# Technical Memorandum
# South Metro Water Supply Authority
# Regional Aquifer Supply Assessment

This Technical Memorandum (TM) describes the assessment of the regional data relevant to groundwater supply in the south Metro area undertaken with the support of a Water Supply Reserve Grant from the Colorado Water Conservation Board (CWCB). The purpose of this assessment is to compile recent regional aquifer data to support the South Metro Water Supply Authority (SMWSA) evaluation of aquifer storage and recovery (ASR) pilot test locations. This TM provides the background for performing the tasks, the results of these tasks, and finally a summary of the findings. All information is reported as provided by the cooperating entities, with reformatting and conversion to common units, except as noted in individual sections.

## Background

In 2004, the CWCB completed the Statewide Water Supply Initiative (SWSI). That study included estimates of unmet water demands in the South Platte Basin amounting to over 400,000 acre-feet (AF) in 2030, with over 90,000 AF of "gap" between projected municipal and industrial (M&I) water demands and available water supplies remaining after identified projects and processes (IPPs) are implemented.

The SWSI estimated that by 2030 approximately 40,000 acre-feet per year (AFY) of this gap was in the south Metro Denver area, which has been one of the fastest growing regions in the state and nation for over a decade. This 40,000 AFY gap was based on the assumption that existing levels of groundwater pumping could continue indefinitely into the future. The south Metro area is a region that relies on groundwater supplies developed from Denver Basin bedrock aquifers. The Denver Basin includes four principle bedrock aquifers that have been defined by the State Engineers Office. These aquifers, in order of depth, are the Dawson, Denver, Arapahoe, and Laramie-Fox Hills aquifers. Each of these aquifers is vertically isolated by the presence of confining units. Figure 1 shows the locations of municipal supply wells that have been reported by cooperating entities in the study area. These deep aquifers receive very little natural recharge in relation to the volumes of groundwater withdrawn. One of the key findings from SWSI is that continued reliance on Denver Basin groundwater supplies creates serious concerns over the reliability and sustainability of this source of supply along the Front Range area. To address this issue the Douglas County Water Resources Authority, Denver Water, and the Colorado River District completed the South Metro Water Supply Study in 2004. The purpose of the 2004 study was to investigate alternatives for meeting water supply needs of the south Metro area through the year 2050.

Water providers in the south Metro area have joined together as the SMWSA to coordinate a variety of activities leading to more sustainable water supplies. In 2007,

the SMWSA completed the South Metro Regional Water Master Plan. This report identified build-out water demands, renewable water supply goals, and potential sources of renewable supplies. In addition, this study also developed proposed regional infrastructure that will allow delivery of new renewable sources, as well as routing of potential local supplies such as water developed through a regional ASR project. The SMWSA members also understand the need to implement strategies to preserve the bedrock aquifers and in September 2007 began discussions on more coordinated management of this resource. Those discussions include formal arrangements to share equipment, personnel, and infrastructure in times of supply emergency, and developing a common resource pool for contracting drilling services. The SMWSA is also aware that the bedrock aquifers vary significantly in their yield and response to pumping within the south Metro area. By initiating this study the member organizations would like to understand these local effects in greater detail so they can develop plans to use the groundwater supplies in ways that reduces withdrawals and supports aquifer productivity throughout the region. In addition, the SMWSA would like to investigate how to expand its artificial recharge of the bedrock aquifers. Centennial Water and Sanitation District (CWSD) has operated a successful ASR program for over 17 years and other water providers are also interested in the development of ASR projects. Figure 2 shows operational ASR wells in the south Metro area. The SMWSA entities understand that a coordinated ASR program is as important as coordinated aquifer pumping.

Given this background, it is appropriate and opportune for this study to be undertaken under the auspices of House Bill [HB]-1177 and the Metro Basin Roundtable to compile the most recent aquifer information to support coordinated regional management of this resource.

The following are the SMWSA entities participating in this study:

- Arapahoe County Water and Wastewater Authority (ACWWA)
- Castle Pines Metropolitan District
- Castle Pines North Metropolitan District
- Centennial Water and Sanitation District
- Cottonwood Water and Sanitation District
- East Cherry Creek Valley Water and Sanitation District (ECCV)
- Inverness Water and Sanitation District
- Meridian Metropolitan District
- Pinery Water and Wastewater District
- Stonegate Village Metropolitan District
- Town of Castle Rock

Parker Water and Sanitation District did not participate in this assessment, thus no data are shown or reported for this portion of the South Metro area.

# Study Objectives

The objectives of the study are to:

1. Develop a better understanding of the aquifer characteristics relevant to well production, artificial recharge, and conjunctive use within the south Metro area through the compilation of recent data from SMWSA providers.

2. Undertake a detailed review of aquifer drawdown data due to pumping in the south Metro area by evaluating information from previous studies and updating with additional information collected from SMWSA providers.

3. Characterize the unit cost of producing potable groundwater in the south Metro area, including costs for pumping, water treatment, annual operations, and maintenance; evaluate whether the unit costs vary by aquifer, geographically and/or over time through the year; and use this information to assess ways of optimizing operations to increase aquifer sustainability.

4. Identify potential regions to conduct a regional ASR demonstration project within the south Metro area.

## Task 1 – Evaluate Aquifer Characteristics

In this task aquifer characteristics were obtained from the SMWSA entities to develop a better understanding of the impacts of pumping and artificial recharge in the south Metro area. The characteristics of most interest for this study include transmissivity and storage coefficient. Other characteristics, such as well specific capacity and productive aquifer thickness, were also reported for some wells.

### Methodology

To obtain the aquifer characteristic data necessary for developing a better understanding of the aquifer hydraulics in the south Metro area, a well field data request was sent to each of the SMWSA entities utilizing bedrock wells. The information provided was used to develop a master table of wells and the respective characteristics reported for each well. Information gathered from recent studies in the area was used to supplement the information reported by the SMWSA entities. These studies included the South Platte Decision Support System (SPDSS), the Senate Bill [SB]06-196 Underground Water Storage Evaluation, the South Metro Water Supply Study, and the Castle Pines North District Integrated Water Resources Plan. These studies incorporated the extensive body of knowledge that has been published by earlier federal and state agencies. Finally, the aquifer characteristics received from the SMWSA entities and obtained from recent studies were converted into consistent units.

The aquifer characteristics were tabulated and used to develop figures showing the spatial variability in the aquifer characteristics by aquifer in the South Metro area.

## Results

Aquifer characteristics compiled from the SMWSA entities were used to gain a better understanding of the variability of the bedrock aquifers in the south Metro area. Aquifer characteristics such as transmissivity, hydraulic conductivity, saturated thickness, storage coefficient, and specific yield were solicited from SMWSA entities. The availability of each of these characteristics varies by entity, depending on the information received. Appendix A contains a table of the aquifer hydraulic properties for the south Metro area that were reported by the cooperating entities. A key parameter for understanding the potential yield of an aquifer is transmissivity. Most of the entities were able to provide transmissivity data for their wells. Transmissivity is a key factor in identifying areas that are best suited for an ASR well, though other characteristics, such as water quality and availability of water and infrastructure, are also important.

The transmissivity of an aquifer is a measure of the ability of the entire thickness of the aquifer to transmit groundwater. The cooperating entities reported results of aquifer tests at 171 wells that were completed within a single aquifer. Aquifer test data provided represents a variety of test durations, measurement methods, and analysis methods. These test results were taken 'as-is' and not reinterpreted as part of this assessment. The spatial distribution of transmissivity values for the Dawson, Denver, Arapahoe, and Laramie-Fox Hills aquifers are shown in Figures 3 to 6. These values are also plotted on maps of sand thickness in each aquifer in Appendix C. These figures indicate that significant local variability in transmissivity occurs within each of the aquifers; however, some general trends are apparent. Reported transmissivities in the Dawson Aquifer are typically higher in the northern portion of the study area, while the opposite trend occurs in the Denver Aquifer where higher transmissivities occur in the southern area. Within the Arapahoe Aquifer, lower transmissivities predominate in the southern and western areas, with consistently higher values occurring in the northern portion of the study area. No clear trends are apparent in the Laramie-Fox Hills Aquifer due to the relatively sparse data. The Laramie-Fox Hills Aquifer is geologically different than the upper three aquifers and because of the depositional environment that created the formation, the aquifer characteristics are expected to be less variable. The Appendix C figures indicate some correlation between sand thickness and transmissivity. The thickness of sand is generally greatest along the axis of the deep portion of the Denver Basin, which lies along a north-northwest trend in the western portion of the SMWSA member service area. Even within the thickest sand zones, significant variability in transmissivity occurs.

These results are summarized in Table 1, which provides a statistical summary of the data by aquifer. The Dawson and Arapahoe Aquifers have been subdivided by the State Engineer into upper and lower members, however, the values reported do not differentiate between these subdivisions. Figure 7 provides a graphical comparison of transmissivities for the bedrock aquifers using a box and whisker plot. The Arapahoe Aquifer has the highest geometric mean transmissivity of the four zones, with the remaining zones showing significantly lower values. The geometric mean is an

appropriate measure of central tendency of parameter, such as transmissivity, when the distribution contains a few higher values.

**Table 1. Statistical Summary of Transmissivities of SMWSA Denver Basin Wells ($ft^2/d$)**

| Aquifer | # Values | Minimum | Maximum | Geometric Mean | Median |
|---|---|---|---|---|---|
| Dawson | 16 | 109.7 | 536.0 | 200.2 | 184.3 |
| Denver | 54 | 2.9 | 631.3 | 148.7 | 223.6 |
| Arapahoe | 80 | 92.5 | 2962.7 | 758.5 | 848.0 |
| Laramie-Fox Hills | 21 | 0.9 | 672.1 | 84.2 | 100.8 |

The transmissivity of the aquifer in the vicinity of potential ASR locations is an important characteristic in assessing the feasibility of this technology. Areas with higher transmissivity are able to accept more water during injection cycles, and then produce this water more easily during the recovery cycle. Ideally, areas that exhibit consistent higher transmissivity values would be best suited candidate sites for ASR. The long-term successful operations conducted by Centennial have demonstrated that even lower transmissivity zones can be successfully operated as ASR projects. Other factors such as well construction, water availability, and proximity to infrastructure are also important considerations in selecting an ASR location.

As shown in Appendix A, transmissivity estimates were the primary aquifer characteristic reported, with hydraulic conductivity and storage parameters reported for some wells. No additional information was reported on the top and bottom elevations thus were not reinterpreted for the aquifers, while a limited number of wells reported total sand thickness within the aquifer. The best available aquifer configuration data for the Denver Basin bedrock aquifers has been collected as part of the SPDSS and is currently being used by the U.S. Geological Survey (USGS) to model the Denver Basin aquifers. This information is available on the Colorado Decision Support System (CDSS) website (http://cdss.state.co.us/DNN/default.aspx).

## Task 2 – Characterize Aquifer Pumping and Its Effects

Municipal well pumping and the depth-to-water levels are measured by the water providers in the south Metro area. This information was compiled into a database that has consistent reporting units for each category of data. These data were used to characterize the location, duration, and amount of pumping and how this has changed over time, along with the available water level monitoring data.

### Methodology

In response to the well field data request, most SMWSA entities transmitted water level and well production data for their respective wells in an electronic format. Well production data from one of the largest entities in the south Metro area, Parker, is not included so the pumping totals reported in this assessment are not representative of the entire south Metro area. These data were reviewed for anomalies, converted to consistent units, and compiled in tables. Depending on the entity, water level and well production data were provided at variable time intervals. In cases where depth to water was provided, survey information was used to convert all data to elevations to maintain consistency.

Daily and monthly well production data were loaded directly into the database. Monthly production values are indicated by values being reported on the first day of the month. In instances where well production was reported on a specified interval, an average well pumping rate was computed for the time between measurements. For example, if the well production for a well was reported on the 4th of a month and then the next produced volume was reported on the 10th, the volume of water produced from the 10th was distributed over the 6 days between measurements equally. This approach calculates the average production rate between meter readings but not the actual daily pumping amounts. This needs to be considered when comparing well production to water levels in these particular wells. In addition, water levels may have been taken from wells during or recently after well pumping. Data obtained from the SMWSA entities participating in this assessment was taken 'as-is' with no quality control relating to whether a well was pumping or not during the depth to water measurement.

## Results

A complete set of water level and pumping rate hydrographs using the reported data are contained in Appendix B.

The response to water levels as a result of pumping in the Denver Basin has been a great concern for many of the SMWSA entities since many rely on the Denver Basin aquifers as a key component of their water supply. The reported monthly well production from participating SMWSA entities in recent years (2002 to 2008) for each of the aquifers is shown in Figures 8 to 11. This period was selected because it represents the most recent aquifer data and data has been collected on a more frequent basis. During 2008, the most recent available full year data set, total reported groundwater pumping was 23,444 AF, with 59 percent of this quantity produced from the Arapahoe Aquifer. As noted previously, these pumping totals do not include pumping from Parker. The Laramie-Fox Hills Aquifer produced 17 percent, the Denver Aquifer produced 15 percent, and the remaining 9 percent was produced from the Dawson Aquifer. Figure 12 shows the relative pumping density in 2008 for the Arapahoe Aquifer in the SMWSA area, shown as annual production within each 4-square-mile grid cell. This density map illustrates the areas of most intensive development of this aquifer in the Pinery, Castle Rock, ECCV, ACWWA, and Stonegate areas. An area of net recharge (shown as a production density of less than zero on Figure 12) is present within the Centennial area in 2008, due to the ongoing ASR operations.

The daily data provides a relatively "real-time" cause and effect of pumping and observed water levels in a well and any nearby wells in the same aquifer. Daily water level and/or production data was available for 185 wells in this study. Figures 13 and 14 are examples of water levels and well pumping in two Arapahoe Aquifer wells. Figure 13 shows daily data for a Castle Pines North Arapahoe well (A-04) over a portion of the summer pumping season in 2007.

As expected, the water levels drop when the well is producing and water levels rebound when the well is shut off. There are many factors that influence the water levels, including proximity of other wells pumping in the same aquifer, duration of pumping and recovery periods, and well efficiency. The scope of this study was not to evaluate each of these factors but to determine the overall reaction of the aquifer due to well pumping in the region to help assess potential for ASR in stabilizing water levels in the aquifer. No clear trends in water levels are apparent in the aquifers, due to the variety of factors that impact water levels in individual wells.

Another well with daily data is CWSD's Arapahoe well A-10. CWSD has been operating an ASR program since the early 1990s that includes this well. This has allowed CWSD to operate wells in either a production or recharge mode depending on water supply and demands.

As seen in Figure 14, water levels in CWSD well A-10 have risen and fallen over the 2-year period that is plotted in response to well production and recharge. When the well is recharging, daily production values are negative, the water levels rise dramatically in the well, then fall as the pressure mound decays when injection ceases. The water level hydrograph also exhibits variable response during the injection cycle that could be due to variation in injection rates not captured in the flow records, or the impact of nearby pumping wells. The operation of the well using ASR appears to have stabilized water levels at this well over the period shown. This figure represents only a portion of the historical data for this well and may not reflect a long-term trend due to varying pumping rates over time.

## Task 3 – Analyze Pumping Costs

Information related to water production costs was obtained from the south Metro water providers. In general, the costs provided consisted of capital cost items (e.g., well construction and/or pump replacement) and annual operations and maintenance (O&M) costs (e.g., annual electrical pumping costs and/or water treatment costs). The provided costs were reviewed, screened, and used to evaluate the average annual O&M costs to deliver a unit of 1 AF of water, based upon the well production data collected in Task 2. The information was then displayed spatially to help identify any potential trends that could identify areas where ASR and/or pumping operations could be optimized.

### Methodology

Pumping costs were reported in eight of the participant surveys. The reported costs were reviewed and summarized for each aquifer. Capital cost data was received by some but not all the entities. Capital cost data consisted of well construction costs and pump replacement costs. Capital costs for the construction of a production well were highly variable due to factors such as total depth, well diameter, and casing and screening material. In addition, material costs (i.e., steel) have greatly fluctuated in the recent past. Therefore, it was decided to not assess the total capital costs by provider and aquifer.

The reported costs also contained annual O&M costs including electrical pumping costs, water treatment, and periodic rehabilitation of the wells. Not all providers included line items for all of the costs, nor were annual O&M costs available for all years where pumping information was available. Therefore, the reported costs were screened and reviewed; however, some wells had more complete data than others. For all of the wells with reported annual O&M costs, the total annual expenditure was calculated. Based upon the work completed in Task 2, the total annual O&M expenditure (U.S. Dollars) was divided by the total pumped volumes (AF) to calculate a temporal snapshot of total costs to produce a unit volume of water. It should be noted that CWSD has multiple wells with ASR capabilities and reported both recharge and withdrawal volumes. The cumulative totals of both recharged and withdrawn volumes were used to calculate CWSD's unit costs.

The calculated unit costs were reviewed and wells with incomplete O&M costs or non-reported pumped volumes were eliminated from further analyses. Well rehabilitation was not taken into account for this analysis since not all wells incurred the cost and rehabilitation efforts can vary greatly dependent upon well operations. In addition, wells with large O&M expenditures that had substantially smaller than normal pumped volumes for that year were eliminated from further analyses. However, wells with larger annual O&M costs that had pumped an amount within the historical range were retained to help identify changes in unit costs over time. Finally, wells that had significant components of the annual O&M cost (such as no electrical costs) missing from the received surveys were eliminated as the calculated unit costs did not reflect reasonable estimates.

## Results

The four summary tables, Tables 2 through 5, show the calculated annual unit costs ($/AF) for each of the Denver Basin aquifers based upon O&M costs. The overall average annual unit cost to produce an AF of water from the Dawson, Denver, Arapahoe, and Laramie-Fox Hills aquifers are $250/AF, $257/AF, $359/AF, and $208/AF, respectively. Based upon this data, the general trend observed for all of the aquifers, except the Dawson, was that the average annual O&M unit cost increases with time. For the Dawson Aquifer there was limited data (wells with multiple years of reported annual O&M costs), thus no clear temporal trend for the Dawson Aquifer was seen. The variable detail in reporting of costs and limited responses increases the uncertainty in applying these costs on a general basis to the South Metro area.

In addition, it was anticipated that the Laramie-Fox Hill Aquifer annual unit cost would be the highest due to the fact that the Laramie-Fox Hill Aquifer is the lowest Denver Basin Aquifer, and in general, as the poorest water quality of the Denver Basin aquifers. Only limited cost information was available for the Laramie-Fox Hills Aquifer, thus the costs may not be indicative of those for the entire South Metro area.

Finally, the average unit costs were imported into ArcGIS and displayed spatially to help identify trends based on locations within each of the aquifers. Figures 15 through 18 show the spatial distribution of the average annual unit cost to produce an AF of

water from wells completed in the Dawson, Denver, Arapahoe, and Laramie-Fox Hills aquifers. Within the Dawson Aquifer, the lowest average annual O&M costs appear to be located in the southwestern portion of the study area. Unfortunately, no clear spatial trends on cost of production were apparent in the remaining aquifers.

## Task 4 – Evaluate Potential ASR Locations

ASR has been used in the Denver Basin since the early 1990s and is considered a proven technology. SMWSA is evaluating this technology for implementation on a regional scale using sustainable water resources that may be lower in quality than water that has been typically used for ASR to this point. Information collected in Tasks 1 through 3 was used to identify regions within the south Metro area that might be suitable for ASR demonstration projects. Other factors must also be considered in this evaluation, such as the source of potential recharge water, the infrastructure to deliver this water for a pilot test, and the interest of individual utilities in the program. This evaluation has focused on development intensity and physical aquifer characteristics, and other selection factors will need to be considered in the future selection of a pilot test well. Areas of most intensive development are also favorable for consideration as candidate areas for implementing ASR since these areas will benefit the most from the recharge. Since the Arapahoe Aquifer is the most heavily developed, this is the zone that is considered for the pilot testing program. Infrastructure capable of delivering water of the targeted quality is available principally in the northeastern quadrant of SMWSA member agency service areas. Such infrastructure is also available in the CWSD area; however, they are already conducting intensive ASR operations.

Based on information provided by the cooperating entities, 24 wells have been used for ASR operations, nearly all of which are in the CWSD. The total injection volume during 2008 amounted to nearly 3,300 AF in 13 active wells. The majority of these wells are in the Arapahoe Aquifer (50 percent), with 37 percent in the Laramie-Fox Hills Aquifer, and the remainder in the Denver Aquifer. The range in transmissivity reported for wells used for ASR operation is from 9.4 to 2,963 square feet per day, demonstrating that ASR operations can be conducted using wells with a wide range in hydraulic characteristics. As expected, wells with higher transmissivities are typically operated at higher injection rates.

Although it is believed that ASR is feasible at all locations in the Denver Basin, based on pumping density and transmissivity distributions, the most favorable candidate areas for ASR pilot testing are located in the northeastern quadrant of the SMWSA area.

# Summary and Recommendations

As part of this regional aquifer supply assessment, a dataset of aquifer characteristics, recent water levels, and well production was compiled and evaluated to gain a better understanding of the Denver Basin bedrock aquifers in the south Metro area. These aquifers are a key component of water supply for many of the SMWSA entities.

Aquifer characteristics, well data, water levels, well production, and costs associated with delivering water from each well were collected from SMWSA entities and recent studies in the south Metro area. This information was compiled in a database to allow for processing and querying of the data. The data allowed the evaluation of aquifer characteristics, with a focus on aquifer transmissivity, to identify areas in the south Metro area that are more suitable for ASR based upon aquifer hydraulics. Well pumping and depth to water information was evaluated to identify areas where there may be potential to stabilize water levels with ASR operations. Since the Arapahoe Aquifer typically has the highest transmissivities, and pumps the largest quantity of water, this aquifer is recommended as the zone for testing in the pilot program. Since existing operational data demonstrates the feasibility of successful ASR, other considerations are more heavily weighted than transmissivity in recommending an area for pilot testing. Based on the intensity of development, availability of suitable recharge water and infrastructure to deliver it, the northeastern quadrant of the SMWSA area, including the ECCV and ACWWA areas, are recommended for consideration for the pilot program.

Based upon the findings of this assessment SMWSA would like to further explore the potential for implementing ASR in the south Metro area by conducting an ASR pilot study. This study would evaluate several long-term renewable water sources candidates for supplying ASR wells in the area, water quality compatibility, and the potential for regional integration of ASR operations to better manage the groundwater resources of the SMWSA entities.

# References

CDM (Camp Dresser & McKee Inc.). 2004. Colorado's Statewide Water Supply Initiative (SWSI). Prepared for the Colorado Water Conservation Board. November.

CDSS (Colorado Decision Support System) website. Accessed on November 20, 2009. (http://cdss.state.co.us/DNN/default.aspx).

Black and Veatch. 2004. South Metro Water Supply Study. Prepared for the South Metro Water Supply Study Board. February.

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# Tables

**Table 2 - Summary Unit Pumping Costs ($/AF) for South Metro Providers' Dawson Aquifer Wells**

| Provider | Well Name | 2003 Unit Cost ($/AF) | 2004 Unit Cost ($/AF) | 2005 Unit Cost ($/AF) | 2006 Unit Cost ($/AF) | 2007 Unit Cost ($/AF) | 2008 Unit Cost ($/AF) | Average Cost ($/AF) |
|---|---|---|---|---|---|---|---|---|
| Pinery | A | $261 | | $362 | $340 | $330 | | $323 |
| Pinery | B | $159 | $500 | $258 | | $209 | $209 | $267 |
| Pinery[1] | J | $157 | $147 | $165 | $187 | $212 | $173 | $173 |
| Pinery[1] | R | | | | | $702 | $195 | $449 |
| Pinery[1] | S | | | | | $414 | $241 | $328 |
| Pinery[1] | T | | | | | $288 | $305 | $296 |
| Castle Rock[2] | 44 | | | | | | $471 | $471 |
| Castle Rock[2] | 168 | | | | | | $151 | $151 |
| Castle Rock[2] | 170 | | | | | | $68 | $68 |
| Castle Rock[2] | 222 | | | | | | $158 | $158 |
| Castle Rock[2] | 225 | | | | | | $70 | $70 |

[1] Irrigation well - no treatment costs

[2] Treatment costs not available

**Table 3 - Summary Unit Pumping Costs ($/AF) for South Metro Providers' Denver Aquifer Wells**

| Provider | Well Name | 2003 Unit Cost ($/AF) | 2004 Unit Cost ($/AF) | 2005 Unit Cost ($/AF) | 2006 Unit Cost ($/AF) | 2007 Unit Cost ($/AF) | 2008 Unit Cost ($/AF) | Average Cost ($/AF) |
|---|---|---|---|---|---|---|---|---|
| Centennial[1,2] | D-04 | | | $180 | $475 | $136 | $156 | $237 |
| Centennial[1,2] | D-05 | | | | $196 | | | $196 |
| Centennial[1,2] | D-08 | | | $185 | $131 | $79 | $109 | $126 |
| Centennial[1,2,3] | D-09 | | | | $175 | $22 | $18 | $72 |
| Centennial[1,2] | D-10A | | | | | | $151 | $151 |
| Centennial[1,2] | D-11 | $117 | | | | | | $117 |
| Centennial[1,2] | D-12R | $309 | | $164 | $198 | $143 | $317 | $226 |
| Centennial[1,2,3] | D-14 | | | $197 | $231 | $113 | $837 | $345 |
| Centennial[1,2] | D-16 | | | $201 | $176 | $227 | $365 | $242 |
| Centennial[1,3] | D-17 | | | $161 | $219 | $91 | $332 | $201 |
| Centennial[1] | D-18 | | | $189 | $192 | $176 | $338 | $224 |
| Centennial[1] | D-19 | | $110 | $209 | $163 | | $408 | $223 |
| Centennial[1,2] | D-20 | | | $224 | $171 | | $550 | $315 |
| Centennial[1,2] | TD-05 | | | | $132 | | | $132 |
| Centennial[1,2] | TD-06 | | | | $158 | | | $158 |
| Centennial[1,2] | TD-07 | $634 | | | $415 | | | $524 |
| Centennial[1,2] | TD-08 | | | | $161 | | | $161 |
| Centennial[1,2] | TD-09 | | | | $871 | | $373 | $622 |
| Centennial[1,2] | TD-10 | | $117 | | $140 | | $335 | $197 |
| CPMD[4] | DE-8 | | | | $377 | $272 | $227 | $292 |
| Castle Rock[5] | 7C | | | | | | $339 | $339 |
| Castle Rock[5] | 15 | | | | | | $90 | $90 |
| Castle Rock[5] | 33R | | | | | | $302 | $302 |
| Castle Rock[5] | 41 | | | | | | $220 | $220 |
| Castle Rock[5] | 47 | | | | | | $256 | $256 |
| Castle Rock[5] | 50R | | | | | | $117 | $117 |
| Castle Rock[5] | 105 | | | | | | $297 | $297 |
| Castle Rock[5] | 110 | | | | | | $218 | $218 |
| Castle Rock[5] | 111 | | | | | | $194 | $194 |
| Castle Rock[5] | 148 | | | | | | $268 | $268 |
| Castle Rock[5] | 149 | | | | | | $449 | $449 |
| Castle Rock[5] | 150 | | | | | | $621 | $621 |
| Castle Rock[5] | 174 | | | | | | $160 | $160 |
| Castle Rock[5] | 217 | | | | | | $405 | $405 |
| Castle Rock[5] | 221 | | | | | | $280 | $280 |
| Castle Rock[5] | 224 | | | | | | $275 | $275 |

[1] Electrical costs in 2003 and 2004 were not available

[2] Annual treatment costs were not available for all years

[3] Annual costs per Acre-foot include both recharged and extracted volumes as applicable

[4] No electrical costs were available

[5] Treatment costs not available

**Table 4 - Summary Unit Pumping Costs ($/AF) for South Metro Providers' Arapahoe Aquifer Wells**

| Provider | Well Name | 2003 Unit Cost ($/AF) | 2004 Unit Cost ($/AF) | 2005 Unit Cost ($/AF) | 2006 Unit Cost ($/AF) | 2007 Unit Cost ($/AF) | 2008 Unit Cost ($/AF) | Average Cost ($/AF) |
|---|---|---|---|---|---|---|---|---|
| Centennial[1,2,3] | A-01 | | | $278 | $206 | | $445 | $310 |
| Centennial[1,3] | A-02 | $374 | | $102 | $255 | $383 | $139 | $251 |
| Centennial[1,2,3] | A-03 | | $309 | | $774 | | | $542 |
| Centennial[1,2,3] | A-04 | | | $91 | $247 | | $762 | $367 |
| Centennial[1,2] | A-05R | | | | $182 | | $465 | $324 |
| Centennial[1,2,3] | A-06R | | | $255 | $109 | | | $182 |
| Centennial[1,2] | A-07 | | | $377 | $299 | | | $338 |
| Centennial[1,2] | A-08 | | | | $189 | | | $189 |
| Centennial[1,3] | A-09R | | | $148 | $252 | $111 | $329 | $210 |
| Centennial[1,2,3] | A-10R | | | $363 | $235 | | $520 | $373 |
| Centennial[1,2,3] | A-11R | | | | $169 | $80 | $196 | $148 |
| Centennial[1,2,3] | A-12R | | | $96 | $201 | $43 | $199 | $135 |
| Centennial[1,2] | A-13R | | | $286 | $233 | | $474 | $331 |
| Pinery | C2A | $443 | $576 | $486 | $466 | | $467 | $488 |
| Pinery | I | $790 | $793 | $691 | $486 | $589 | $465 | $636 |
| Pinery | N | $526 | $524 | $535 | $561 | $668 | $649 | $577 |
| Pinery[4] | O | | $326 | $314 | $330 | $317 | $331 | $324 |
| Pinery[4] | P | | $756 | $342 | $315 | $318 | $305 | $407 |
| Pinery | Q | | | $787 | $540 | | $528 | $618 |
| Castle Rock[5] | 14R | | | | | | $289 | $289 |
| Castle Rock[5] | 20 | | | | | | $685 | $685 |
| Castle Rock[5] | 28R | | | | | | $218 | $218 |
| Castle Rock[5] | 39 | | | | | | $325 | $325 |
| Castle Rock[5] | 43 | | | | | | $300 | $300 |
| Castle Rock[5] | 49 | | | | | | $432 | $432 |
| Castle Rock[5] | 82 | | | | | | $327 | $327 |
| Castle Rock[5] | 83 | | | | | | $701 | $701 |
| Castle Rock[5] | 86 | | | | | | $547 | $547 |
| Castle Rock[5] | 118 | | | | | | $298 | $298 |
| Castle Rock[5] | 123 | | | | | | $337 | $337 |
| Castle Rock[5] | 124 | | | | | | $277 | $277 |
| Castle Rock[5] | 218 | | | | | | $179 | $179 |
| Castle Rock[5] | 219 | | | | | | $299 | $299 |
| Castle Rock[5] | 220 | | | | | | $292 | $292 |
| Castle Rock[5] | 223 | | | | | | $302 | $302 |

[1] Electrical costs in 2003 and 2004 were not available

[2] Annual treatment costs were not available for all years

[3] Annual costs per Acre-foot include both recharged and extracted volumes as applicable

[4] Irrigation well - no treatment costs

[5] Treatment costs not available

**Table 5 - Summary Unit Pumping Costs ($/AF) for South Metro Providers' Laramie-Fox Hills Aquifer Wells**

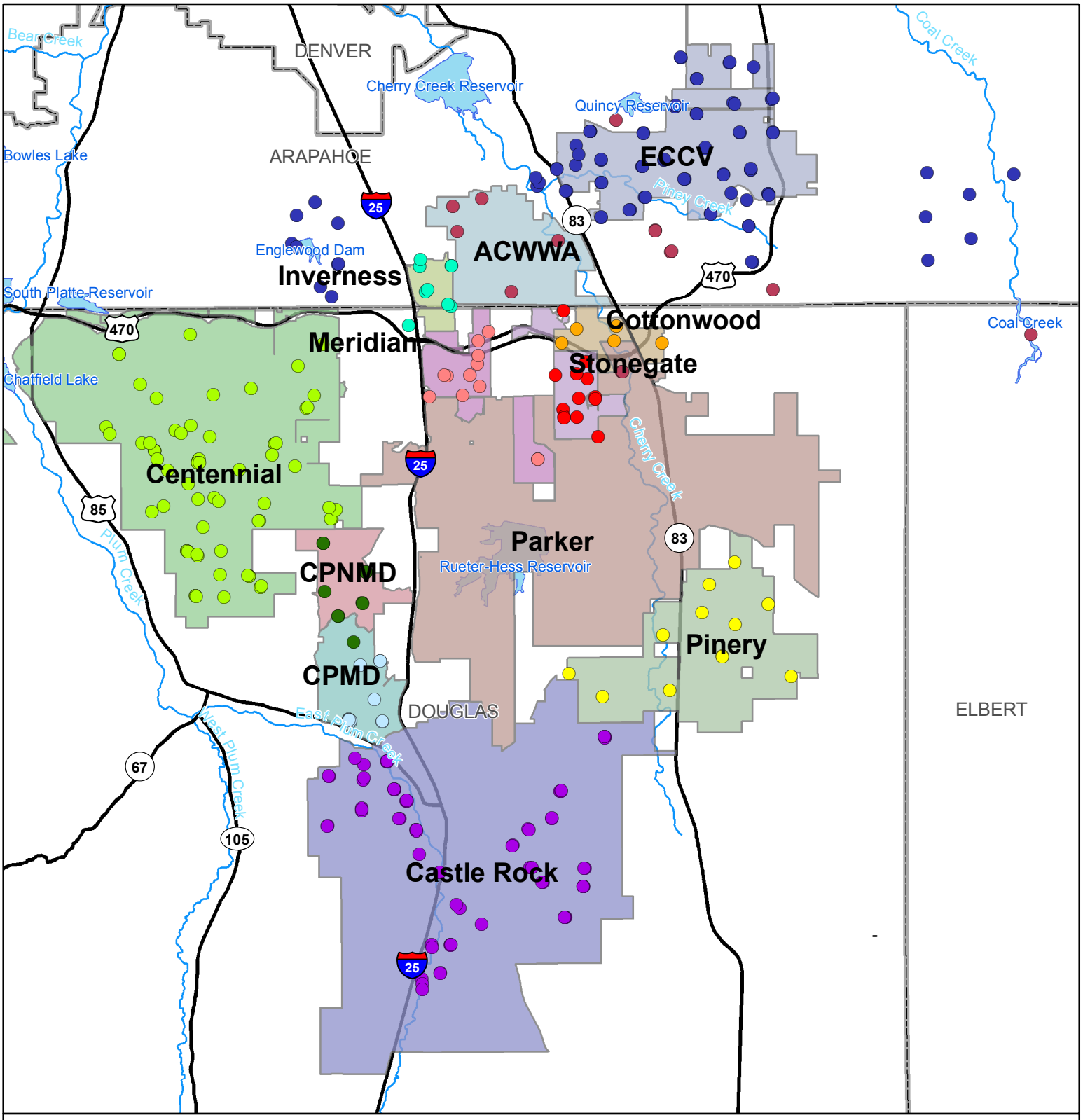
| Provider | Well_ID | 2003 Unit Cost ($/AF) | 2004 Unit Cost ($/AF) | 2005 Unit Cost ($/AF) | 2006 Unit Cost ($/AF) | 2007 Unit Cost ($/AF) | 2008 Unit Cost ($/AF) | Average Cost ($/AF) |
|---|---|---|---|---|---|---|---|---|
| Centennial[1,2,3] | LFH-07 | | | $155 | $210 | | $588 | $318 |
| Centennial[1,2,3] | LFH-08R | | | $19 | $121 | $137 | $224 | $125 |
| Centennial[1,2,3] | LFH-09 | | | | $152 | $63 | $261 | $159 |
| Centennial[1,2,3] | LFH-10R | | | $130 | $198 | $146 | $129 | $151 |
| Centennial[1,2,3] | LFH-11 | | | $277 | $225 | | | $251 |
| Centennial[1,2,3] | LFH-13 | | | $472 | $210 | $139 | $280 | $275 |
| Centennial[1,2,3] | LFH-14R | | | $152 | $221 | $167 | | $180 |

[1] Electrical costs in 2003 and 2004 were not available

[2] Annual treatment costs were not available for all years

[3] Annual costs per Acre-foot include both recharged and extracted volumes as applicable

# Figures




SMWSA
SOUTH METRO WATER SUPPLY AUTHORITY

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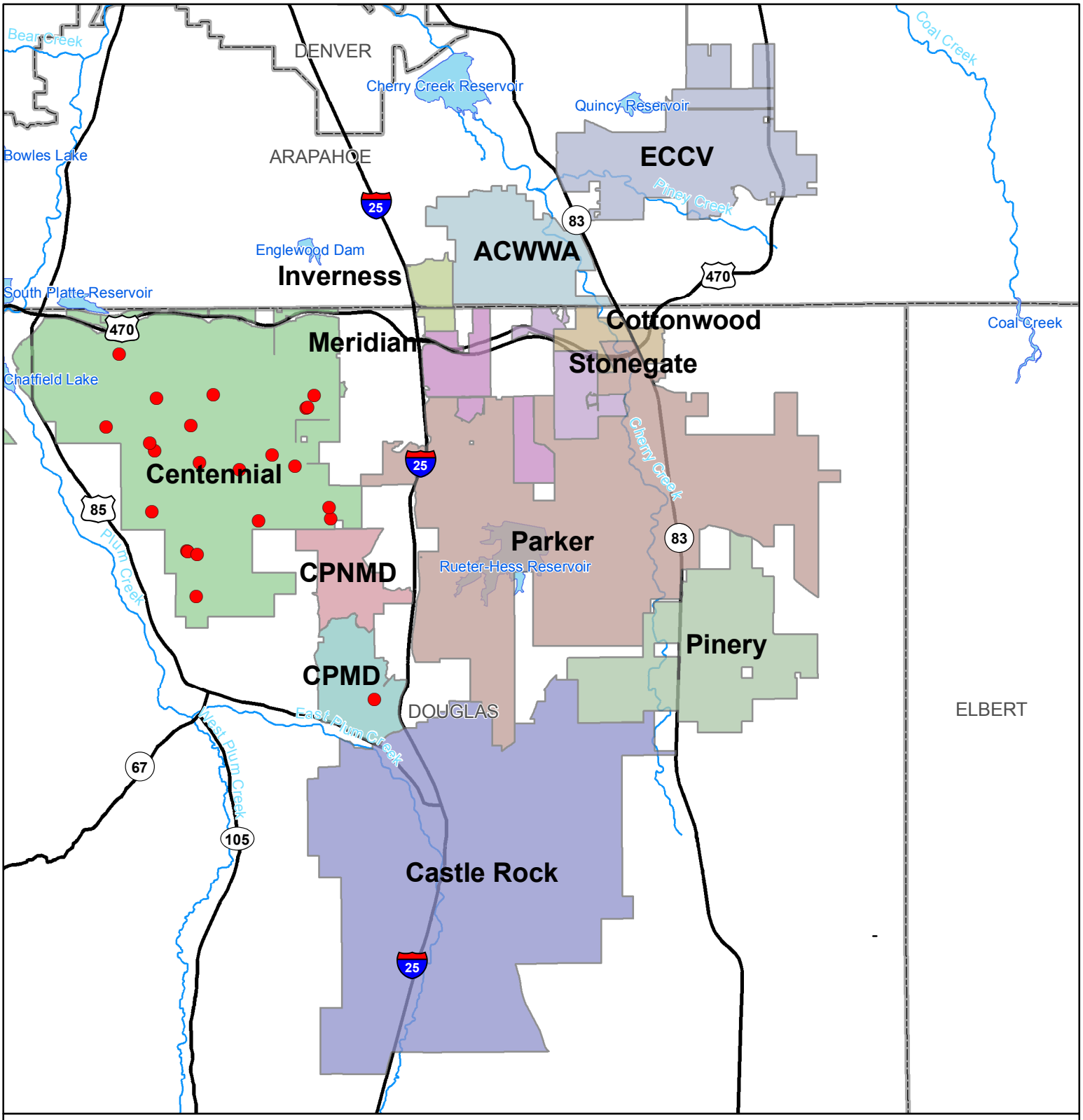
# Figure 1 - SMWSA Denver Basin Wells (less Parker)

Lakes
Streams
Highways
Counties

**South Metro Wells**

- ACWWA
- CPMD
- Castle Pines North
- Centennial
- Cottonwood
- Meridian
- Pinery
- ECCV
- Inverness
- Castle Rock
- Stonegate


Bear Creek
DENVER
Cherry Creek Reservoir
Quincy Reservoir
Coal Creek
Bowles Lake
ARAPAHOE
ECCV
Piney Creek
25
83
ACWWA
Englewood Dam
Inverness
470
South Platte Reservoir
Cottonwood
Coal Creek
470
Meridian
Stonegate
Chatfield Lake
Cherry Creek
Centennial
25
85
Plum Creek
Parker
83
Rueter-Hess Reservoir
CPNMD
Pinery
CPMD
DOUGLAS
ELBERT
East Plum Creek
West Plum Creek
67
105
Castle Rock
25
SMWSA
SOUTH METRO WATER SUPPLY AUTHORITY
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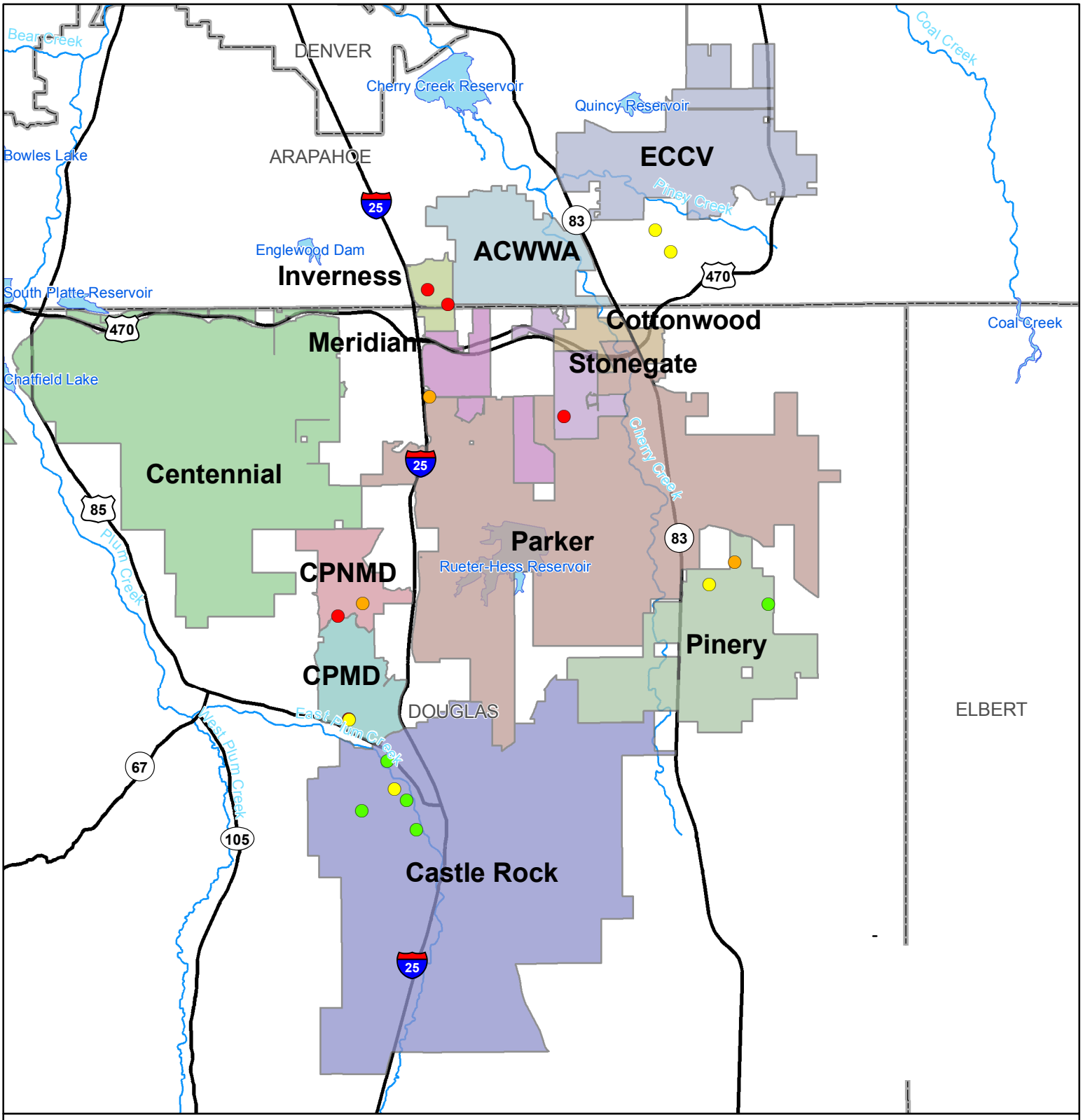
03/01/2010
Figure 2 - Existing ASR Wells in South Metro Area
ASR Wells
Lakes
Highways
Streams
Counties

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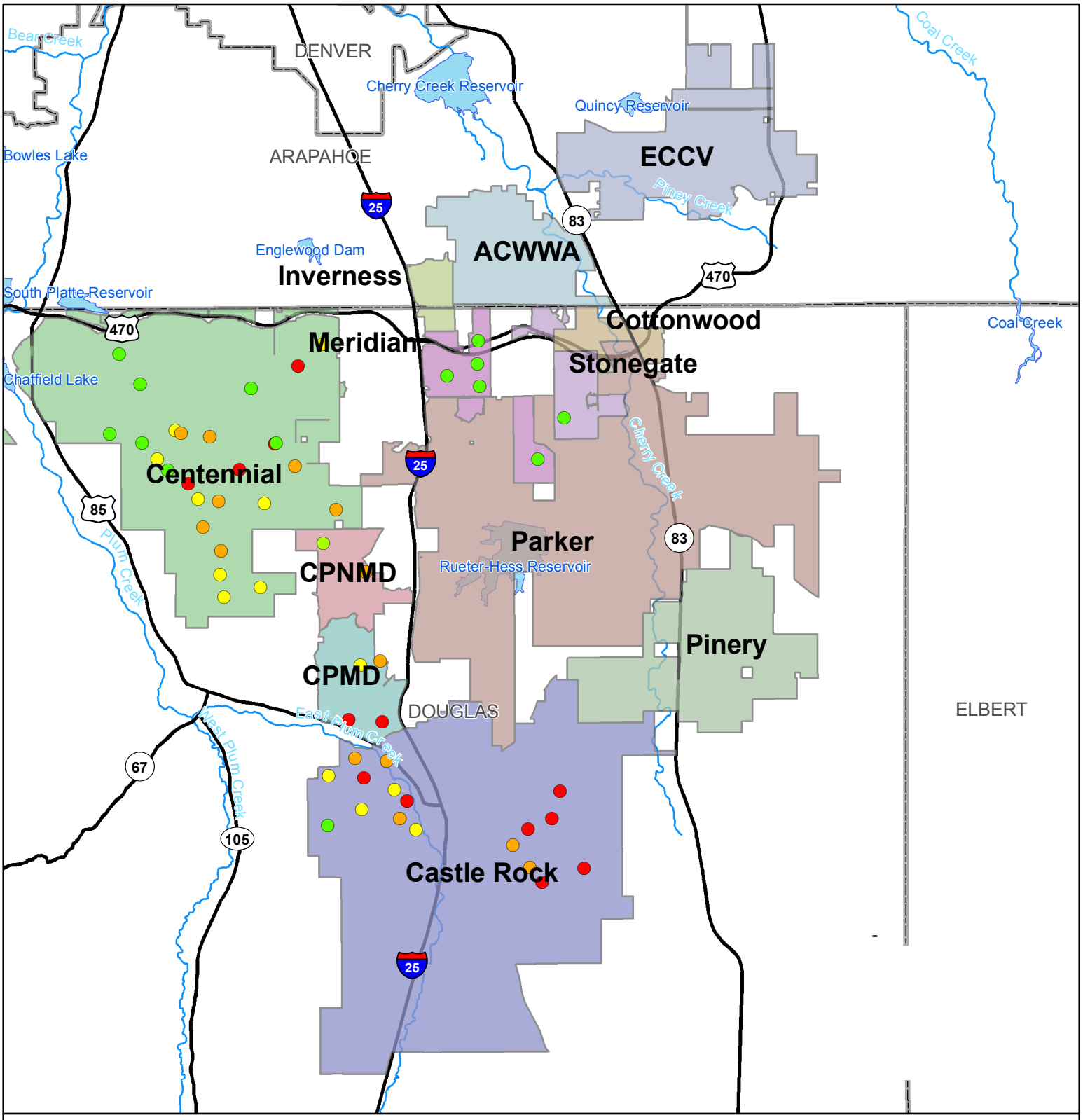
## Figure 3 - Dawson Transmissivity

**Transmissivity**

- < 146 ft²/day
- 146 to 195 ft²/day
- 195 to 261 ft²/day
- > 261 ft²/day

- Highways
- Lakes
- Streams
- Counties


Bear Creek
DENVER
Cherry Creek Reservoir
Quincy Reservoir
Coal Creek
Bowles Lake
ARAPAHOE
ECCV
Piney Creek
25
83
Englewood Dam
ACWWA
Inverness
470
South Platte Reservoir
Cottonwood
Coal Creek
470
Meridian
Stonegate
Chatfield Lake
Cherry Creek
25
Centennial
85
Plum Creek
Parker
83
Rueter-Hess Reservoir
CPNMD
Pinery
CPMD
DOUGLAS
ELBERT
East Plum Creek
West Plum Creek
67
105
Castle Rock
25
SMWSA
SOUTH METRO WATER SUPPLY AUTHORITY
CDM
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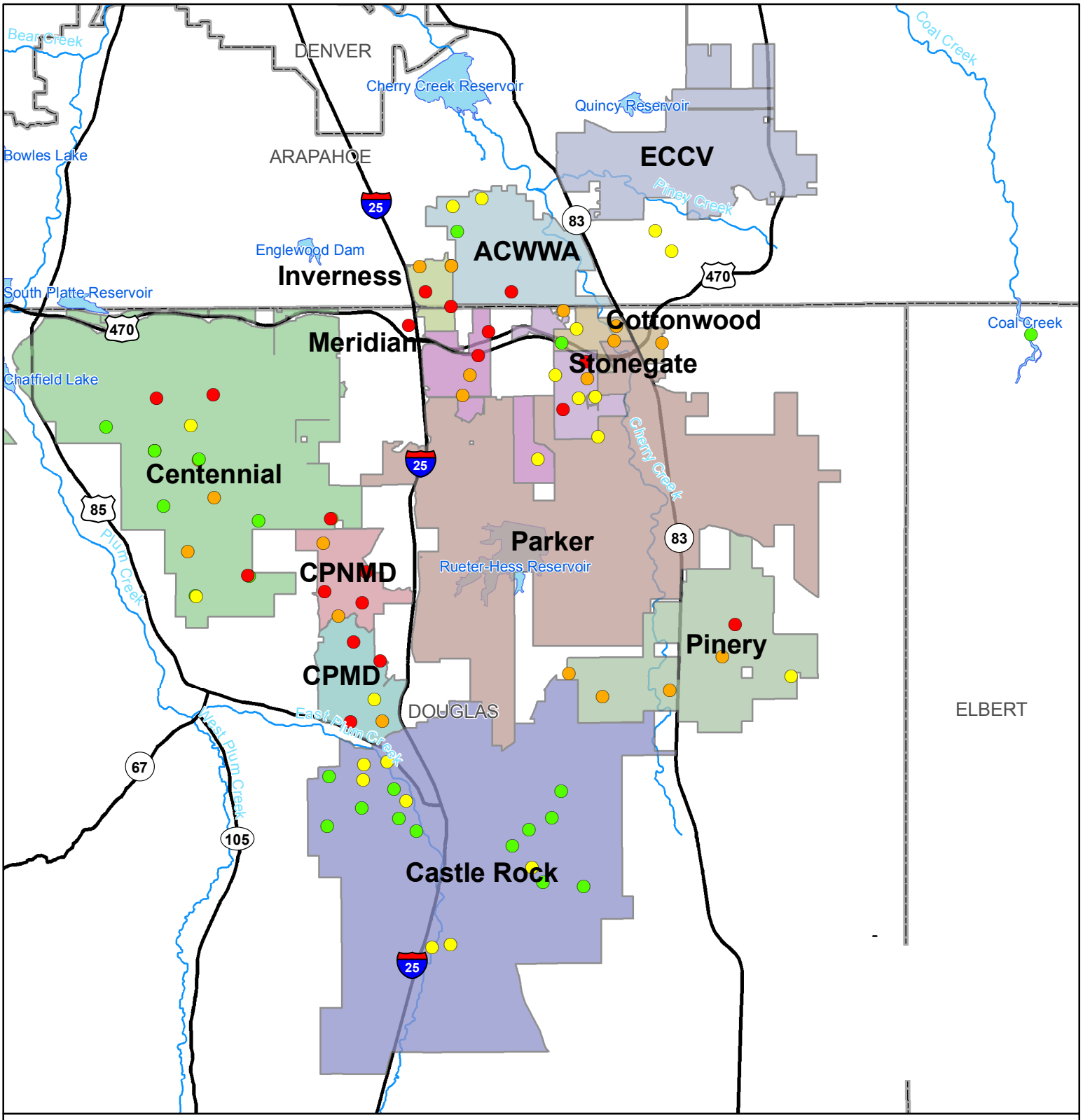
Miles
03/16/2010
Figure 4 - Denver Transmissivity
Transmissivity
< 82 ft²/day
82 to 224 ft²/day
224 to 286 ft²/day
> 286 ft²/day
Highways
Lakes
Streams
Counties

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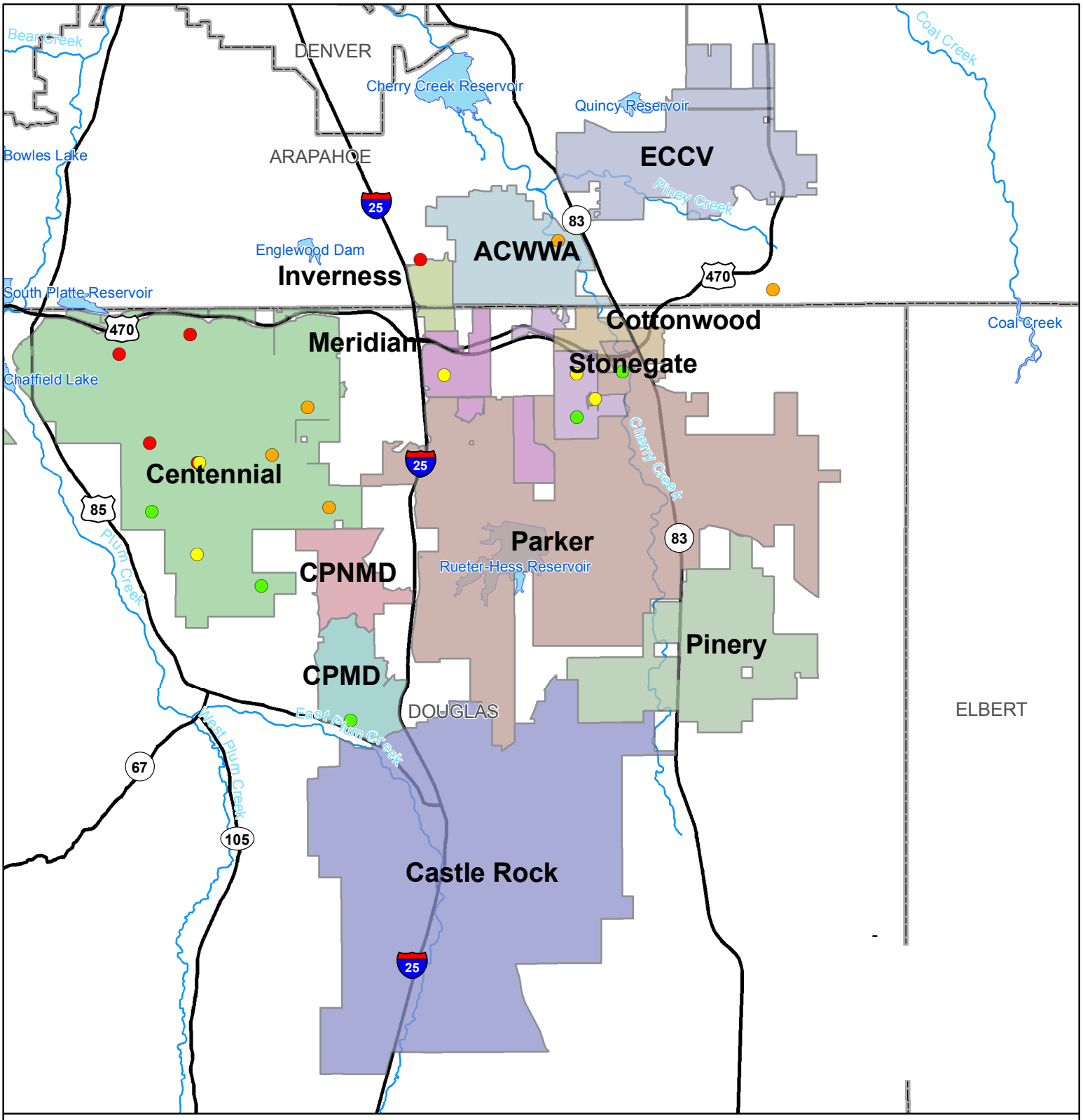
# Figure 5 - Arapahoe Transmissivity

**Transmissivity**

- < 482 ft²/day
- 482 to 889 ft²/day
- 889 to 1403 ft²/day
- > 1403 ft²/day

- Highways
- Lakes
- Streams
- Counties

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# Figure 6 - Laramie-Fox Hills Transmissivity

**Transmissivity**

- < 42 ft²/day
- 42 to 101 ft²/day
- 101 to 157 ft²/day
- > 157 ft²/day

- Highways
- Lakes
- Streams
- Counties

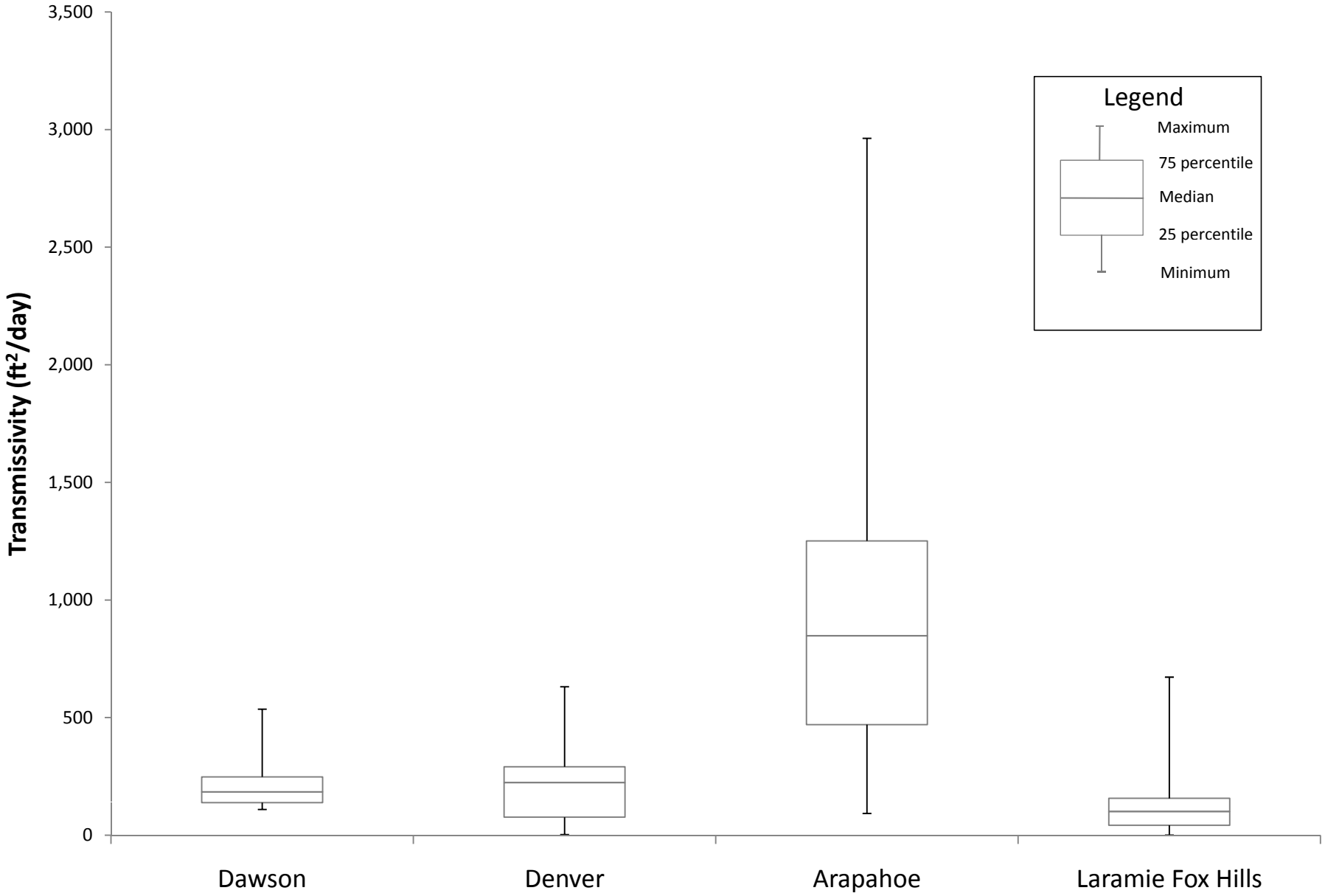



**Figure 7 - Comparison of Aquifer Transmissivities**

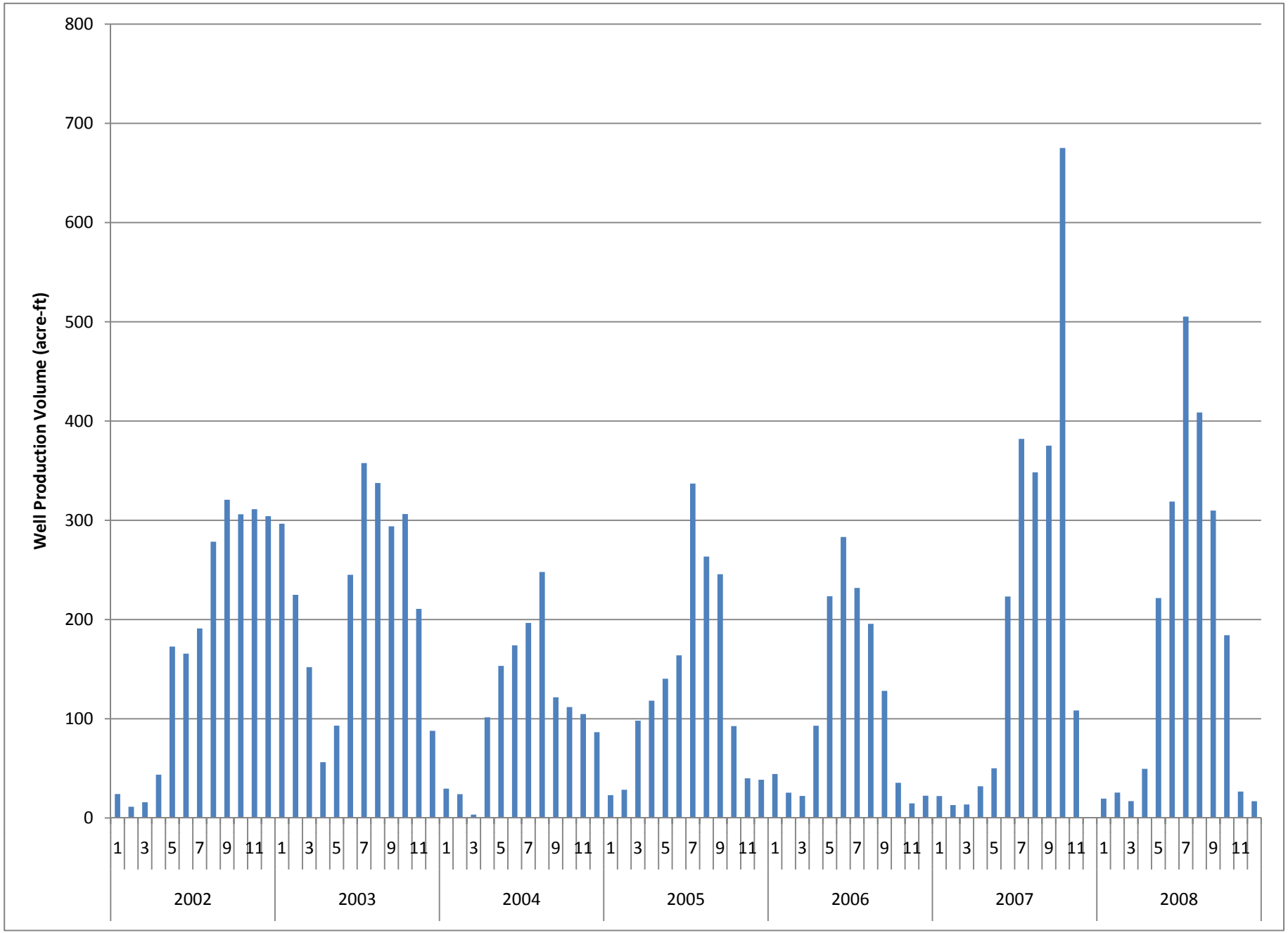



**Figure 8 - Well Production in Dawson Aquifer**

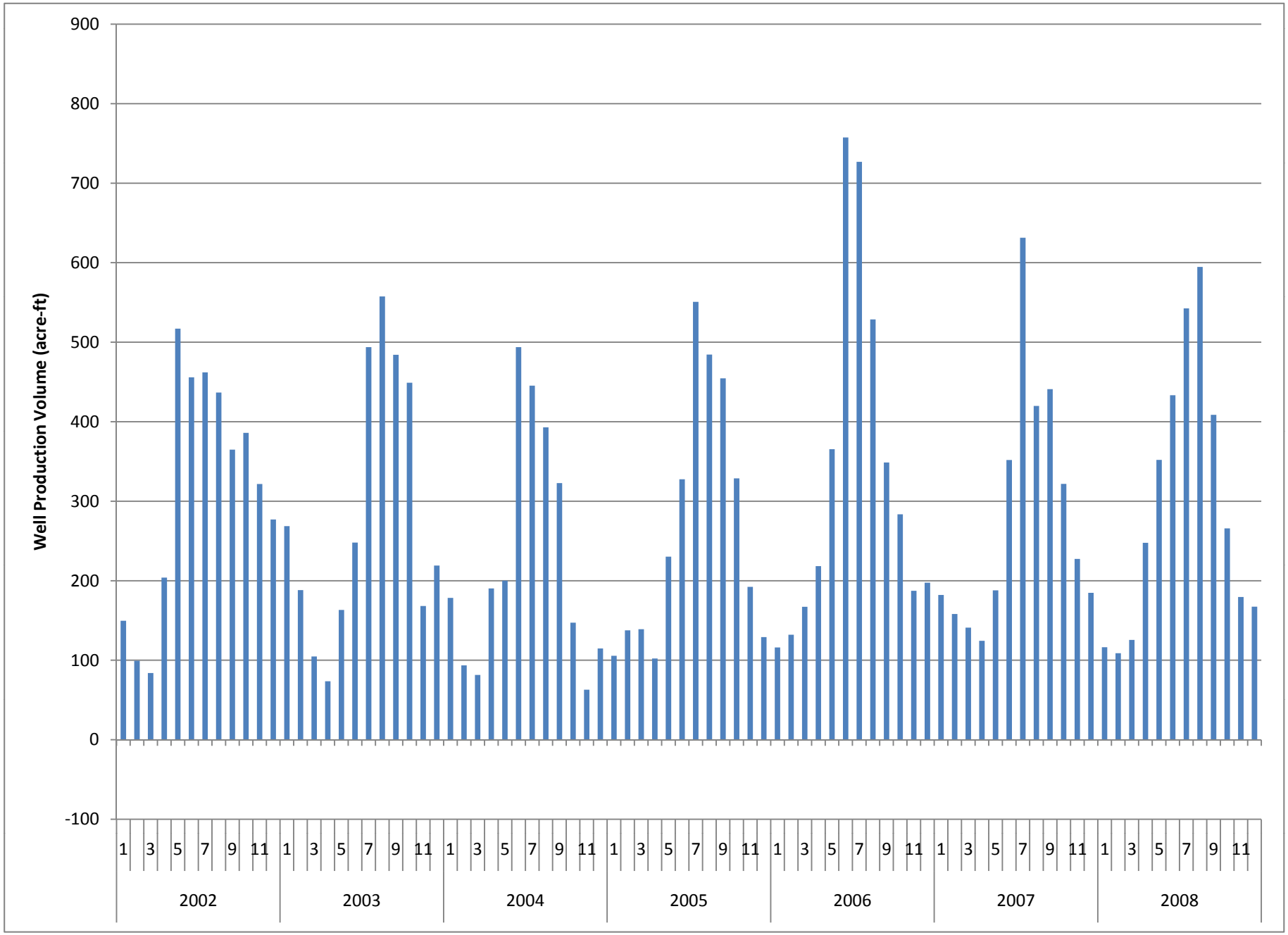



**Figure 9 - Well Production in Denver Aquifer**

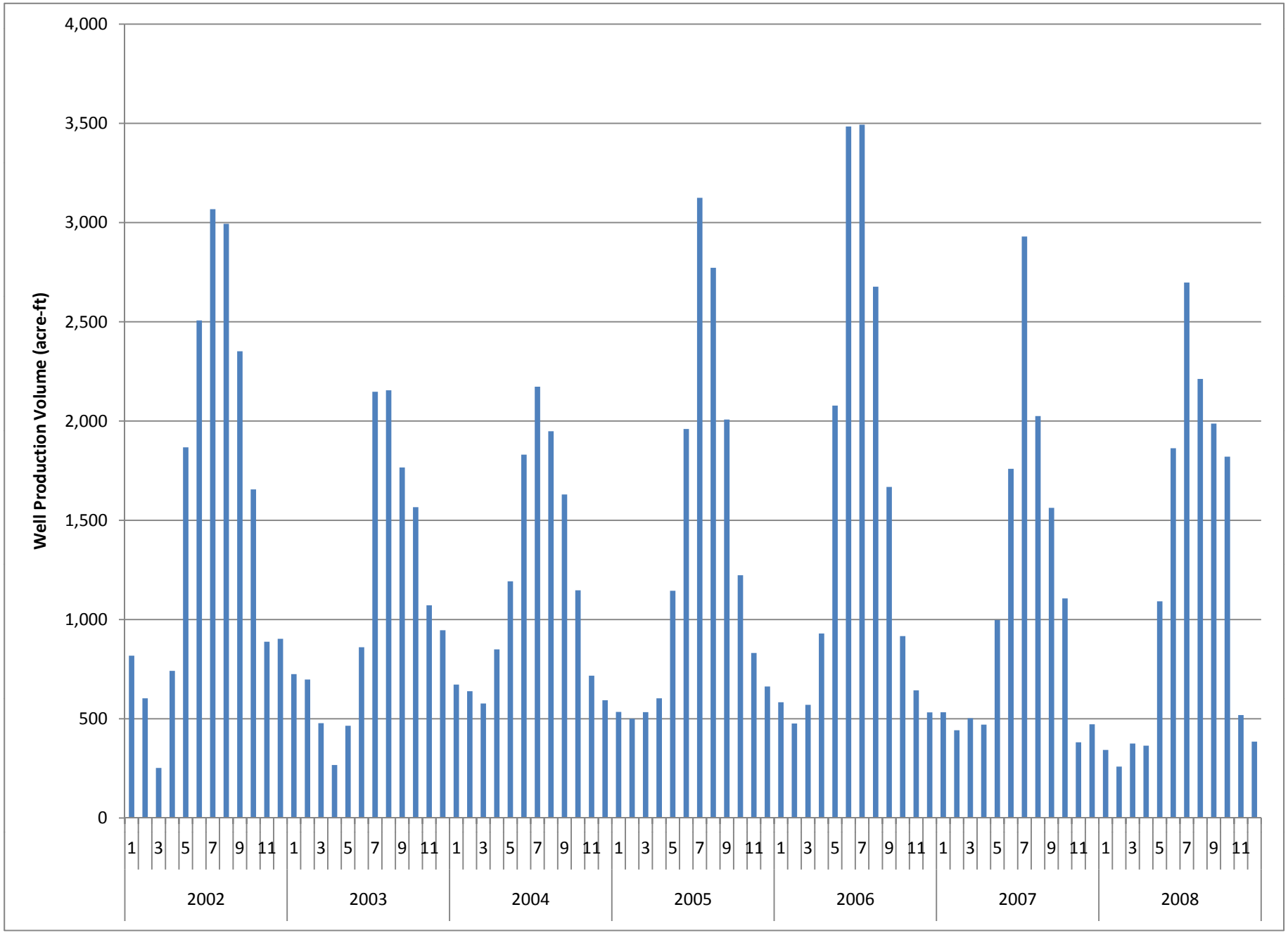



**Figure 10 - Well Production in Arapahoe Aquifer**

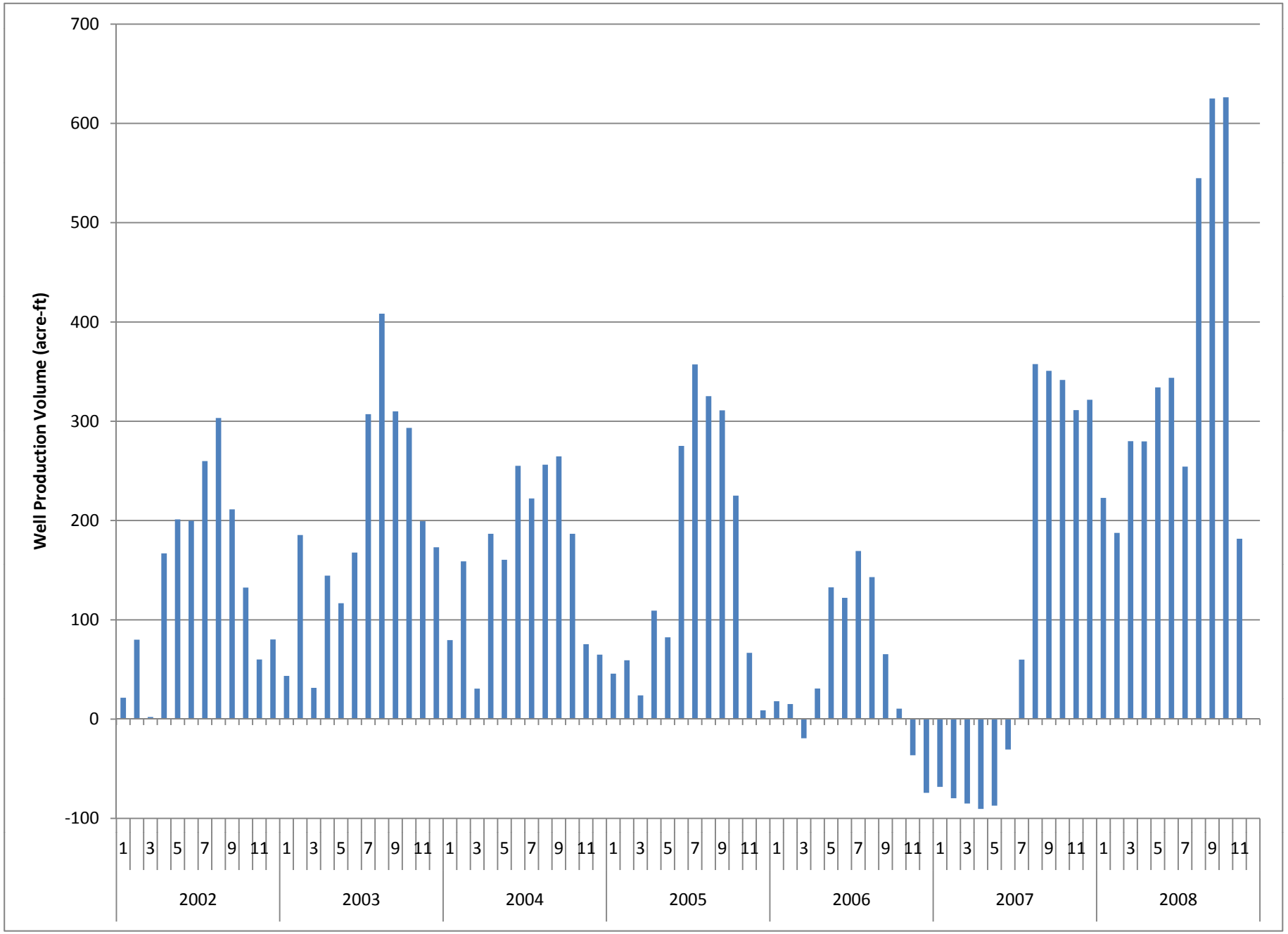
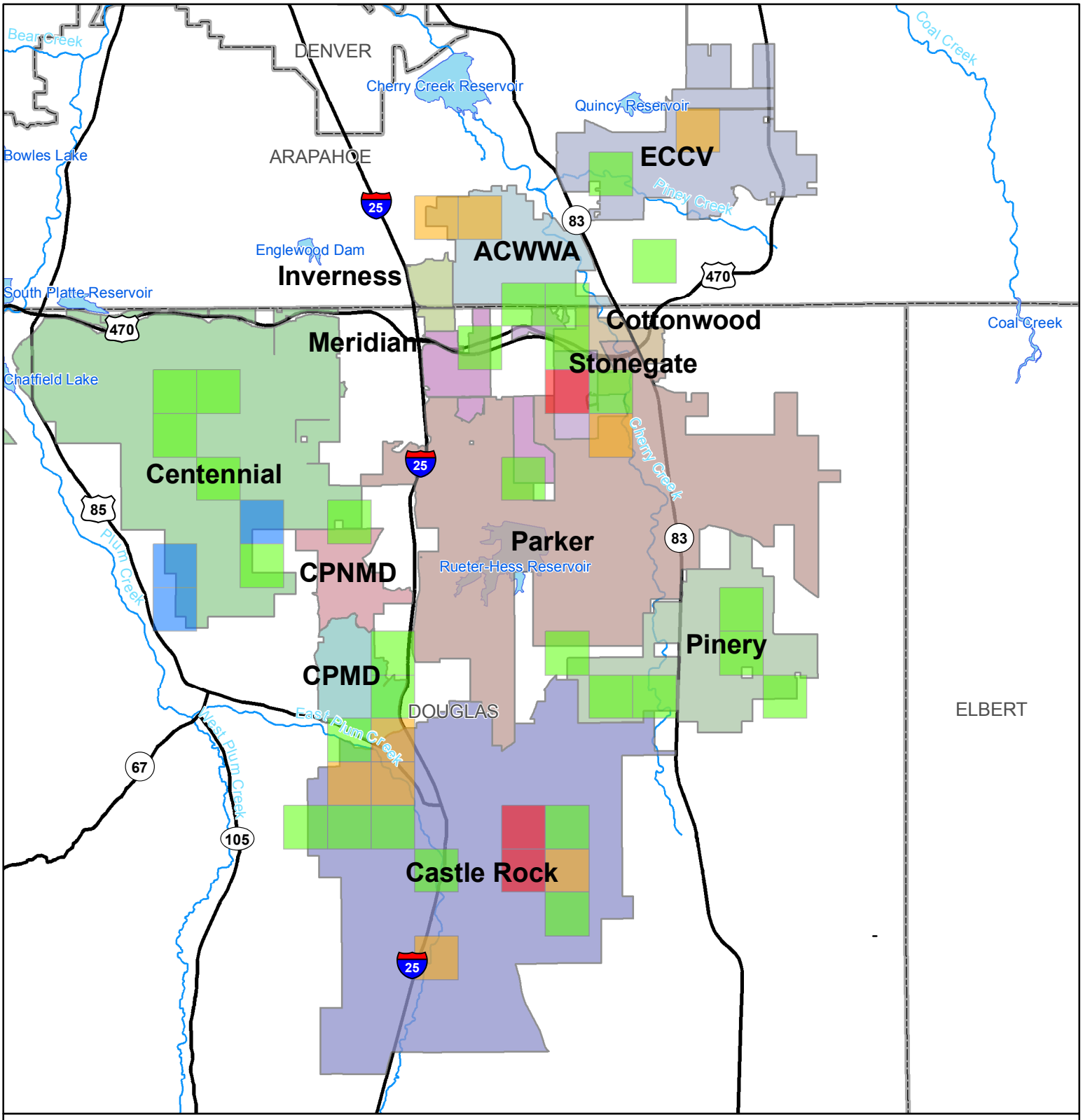



**Figure 11 - Well Production in Laramie-Fox Hills Aquifer**

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# Figure 12 - Production Density of Arapahoe Aquifer in 2008

Highways
Lakes
Streams
Counties

**2008 Well Production**

- < 0 acre feet
- 0 to 300 acre feet
- 300 to 600 acre feet
- > 600 acre feet

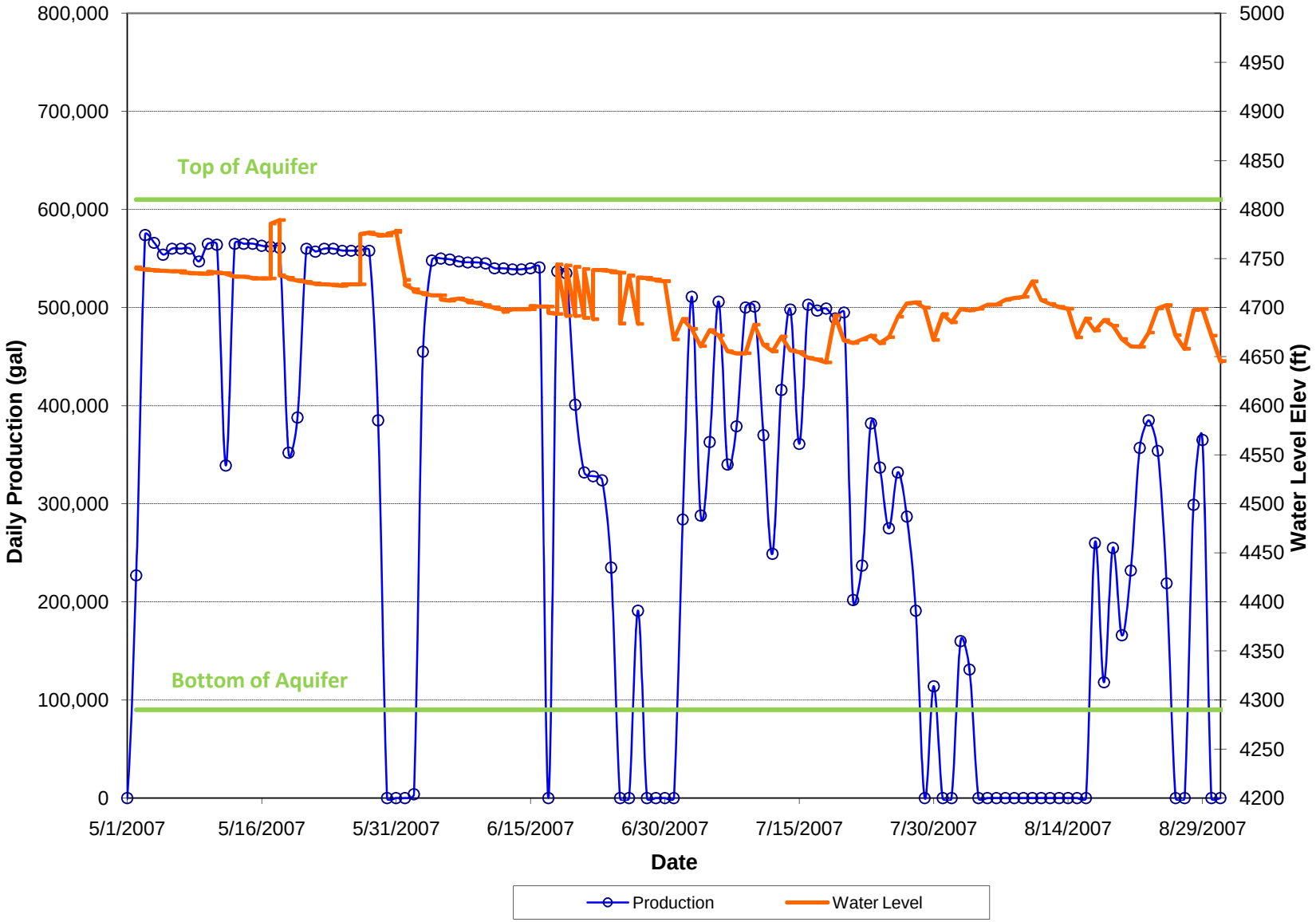



**Figure 13 – Water Levels and Production for CPN Well A-04 in 2007**

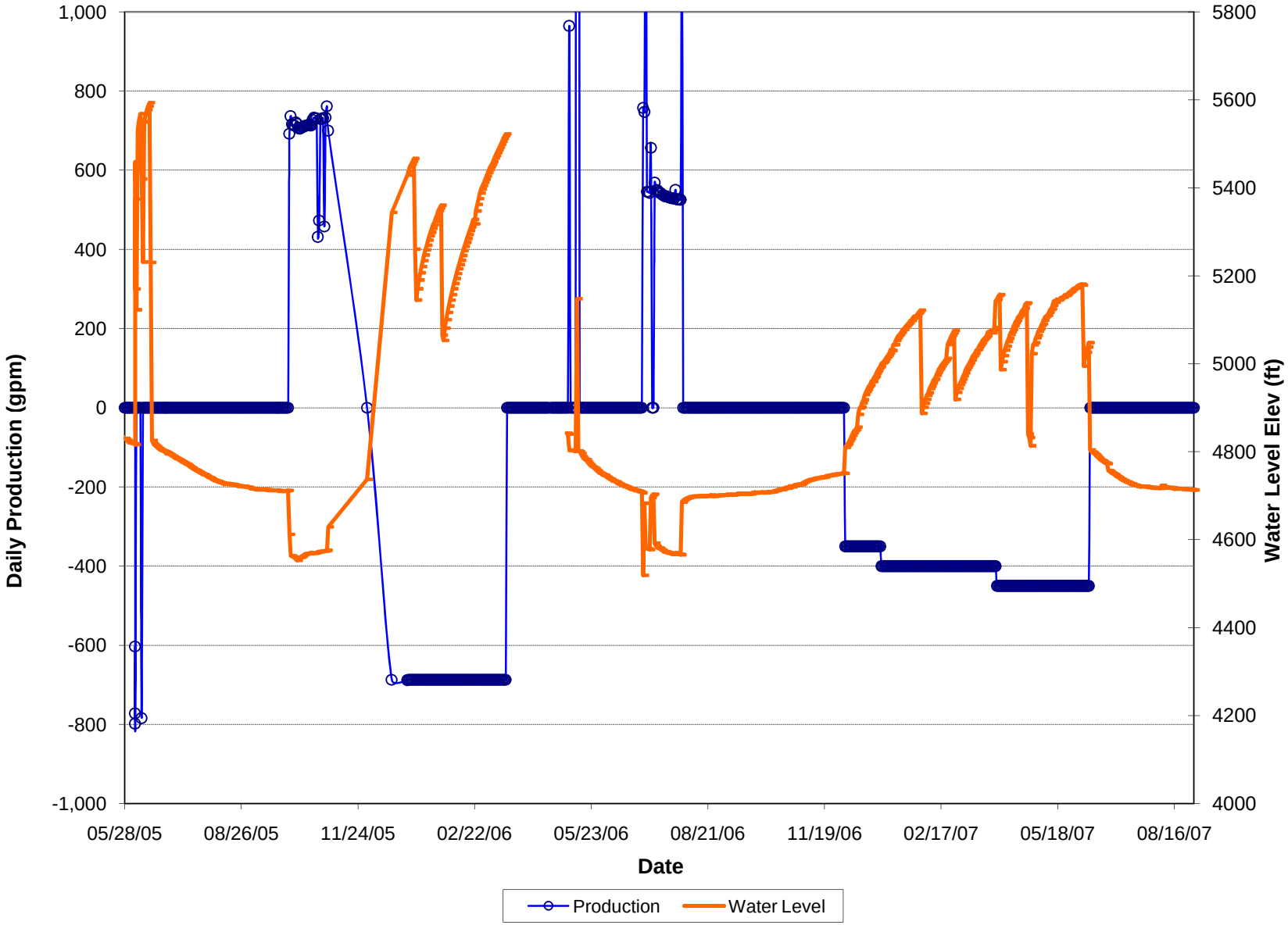
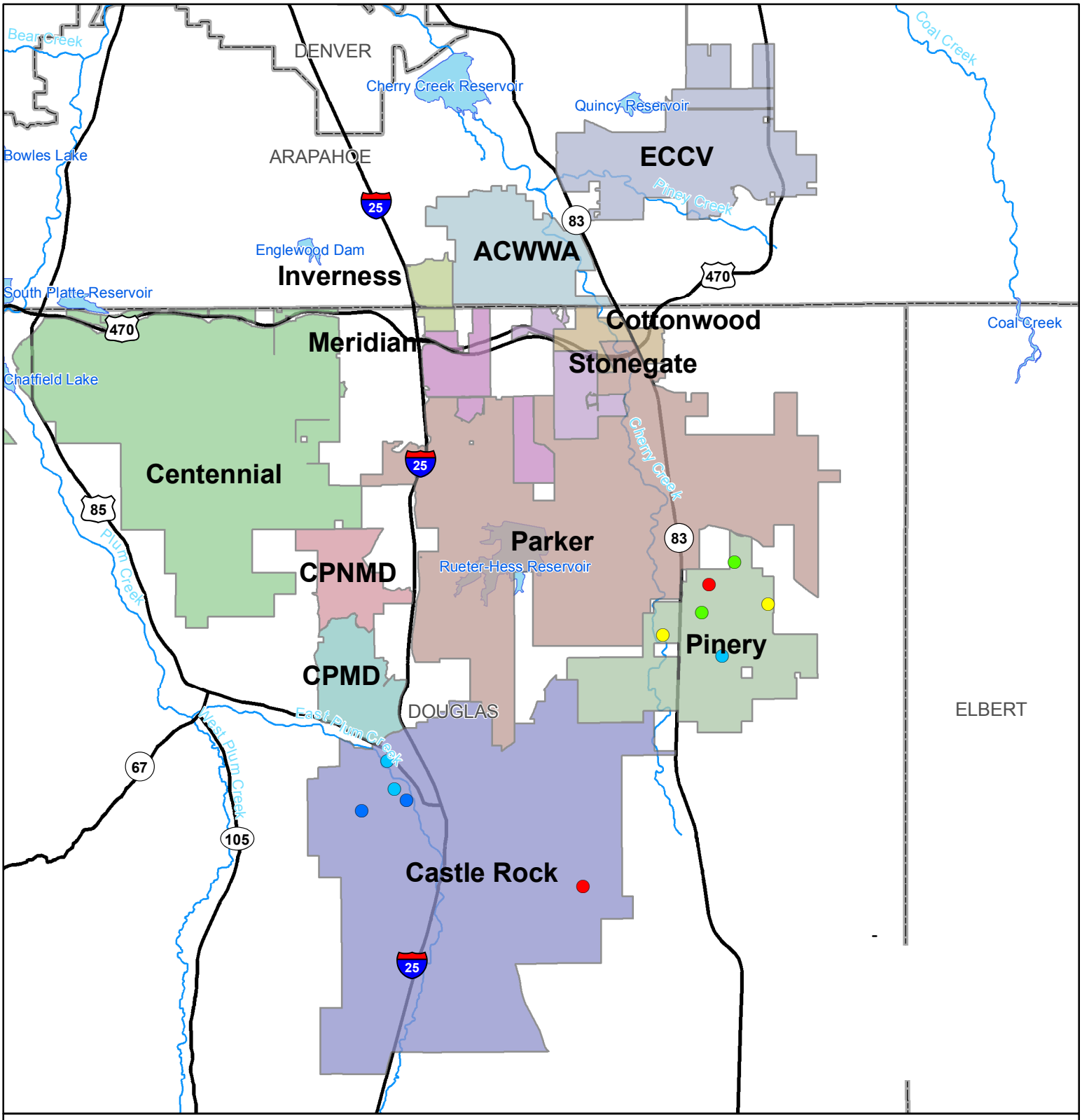



**Figure 14 – Water Levels and Production for CWSD Well A-10 from 2005 to 2007**

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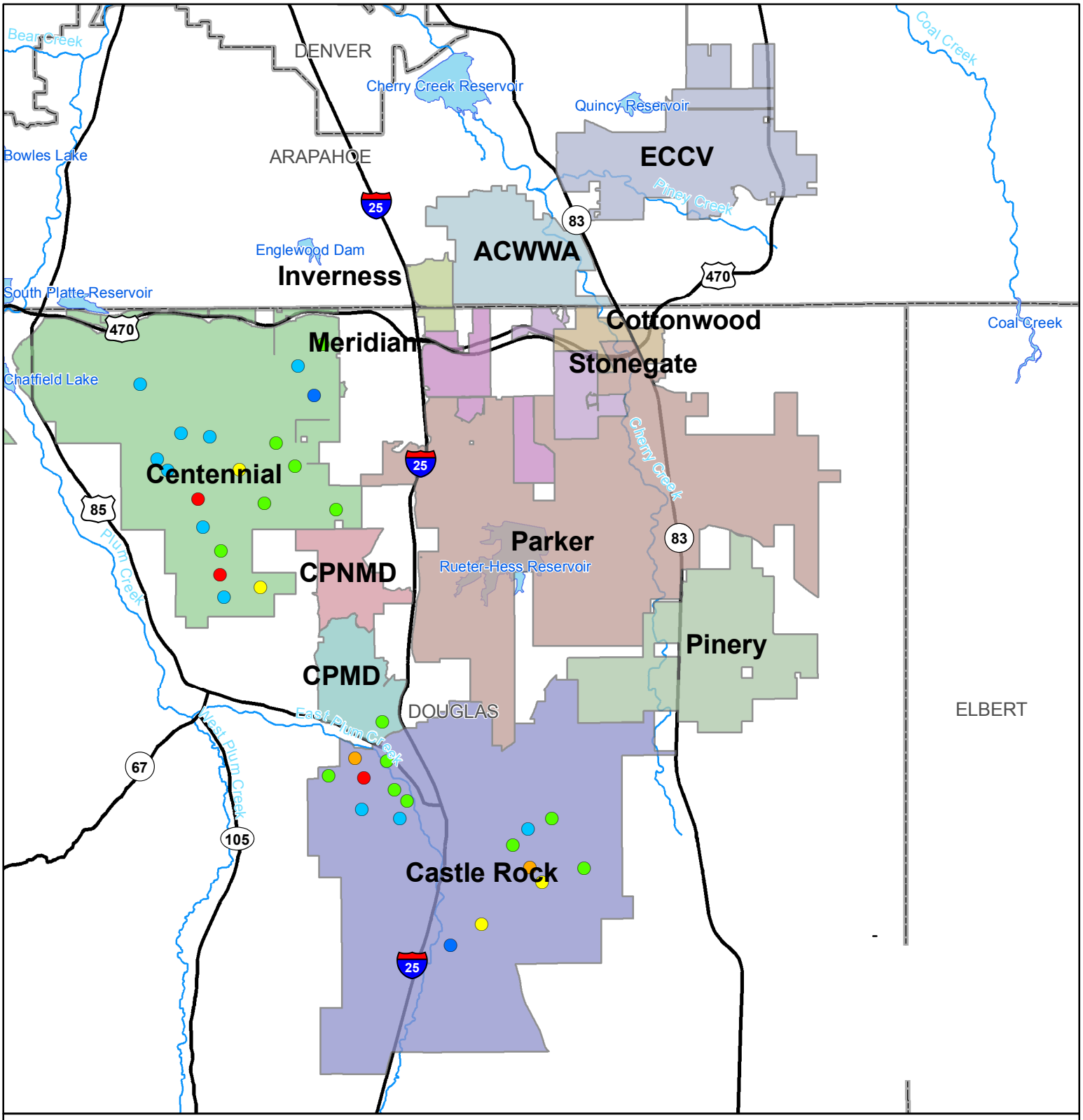
# Figure 15 - Annual Unit Operation Cost for Dawson

**O&M Costs**

- < $100 per acre foot
- $100 to $200 per acre foot
- $200 to $300 per acre foot
- $300 to $400 per acre foot
- > $400 per arce foot

- Highways
- Lakes
- Streams
- Counties

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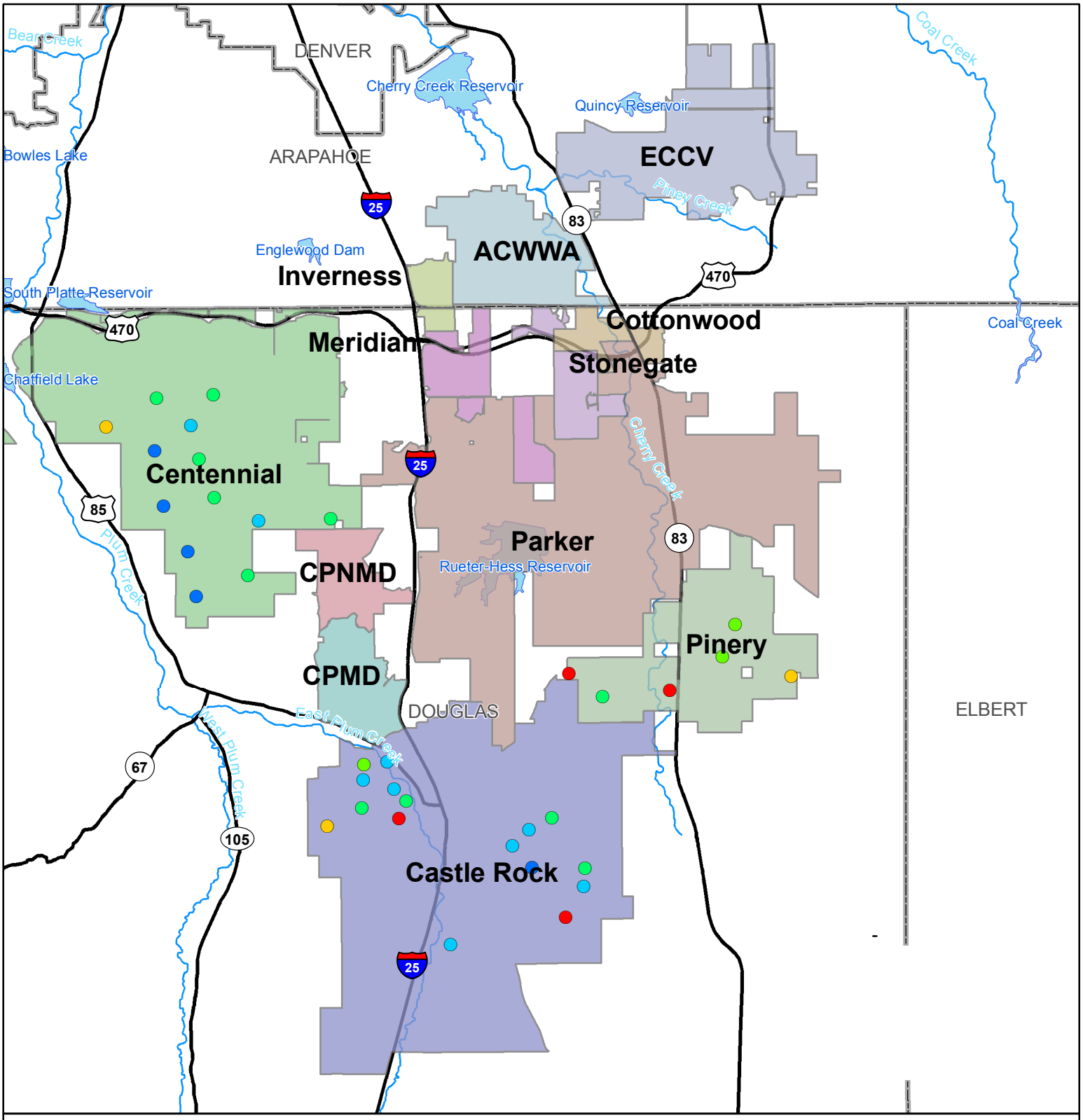
# Figure 16 - Annual Unit Operation Cost for Denver

**O&M Costs**

- < $100 per acre foot
- $100 to $200 per acre foot
- $200 to $300 per acre foot
- $300 to $400 per acre foot
- $400 to $500 per acre foot
- > $500 per acre foot

- Highways
- Lakes
- Streams
- Counties


Bear Creek
DENVER
Cherry Creek Reservoir
Quincy Reservoir
Coal Creek
Bowles Lake
ARAPAHOE
ECCV
Piney Creek
25
83
ACWWA
Englewood Dam
Inverness
470
South Platte Reservoir
Cottonwood
Coal Creek
470
Meridian
Stonegate
Chatfield Lake
Cherry Creek
25
Centennial
85
Plum Creek
Parker
83
Rueter-Hess Reservoir
CPNMD
Pinery
CPMD
DOUGLAS
ELBERT
East Plum Creek
West Plum Creek
67
105
Castle Rock
25
SMWSA
SOUTH METRO WATER SUPPLY AUTHORITY
CDM
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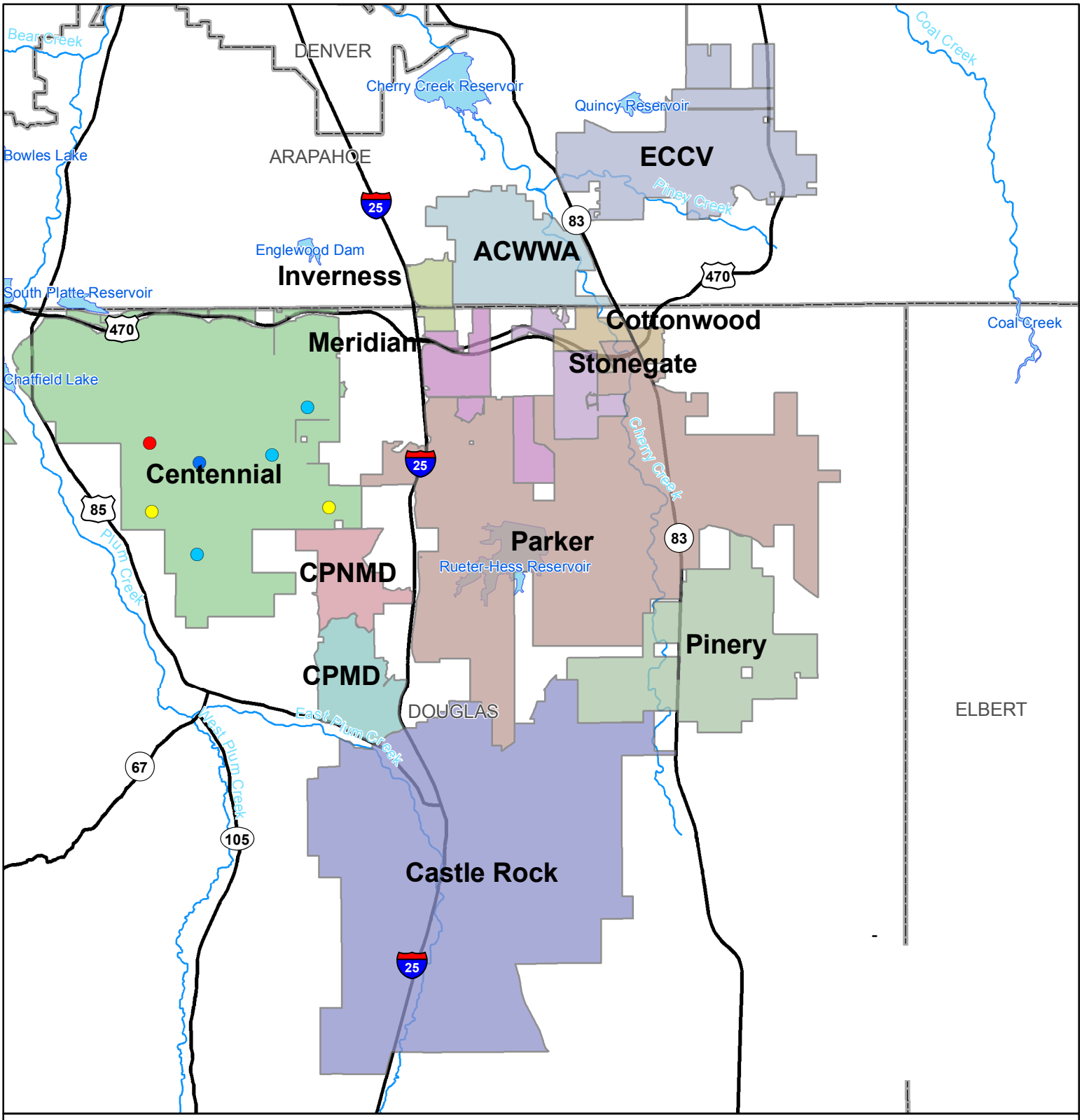
03/16/2010
Figure 17 - Annual Unit Operation Cost for Arapahoe
O&M Costs
< $200 per acre foot
$200 to $300 per acre foot
$300 to $400 per acre foot
$400 to $500 per acre foot
$500 to $600 per acre foot
> $600 per acre foot
Highways
Lakes
Streams
Counties

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# Figure 18 - Annual Unit Operation Cost for Laramie-Fox Hills

**O&M Costs**

- < $150 per acre foot
- $150 to $200 per acre foot
- $200 to $250 per acre foot
- $250 to $300 per acre foot
- > $300 per acre foot

- Highways
- Lakes
- Streams
- Counties

# Appendices

# Appendix A

**Appendix A Summary of Aquifer Hydrauic Properties of Denver Basin Wells**

| LOC_ID | Well Name | Aquifer | Owner | Test Date | Transmissivity ($ft^2$/day) | Hydraulic Conductivity (ft/day) | Storativity | Specific Capacity (gpm/ft) | Specific Yield | Cumulative thickness of saturated permeable units (ft) | Comment | Latdecdeg | Longdecdeg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1083 | Chap-DA-1[2] | Dawson | ACWWA | | 195 | 1.25 | 3.000E-03 | | | 156 | Brogden | 39.59144 | -104.76804 |
| 1084 | Chap-DA-2 | Dawson | ACWWA | | 195 | | 3.000E-03 | | | | Brogden | 39.58419 | -104.76151 |
| 1022 | LDa-10 (old) | Dawson | CPMD | 4/30/1991 | 174 | 1.34 | | 1.07 | | 130 | | 39.42926 | -104.90119 |
| 1024 | LDa-10R | Dawson | CPMD | 6/21/2007 | 514 | 3.80 | 7.000E-04 | 1.15 | | 141 | | 39.42932107 | -104.9014071 |
| 1317 | WD-1[1] | Dawson | ECCV | | | 0.67 | | | | 110 | | 39.60167648 | -104.9144496 |
| 1355 | A | Dawson | Inverness | 5/16/1973 | 402 | 3.26 | | | | 123 | | 39.56709074 | -104.8576423 |
| 1356 | C | Dawson | Inverness | 12/30/1973 | 268 | 2.14 | | | | 125 | | 39.57222788 | -104.8662126 |
| 1170 | UDa-4 | Dawson | Meridian | 6/19/1989 | 200 | 4.44 | | 1.25 | | 45 | | 39.53648281 | -104.8658274 |
| 1211 | R | Dawson | Pinery | | 161 | | | 1 | | | | 39.473452 | -104.746233 |
| 1212 | S | Dawson | Pinery | | 111 | | | 0.7 | | | | 39.466715 | -104.720961 |
| 1213 | T | Dawson | Pinery | | 241 | | | 0.6 | | | | 39.480583 | -104.735142 |
| 1226 | TDW-5 | Dawson | Stonegate | 3/7/2002 | 536 | 4.11 | 2.870E-04 | 2.14 | | 130 | | 39.52954658 | -104.8080592 |
| 1126 | 16 | Dawson | Castle Rock | 6/20/1983 | | | | 1.29 | | 157 | No test drawdown information. | 39.35402704 | -104.8581045 |
| 1128 | 18 | Dawson | Castle Rock | | | | | 1.3 | | 105 | No test drawdown information. | 39.34475756 | -104.8628288 |
| 1131 | 22 | Dawson | Castle Rock | | | | | 2.06 | | 281 | No test drawdown information. | 39.36299105 | -104.8095595 |
| 1139 | 44 | Dawson | Castle Rock | 4/5/1988 | | | | 2.1 | | 384 | No test drawdown information. | 39.37313261 | -104.8013876 |
| 1116 | 152 | Dawson | Castle Rock | 3/26/2008 | 141 | 0.64 | | 0.76 | | 220 | T from drawdown test | 39.39230869 | -104.8726885 |
| 1117 | 168 | Dawson | Castle Rock | 6/12/2004 | 167 | 1.32 | | 1.14 | | 126 | T from drawdown test | 39.40606524 | -104.8819436 |
| 1118 | 170 | Dawson | Castle Rock | 5/16/2001 | 110 | 0.91 | | 0.68 | | 120 | T from drawdown test | 39.39884882 | -104.8960871 |
| 1151 | 222 | Dawson | Castle Rock | 3/14/2006 | 117 | 1.02 | | 0.35 | | 114 | T from drawdown test | 39.41542012 | -104.8848716 |
| 1154 | 225 | Dawson | Castle Rock | 1/29/2006 | 133 | 0.94 | | 1.2 | | 141 | T from drawdown test | 39.40232844 | -104.8767044 |
| 1166 | LDA-1[2] | Dawson | CPN | | 375.7 | 1.43 | | 1.7 | | 204 | | 39.4637255 | -104.9056655 |
| 1167 | LDA-2 | Dawson | CPN | | 217.0 | 0.76 | | 1.4 | | | | 39.46801457 | -104.8951504 |
| 1073 | DE-10R | Denver | CPMD | 7/1/2007 | 631 | 1.90 | 7.000E-04 | 0.83 | | 273 | | 39.42926 | -104.90135 |
| 1025 | DE-1[2] | Denver | CPMD | 3/28/2006 | 154 | 0.43 | 1.200E-02 | | | 355 | | 39.44745687 | -104.8962469 |
| 1026 | DE-2 | Denver | CPMD | 4/7/2005 | 249 | | | | | | | 39.44866809 | -104.8877203 |
| 1027 | DE-8 | Denver | CPMD | 1/25/2000 | 294 | 0.61 | | 1.16 | | 418 | | 39.42848427 | -104.8868847 |
| 1073 | DE-10R | Denver | CPMD | 4/3/1991 | 303 | 0.97 | | 1.72 | | 314 | | 39.42926 | -104.90135 |
| 1228 | D-01 | Denver | Centennial | 2/1/2002 | 2.9 | | | | | | Trans based on recovery | 39.55126687 | -104.9990938 |
| 1230 | D-04 | Denver | Centennial | 7/1/1995 | 99 | | 4.000E-04 | | | | | 39.55433478 | -104.911455 |
| 1231 | D-05 | Denver | Centennial | 12/1/1994 | 60 | | | | | | Trans based on recovery | 39.5414459 | -104.9900146 |
| 1232 | D-07 | Denver | Centennial | 4/1/2007 | 50 | | | | | | Trans based on recovery | 39.53968391 | -104.9424043 |
| 1233 | D-08 | Denver | Centennial | 9/1/1985 | 536 | | 4.000E-04 | | | | | 39.54702928 | -104.9221204 |
| 1235 | D-10 | Denver | Centennial | 4/1/1985 | 134 | | 4.000E-04 | | | | | 39.52577796 | -104.9751833 |
| 1236 | D-10A | Denver | Centennial | 3/1/2008 | 239 | | | | | | Trans based on recovery | 39.52493026 | -104.9725765 |
| 1237 | D-11 | Denver | Centennial | 5/21/1985 | 230 | | 2.710E-04 | | | | | 39.52380956 | -104.9602288 |
| 1238 | D-12 | Denver | Centennial | 10/18/1985 | 509 | | 4.000E-04 | | | | | 39.52131611 | -104.9323186 |
| 1240 | D-12R | Denver | Centennial | 3/1/2003 | 48 | | 2.000E-04 | | | | Trans based on recovery | 39.52142358 | -104.9317207 |
| 1241 | D-13 | Denver | Centennial | 8/1/1985 | 472 | | 4.000E-04 | | | | | 39.50813791 | -104.9696263 |
| 1242 | D-14 | Denver | Centennial | 1/1/1998 | 324 | | | | | | Data not available | 39.51265275 | -104.947698 |
| 1243 | D-15 | Denver | Centennial | 8/8/1985 | 279 | | 2.990E-04 | | | | | 39.50219163 | -104.9565333 |
| 1244 | D-16[2] | Denver | Centennial | 3/20/1985 | 134 | 0.17 | 4.000E-04 | | | 799 | | 39.50141083 | -104.9368801 |
| 1245 | D-17 | Denver | Centennial | 12/1/1997 | 237 | | 1.400E-04 | | | | Trans based on recovery | 39.51380589 | -104.9238588 |
| 1246 | D-18 | Denver | Centennial | 5/1/1998 | 261 | | | | | | Trans based on recovery | 39.49901844 | -104.9061146 |
| 1247 | D-19 | Denver | Centennial | 4/1/1996 | 254 | | | | | | Trans based on recovery | 39.48554442 | -104.9558252 |
| 1248 | D-20 | Denver | Centennial | 2/1/1998 | 107 | | | | | | Trans based on recovery | 39.47343079 | -104.9389728 |
| 1249 | TD-04 | Denver | Centennial | 10/1/2002 | 35 | | | | | | Trans based on recovery | 39.52173043 | -104.9894682 |
| 1250 | TD-05 | Denver | Centennial | 5/1/2002 | 85 | | | | | | Trans based on recovery | 39.51635664 | -104.982973 |
| 1251 | TD-06 | Denver | Centennial | 10/1/2002 | 60 | | | | | | Trans based on recovery | 39.51262693 | -104.9784294 |
| 1252 | TD-07 | Denver | Centennial | 2/1/1997 | 194 | | | | | | Trans based on recovery | 39.50298241 | -104.9654421 |
| 1253 | TD-08 | Denver | Centennial | 7/1/1997 | 247 | | | | | | Trans based on recovery | 39.49368766 | -104.9634866 |
| 1254 | TD-09 | Denver | Centennial | 12/1/1996 | 157 | | | | | | Trans based on recovery | 39.47784806 | -104.9562068 |
| 1255 | TD-10[2] | Denver | Centennial | 2/1/1997 | 167 | 0.52 | | | | 324 | Trans based on recovery | 39.47042966 | -104.9544515 |
| 1256 | TD-12 | Denver | Centennial | 5/1/2002 | 74 | | | | | | Trans based on recovery | 39.52475964 | -105.0033332 |
| 1318 | WD-4[1] | Denver | ECCV | | | 0.29 | | | | 118 | | 39.58094797 | -104.9045587 |
| 1319 | WD-5[1] | Denver | ECCV | | | 0.47 | | | | 131 | | 39.58788577 | -104.9245386 |
| 1320 | WCD-1[1] | Denver | ECCV | | | 0.78 | | | | 120 | | 39.57320814 | -104.9123541 |
| 1171 | DE-1R | Denver | Meridian | 8/13/2001 | 43 | 0.27 | | 0.32 | | 138 | | 39.55516213 | -104.8445601 |
| 1172 | DE-2 | Denver | Meridian | 7/9/1996 | 45 | 0.31 | | 0.29 | | 140 | | 39.54717944 | -104.8450202 |
| 1173 | DE-3 | Denver | Meridian | 7/23/1996 | 34 | 0.25 | | 0.25 | | 140 | | 39.53994273 | -104.8440704 |
| 1339 | DE-4 | Denver | Meridian | 4/17/2007 | 58 | 0.37 | | 0.4 | | 140 | | 39.54342979 | -104.8581329 |
| 1340 | DE-13 | Denver | Meridian | 8/17/2004 | 48 | 0.36 | | 0.332 | | 135 | | 39.51559 | -104.81938 |
| 1227 | TKD-13 | Denver | Stonegate | 2/26/2002 | 13 | 0.08 | 9.800E-02 | 0.2 | | 160 | | 39.52928975 | -104.8080447 |
| 1121 | 7C | Denver | Castle Rock | 6/24/1987 | | | | 0.79 | | 177 | No test drawdown information. | 39.36086064 | -104.8450416 |
| 1125 | 15 | Denver | Castle Rock | 10/14/1982 | | | | 0.96 | | 236 | No test drawdown information. | 39.3539942 | -104.8584591 |
| 1127 | 17 | Denver | Castle Rock | | | | | | | 174 | No test drawdown information. | 39.34488395 | -104.8628808 |
| 1130 | 21 | Denver | Castle Rock | | | | | 0.58 | | 184 | No test drawdown information. | 39.36306597 | -104.8093391 |
| 1135 | 33R | Denver | Castle Rock | 1/14/2004 | 342 | 1.35 | | 1.68 | | 253 | T from recovery test | 39.37477292 | -104.8188849 |
| 1137 | 41 | Denver | Castle Rock | 5/20/1999 | 439 | 1.44 | | 2 | | 304 | T from drawdown test | 39.37912201 | -104.8007665 |
| 1140 | 45 | Denver | Castle Rock | 2/15/1988 | | | | 0.6 | | 272 | No test drawdown information. | 39.37312984 | -104.801214 |
| 1141 | 47 | Denver | Castle Rock | 3/30/1988 | 143 | 0.41 | | 1.81 | | 350 | T from drawdown test | 39.41063684 | -104.9101036 |
| 1095 | 50R | Denver | Castle Rock | 10/10/2005 | 232 | 0.70 | | 0.87 | | 334 | T from drawdown test | 39.39606209 | -104.879679 |
| 1096 | 51A | Denver | Castle Rock | 3/20/2000 | 54 | 0.22 | 1.800E-05 | 0.21 | | 246 | T from drawdown test | 39.39412195 | -104.9106892 |
| 1098 | 72R | Denver | Castle Rock | 3/15/2007 | 322 | 1.23 | | 0.77 | | 261 | T from recovery test | 39.40498371 | -104.8109033 |
| 1105 | 84 | Denver | Castle Rock | 4/1/2008 | 174 | 0.48 | | 0.73 | | 360 | T from recovery test | 39.39231446 | -104.8727415 |
| 1107 | 105 | Denver | Castle Rock | 12/20/2006 | 283 | 1.06 | | 0.63 | | 268 | T from recovery test | 39.38700072 | -104.8314039 |
| 1108 | 110 | Denver | Castle Rock | 1/15/2007 | 354 | 1.28 | | 1 | | 276 | T from recovery test | 39.39579337 | -104.8145006 |
| 1109 | 111 | Denver | Castle Rock | 2/2/2004 | 339 | 1.31 | | 1.7 | | 259 | T from recovery test | 39.39232646 | -104.8247368 |
| 1113 | 148 | Denver | Castle Rock | 7/17/2004 | 221 | 1.03 | | 1.37 | | 214 | T from drawdown test | 39.40586094 | -104.8819212 |
| 1114 | 149 | Denver | Castle Rock | 3/12/1998 | 227 | 0.54 | | 1.24 | | 420 | T from drawdown test | 39.41643867 | -104.8987664 |
| 1115 | 150 | Denver | Castle Rock | 4/16/1998 | 354 | 0.84 | | 2 | | 420 | T from drawdown test | 39.40975542 | -104.8950333 |
| 1143 | 174 | Denver | Castle Rock | 1/9/2001 | 107 | 0.32 | | 0.78 | | 334 | T from drawdown test | 39.39931703 | -104.8960832 |
| 1146 | 217 | Denver | Castle Rock | 2/28/2001 | 281 | 0.99 | | 2 | | 283 | T from drawdown test | 39.37972389 | -104.8240408 |
| 1150 | 221 | Denver | Castle Rock | 3/1/2006 | 243 | 1.11 | | 0.63 | | 220 | T from drawdown test | 39.41547946 | -104.885214 |
| 1153 | 224 | Denver | Castle Rock | 1/15/2006 | 456 | 1.48 | | 2.2 | | 308 | T from drawdown test | 39.4020513 | -104.8766185 |
| 1164 | DE-6 | Denver | CPN | | 179.9 | 0.60 | | 0.8 | | | | 39.4879149 | -104.9119124 |

1 - All properties provided by DSS data
2 - Cumulative thickness provided by DSS data

**Appendix A Summary of Aquifer Hydrauic Properties of Denver Basin Wells**

| LOC_ID | Well Name | Aquifer | Owner | Test Date | Transmissivity ($ft^2$/day) | Hydraulic Conductivity (ft/day) | Storativity | Specific Capacity (gpm/ft) | Specific Yield | Cumulative thickness of saturated permeable units (ft) | Comment | Latdecdeg | Longdecdeg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1165 | DE-7 | Denver | CPN | | 258.8 | 0.93 | | 1.1 | | | | 39.47825486 | -104.8936029 |
| 1086 | A-1[2] | Arapahoe | ACWWA | | 880 | 1.87 | | | | 472 | | 39.60003733 | -104.8550816 |
| 1087 | A-2[2] | Arapahoe | ACWWA | | 516 | 1.22 | | | | 422 | | 39.60236946 | -104.8426394 |
| 1088 | AP-3 | Arapahoe | ACWWA | | 92 | | | | | | | 39.59148 | -104.85338 |
| 1089 | Den-A[2] | Arapahoe | ACWWA | | 1541 | 3.60 | | | | 428 | | 39.57118 | -104.83021 |
| 1091 | Chap-A-2 | Arapahoe | ACWWA | | 725 | | 1.400E-03 | | | | Brogden | 39.58447 | -104.76125 |
| 1353 | Elkhorn | Arapahoe | ACWWA | 1/1/2001 | 308 | 0.78 | | | | 394 | | 39.55555662 | -104.6069638 |
| 1074 | A-4R | Arapahoe | CPMD | 4/1/2008 | 742 | 6.99 | | 4.07 | | 367 | | 39.43598546 | -104.8904318 |
| 1075 | A-8 | Arapahoe | CPMD | 5/22/1986 | 1389 | 2.89 | | 7.5 | | 479 | | 39.42868624 | -104.8870192 |
| 1076 | A-10 | Arapahoe | CPMD | 7/20/1989 | 1442 | 3.20 | | 5.3 | | 449 | | 39.42869235 | -104.9006156 |
| 1077 | A-12 | Arapahoe | CPMD | 9/4/2001 | 1589 | 4.85 | | 3.47 | | 327 | | 39.4487492 | -104.8877352 |
| 1158 | A-1 | Arapahoe | CPN | | 1388.4 | 2.94 | | 4.9 | | | | 39.46373352 | -104.9054743 |
| 1159 | A-2 | Arapahoe | CPN | | 1801.7 | 4.27 | | 7.1 | | | | 39.46806212 | -104.8951786 |
| 1160 | A-3[2] | Arapahoe | CPN | | 1870.7 | 4.01 | | 9.1 | | 427 | | 39.455132 | -104.8990233 |
| 1161 | A-4C[2] | Arapahoe | CPN | | 1735.8 | 2.74 | | 3.4 | | 449 | | 39.47196405 | -104.9113633 |
| 1162 | A-6[2] | Arapahoe | CPN | | 1330.1 | 3.78 | | 3.8 | | 446 | | 39.48801393 | -104.911796 |
| 1163 | A-7 | Arapahoe | CPN | | 2037.0 | 5.73 | | 6.3 | | | | 39.47833479 | -104.8933737 |
| 1155 | A-01 | Arapahoe | Centennial | 8/3/1981 | 2963 | | 4.000E-04 | | | | | 39.53760879 | -104.9585548 |
| 1156 | A-02[2] | Arapahoe | Centennial | 7/18/1984 | 871 | 2.26 | 4.000E-04 | | | 386 | | 39.52741349 | -104.968391 |
| 1157 | A-03 | Arapahoe | Centennial | 3/1/1995 | 221 | | | | | | Data not available | 39.52713565 | -105.0046859 |
| 1174 | A-04 | Arapahoe | Centennial | 6/11/1981 | 1747 | | 1.200E-03 | | | | | 39.53661903 | -104.9831261 |
| 1175 | A-05[2] | Arapahoe | Centennial | 7/1/1985 | 1163 | 2.47 | 1.770E-04 | | | 471 | | 39.5160155 | -104.9651072 |
| 1177 | A-05R | Arapahoe | Centennial | 10/1/2004 | 324 | | 5.000E-05 | | | | Trans based on recovery | 39.5161699 | -104.9649635 |
| 1178 | A-06[2] | Arapahoe | Centennial | 6/6/1985 | 1409 | 3.16 | 2.730E-04 | | | 446 | | 39.51919651 | -104.9839816 |
| 1180 | A-06R | Arapahoe | Centennial | 9/1/2002 | 338 | | 5.500E-04 | | | | Trans based on recovery | 39.51919651 | -104.9839816 |
| 1181 | A-07[2] | Arapahoe | Centennial | 7/10/1985 | 1025 | 2.61 | 2.480E-05 | | | 392 | | 39.50330806 | -104.9585831 |
| 1184 | A-08[2] | Arapahoe | Centennial | 2/1/1994 | 242 | 0.66 | 1.700E-01 | | | 366 | | 39.50067737 | -104.9802238 |
| 1187 | A-09R | Arapahoe | Centennial | 2/1/1998 | 368 | | 2.000E-04 | | | | Trans based on recovery | 39.49560766 | -104.9395117 |
| 1188 | A-10 | Arapahoe | Centennial | 3/14/1985 | 683 | | 4.000E-04 | | | | | 39.49611147 | -104.9081637 |
| 1190 | A-10R | Arapahoe | Centennial | 3/1/1998 | 2471 | | 1.490E-02 | | | | Trans based on recovery | 39.49612253 | -104.908513 |
| 1191 | A-11[1] | Arapahoe | Centennial | 7/1/1985 | | | | | | 416 | Data not available | 39.48570197 | -104.9703559 |
| 1193 | A-11R | Arapahoe | Centennial | 10/1/2005 | 1059 | | 2.340E-03 | | | | s = .00234 to .000008; Trans based on recovery | 39.48552788 | -104.9700852 |
| 1194 | A-12[2] | Arapahoe | Centennial | 7/1/1985 | 201 | 0.42 | 4.000E-04 | | | 477 | | 39.47069866 | -104.9668583 |
| 1196 | A-12R | Arapahoe | Centennial | 6/1/2001 | 762 | | 8.000E-04 | | | | Trans based on recovery | 39.47053476 | -104.9664783 |
| 1197 | A-13 | Arapahoe | Centennial | 8/14/1985 | 201 | | 4.000E-04 | | | | | 39.47738906 | -104.9437434 |
| 1199 | A-13R | Arapahoe | Centennial | 2/13/1997 | 1434 | | 4.000E-04 | | | | | 39.47742494 | -104.944224 |
| 1277 | DD-1[2] | Arapahoe | Cottonwood | 4/17/1997 | 1197 | 1.98 | | | 5.6 | 604 | | 39.55961 | -104.78525 |
| 1278 | DD-2[2] | Arapahoe | Cottonwood | 12/30/1996 | 758 | 1.85 | | | 2.2 | 410 | | 39.55881 | -104.80226 |
| 1279 | DD-3[2] | Arapahoe | Cottonwood | 1/1/1986 | 1231 | 2.26 | | | | 544 | W. Owens | 39.5546 | -104.7862 |
| 1280 | DD-4A[2] | Arapahoe | Cottonwood | 7/12/2001 | 1227 | 3.36 | | | 4.3 | 365 | | 39.55385 | -104.76553 |
| 1281 | DD-11 | Arapahoe | Cottonwood | 5/12/2003 | 319 | | | | 5.5 | | | 39.55399 | -104.80867 |
| 1303 | SBLC A-6[1] | Arapahoe | ECCV | | | 1.52 | | | | 229 | B obtained from SPDSS T42 Configuration Maps (used to calc. K) | 39.5805681 | -104.6509634 |
| 1304 | SBLC A-7[1] | Arapahoe | ECCV | | | 0.84 | | | | 210 | B obtained from Geophyslogs Hydrobase table (used to calc. K) | 39.58780575 | -104.6323981 |
| 1305 | SBLC A-14[1] | Arapahoe | ECCV | | | 0.31 | | | | 227 | B obtained from SPDSS T42 Configuration Maps (used to calc. K) | 39.60910038 | -104.6138072 |
| 1309 | WA-1B[1] | Arapahoe | ECCV | | | 0.70 | | | | 159 | | 39.59721858 | -104.9223586 |
| 1313 | WA-5R[1] | Arapahoe | ECCV | | | 3.10 | | | | 294 | Static Water level on permit was 1032 and Pump Rate, 698gpm | 39.58084686 | -104.9046222 |
| 1314 | WA5-A[1] | Arapahoe | ECCV | | | 5.40 | | | | 255 | | 39.56989456 | -104.9075032 |
| 1003 | A-4[1] | Arapahoe | ECCV | | | 3.28 | | | | 221 | B obtained from SPDSS T42 Configuration Maps (used to calc. K) | 39.59678865 | -104.7442541 |
| 1005 | A-5R[1] | Arapahoe | ECCV | | | 0.98 | 3.000E-04 | | | 190 | | 39.61840418 | -104.7463777 |
| 1008 | A-7R[1] | Arapahoe | ECCV | | | 0.74 | | | | 219 | B obtained from SPDSS T42 Configuration Maps (used to calc. K) | 39.60318177 | -104.7193154 |
| 1009 | A-8[1] | Arapahoe | ECCV | | | 1.78 | | | | 239 | B obtained from SPDSS T42 Configuration Maps (used to calc. K) | 39.58057156 | -104.7264054 |
| 1020 | A-19[1] | Arapahoe | ECCV | | | 2.14 | | | | 110 | B obtained from Geophyslogs Hydrobase table (used to calc. K) | 39.59586781 | -104.79138 |
| 1034 | SA-7[1] | Arapahoe | ECCV | | | 1.01 | | | | 227 | B obtained from SPDSS T42 Configuration Maps (used to calc. K) | 39.59264961 | -104.7280324 |
| 1299 | SBLC A-1[1] | Arapahoe | ECCV | | | 0.57 | | | | 236 | B obtained from SPDSS T42 Configuration Maps (used to calc. K) | 39.59515792 | -104.6517493 |
| 1300 | SBLC A-2[1] | Arapahoe | ECCV | | | 0.57 | | | | 231 | B obtained from SPDSS T42 Configuration Maps (used to calc. K) | 39.60235591 | -104.6329708 |
| 1301 | SBLC A-4[1] | Arapahoe | ECCV | | | 0.78 | | | | 234 | B obtained from SPDSS T42 Configuration Maps (used to calc. K) | 39.60972107 | -104.6509631 |
| 1337 | 2R | Arapahoe | Inverness | 7/11/1980 | 1574 | 5.93 | | 5.85 | | 265 | k = t/B | 39.56656 | -104.85624 |
| 1169 | 3R | Arapahoe | Inverness | 5/24/1980 | 1032 | 4.79 | | 5.36 | | 215 | k = t/B | 39.58007 | -104.85585 |
| 1338 | 3RR | Arapahoe | Inverness | 4/2/2009 | 1123 | 4.87 | | 5.01 | | 230 | | 39.58007 | -104.85585 |
| 1168 | 4R | Arapahoe | Inverness | 8/9/1980 | 1221 | 5.41 | | 5.66 | | 225 | | 39.57992 | -104.86971 |
| 1168 | 4R | Arapahoe | Inverness | 5/19/2004 | 1109 | 4.92 | 6.400E-04 | 5.26 | | 225 | This test also had a monitoring well, k = t/B | 39.57992 | -104.86971 |
| 1337 | 2R | Arapahoe | Inverness | 2/4/1997 | 2385 | 8.98 | 2.700E-04 | 6.67 | | 265 | This test also had a monitoring well, k = t/B | 39.56656 | -104.85624 |
| 1336 | 1R | Arapahoe | Inverness | 5/7/1980 | 1563 | 5.67 | | 6.01 | | 275 | k = t/B | 39.57154 | -104.86717 |
| 1337 | 2R | Arapahoe | Inverness | 3/10/1980 | 1879 | 7.08 | | 6.46 | | 265 | k = t/B | 39.56656 | -104.85624 |
| 1357 | Howell | Arapahoe | Inverness | 11/3/1982 | 1744 | 5.04 | | | | 250 | | 39.56025311 | -104.874419 |
| 1341 | HS-A-1 | Arapahoe | Meridian | 8/24/2004 | 575 | 2.01 | | 2.22 | | 286 | | 39.51559 | -104.81938 |
| 1342 | A-2R | Arapahoe | Meridian | 5/1/2000 | 1855 | 5.49 | | 7.29 | | 337 | | 39.55027842 | -104.8445477 |
| 1343 | A-3 | Arapahoe | Meridian | 5/6/1982 | 1126 | 3.56 | | 3.42 | | 316 | | 39.54348964 | -104.8484383 |
| 1344 | A-4 | Arapahoe | Meridian | 1/28/2002 | 1475 | 5.64 | 1.500E-03 | 7.5 | | 261 | | 39.55803043 | -104.8401071 |
| 1345 | A-5 | Arapahoe | Meridian | 9/24/2004 | 1010 | 4.52 | | 3.38 | | 223 | | 39.53680781 | -104.8515134 |
| 1204 | C2A[2] | Arapahoe | Pinery | | 1407 | 4.08 | | 2.7 | | 345 | | 39.459876 | -104.735127 |
| 1205 | I | Arapahoe | Pinery | | 1126 | | | 6 | | | | 39.438299 | -104.763577 |
| 1207 | N[2] | Arapahoe | Pinery | | 616 | 2.40 | | 2.5 | | 257 | | 39.44258 | -104.711309 |
| 1208 | O | Arapahoe | Pinery | | 1179 | | | 4.7 | | | | 39.436436 | -104.792392 |
| 1209 | P | Arapahoe | Pinery | | 898 | | | 5.3 | | | | 39.449272 | -104.740861 |
| 1210 | Q | Arapahoe | Pinery | | 1313 | | | 5.9 | | | | 39.444092 | -104.806808 |
| 1215 | KA-15 | Arapahoe | Stonegate | 1/1/2000 | 1536 | 6.38 | 3.000E-05 | 5.48 | | 240 | | 39.54772702 | -104.7984409 |
| 1216 | KA-16 | Arapahoe | Stonegate | 1/6/1998 | 1007 | 3.64 | 3.800E-05 | 3.72 | | 276 | | 39.54222968 | -104.7979029 |
| 1217 | KA-17 | Arapahoe | Stonegate | 1/7/1994 | 576 | 2.07 | 2.300E-04 | 2.59 | | 277 | | 39.53560435 | -104.801619 |
| 1218 | KA-18 | Arapahoe | Stonegate | 10/27/1985 | 2194 | 7.08 | 8.000E-04 | 9.02 | | 309 | | 39.53197547 | -104.8083992 |

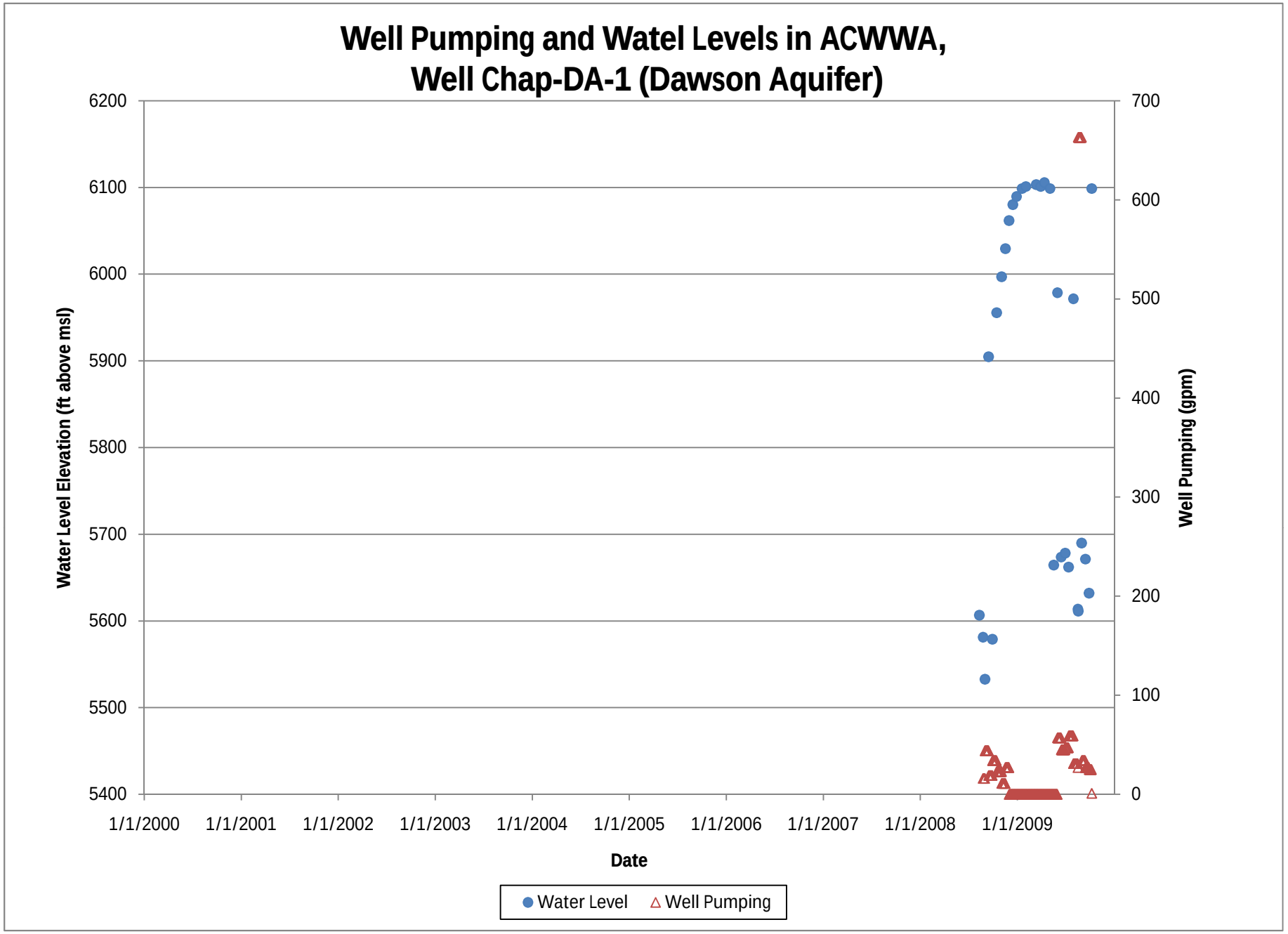
1 - All properties provided by DSS data
2 - Cumulative thickness provided by DSS data

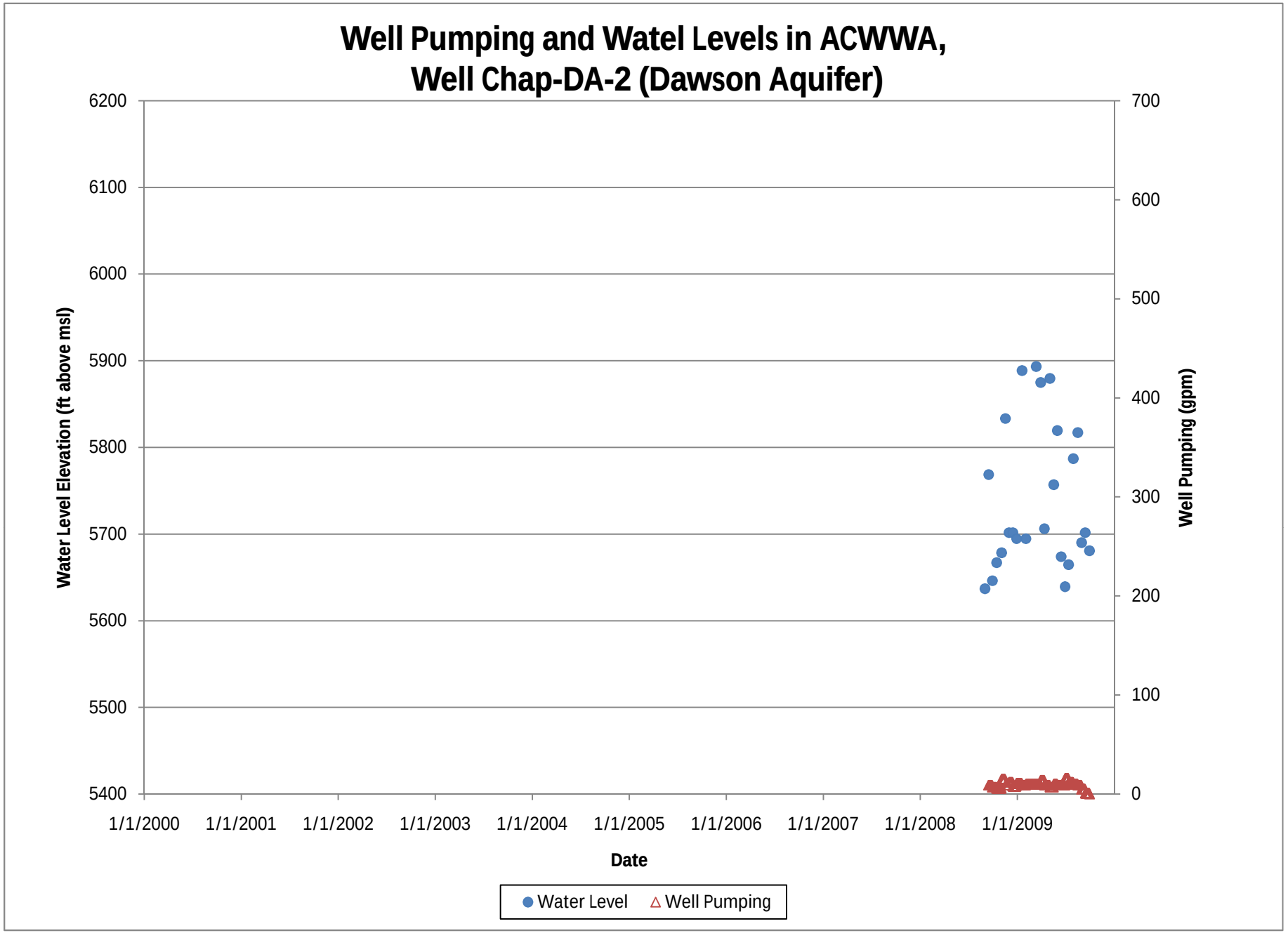
**Appendix A Summary of Aquifer Hydrauic Properties of Denver Basin Wells**

| LOC_ID | Well Name | Aquifer | Owner | Test Date | Transmissivity ($ft^2$/day) | Hydraulic Conductivity (ft/day) | Storativity | Specific Capacity (gpm/ft) | Specific Yield | Cumulative thickness of saturated permeable units (ft) | Comment | Latdecdeg | Longdecdeg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1219 | KA-19 | Arapahoe | Stonegate | 2/4/2003 | 544 | 1.99 | 2.600E-02 | 3.16 | | 273 | | 39.53601102 | -104.7945265 |
| 1220 | KA-20 | Arapahoe | Stonegate | 1/4/2004 | 1023 | 4.15 | 7.300E-04 | 4.26 | | 246 | | 39.56486565 | -104.807892 |
| 1221 | CA-1R | Arapahoe | Stonegate | 4/26/1996 | 537 | 1.76 | 7.100E-05 | 2.09 | | 305 | | 39.54336996 | -104.8115777 |
| 1222 | CA-2R | Arapahoe | Stonegate | 6/3/1997 | 853 | 2.90 | 5.000E-03 | 3.96 | | 293 | | 39.52286292 | -104.7935425 |
| 1124 | 14R | Arapahoe | Castle Rock | 6/14/2001 | 635 | 1.79 | 8.000E-04 | 3.61 | | 355 | T from drawdown test | 39.35407094 | -104.8583076 |
| 1129 | 20 | Arapahoe | Castle Rock | | | | | 1.25 | | 237 | No test drawdown information. | 39.36308356 | -104.8088137 |
| 1132 | 27 | Arapahoe | Castle Rock | 1/8/1987 | 276 | 1.15 | | 1.68 | | 240 | T from drawdown test | 39.41048246 | -104.910058 |
| 1133 | 28R | Arapahoe | Castle Rock | 7/5/2003 | 606 | 1.93 | 9.000E-04 | 2.67 | | 315 | T from recovery test | 39.40917852 | -104.8954258 |
| 1134 | 31R | Arapahoe | Castle Rock | 2/28/2000 | 393 | 1.36 | 9.700E-07 | 2.2 | | 289 | T from drawdown test | 39.37458139 | -104.8186478 |
| 1136 | 39 | Arapahoe | Castle Rock | | | | | | | 345 | No well test results information available. | 39.37927898 | -104.8005055 |
| 1138 | 43 | Arapahoe | Castle Rock | 3/8/1988 | 378 | 1.48 | | 2.4 | | 255 | T from drawdown test | 39.37313461 | -104.8010485 |
| 1142 | 49 | Arapahoe | Castle Rock | 9/8/1994 | 489 | 1.74 | | 2.97 | | 280 | T from drawdown test | 39.41431528 | -104.8949604 |
| 1097 | 67 | Arapahoe | Castle Rock | 3/18/2008 | 374 | 1.25 | | 2.87 | | 300 | T from drawdown test | 39.39198425 | -104.8726029 |
| 1099 | 73R | Arapahoe | Castle Rock | 2/15/2007 | 388 | 1.75 | | 1.53 | | 222 | T from recovery test | 39.40487104 | -104.8104196 |
| 1103 | 82 | Arapahoe | Castle Rock | 12/30/2000 | 384 | 1.47 | | 2 | | 261 | T from drawdown test | 39.39978192 | -104.896079 |
| 1104 | 83 | Arapahoe | Castle Rock | 9/16/2000 | 480 | 1.71 | | 2.1 | | 281 | T from drawdown test | 39.39611413 | -104.8800522 |
| 1106 | 86 | Arapahoe | Castle Rock | 3/3/2000 | 256 | 0.84 | | 1.16 | | 304 | T from drawdown test | 39.39395303 | -104.9109657 |
| 1110 | 118 | Arapahoe | Castle Rock | 2/16/2006 | 472 | 1.63 | | 1.6 | | 290 | T from recovery test | 39.38681635 | -104.8315837 |
| 1111 | 123 | Arapahoe | Castle Rock | 2/1/2007 | 328 | 1.16 | | 1 | | 282 | T from recovery test | 39.39613262 | -104.8146269 |
| 1112 | 124 | Arapahoe | Castle Rock | 2/26/2004 | 393 | 1.33 | | 1.82 | | 296 | T from drawdown test | 39.39228821 | -104.82438 |
| 1144 | 176 | Arapahoe | Castle Rock | 5/8/1997 | | | | | | 354 | No well test results information available. | 39.3843548 | -104.8715979 |
| 1145 | 204 | Arapahoe | Castle Rock | 4/1/1999 | 825 | 2.56 | | 2.4 | | 323 | T from drawdown test | 39.35326265 | -104.8662704 |
| 1147 | 218 | Arapahoe | Castle Rock | 2/8/2001 | 663 | 2.34 | | 2.26 | | 283 | T from drawdown test | 39.37970828 | -104.8231833 |
| 1148 | 219 | Arapahoe | Castle Rock | 7/3/2004 | 466 | 1.50 | | 2.9 | | 310 | T from drawdown test | 39.40615766 | -104.8822187 |
| 1149 | 220 | Arapahoe | Castle Rock | 2/16/2004 | 843 | 2.63 | | 3.5 | | 320 | T from drawdown test | 39.41513806 | -104.8848669 |
| 1152 | 223 | Arapahoe | Castle Rock | 12/15/2005 | 510 | 1.67 | | 2.1 | | 305 | T from drawdown test | 39.40215003 | -104.8769296 |
| 1092 | LFH-5[2] | Laramie Fox Hills | ACWWA | | 131 | 0.51 | | | | 255 | | 39.5880348 | -104.8098828 |
| 1093 | Den-LFH | Laramie Fox Hills | ACWWA | | 131 | | | | | | | 39.5714 | -104.71773 |
| 1094 | Loyd-LFH | Laramie Fox Hills | ACWWA | | 39 | | | | | | | 39.5443 | -104.78263 |
| 1078 | LFH-10 | Laramie Fox Hills | CPMD | 7/1/1986 | 9.4 | 0.04 | | 0.09 | | 230 | | 39.42888422 | -104.9005549 |
| 1258 | LFH-02 | Laramie Fox Hills | Centennial | 9/23/1978 | 268 | | 2.050E-04 | | | | | 39.55121513 | -104.9990802 |
| 1259 | LFH-03[2] | Laramie Fox Hills | Centennial | 12/15/1979 | 658 | 2.30 | 1.500E-03 | | | 286 | | 39.55788436 | -104.9684592 |
| 1261 | LFH-04R | Laramie Fox Hills | Centennial | 6/1/2007 | 101 | | 6.000E-04 | | | | Trans based on recovery | 39.53968341 | -104.5396834 |
| 1263 | LFH-07 | Laramie Fox Hills | Centennial | 10/1/2002 | 228 | | | | | | Trans based on recovery | 39.52172834 | -104.9861904 |
| 1264 | LFH-08[2] | Laramie Fox Hills | Centennial | 2/3/1979 | 617 | 1.36 | 1.740E-03 | | | 454 | | 39.51501218 | -104.9655235 |
| 1266 | LFH-08R | Laramie Fox Hills | Centennial | 3/14/2003 | 74 | | 1.470E-02 | | | | Trans based on recovery | 39.51496871 | -104.9648556 |
| 1267 | LFH-09 | Laramie Fox Hills | Centennial | 2/28/2003 | 112 | | | | | | Trans based on recovery | 39.51742992 | -104.9335426 |
| 1270 | LFH-10R[2] | Laramie Fox Hills | Centennial | 2/15/2003 | 157 | 1.07 | | | | 147 | Trans based on recovery | 39.53327933 | -104.9181355 |
| 1271 | LFH-11 | Laramie Fox Hills | Centennial | 11/27/2002 | 23 | | | | | | Trans based on recovery | 39.49889659 | -104.9852917 |
| 1272 | LFH-13 | Laramie Fox Hills | Centennial | 11/27/2002 | 113 | | | | | | Trans based on recovery | 39.49984106 | -104.9092086 |
| 1275 | LFH-14R[2] | Laramie Fox Hills | Centennial | 5/31/2002 | 42 | 0.15 | 2.000E-04 | | | 282 | Trans based on recovery | 39.48446569 | -104.96593 |
| 1276 | LFH-15 | Laramie Fox Hills | Centennial | 9/6/2002 | 0.9 | | | | | | Trans based on recovery | 39.47399453 | -104.9384454 |
| 1321 | WFH-3[1] | Laramie Fox Hills | ECCV | | | 2.40 | | | | 165 | | 39.59461504 | -104.9046045 |
| 1322 | WFH-4[1] | Laramie Fox Hills | ECCV | | | 1.30 | | | | 118 | | 39.58653034 | -104.9225397 |
| 1046 | L-1[1] | Laramie Fox Hills | ECCV | | | 0.29 | | | | 210 | B obtained from Geophyslogs Hydrobase table (used to calc. K) | 39.60247357 | -104.7725598 |
| 1047 | L-2[1] | Laramie Fox Hills | ECCV | | | 0.31 | | | | 165 | B obtained from Geophyslogs Hydrobase table (used to calc. K) | 39.62388952 | -104.7729879 |
| 1048 | L-3[1] | Laramie Fox Hills | ECCV | | | 0.40 | | | | 202 | B obtained from Geophyslogs Hydrobase table (used to calc. K) | 39.61516467 | -104.7912623 |
| 1049 | L-4[1] | Laramie Fox Hills | ECCV | | | 0.16 | | | | 178 | B obtained from SPDSS T42 Configuration Maps (used to calc. K) | 39.59657238 | -104.7442865 |
| 1050 | L-5[1] | Laramie Fox Hills | ECCV | | | 0.27 | | | | 157 | B obtained from SPDSS T42 Configuration Maps (used to calc. K) | 39.61874478 | -104.7464306 |
| 1051 | L-6[1] | Laramie Fox Hills | ECCV | | | 0.22 | | | | 145 | B obtained from SPDSS T42 Configuration Maps (used to calc. K) | 39.62361791 | -104.7171588 |
| 1052 | L-7[1] | Laramie Fox Hills | ECCV | | | 0.32 | | | | 168 | B obtained from SPDSS T42 Configuration Maps (used to calc. K) | 39.60293547 | -104.7191692 |
| 1053 | L-8[1] | Laramie Fox Hills | ECCV | | | 0.24 | | | | 205 | B obtained from Geophyslogs Hydrobase table (used to calc. K) | 39.58069448 | -104.726661 |
| 1055 | L-10[1] | Laramie Fox Hills | ECCV | | | 0.47 | | | | 144 | B obtained from SPDSS T42 Configuration Maps (used to calc. K) | 39.64894816 | -104.756606 |
| 1056 | L-11[1] | Laramie Fox Hills | ECCV | | | 0.31 | | | | 147 | B obtained from Geophyslogs Hydrobase table (used to calc. K) | 39.63330005 | -104.7335178 |
| 1057 | L-12[1] | Laramie Fox Hills | ECCV | | | 0.35 | | | | 153 | B obtained from Geophyslogs Hydrobase table (used to calc. K) | 39.62992888 | -104.7498405 |
| 1058 | L-13[1] | Laramie Fox Hills | ECCV | | | 0.40 | | | | 155 | B obtained from SPDSS T42 Configuration Maps (used to calc. K) | 39.63274743 | -104.7590535 |
| 1059 | L-14[1] | Laramie Fox Hills | ECCV | | | 0.61 | | | | 185 | B obtained from Geophyslogs Hydrobase table (used to calc. K) | 39.61687022 | -104.8008608 |
| 1060 | L-15[1] | Laramie Fox Hills | ECCV | | | 0.63 | | | | 187 | B obtained from Geophyslogs Hydrobase table (used to calc. K) | 39.61191079 | -104.8102197 |
| 1061 | L-18[1] | Laramie Fox Hills | ECCV | | | 0.31 | | | | 130 | B obtained from Geophyslogs Hydrobase table (used to calc. K) | 39.64155264 | -104.7496792 |
| 1064 | SL-2[1] | Laramie Fox Hills | ECCV | | | 0.32 | | | | 158 | B obtained from Geophyslogs Hydrobase table (used to calc. K) | 39.61256972 | -104.7733865 |
| 1065 | SL-3[1] | Laramie Fox Hills | ECCV | | | 0.28 | | | | 170 | B obtained from Geophyslogs Hydrobase table (used to calc. K) | 39.61496351 | -104.7639856 |
| 1066 | SL-4[1] | Laramie Fox Hills | ECCV | | | 0.25 | | | | 170 | B obtained from Geophyslogs Hydrobase table (used to calc. K) | 39.60845294 | -104.7555629 |
| 1067 | SL-5[1] | Laramie Fox Hills | ECCV | | | 0.25 | | | | 162 | B obtained from Geophyslogs Hydrobase table (used to calc. K) | 39.60961196 | -104.7385762 |
| 1068 | SL-6[1] | Laramie Fox Hills | ECCV | | | 0.48 | | | | 130 | B obtained from Geophyslogs Hydrobase table (used to calc. K) | 39.62376691 | -104.7315421 |
| 1069 | SL-7[1] | Laramie Fox Hills | ECCV | | | 0.38 | | | | 200 | B obtained from Geophyslogs Hydrobase table (used to calc. K) | 39.59246185 | -104.7280414 |
| 1070 | SL-8[1] | Laramie Fox Hills | ECCV | | | 0.33 | | | | 130 | B obtained from Geophyslogs Hydrobase table (used to calc. K) | 39.61109934 | -104.7267717 |
| 1354 | 5 | Laramie Fox Hills | Inverness | 7/8/1980 | 672 | 2.31 | | | | 150 | | 39.5822869 | -104.8691509 |
| 1346 | LFH-1[2] | Laramie Fox Hills | Meridian | 2/13/1985 | 91 | 0.58 | | 0.32 | | 156 | | 39.54362959 | -104.8594243 |
| 1223 | LFH-1 | Laramie Fox Hills | Stonegate | 4/21/2004 | 40 | 0.27 | 3.750E-03 | 0.1 | | 150 | | 39.52931649 | -104.8024922 |
| 1224 | LFH-2 | Laramie Fox Hills | Stonegate | 9/2/1981 | 71 | 0.42 | 4.500E-03 | 0.4 | | 171 | | 39.54383698 | -104.8025162 |
| 1225 | LFH-3 | Laramie Fox Hills | Stonegate | 2/20/2002 | 80 | 0.57 | 3.000E-03 | 0.48 | | 140 | | 39.53546137 | -104.7945257 |

1 - All properties provided by DSS data
2 - Cumulative thickness provided by DSS data

# Appendix B


Well Pumping and Watel Levels in ACWWA,
Well Chap-DA-1 (Dawson Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6100
6000
5900
5800
5700
5600
5500
5400
700
600
500
400
300
200
100
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping


Well Pumping and Watel Levels in ACWWA,
Well Chap-DA-2 (Dawson Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6100
6000
5900
5800
5700
5600
5500
5400
700
600
500
400
300
200
100
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
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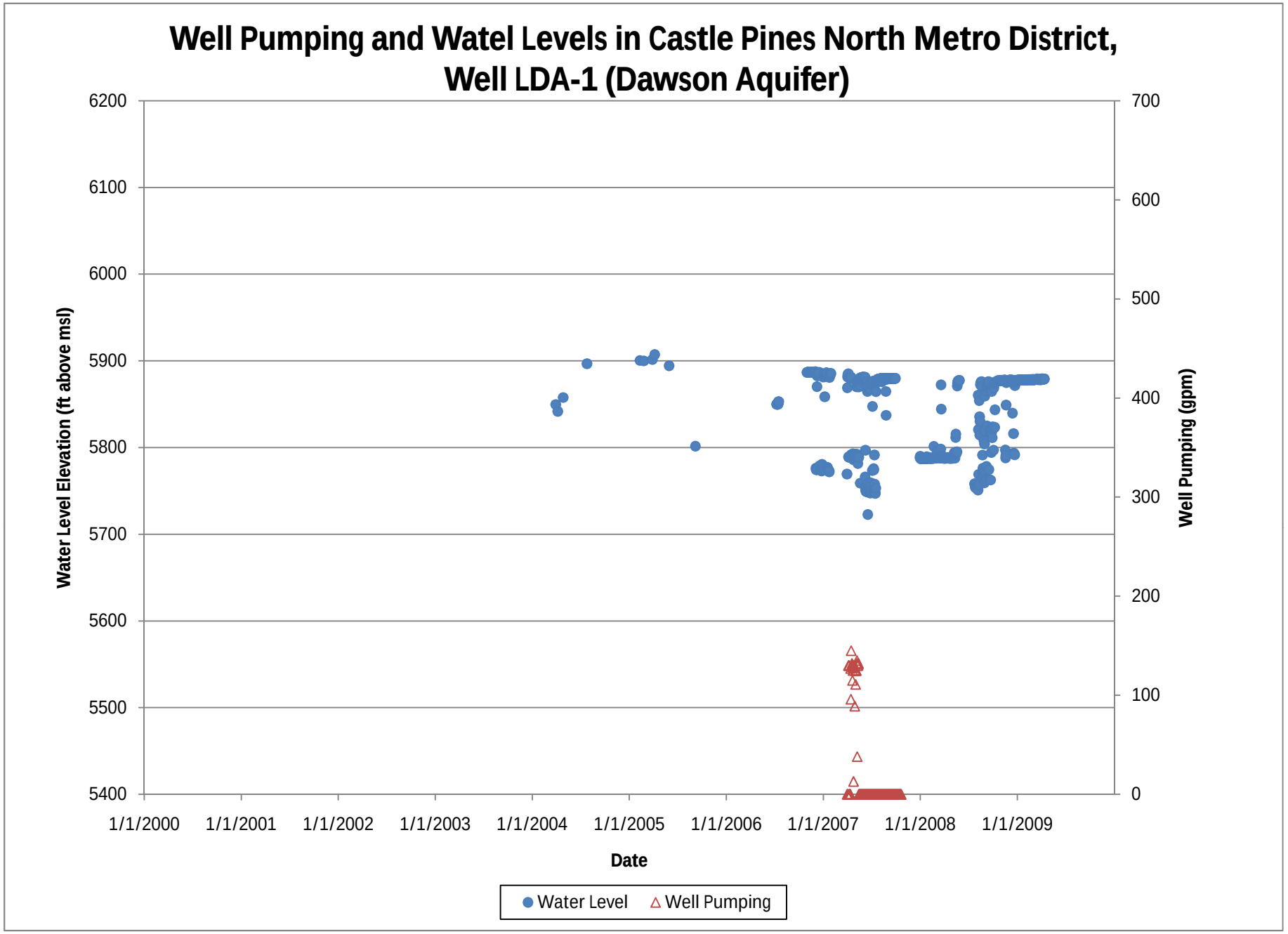
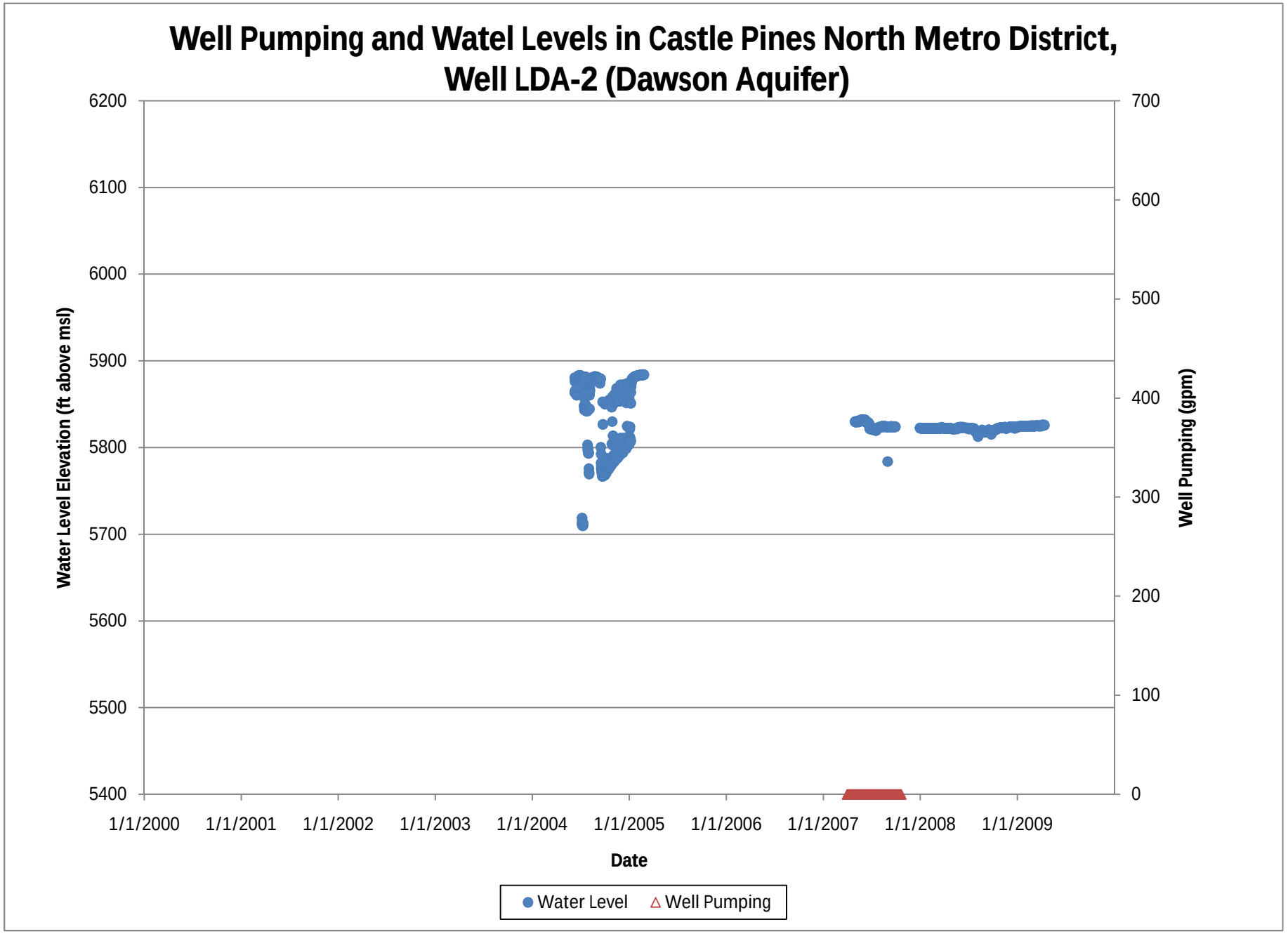
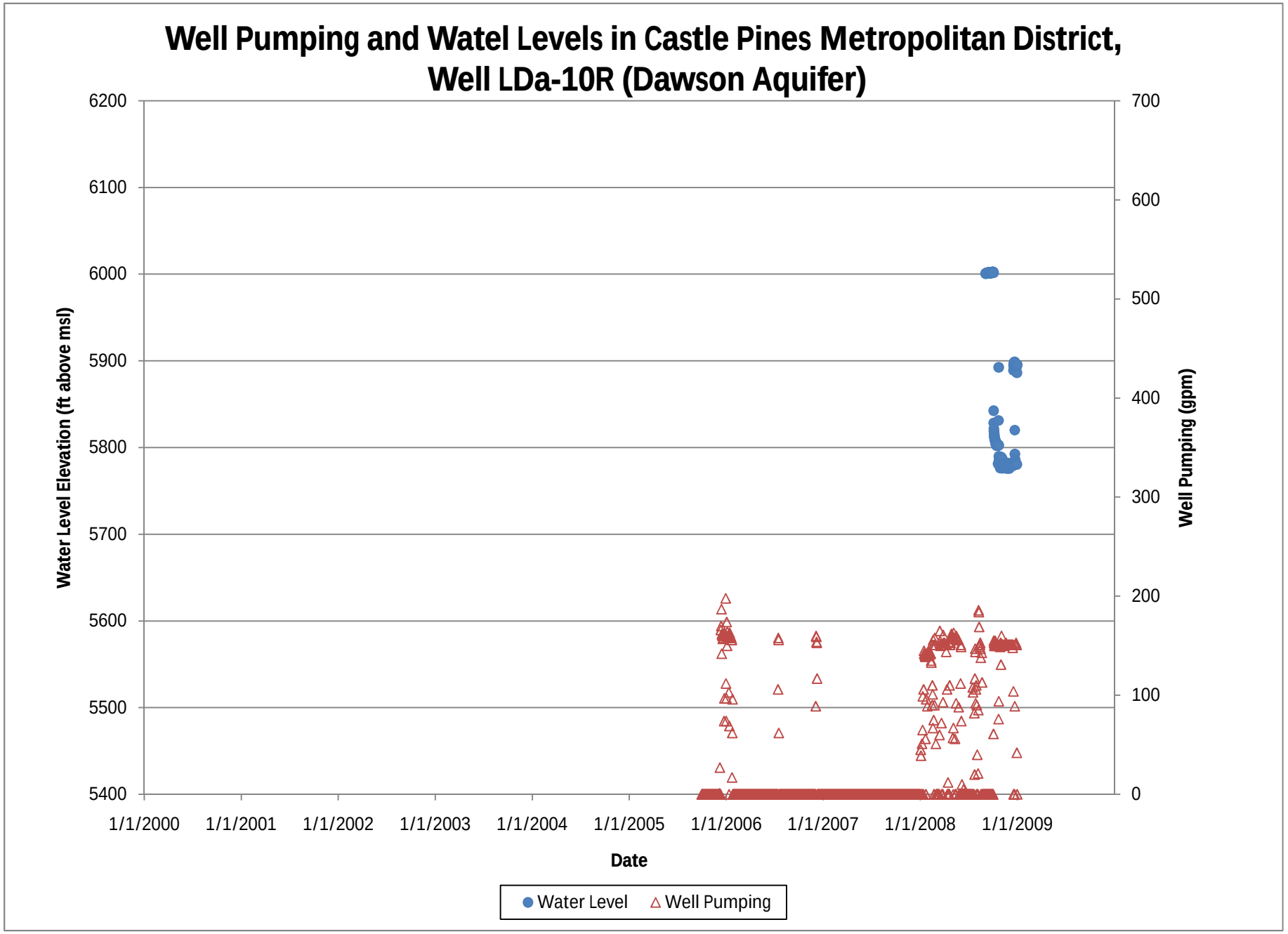
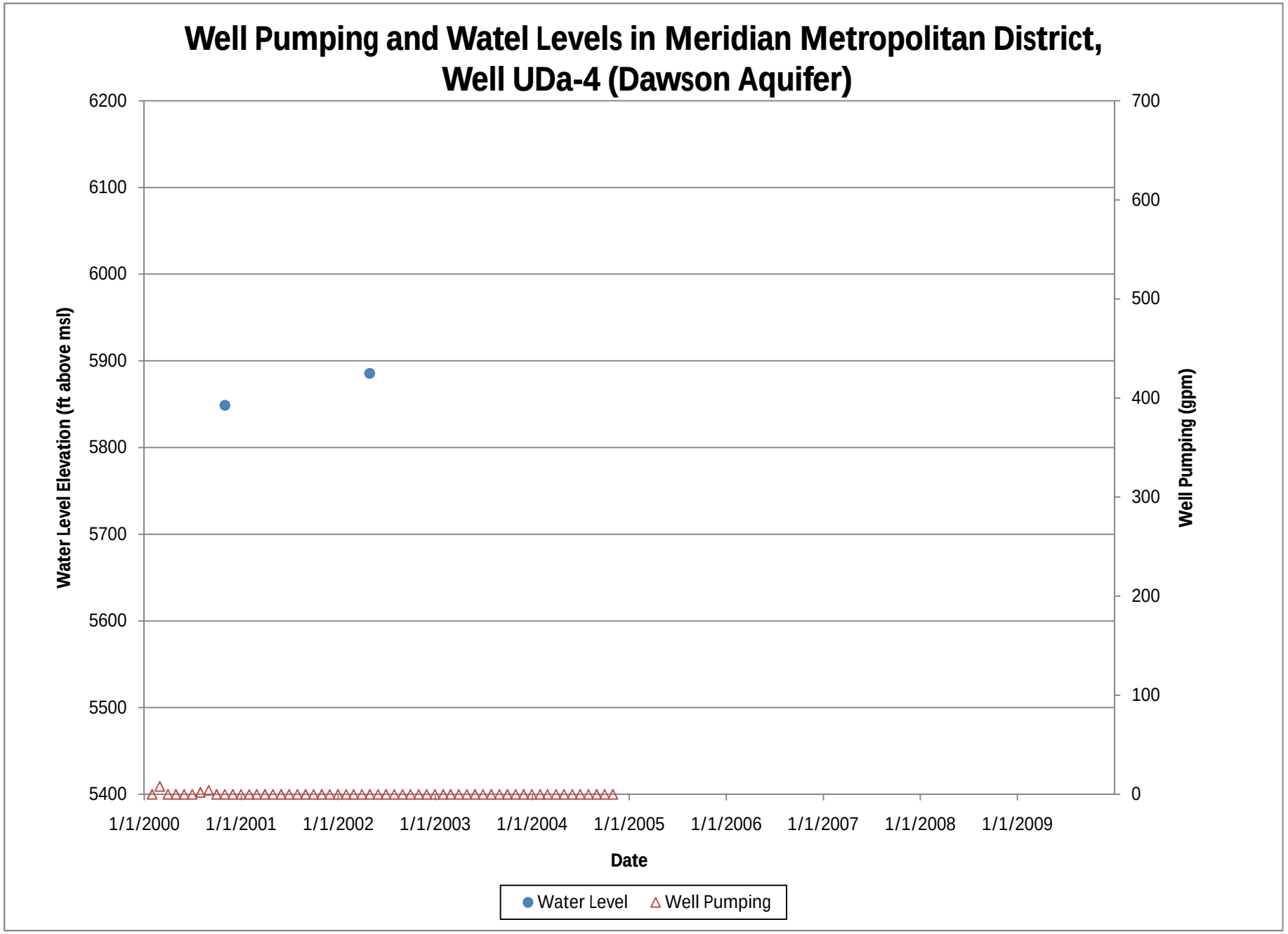
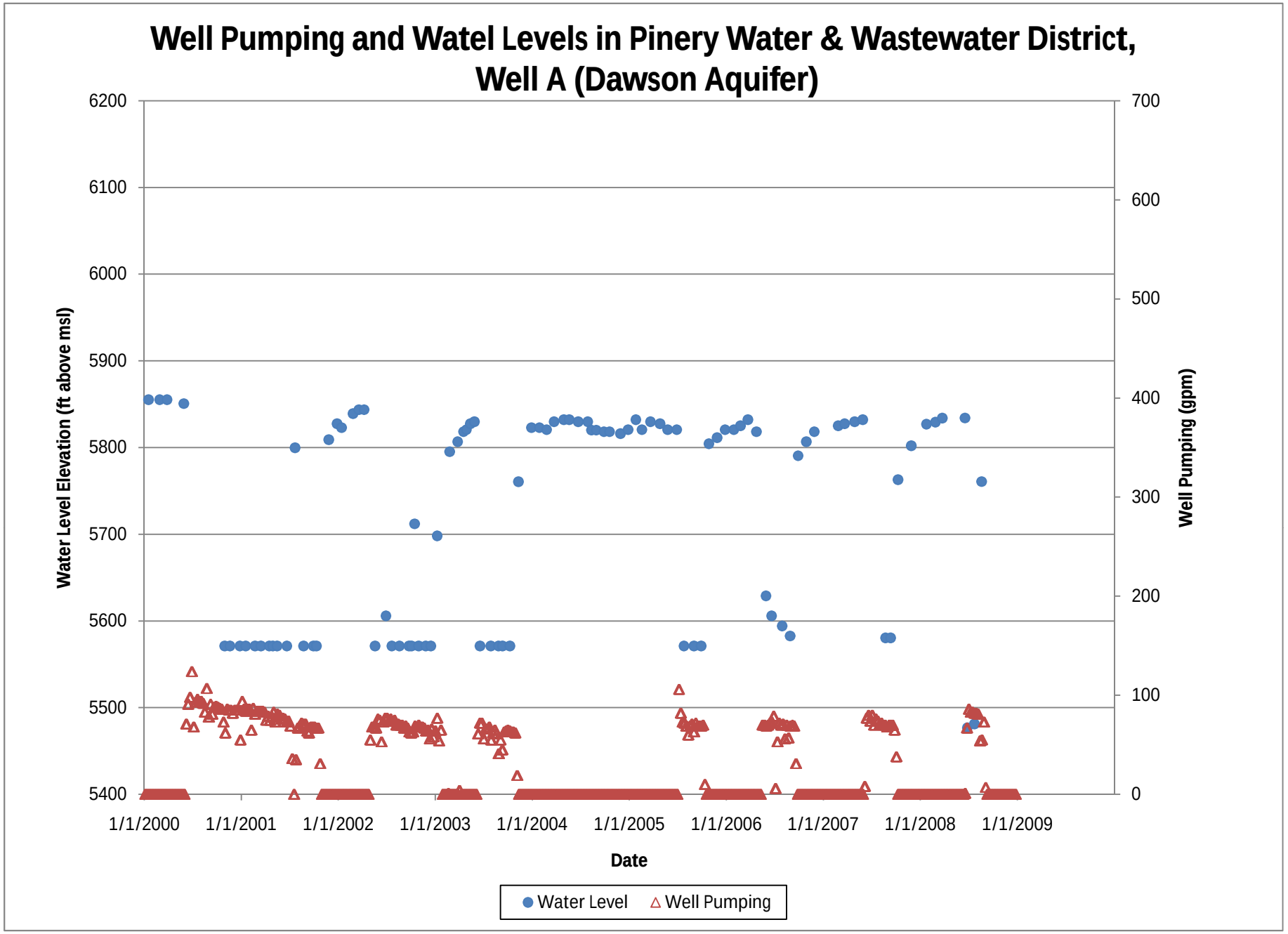
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

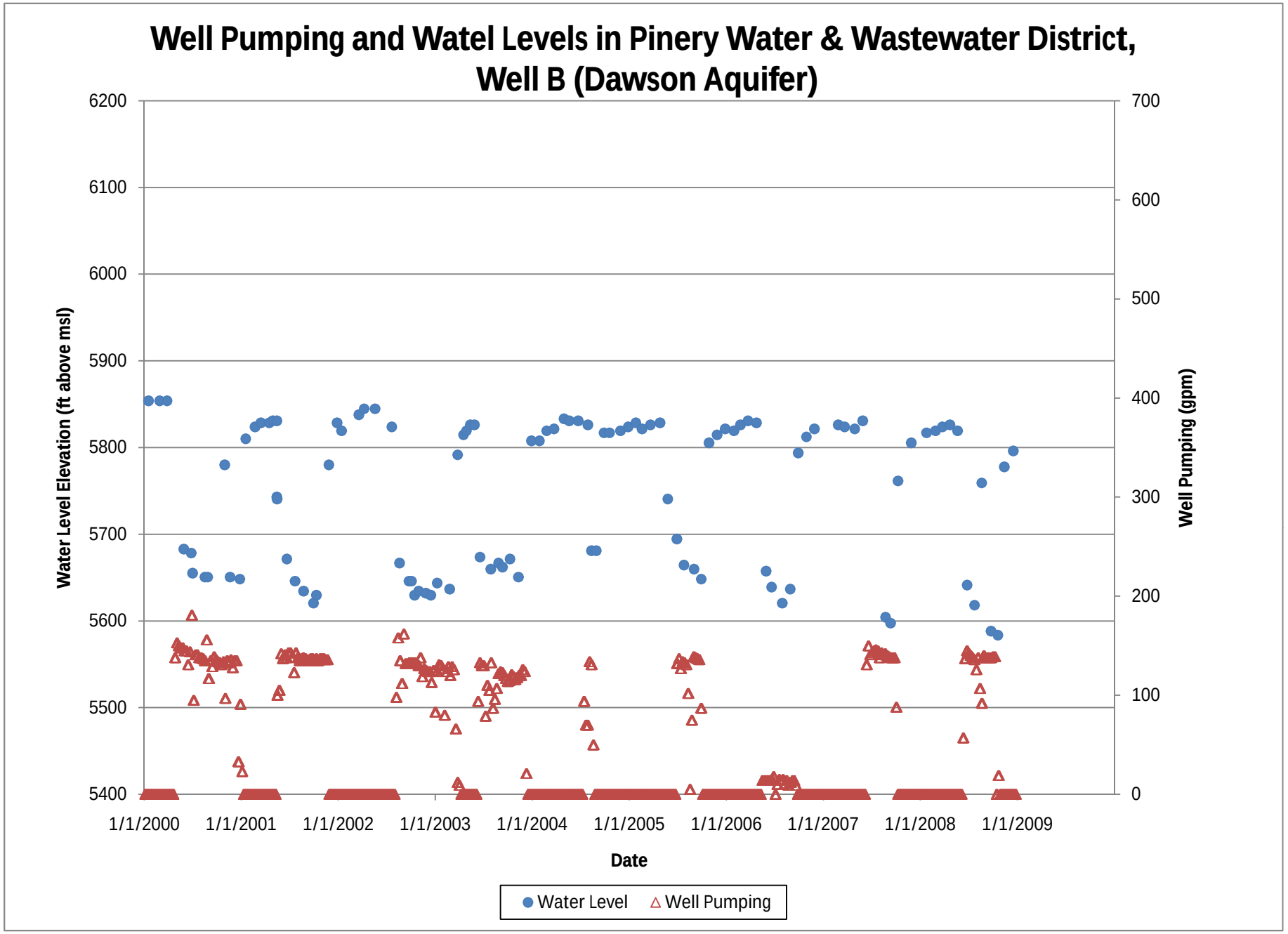

Well Pumping and Watel Levels in Castle Pines North Metro District, Well LDA-1 (Dawson Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6100
6000
5900
5800
5700
5600
5500
5400
700
600
500
400
300
200
100
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

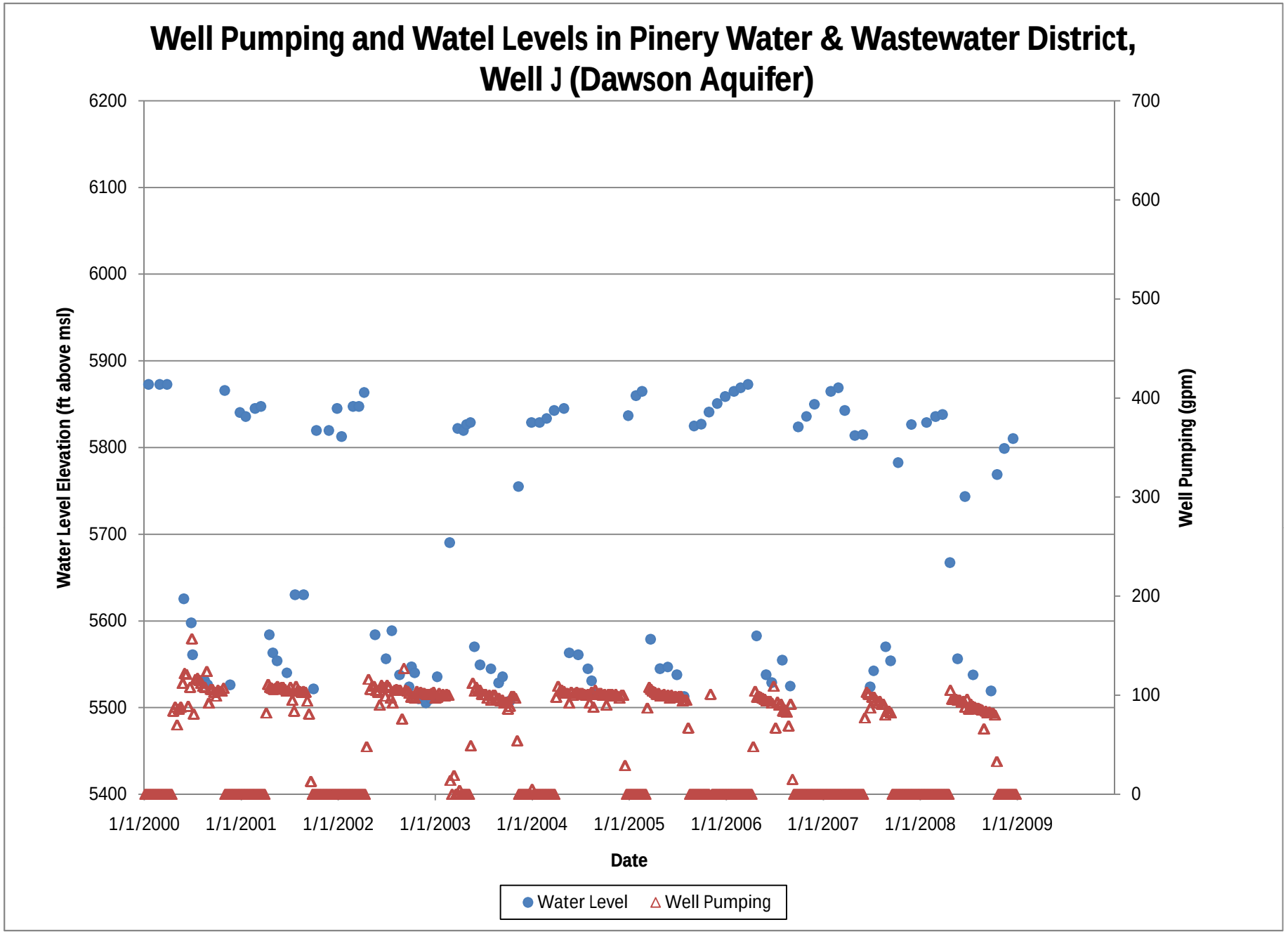

Well Pumping and Watel Levels in Castle Pines North Metro District, Well LDA-2 (Dawson Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6100
6000
5900
5800
5700
5600
5500
5400
700
600
500
400
300
200
100
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping


Well Pumping and Watel Levels in Castle Pines Metropolitan District, Well LDa-10R (Dawson Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6100
6000
5900
5800
5700
5600
5500
5400
700
600
500
400
300
200
100
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping


Well Pumping and Watel Levels in Meridian Metropolitan District, Well UDa-4 (Dawson Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6100
6000
5900
5800
5700
5600
5500
5400
700
600
500
400
300
200
100
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping


Well Pumping and Watel Levels in Pinery Water & Wastewater District, Well A (Dawson Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6100
6000
5900
5800
5700
5600
5500
5400
700
600
500
400
300
200
100
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping


Well Pumping and Watel Levels in Pinery Water & Wastewater District, Well B (Dawson Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6100
6000
5900
5800
5700
5600
5500
5400
700
600
500
400
300
200
100
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping


Well Pumping and Watel Levels in Pinery Water & Wastewater District, Well J (Dawson Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6100
6000
5900
5800
5700
5600
5500
5400
700
600
500
400
300
200
100
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
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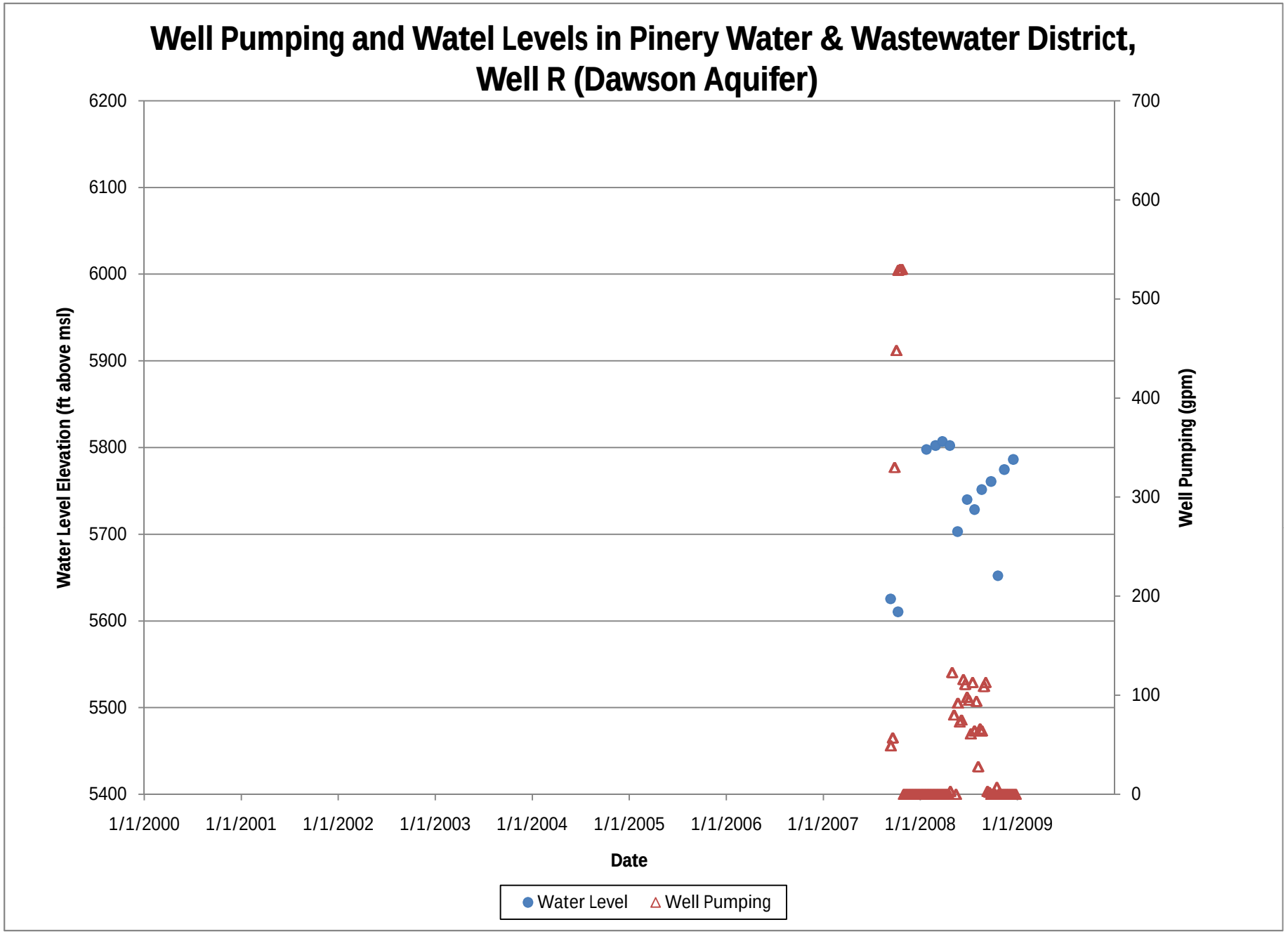
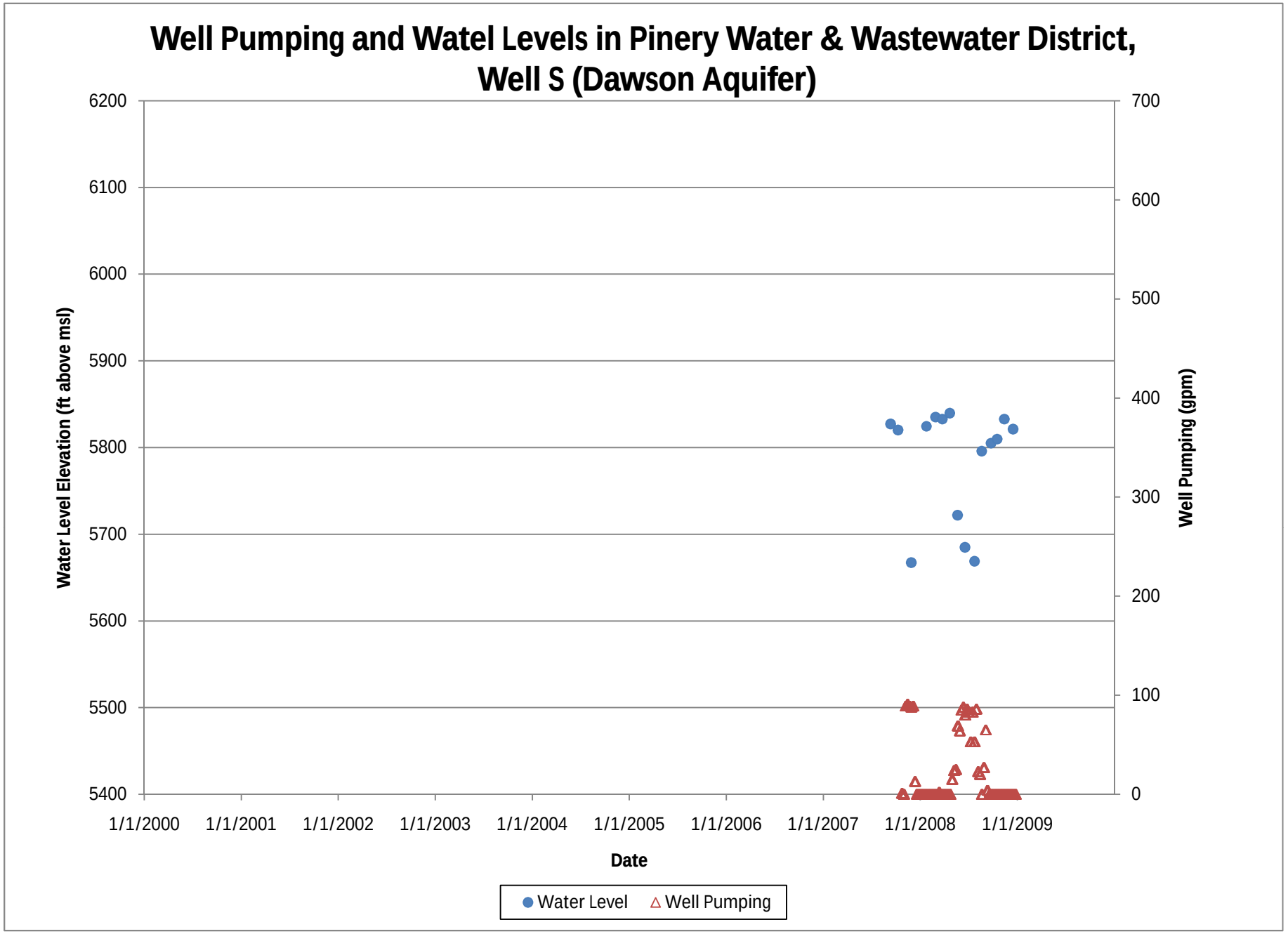
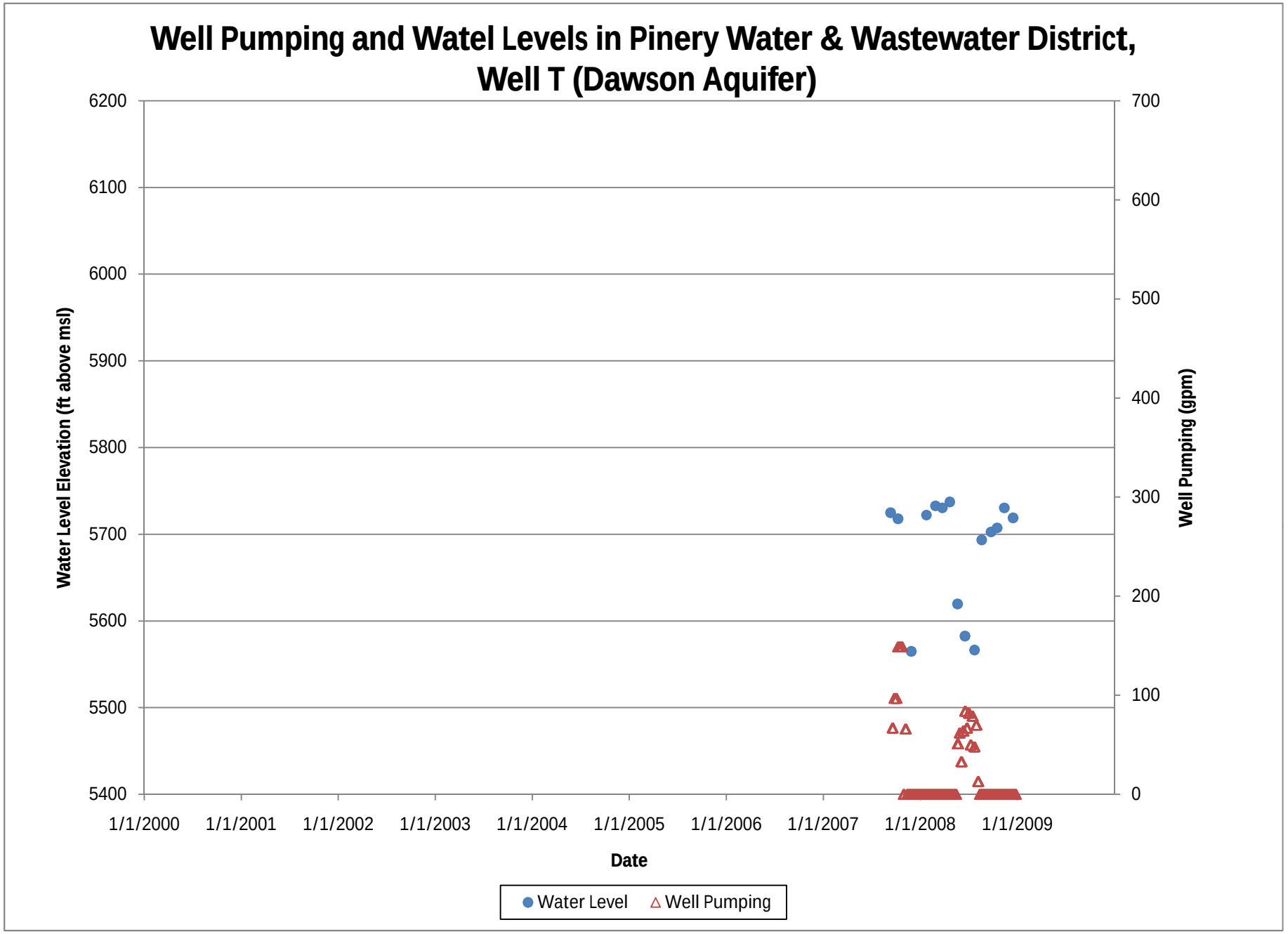
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping


Well Pumping and Watel Levels in Pinery Water & Wastewater District, Well R (Dawson Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6100
6000
5900
5800
5700
5600
5500
5400
700
600
500
400
300
200
100
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping


Well Pumping and Watel Levels in Pinery Water & Wastewater District, Well S (Dawson Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6100
6000
5900
5800
5700
5600
5500
5400
700
600
500
400
300
200
100
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping


Well Pumping and Watel Levels in Pinery Water & Wastewater District, Well T (Dawson Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6100
6000
5900
5800
5700
5600
5500
5400
700
600
500
400
300
200
100
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
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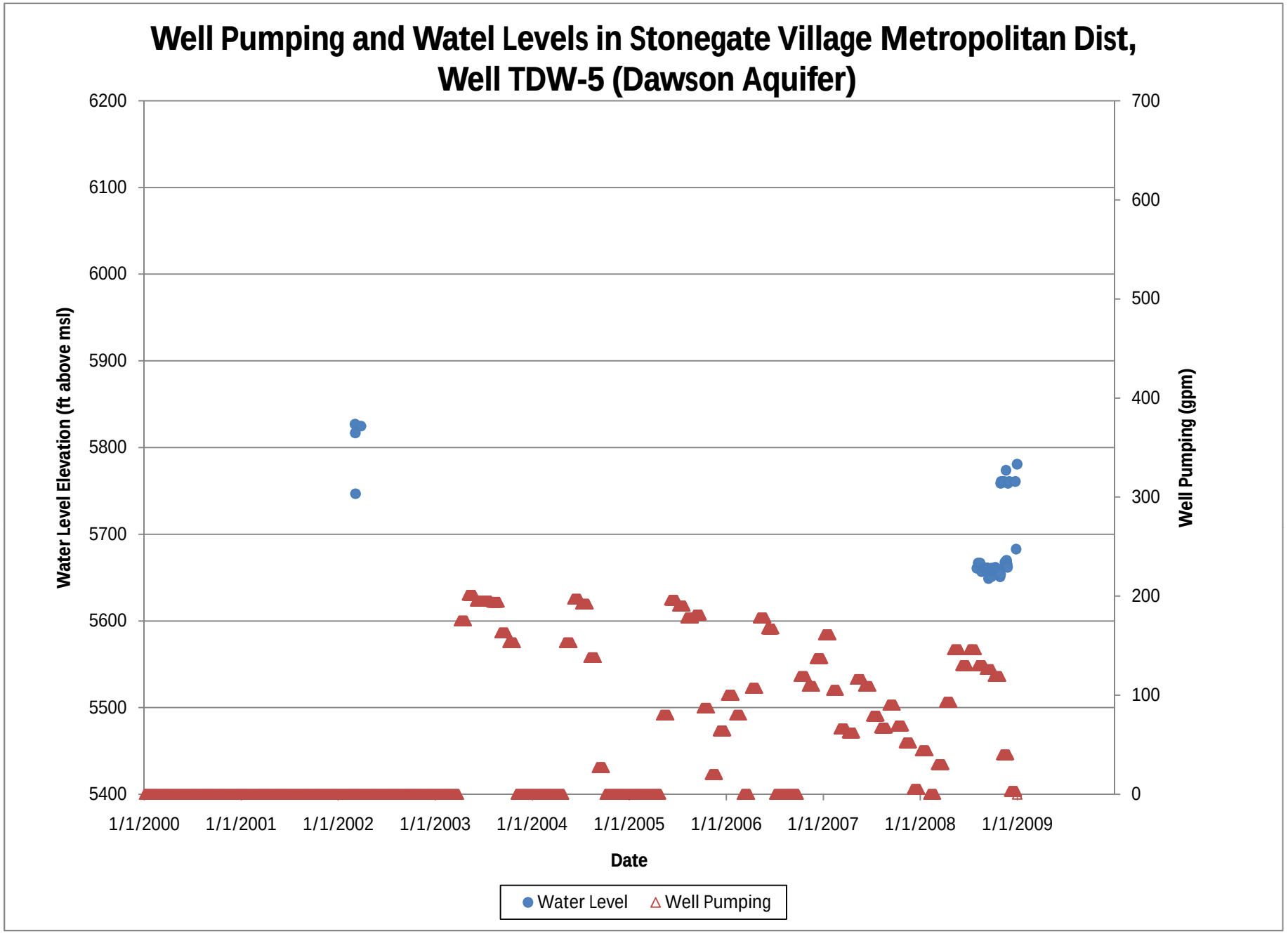
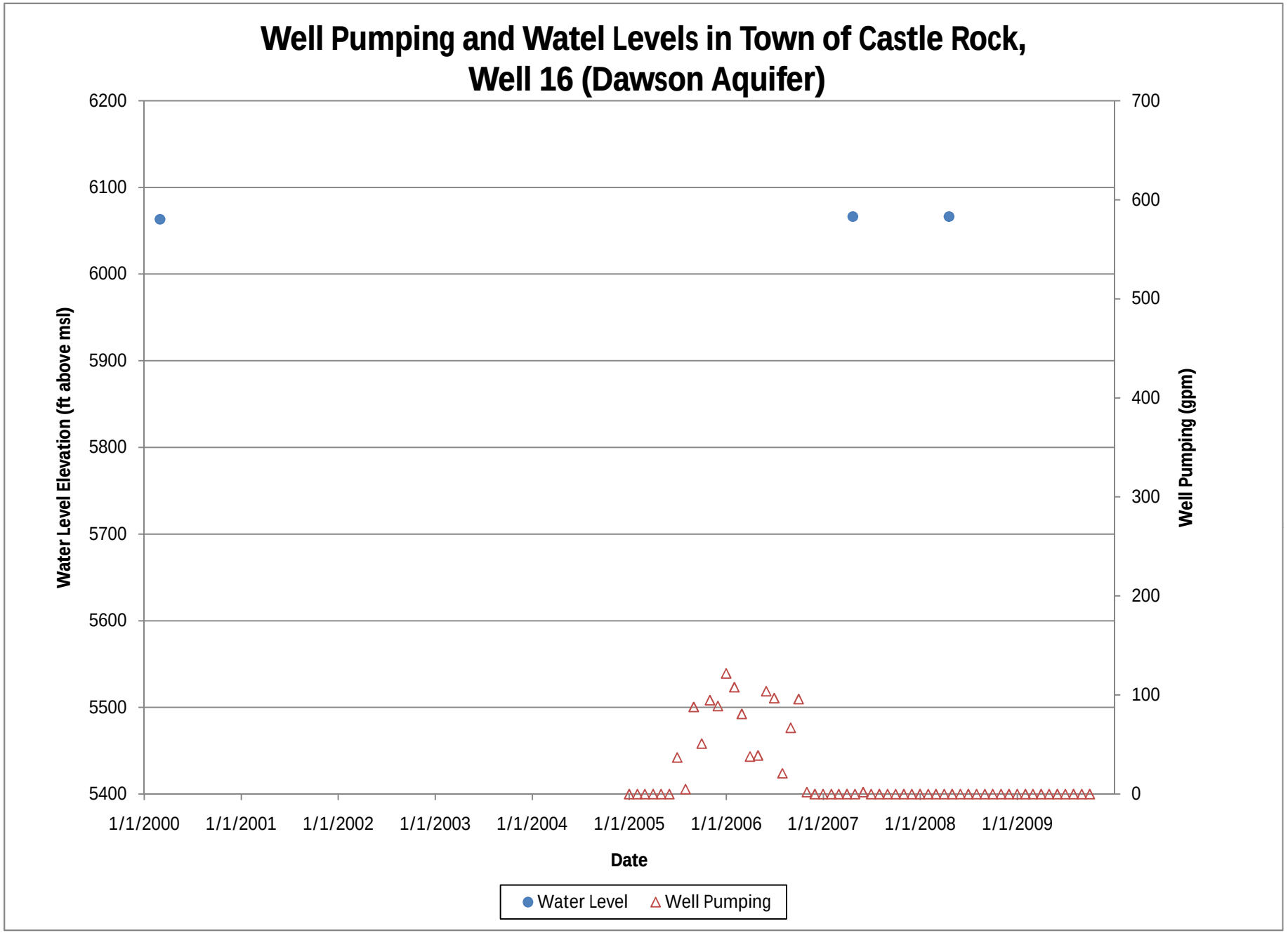
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping


Well Pumping and Watel Levels in Stonegate Village Metropolitan Dist, Well TDW-5 (Dawson Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6100
6000
5900
5800
5700
5600
5500
5400
700
600
500
400
300
200
100
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping


Well Pumping and Watel Levels in Town of Castle Rock, Well 16 (Dawson Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6100
6000
5900
5800
5700
5600
5500
5400
700
600
500
400
300
200
100
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
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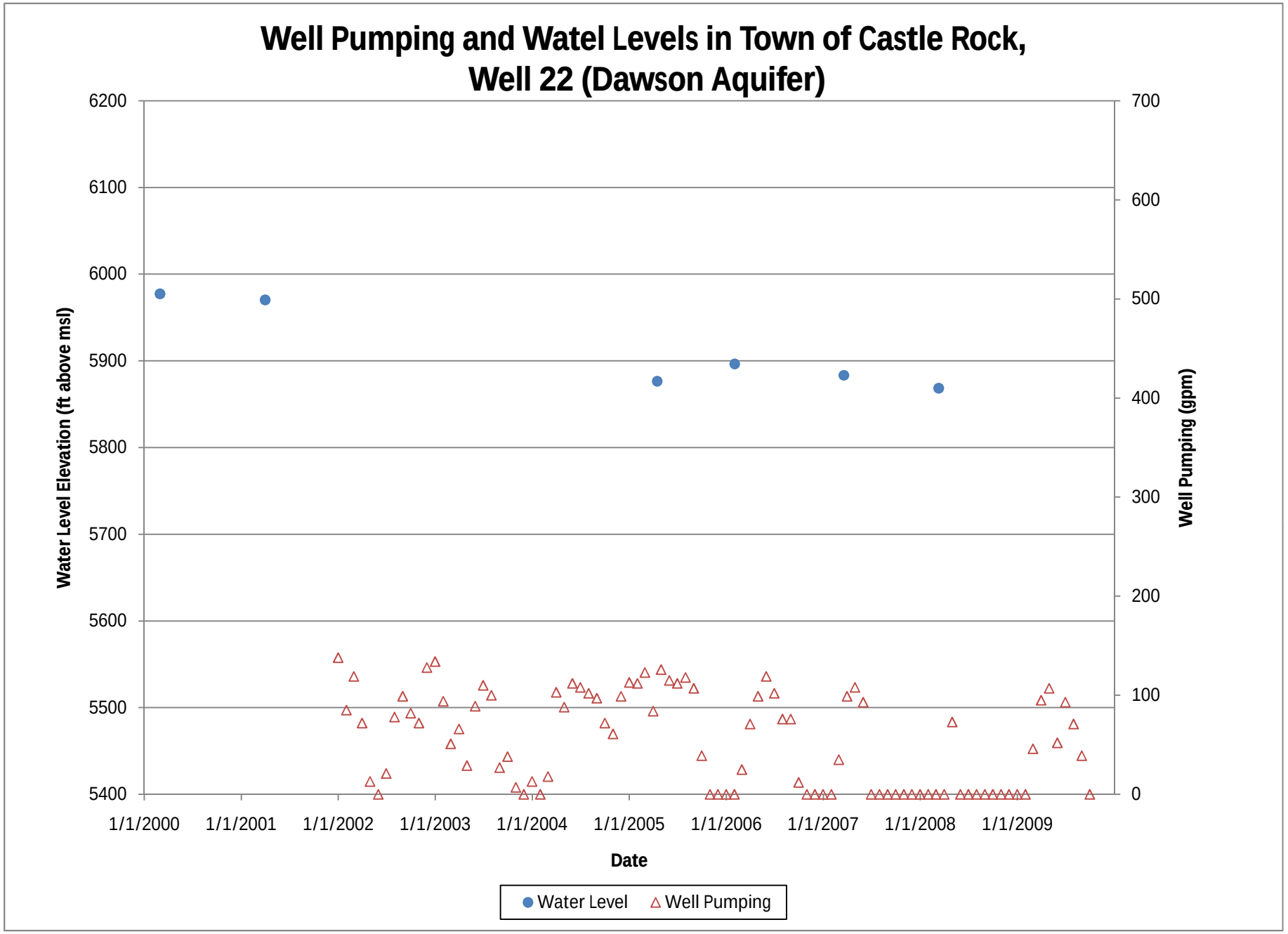
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping


Well Pumping and Watel Levels in Town of Castle Rock, Well 22 (Dawson Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6100
6000
5900
5800
5700
5600
5500
5400
700
600
500
400
300
200
100
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
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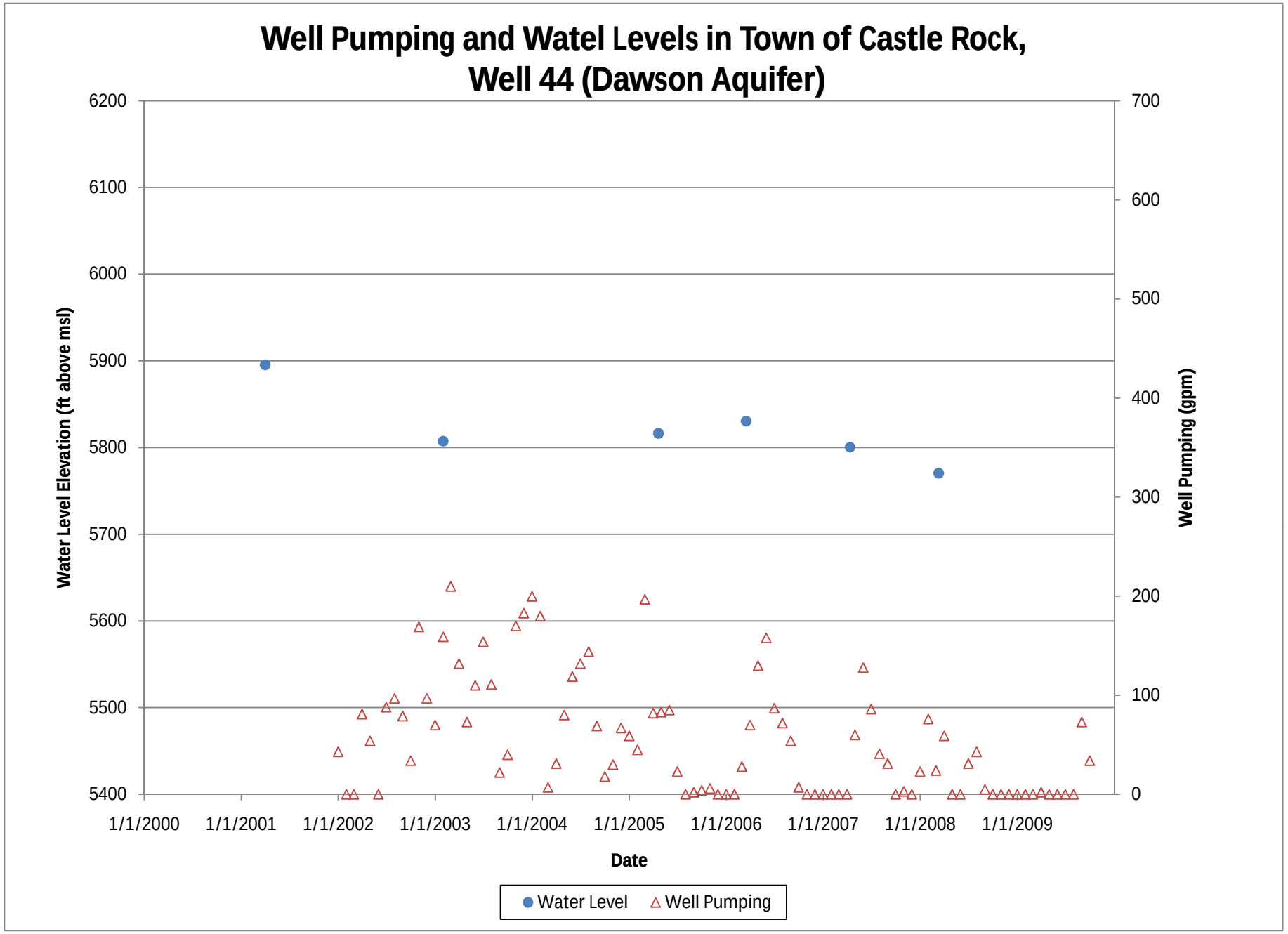
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping


Well Pumping and Watel Levels in Town of Castle Rock, Well 44 (Dawson Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
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6100
6000
5900
5800
5700
5600
5500
5400
700
600
500
400
300
200
100
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
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1/1/2006
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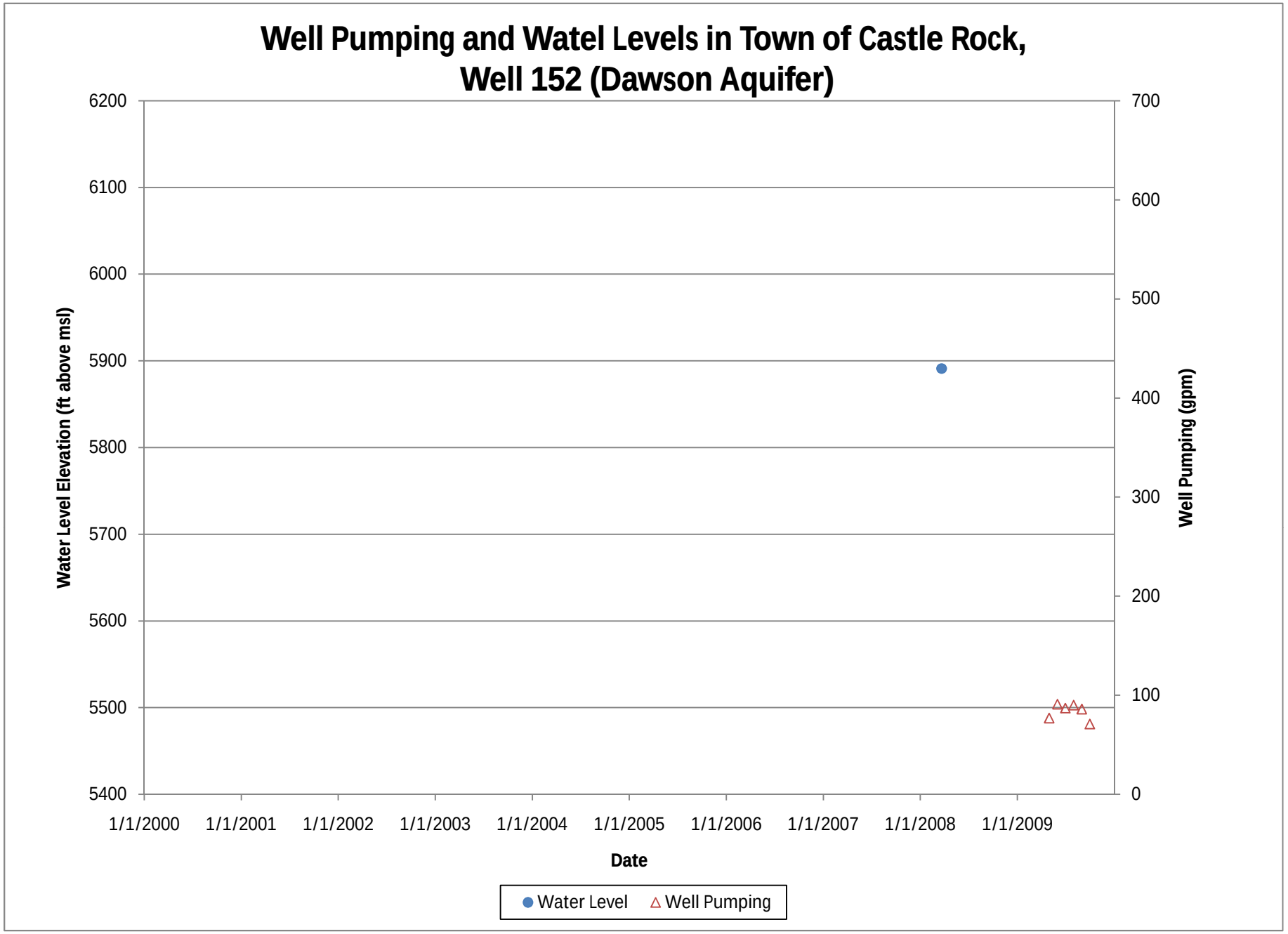
1/1/2008
1/1/2009
Date
Water Level
Well Pumping


Well Pumping and Watel Levels in Town of Castle Rock, Well 152 (Dawson Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
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6100
6000
5900
5800
5700
5600
5500
5400
700
600
500
400
300
200
100
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1/1/2001
1/1/2002
1/1/2003
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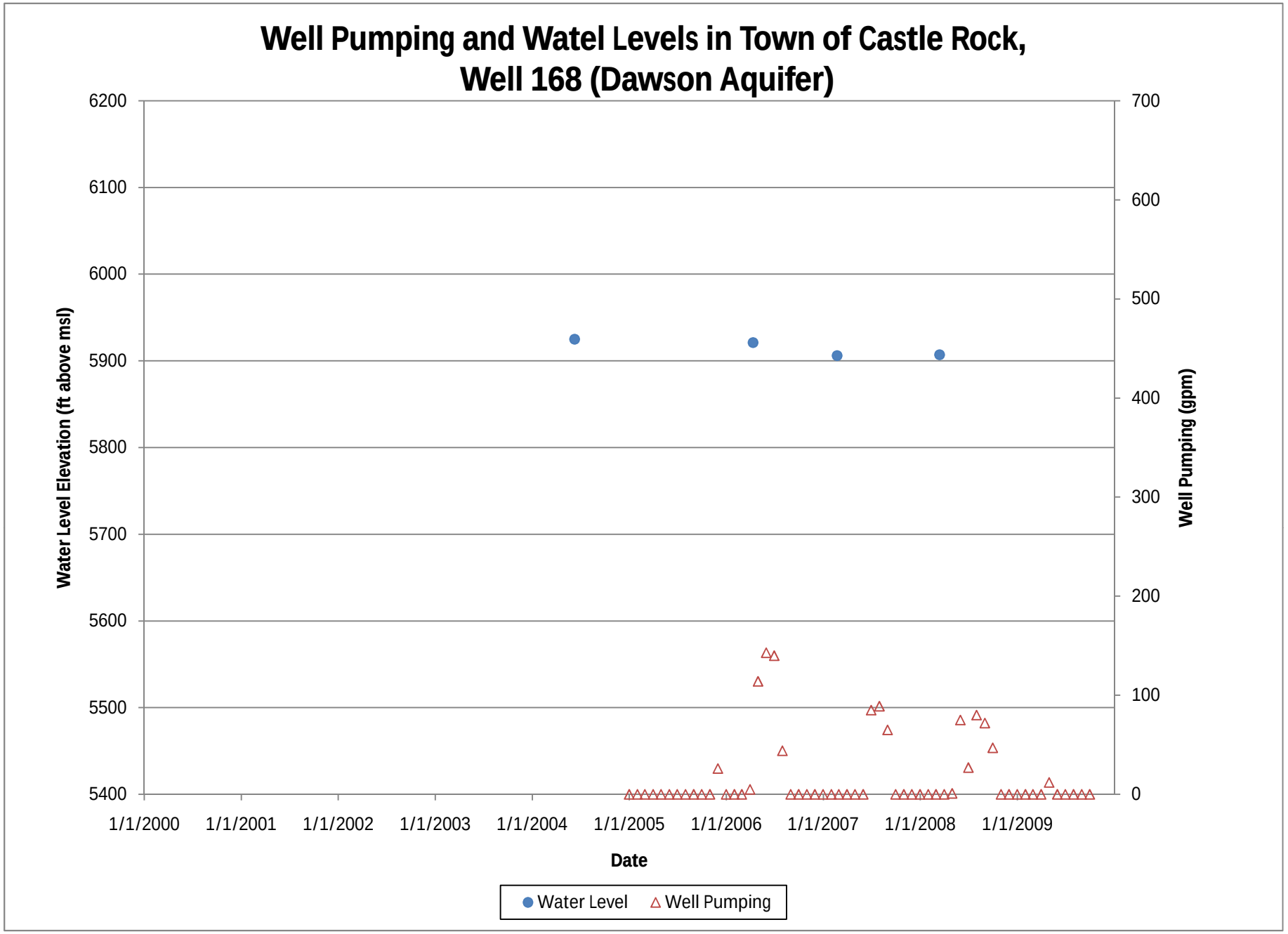
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping


Well Pumping and Watel Levels in Town of Castle Rock, Well 168 (Dawson Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
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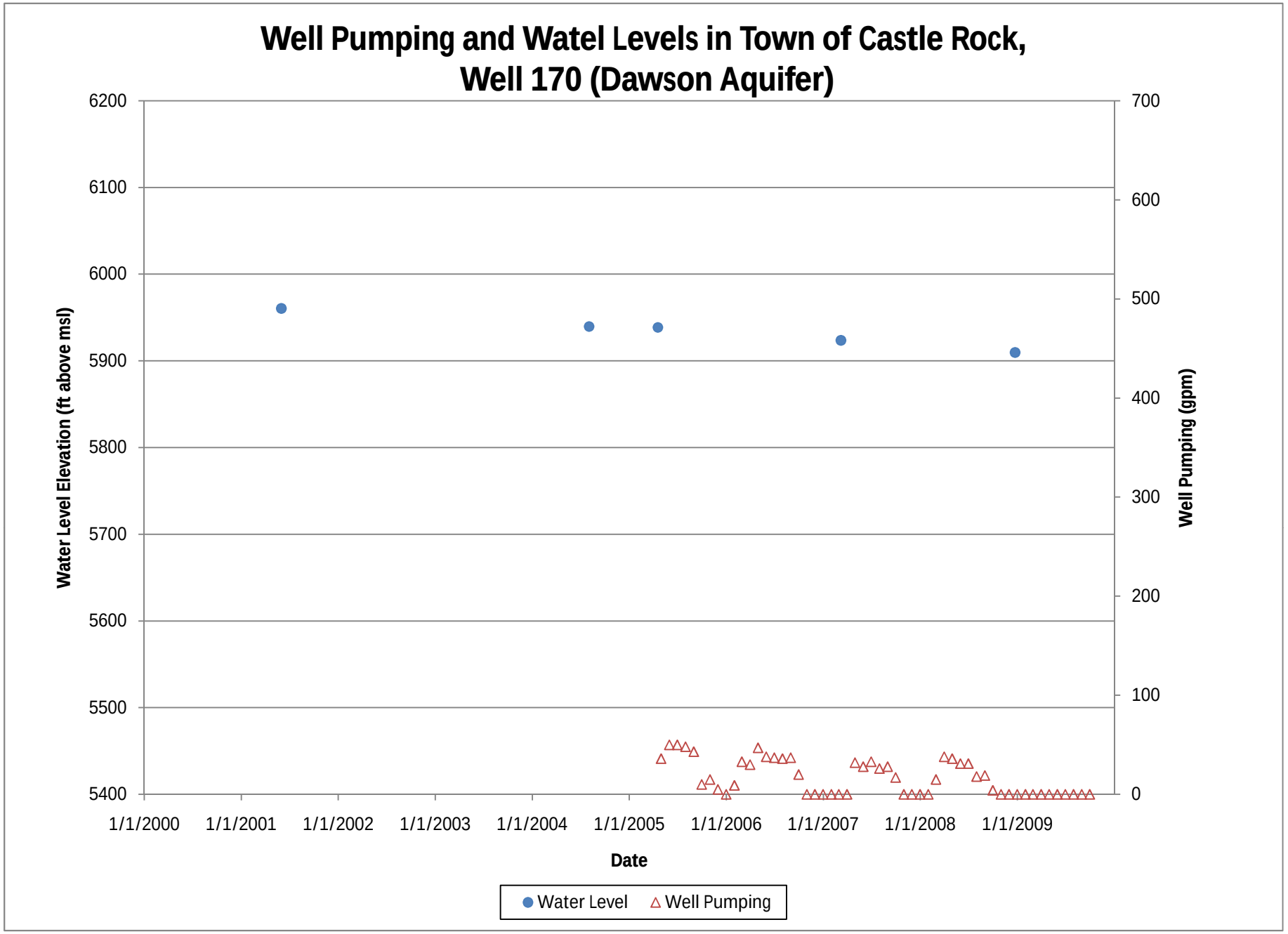
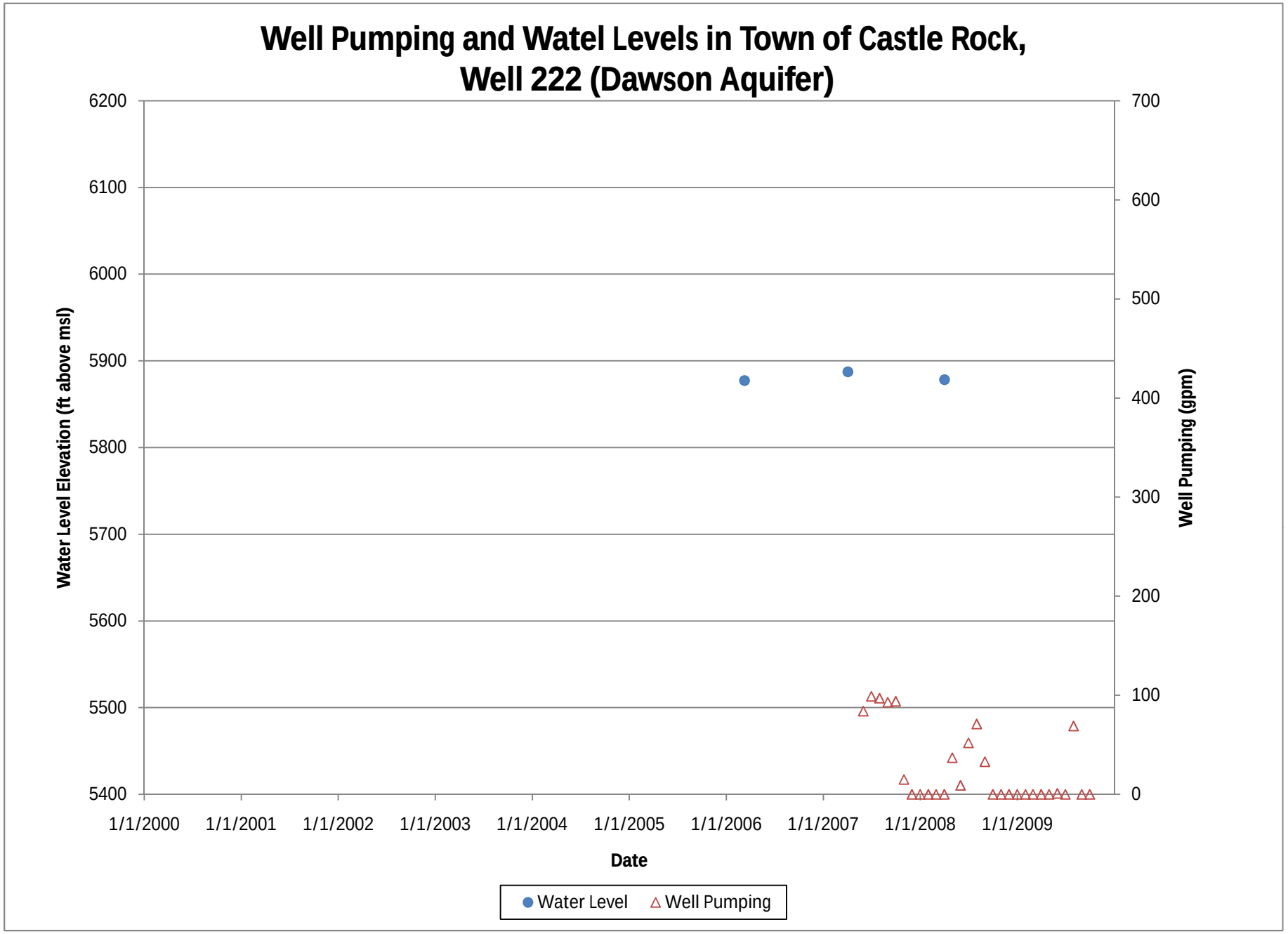
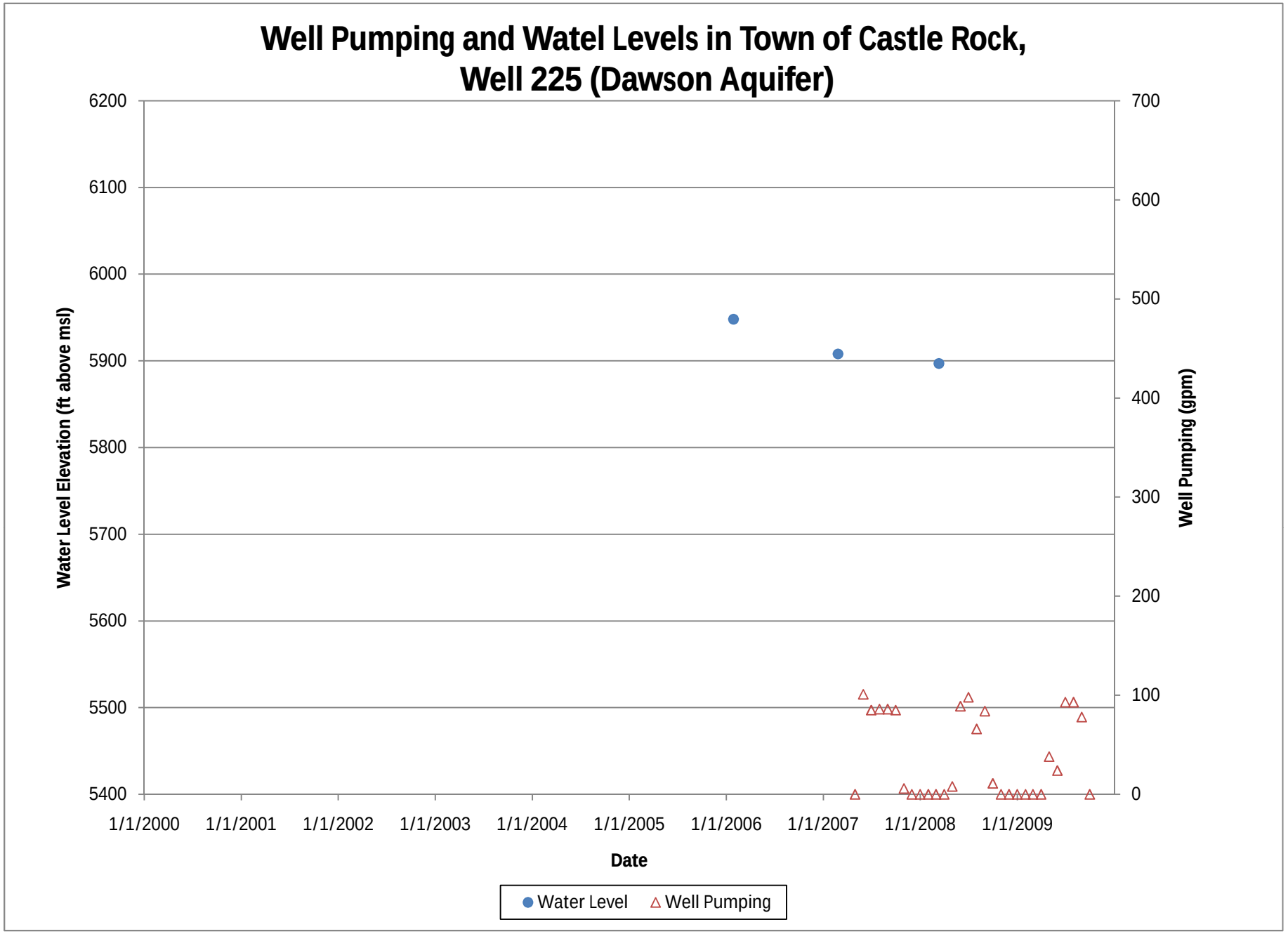
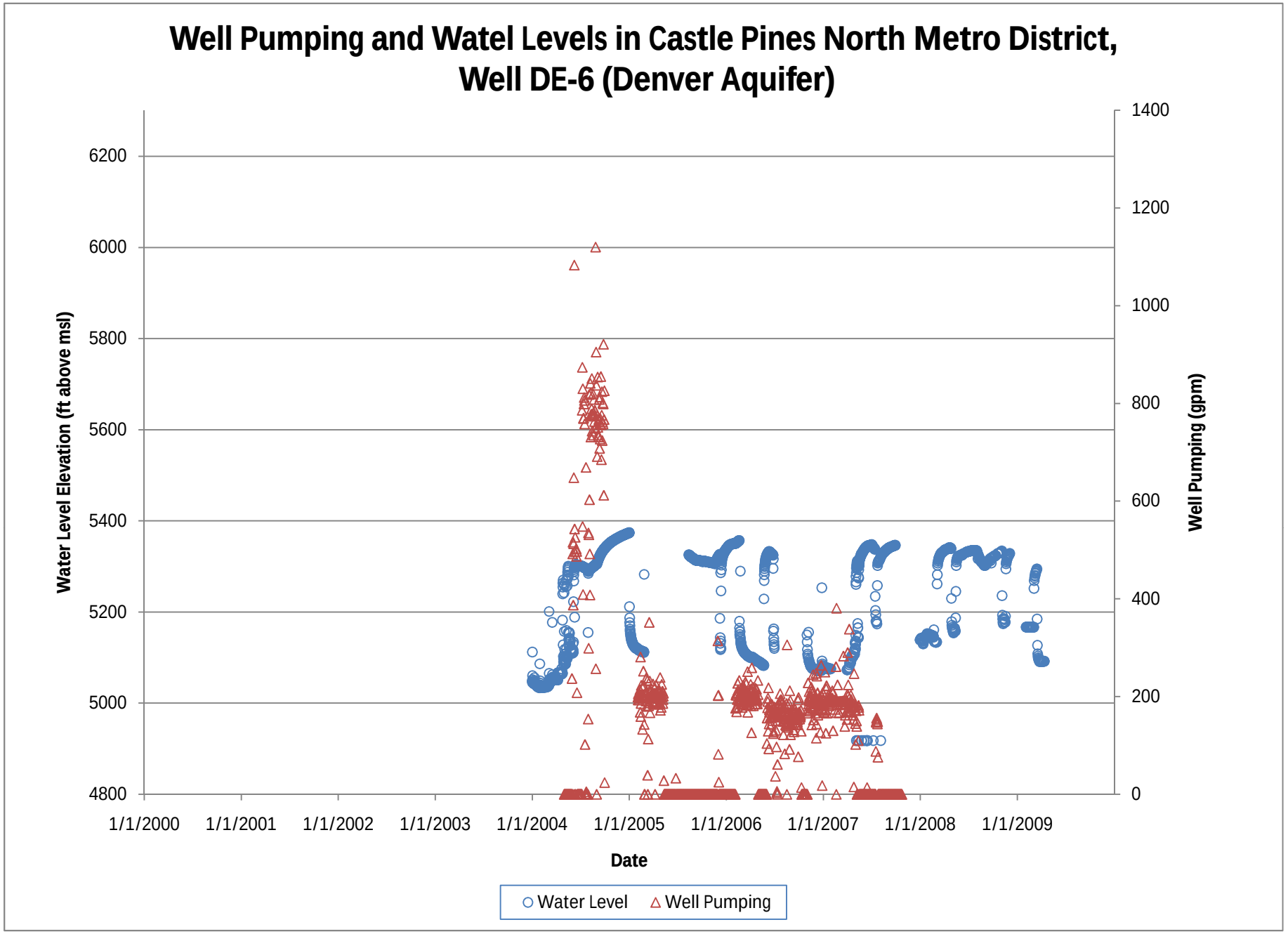
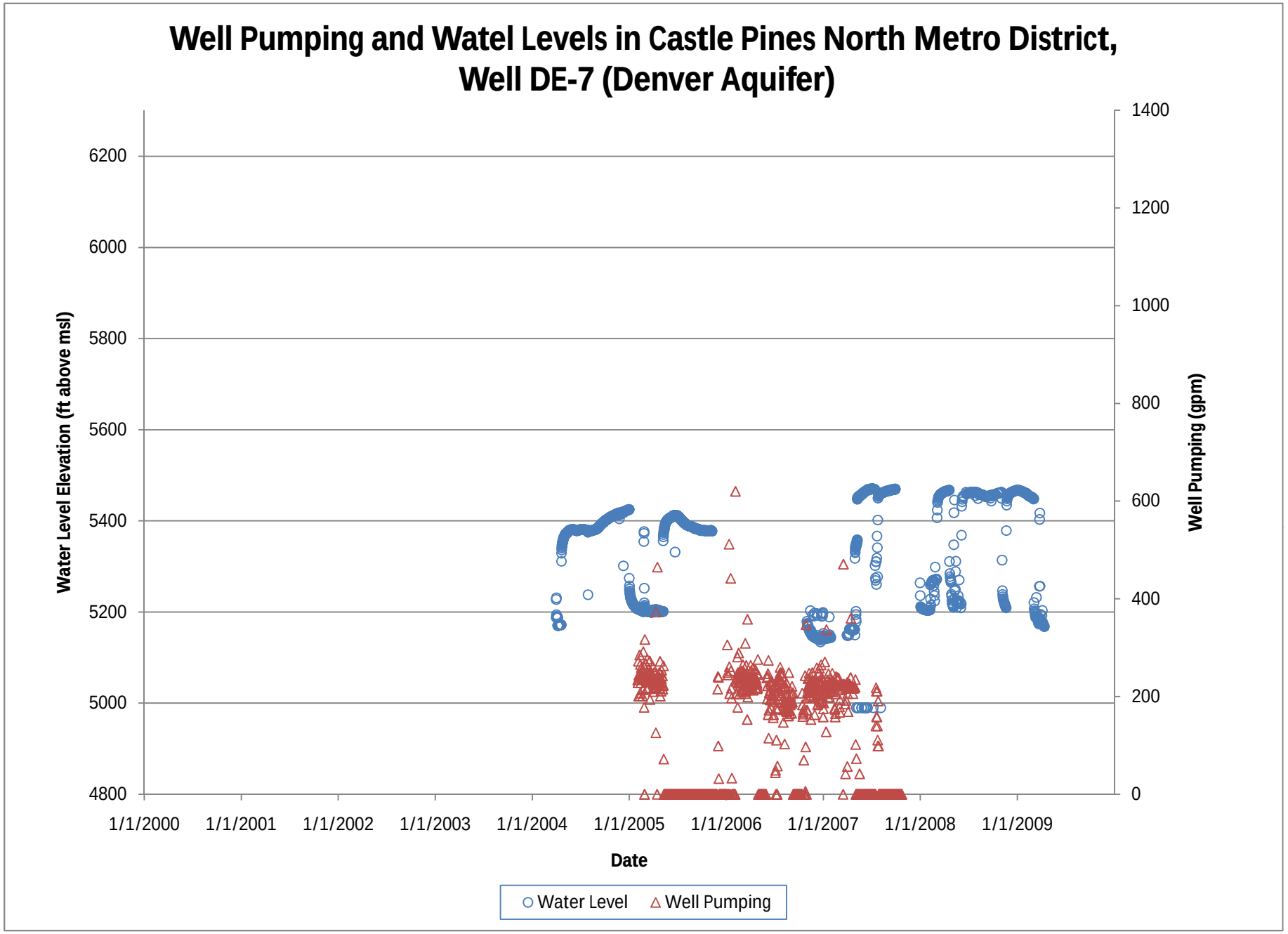
6100
6000
5900
5800
5700
5600
5500
5400
700
600
500
400
300
200
100
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

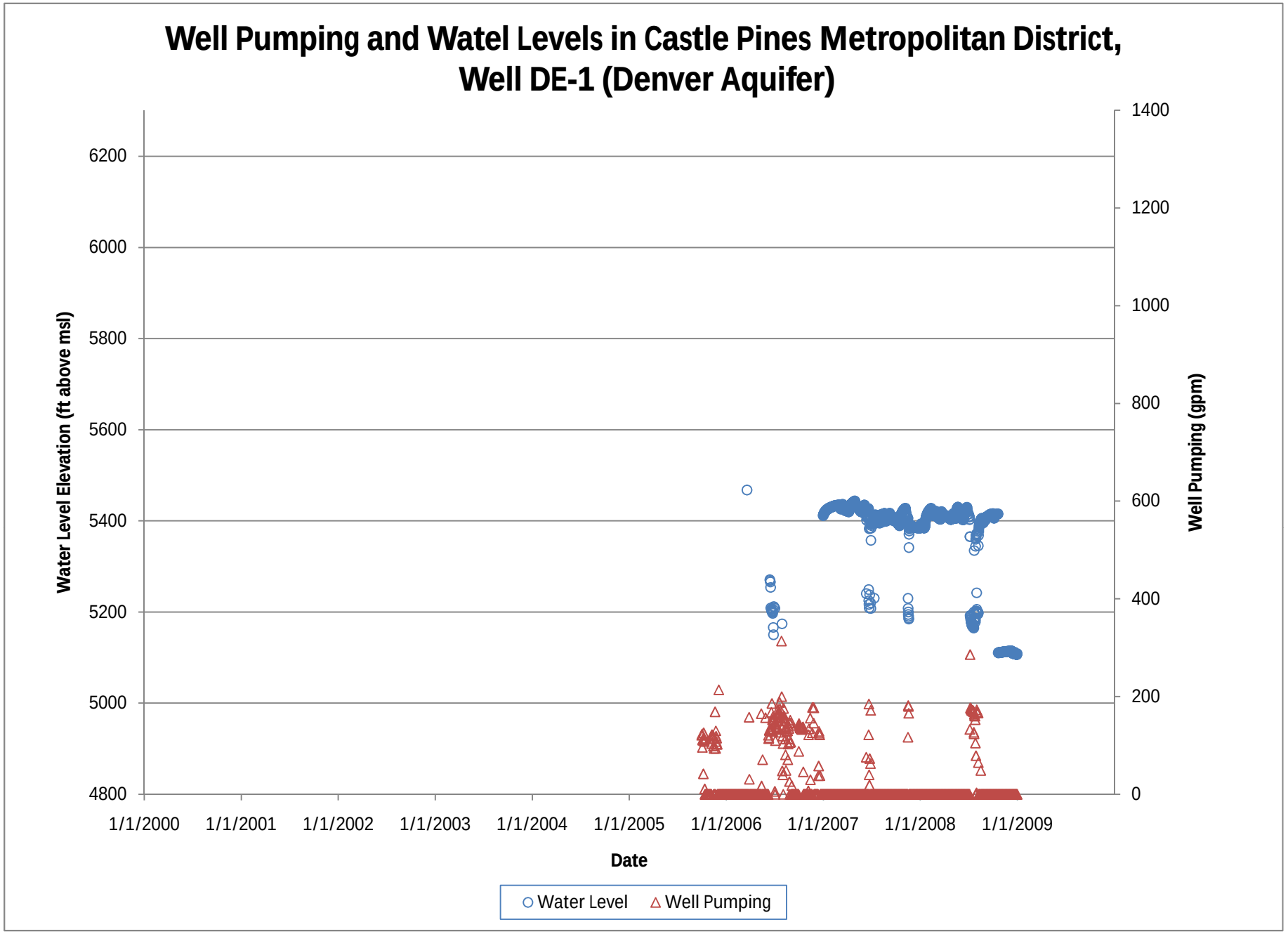

Well Pumping and Watel Levels in Town of Castle Rock, Well 170 (Dawson Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6100
6000
5900
5800
5700
5600
5500
5400
700
600
500
400
300
200
100
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

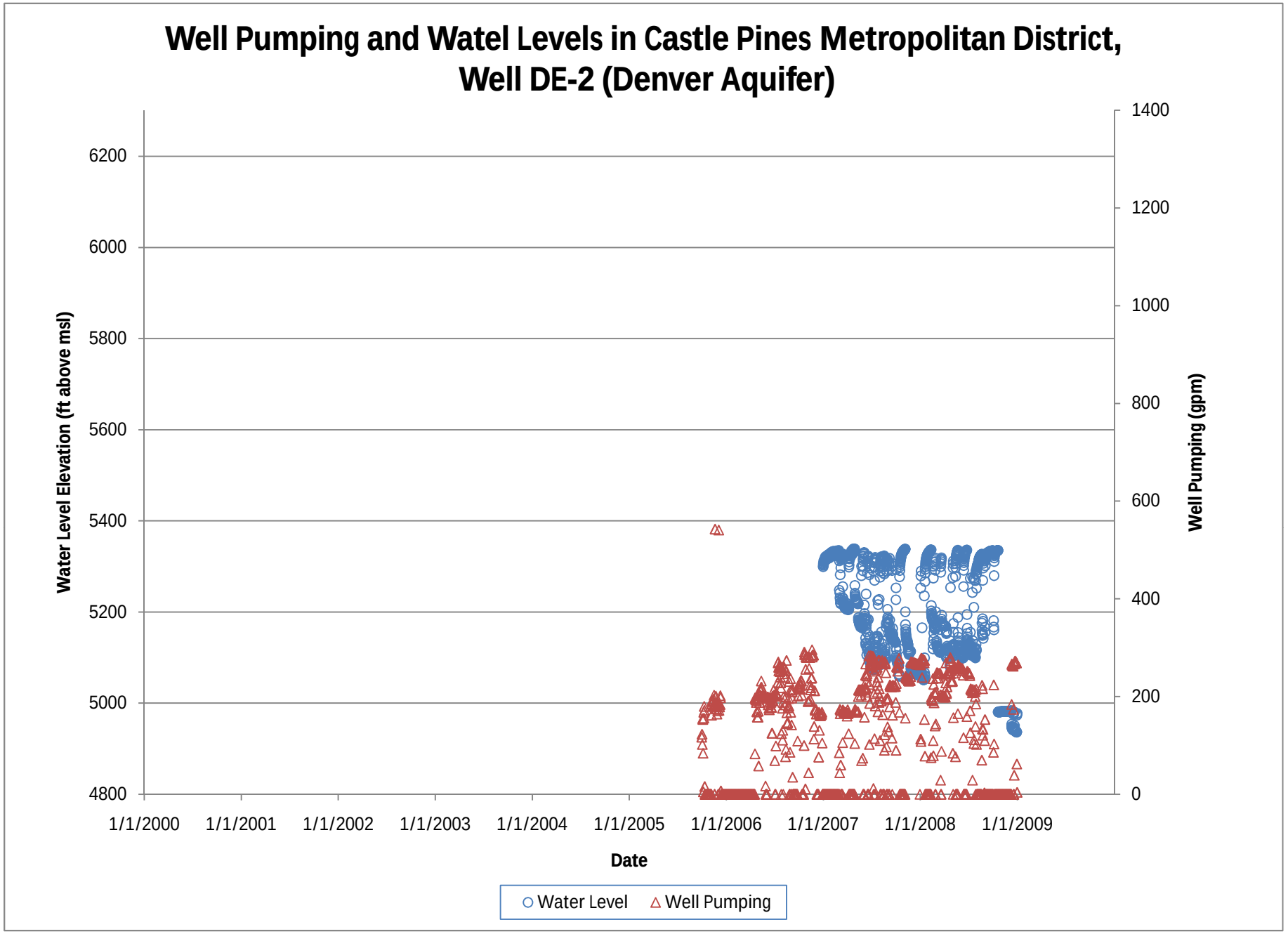

Well Pumping and Watel Levels in Town of Castle Rock, Well 222 (Dawson Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6100
6000
5900
5800
5700
5600
5500
5400
700
600
500
400
300
200
100
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

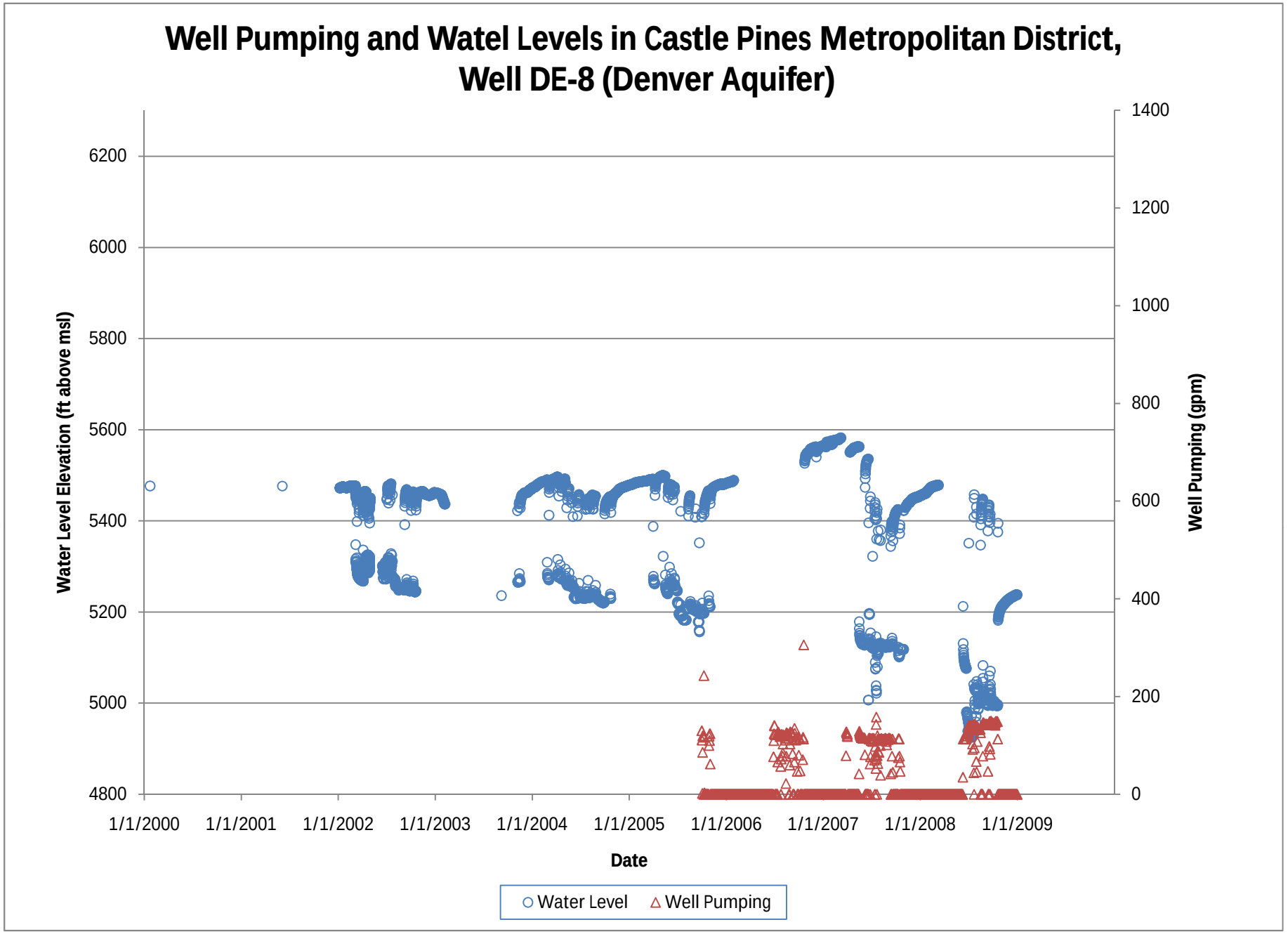

Well Pumping and Watel Levels in Town of Castle Rock, Well 225 (Dawson Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6100
6000
5900
5800
5700
5600
5500
5400
700
600
500
400
300
200
100
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

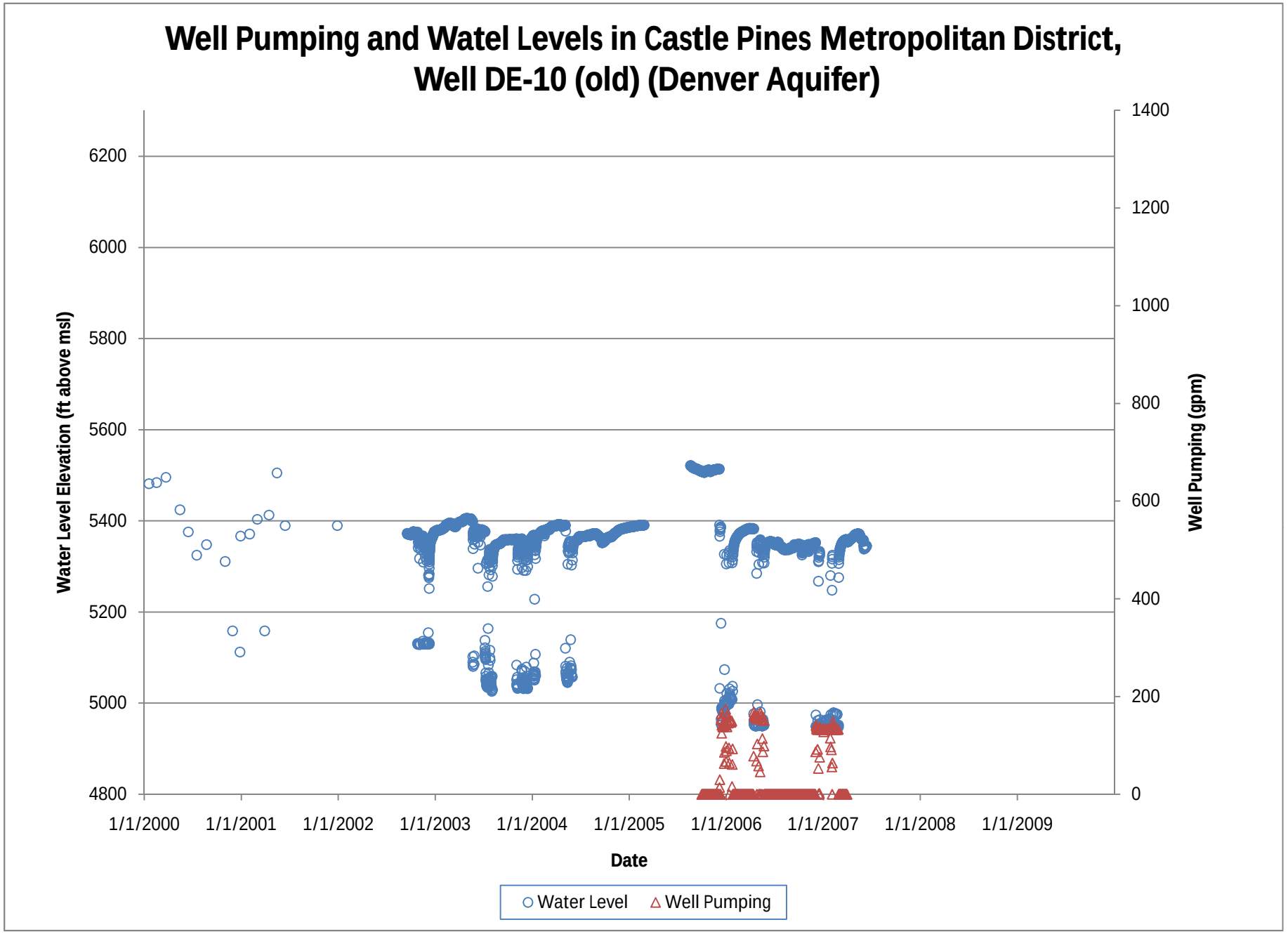

Well Pumping and Watel Levels in Castle Pines North Metro District, Well DE-6 (Denver Aquifer)
Water Level Elevation (ft above msl)
6200
6000
5800
5600
5400
5200
5000
4800
Well Pumping (gpm)
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

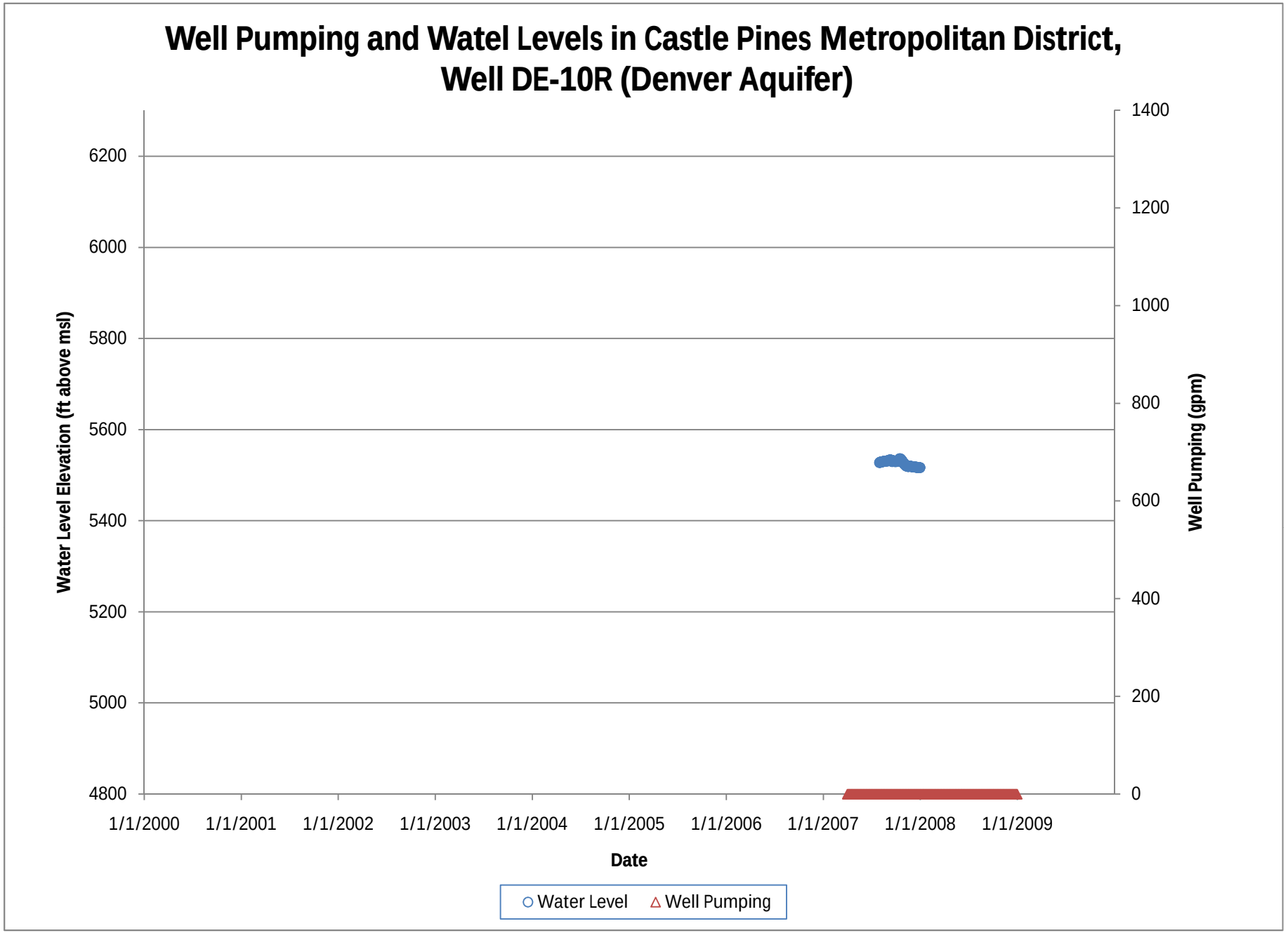

Well Pumping and Watel Levels in Castle Pines North Metro District, Well DE-7 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

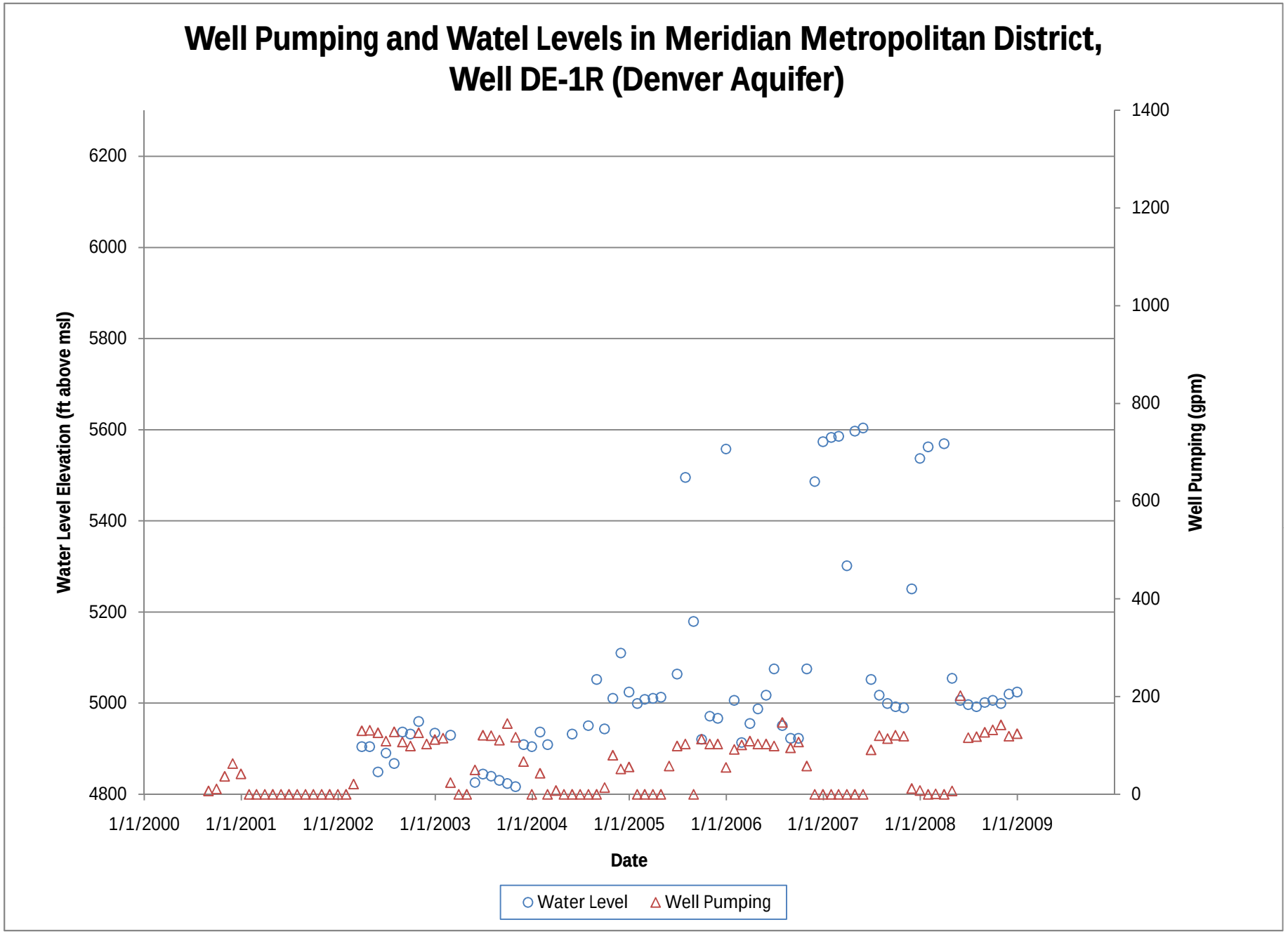

Well Pumping and Watel Levels in Castle Pines Metropolitan District, Well DE-1 (Denver Aquifer)
Water Level Elevation (ft above msl)
6200
6000
5800
5600
5400
5200
5000
4800
Well Pumping (gpm)
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

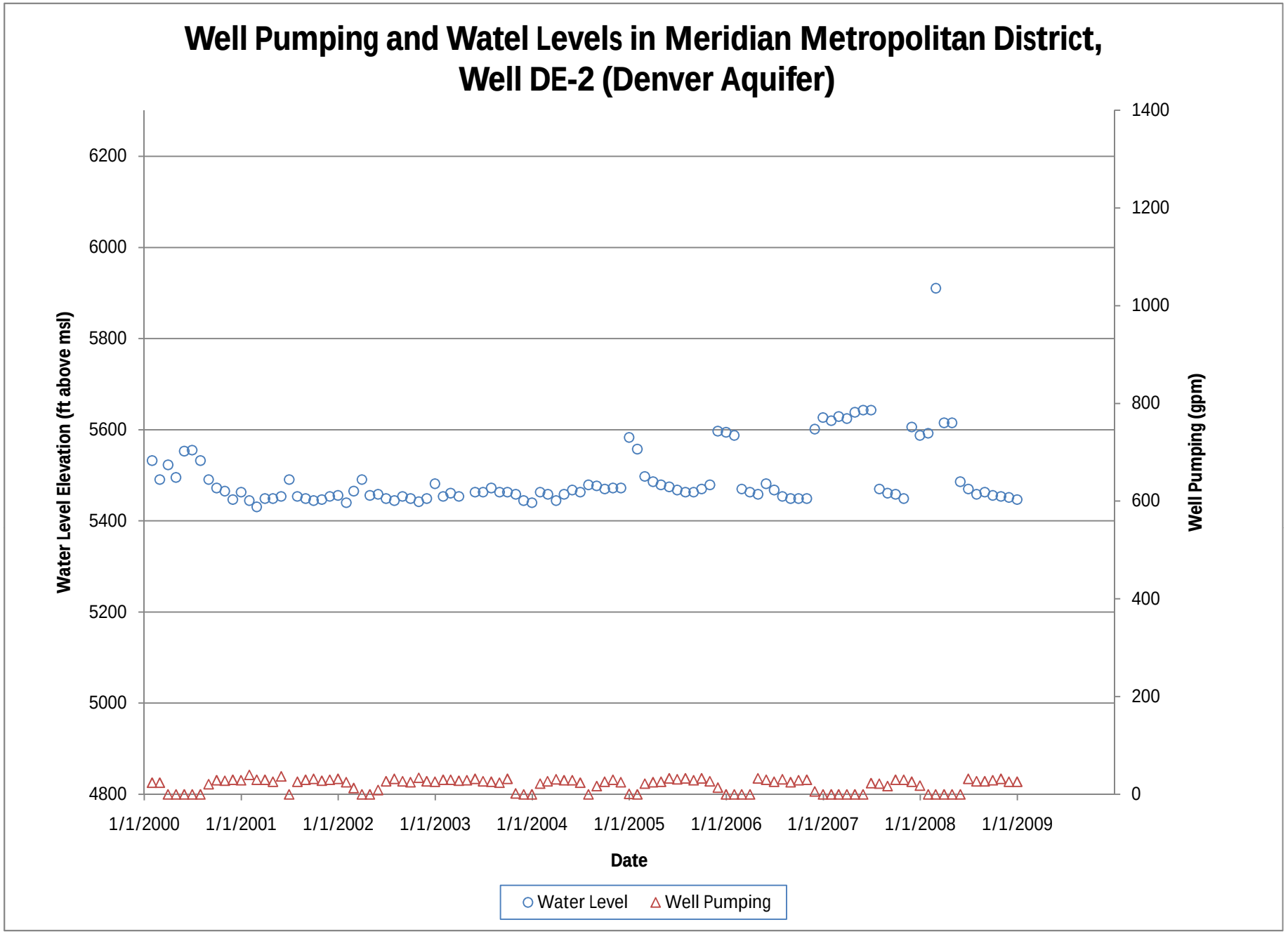

Well Pumping and Watel Levels in Castle Pines Metropolitan District, Well DE-2 (Denver Aquifer)
Water Level Elevation (ft above msl)
6200
6000
5800
5600
5400
5200
5000
4800
Well Pumping (gpm)
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

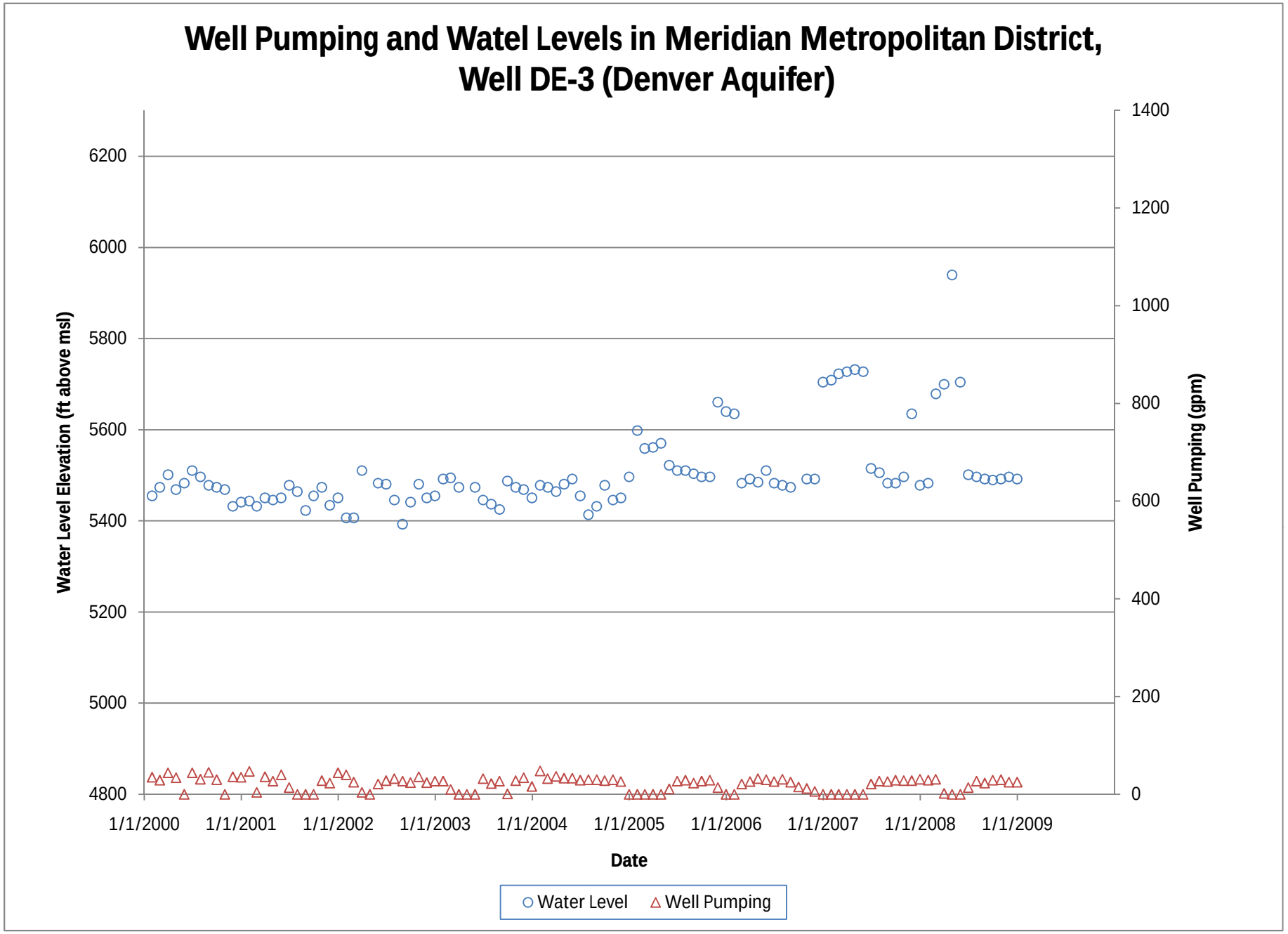

Well Pumping and Watel Levels in Castle Pines Metropolitan District, Well DE-8 (Denver Aquifer)
Water Level Elevation (ft above msl)
6200
6000
5800
5600
5400
5200
5000
4800
Well Pumping (gpm)
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

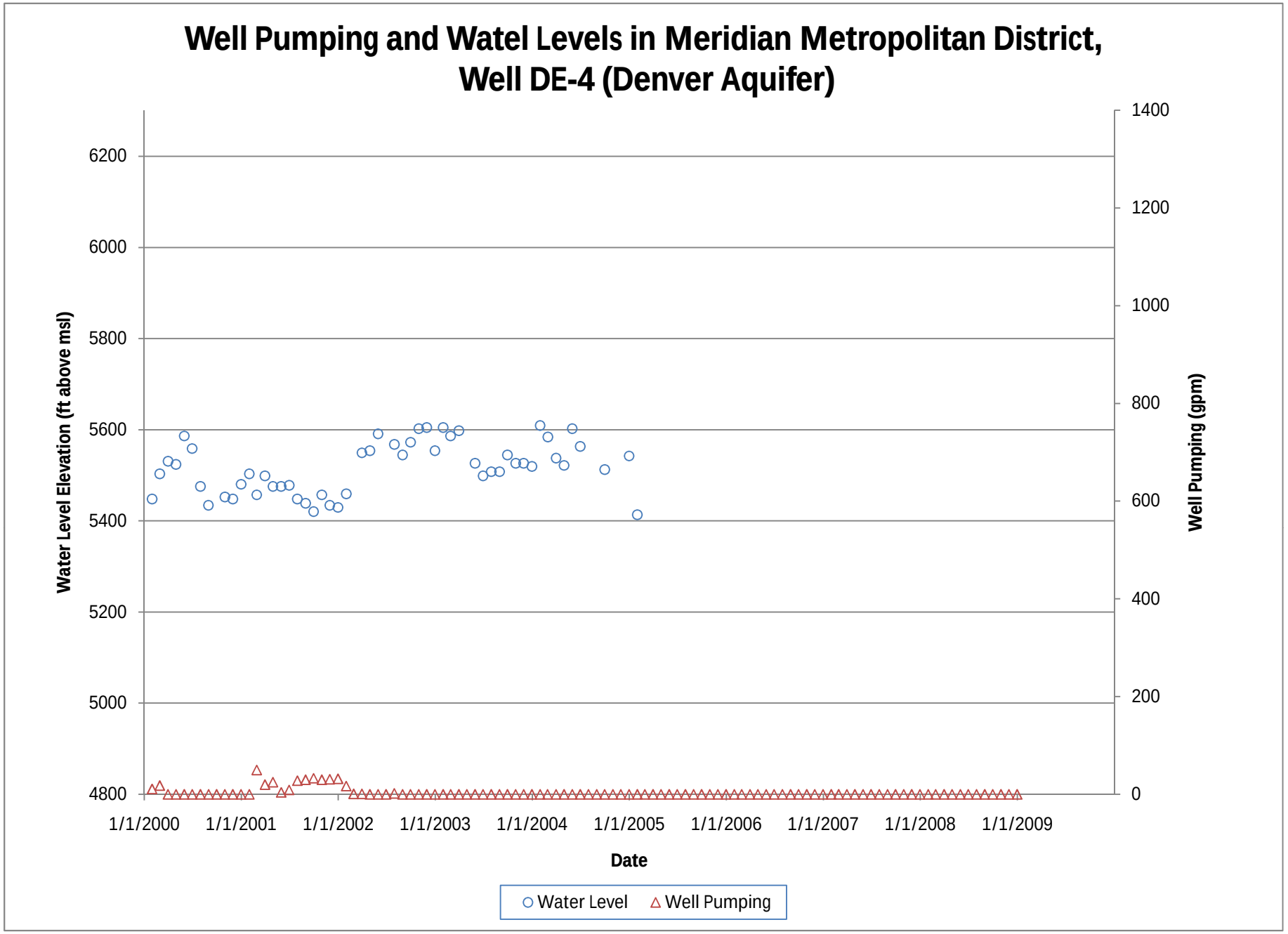

Well Pumping and Watel Levels in Castle Pines Metropolitan District, Well DE-10 (old) (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

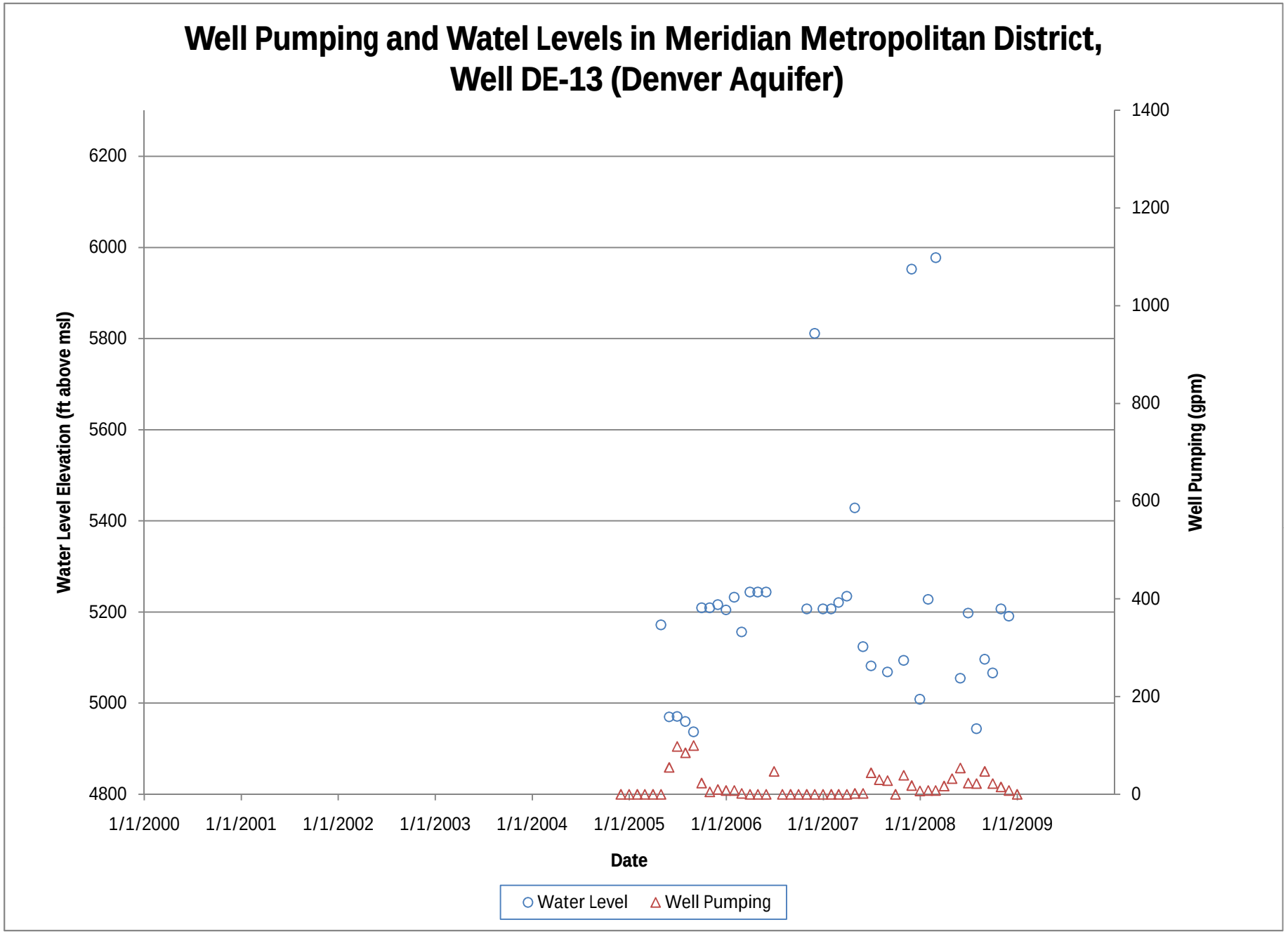

Well Pumping and Watel Levels in Castle Pines Metropolitan District, Well DE-10R (Denver Aquifer)
Water Level Elevation (ft above msl)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
Well Pumping (gpm)
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

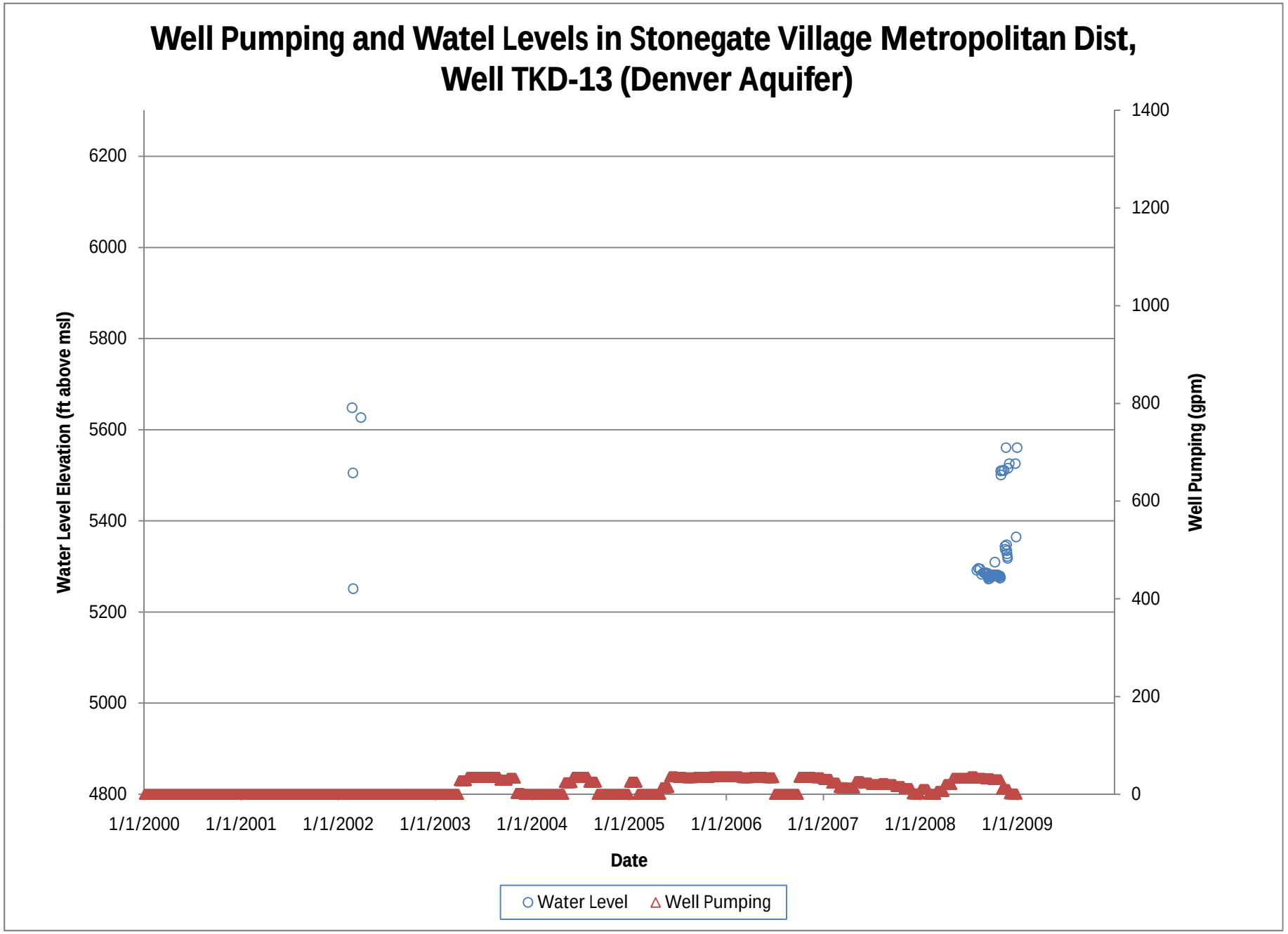

Well Pumping and Watel Levels in Meridian Metropolitan District, Well DE-1R (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

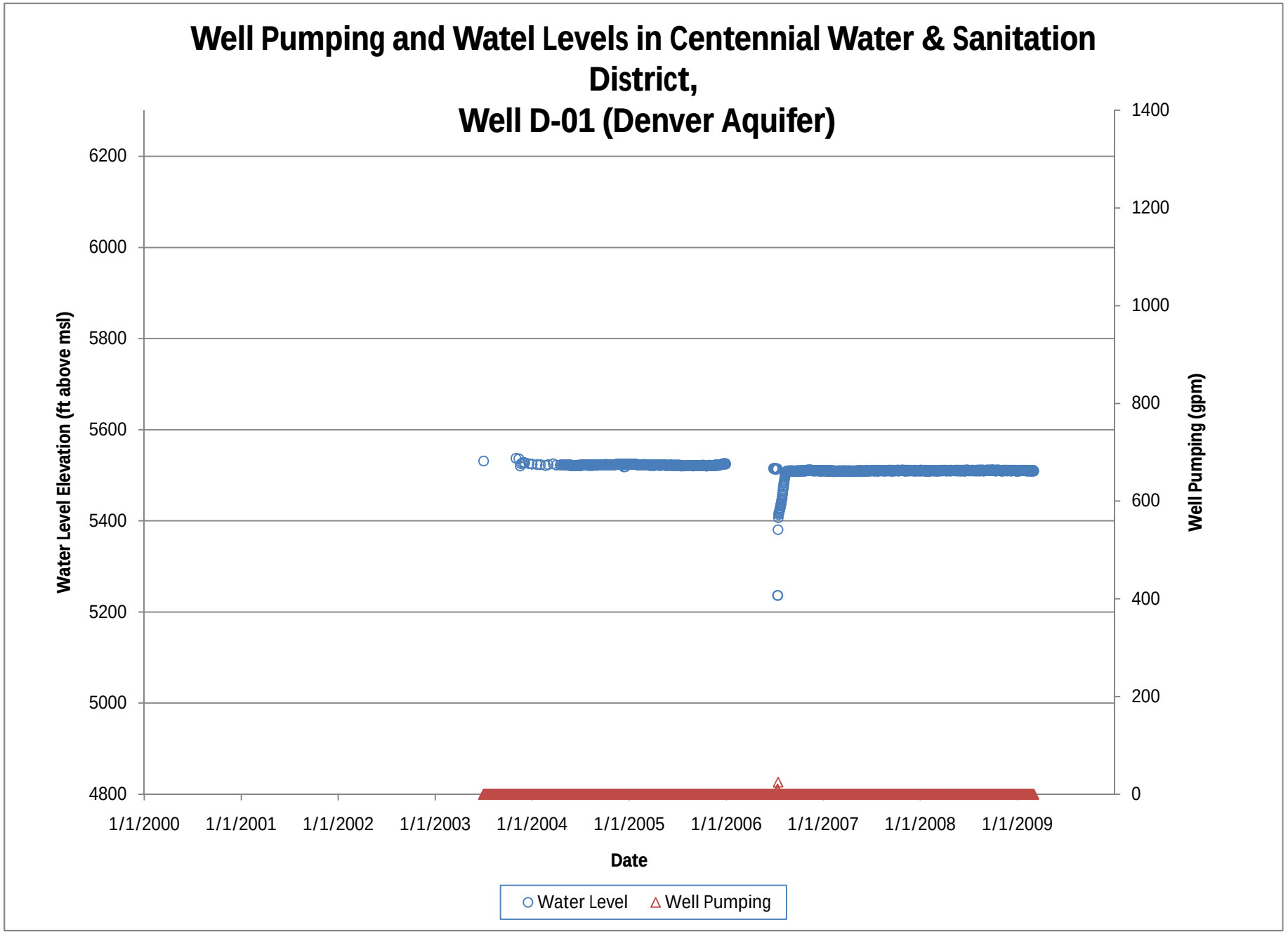

Well Pumping and Watel Levels in Meridian Metropolitan District, Well DE-2 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

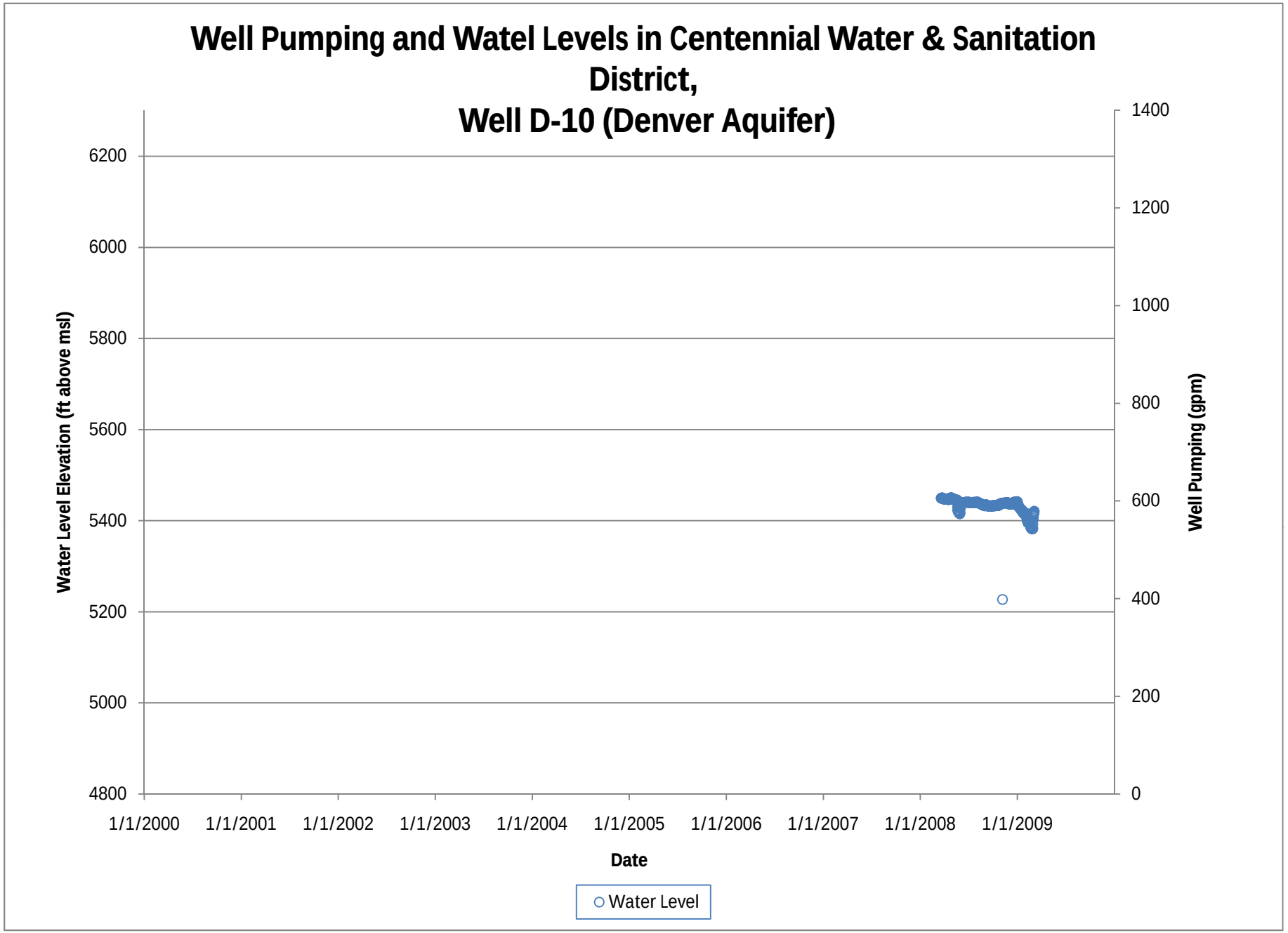

Well Pumping and Watel Levels in Meridian Metropolitan District, Well DE-3 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

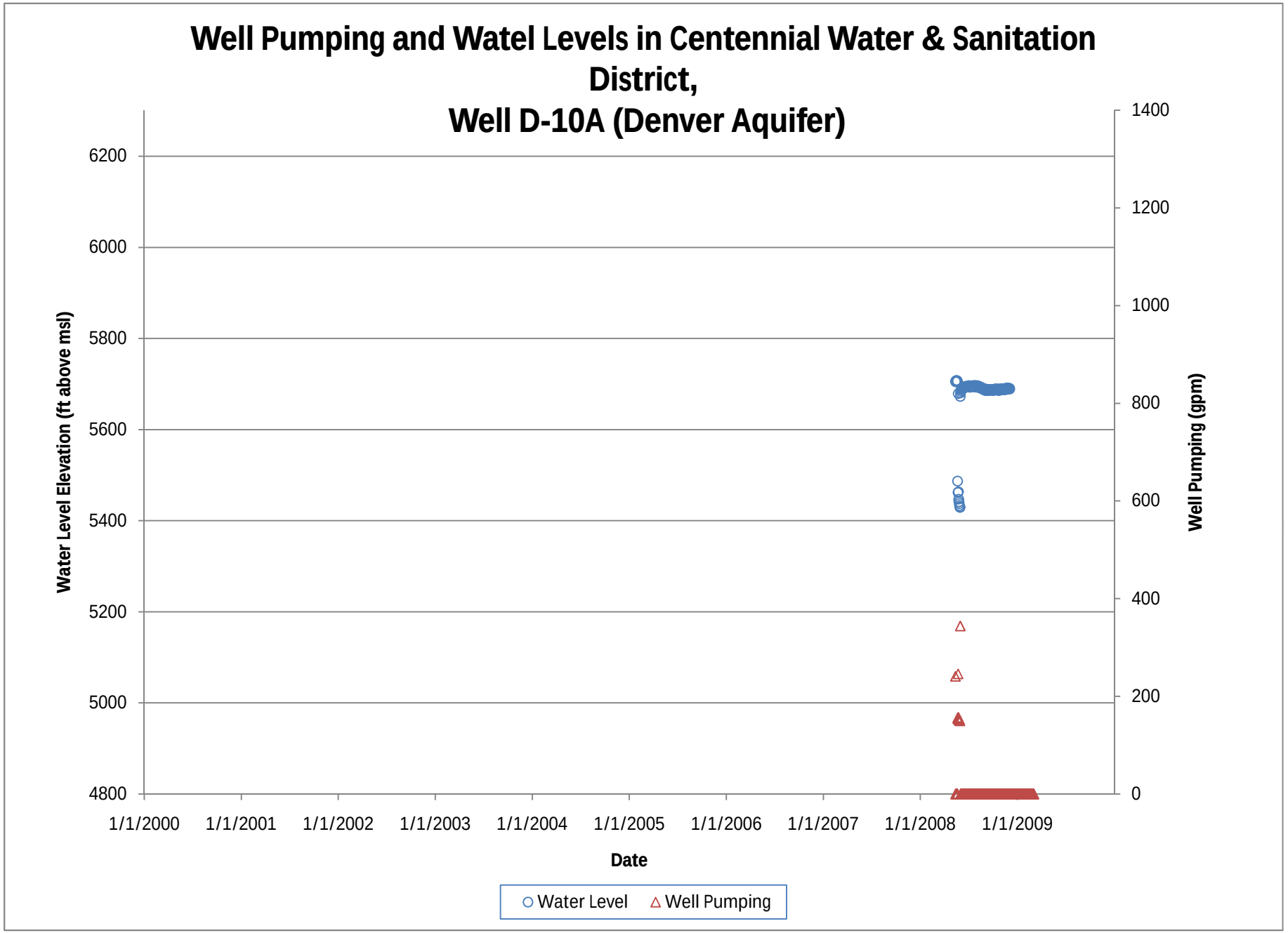

Well Pumping and Watel Levels in Meridian Metropolitan District, Well DE-4 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

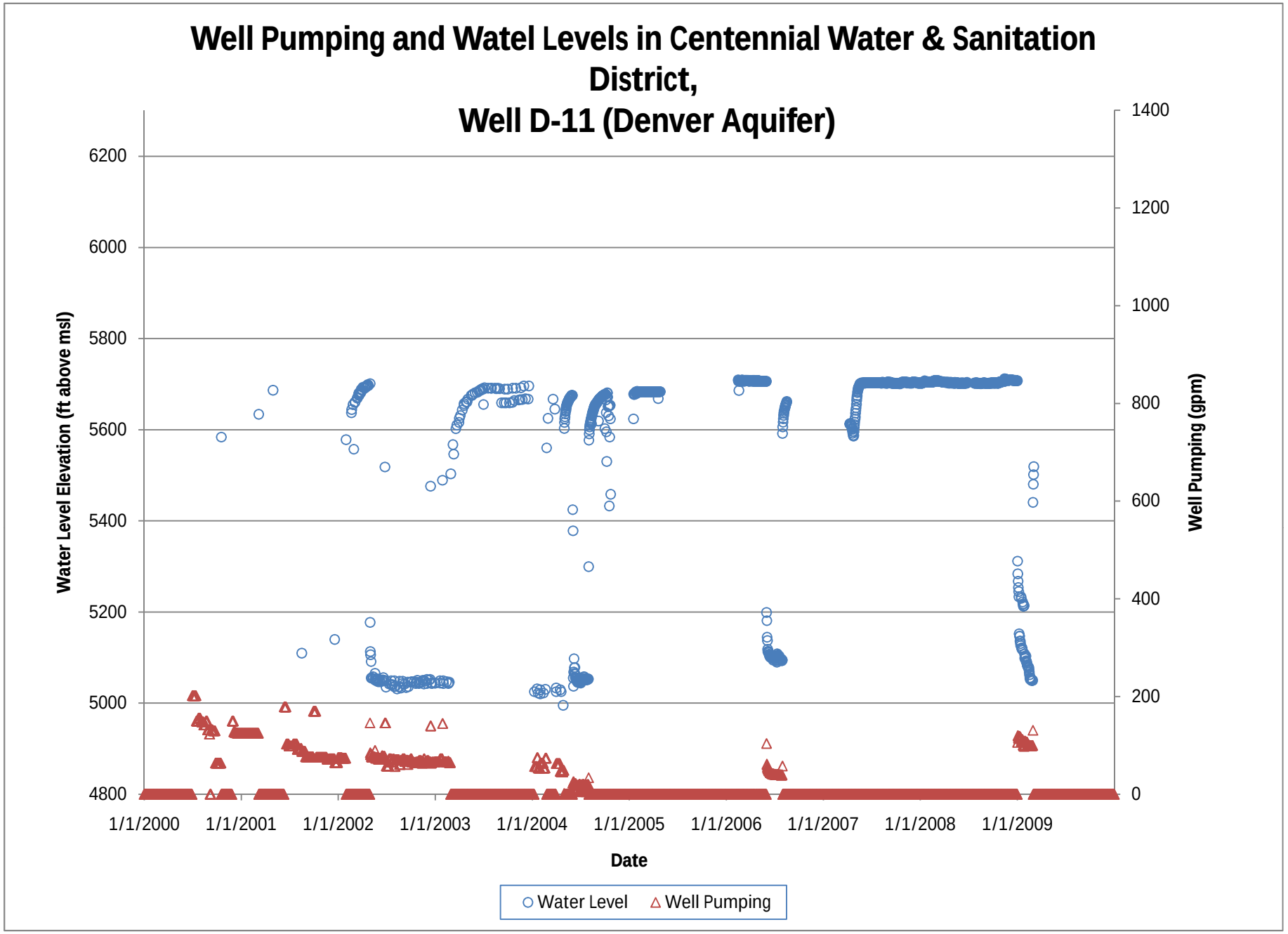

Well Pumping and Watel Levels in Meridian Metropolitan District, Well DE-13 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

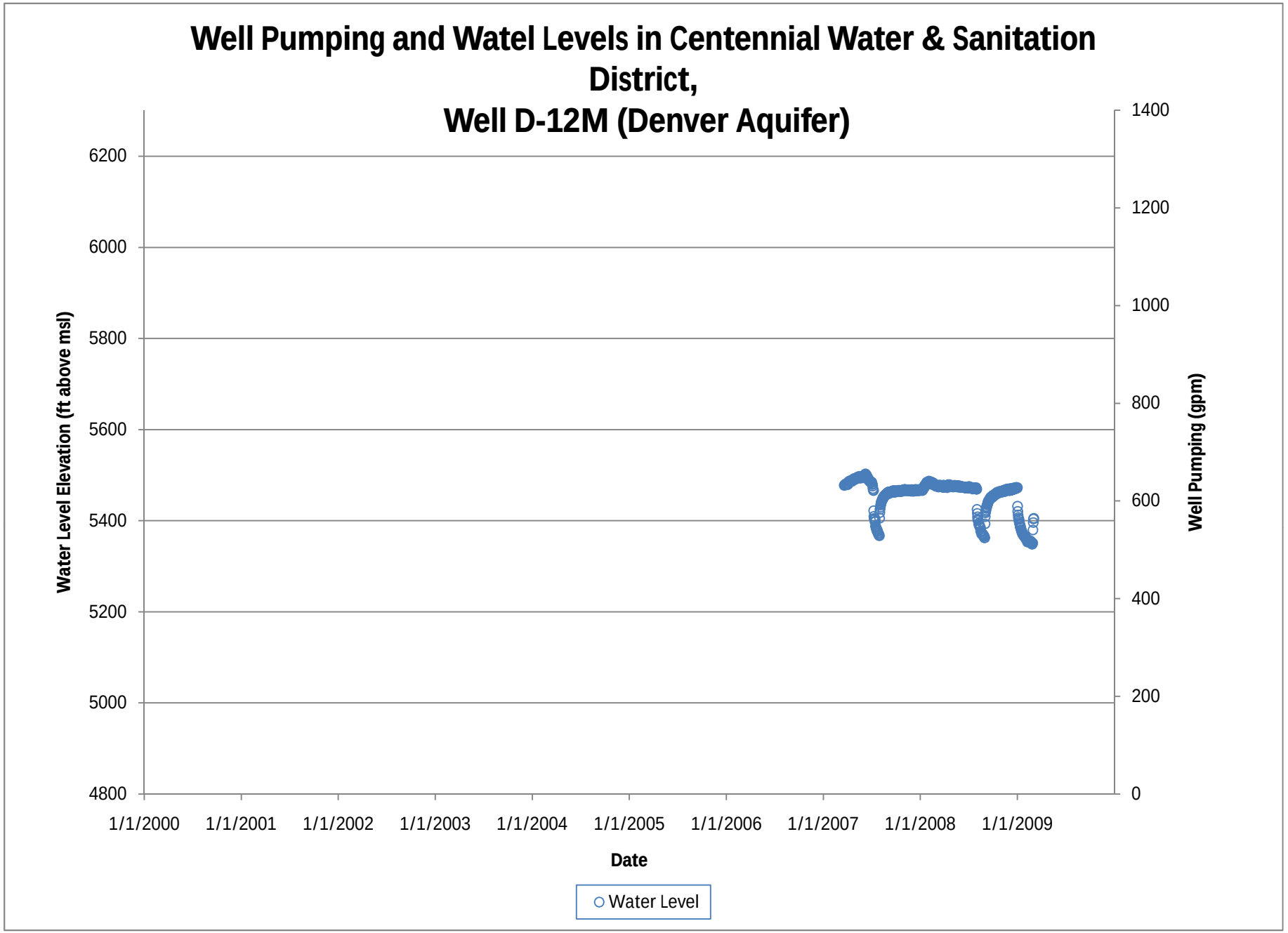

Well Pumping and Watel Levels in Stonegate Village Metropolitan Dist, Well TKD-13 (Denver Aquifer)
Water Level Elevation (ft above msl)
6200
6000
5800
5600
5400
5200
5000
4800
Well Pumping (gpm)
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

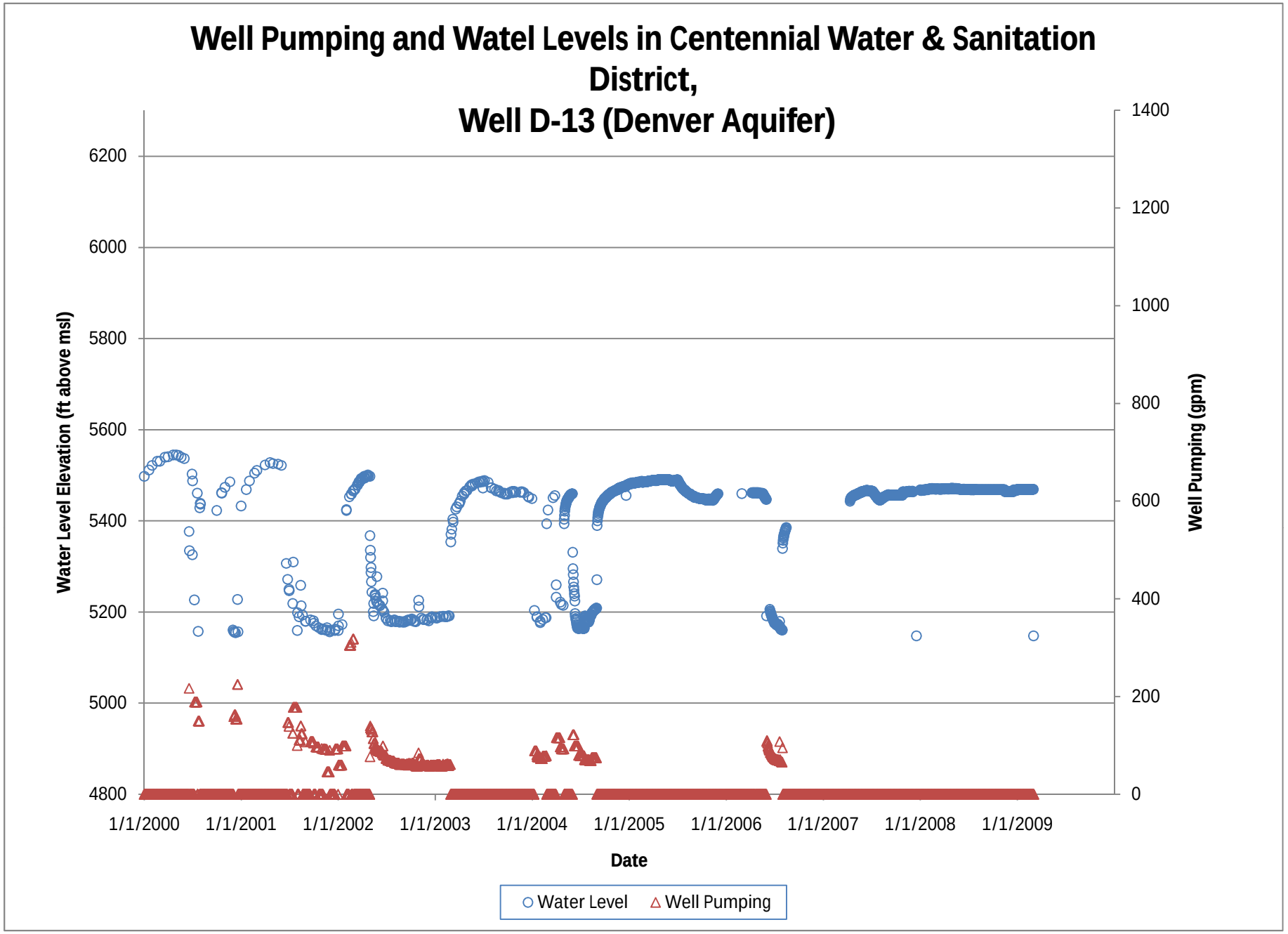

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well D-01 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

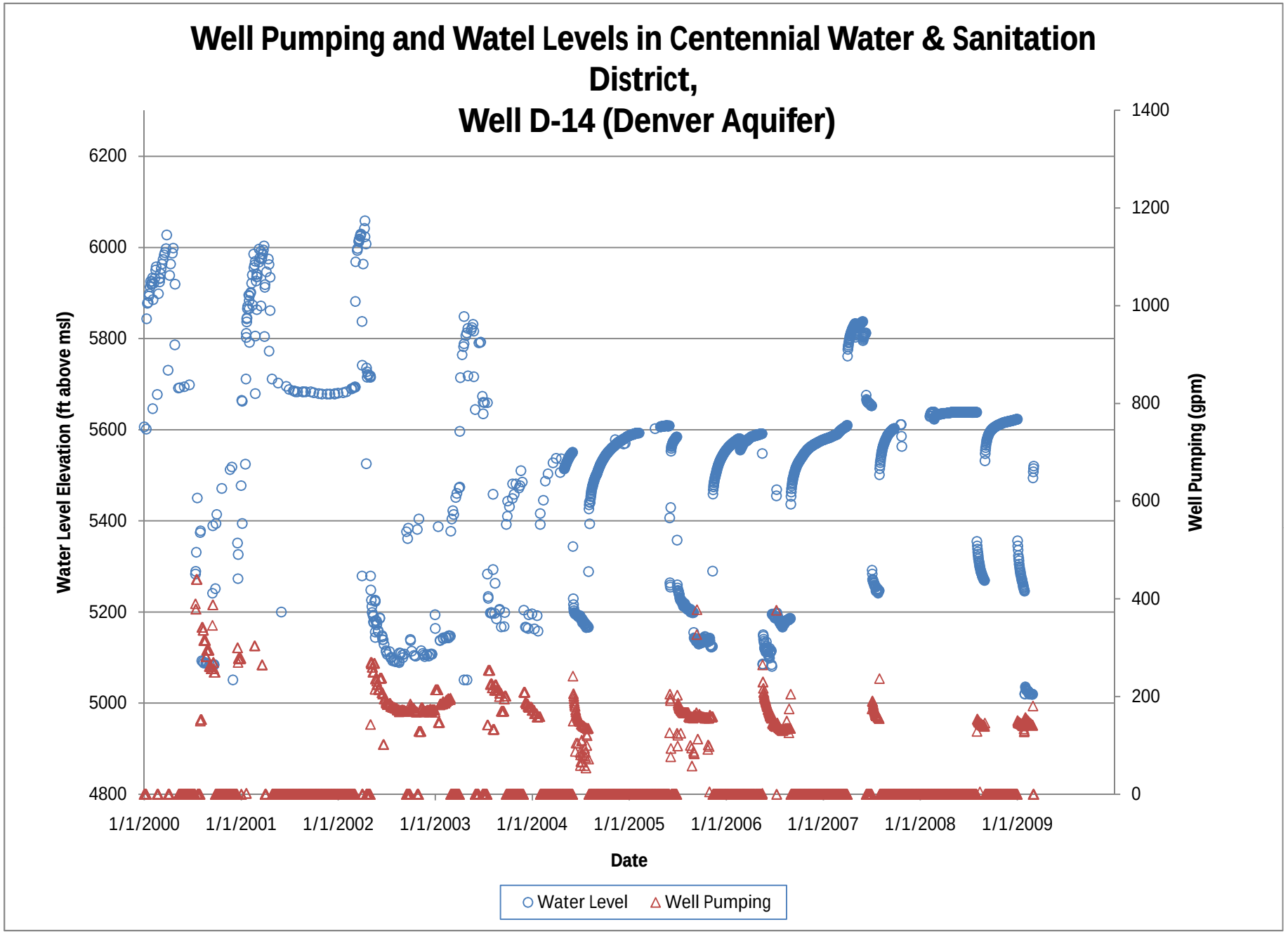

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well D-10 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level

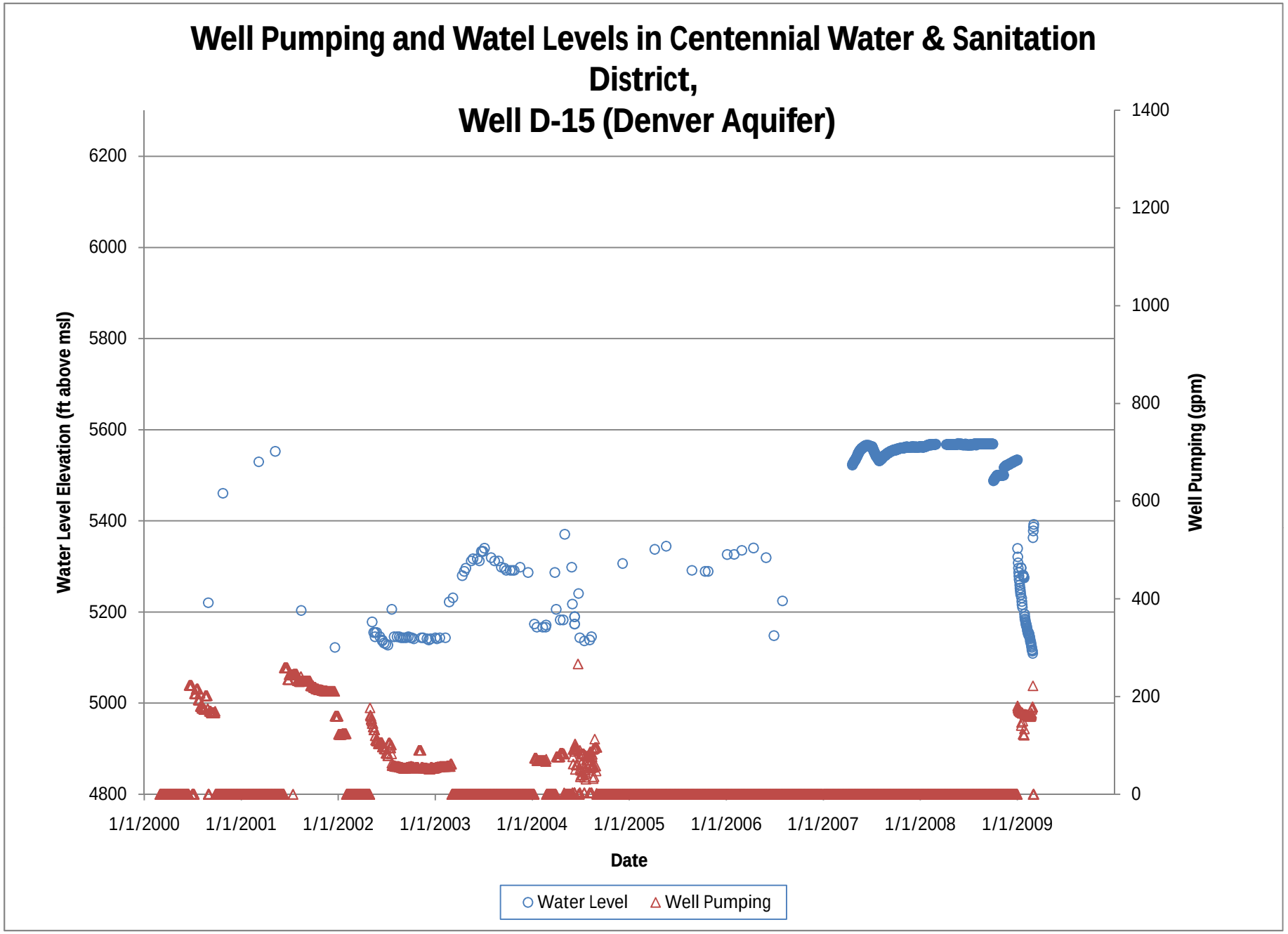

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well D-10A (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

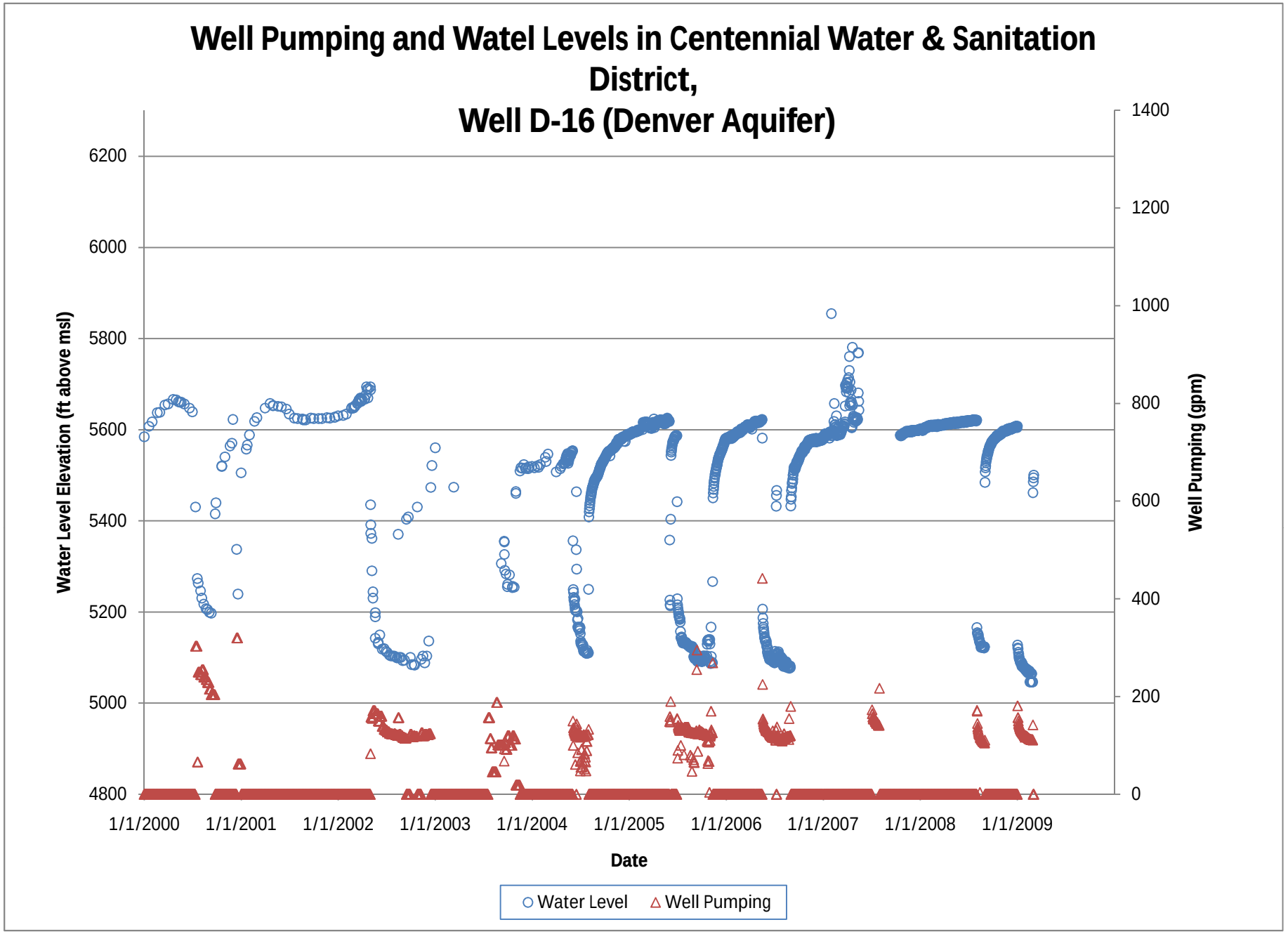

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well D-11 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

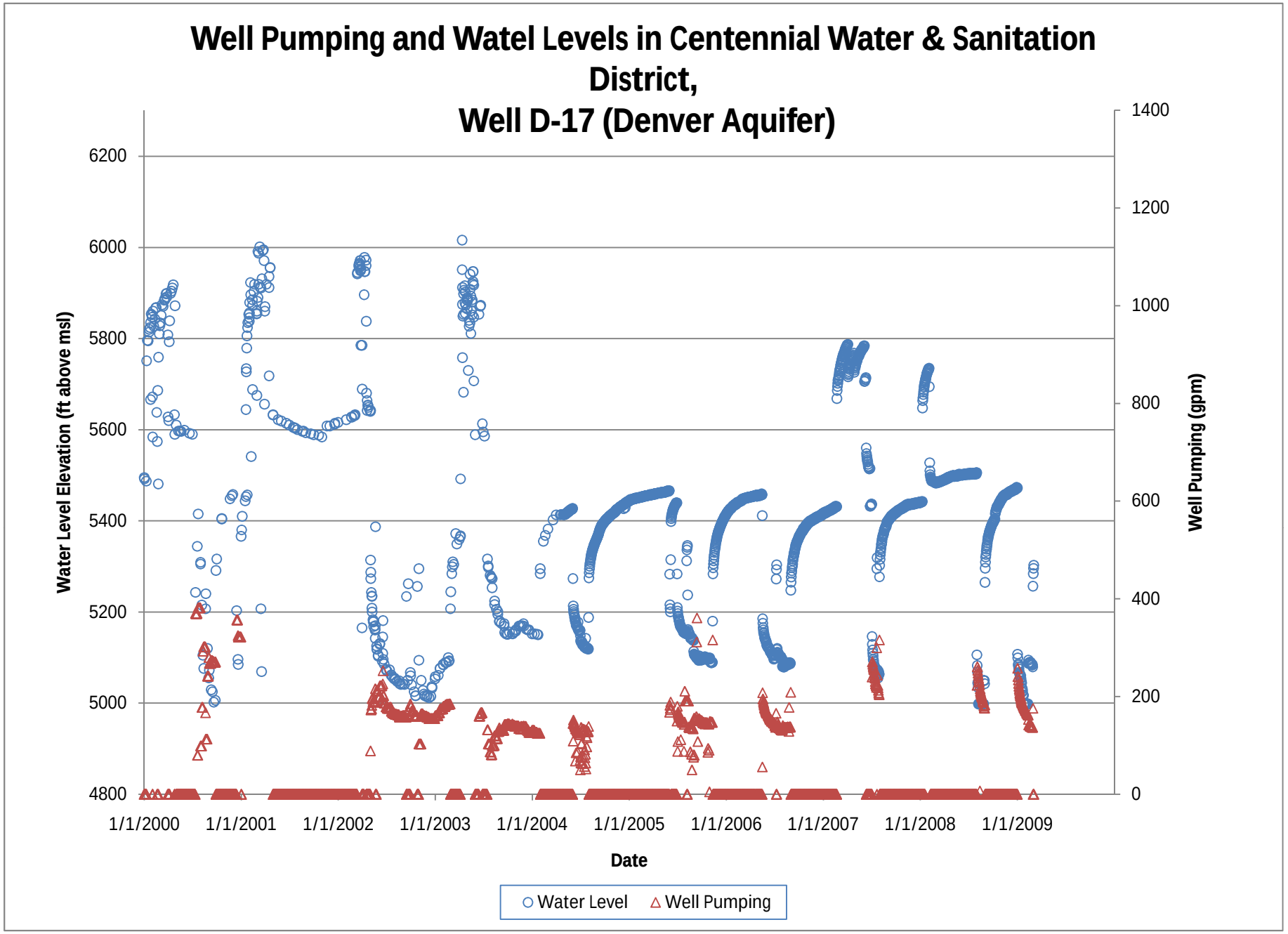

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well D-12M (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level

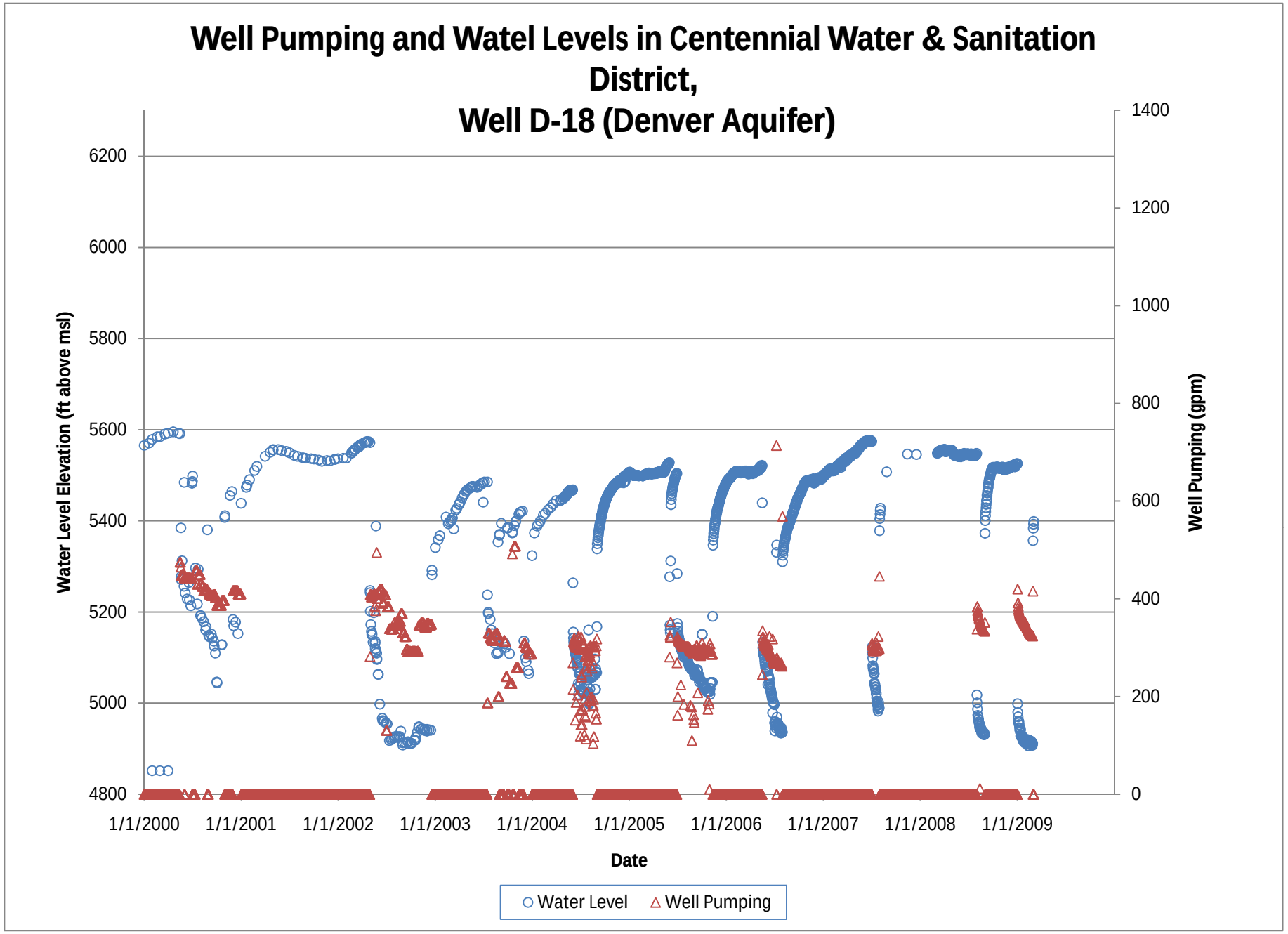

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well D-13 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

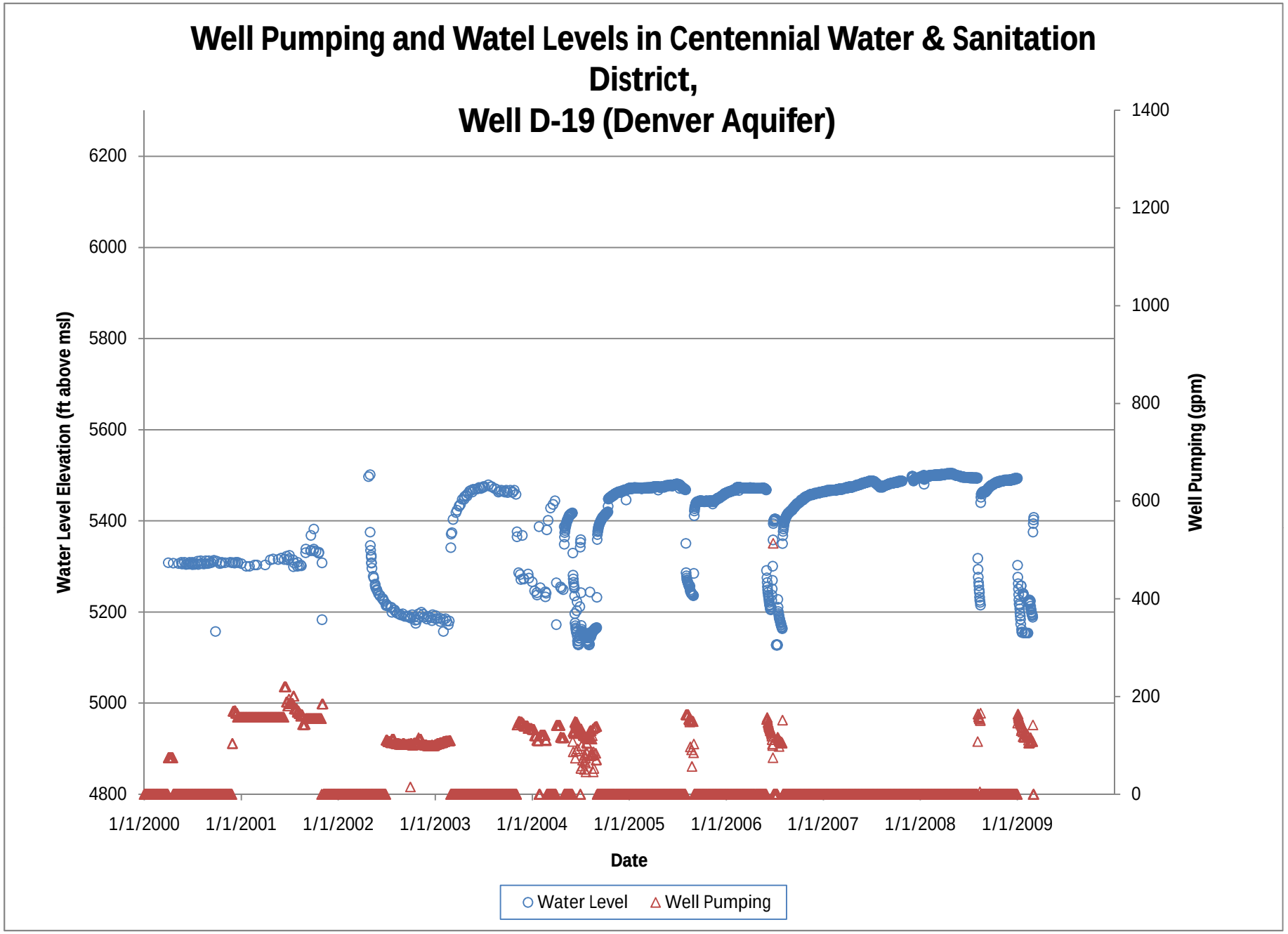

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well D-14 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

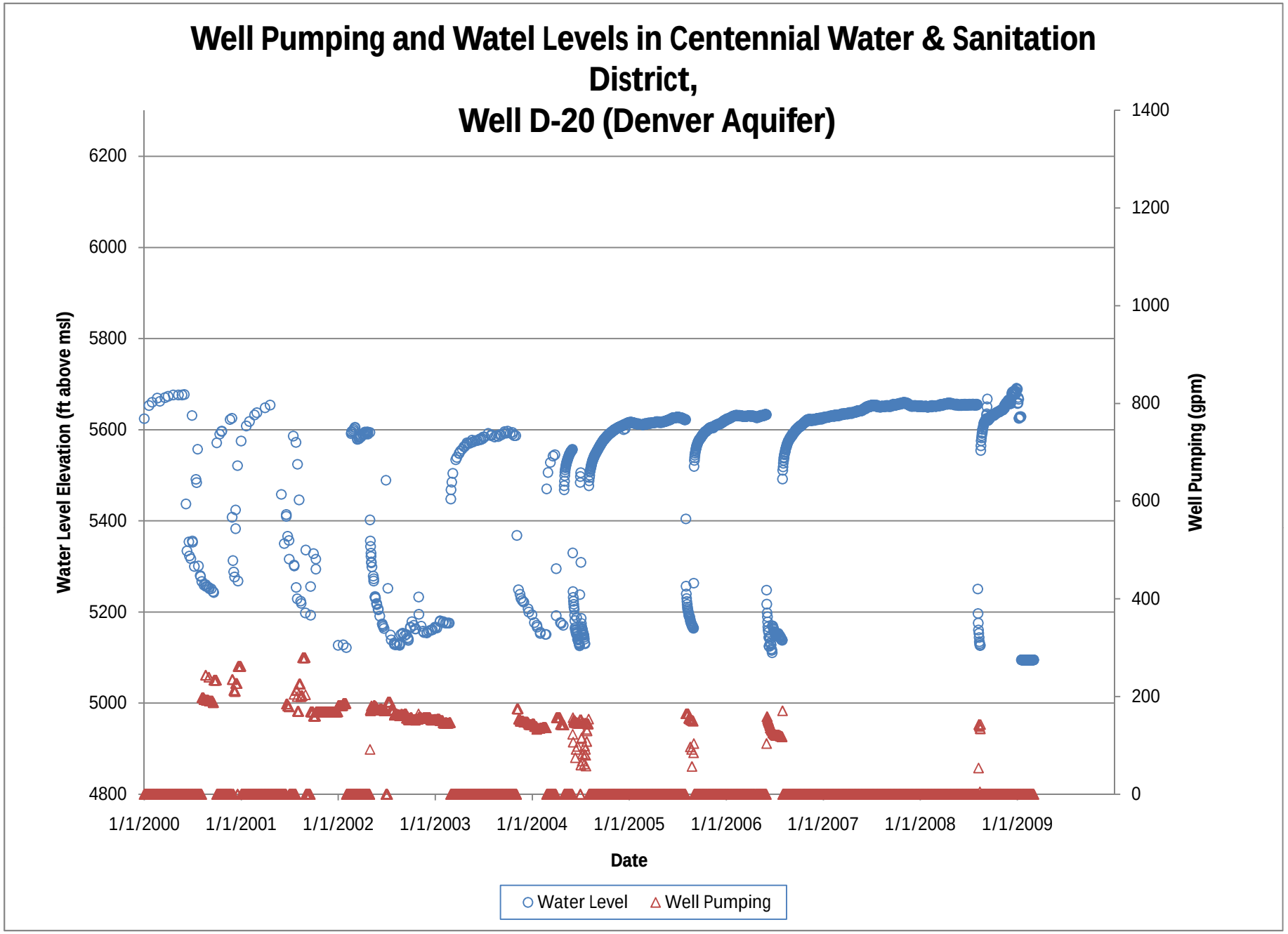

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well D-15 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

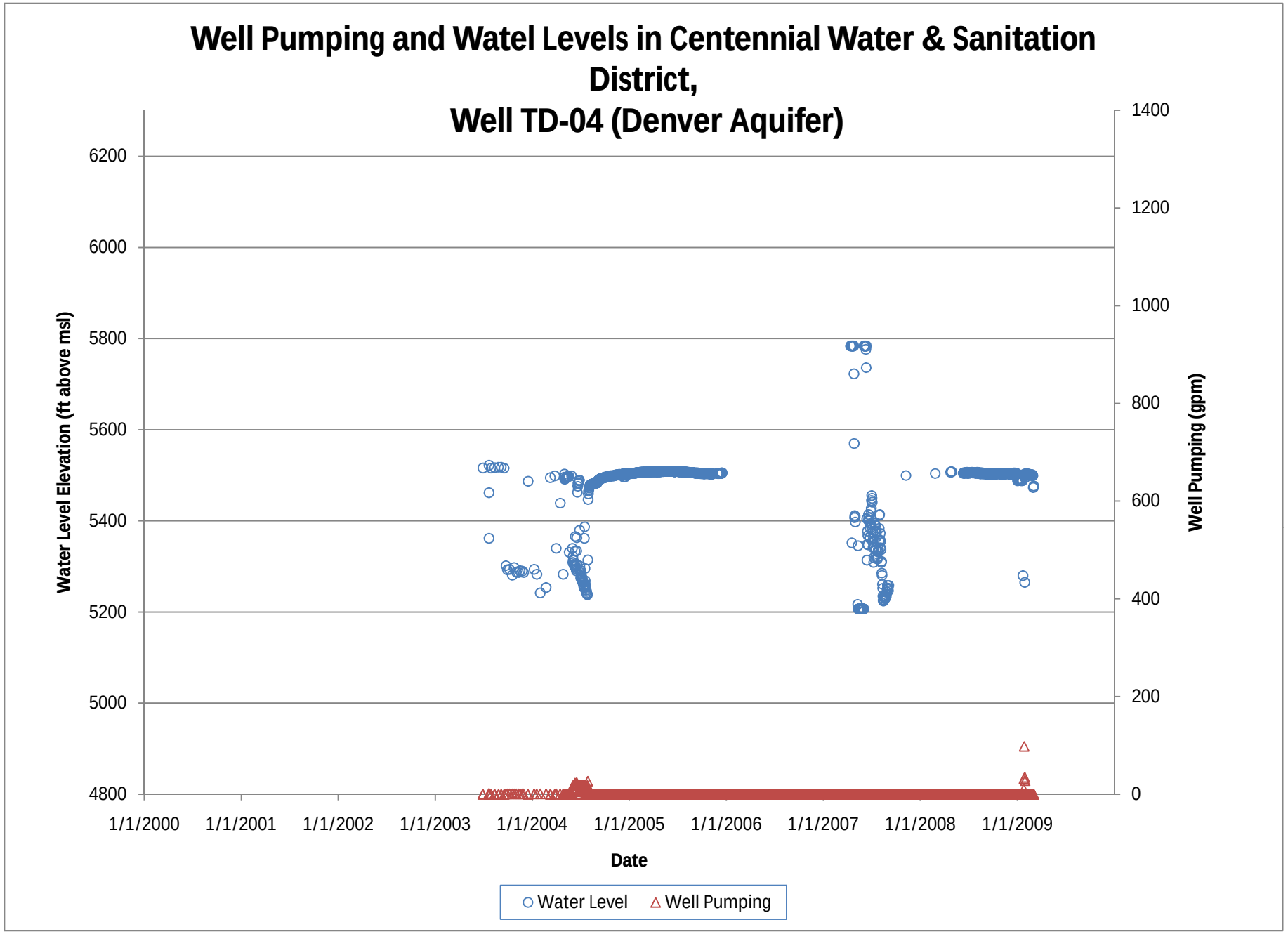

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well D-16 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

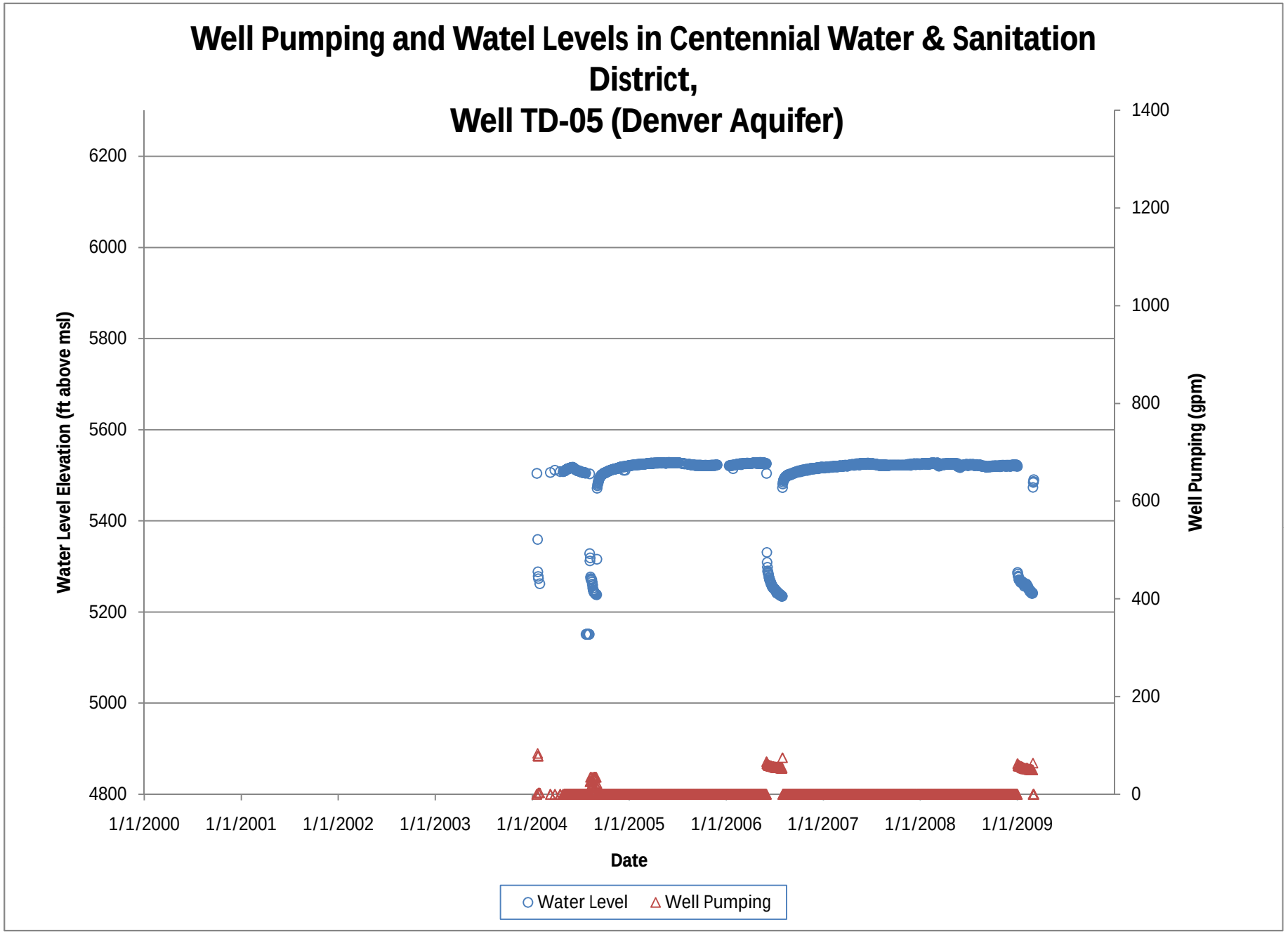

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well D-17 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

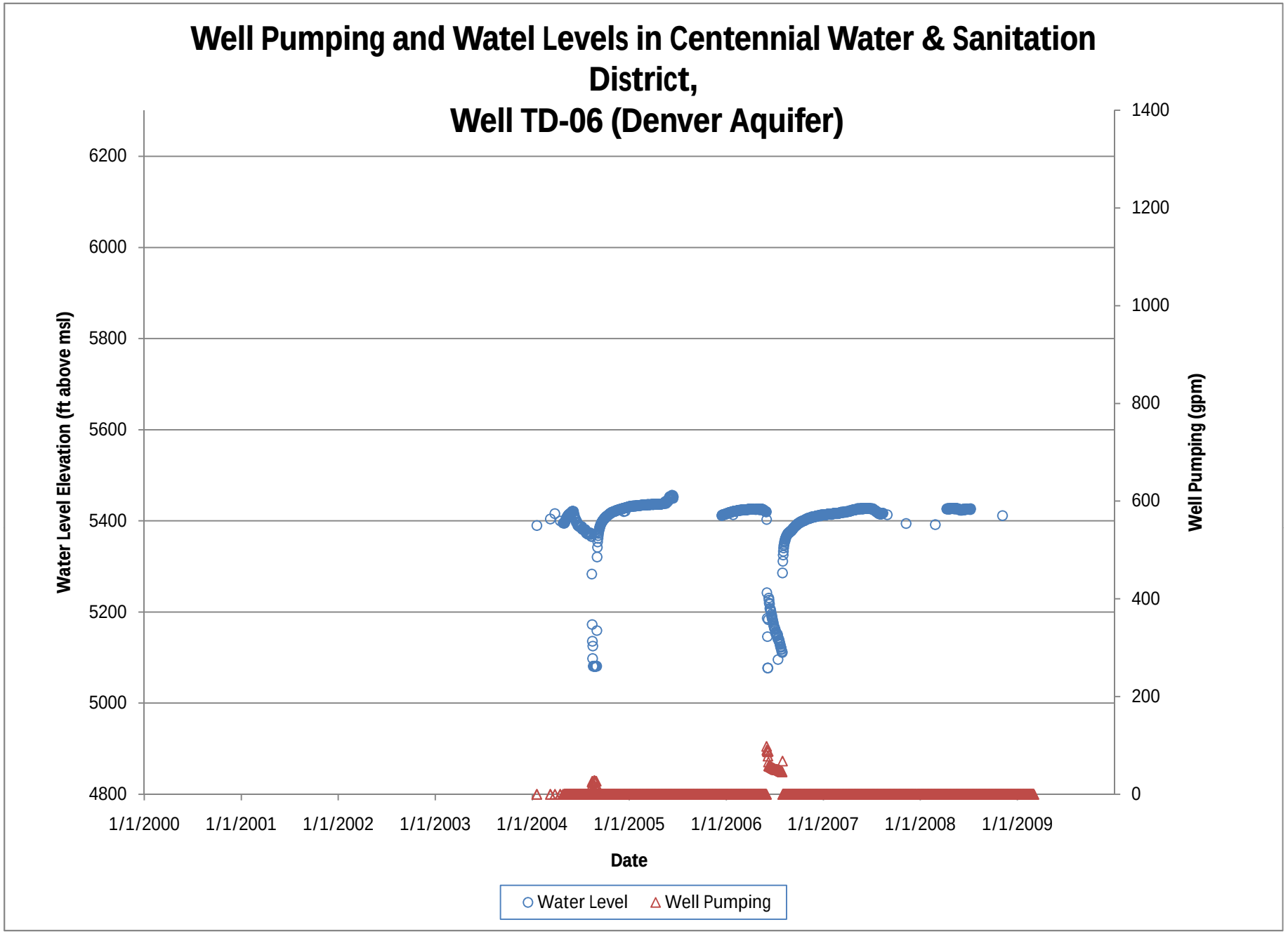

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well D-18 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

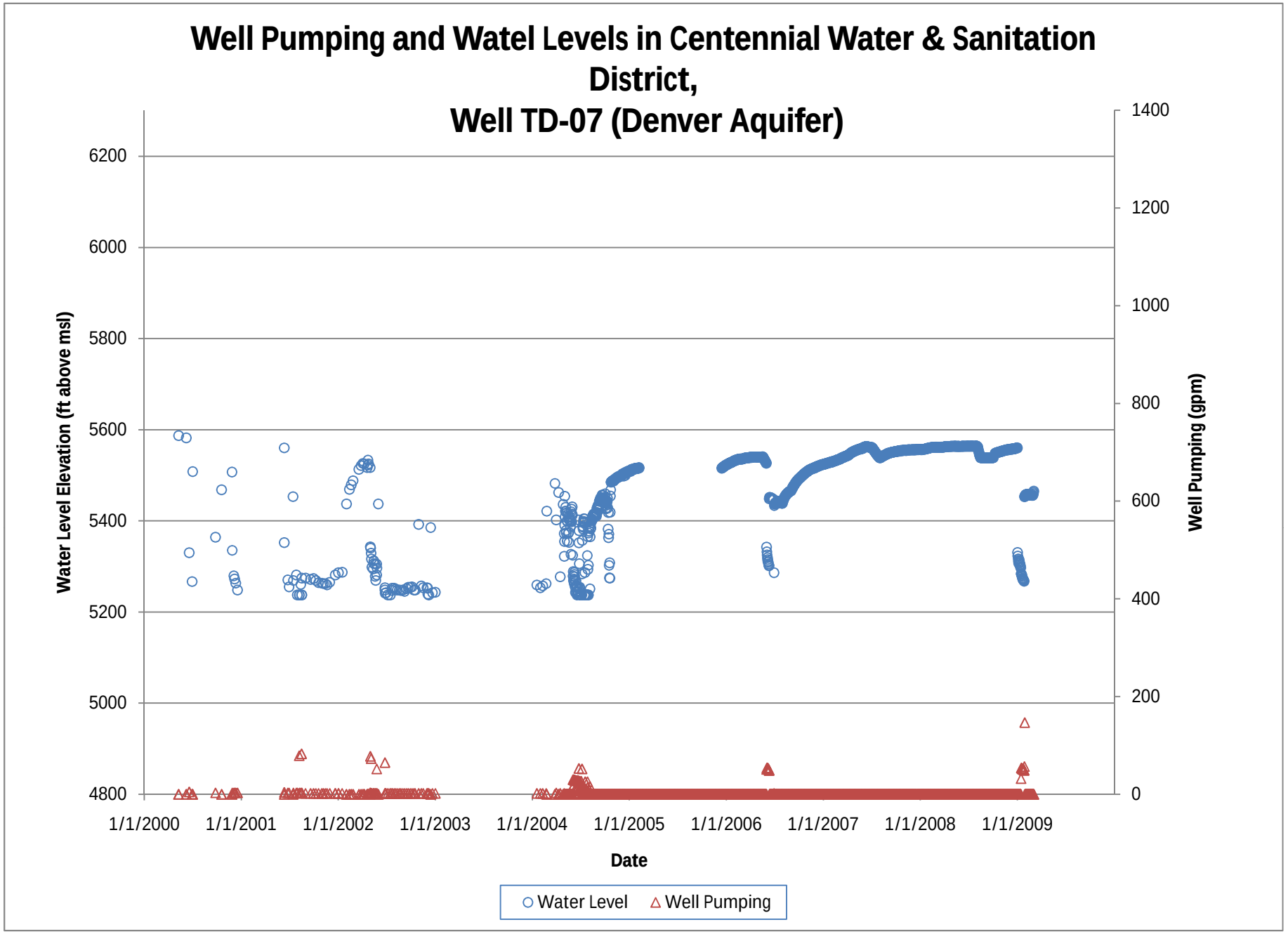

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well D-19 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

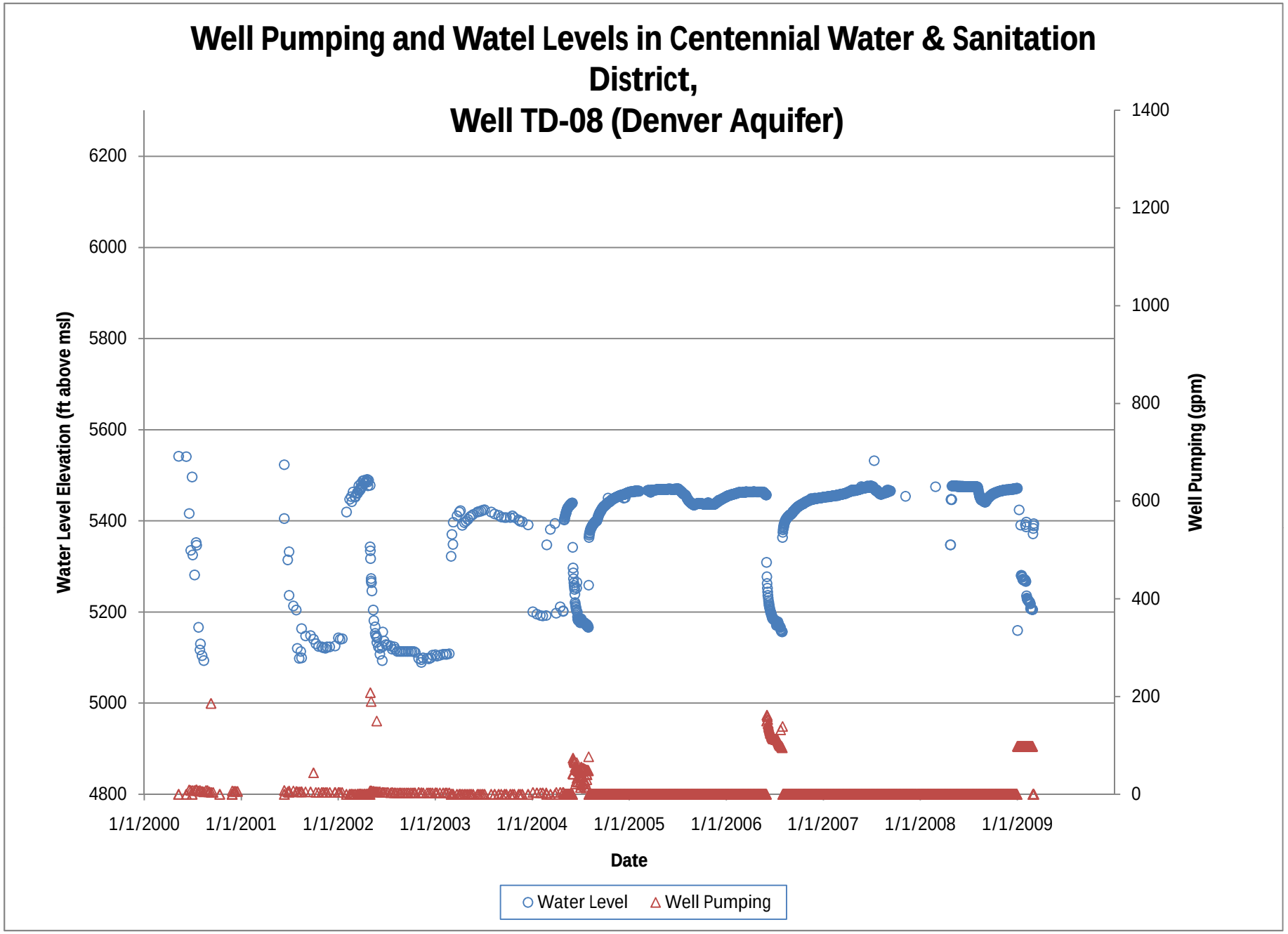

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well D-20 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

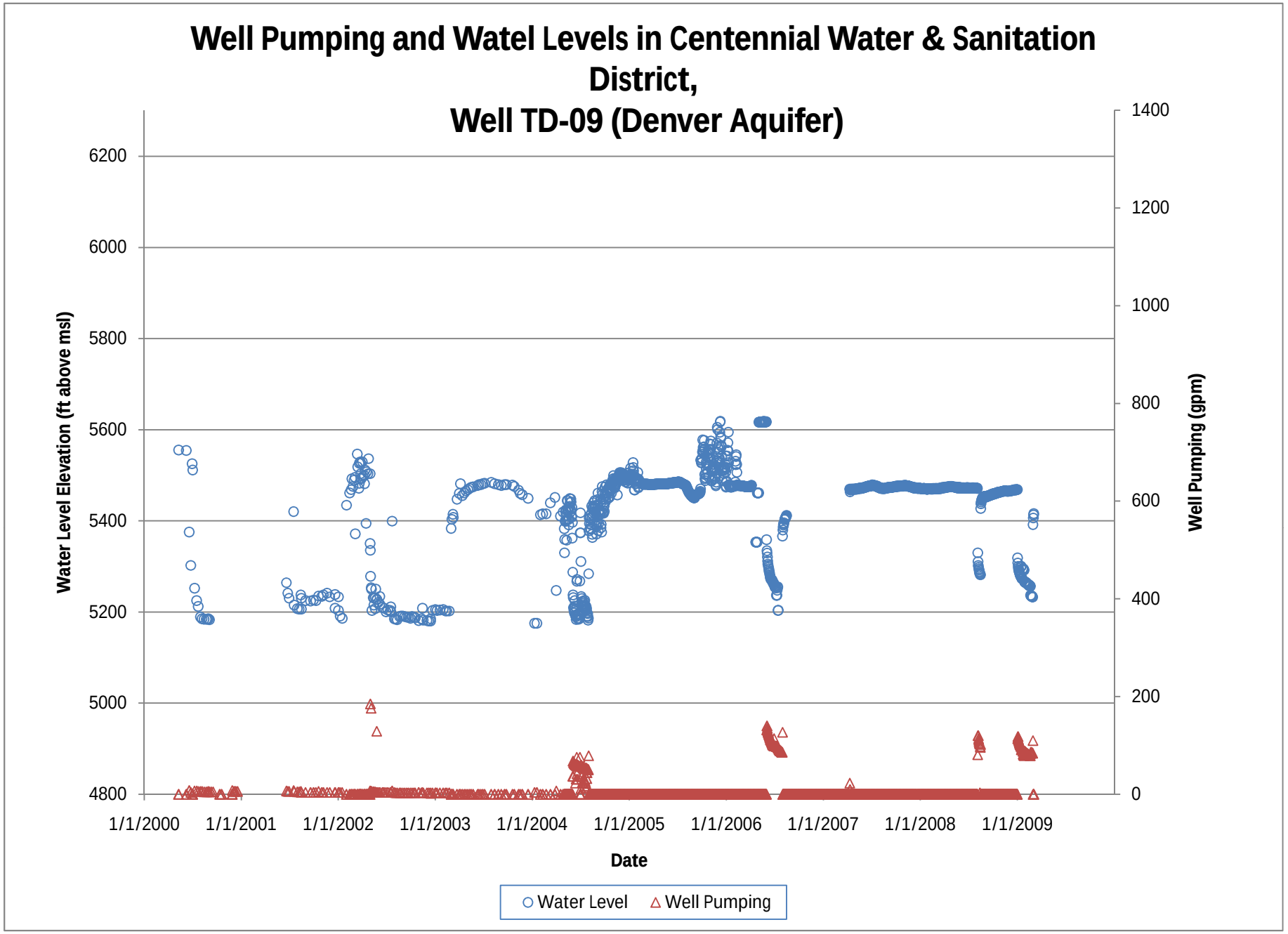

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well TD-04 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

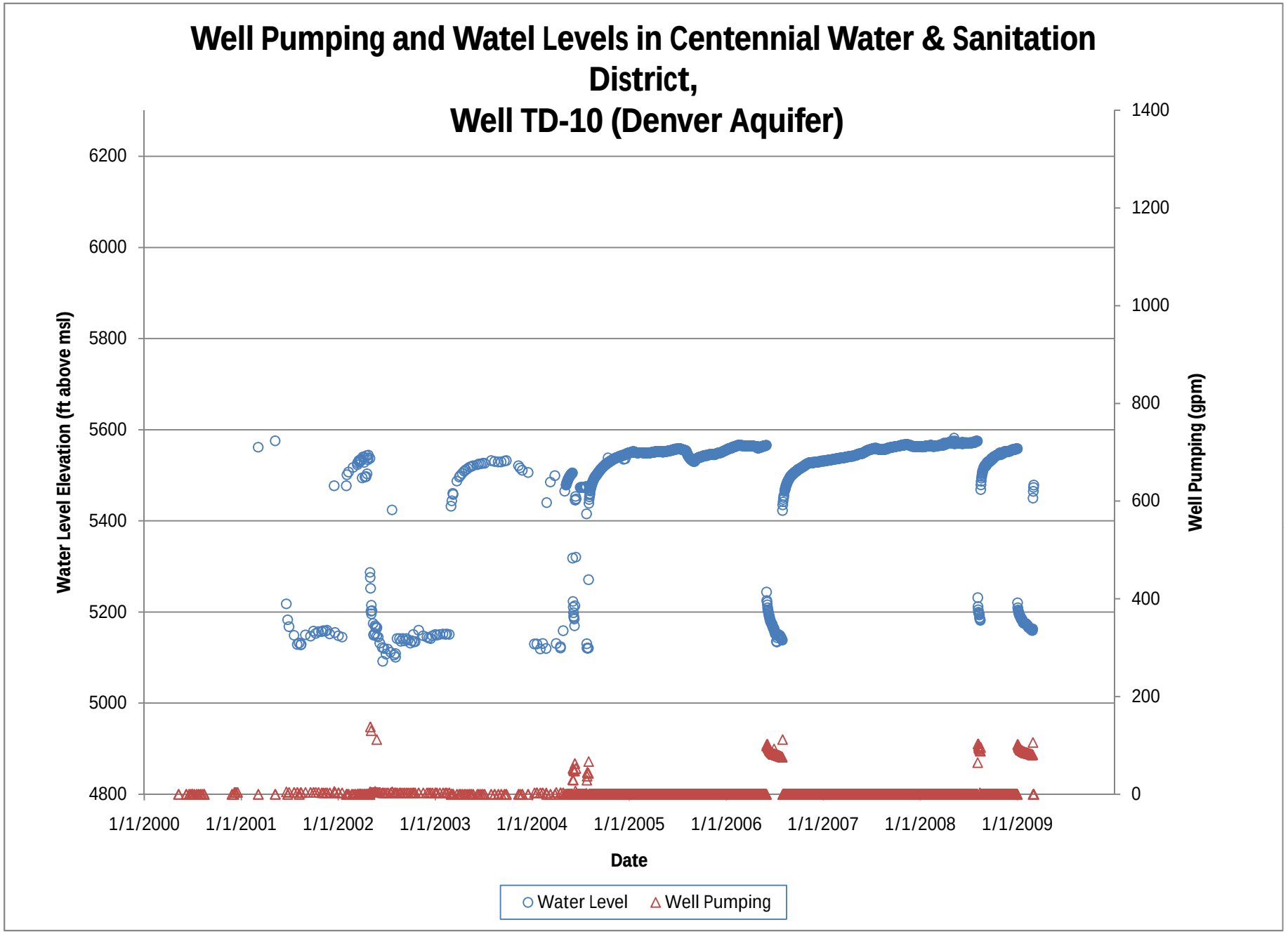

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well TD-05 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

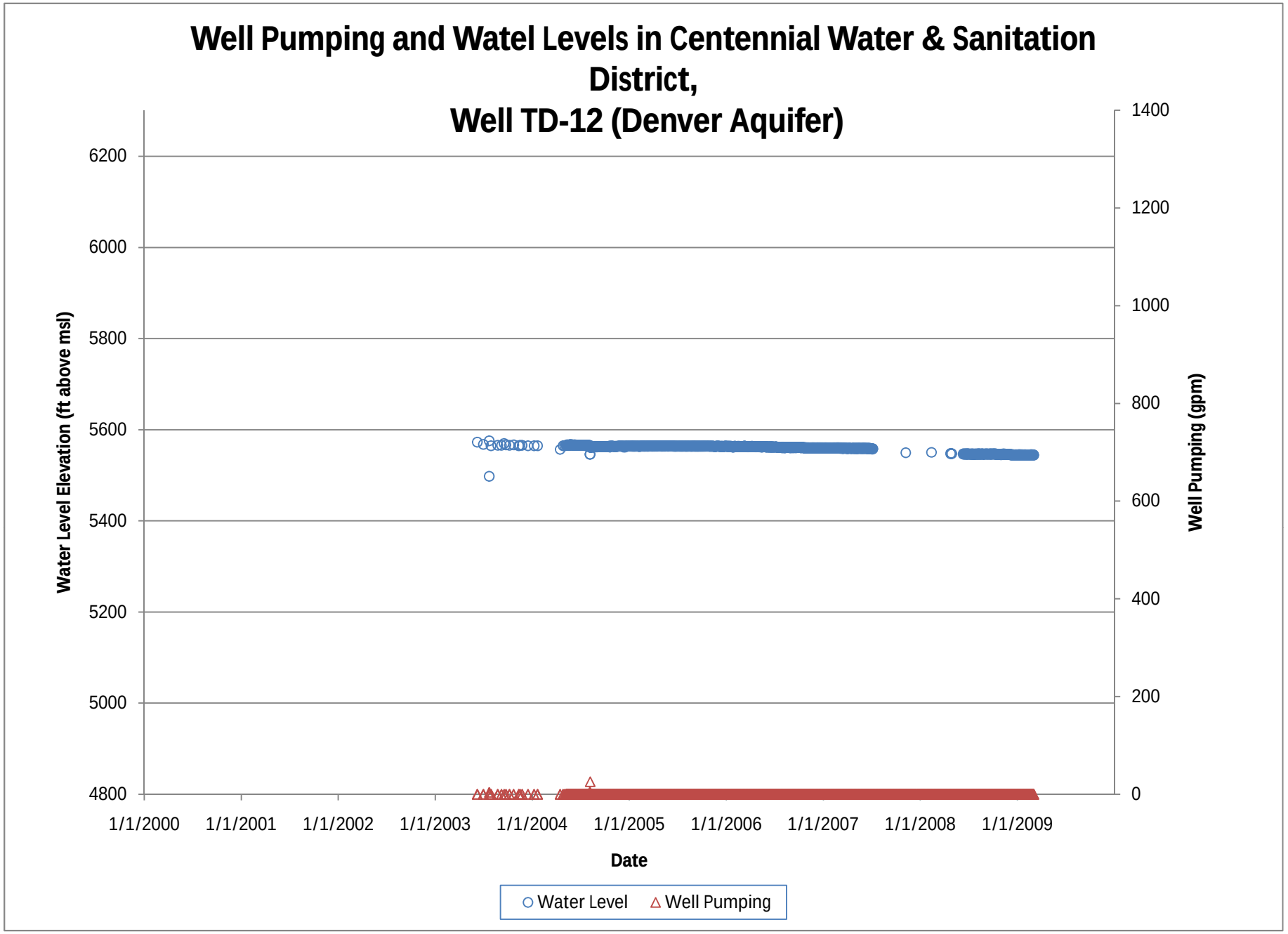

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well TD-06 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

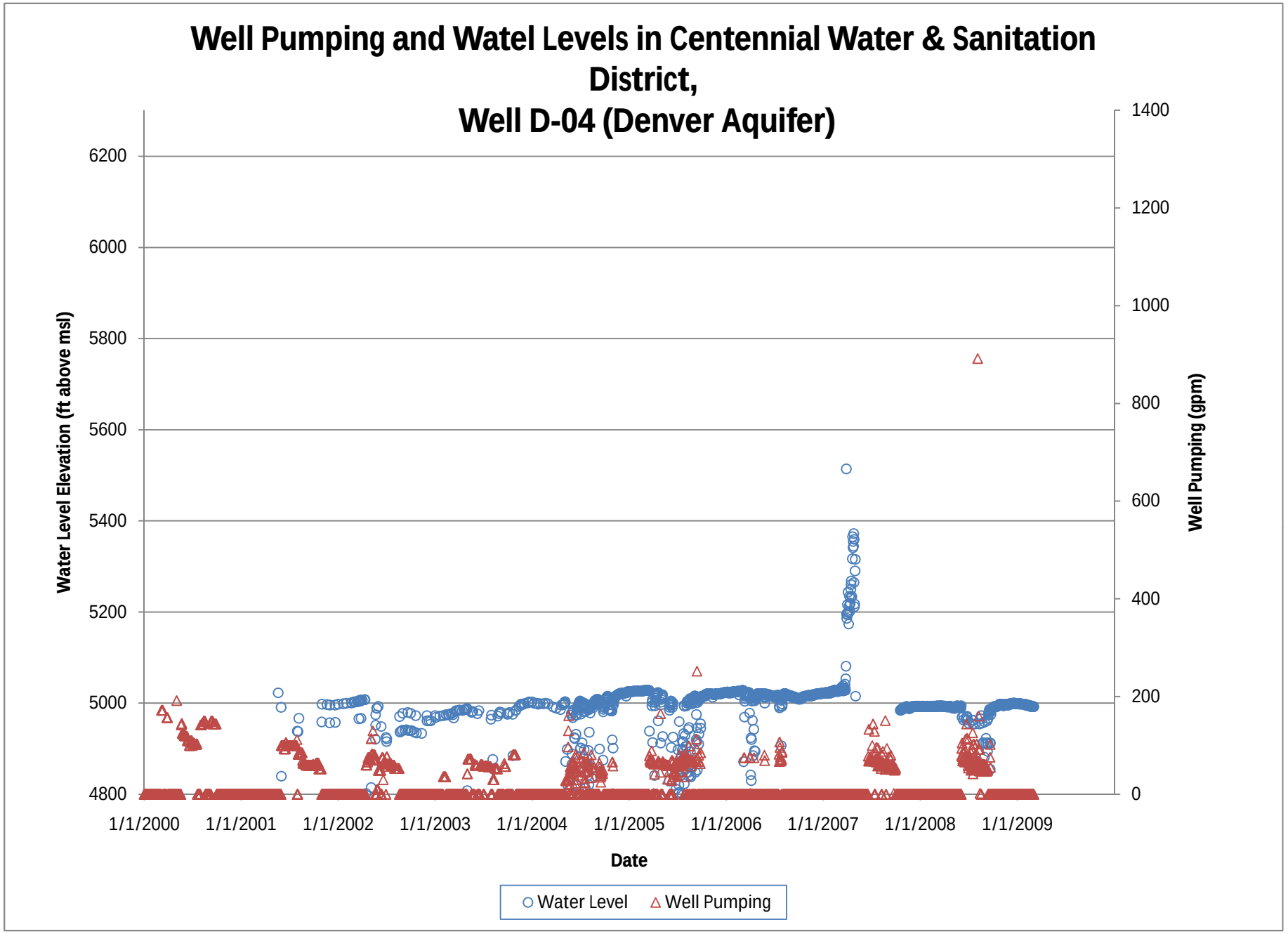

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well TD-07 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

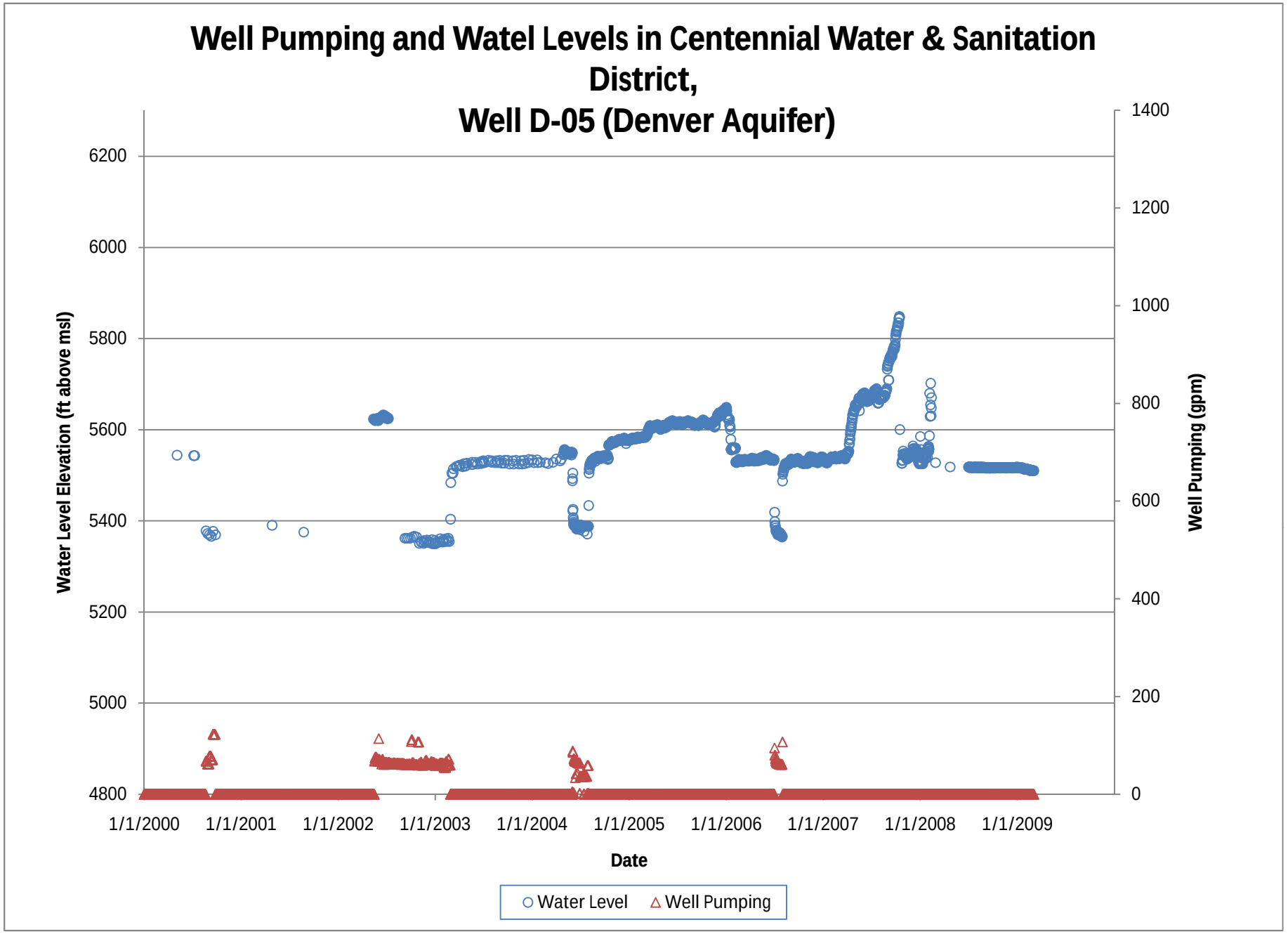

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well TD-08 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

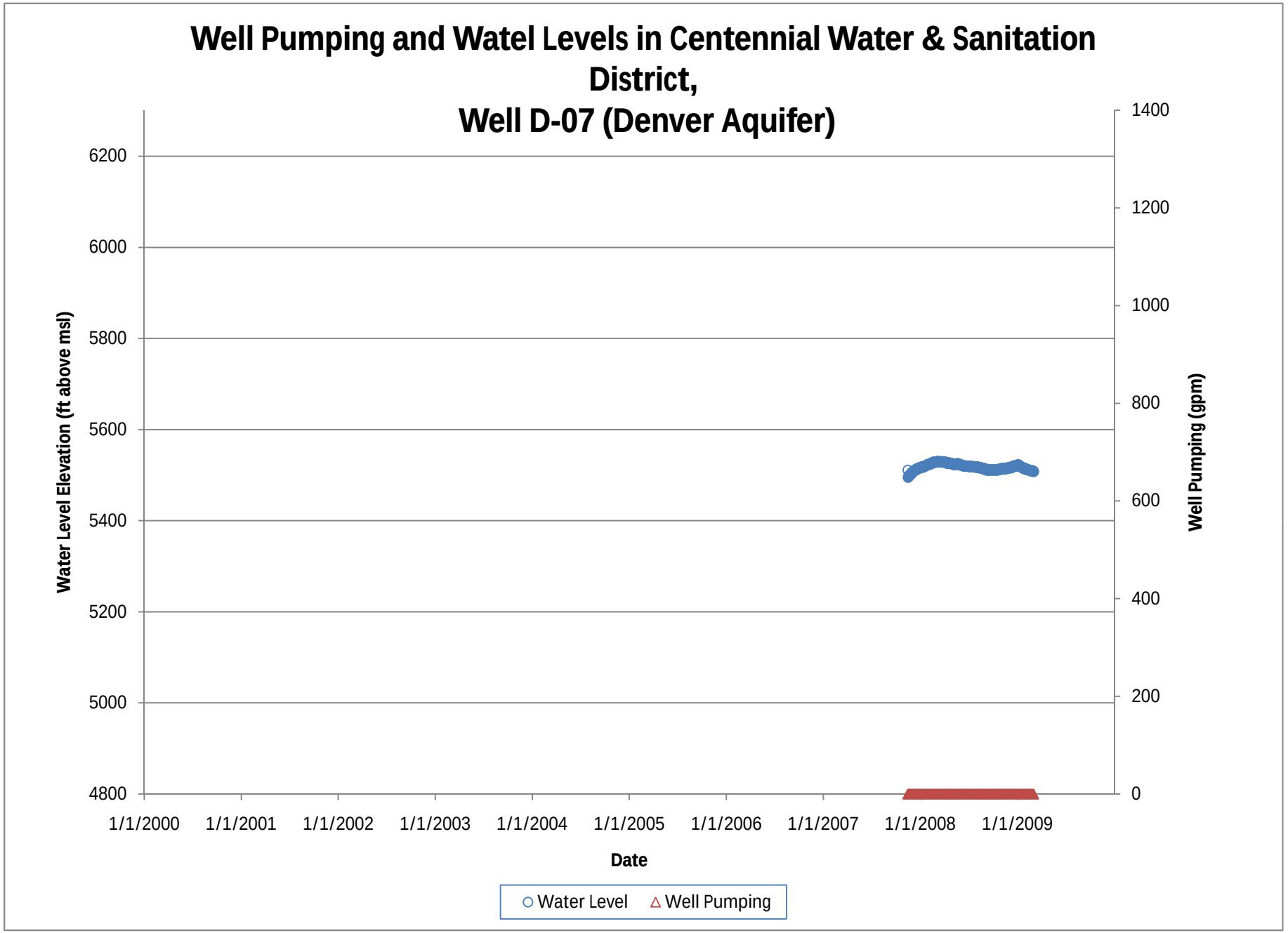

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well TD-09 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

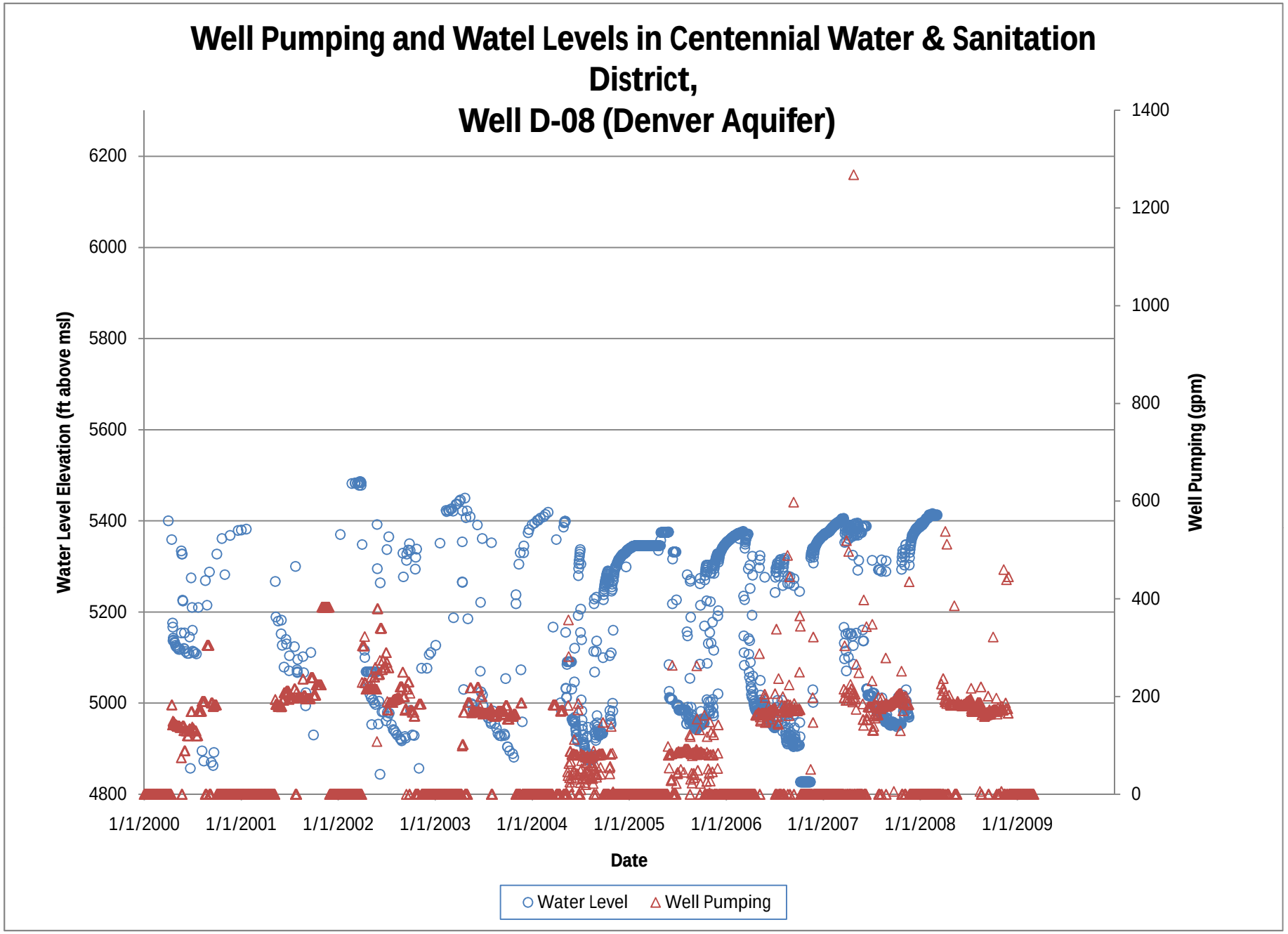

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well TD-10 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

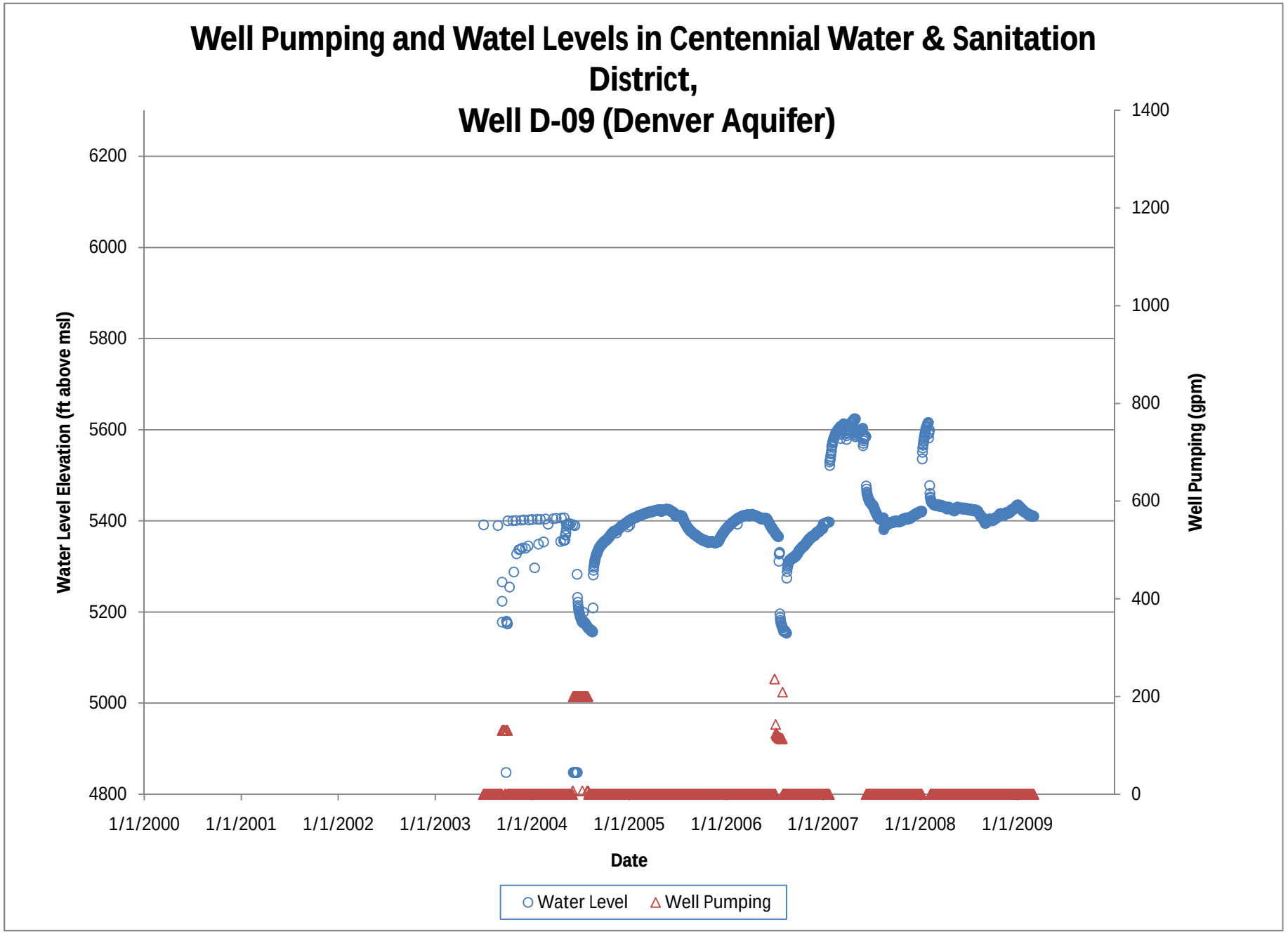

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well TD-12 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

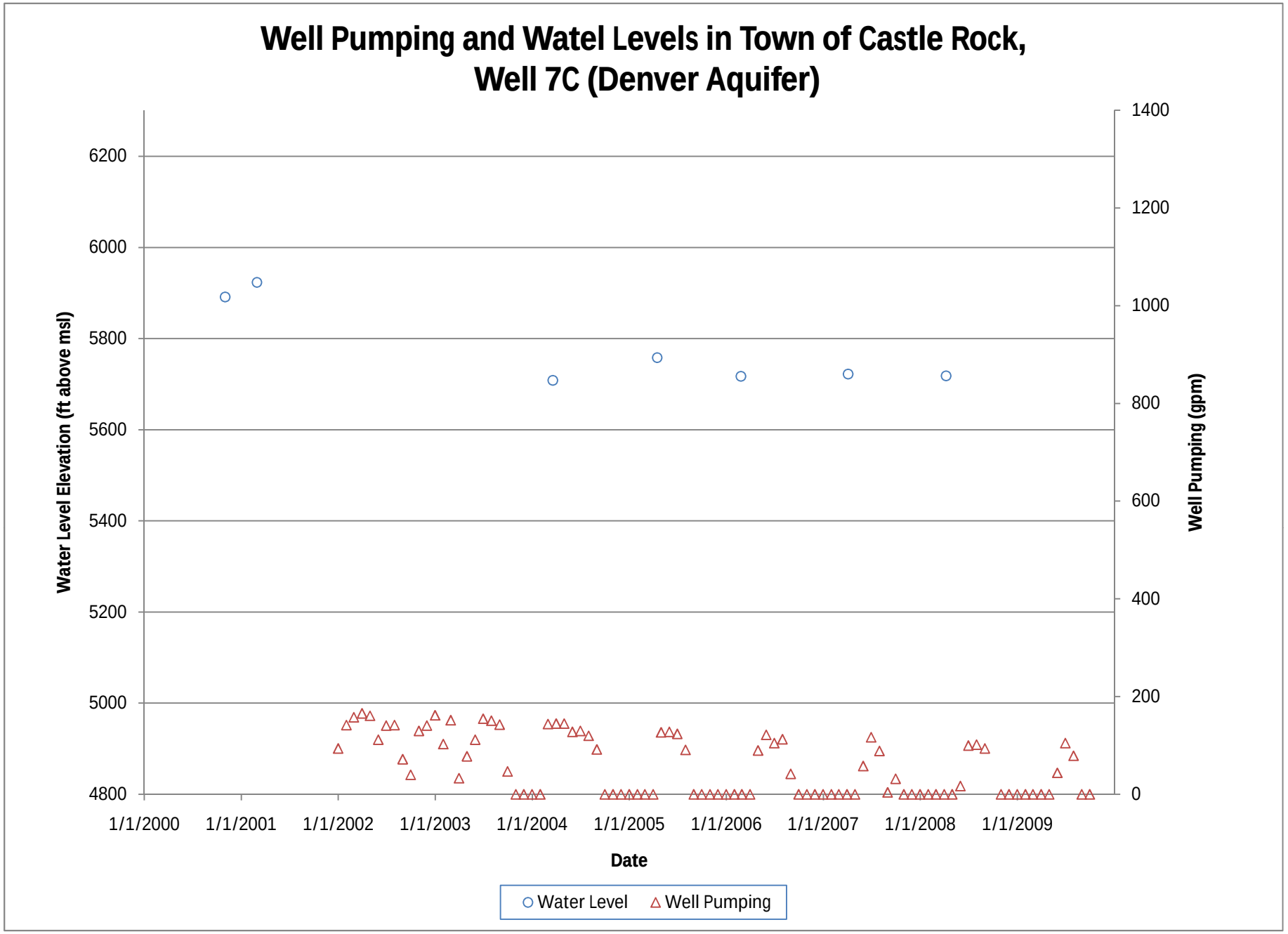

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well D-04 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

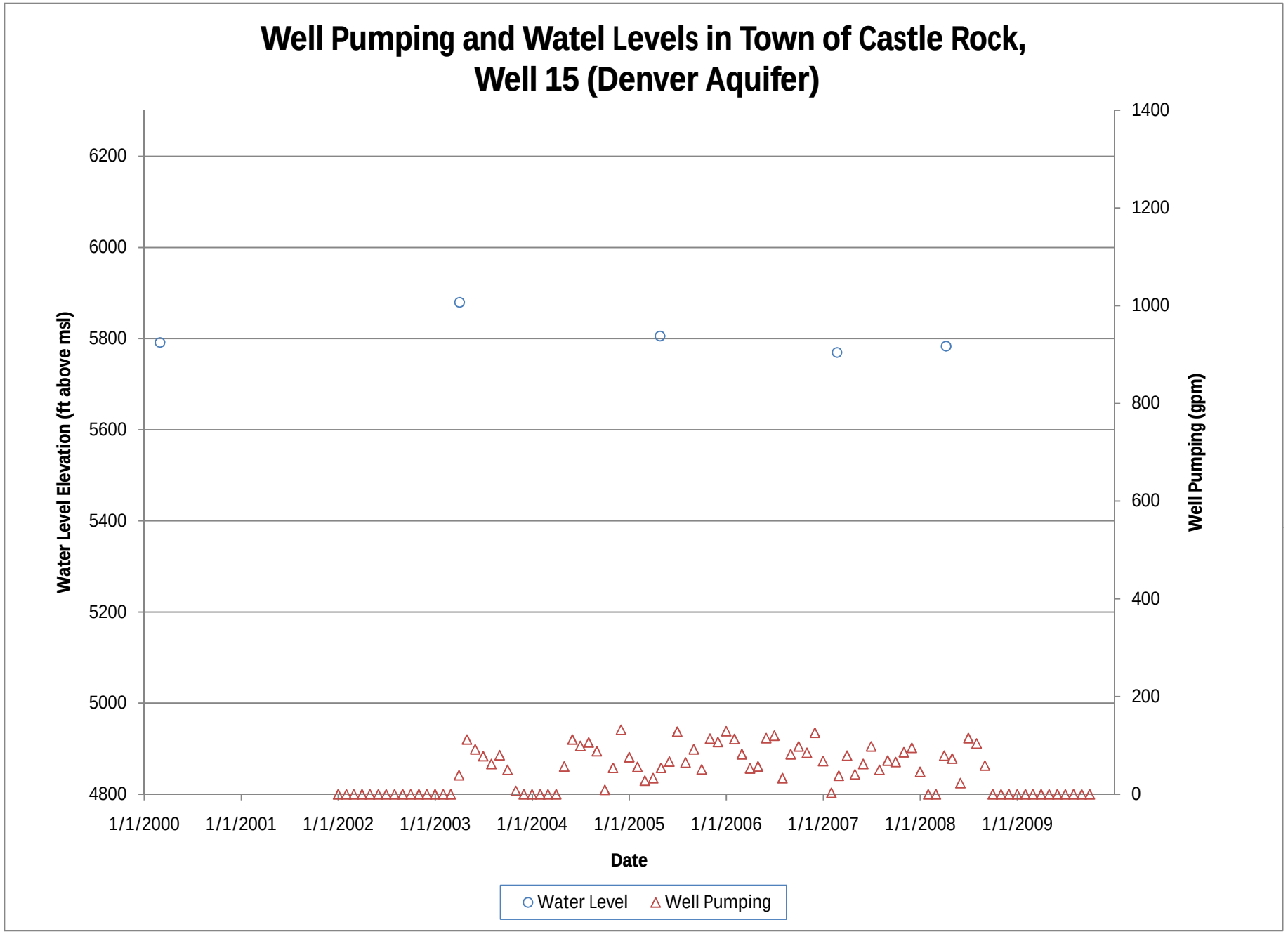

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well D-05 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

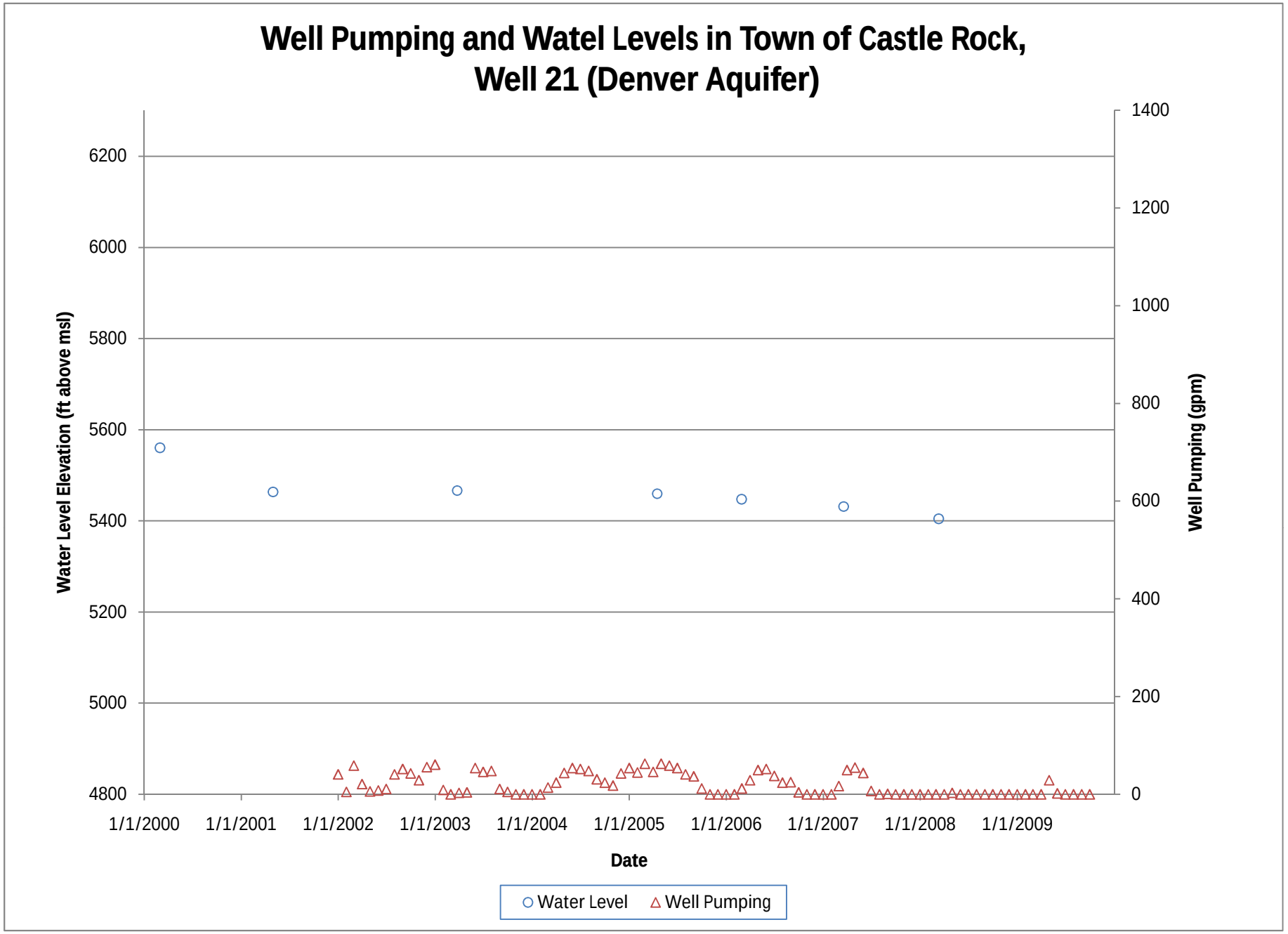

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well D-07 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

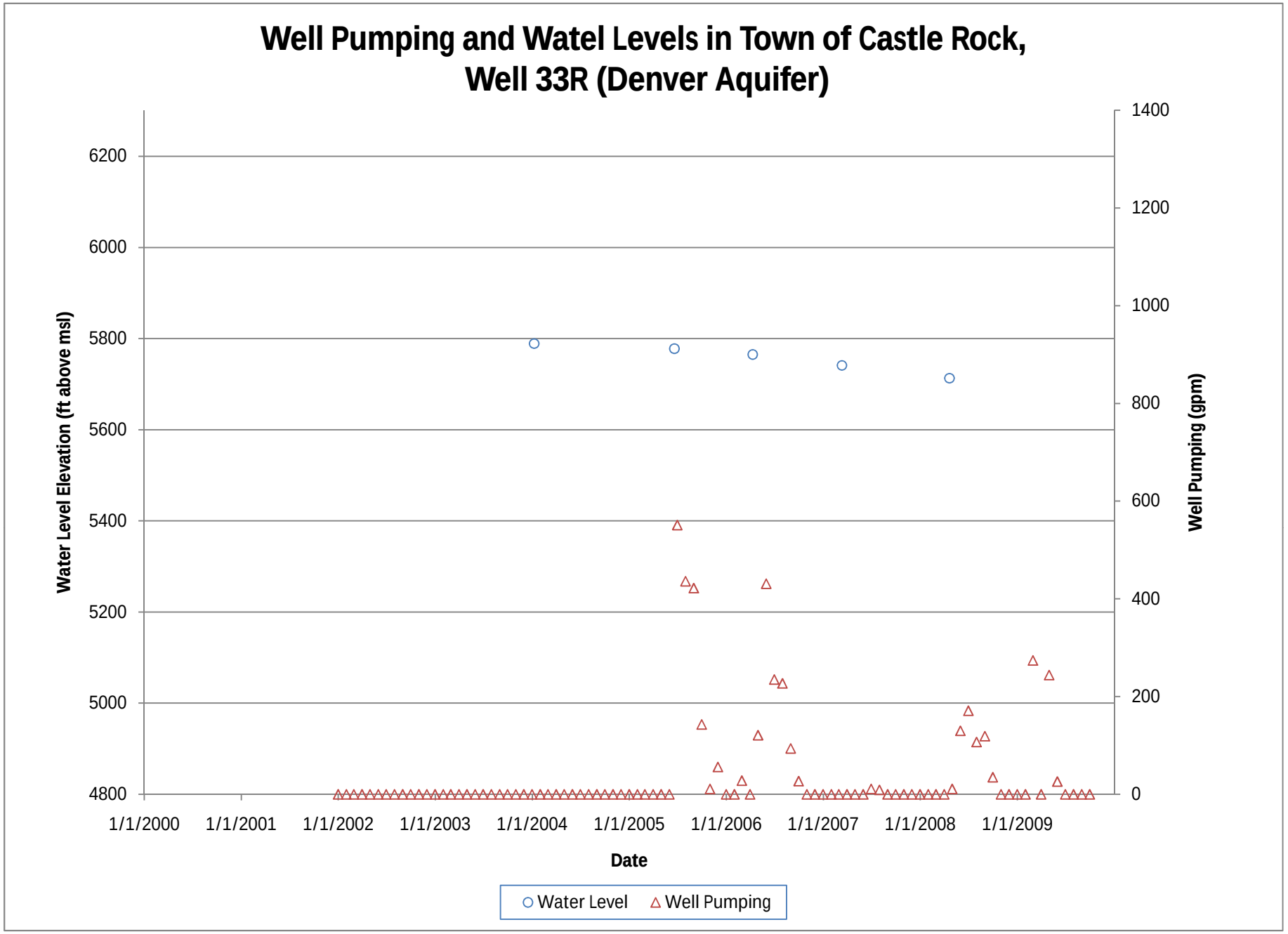

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well D-08 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

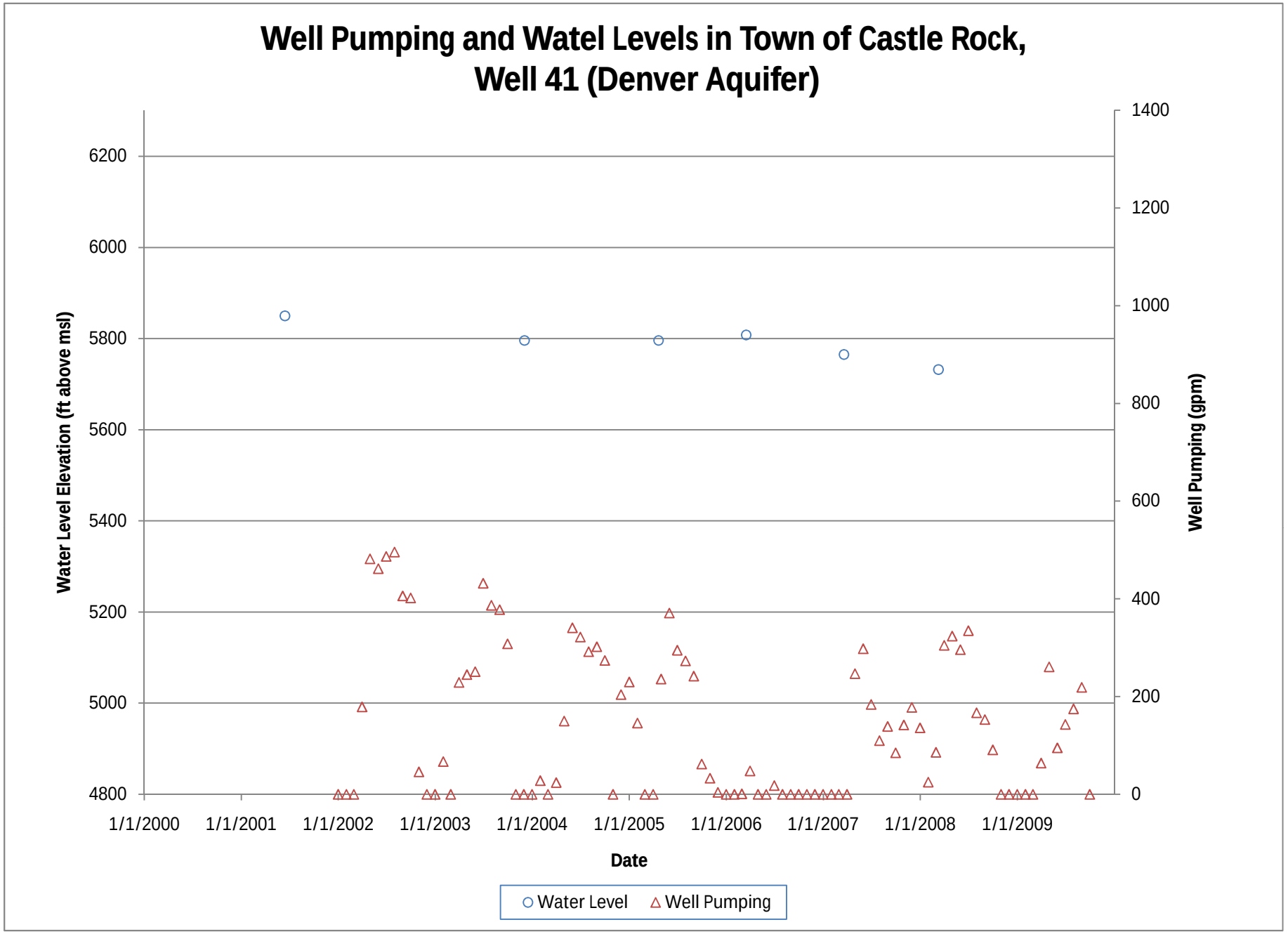

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well D-09 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

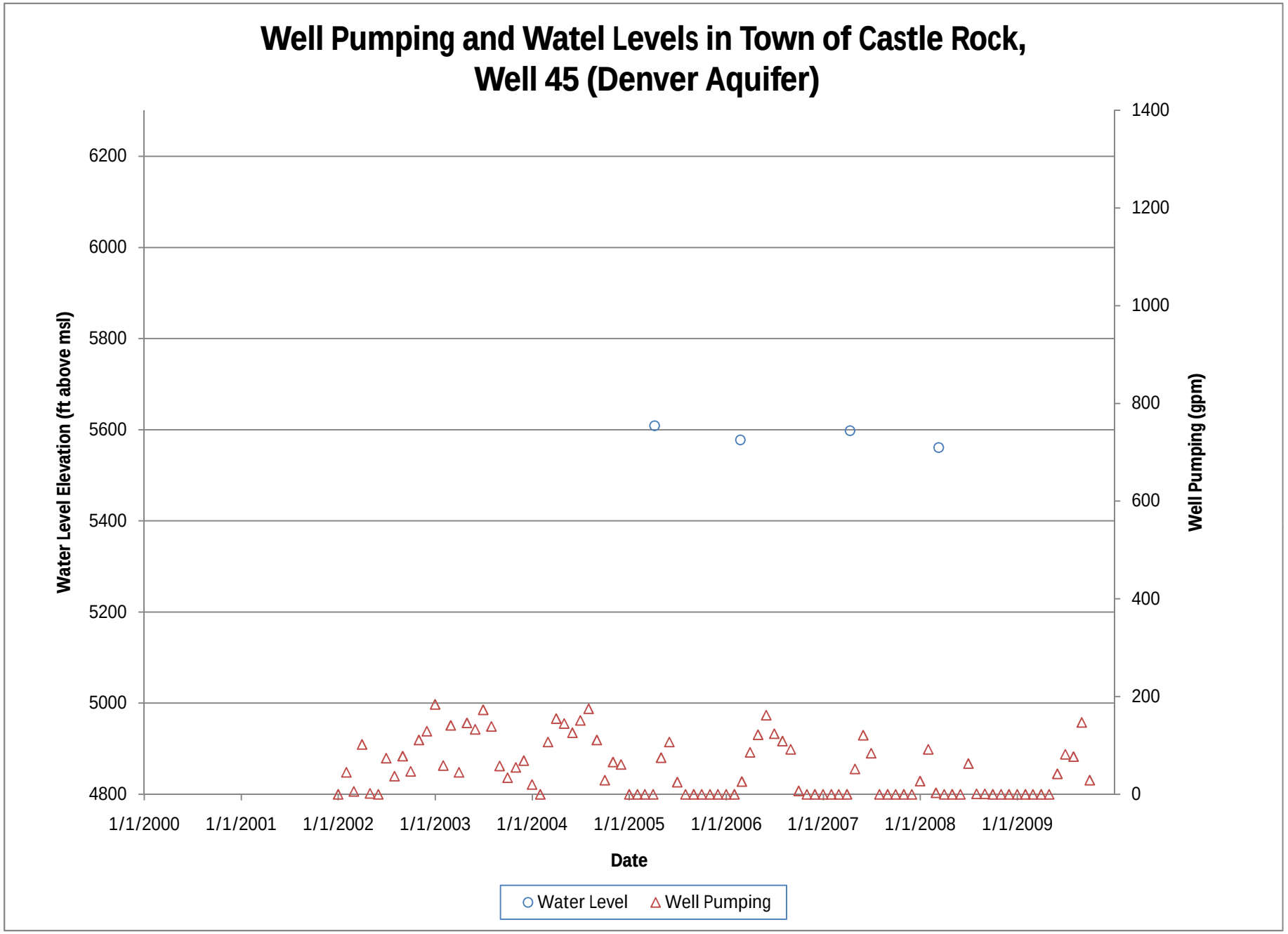

Well Pumping and Watel Levels in Town of Castle Rock, Well 7C (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

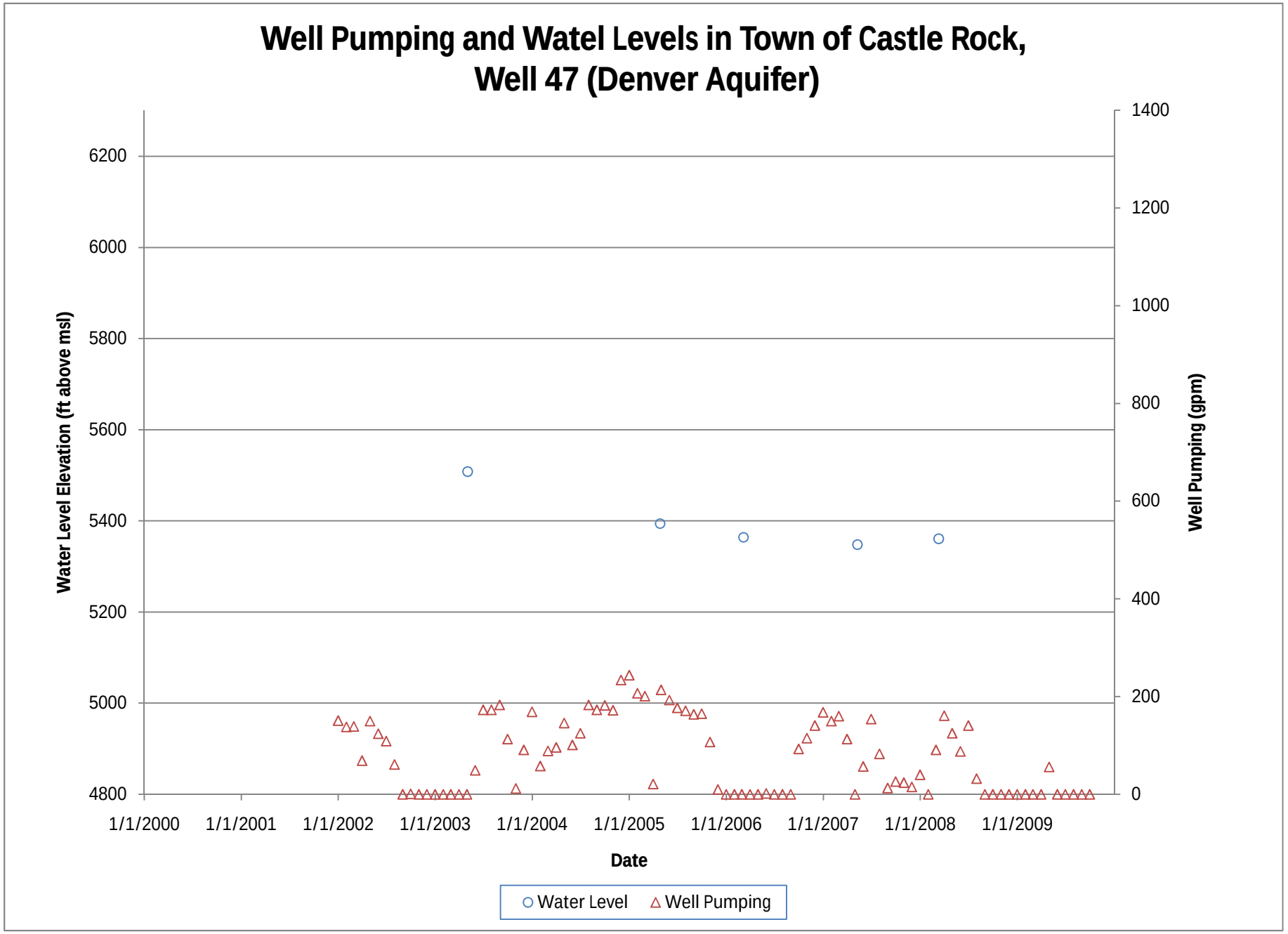

Well Pumping and Watel Levels in Town of Castle Rock, Well 15 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

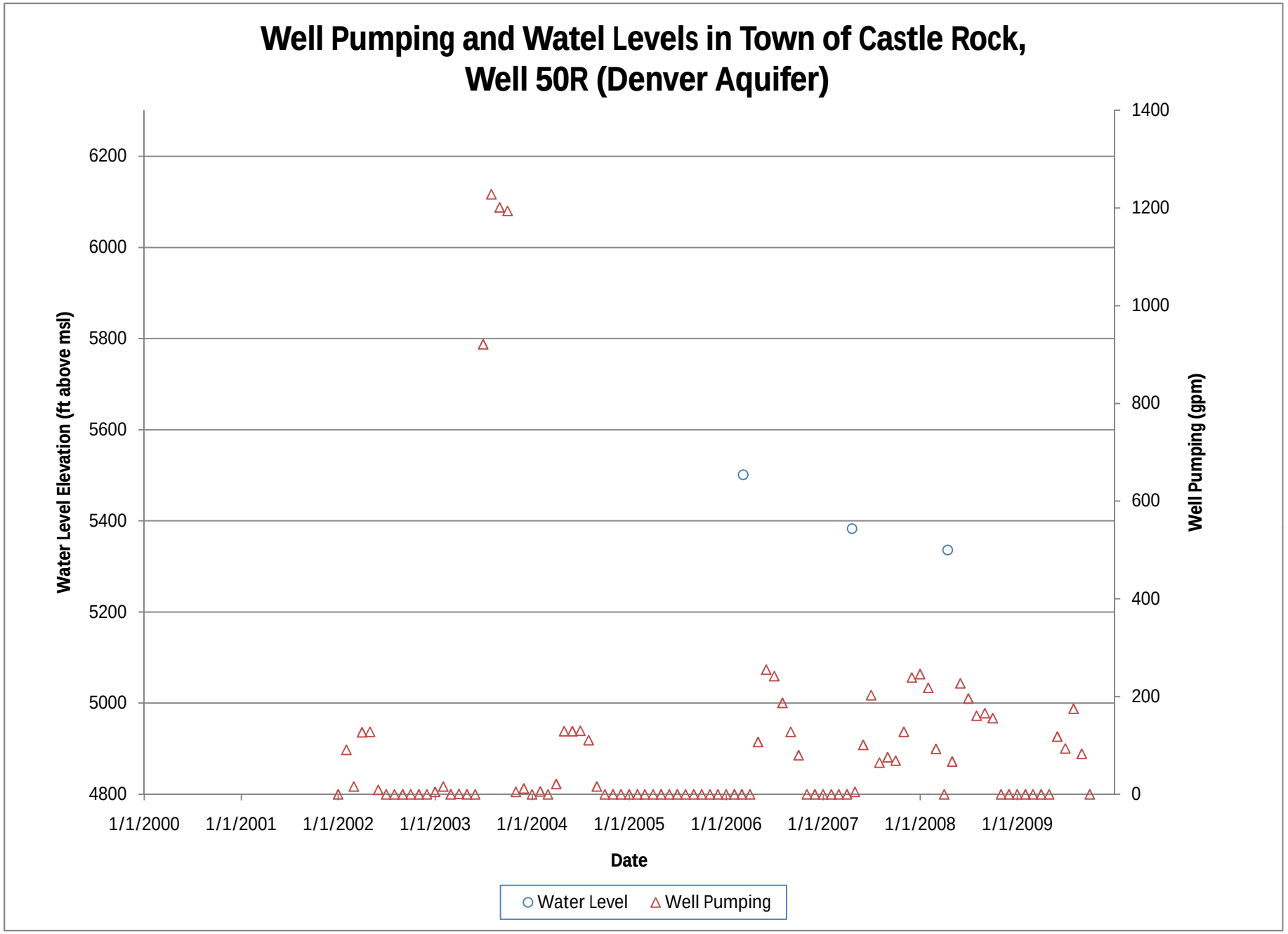

Well Pumping and Watel Levels in Town of Castle Rock, Well 21 (Denver Aquifer)
Water Level Elevation (ft above msl)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
Well Pumping (gpm)
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

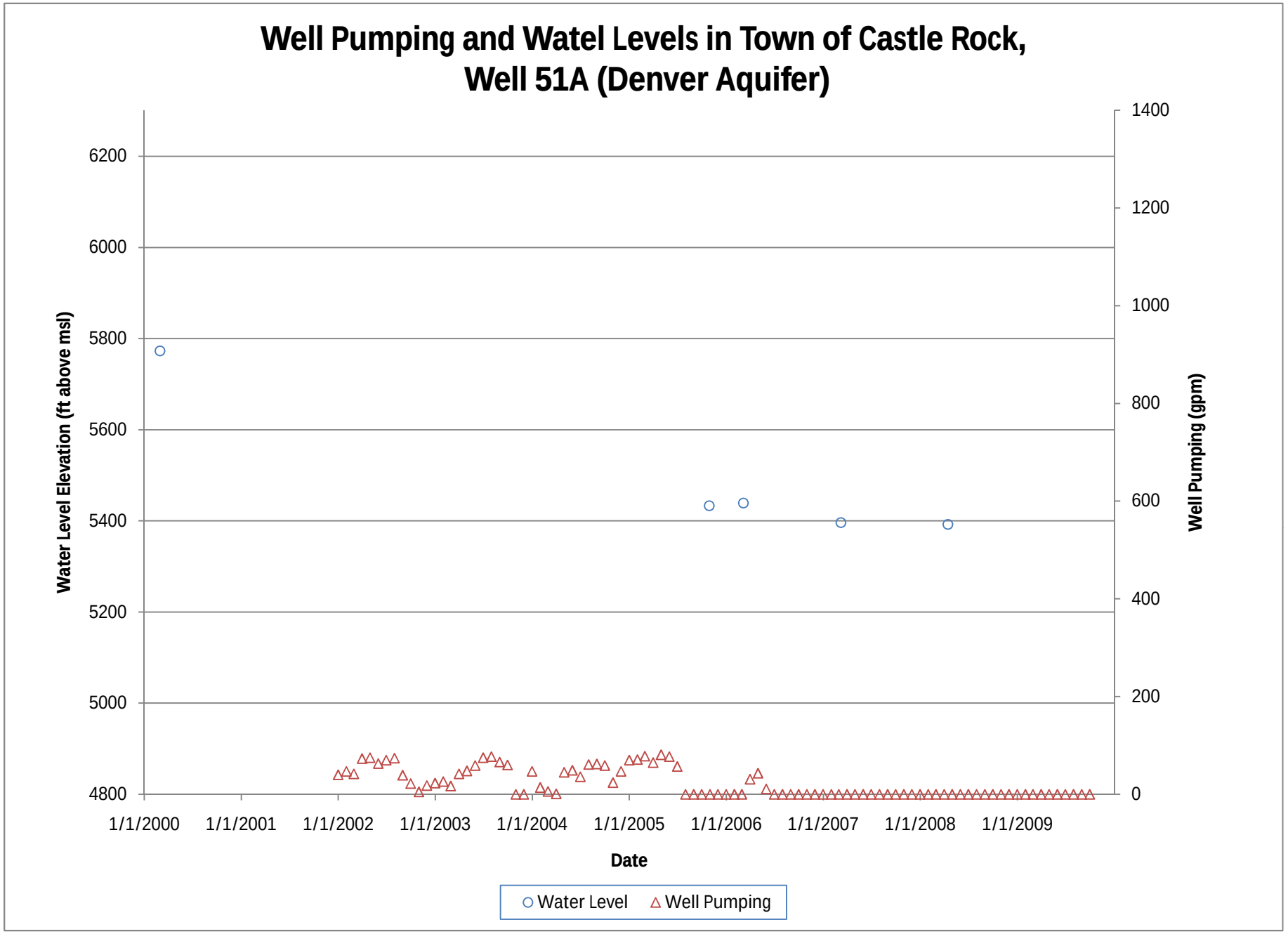

Well Pumping and Watel Levels in Town of Castle Rock, Well 33R (Denver Aquifer)
Water Level Elevation (ft above msl)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
Well Pumping (gpm)
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

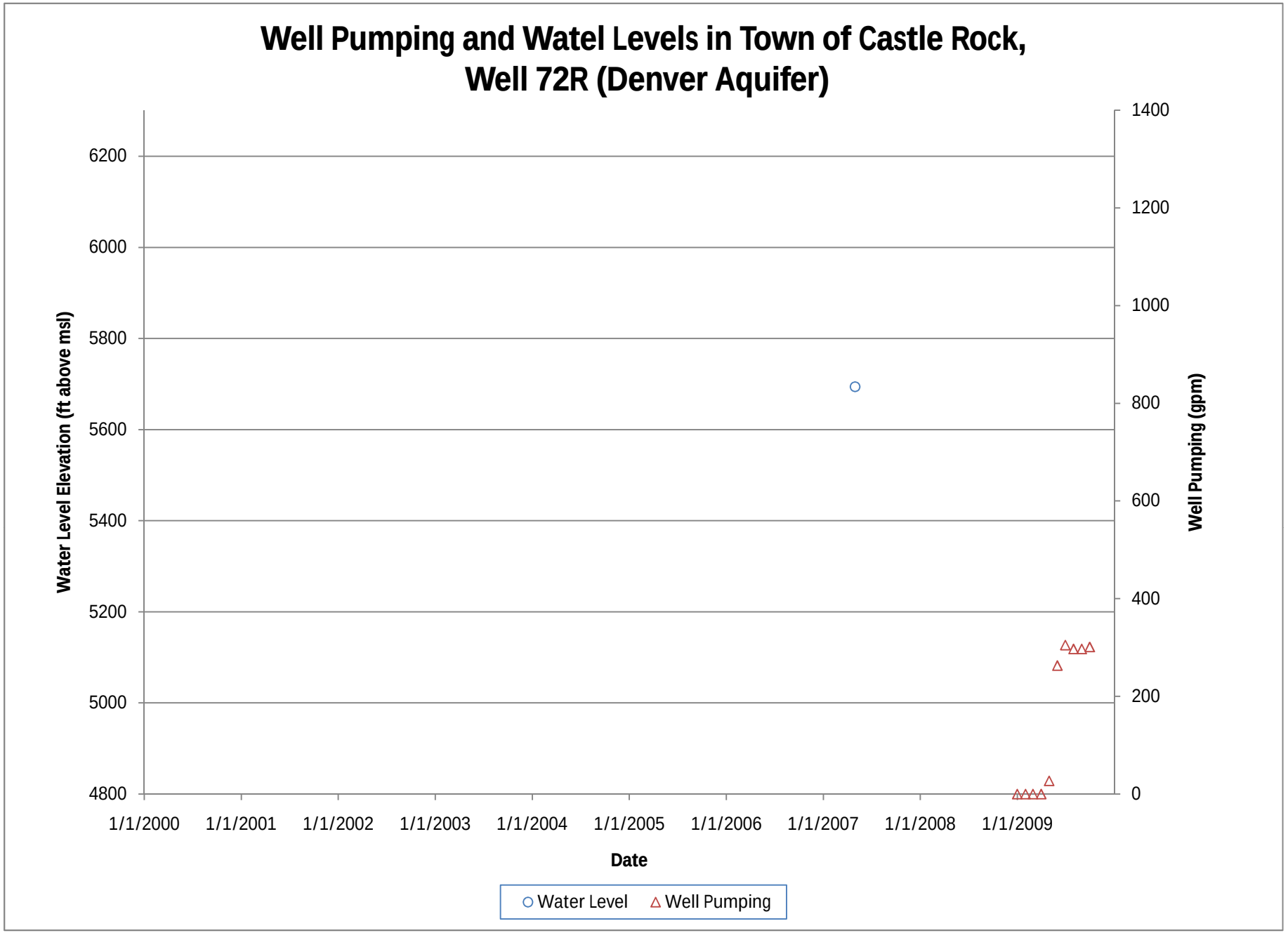

Well Pumping and Watel Levels in Town of Castle Rock, Well 41 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

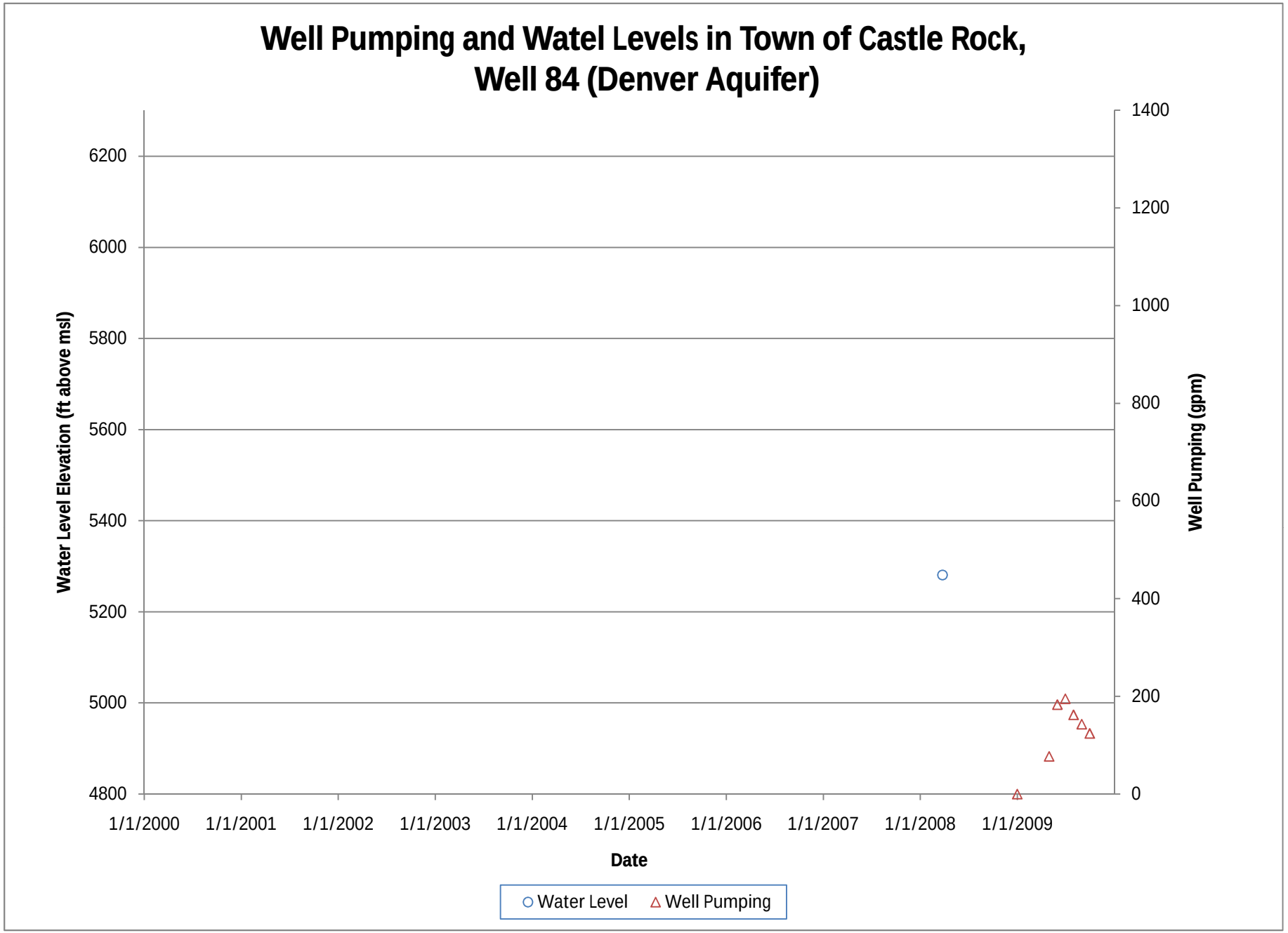

Well Pumping and Watel Levels in Town of Castle Rock, Well 45 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

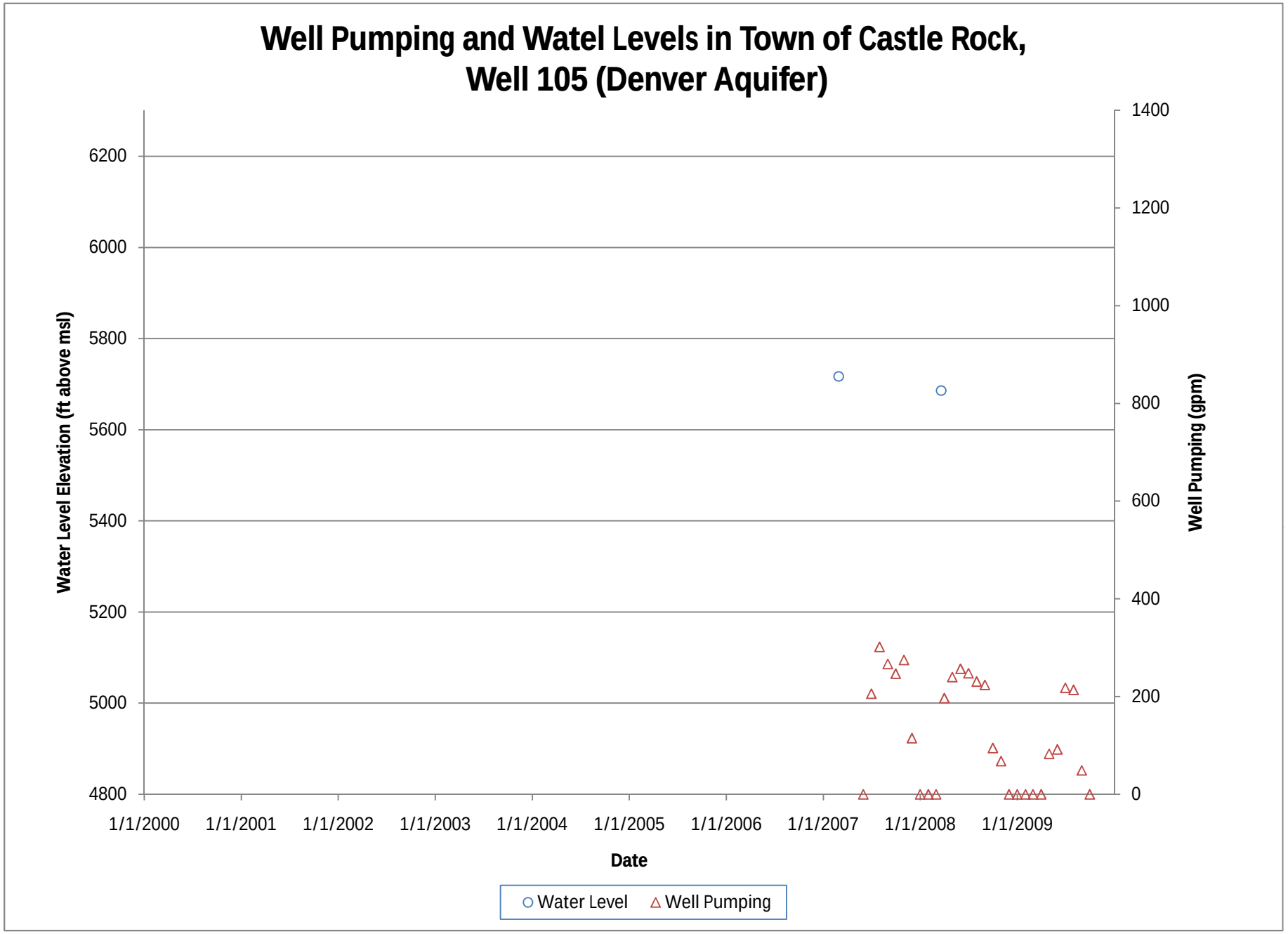

Well Pumping and Watel Levels in Town of Castle Rock, Well 47 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

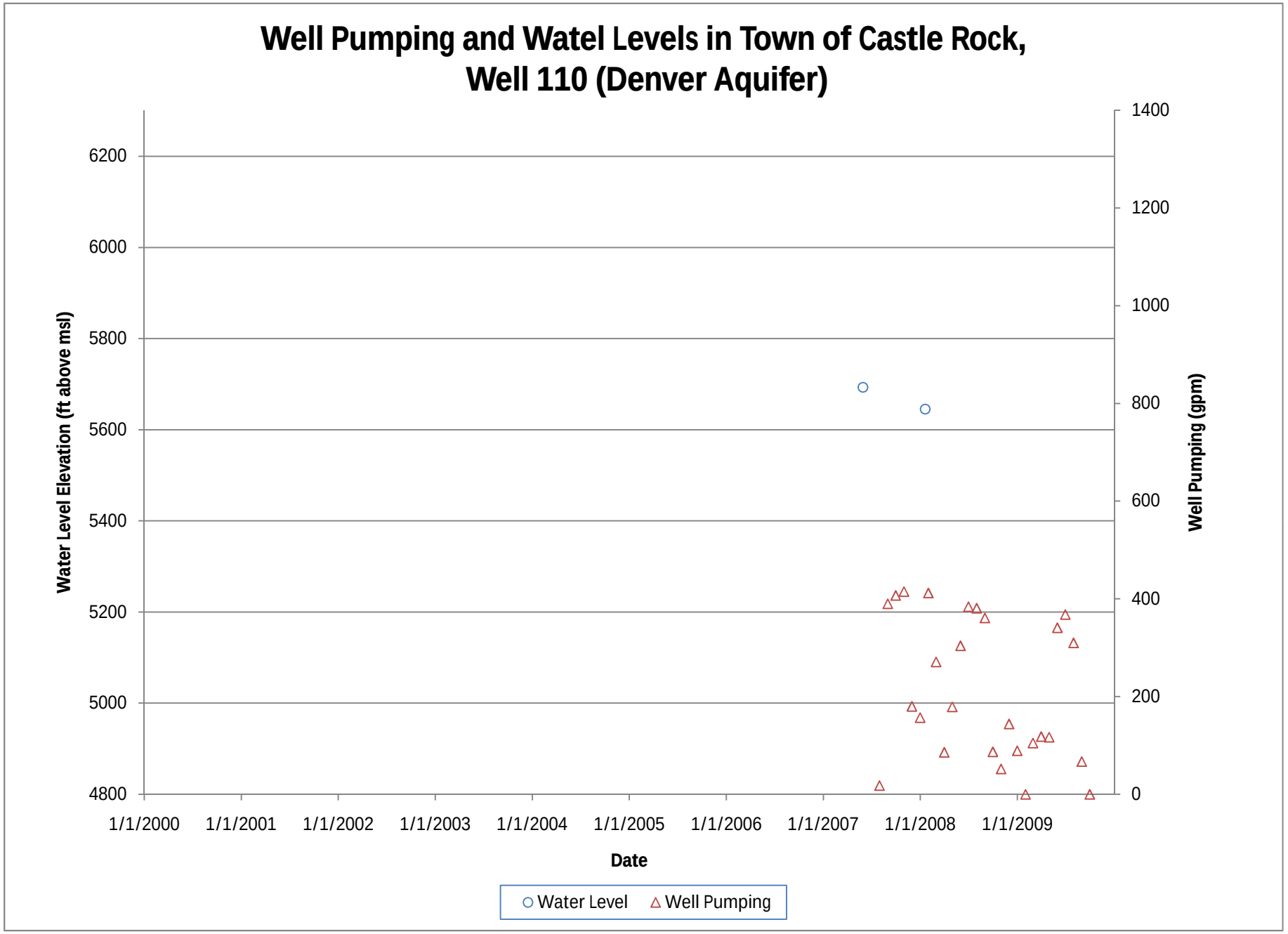

Well Pumping and Watel Levels in Town of Castle Rock, Well 50R (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

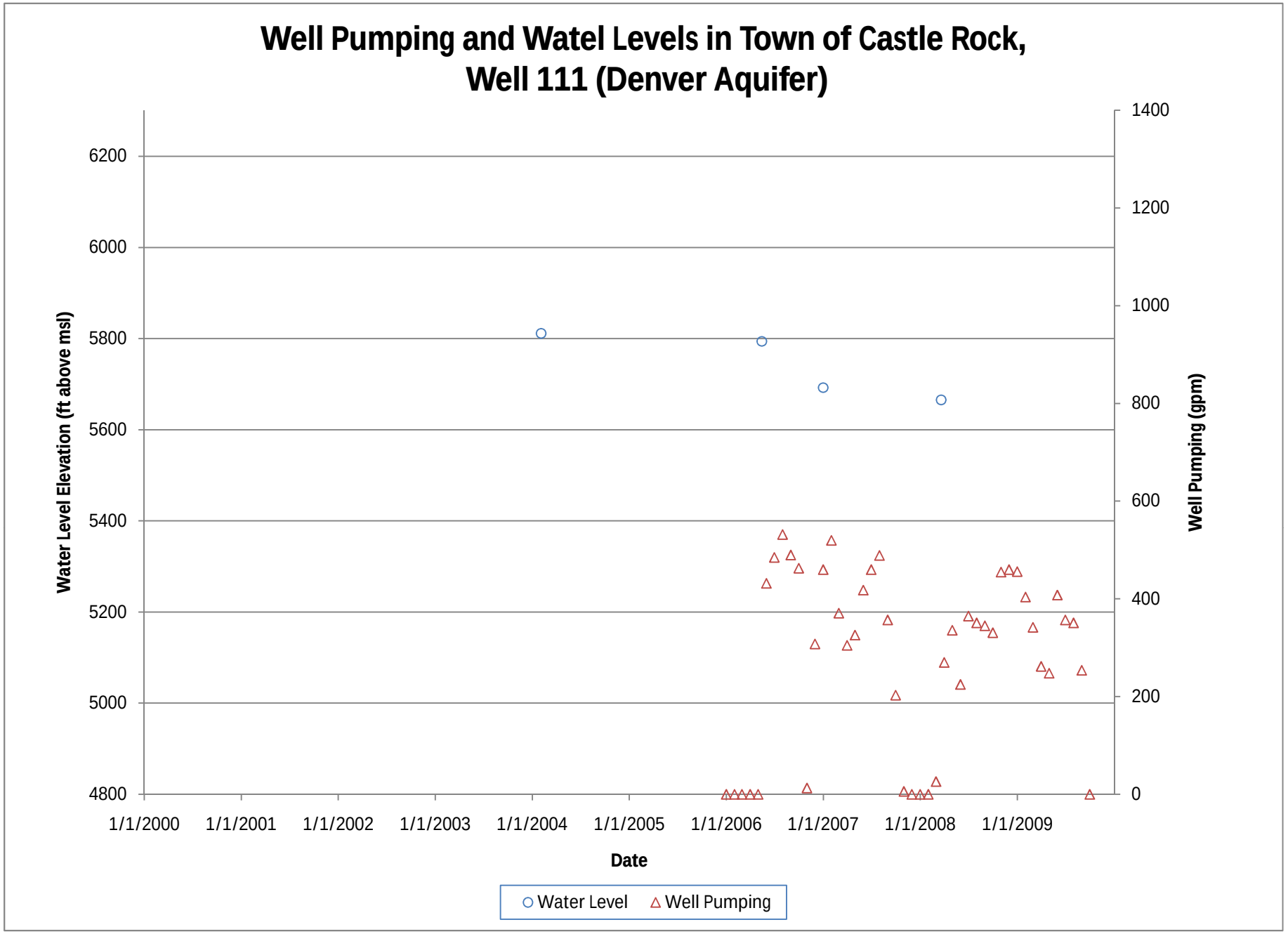

Well Pumping and Watel Levels in Town of Castle Rock,
Well 51A (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

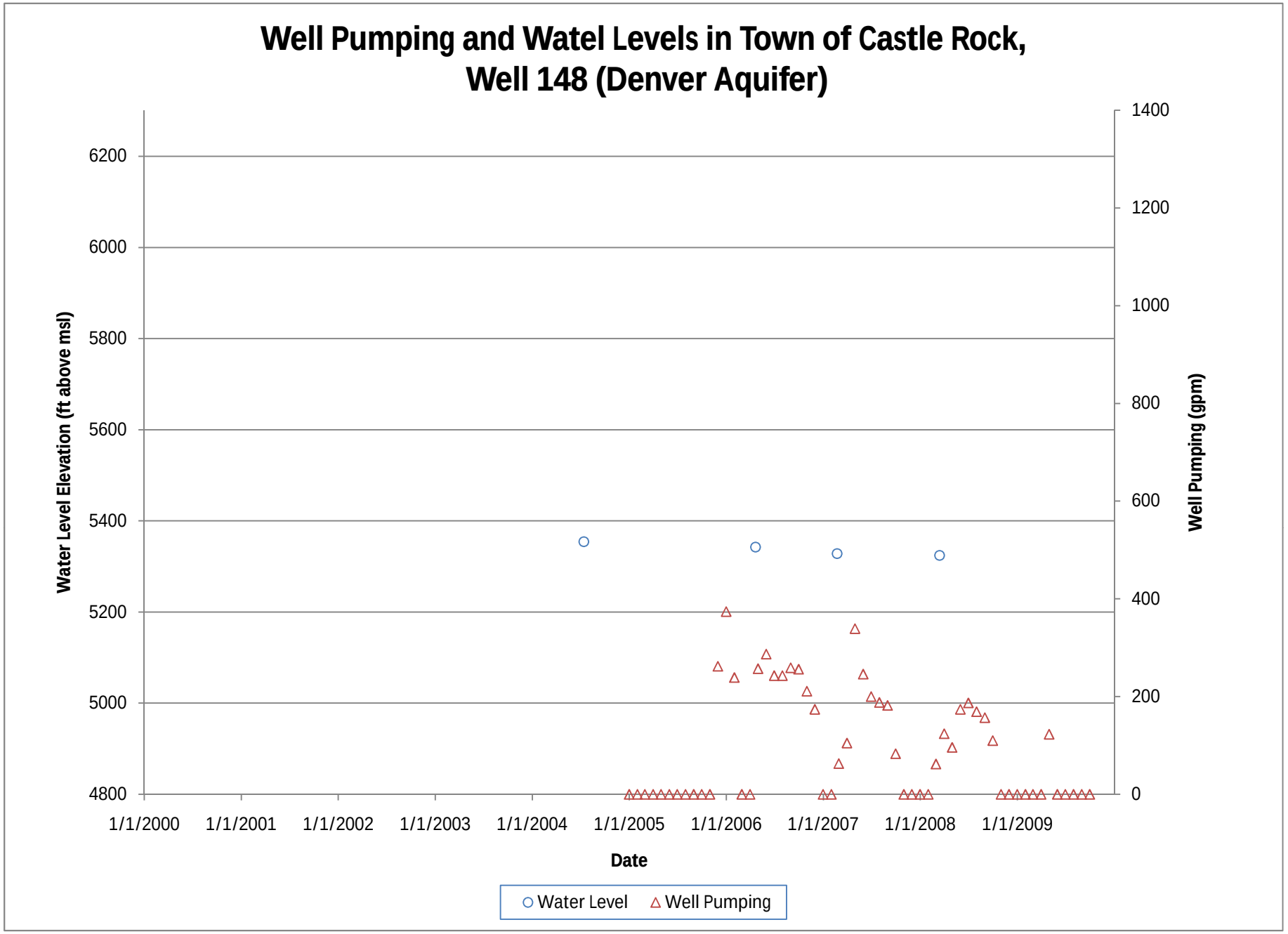

Well Pumping and Watel Levels in Town of Castle Rock,
Well 72R (Denver Aquifer)
Water Level Elevation (ft above msl)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
Well Pumping (gpm)
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

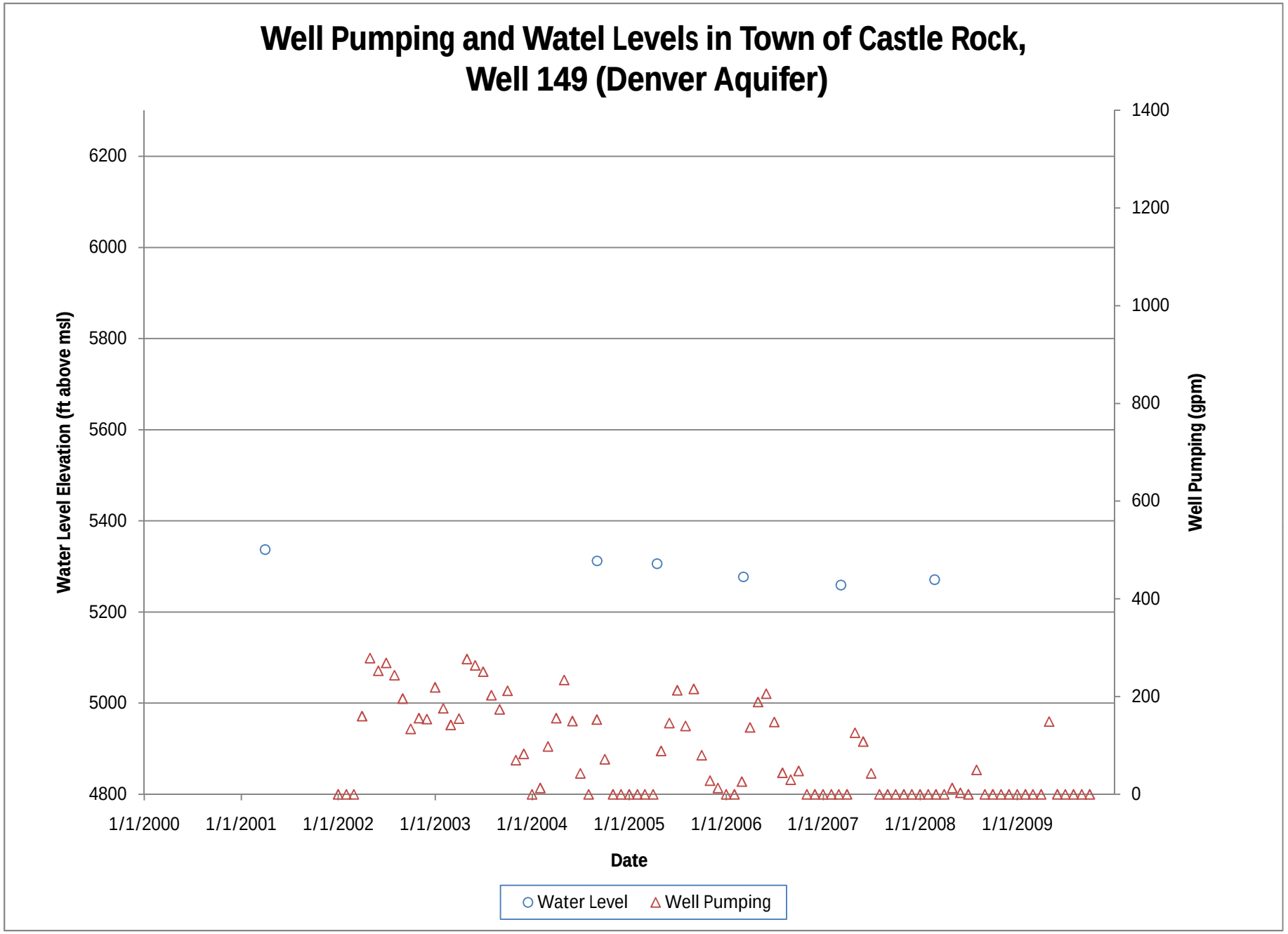

Well Pumping and Watel Levels in Town of Castle Rock, Well 84 (Denver Aquifer)
Water Level Elevation (ft above msl)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
Well Pumping (gpm)
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

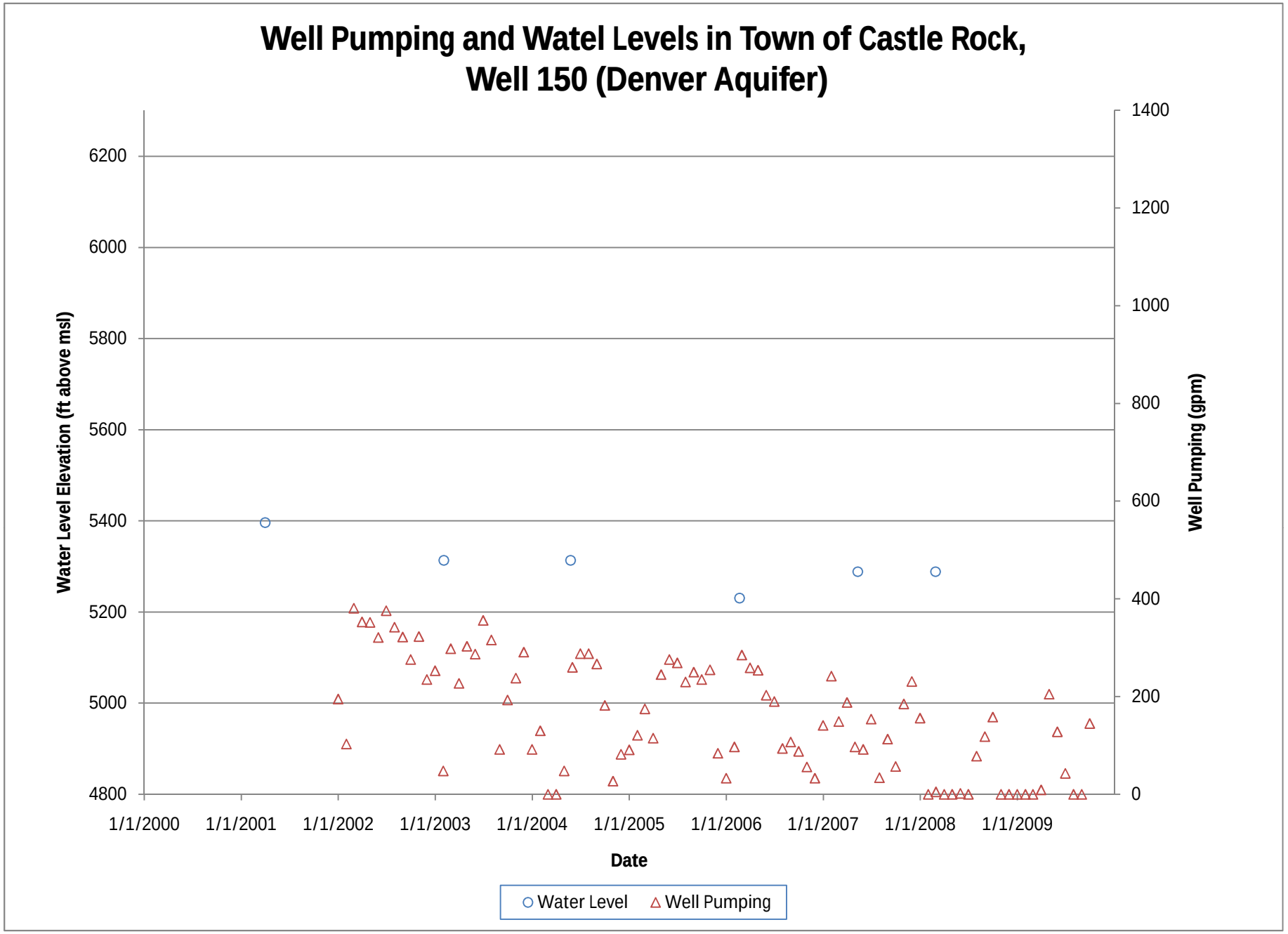

Well Pumping and Watel Levels in Town of Castle Rock,
Well 105 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

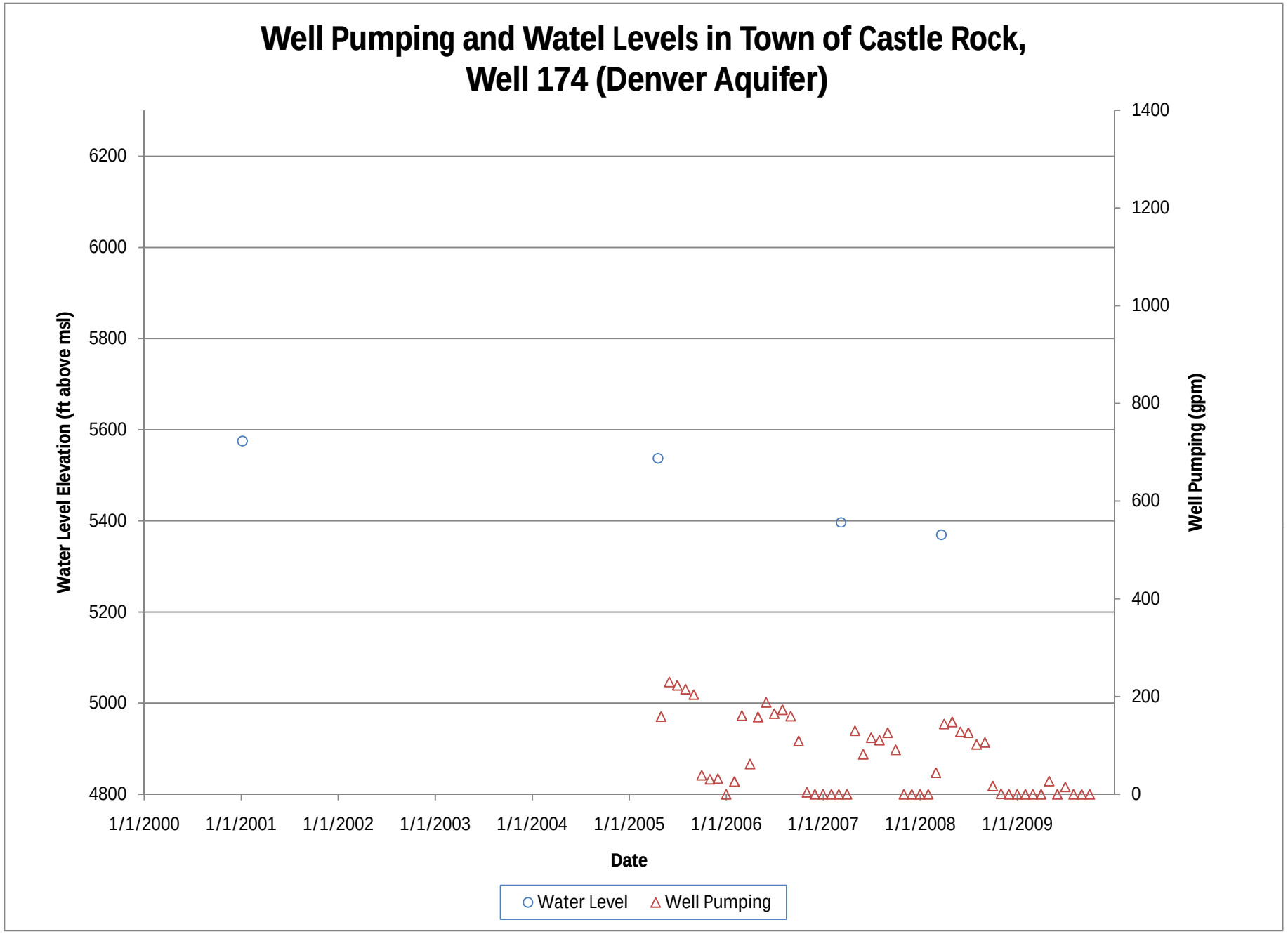

Well Pumping and Watel Levels in Town of Castle Rock,
Well 110 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

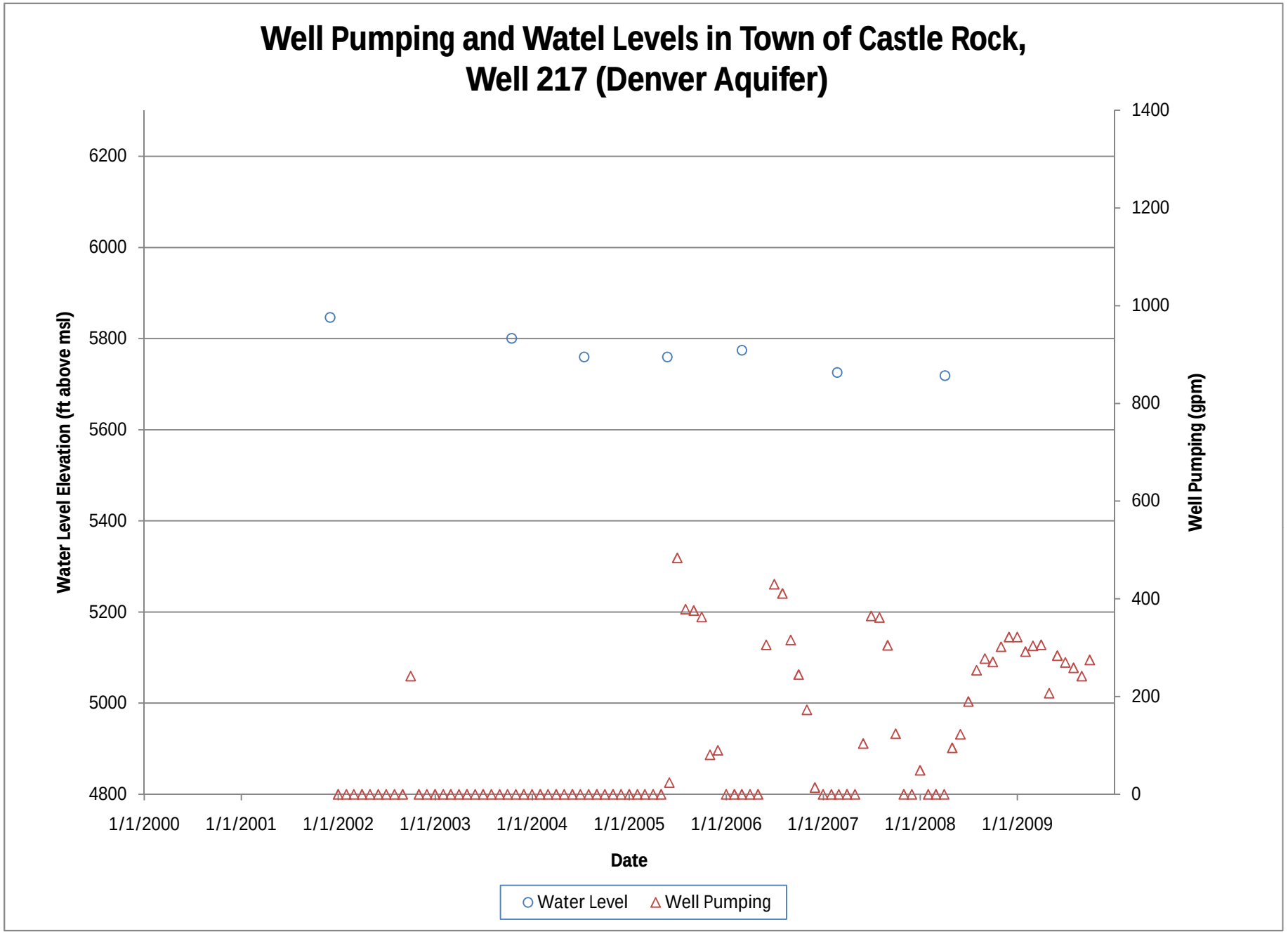

Well Pumping and Watel Levels in Town of Castle Rock, Well 111 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

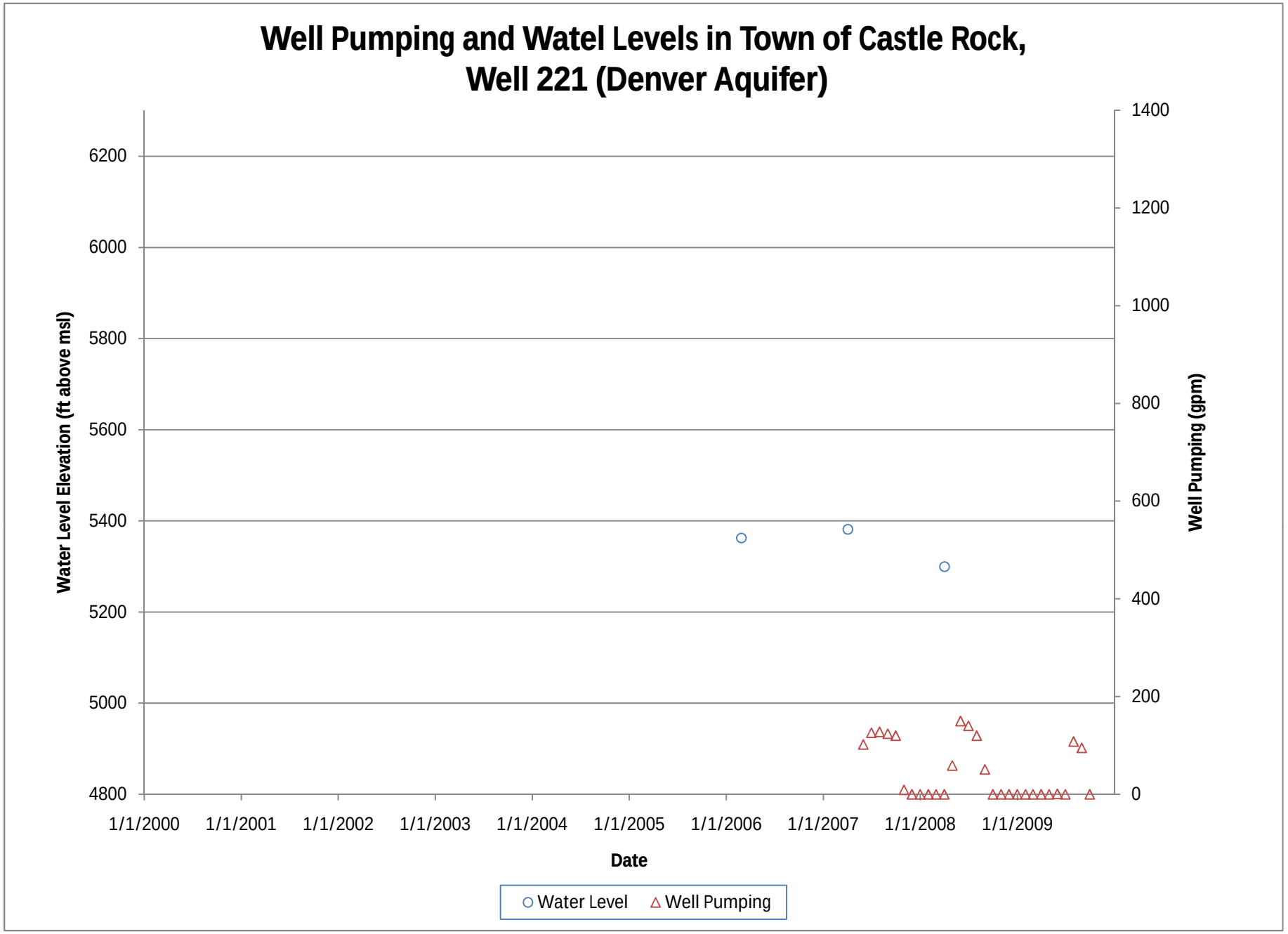

Well Pumping and Watel Levels in Town of Castle Rock, Well 148 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

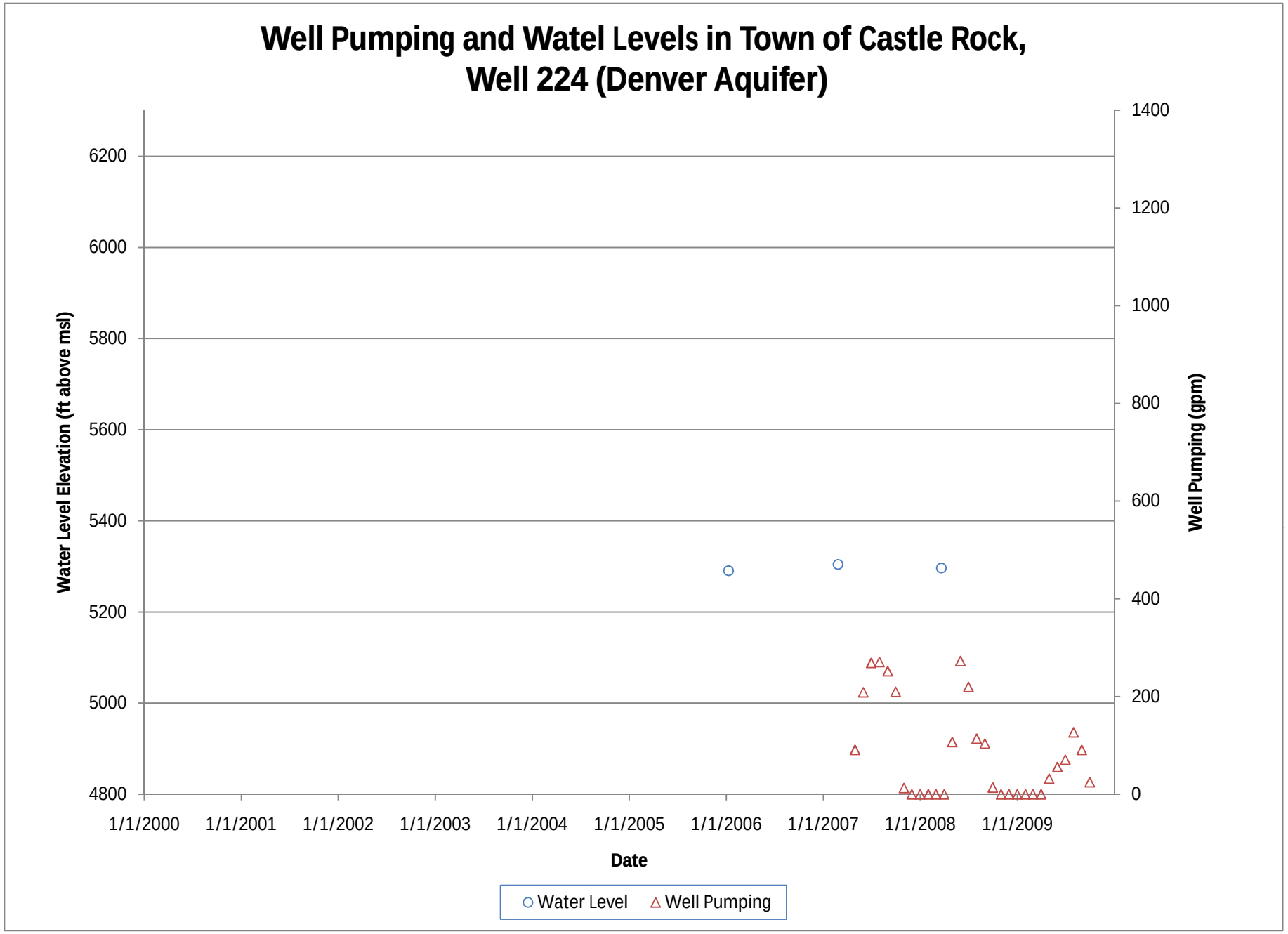

Well Pumping and Watel Levels in Town of Castle Rock, Well 149 (Denver Aquifer)
Water Level Elevation (ft above msl)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
Well Pumping (gpm)
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

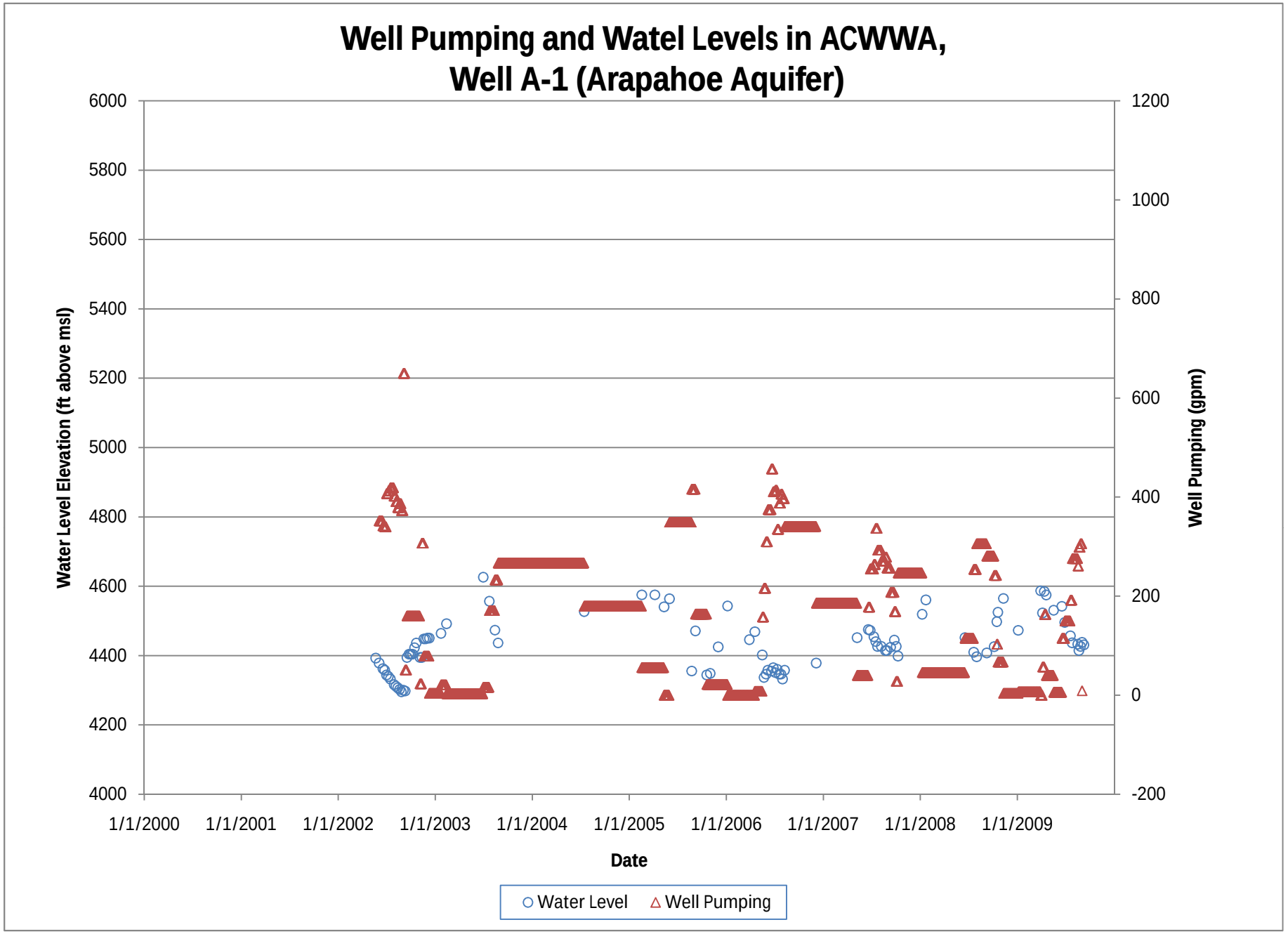

Well Pumping and Watel Levels in Town of Castle Rock,
Well 150 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

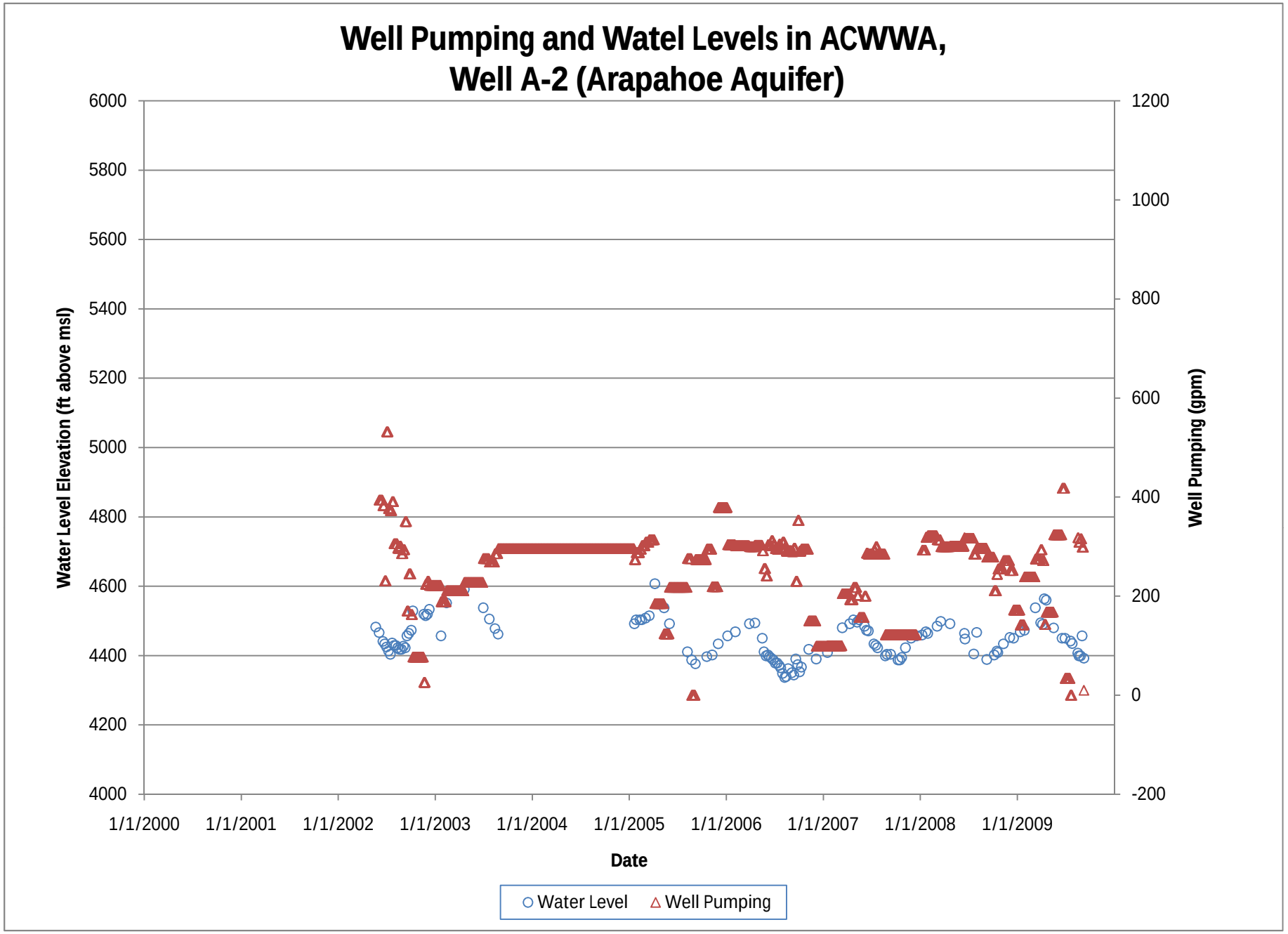

Well Pumping and Watel Levels in Town of Castle Rock, Well 174 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

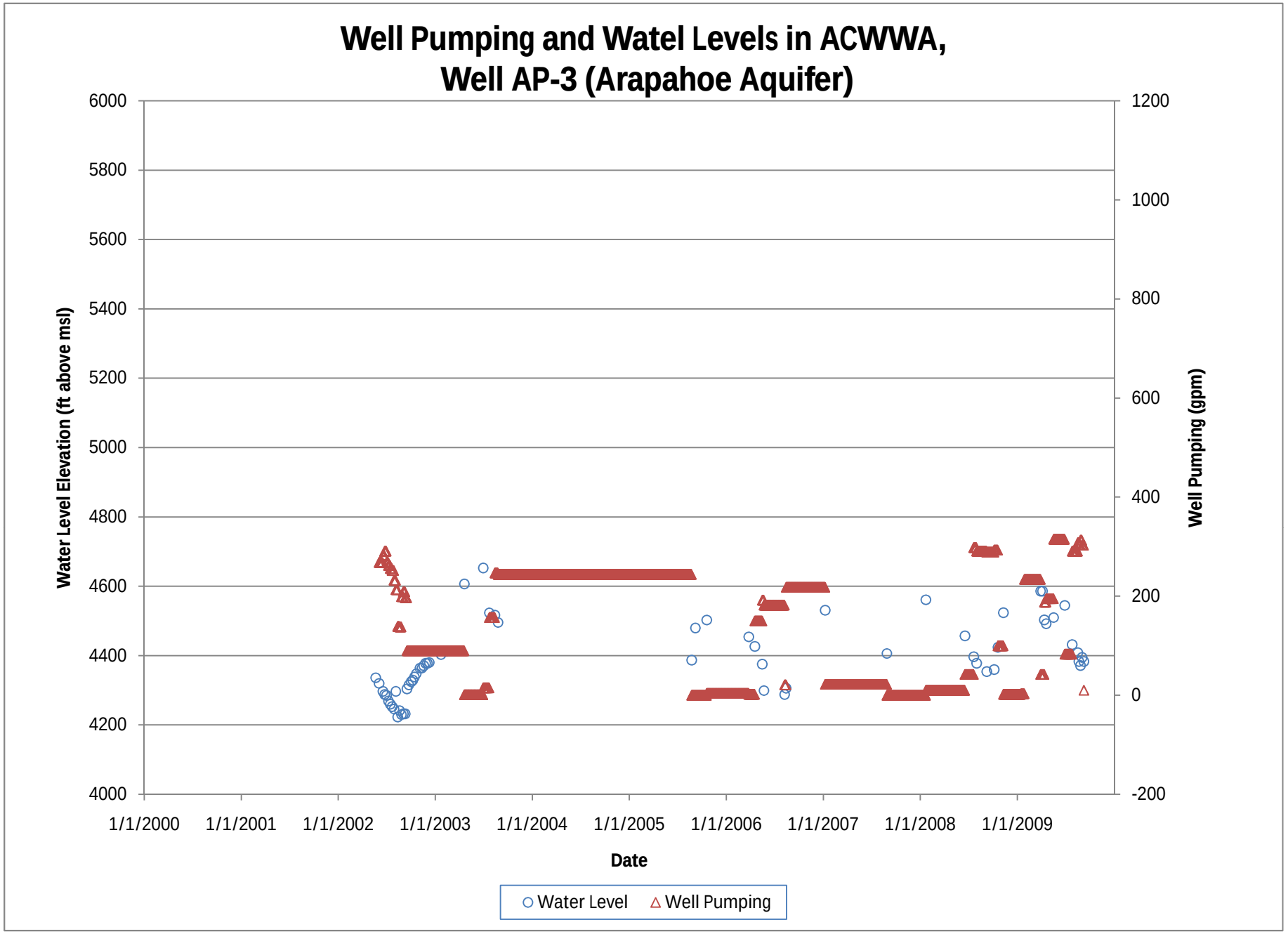

Well Pumping and Watel Levels in Town of Castle Rock,
Well 217 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

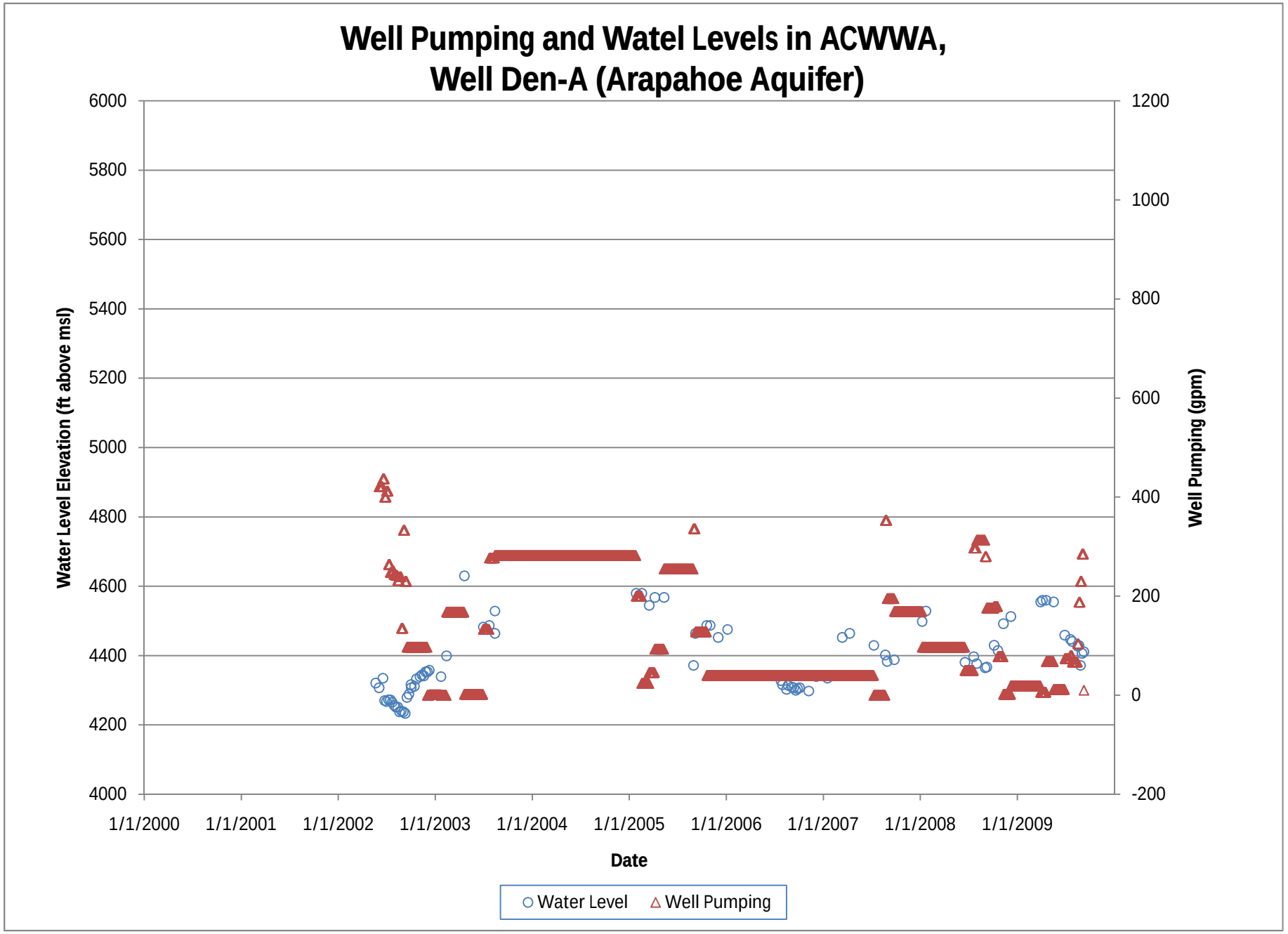

Well Pumping and Watel Levels in Town of Castle Rock,
Well 221 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

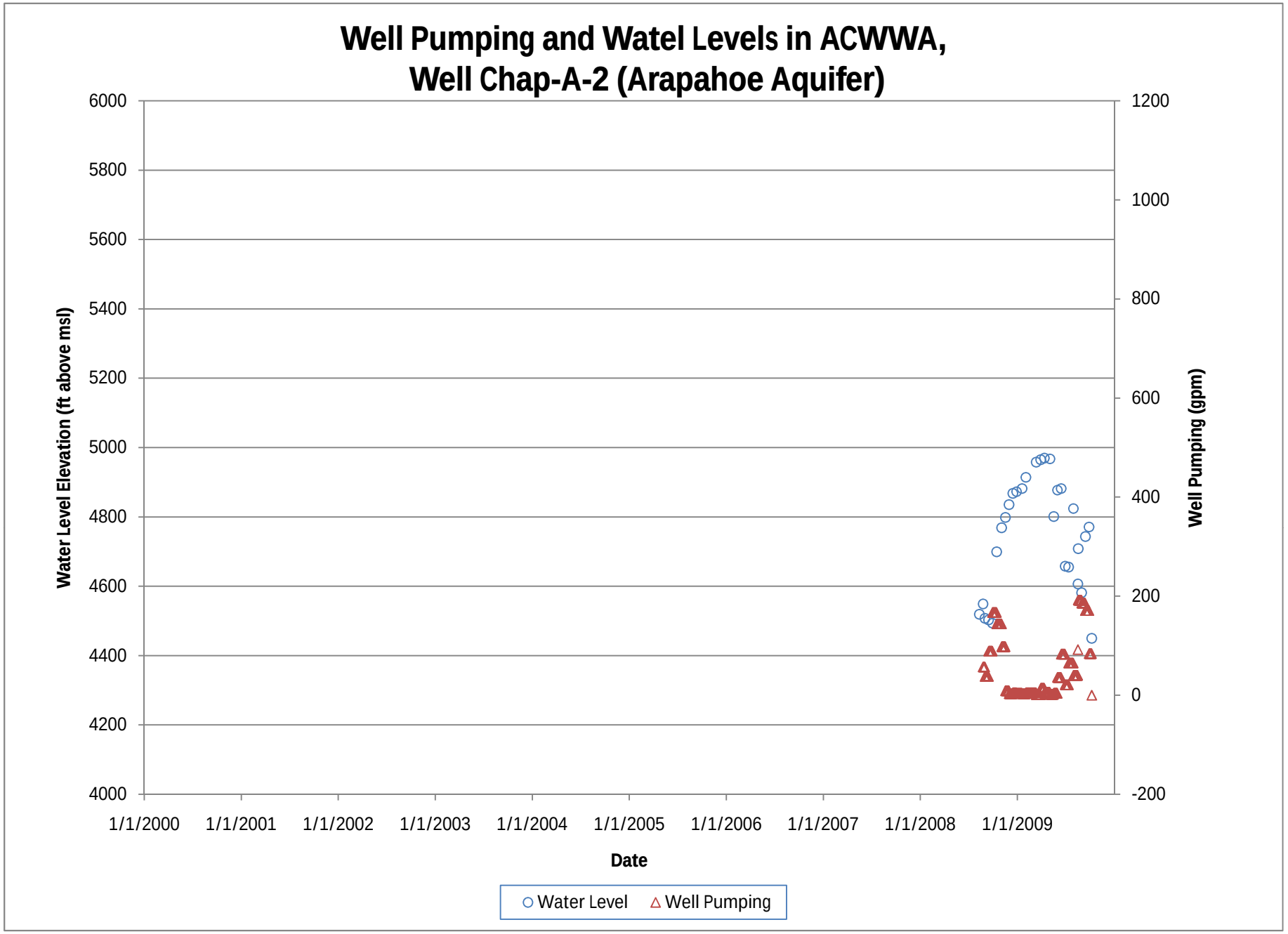

Well Pumping and Watel Levels in Town of Castle Rock,
Well 224 (Denver Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6200
6000
5800
5600
5400
5200
5000
4800
1400
1200
1000
800
600
400
200
0
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

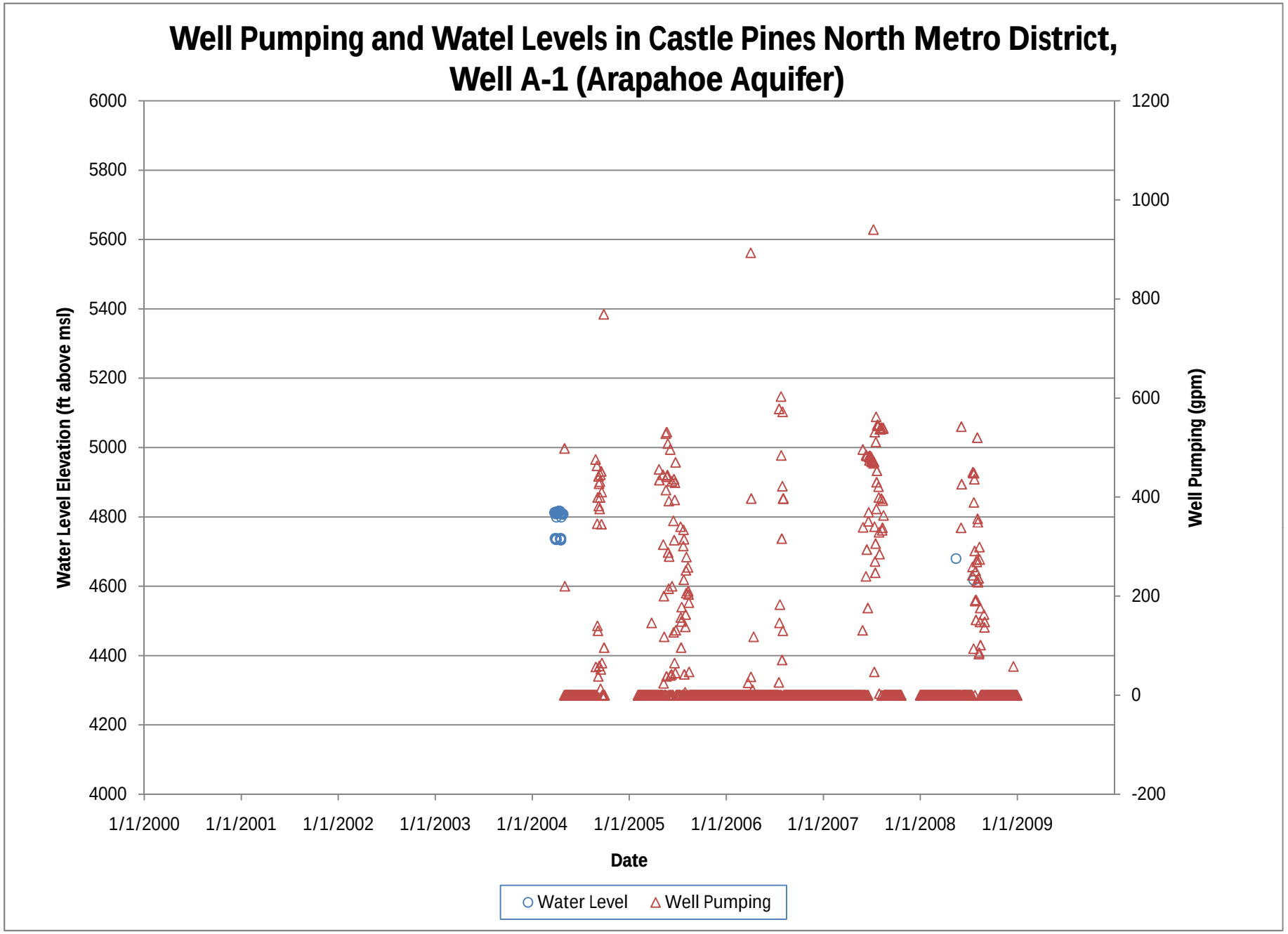

Well Pumping and Watel Levels in ACWWA,
Well A-1 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

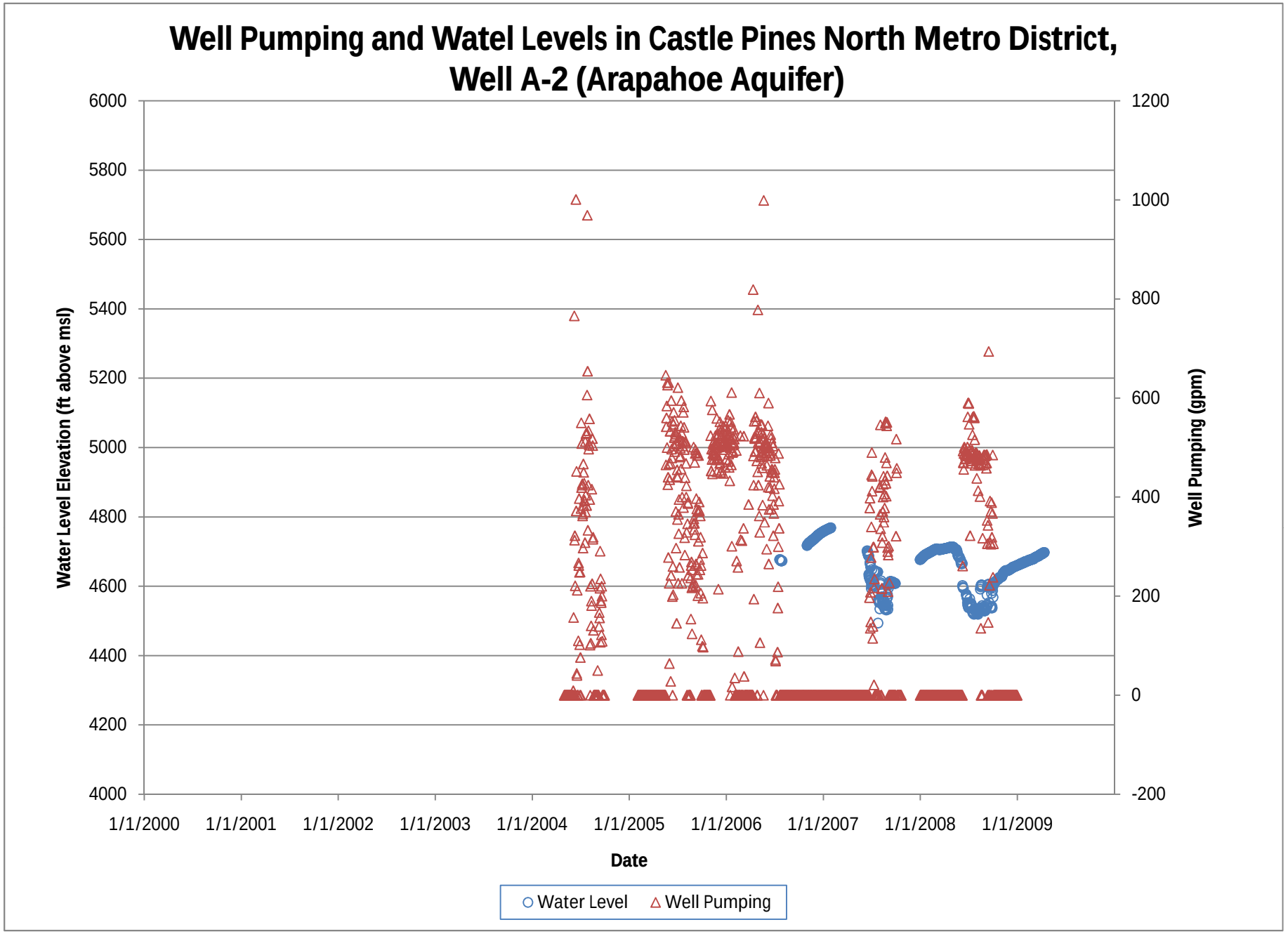

Well Pumping and Watel Levels in ACWWA,
Well A-2 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

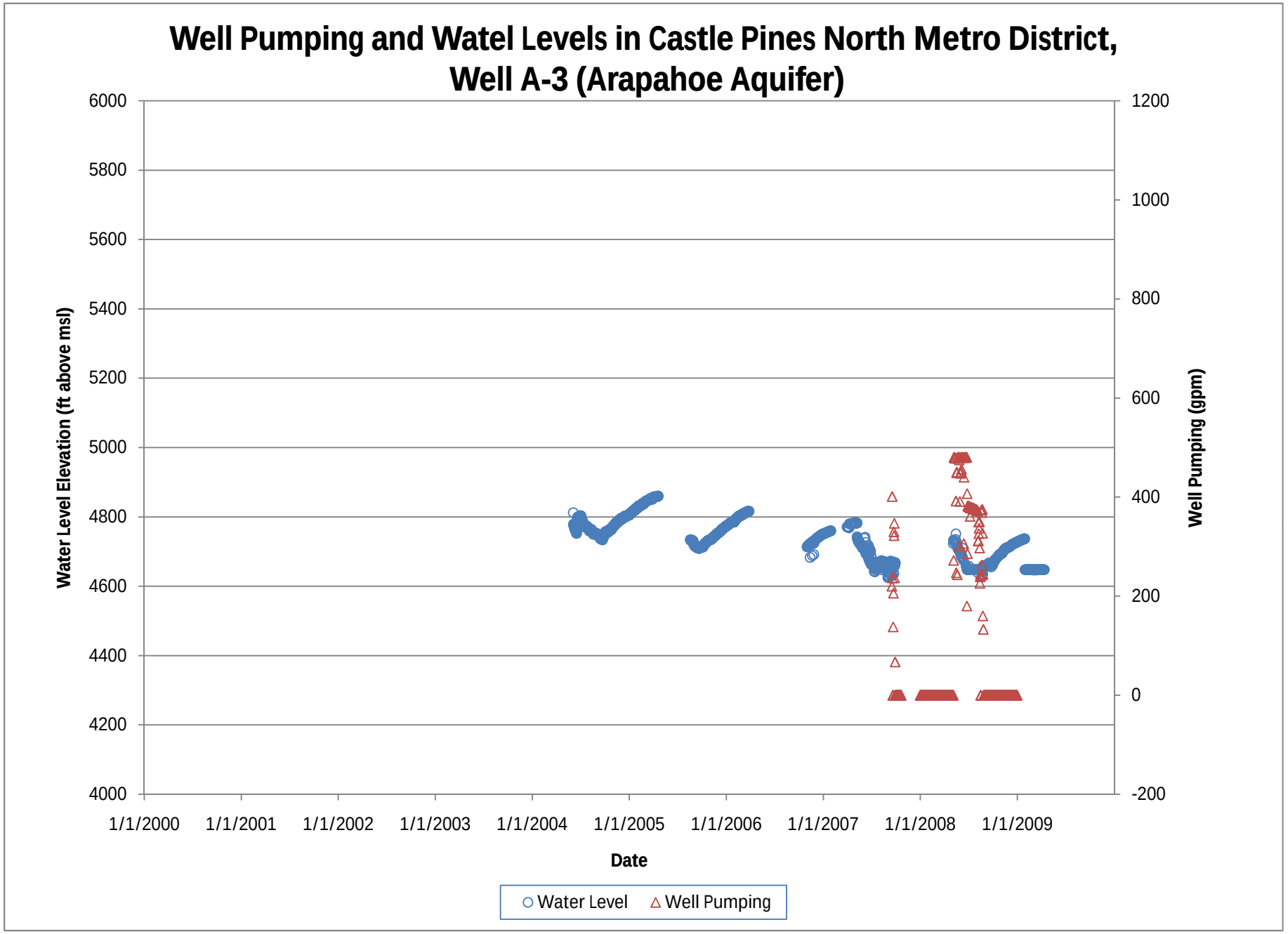

Well Pumping and Watel Levels in ACWWA,
Well AP-3 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

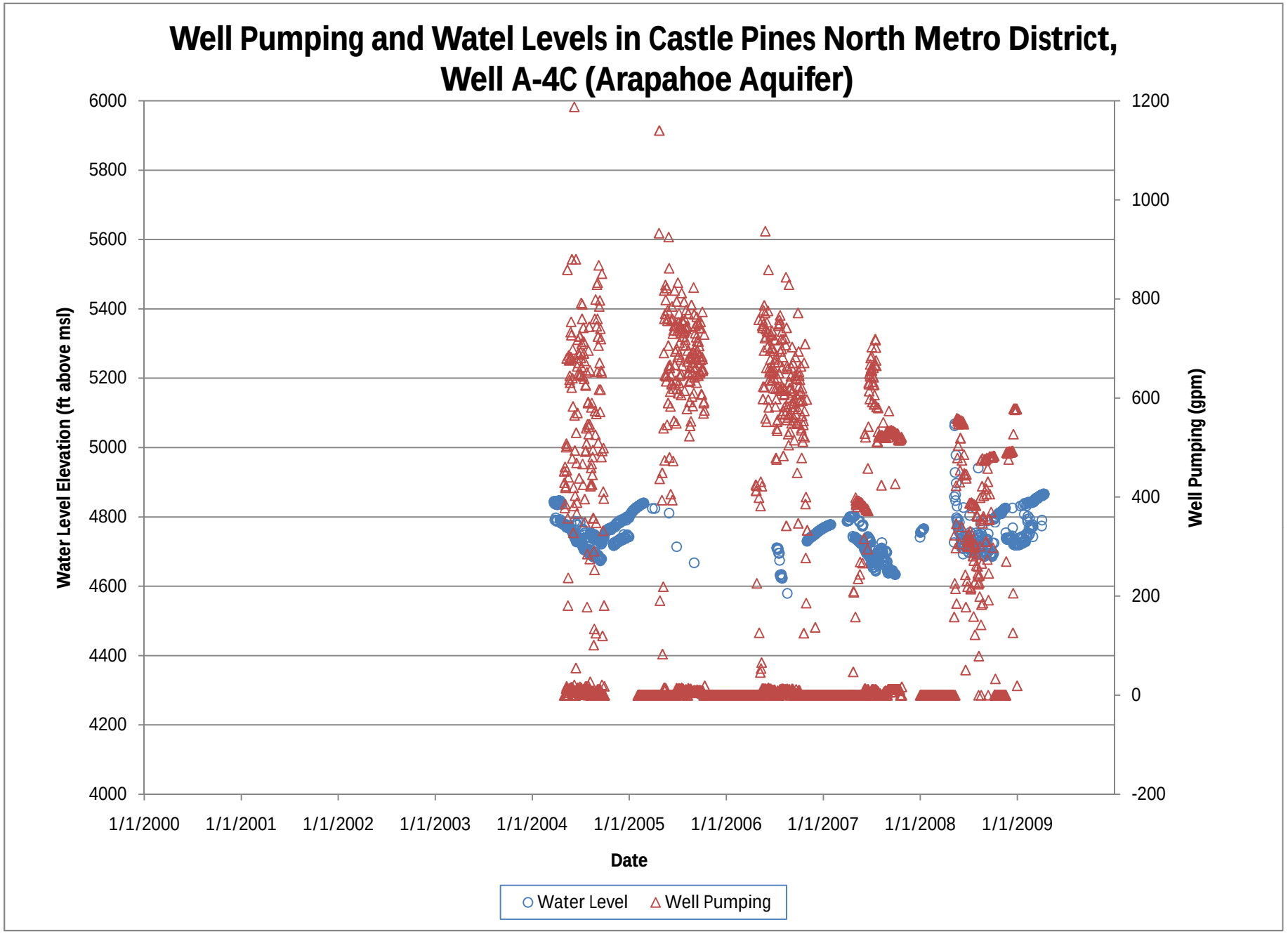

Well Pumping and Watel Levels in ACWWA,
Well Den-A (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

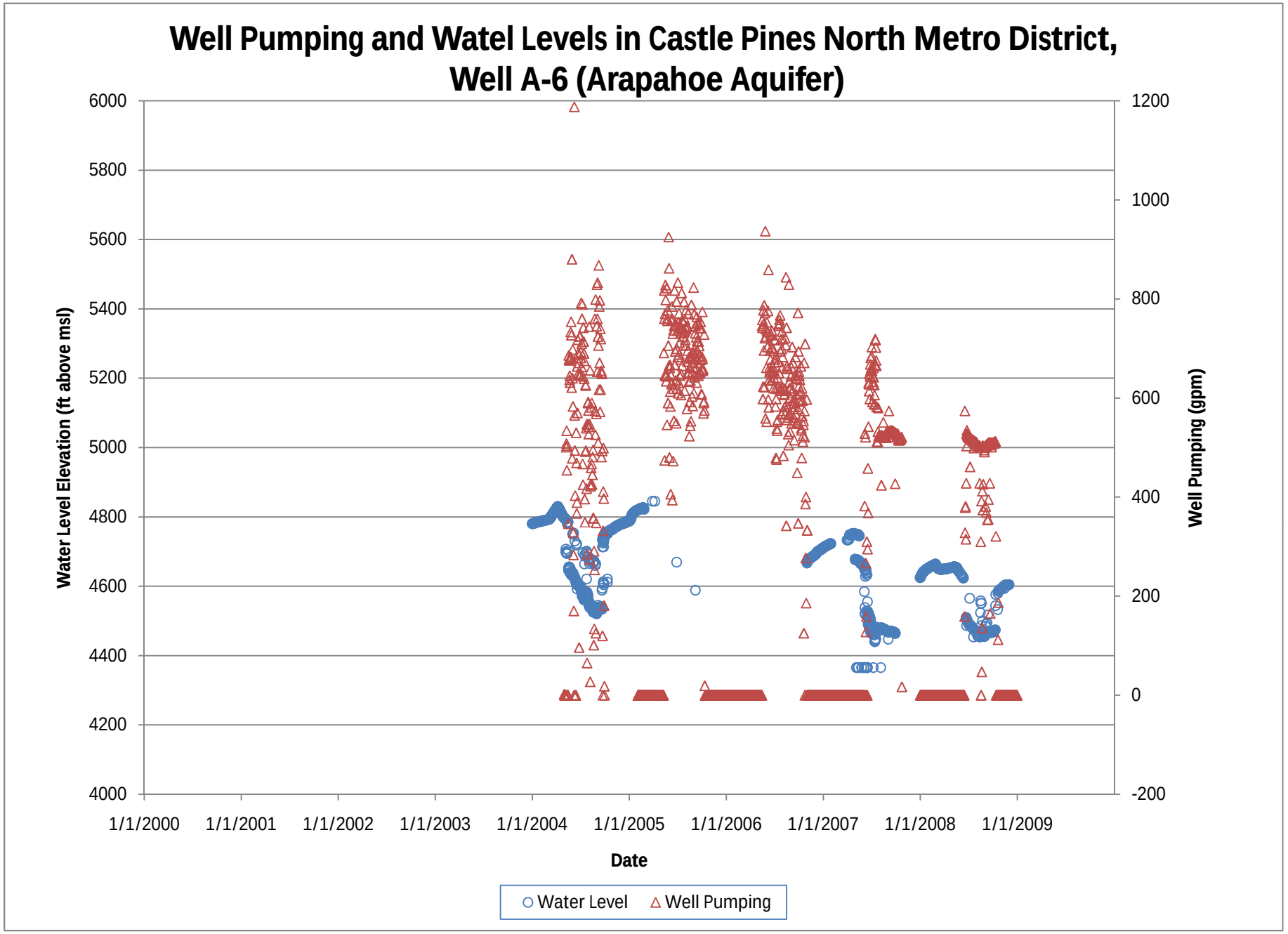

Well Pumping and Watel Levels in ACWWA,
Well Chap-A-2 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

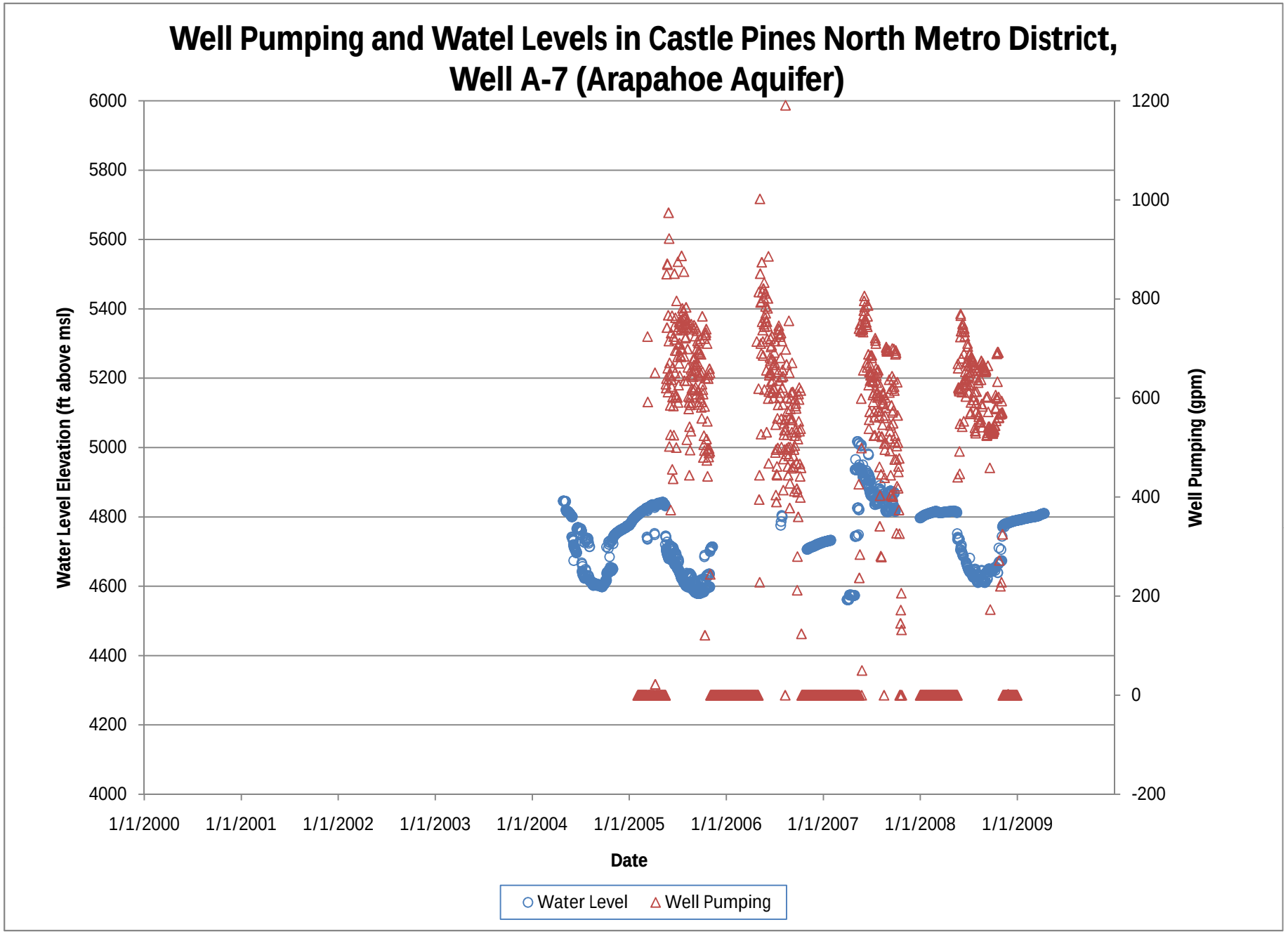

Well Pumping and Watel Levels in Castle Pines North Metro District, Well A-1 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

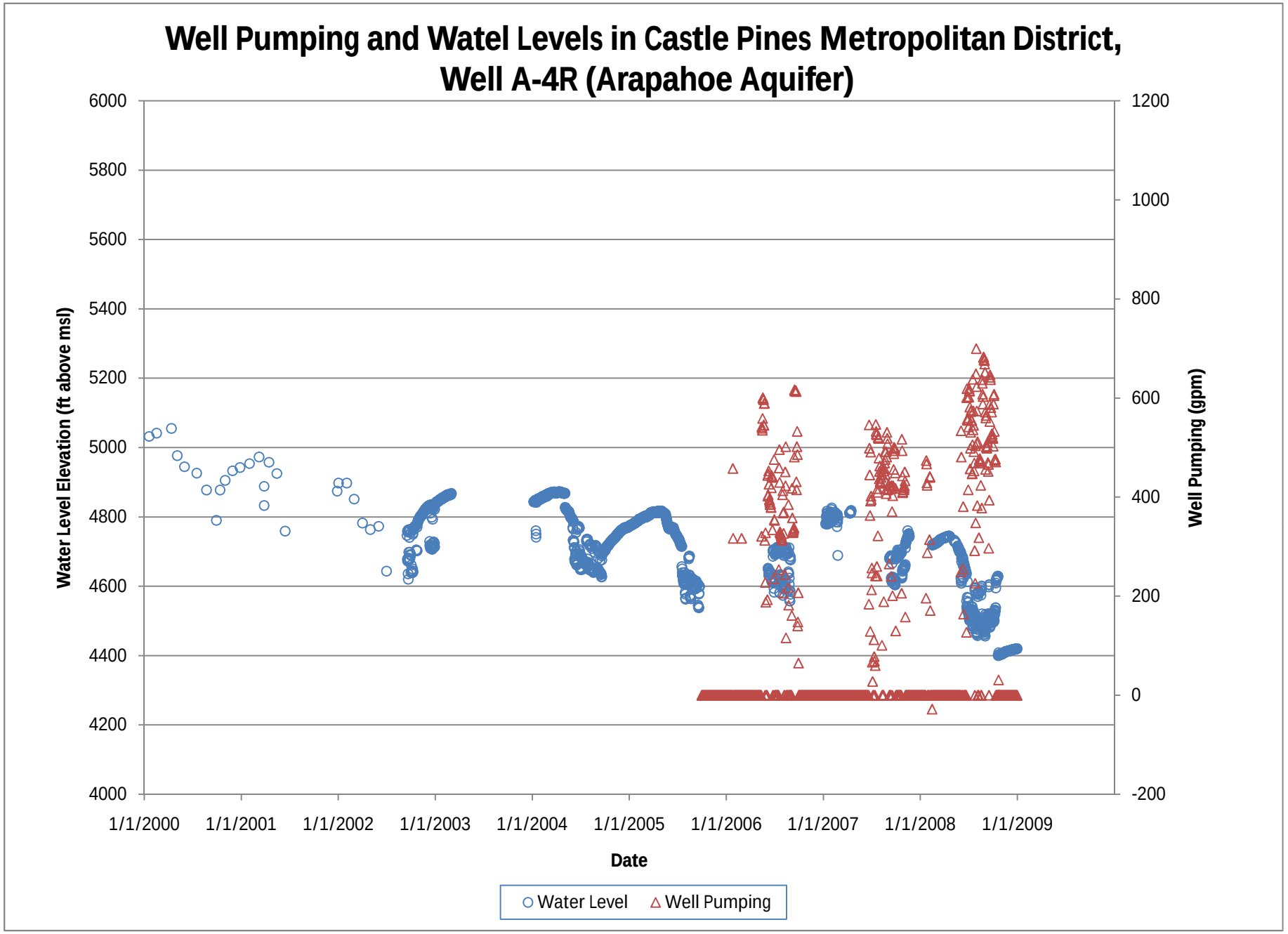

Well Pumping and Watel Levels in Castle Pines North Metro District, Well A-2 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

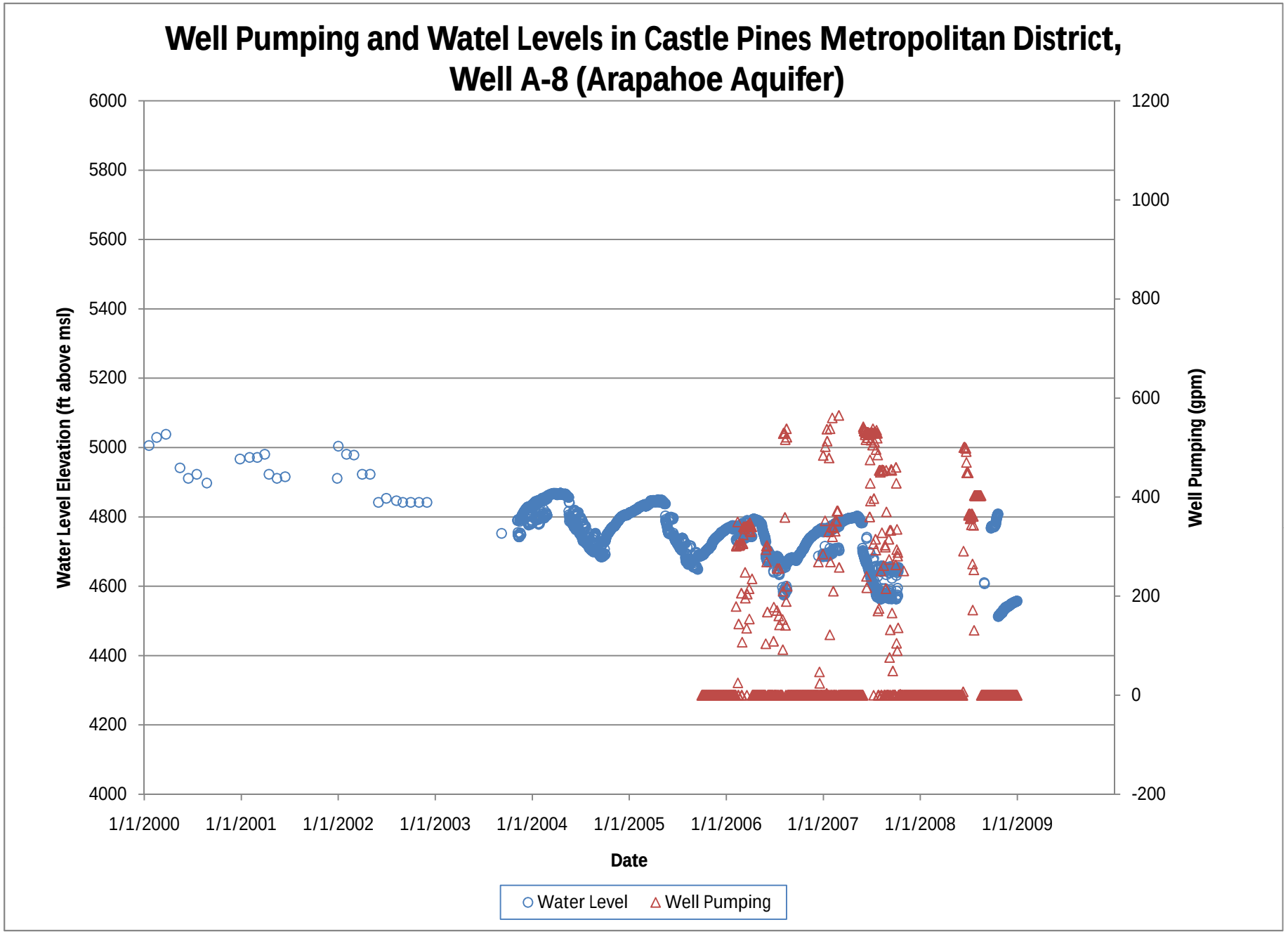

Well Pumping and Watel Levels in Castle Pines North Metro District, Well A-3 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

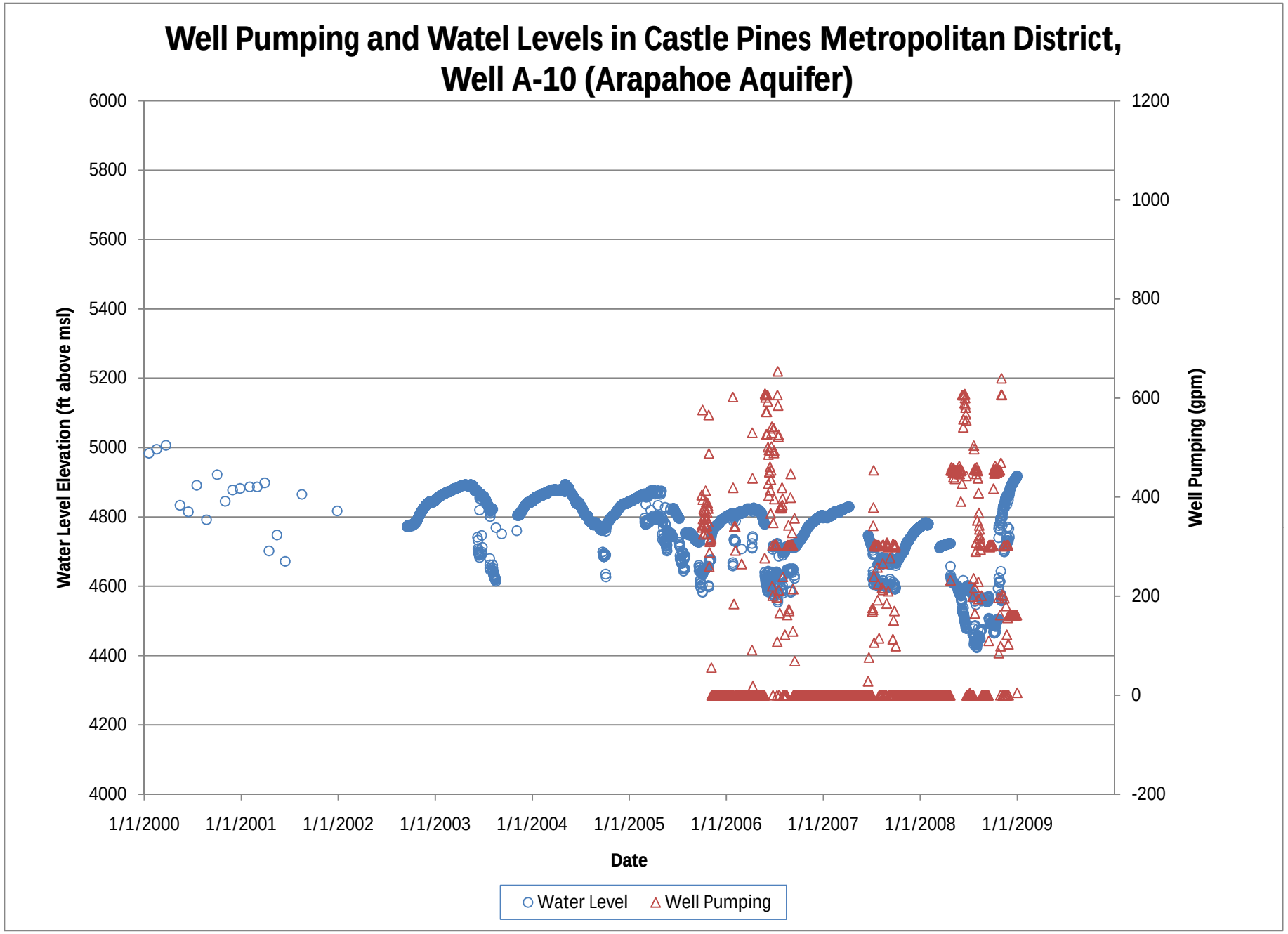

Well Pumping and Watel Levels in Castle Pines North Metro District, Well A-4C (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

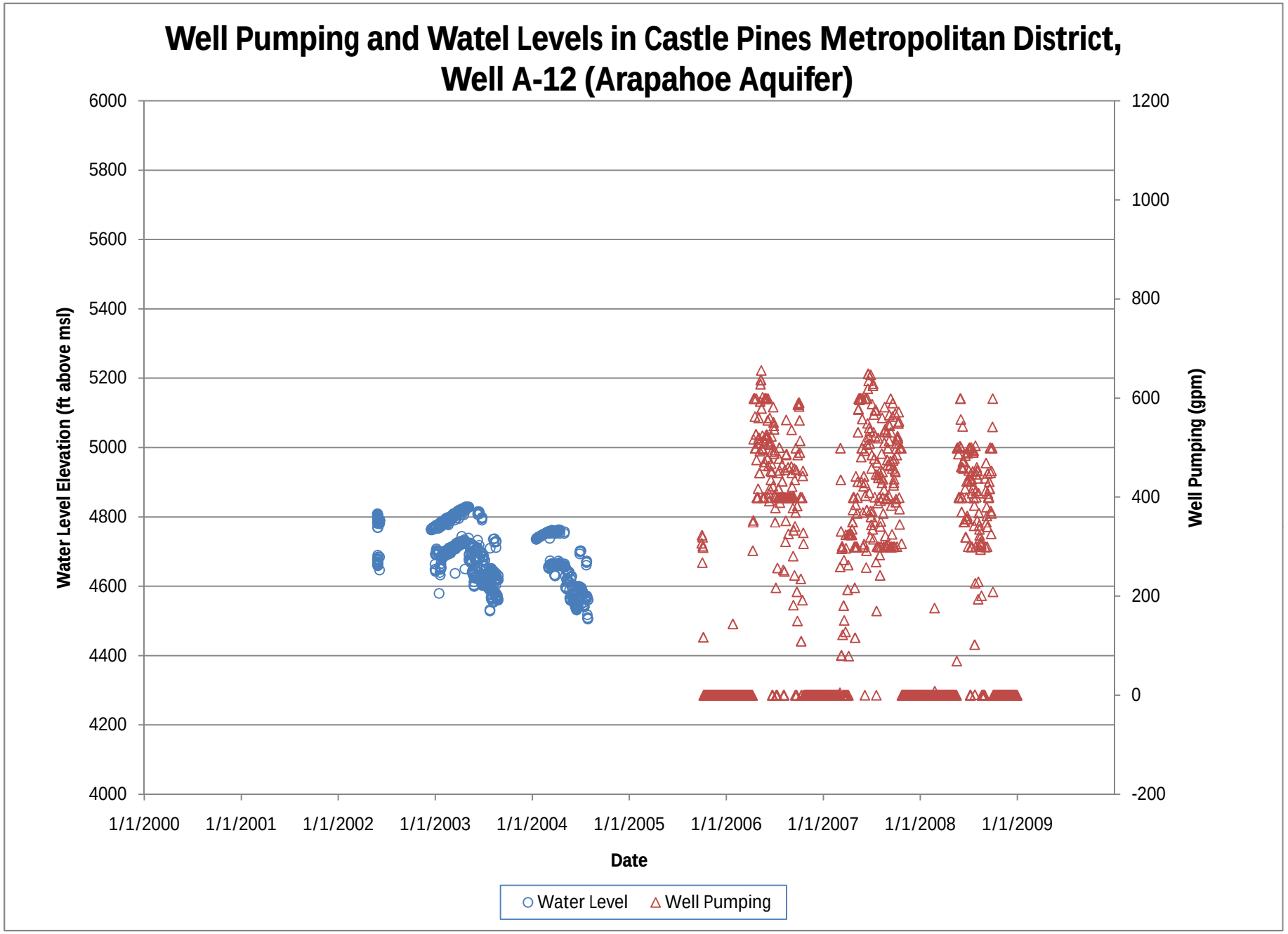

Well Pumping and Watel Levels in Castle Pines North Metro District, Well A-6 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

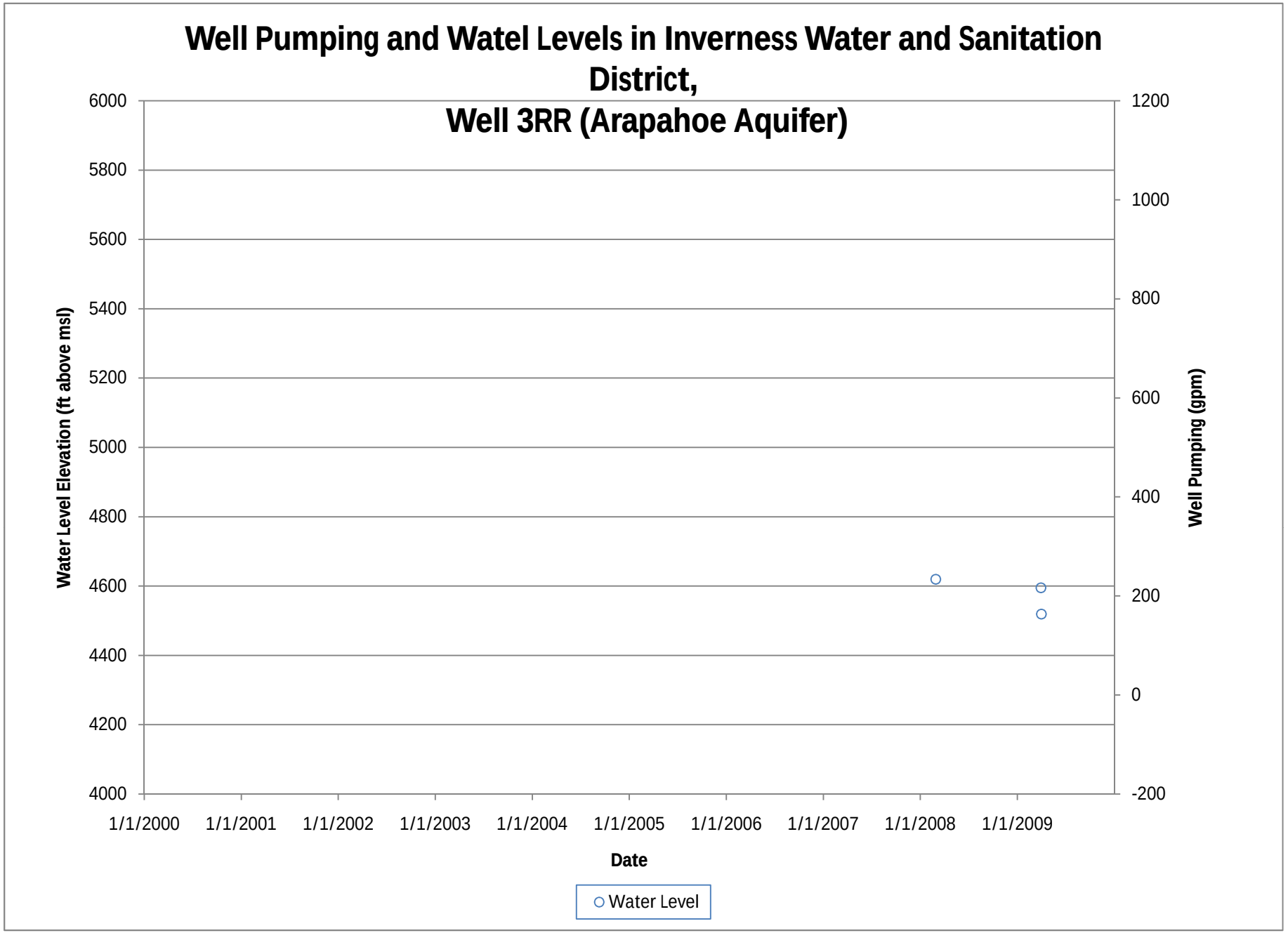

Well Pumping and Watel Levels in Castle Pines North Metro District, Well A-7 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

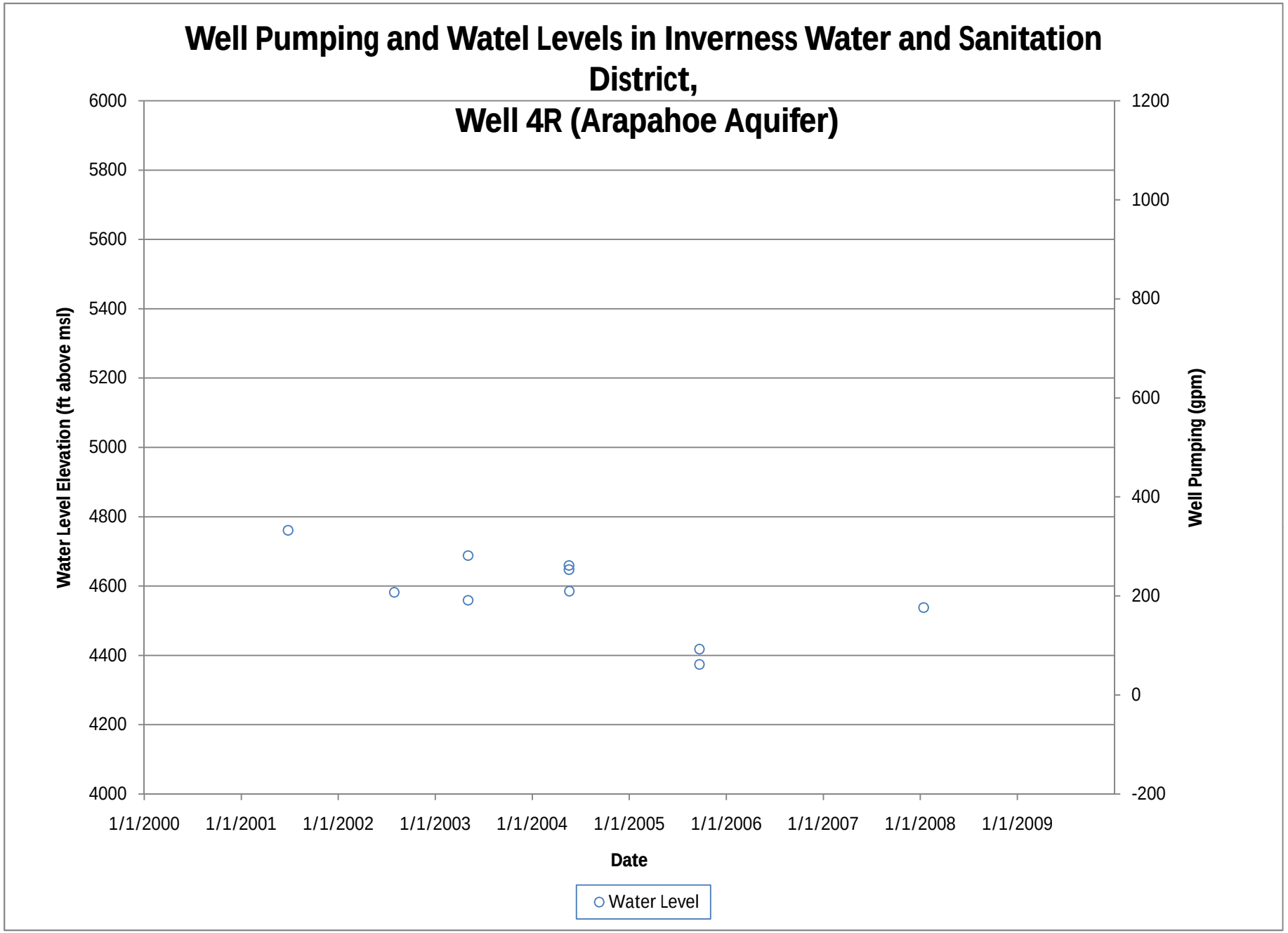

Well Pumping and Watel Levels in Castle Pines Metropolitan District, Well A-4R (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

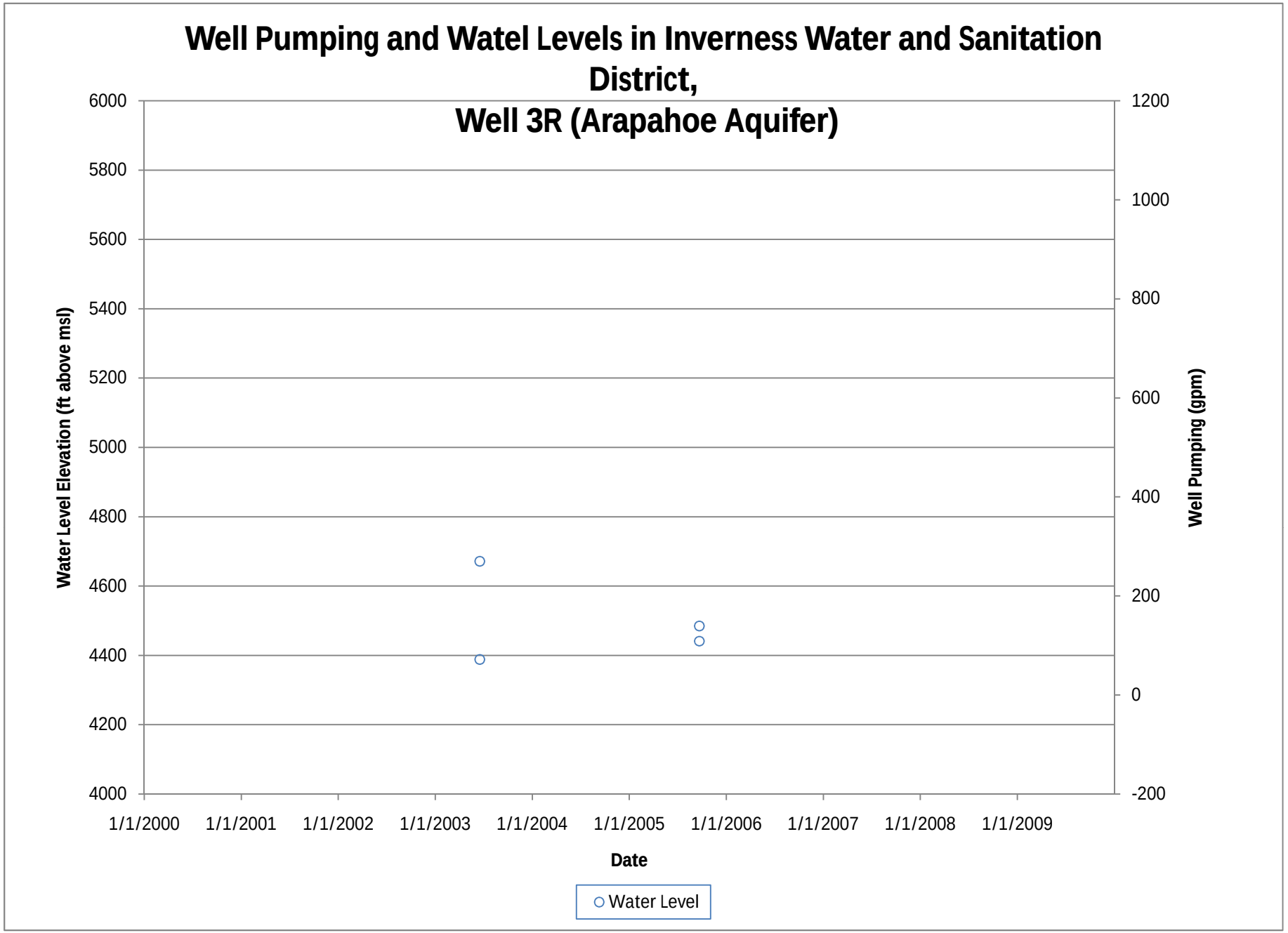

Well Pumping and Watel Levels in Castle Pines Metropolitan District, Well A-8 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

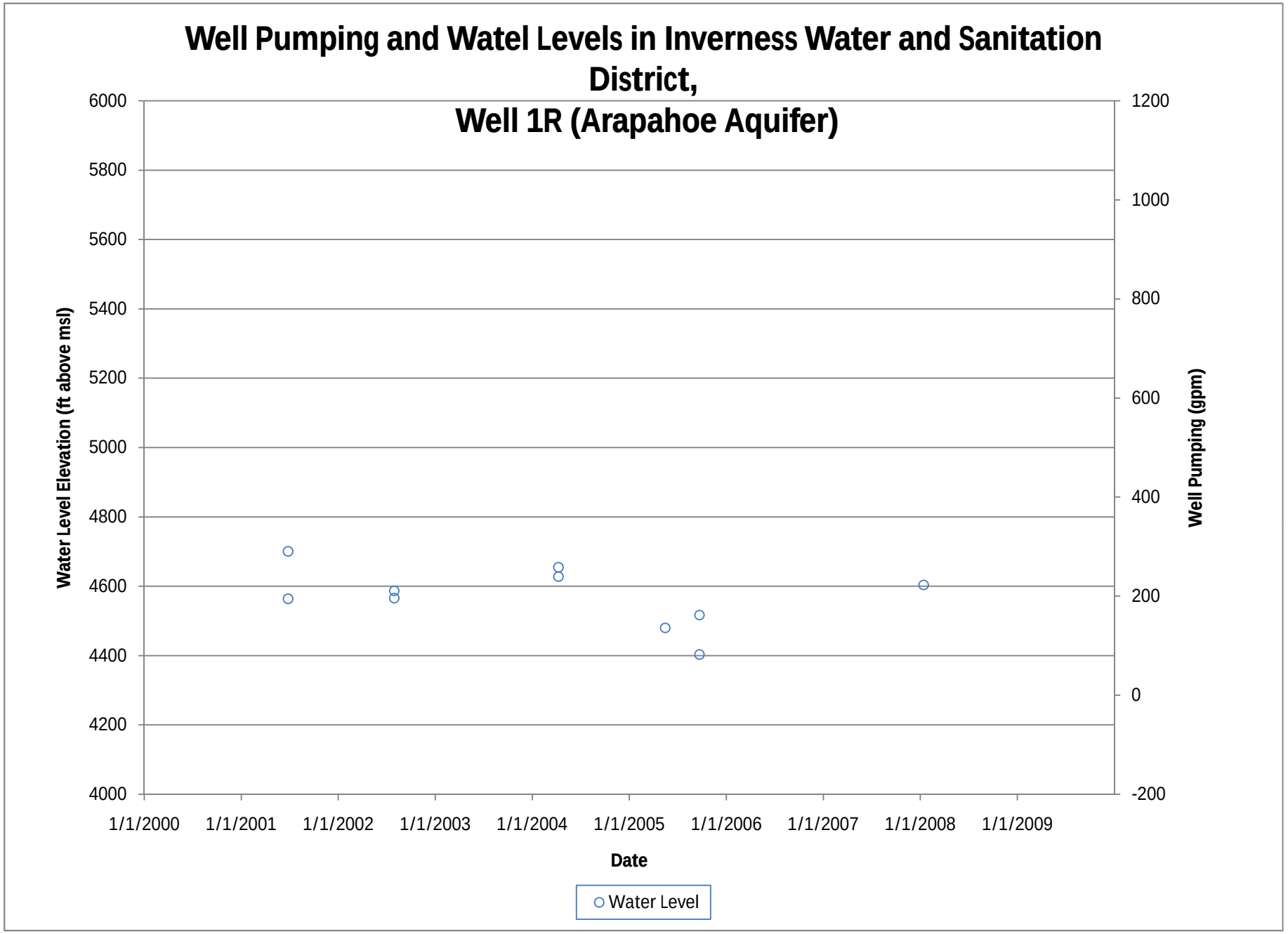

Well Pumping and Watel Levels in Castle Pines Metropolitan District, Well A-10 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

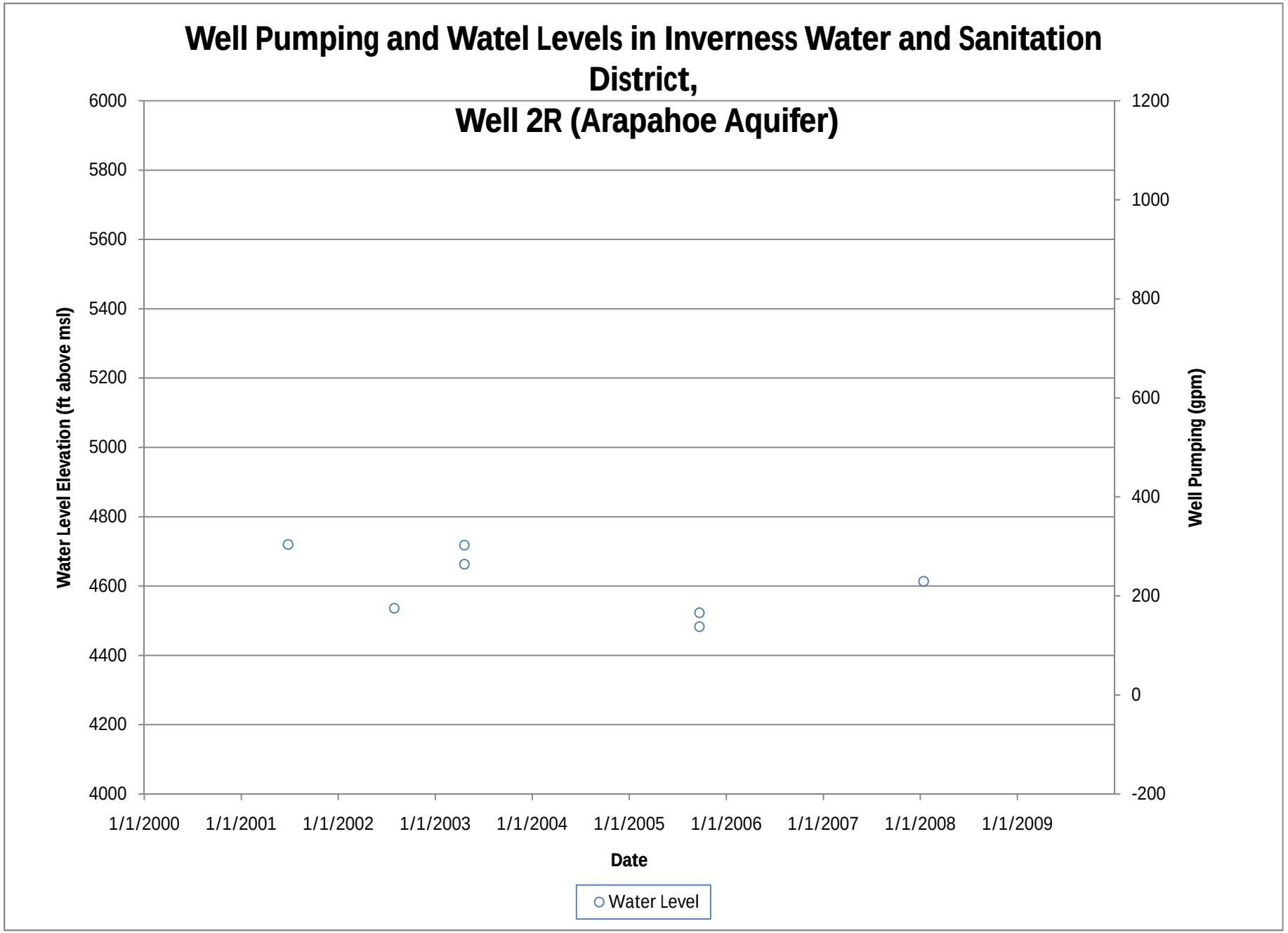

Well Pumping and Watel Levels in Castle Pines Metropolitan District, Well A-12 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

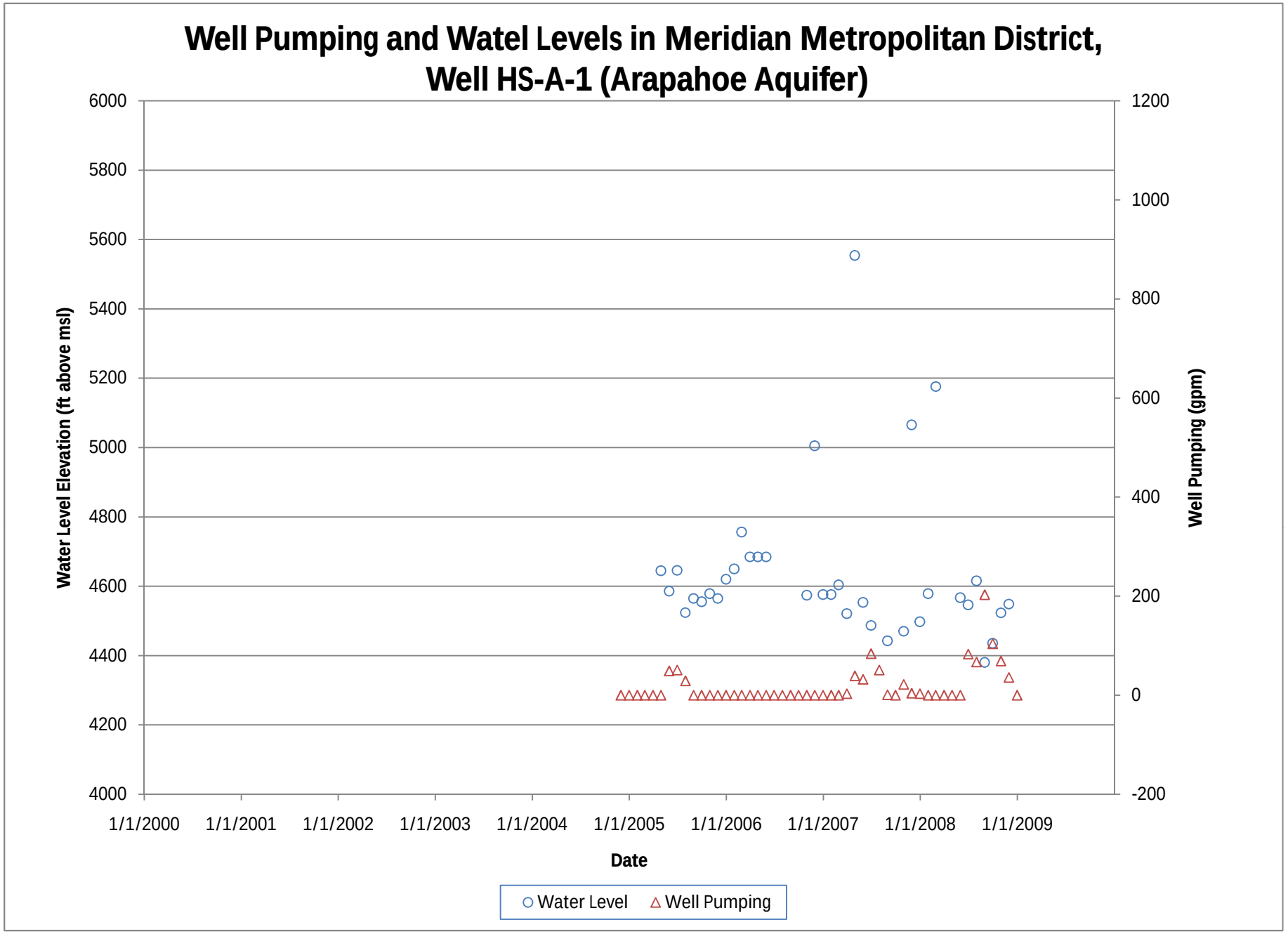

Well Pumping and Watel Levels in Inverness Water and Sanitation District,
Well 3RR (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level

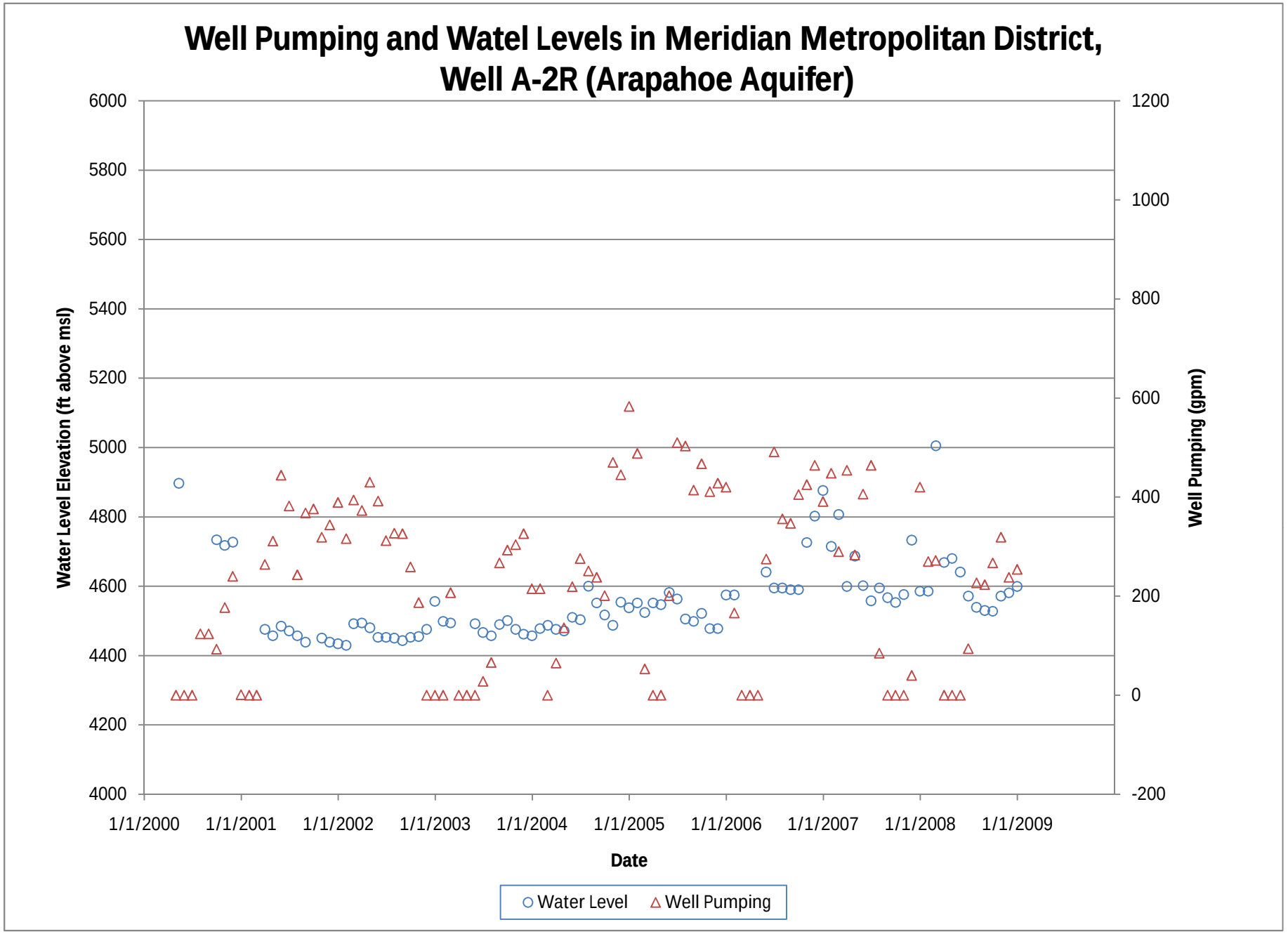

Well Pumping and Watel Levels in Inverness Water and Sanitation District,
Well 4R (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level

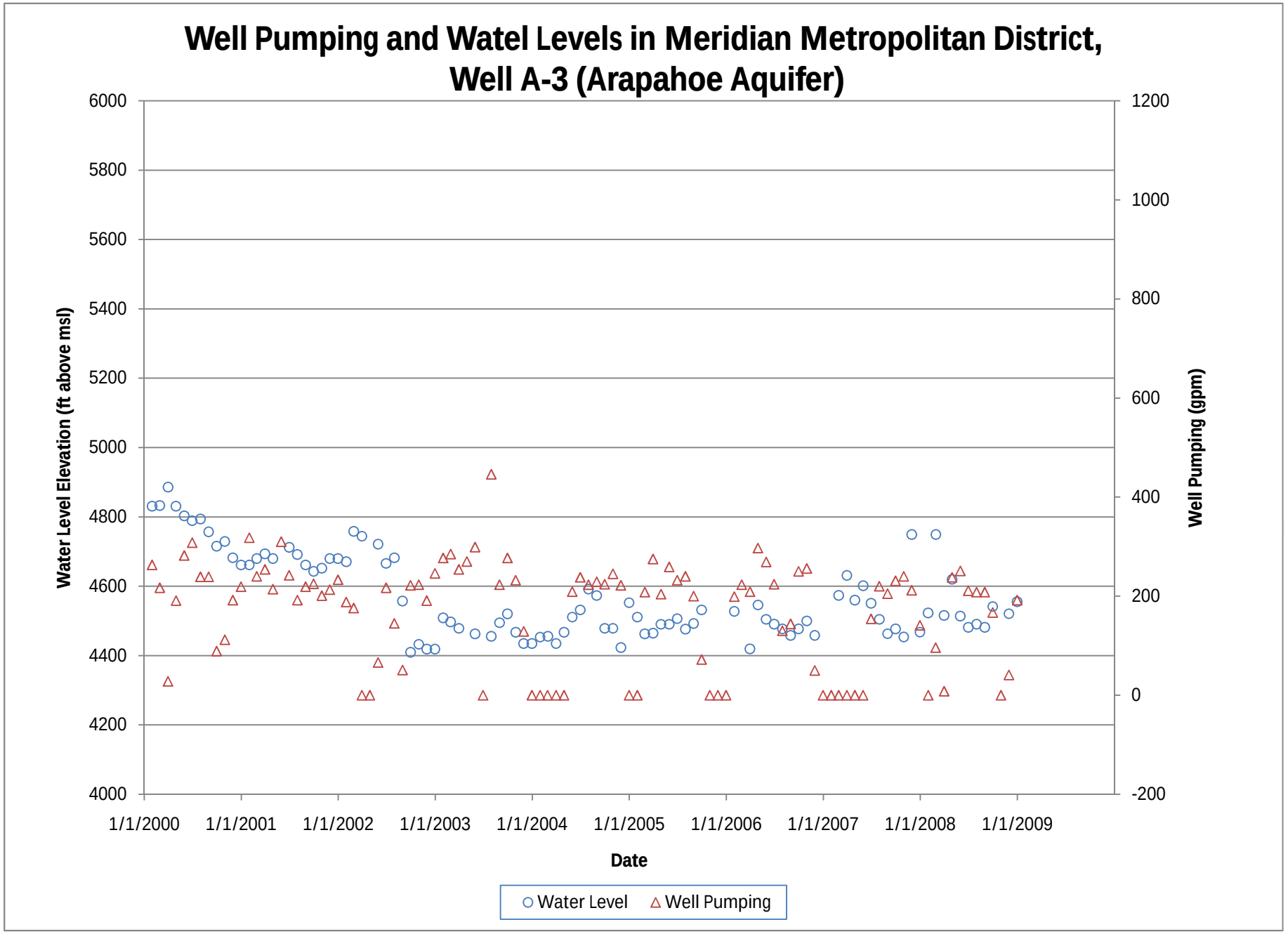

Well Pumping and Watel Levels in Inverness Water and Sanitation District,
Well 3R (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level

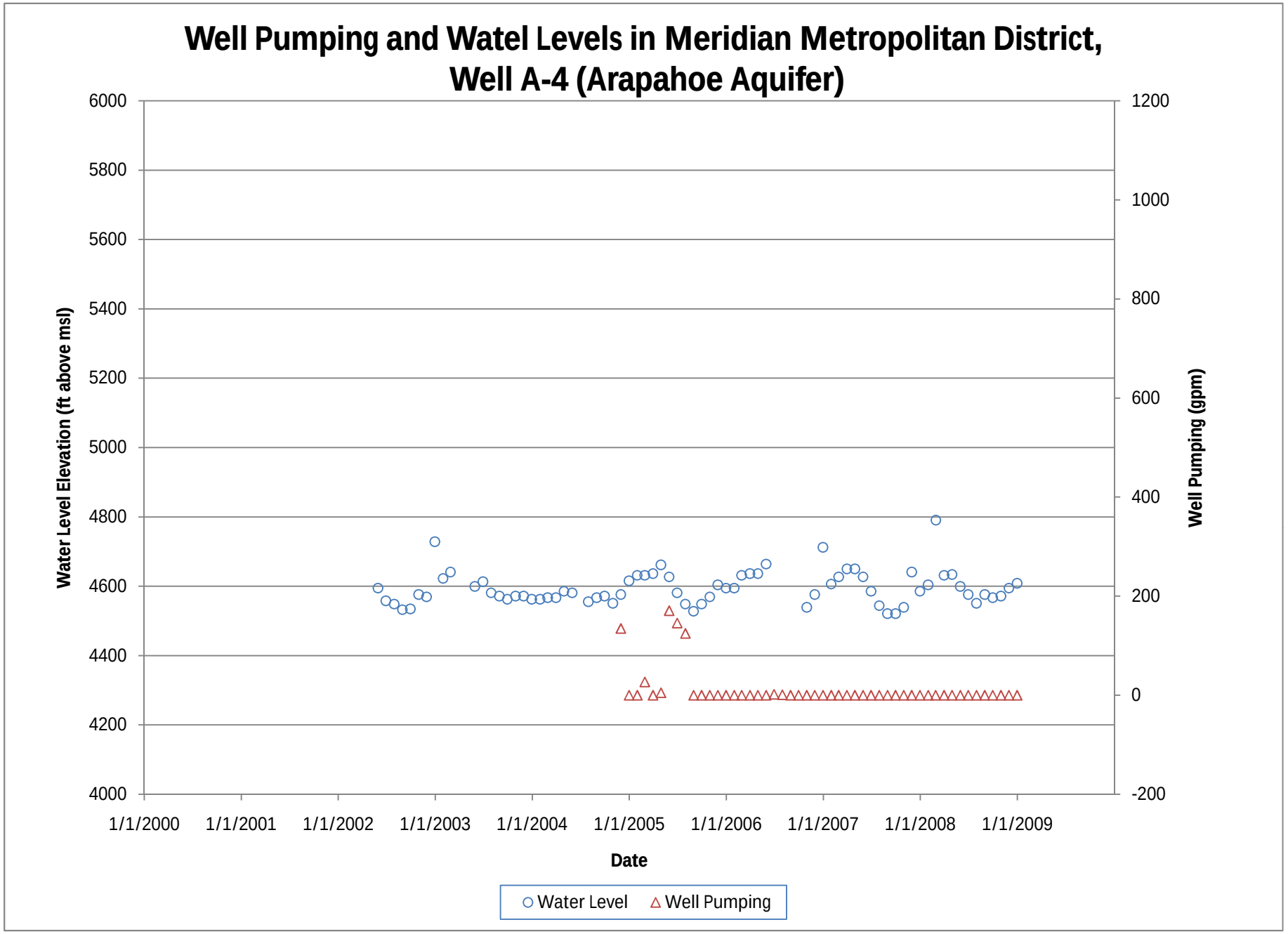

Well Pumping and Watel Levels in Inverness Water and Sanitation District,
Well 1R (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level

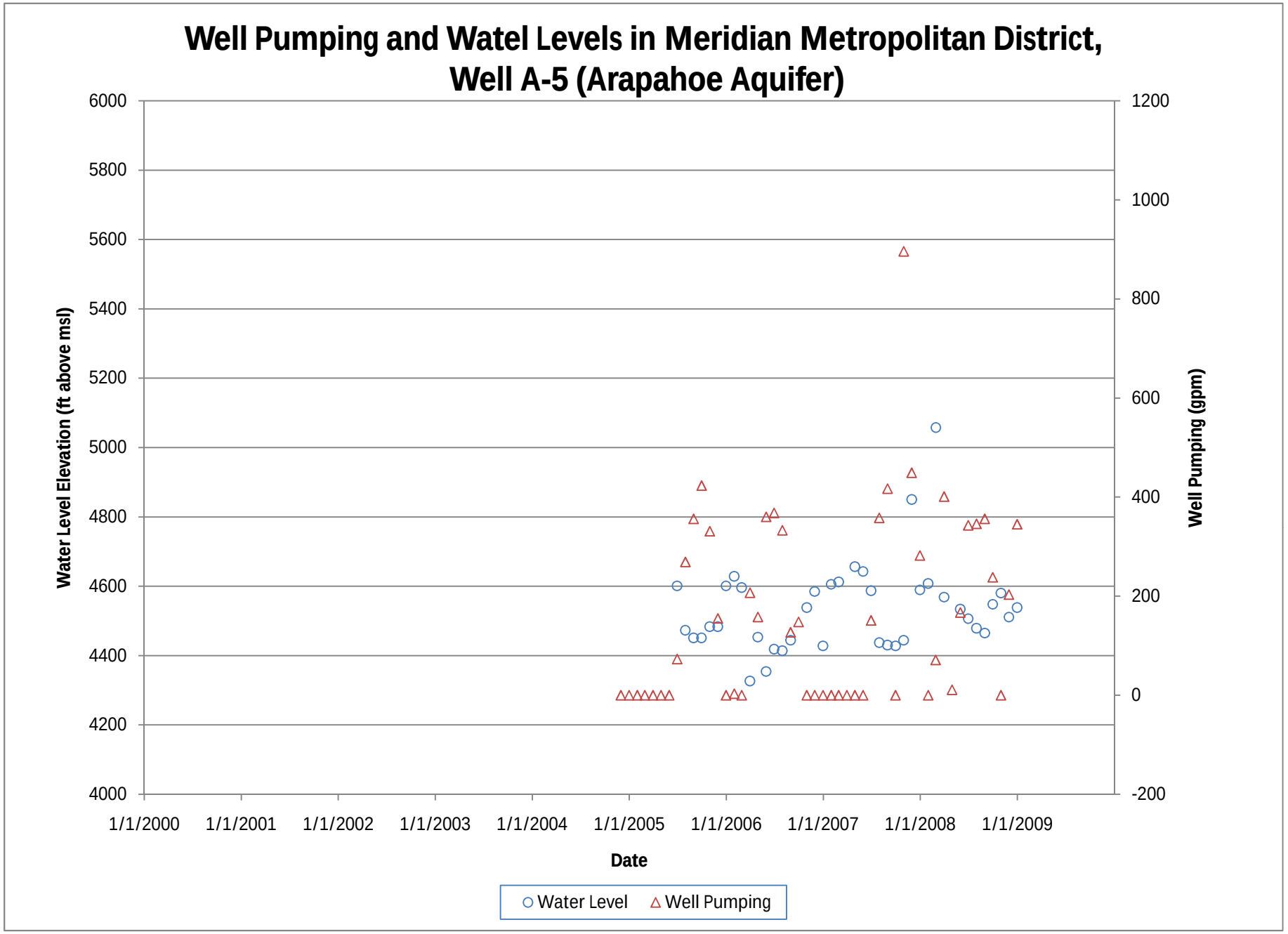

Well Pumping and Watel Levels in Inverness Water and Sanitation District,
Well 2R (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level

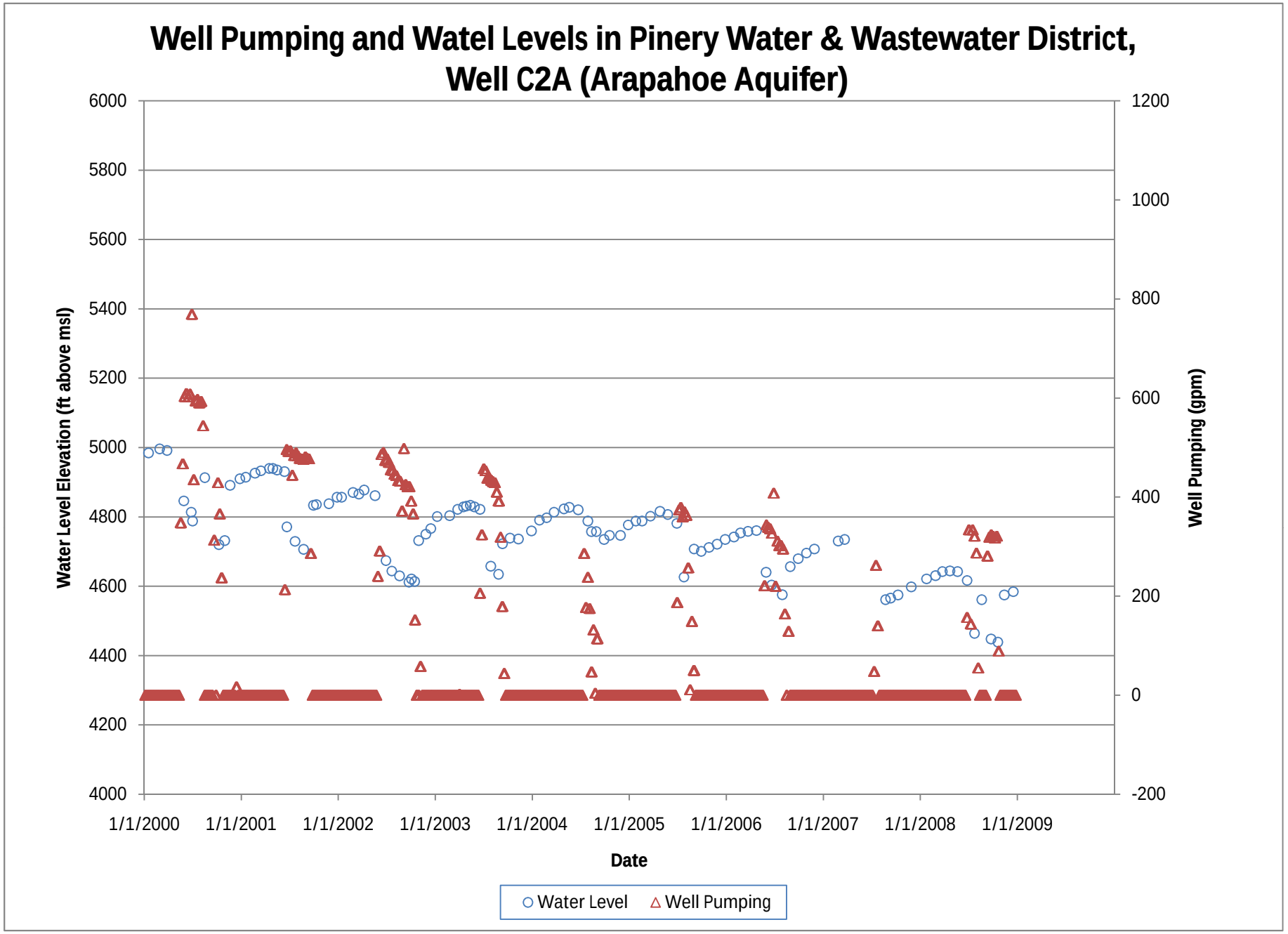

Well Pumping and Watel Levels in Meridian Metropolitan District, Well HS-A-1 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

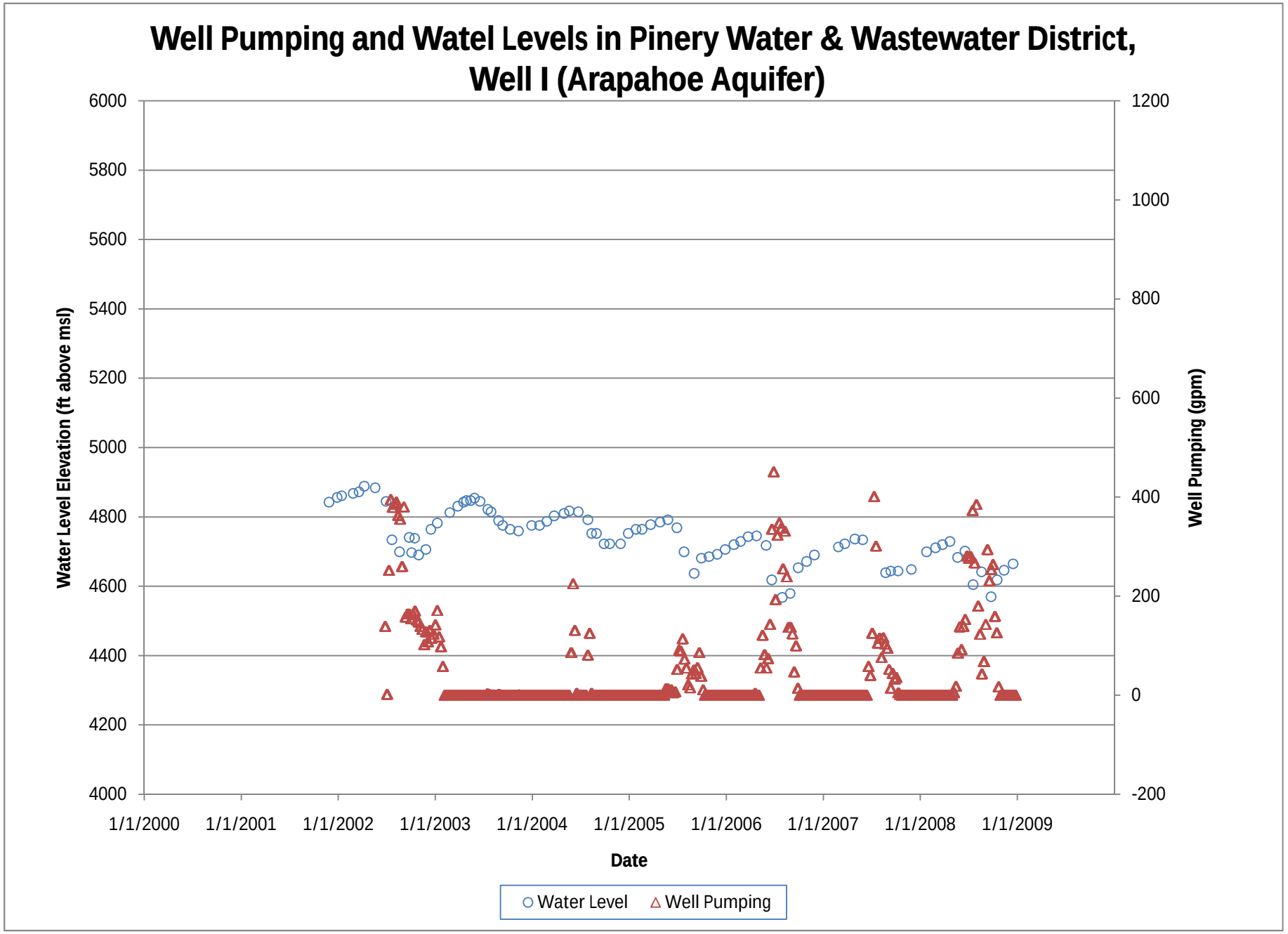

Well Pumping and Watel Levels in Meridian Metropolitan District, Well A-2R (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

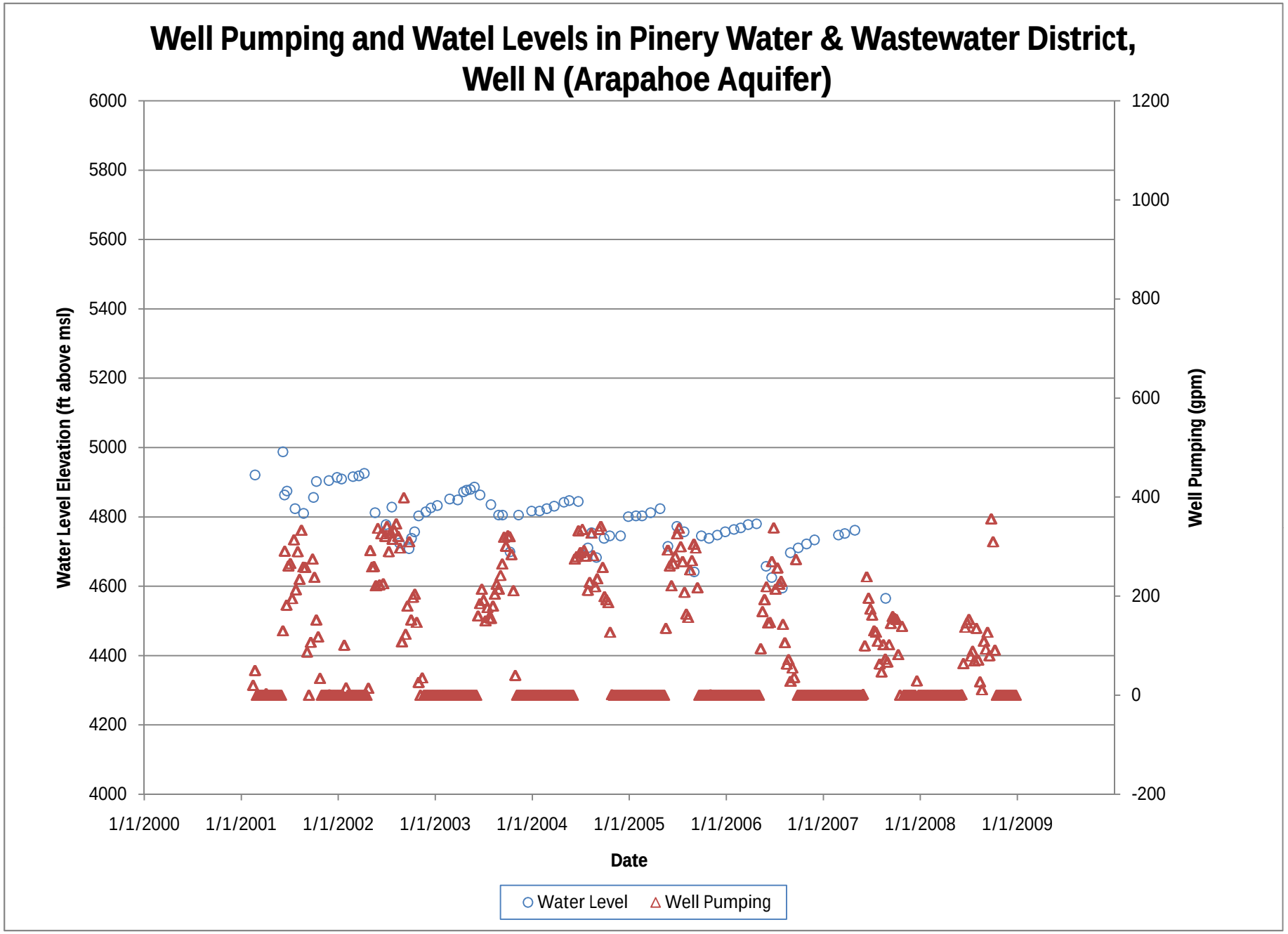

Well Pumping and Watel Levels in Meridian Metropolitan District, Well A-3 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

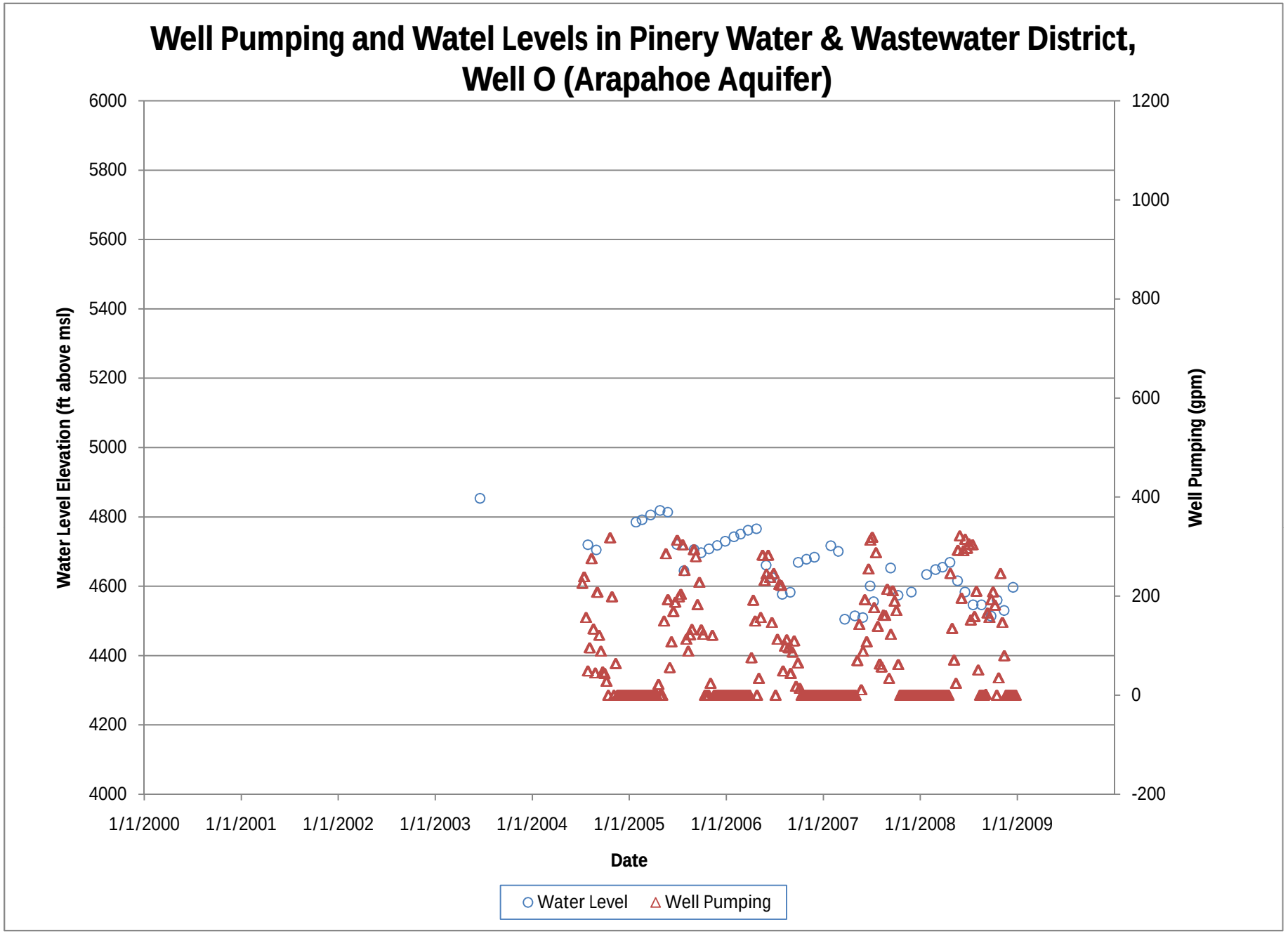

Well Pumping and Watel Levels in Meridian Metropolitan District, Well A-4 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

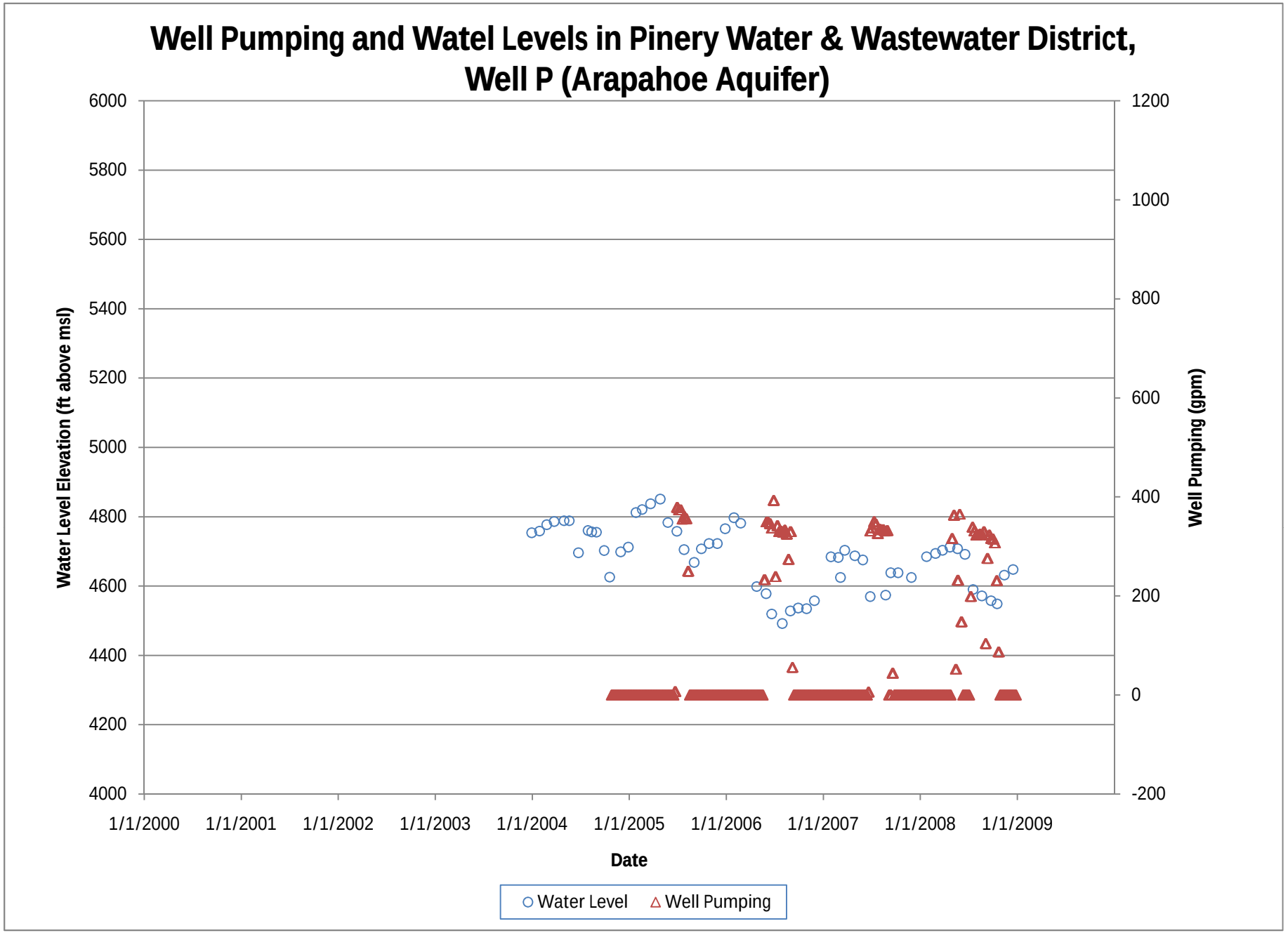

Well Pumping and Watel Levels in Meridian Metropolitan District, Well A-5 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

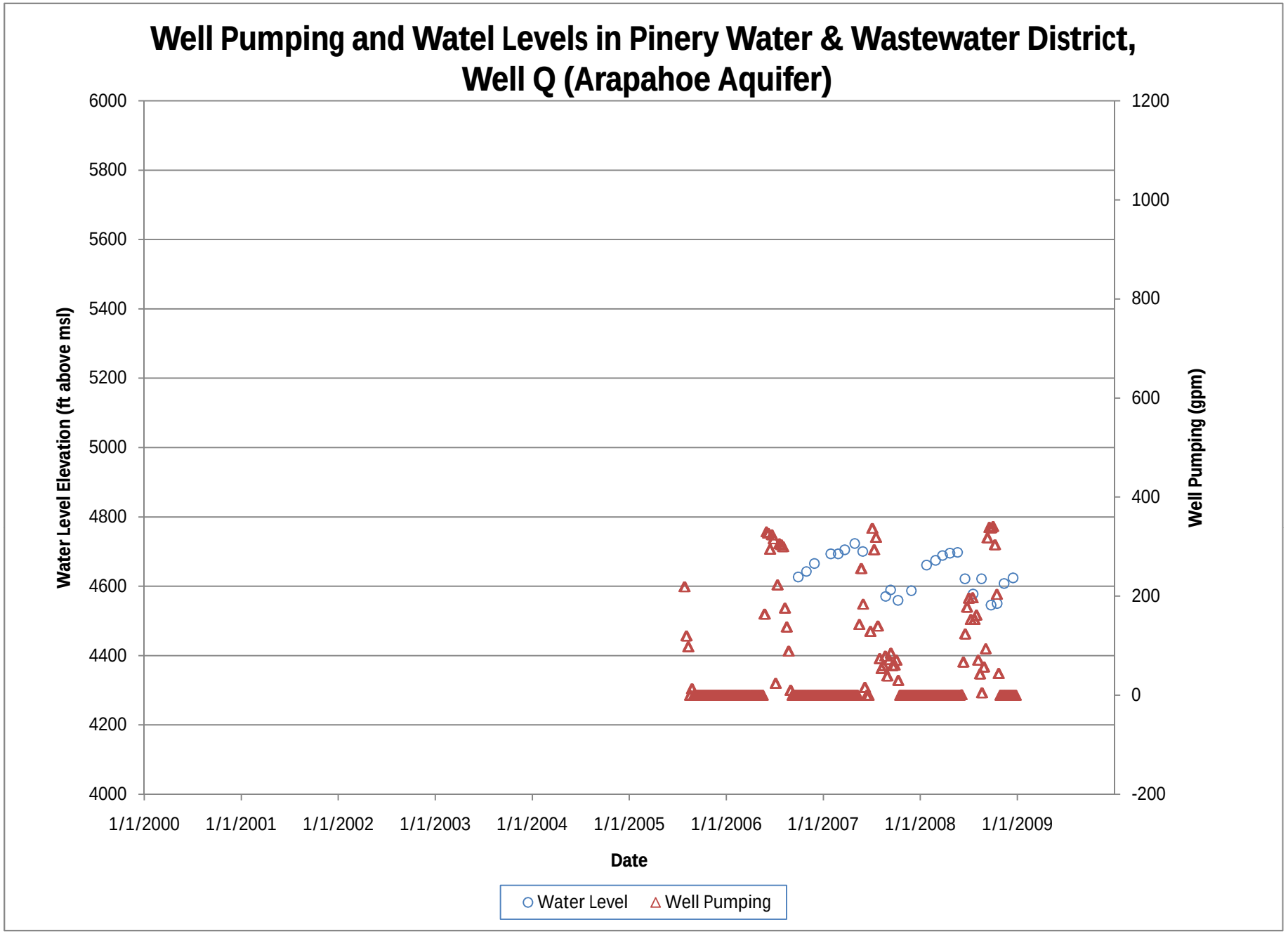

Well Pumping and Watel Levels in Pinery Water & Wastewater District, Well C2A (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

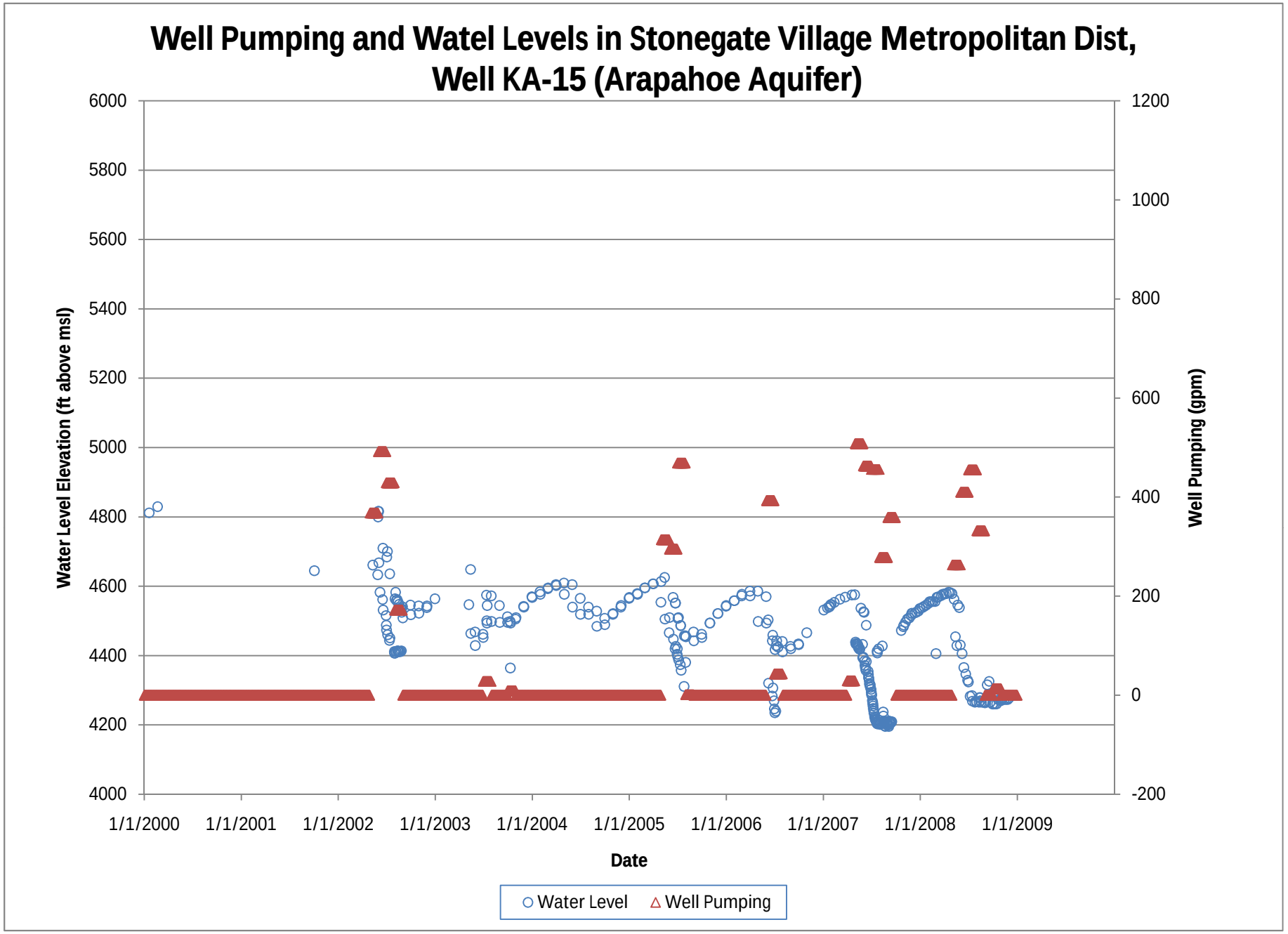

Well Pumping and Watel Levels in Pinery Water & Wastewater District, Well I (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

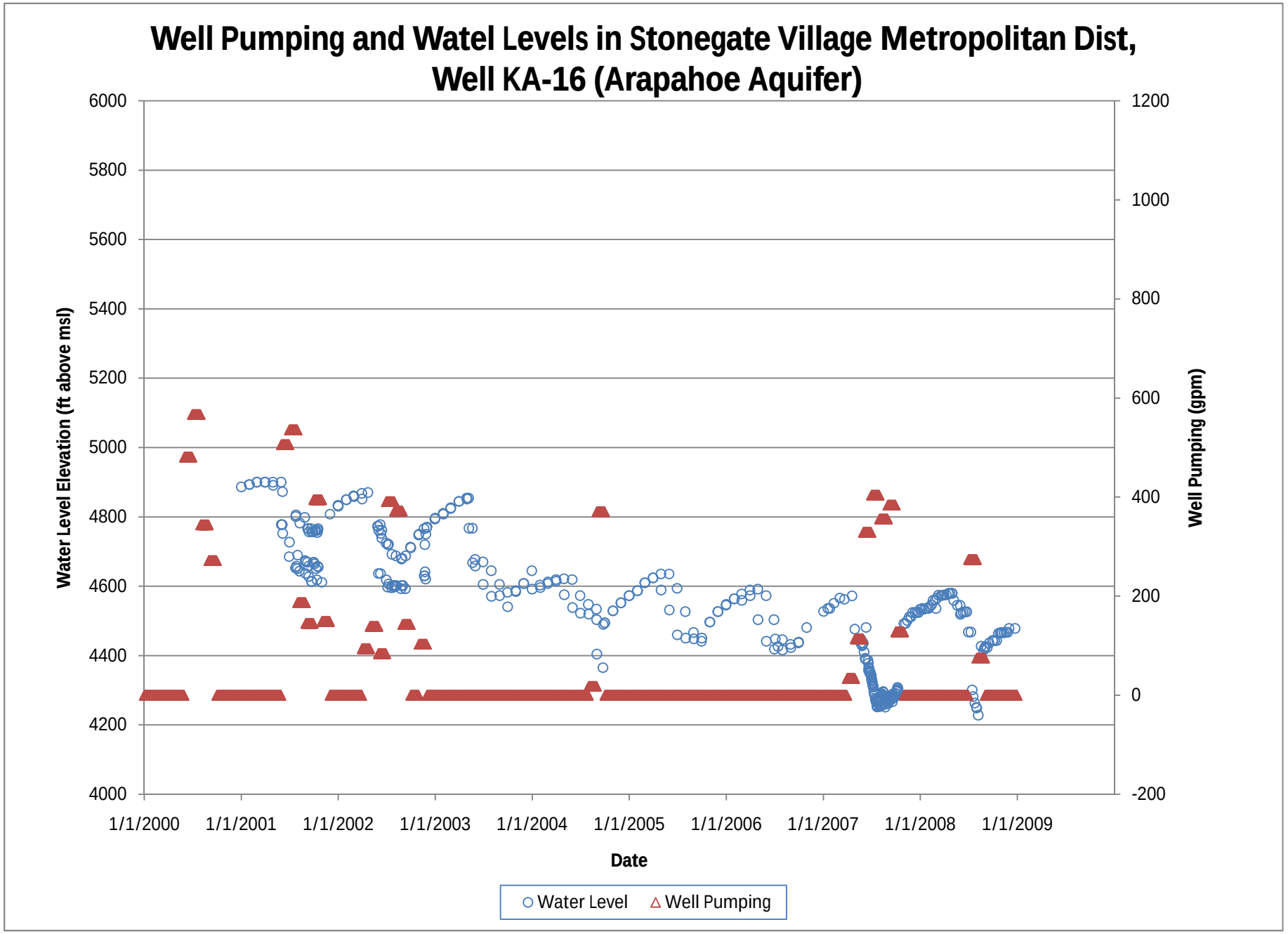

Well Pumping and Watel Levels in Pinery Water & Wastewater District, Well N (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

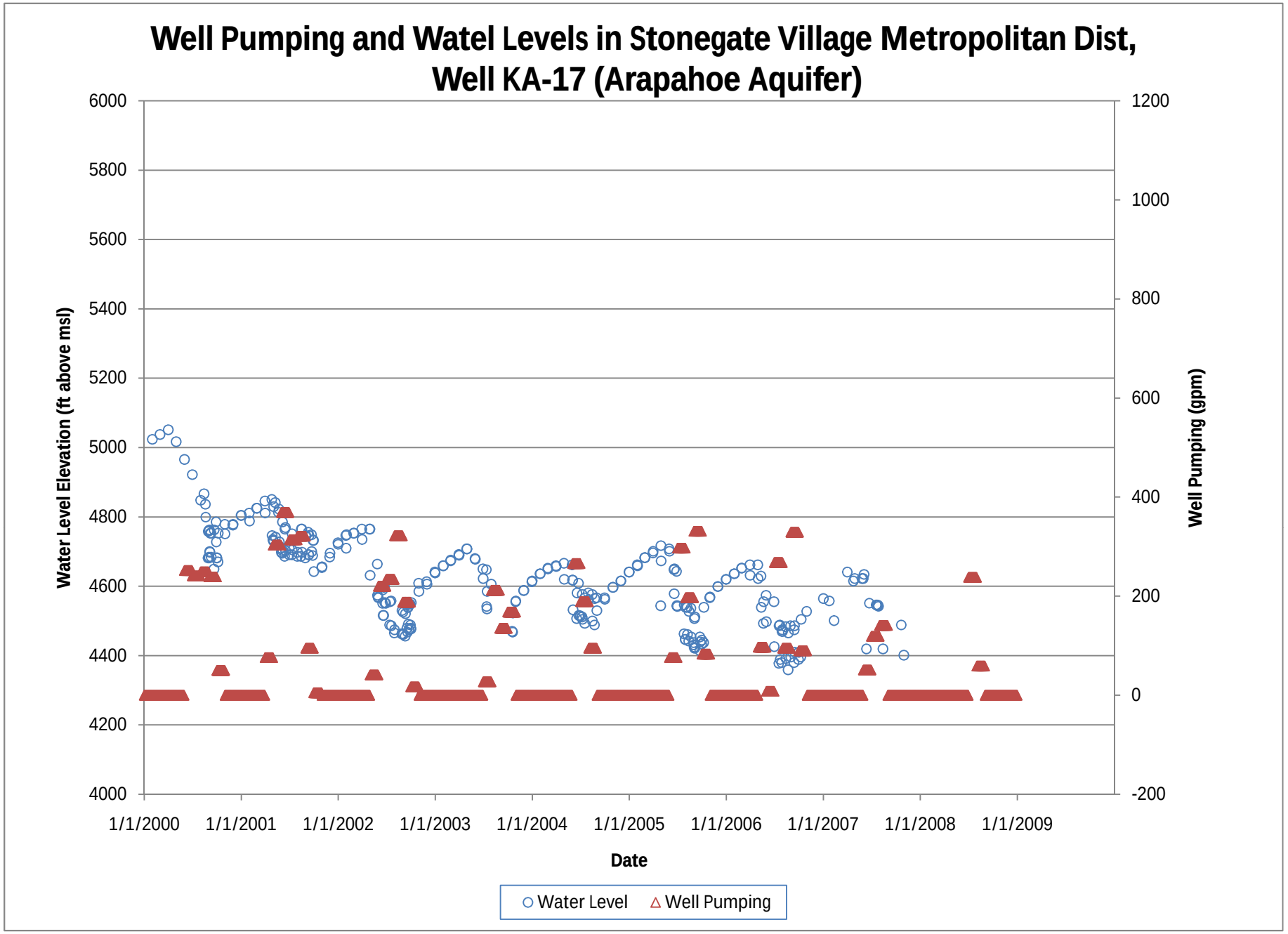

Well Pumping and Watel Levels in Pinery Water & Wastewater District, Well O (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

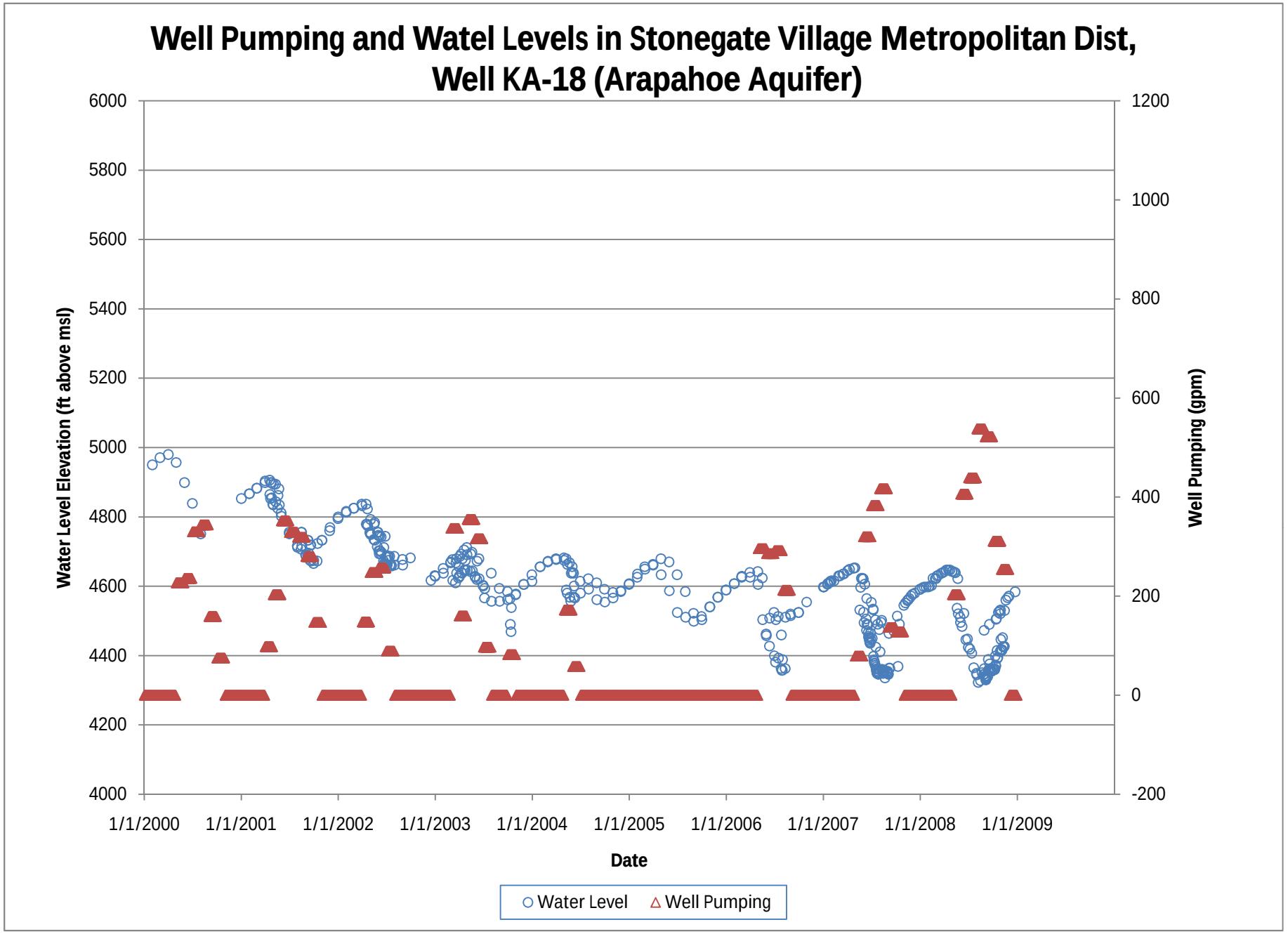

Well Pumping and Watel Levels in Pinery Water & Wastewater District, Well P (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

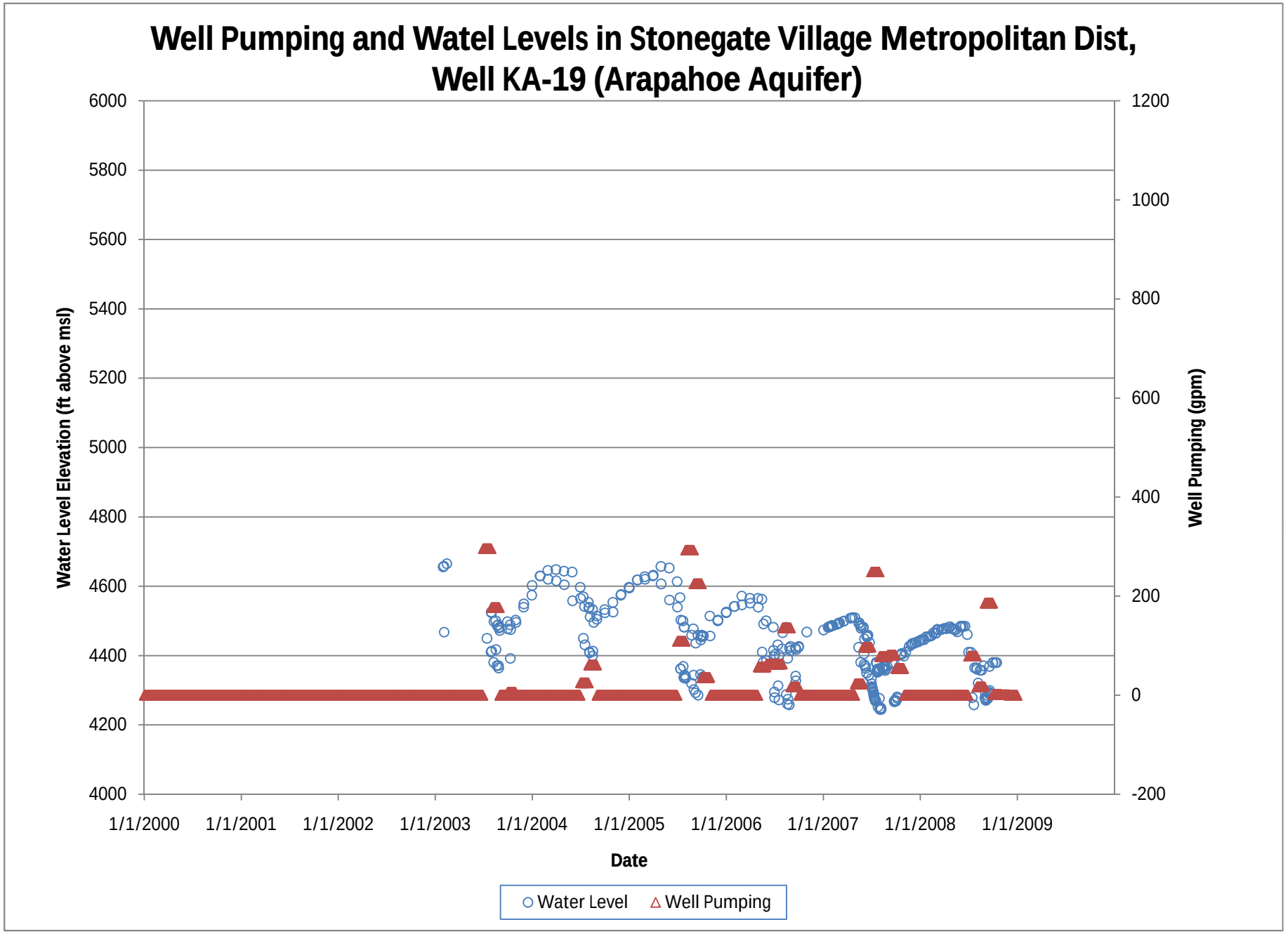

Well Pumping and Watel Levels in Pinery Water & Wastewater District, Well Q (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

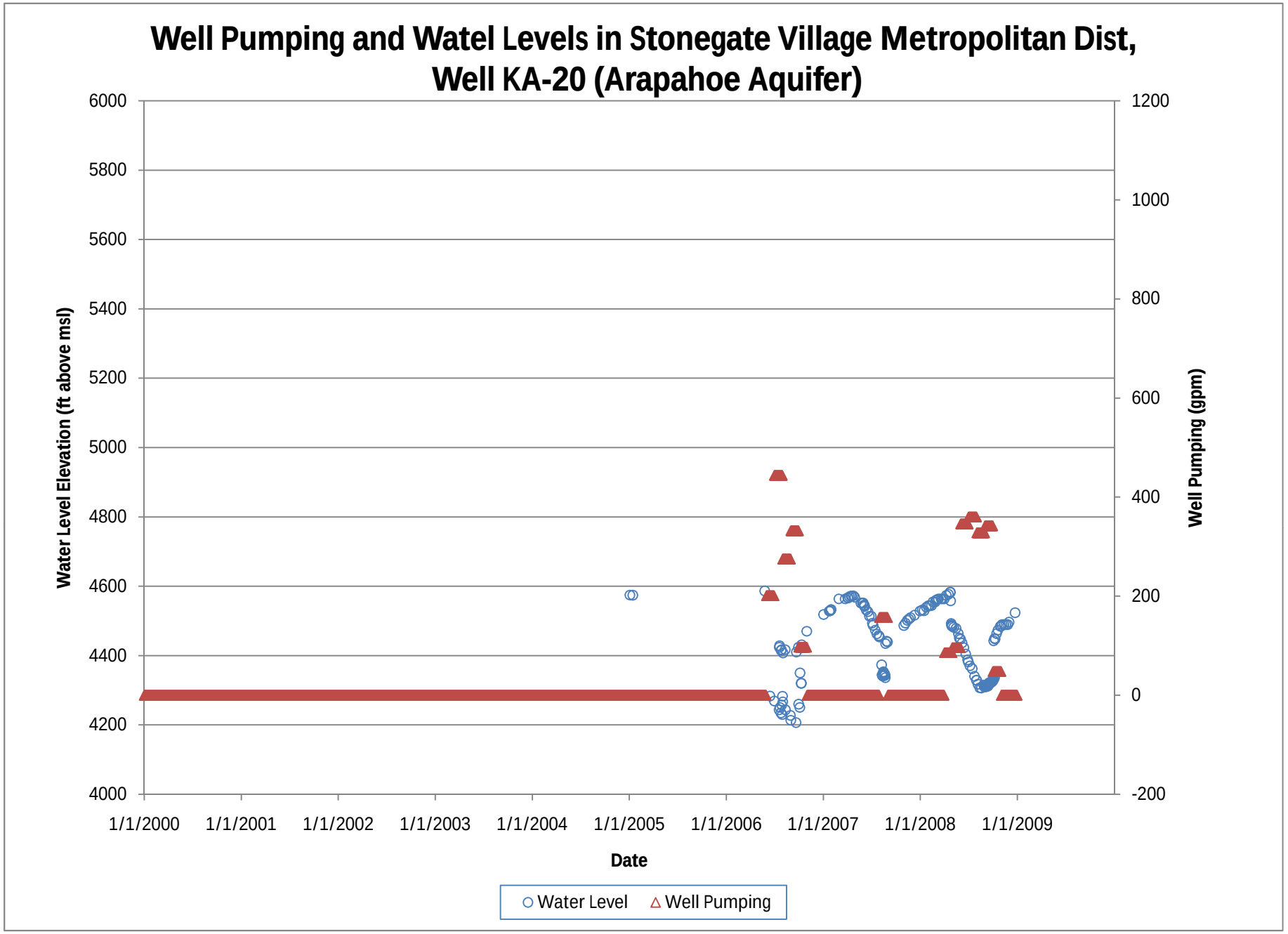

Well Pumping and Watel Levels in Stonegate Village Metropolitan Dist, Well KA-15 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

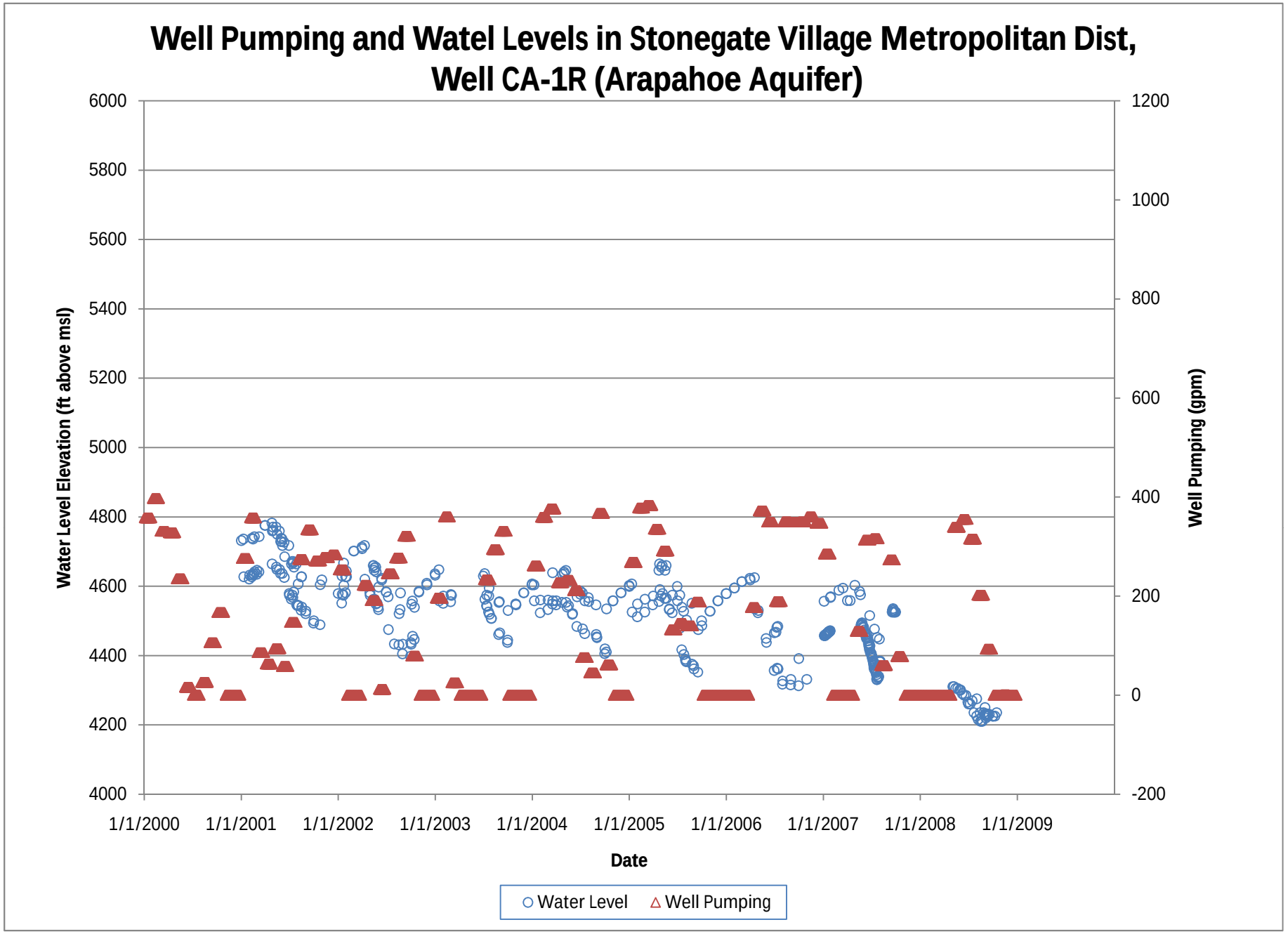

Well Pumping and Watel Levels in Stonegate Village Metropolitan Dist, Well KA-16 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

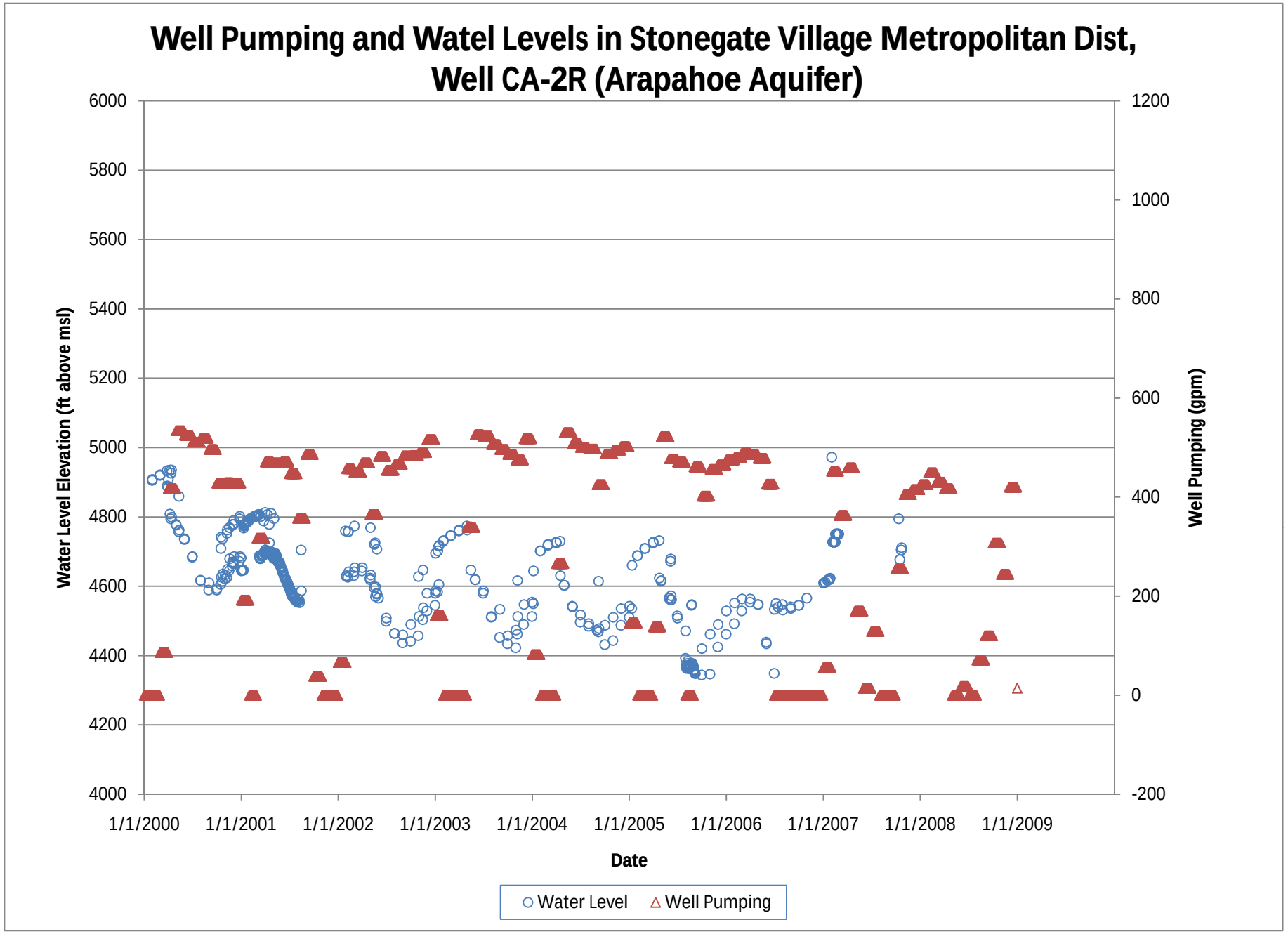

Well Pumping and Watel Levels in Stonegate Village Metropolitan Dist, Well KA-17 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

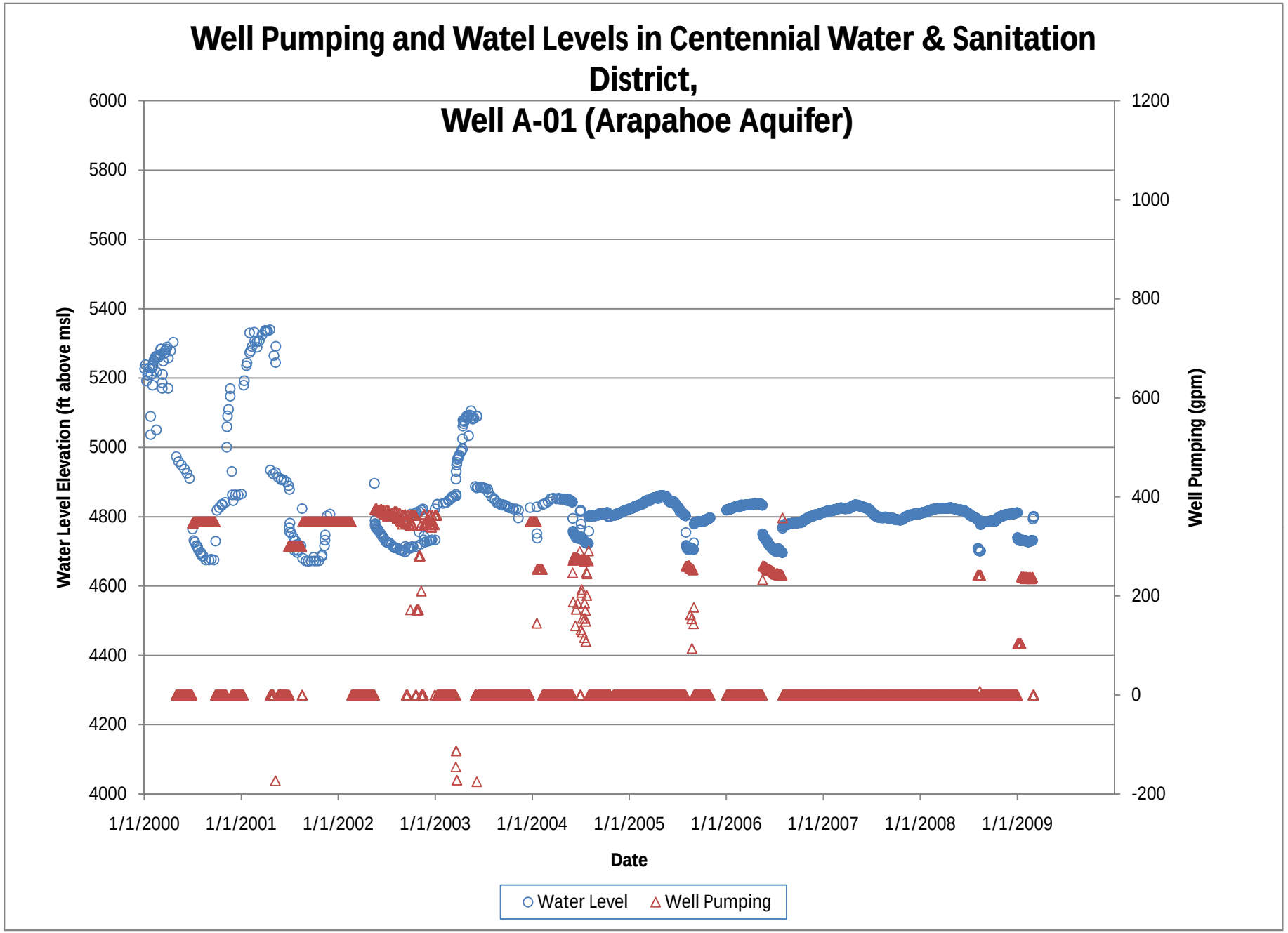

Well Pumping and Watel Levels in Stonegate Village Metropolitan Dist, Well KA-18 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

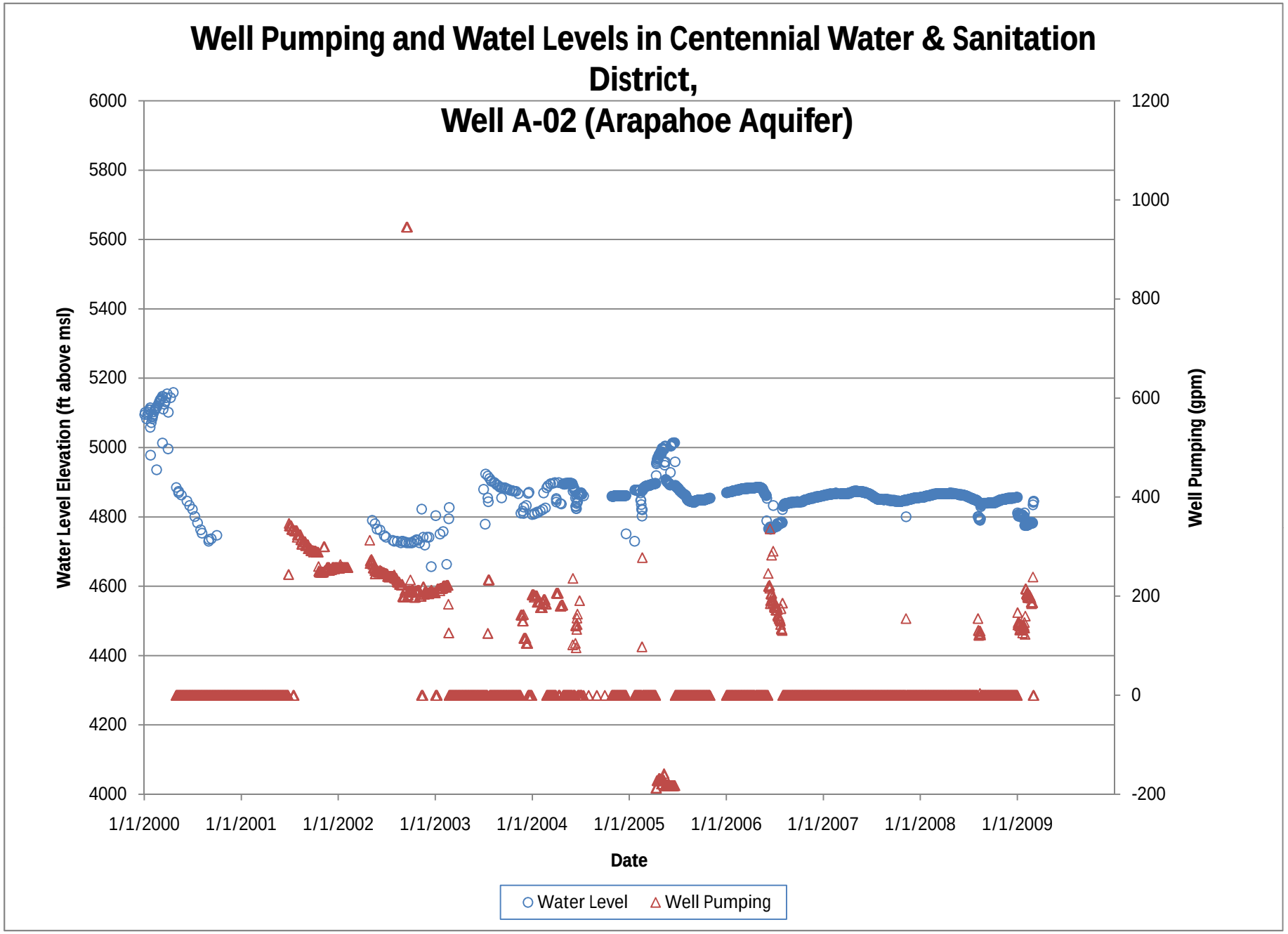

Well Pumping and Watel Levels in Stonegate Village Metropolitan Dist, Well KA-19 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

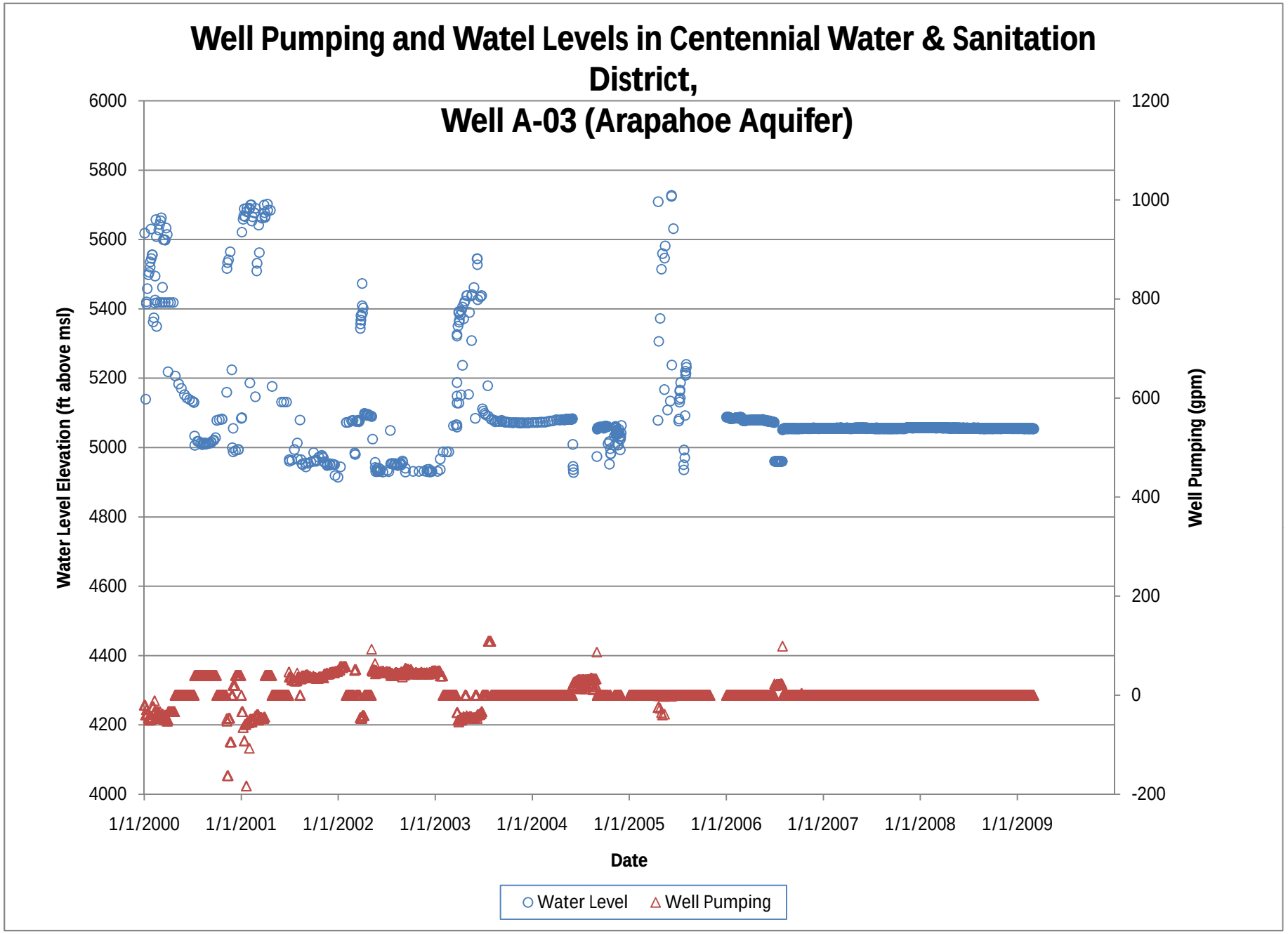

Well Pumping and Watel Levels in Stonegate Village Metropolitan Dist, Well KA-20 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

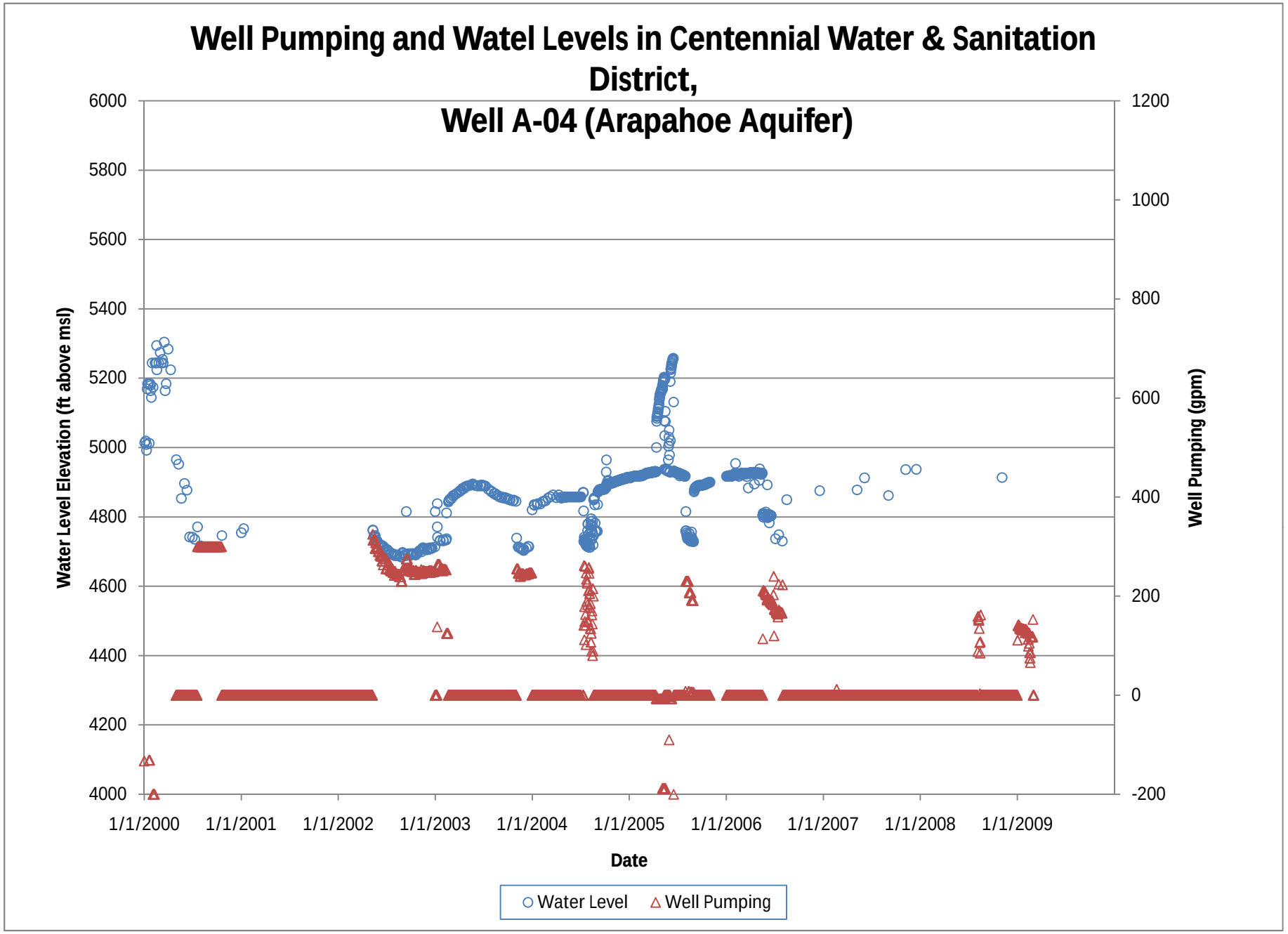

Well Pumping and Watel Levels in Stonegate Village Metropolitan Dist, Well CA-1R (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

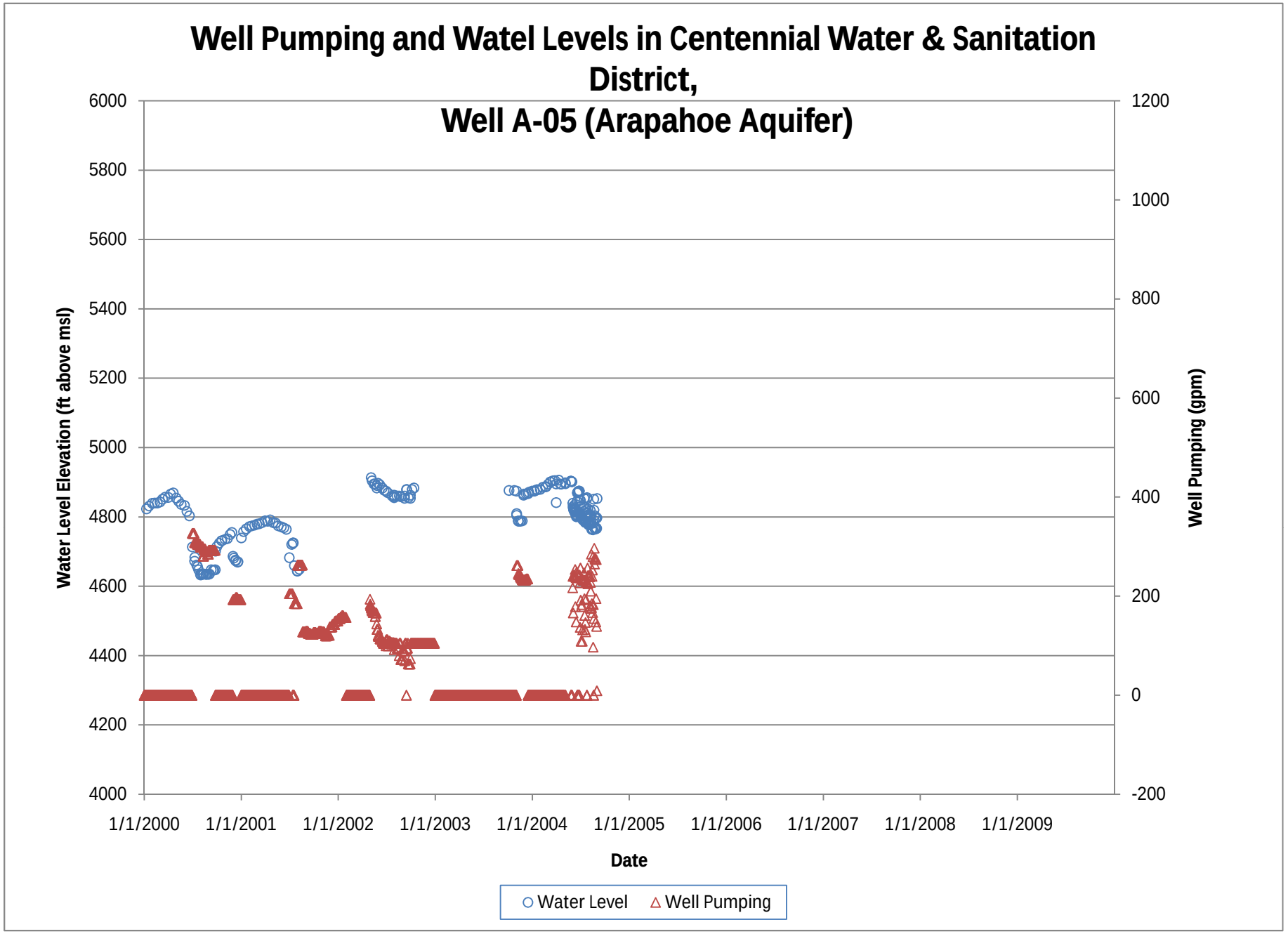

Well Pumping and Watel Levels in Stonegate Village Metropolitan Dist, Well CA-2R (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

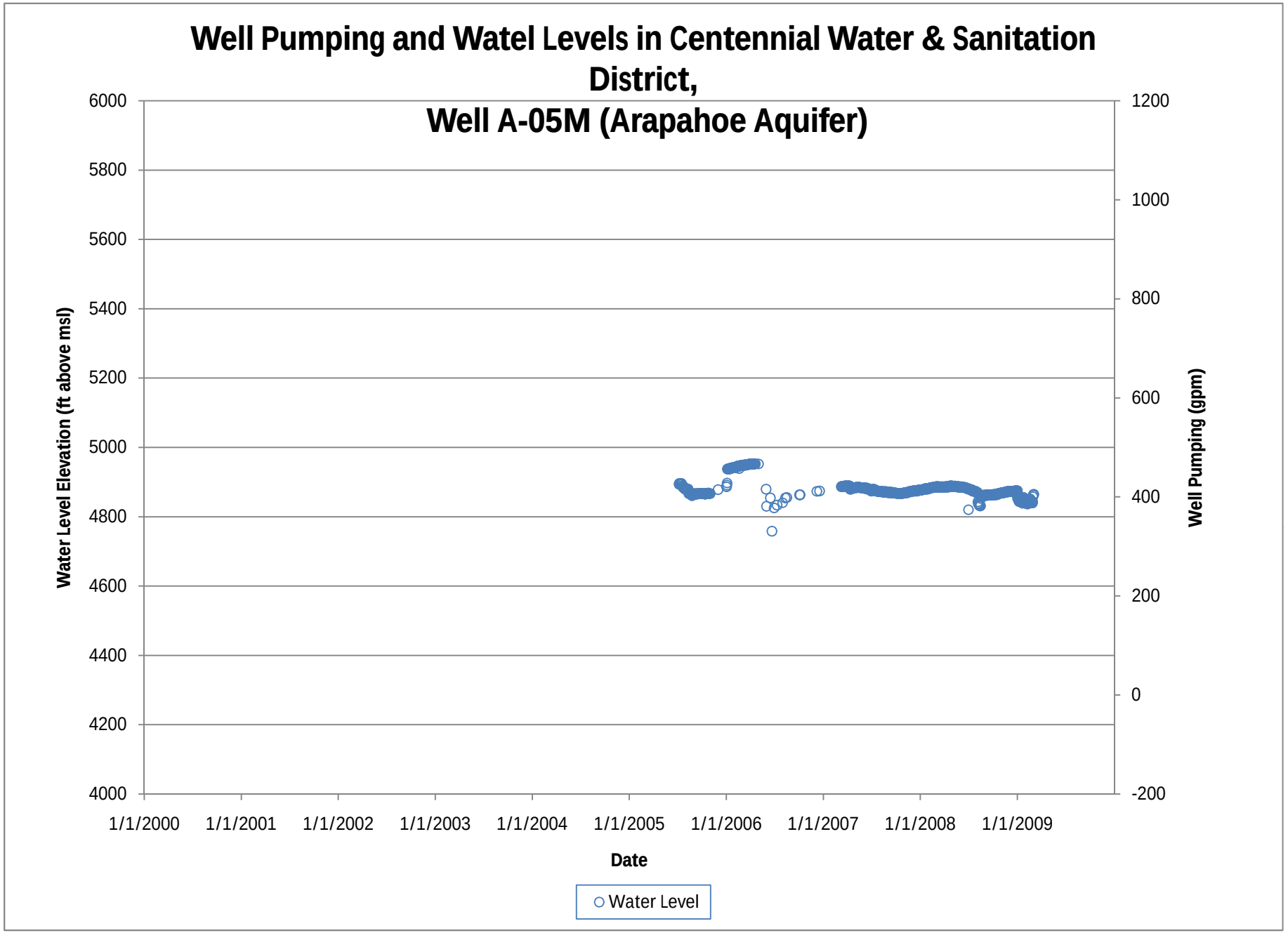

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well A-01 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

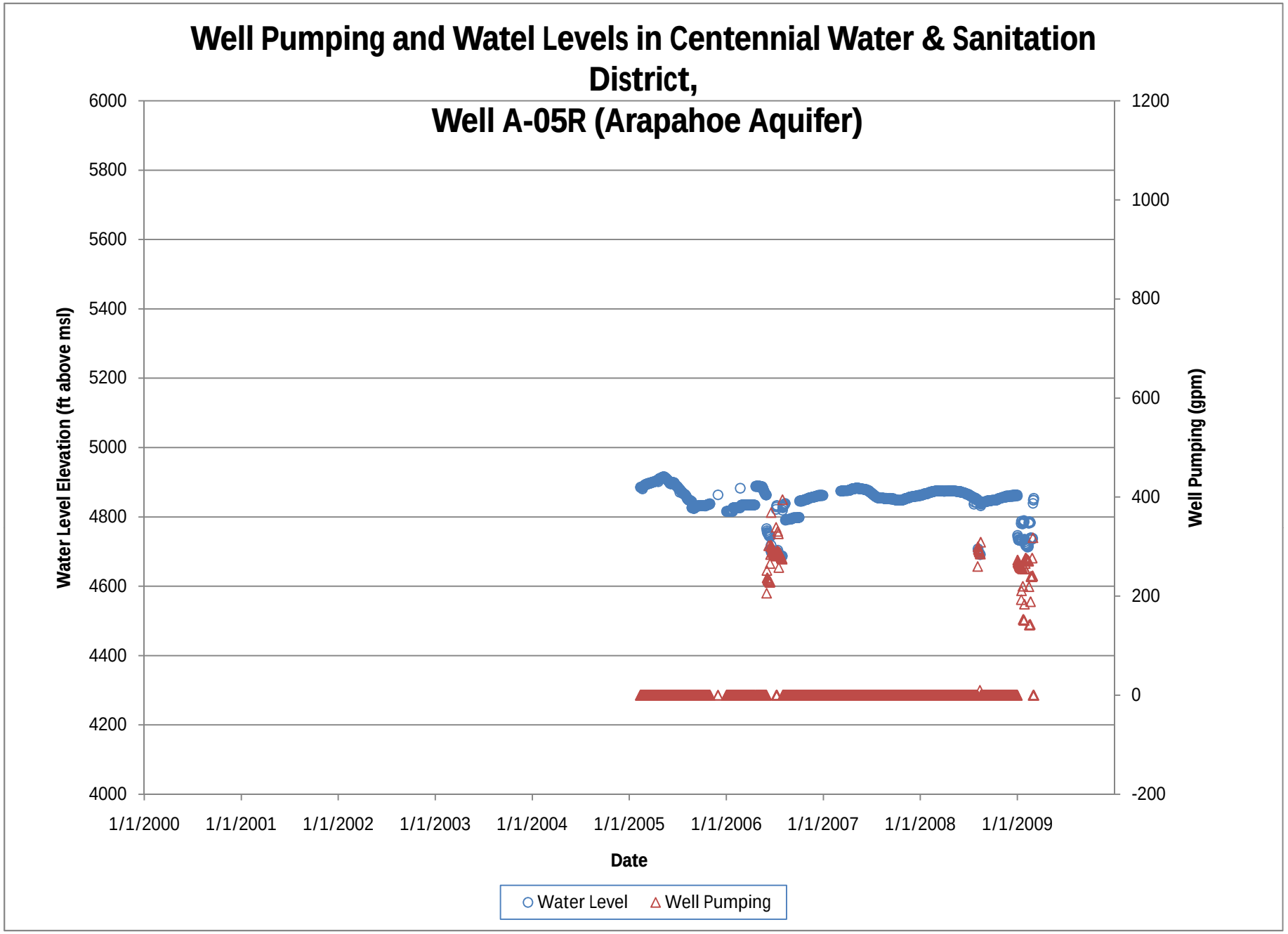

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well A-02 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

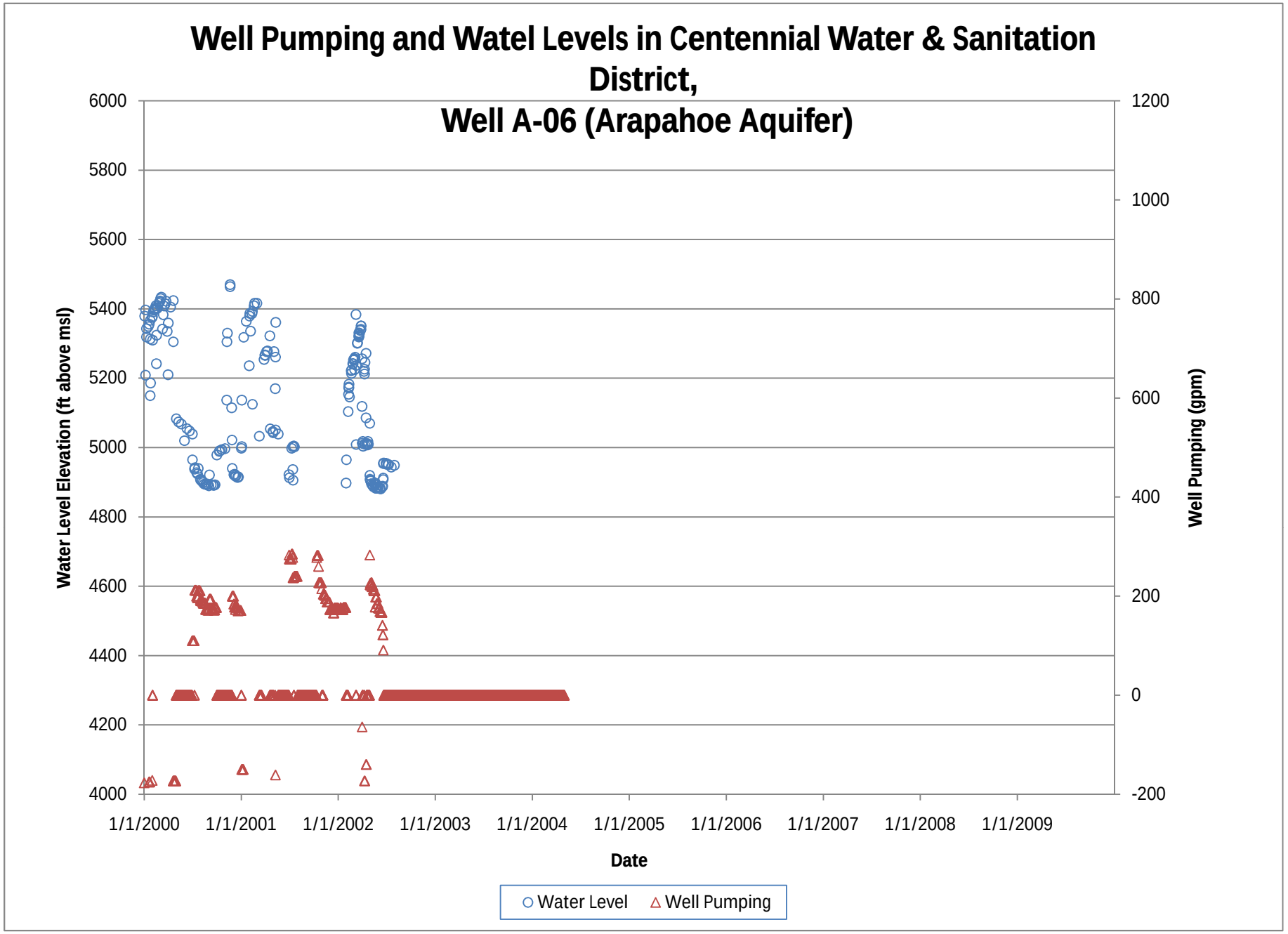

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well A-03 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

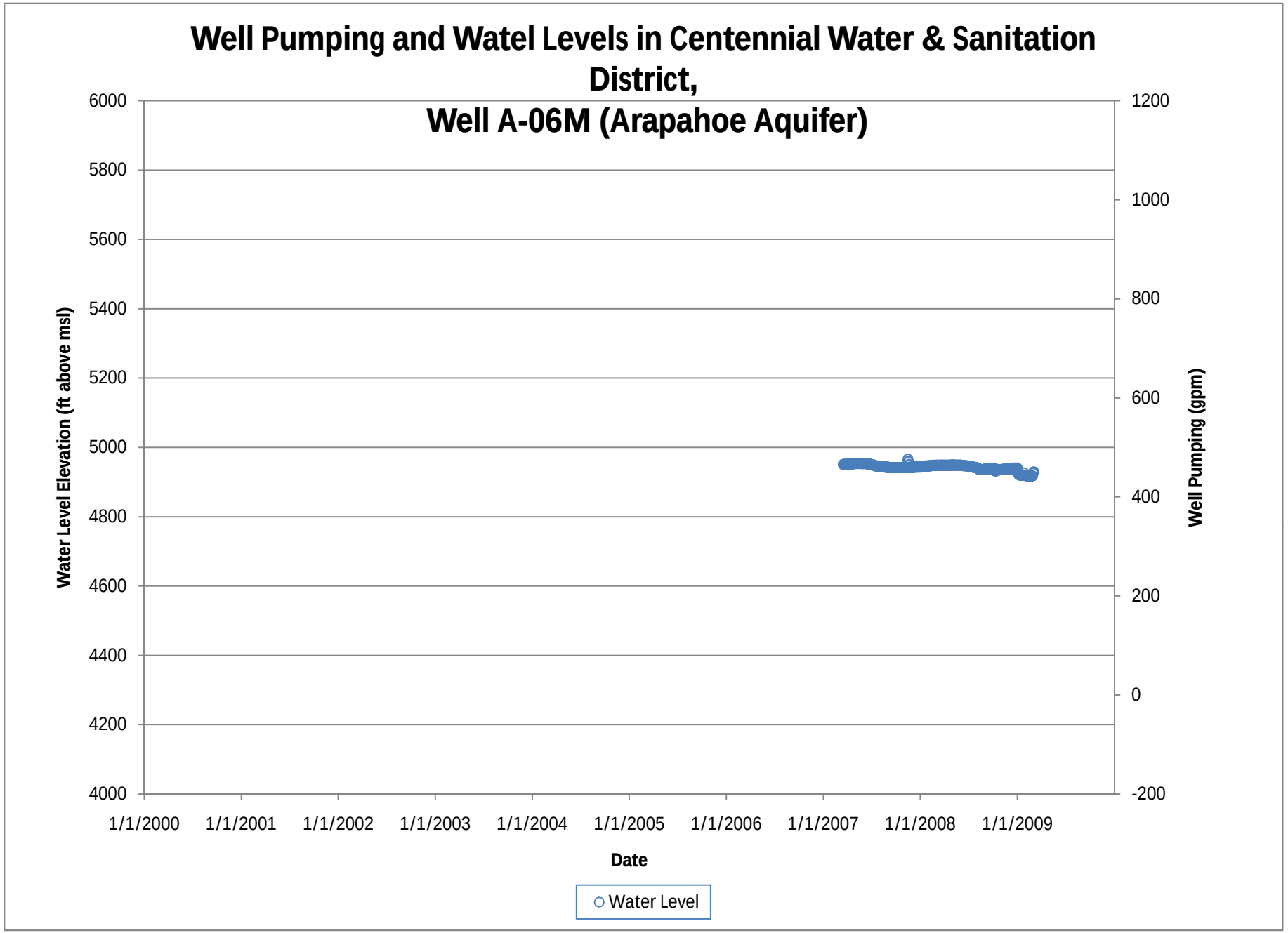

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well A-04 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

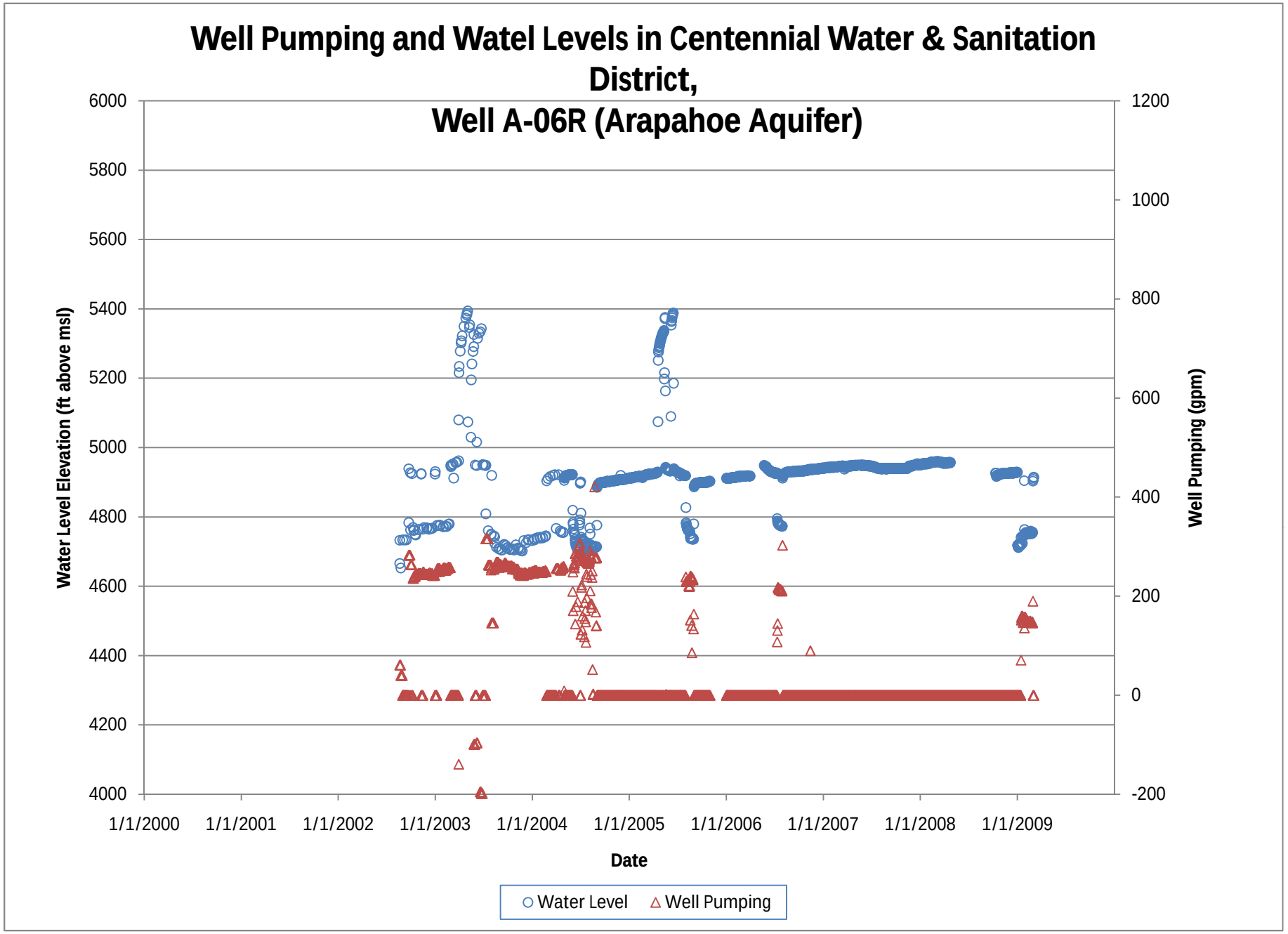

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well A-05 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

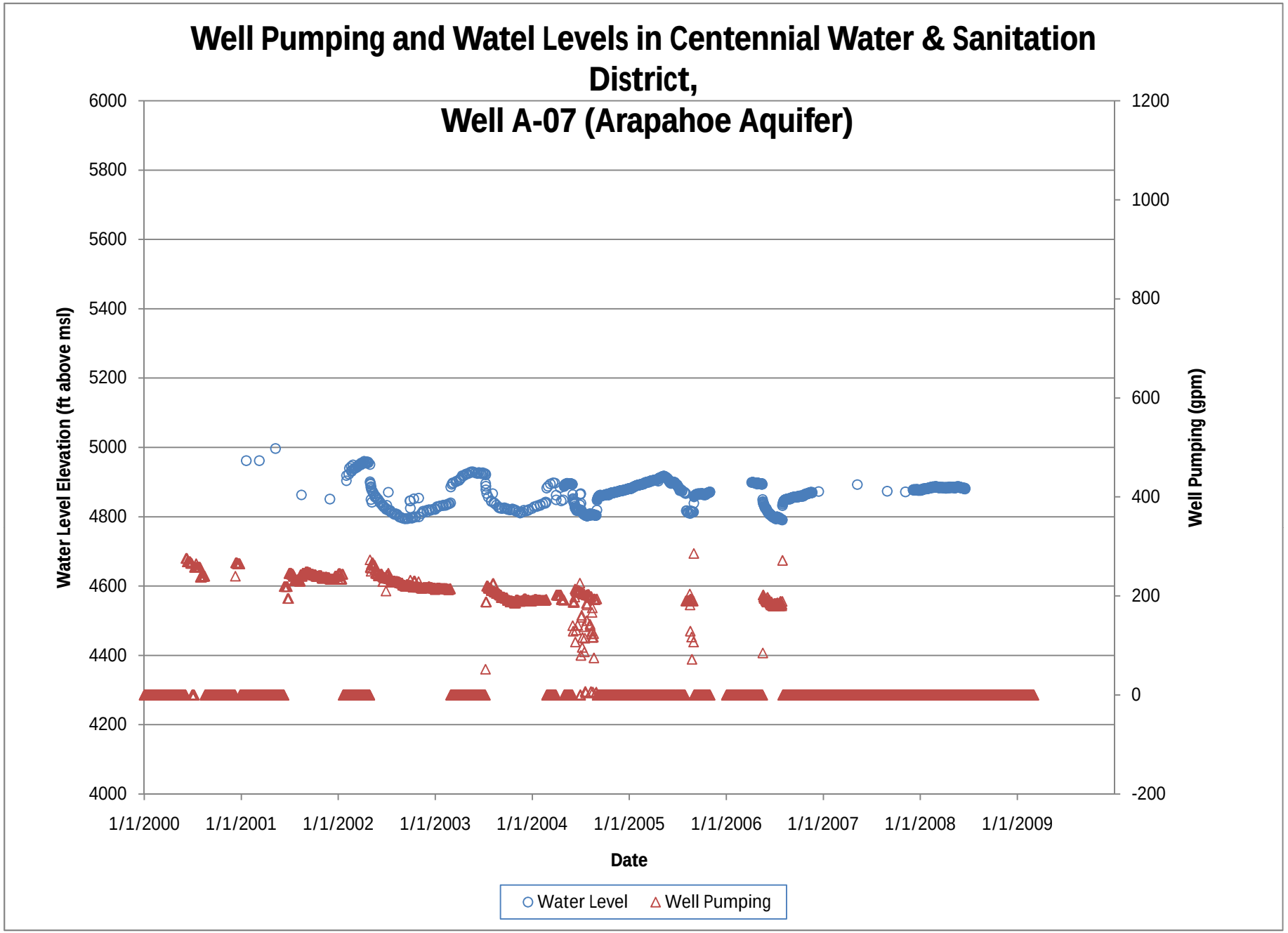

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well A-05M (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level

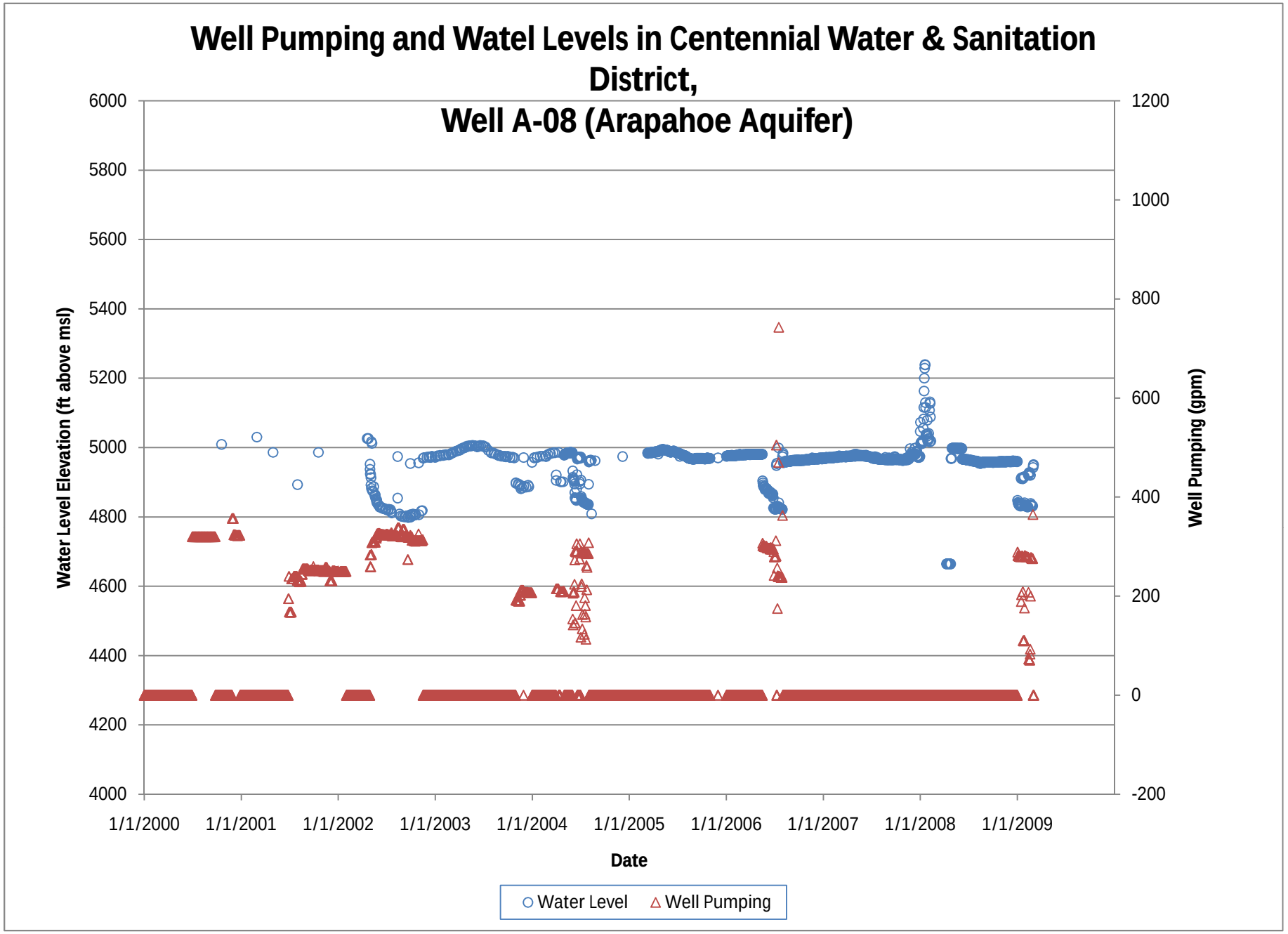

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well A-05R (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

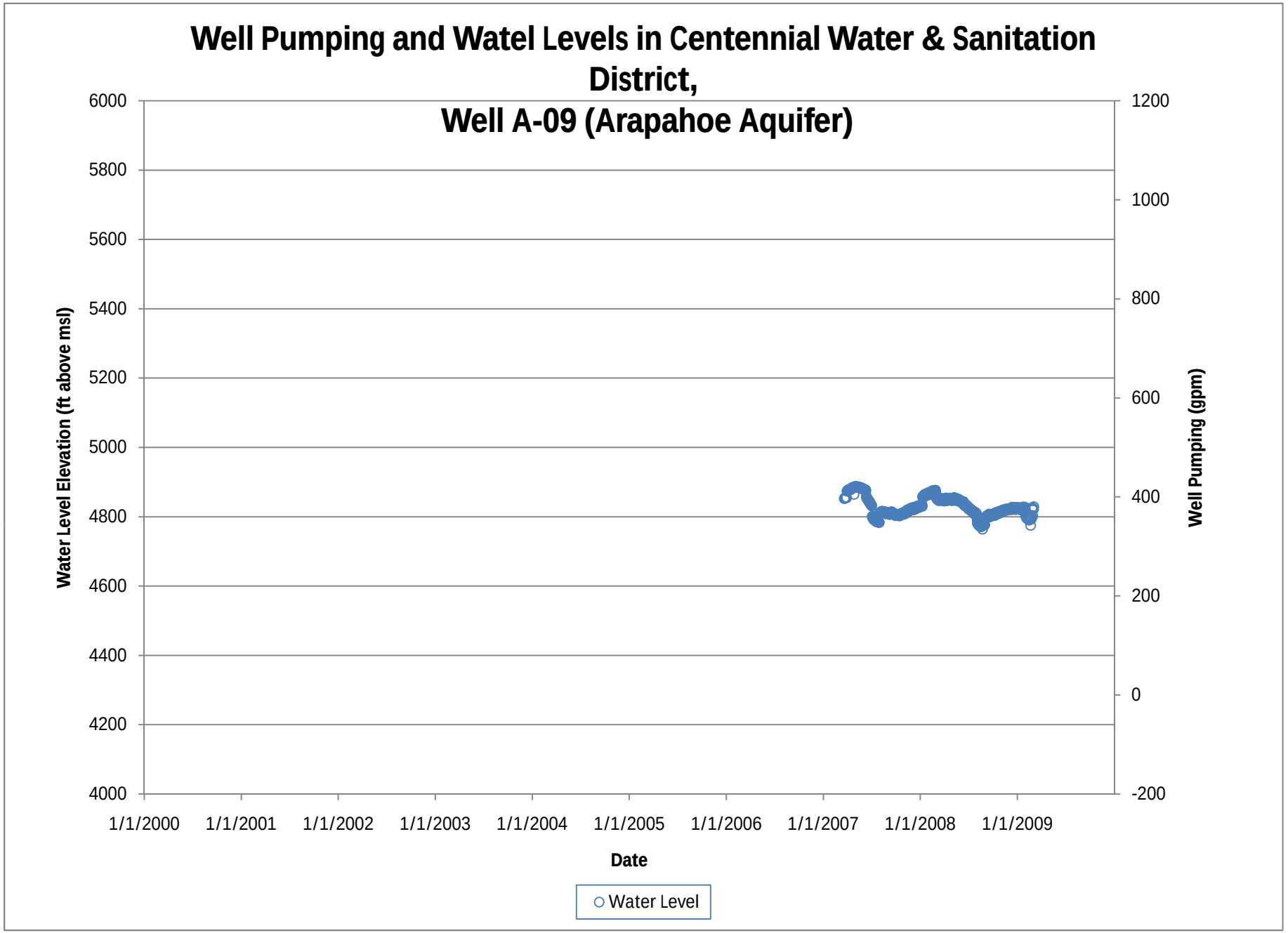

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well A-06 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

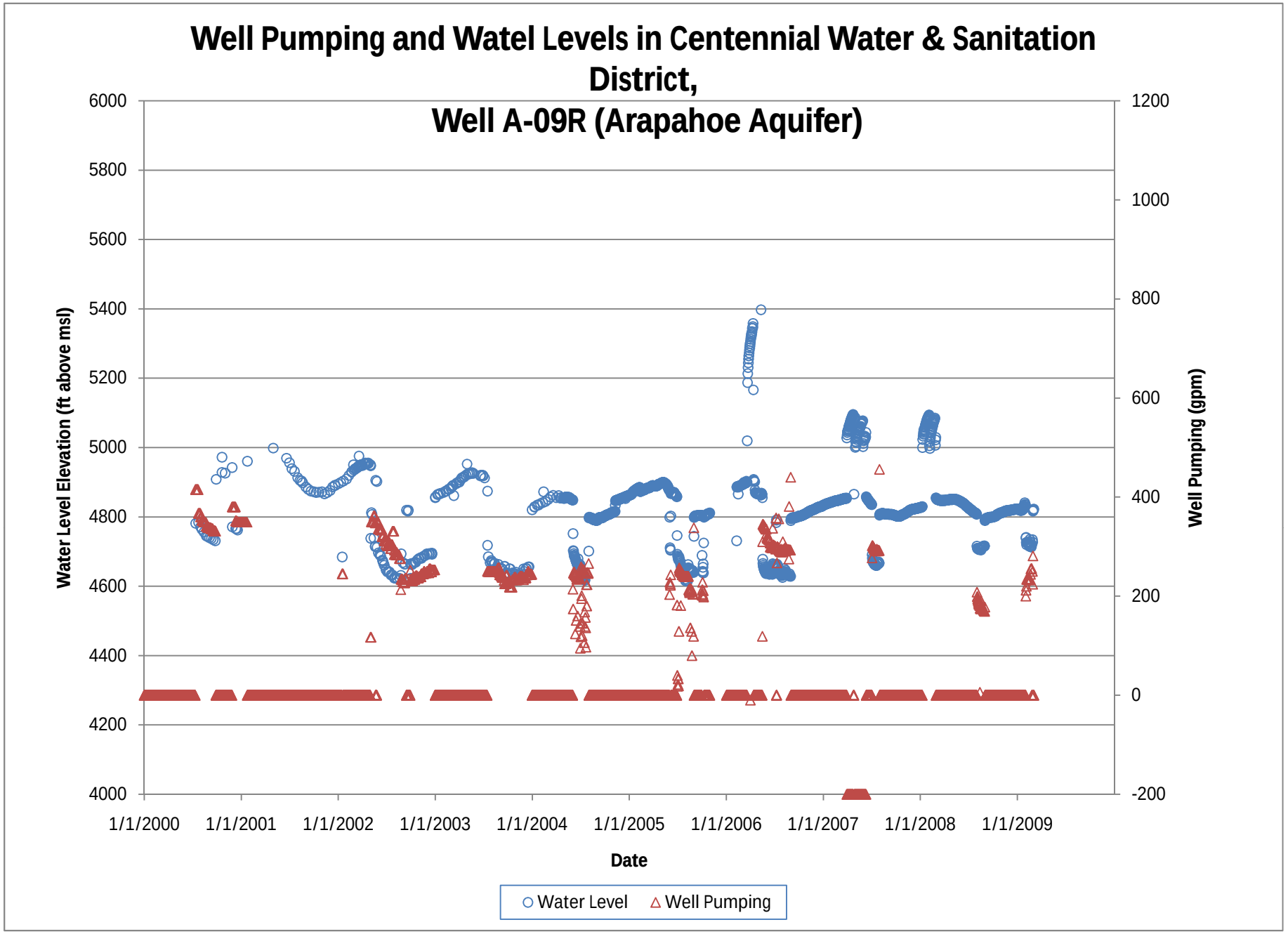

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well A-06M (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level

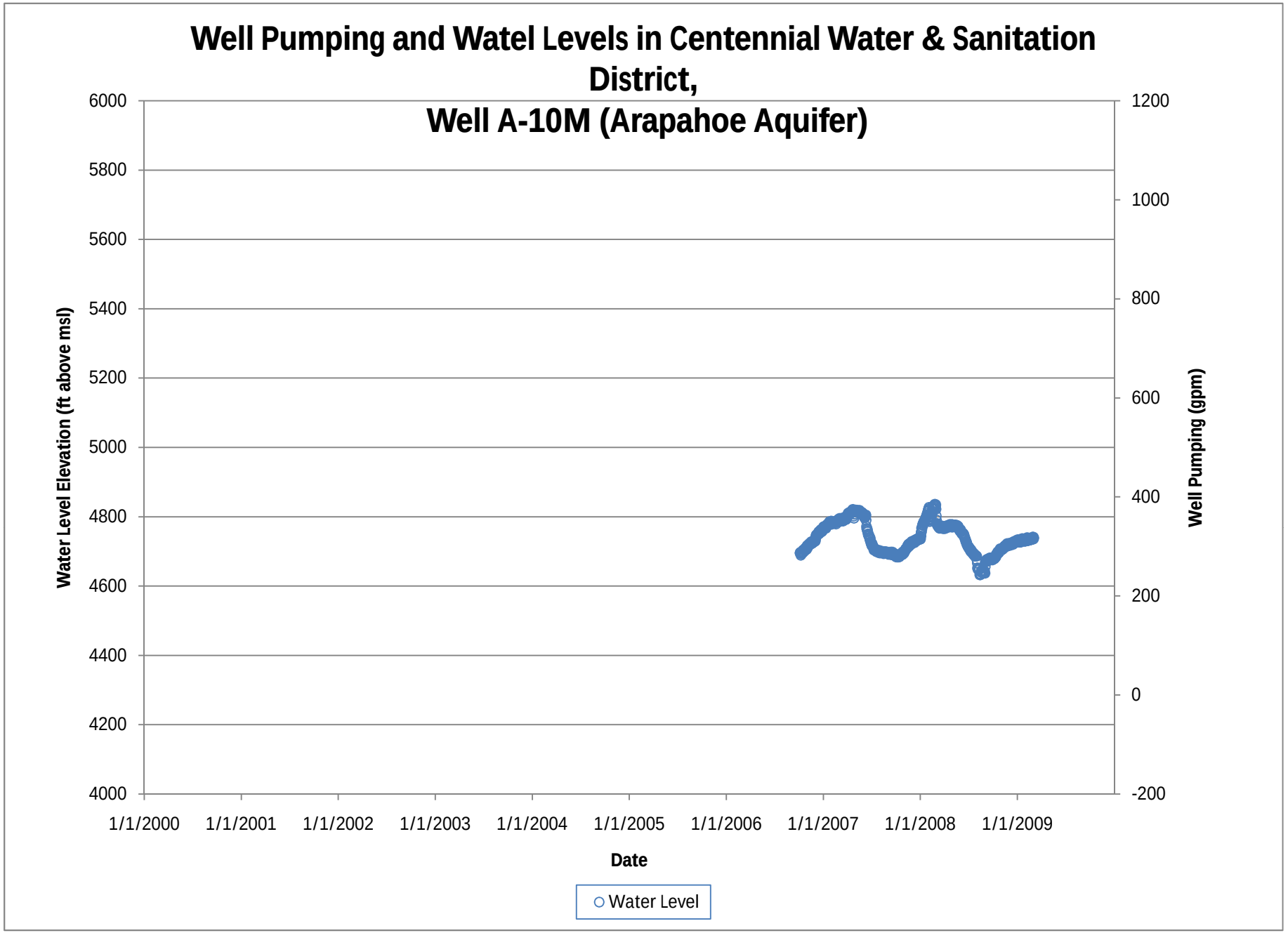

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well A-06R (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

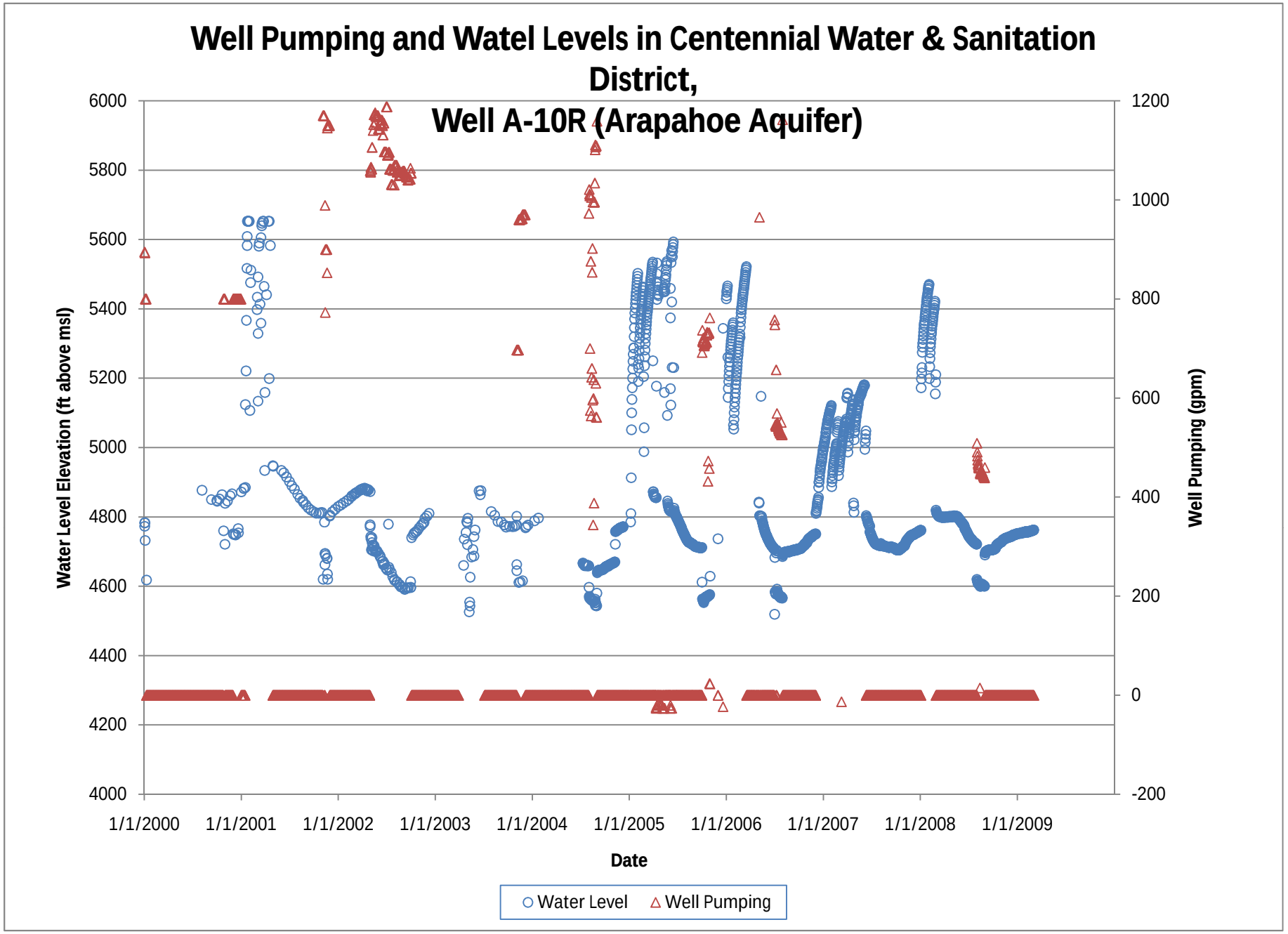

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well A-07 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

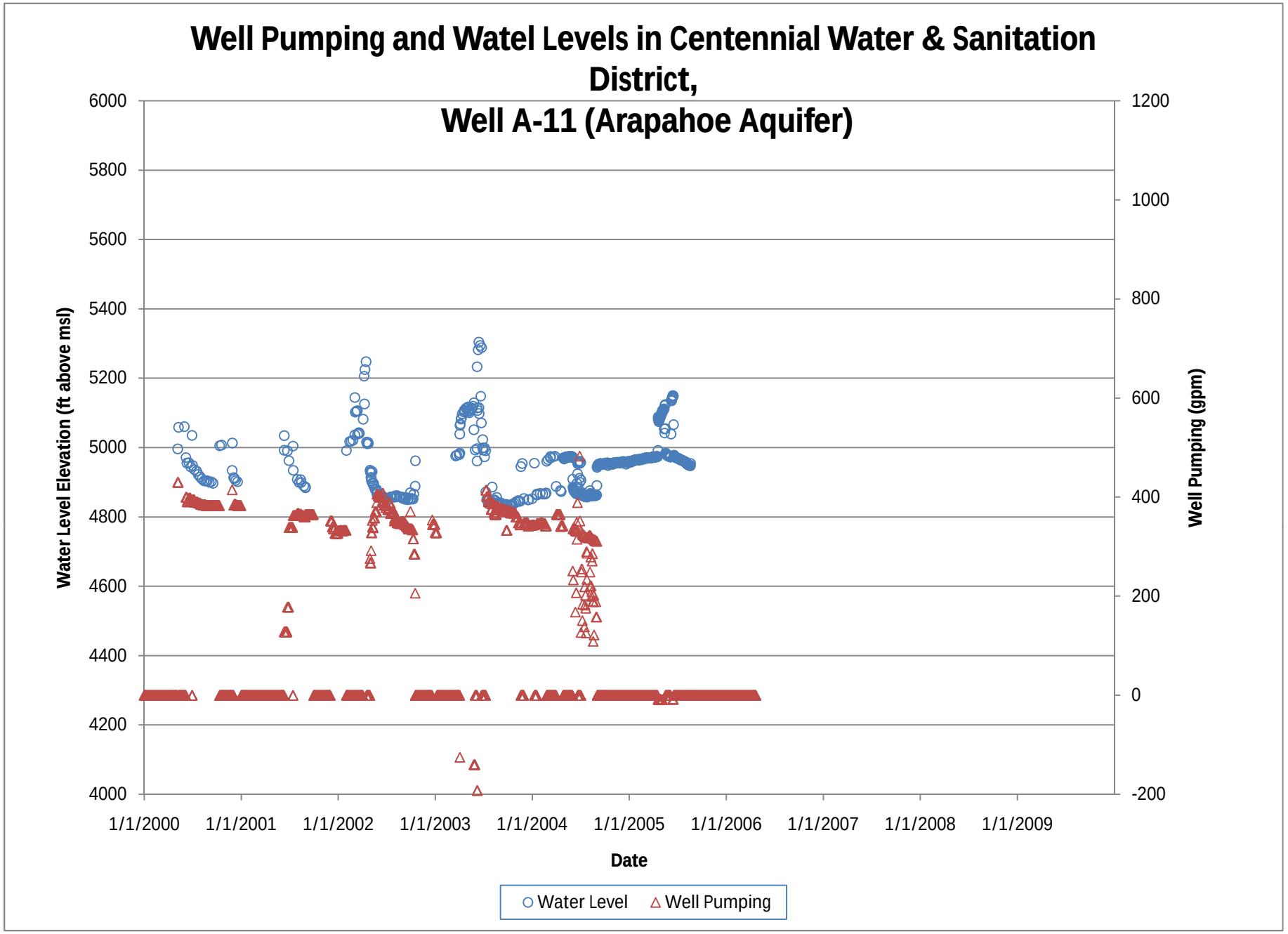

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well A-08 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

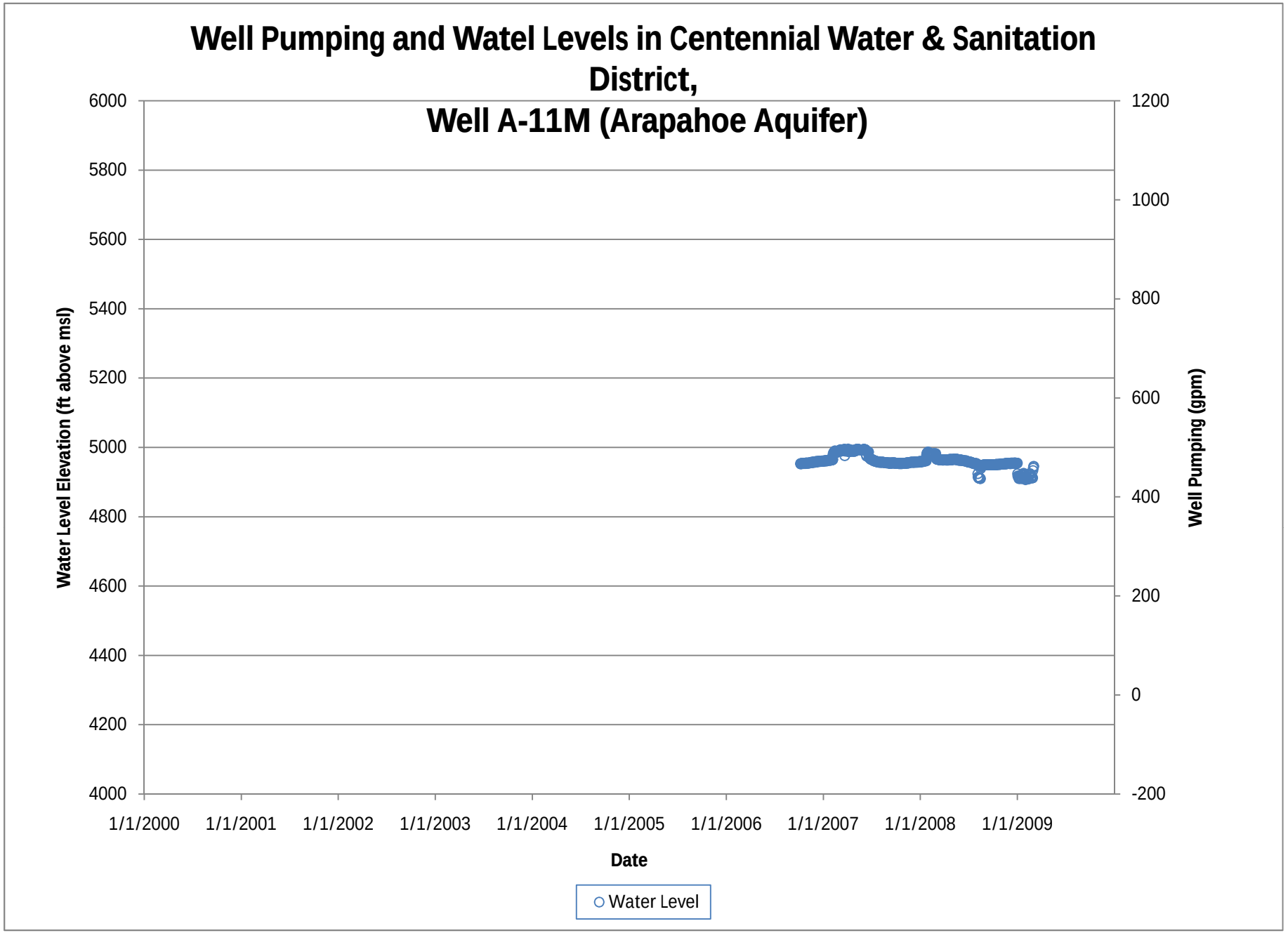

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well A-09 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level

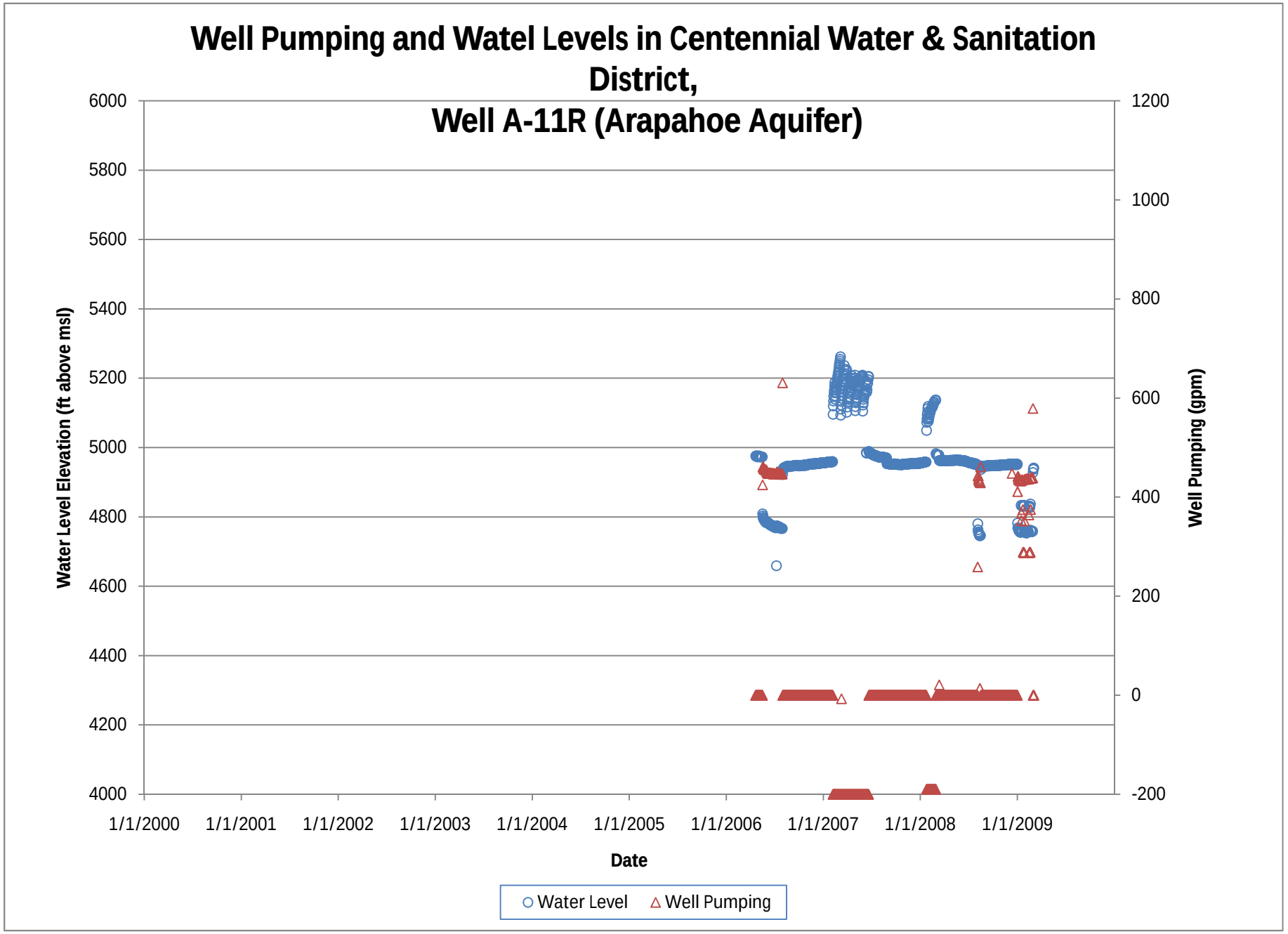

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well A-09R (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

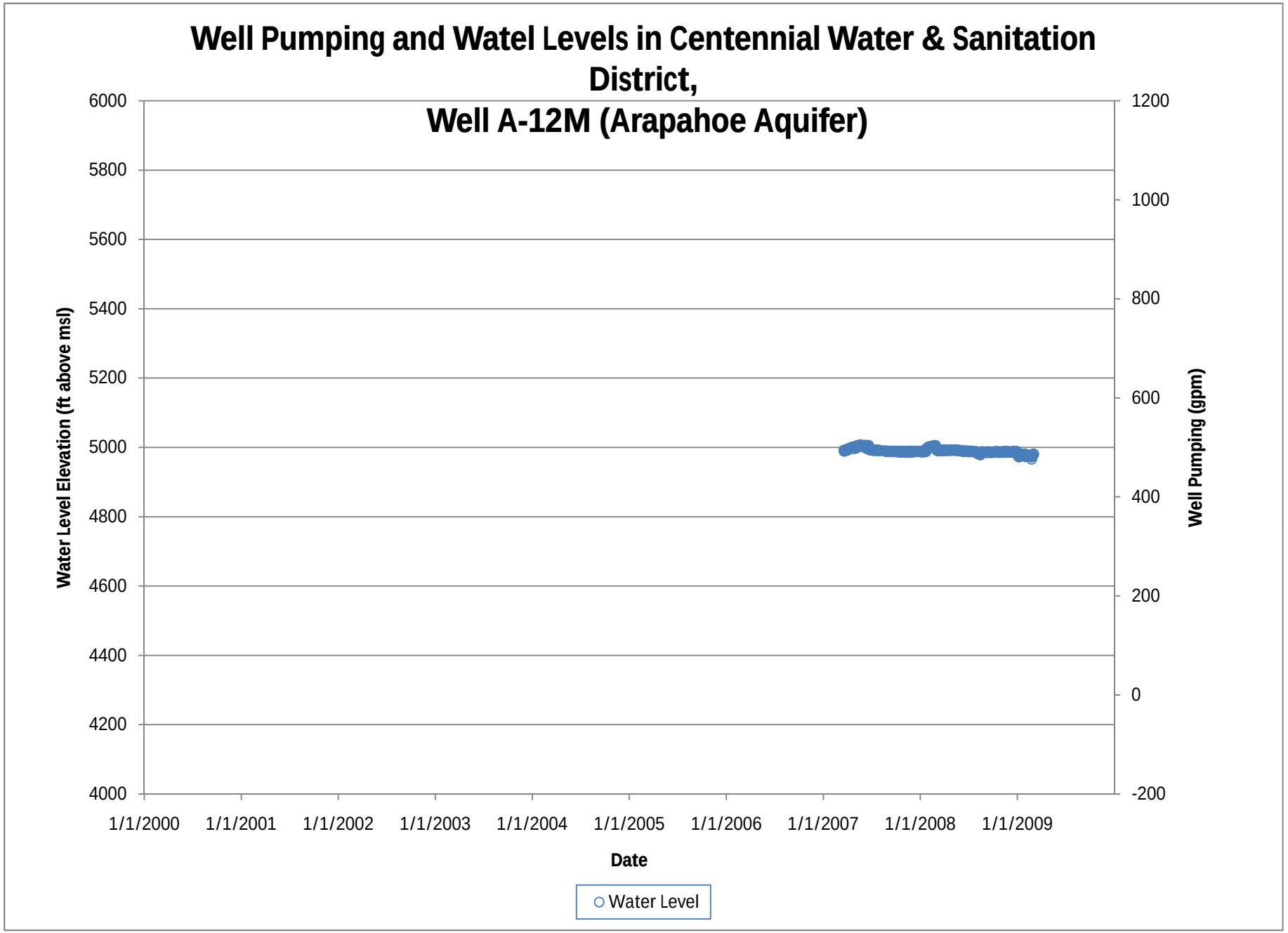

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well A-10M (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level

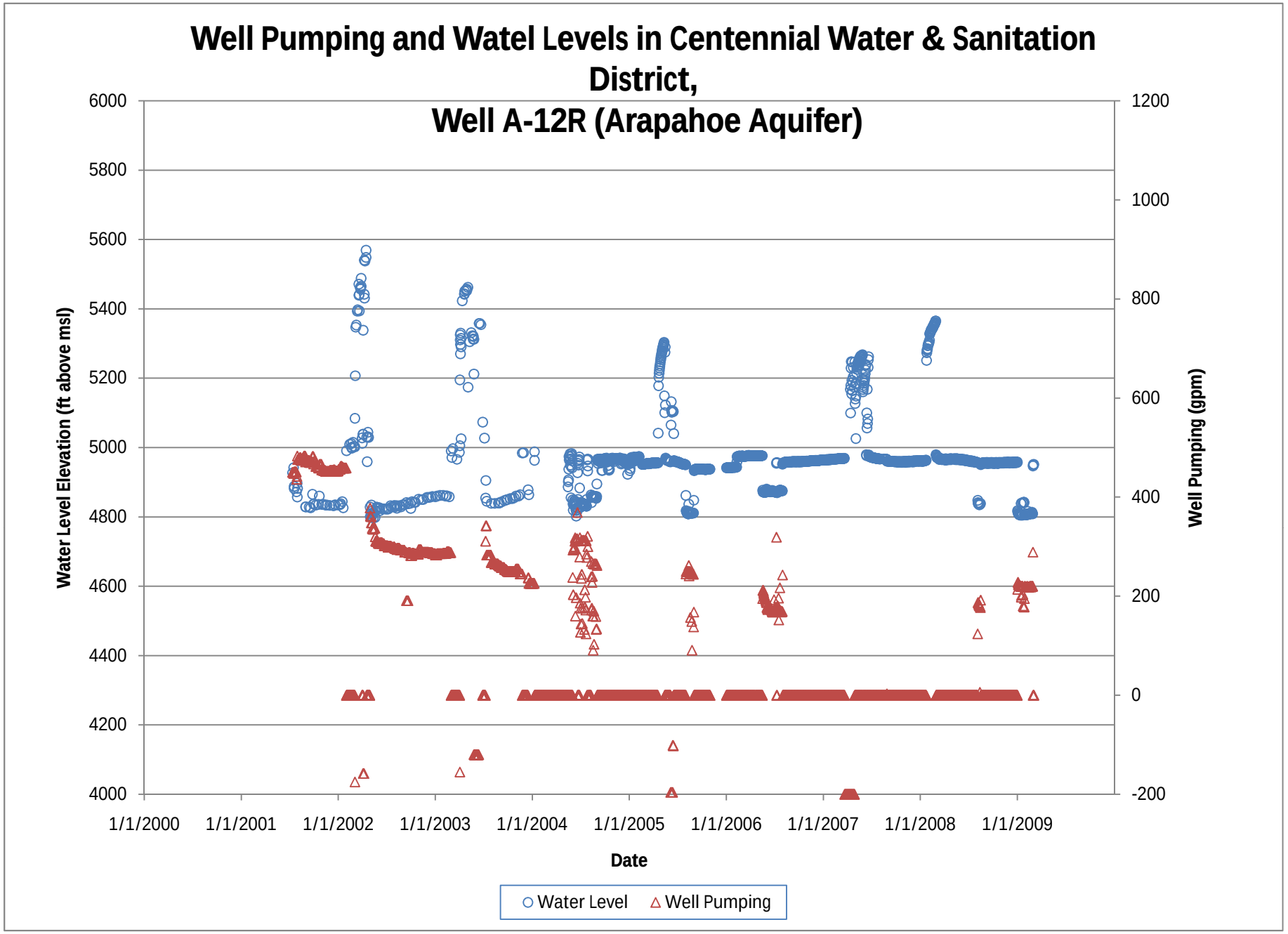

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well A-10R (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

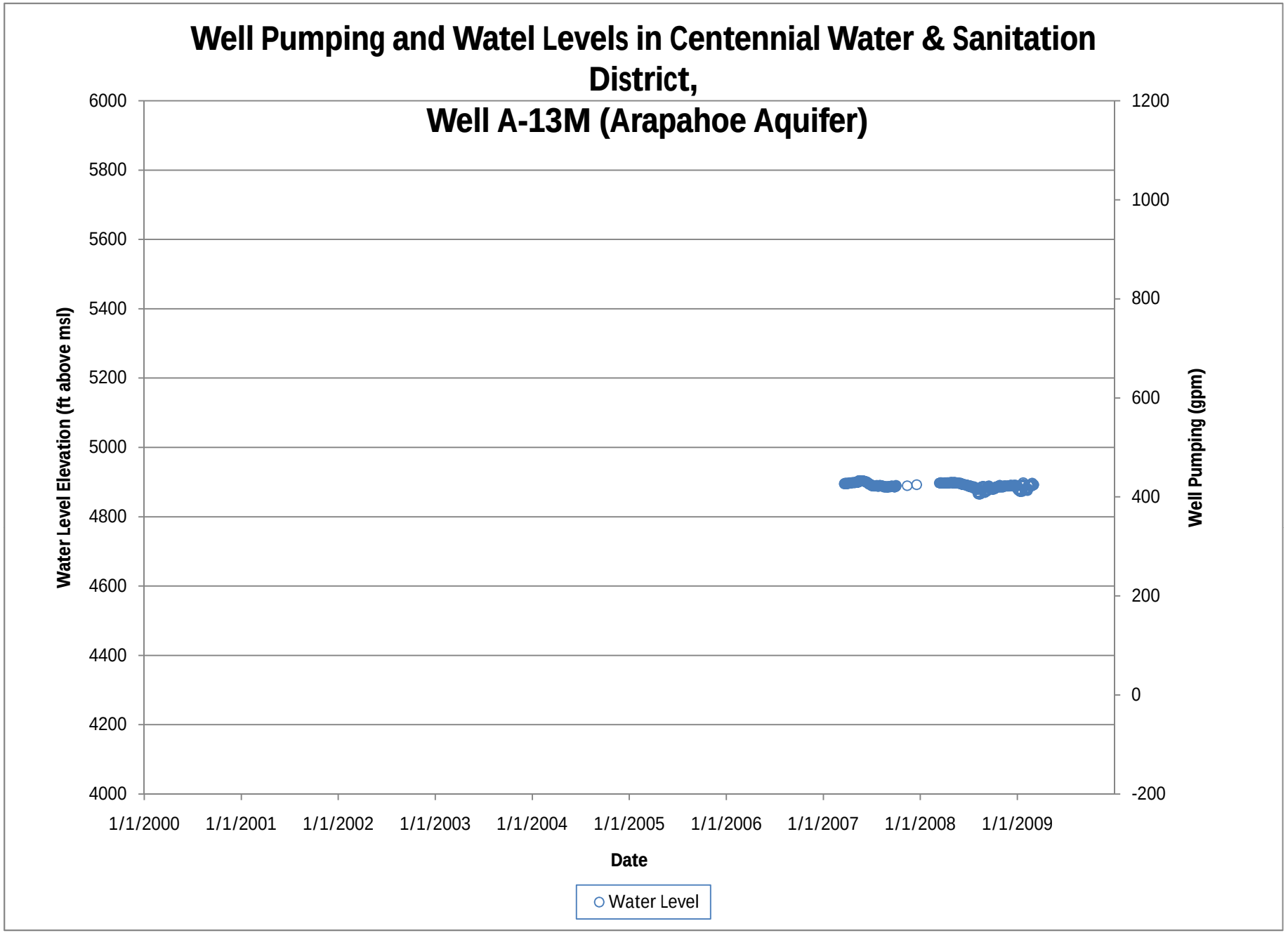

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well A-11 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

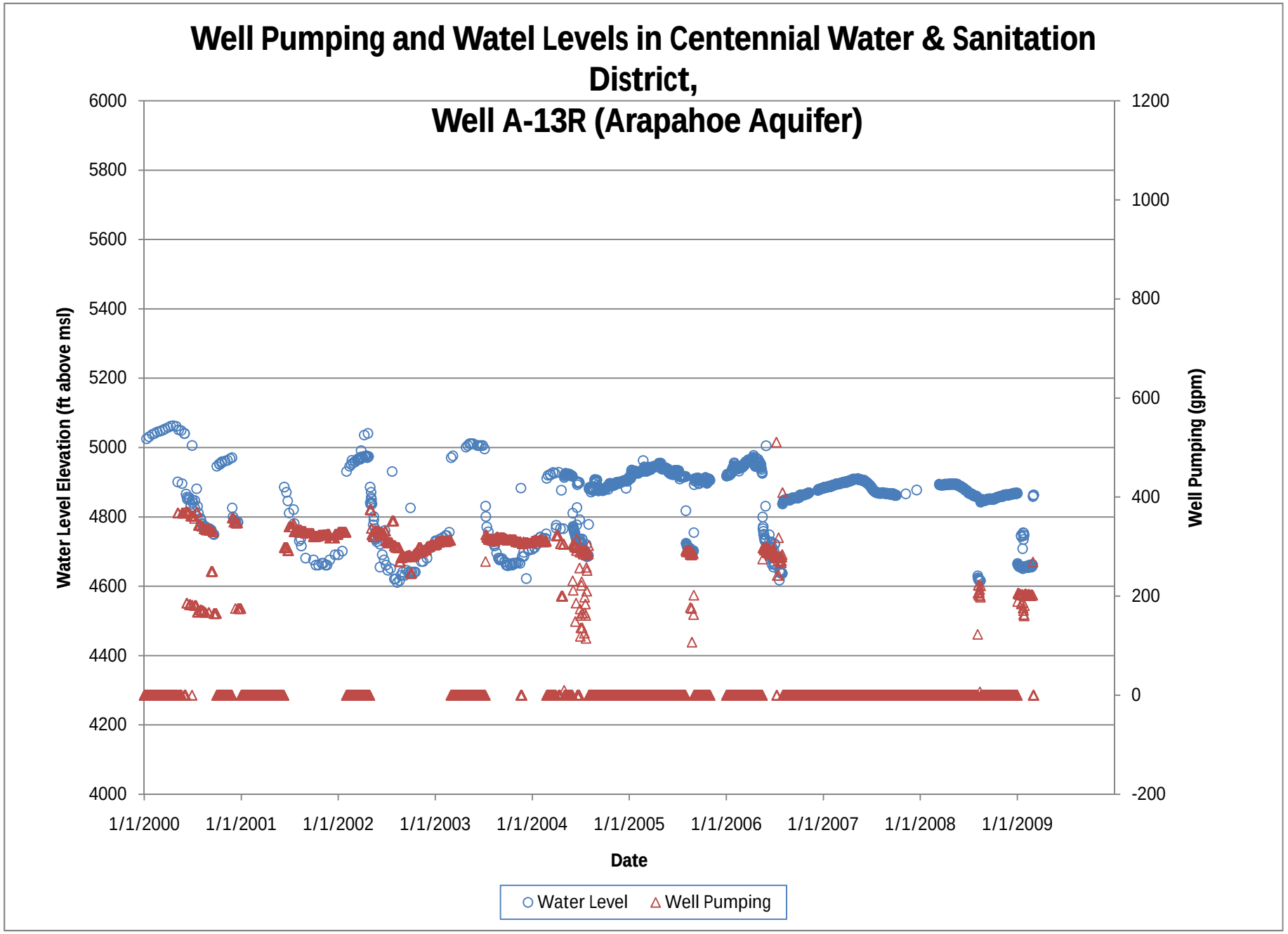

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well A-11M (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level

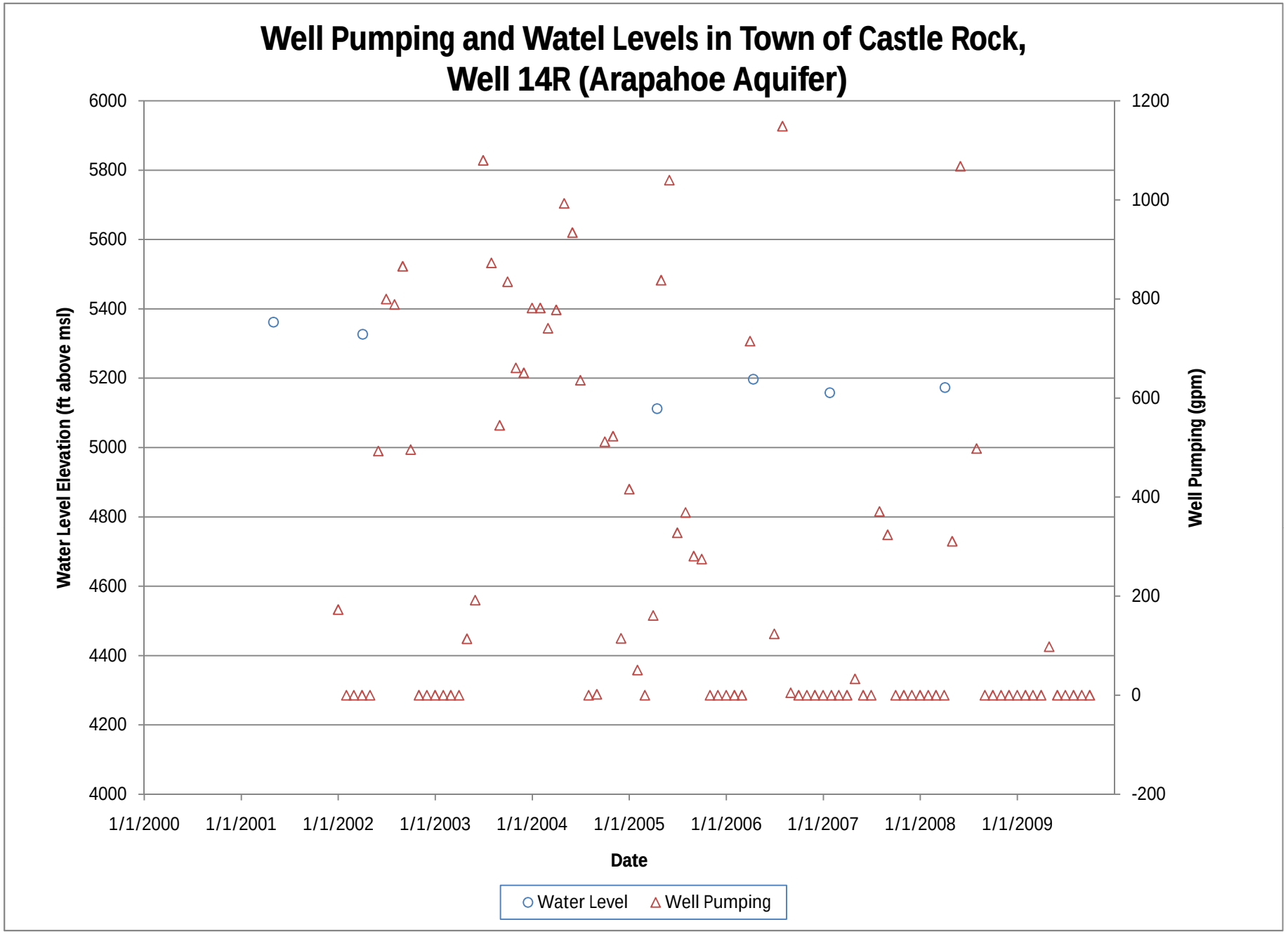

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well A-11R (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

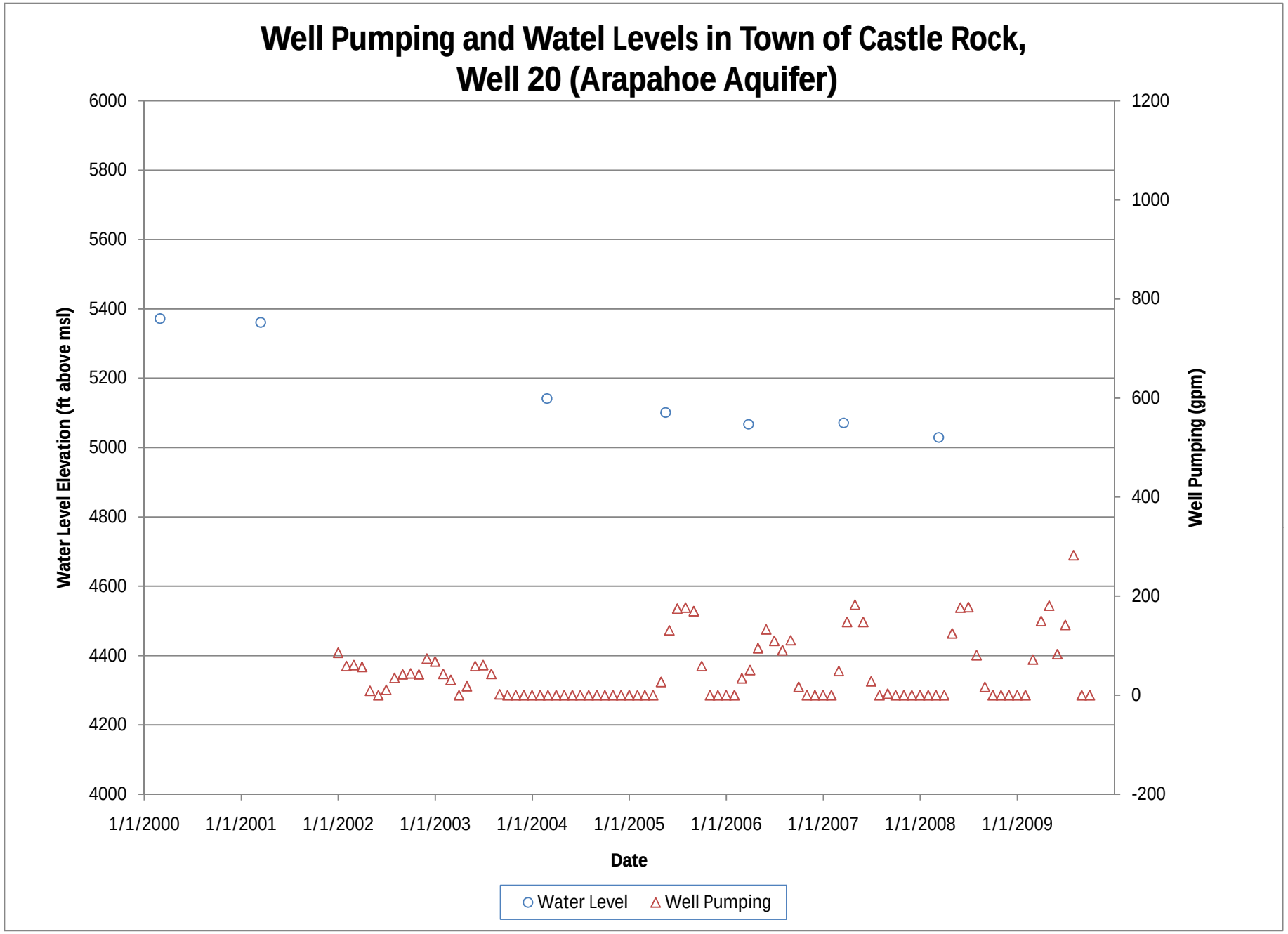

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well A-12M (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level

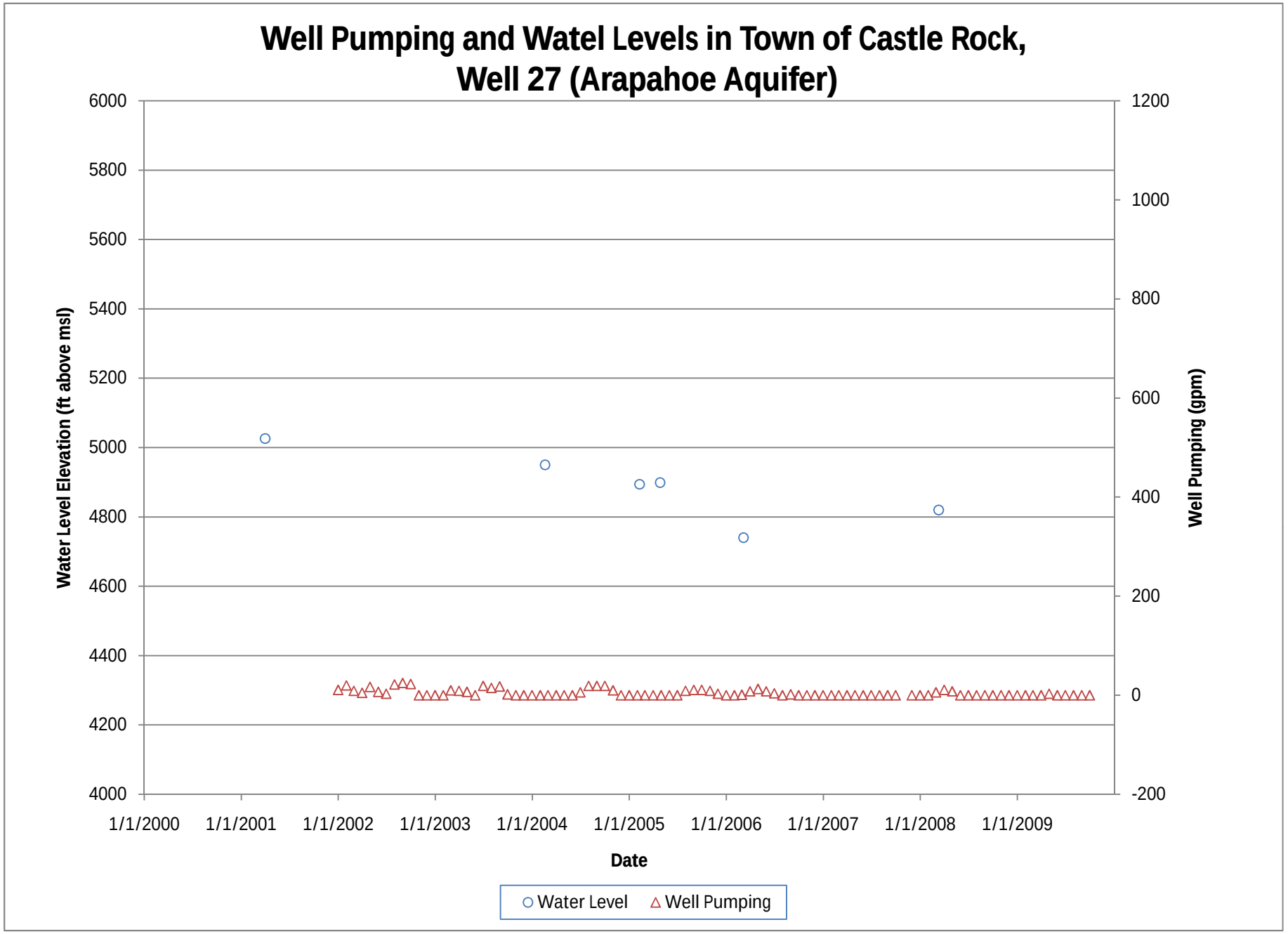

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well A-12R (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

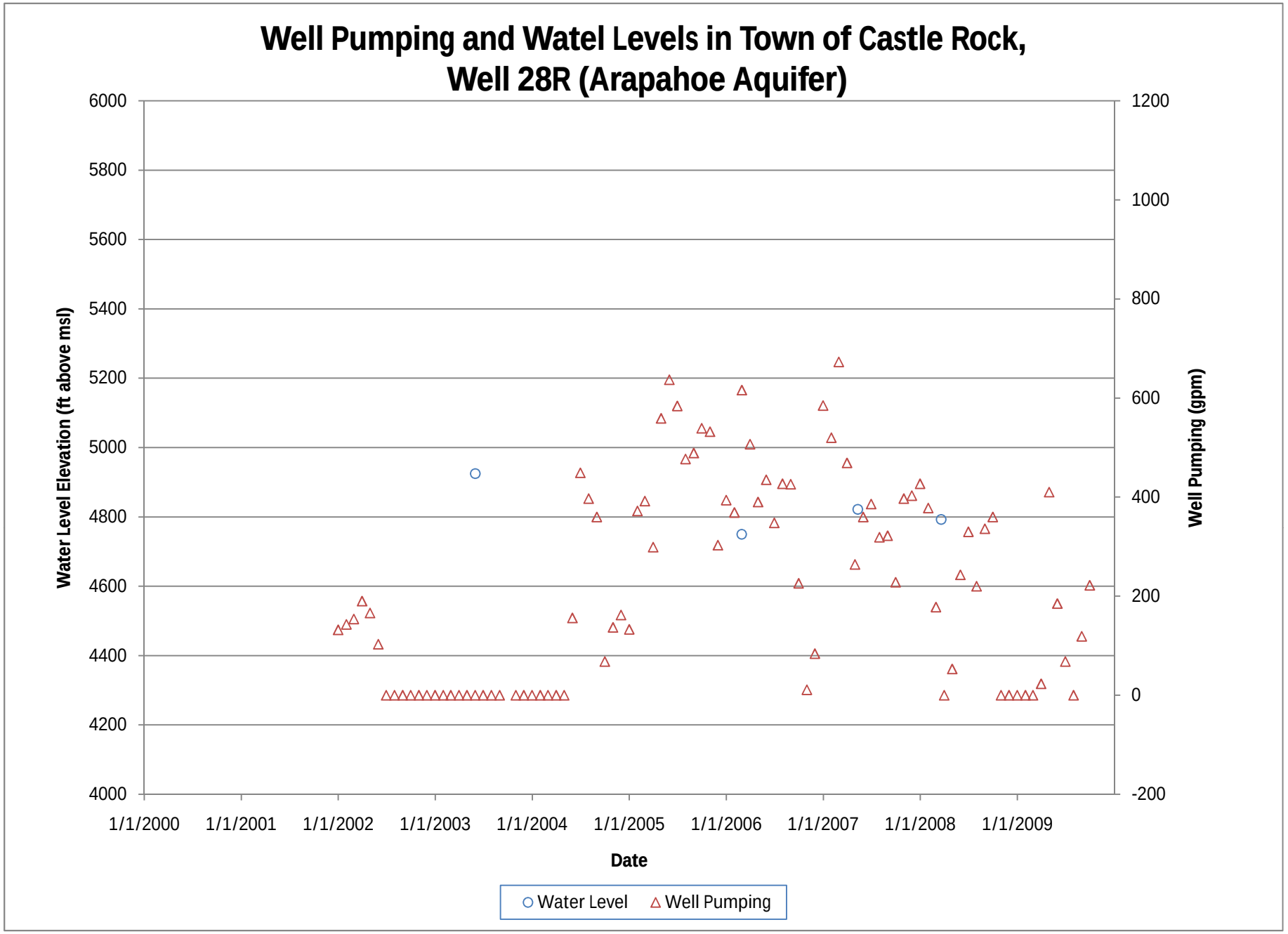

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well A-13M (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level

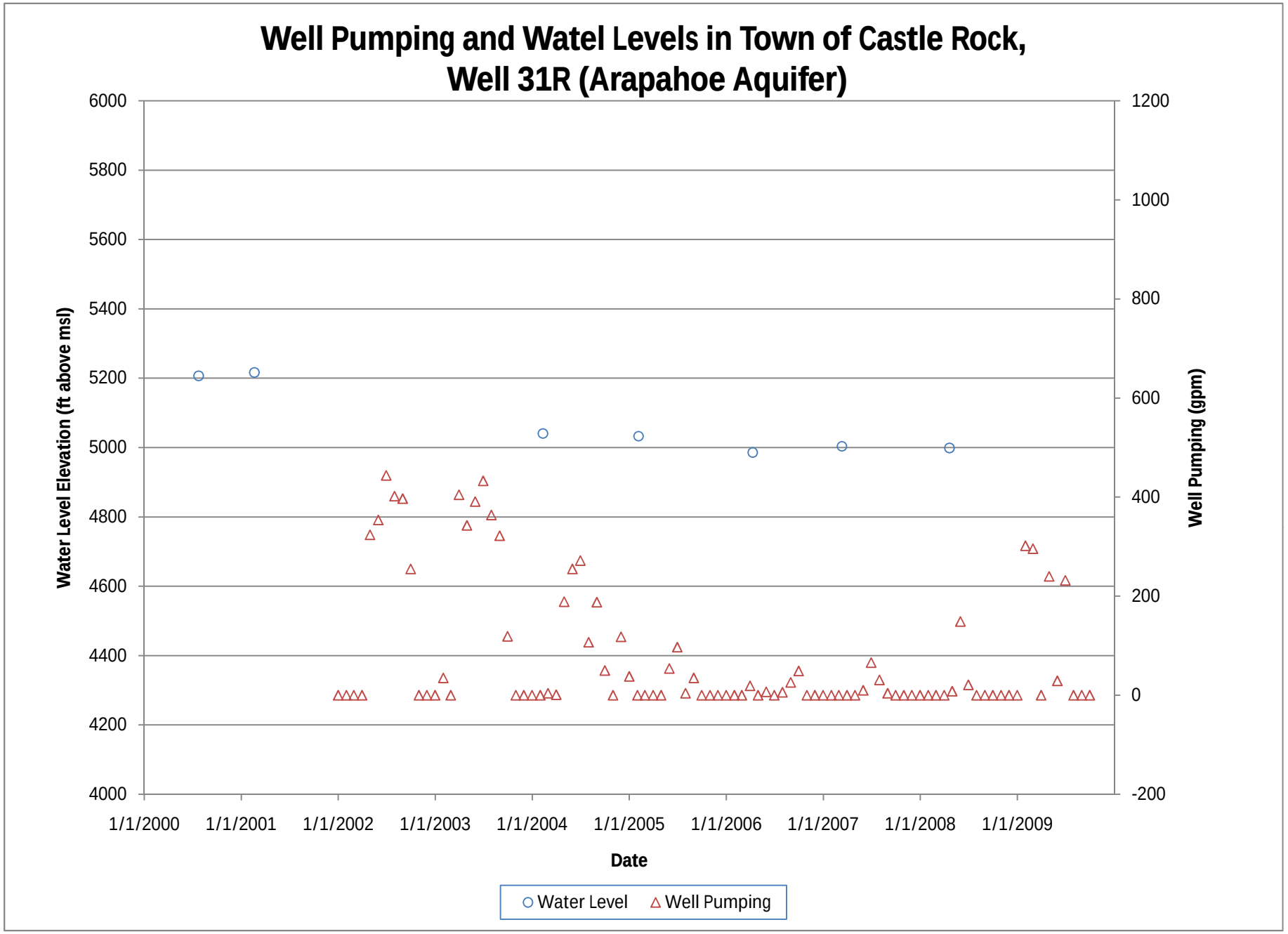

Well Pumping and Watel Levels in Centennial Water & Sanitation District,
Well A-13R (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

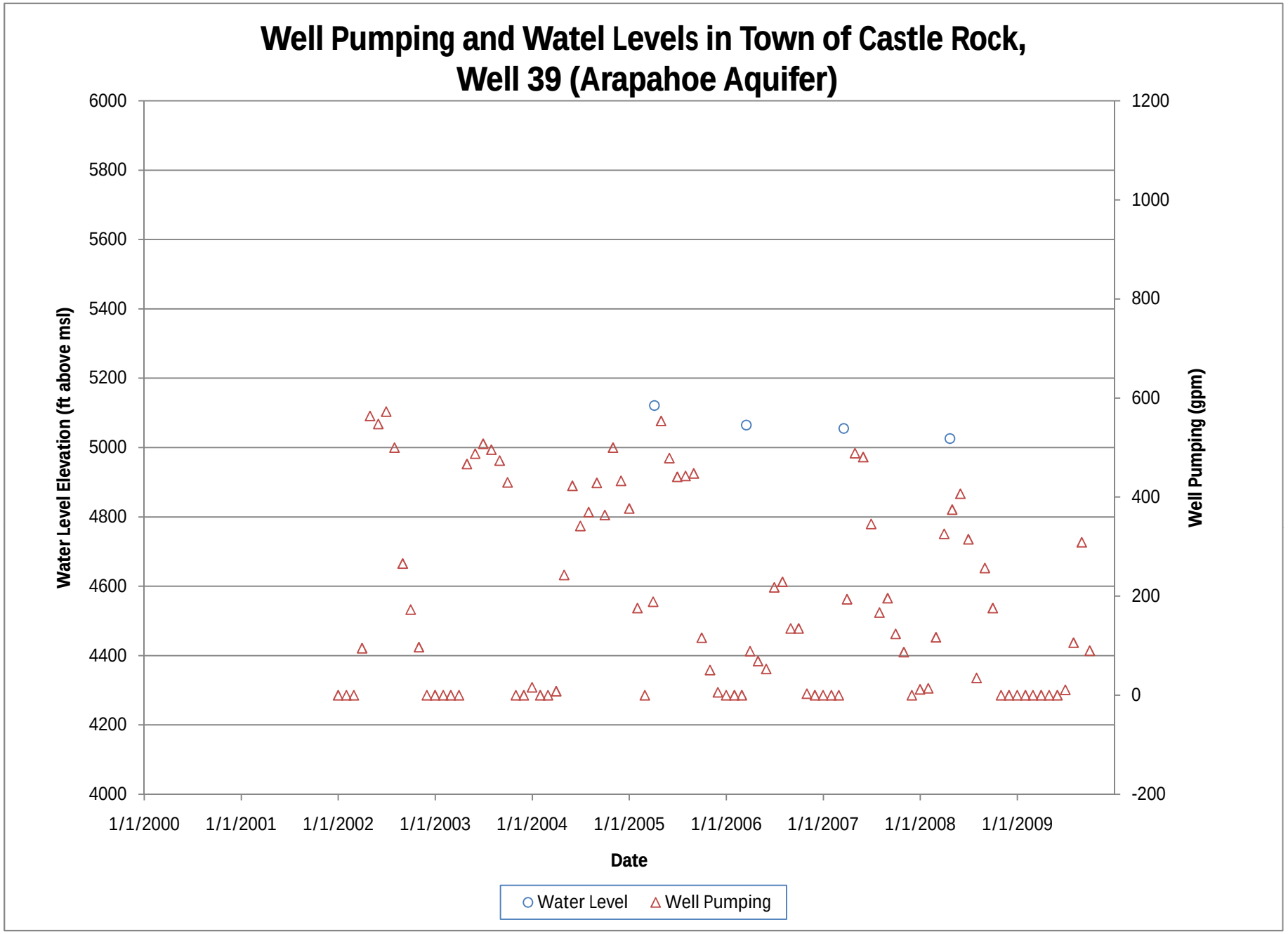

Well Pumping and Watel Levels in Town of Castle Rock, Well 14R (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

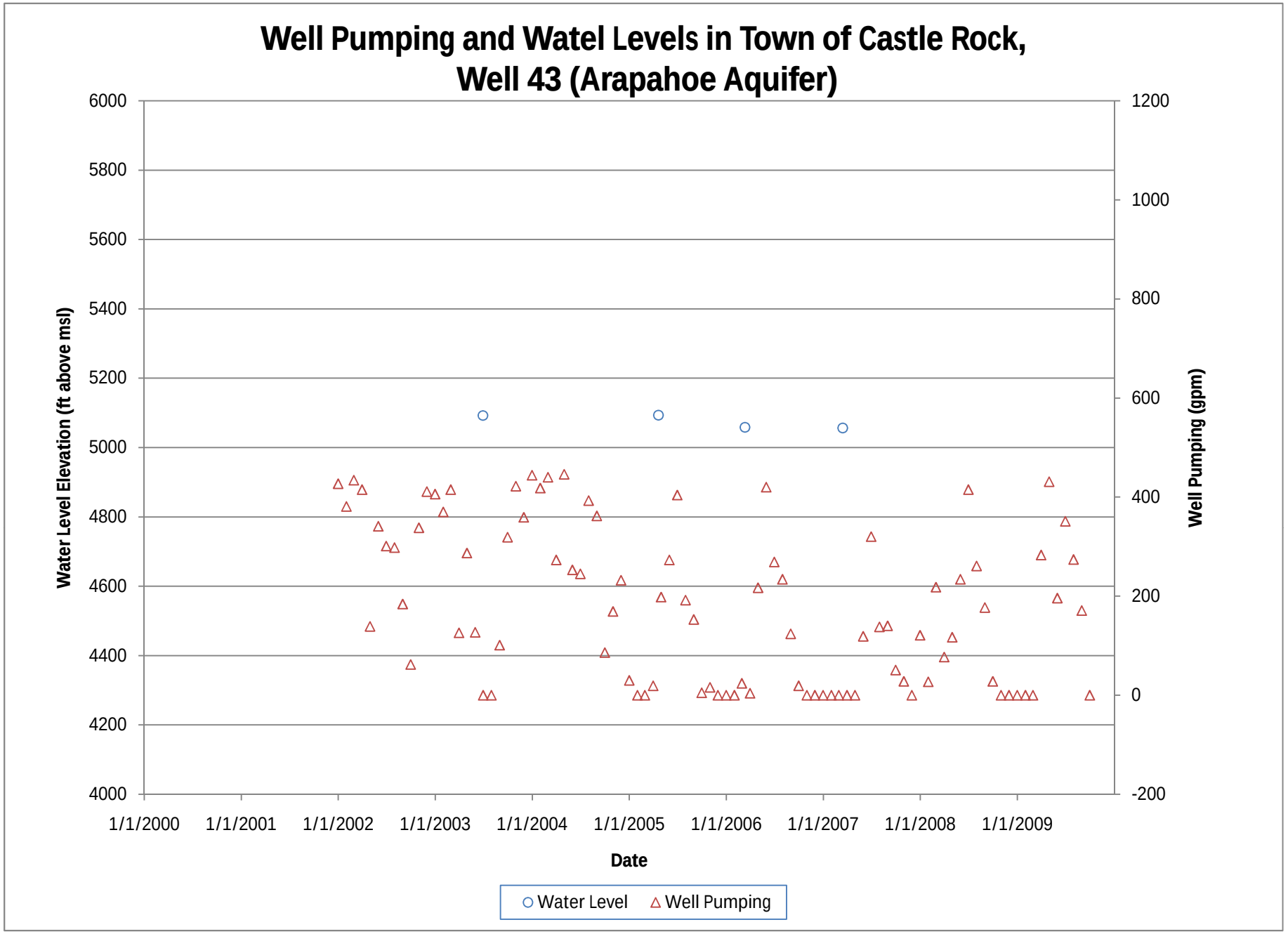

Well Pumping and Watel Levels in Town of Castle Rock, Well 20 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

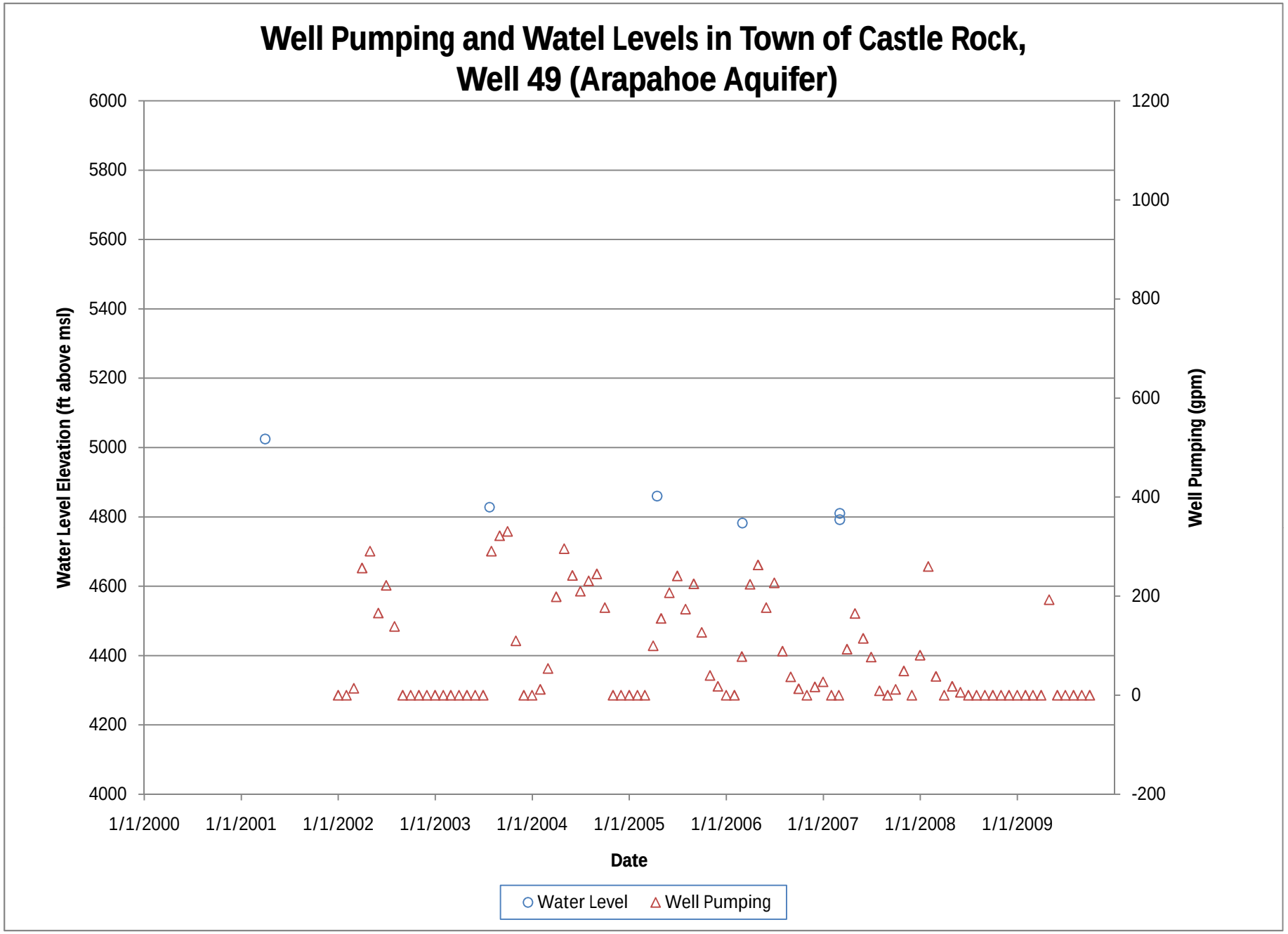

Well Pumping and Watel Levels in Town of Castle Rock, Well 27 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

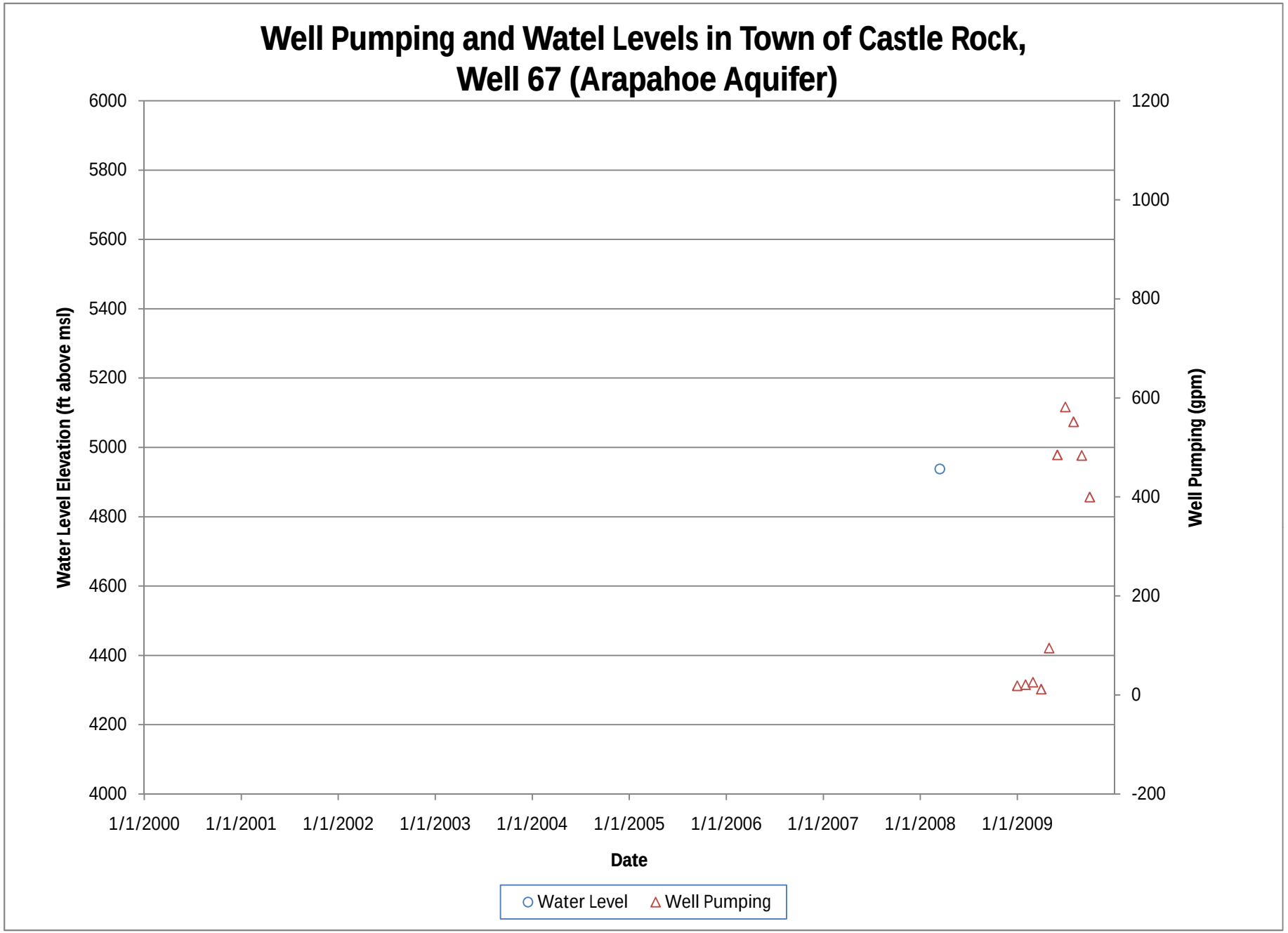

Well Pumping and Watel Levels in Town of Castle Rock, Well 28R (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

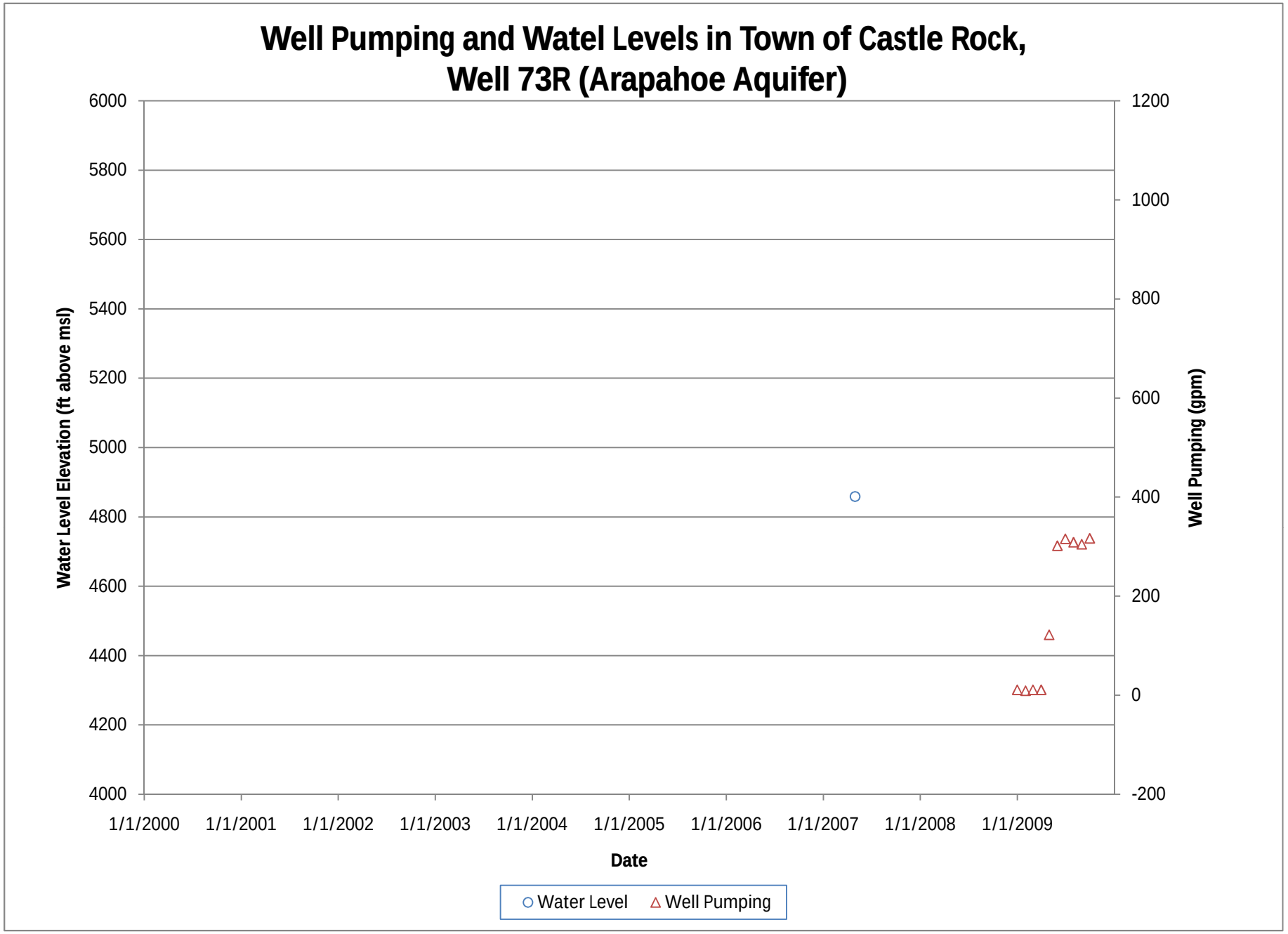

Well Pumping and Watel Levels in Town of Castle Rock, Well 31R (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

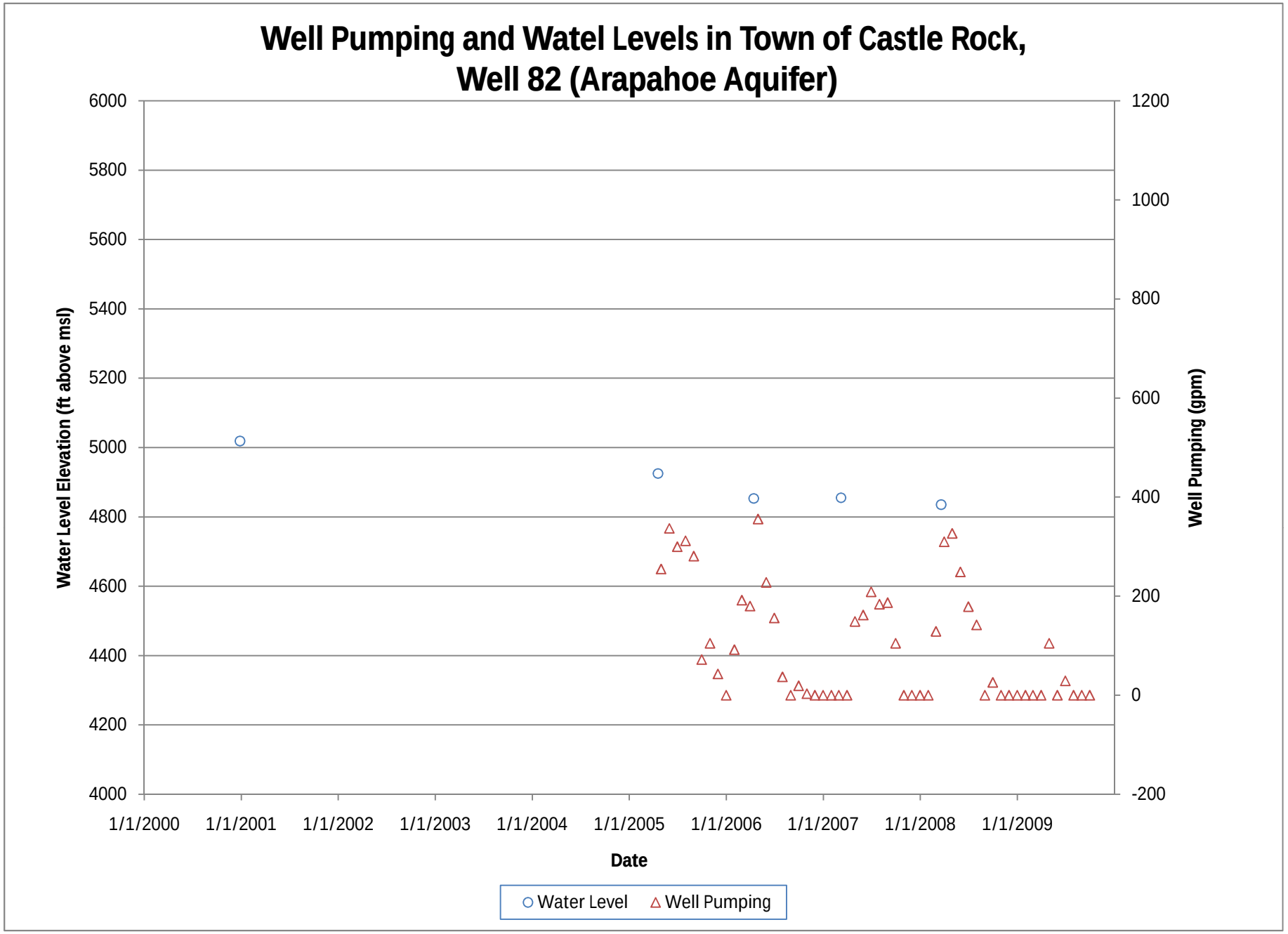

Well Pumping and Watel Levels in Town of Castle Rock, Well 39 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

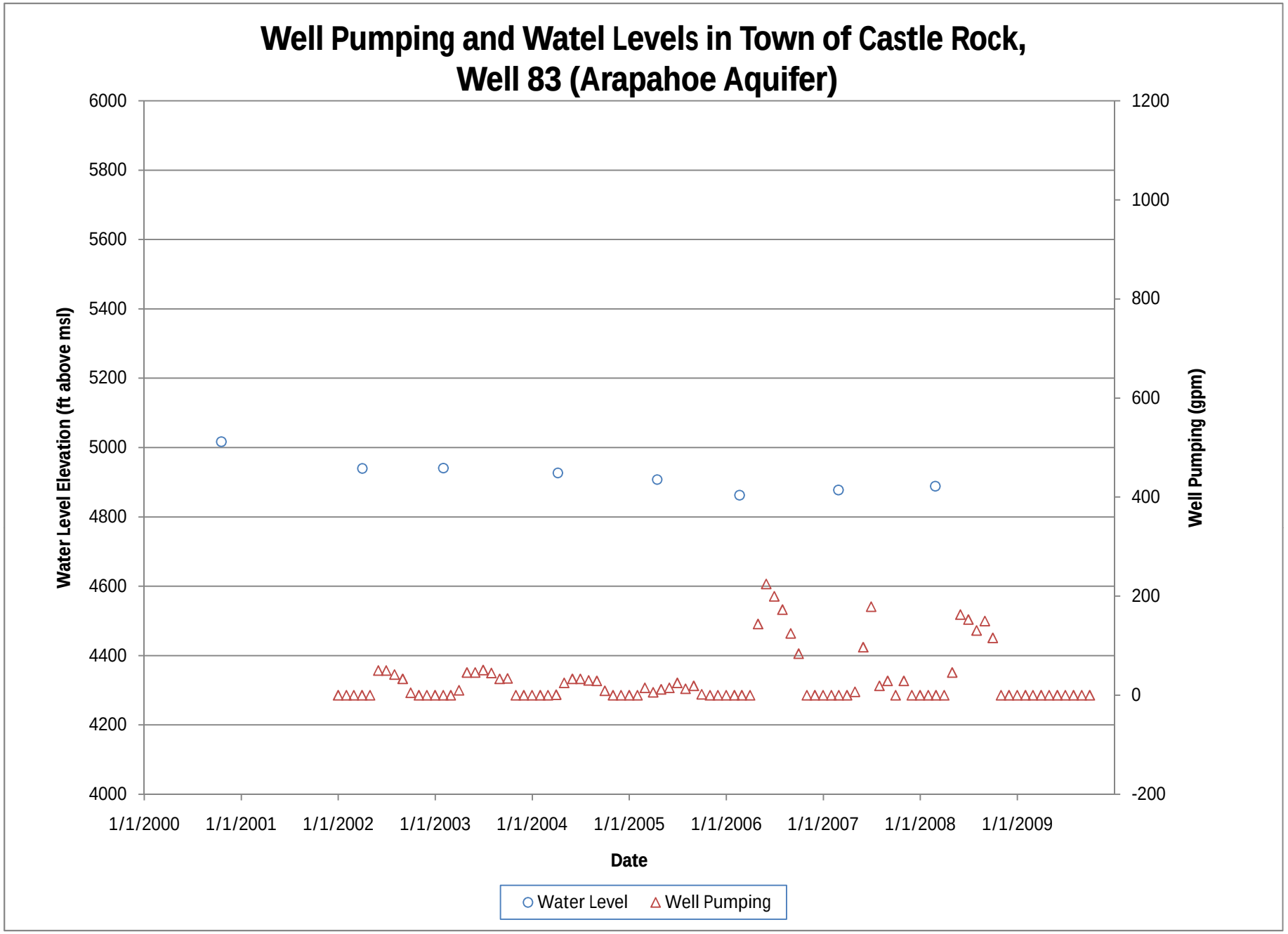

Well Pumping and Watel Levels in Town of Castle Rock, Well 43 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

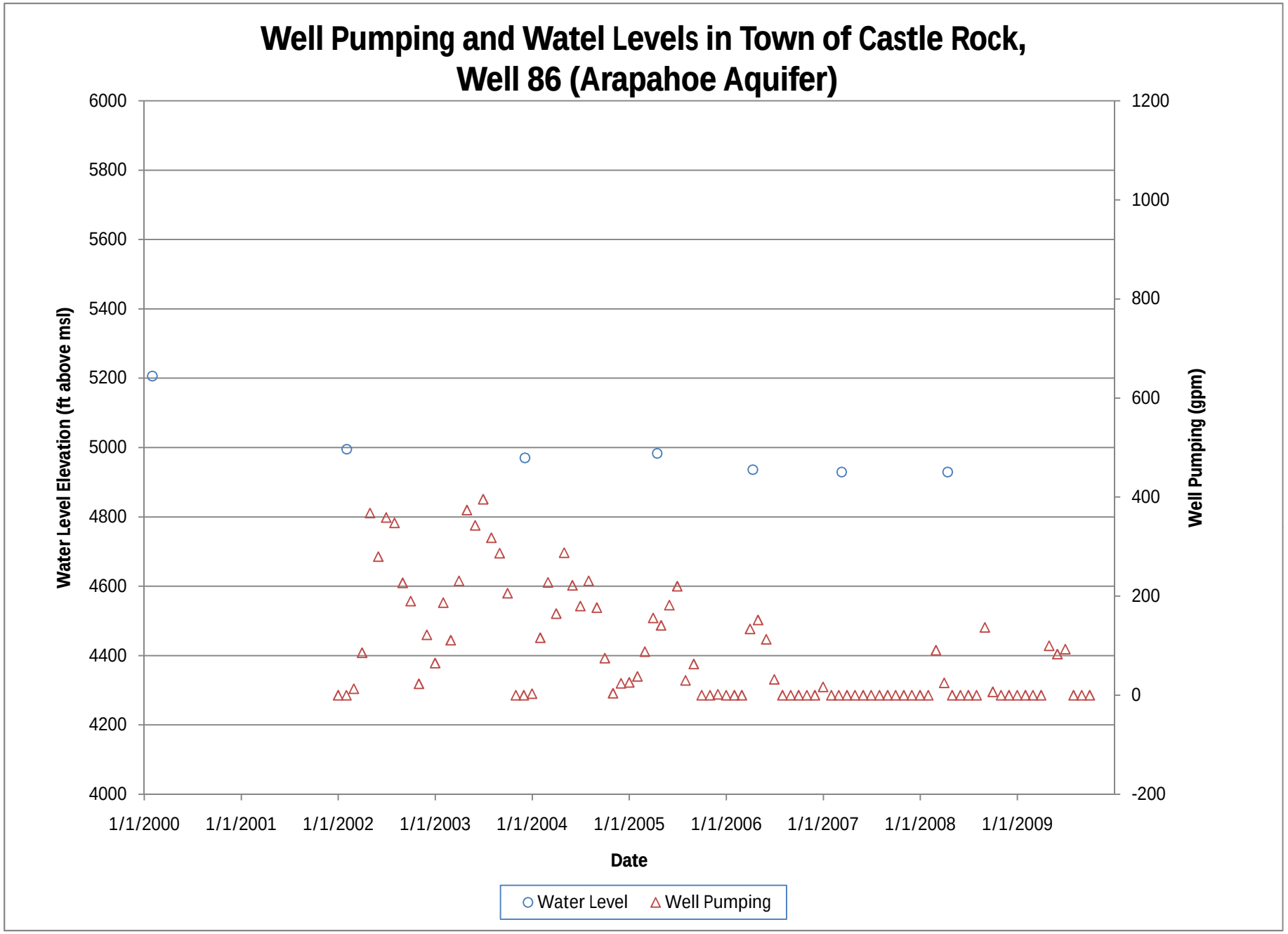

Well Pumping and Watel Levels in Town of Castle Rock, Well 49 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

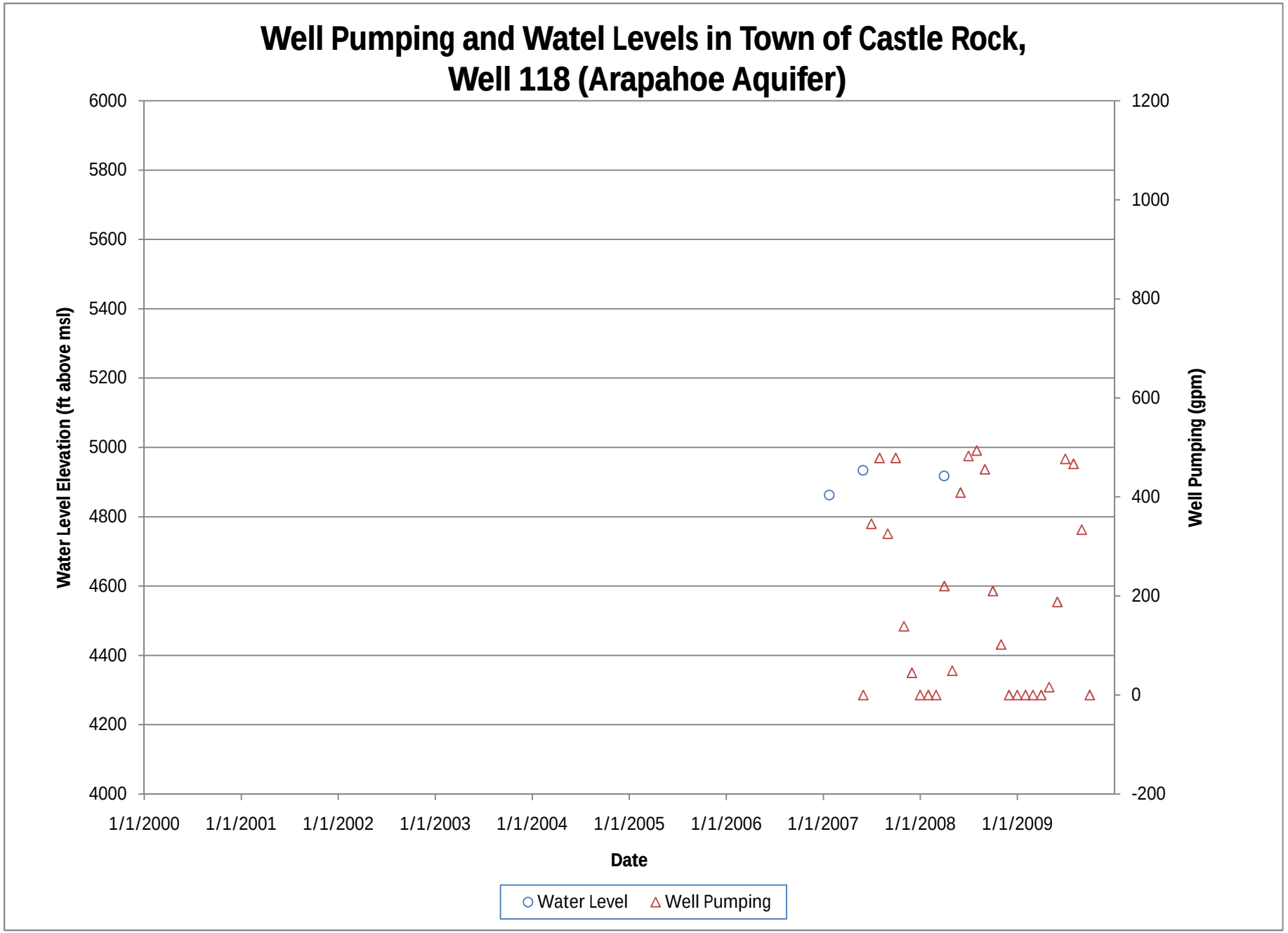

Well Pumping and Watel Levels in Town of Castle Rock, Well 67 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

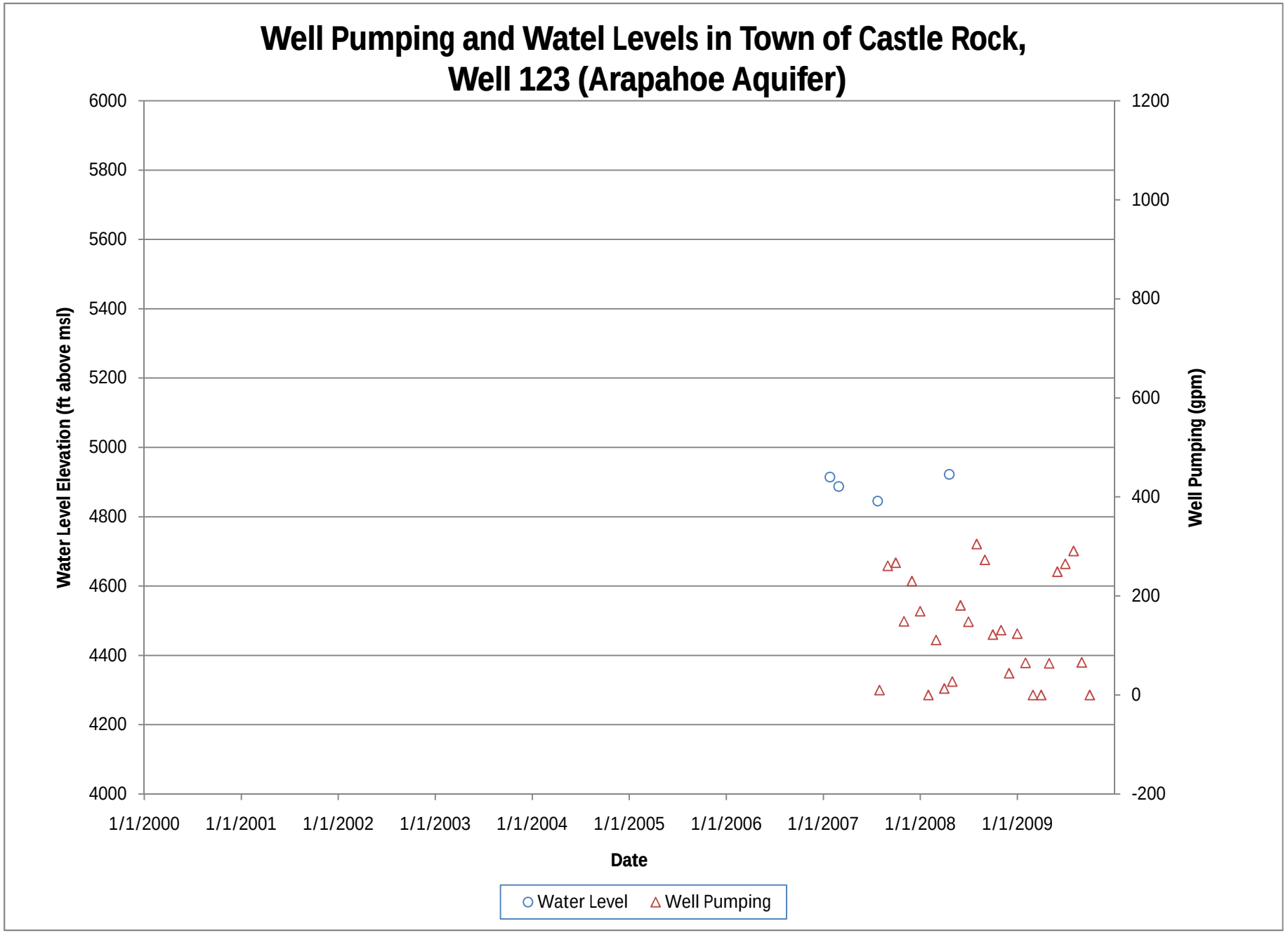

Well Pumping and Watel Levels in Town of Castle Rock, Well 73R (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

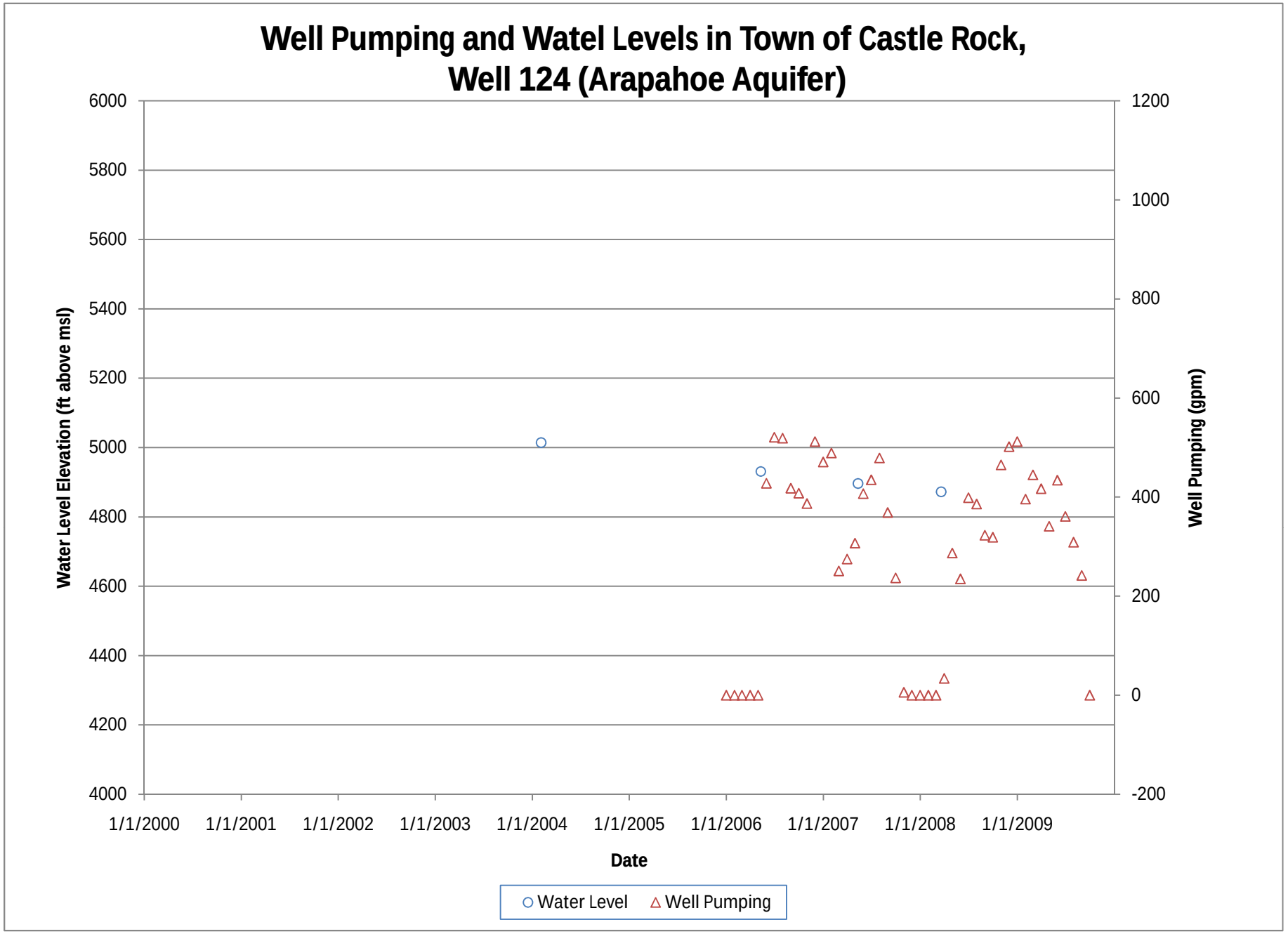

Well Pumping and Watel Levels in Town of Castle Rock, Well 82 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

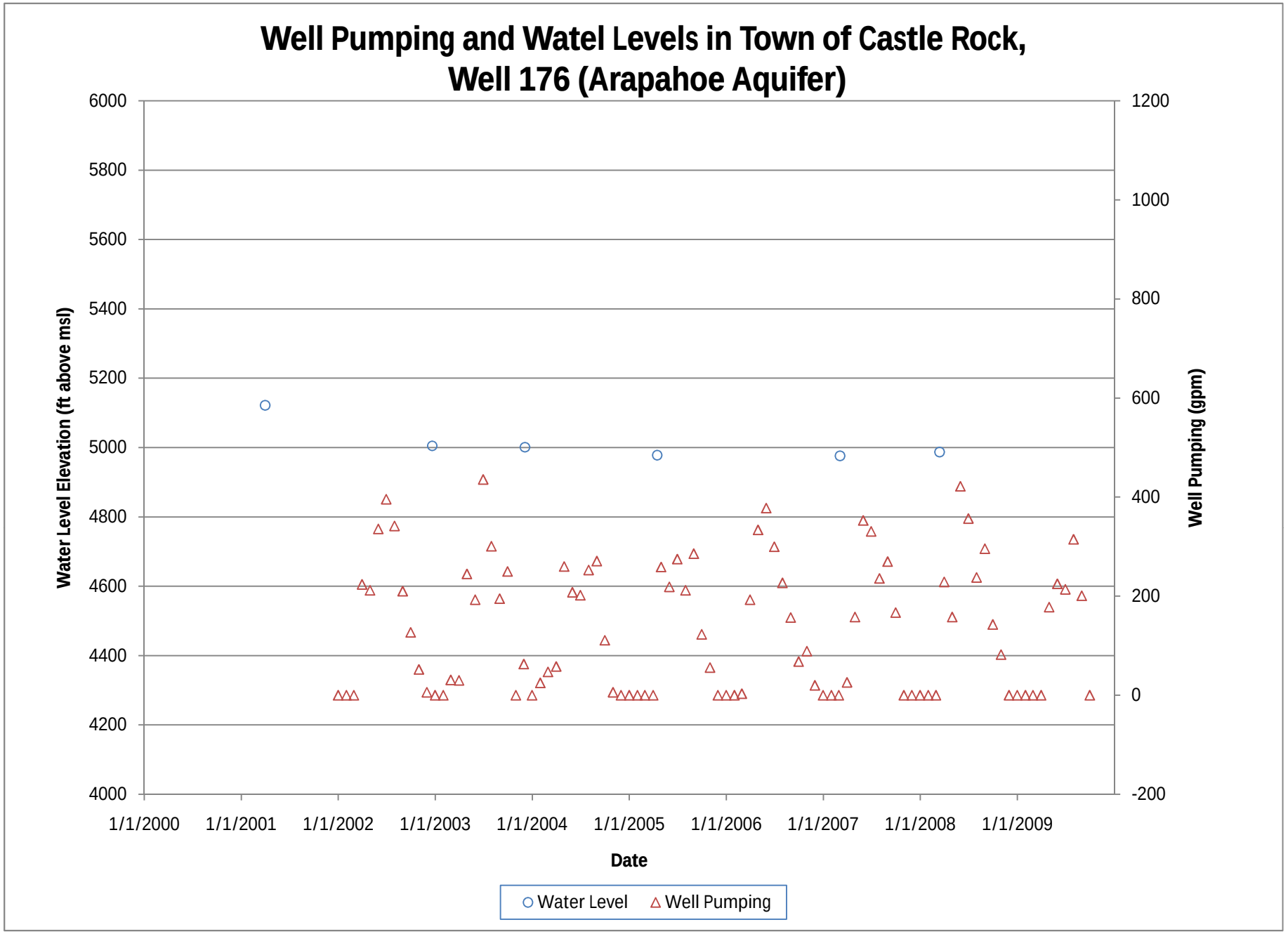

Well Pumping and Watel Levels in Town of Castle Rock, Well 83 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

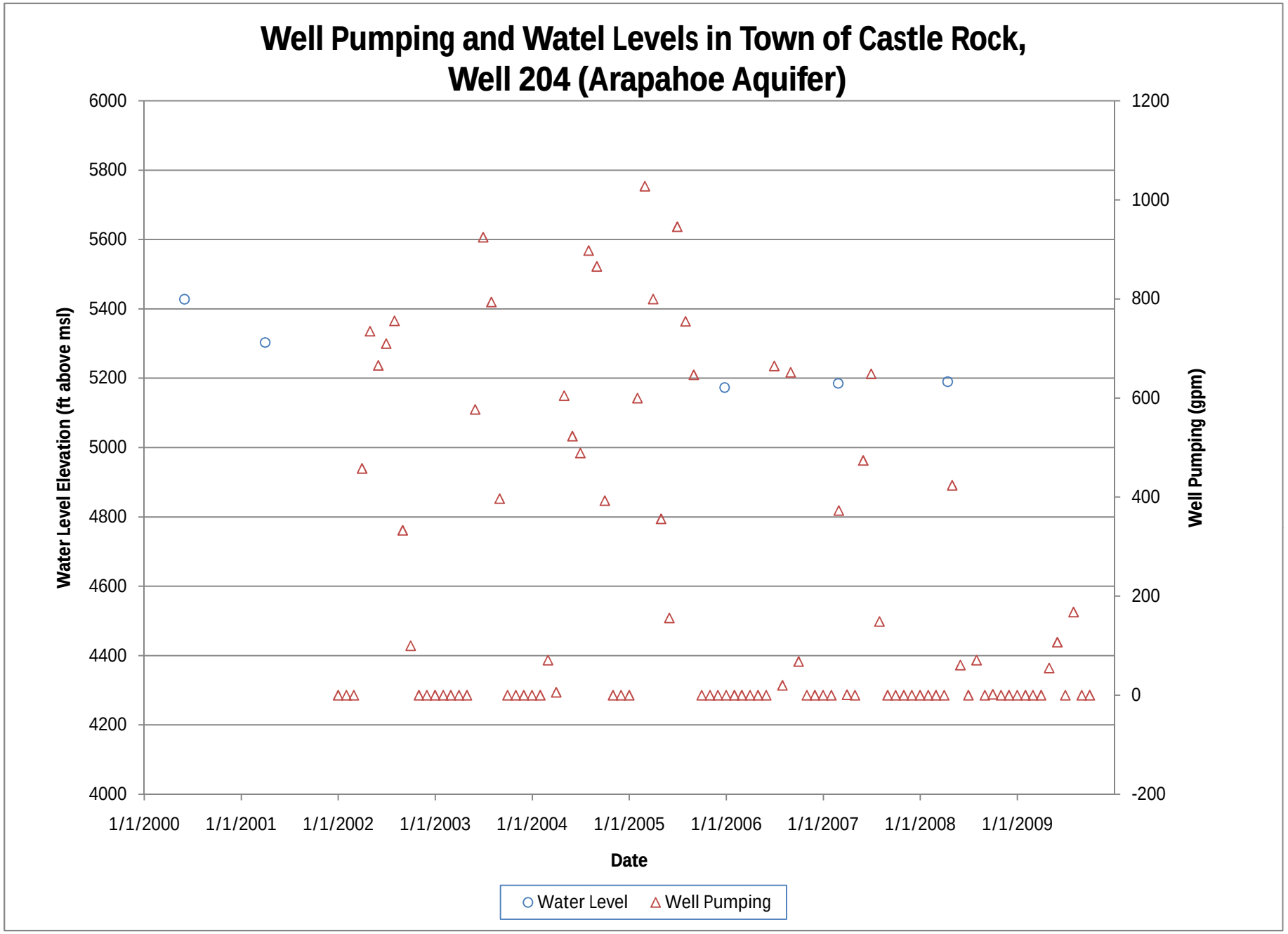

Well Pumping and Watel Levels in Town of Castle Rock, Well 86 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

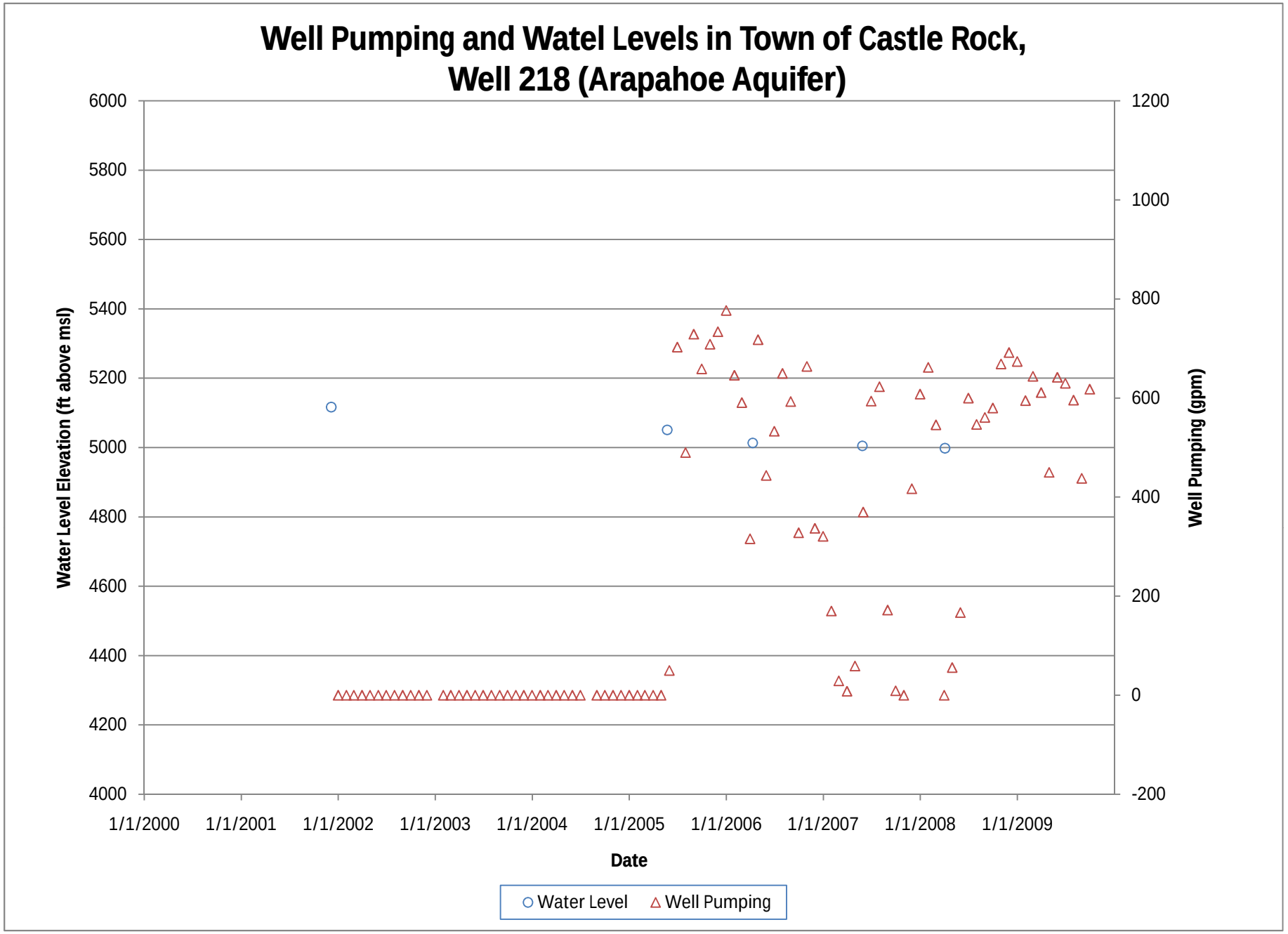

Well Pumping and Watel Levels in Town of Castle Rock, Well 118 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

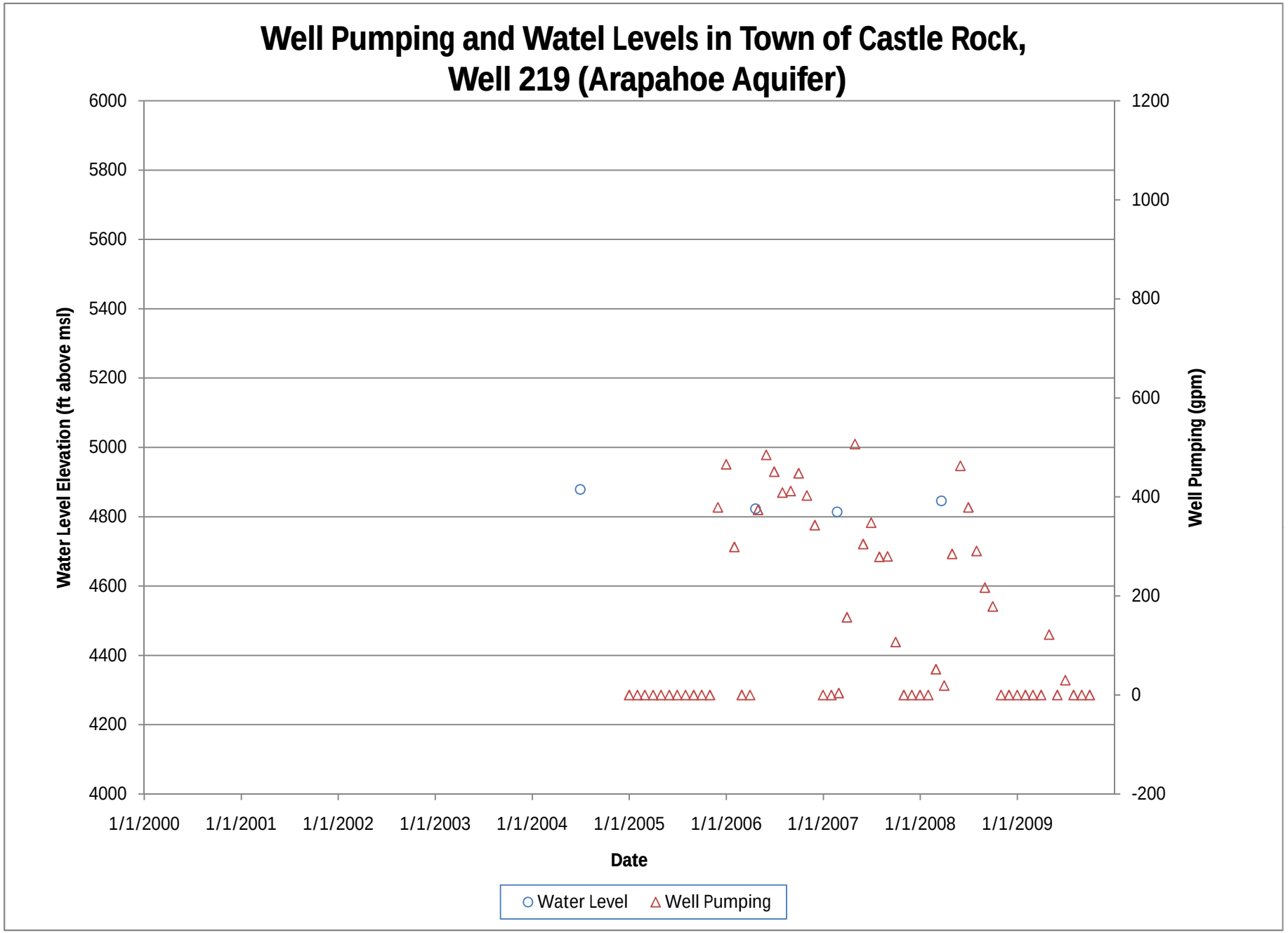

Well Pumping and Watel Levels in Town of Castle Rock, Well 123 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

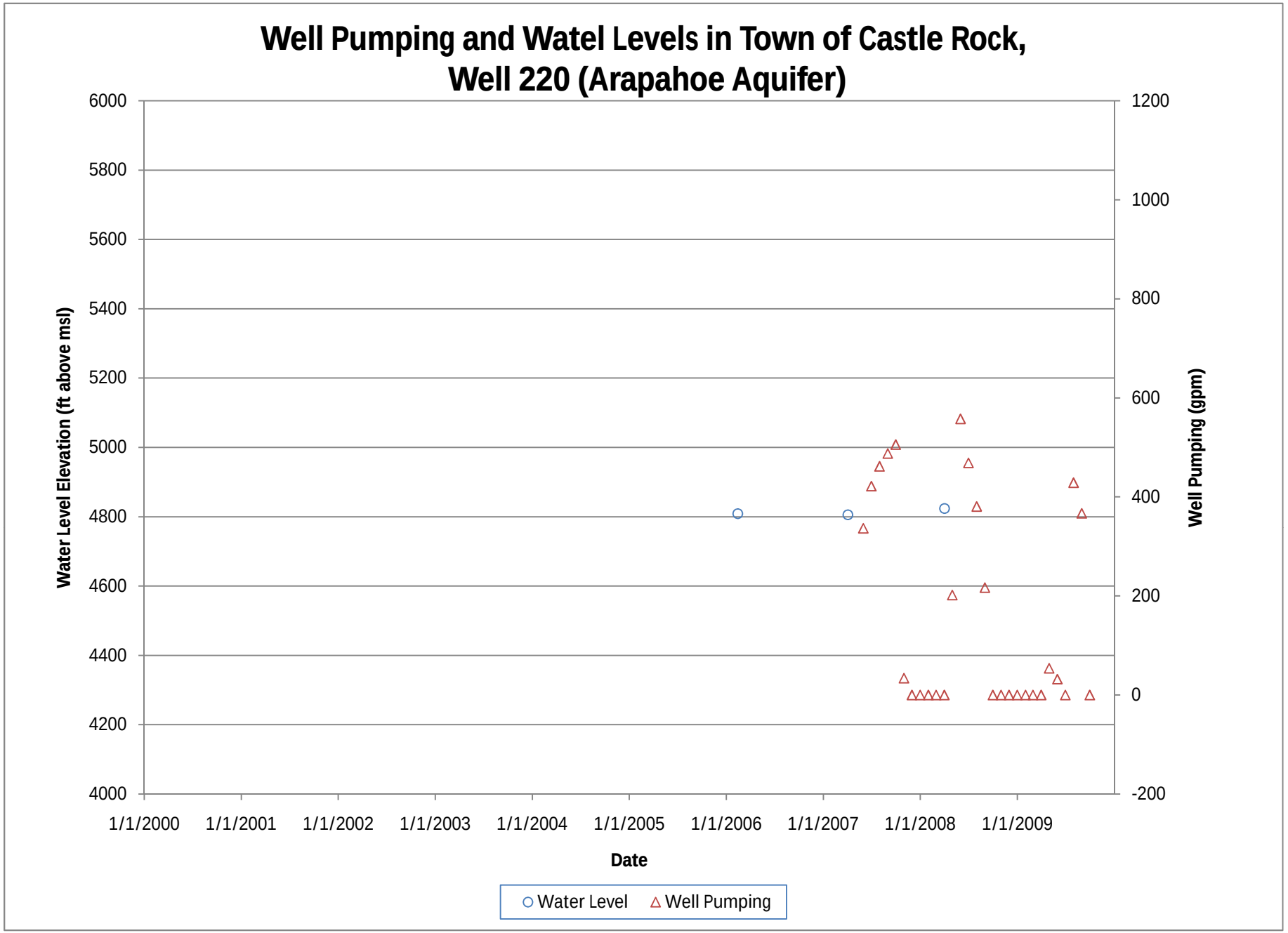

Well Pumping and Watel Levels in Town of Castle Rock, Well 124 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

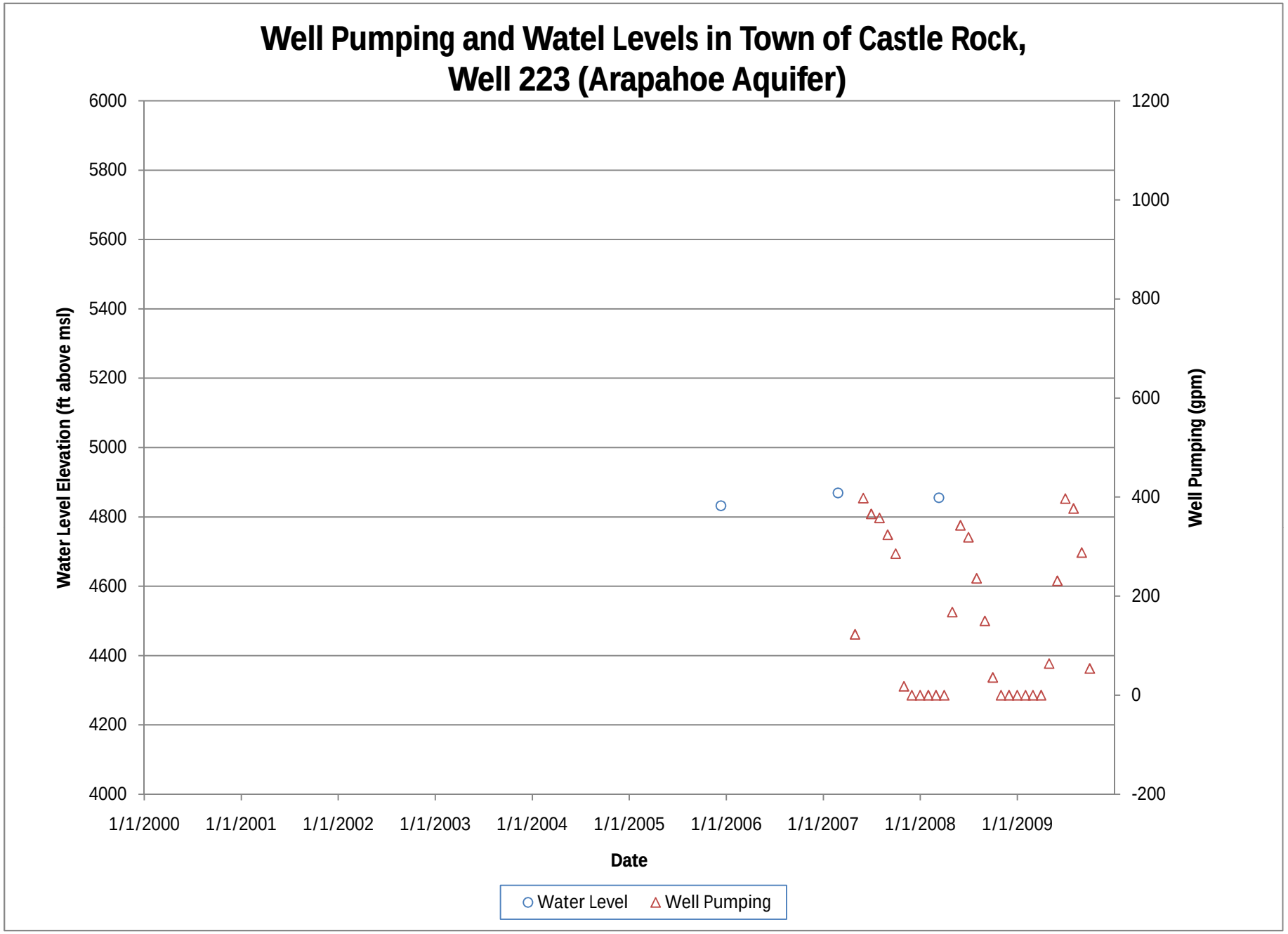

Well Pumping and Watel Levels in Town of Castle Rock, Well 176 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

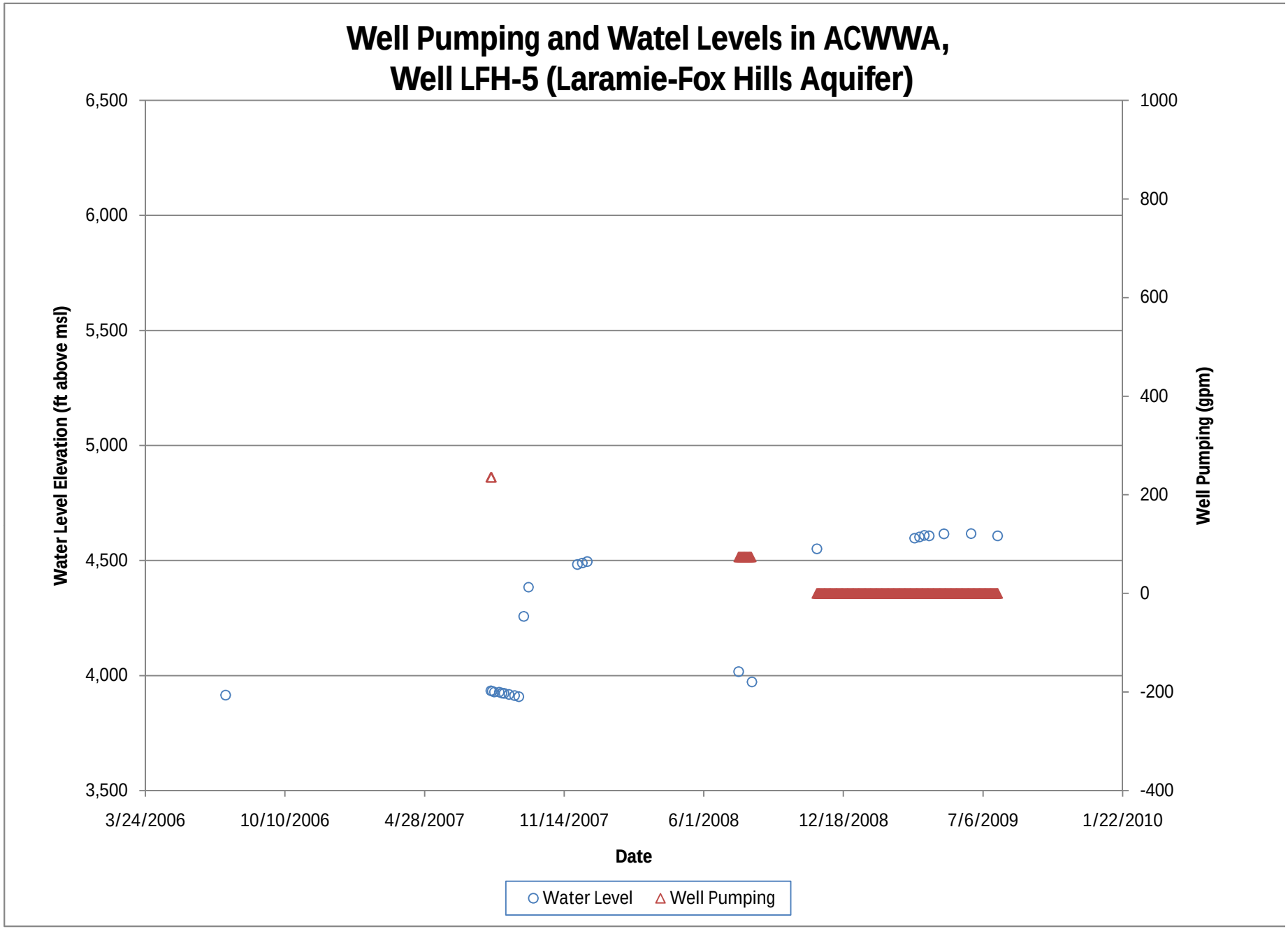

Well Pumping and Watel Levels in Town of Castle Rock, Well 204 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

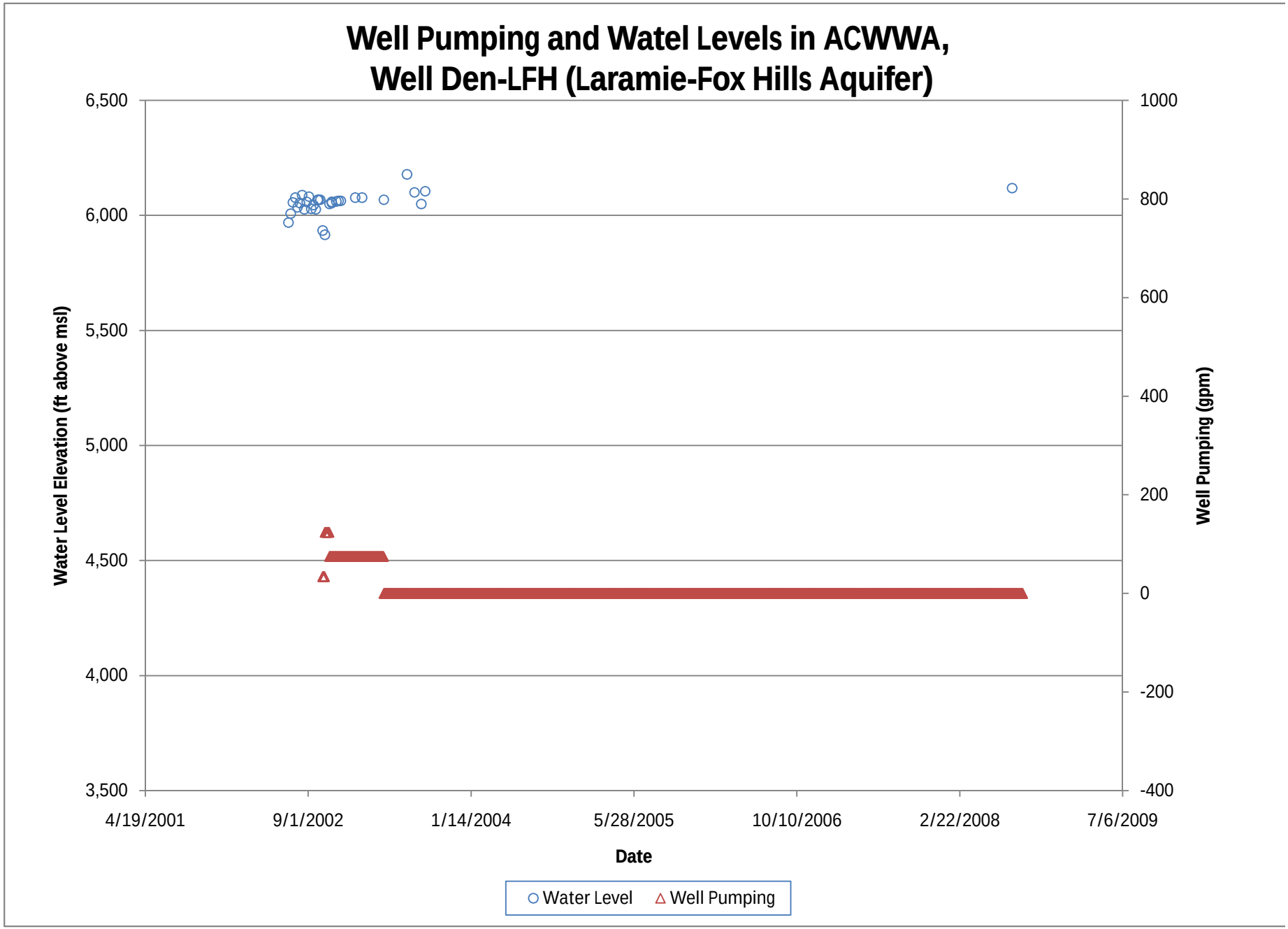

Well Pumping and Watel Levels in Town of Castle Rock, Well 218 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

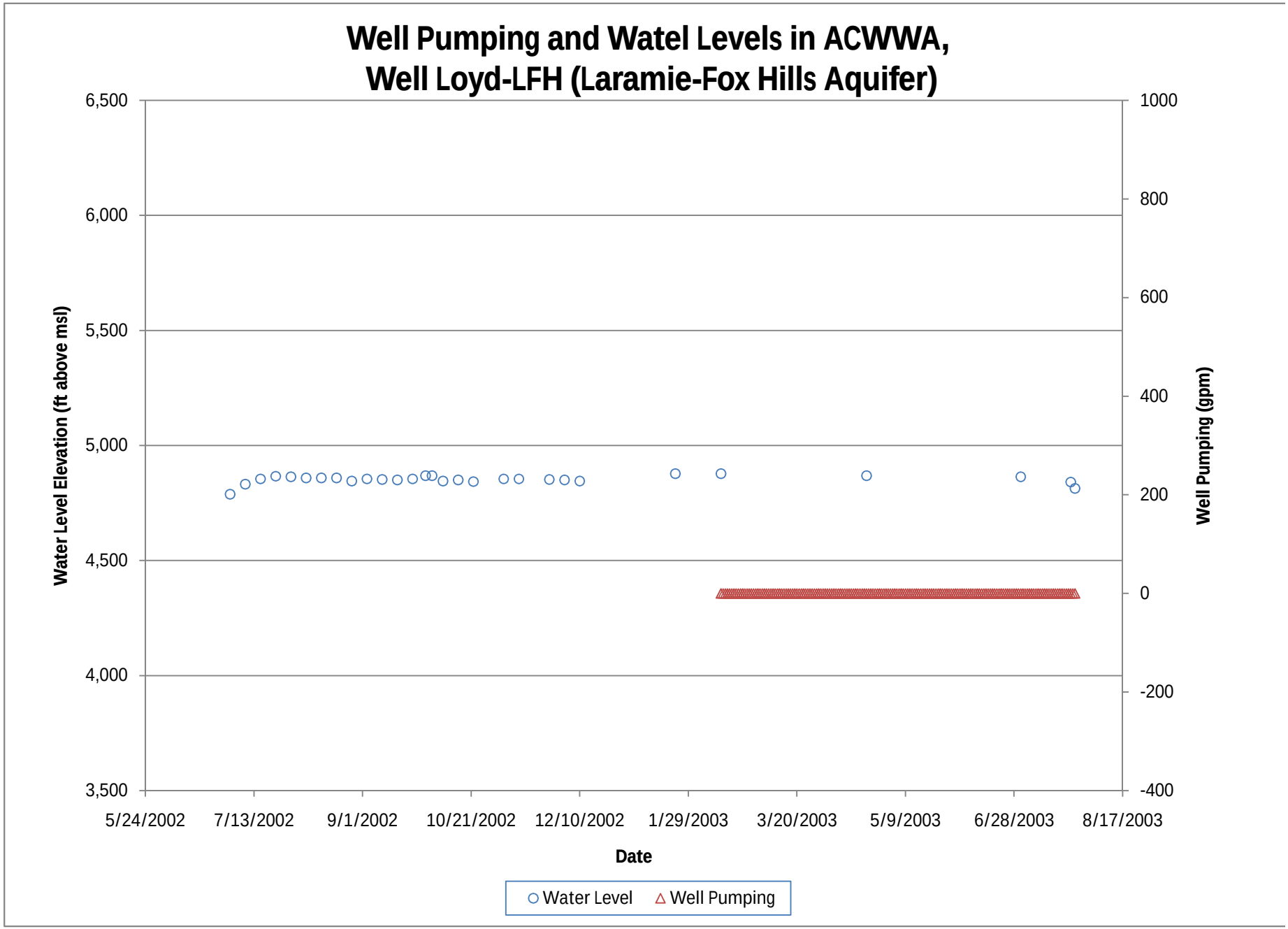

Well Pumping and Watel Levels in Town of Castle Rock, Well 219 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

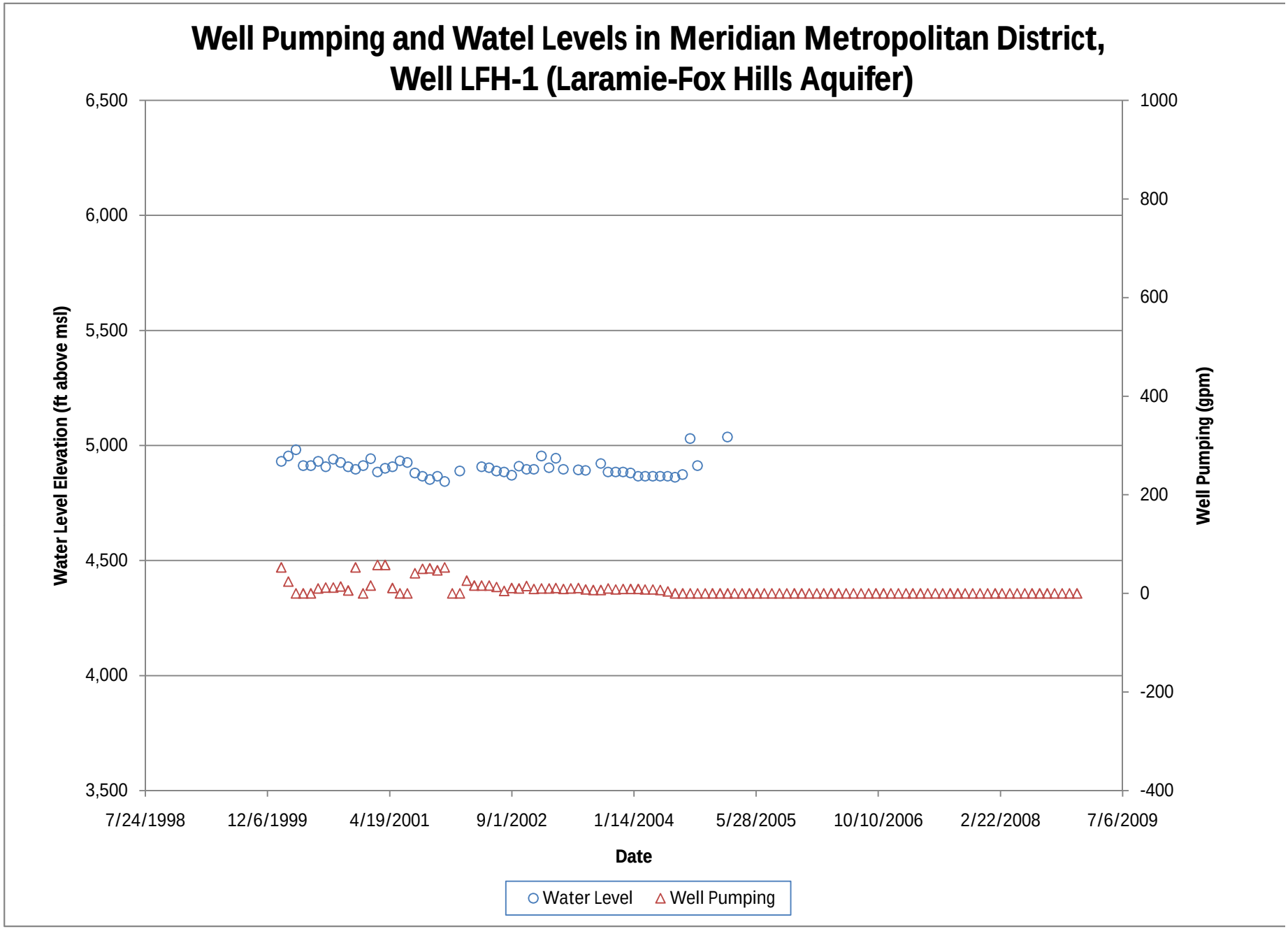

Well Pumping and Watel Levels in Town of Castle Rock, Well 220 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

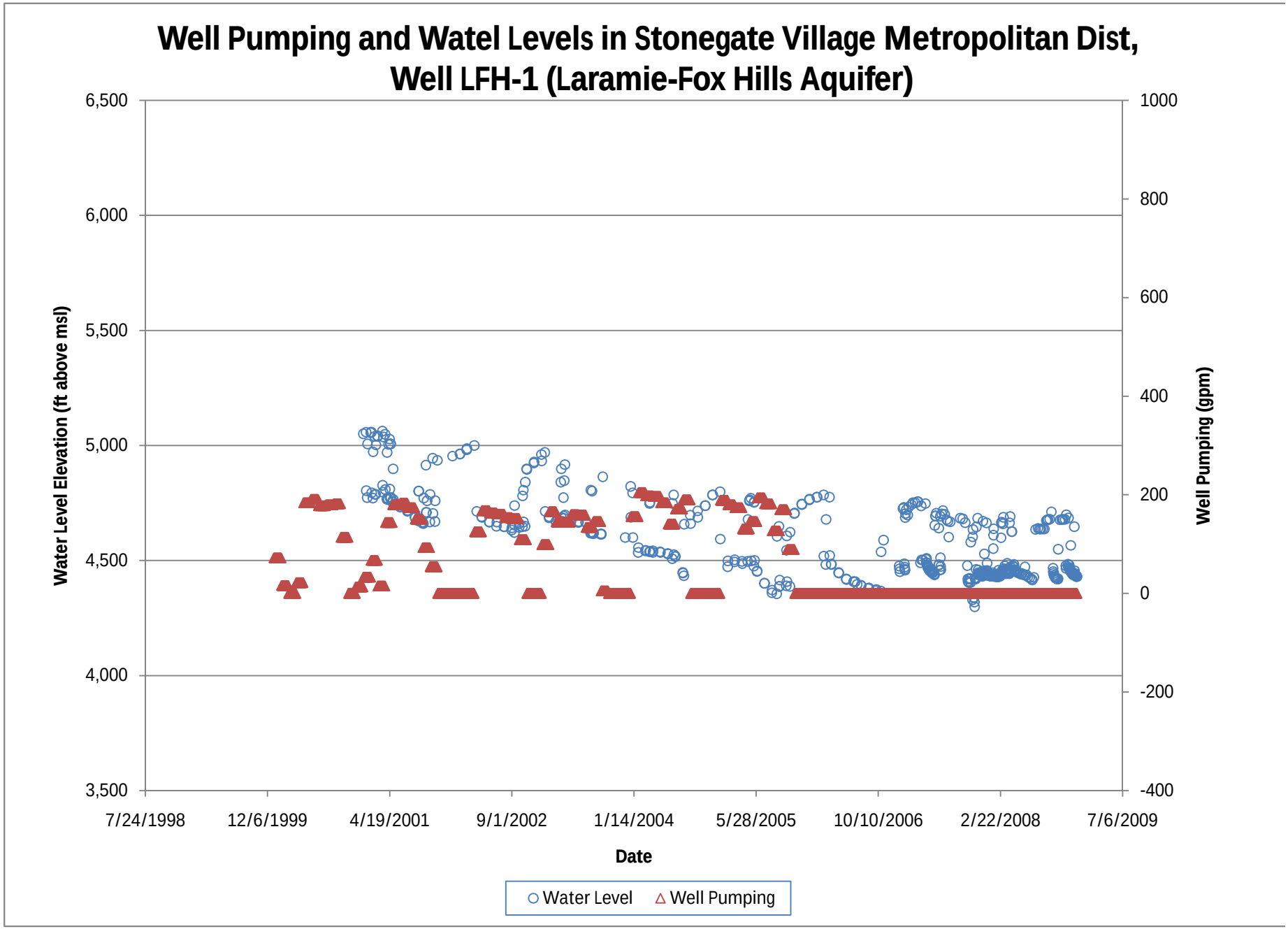

Well Pumping and Watel Levels in Town of Castle Rock, Well 223 (Arapahoe Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6000
5800
5600
5400
5200
5000
4800
4600
4400
4200
4000
1200
1000
800
600
400
200
0
-200
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
Date
Water Level
Well Pumping

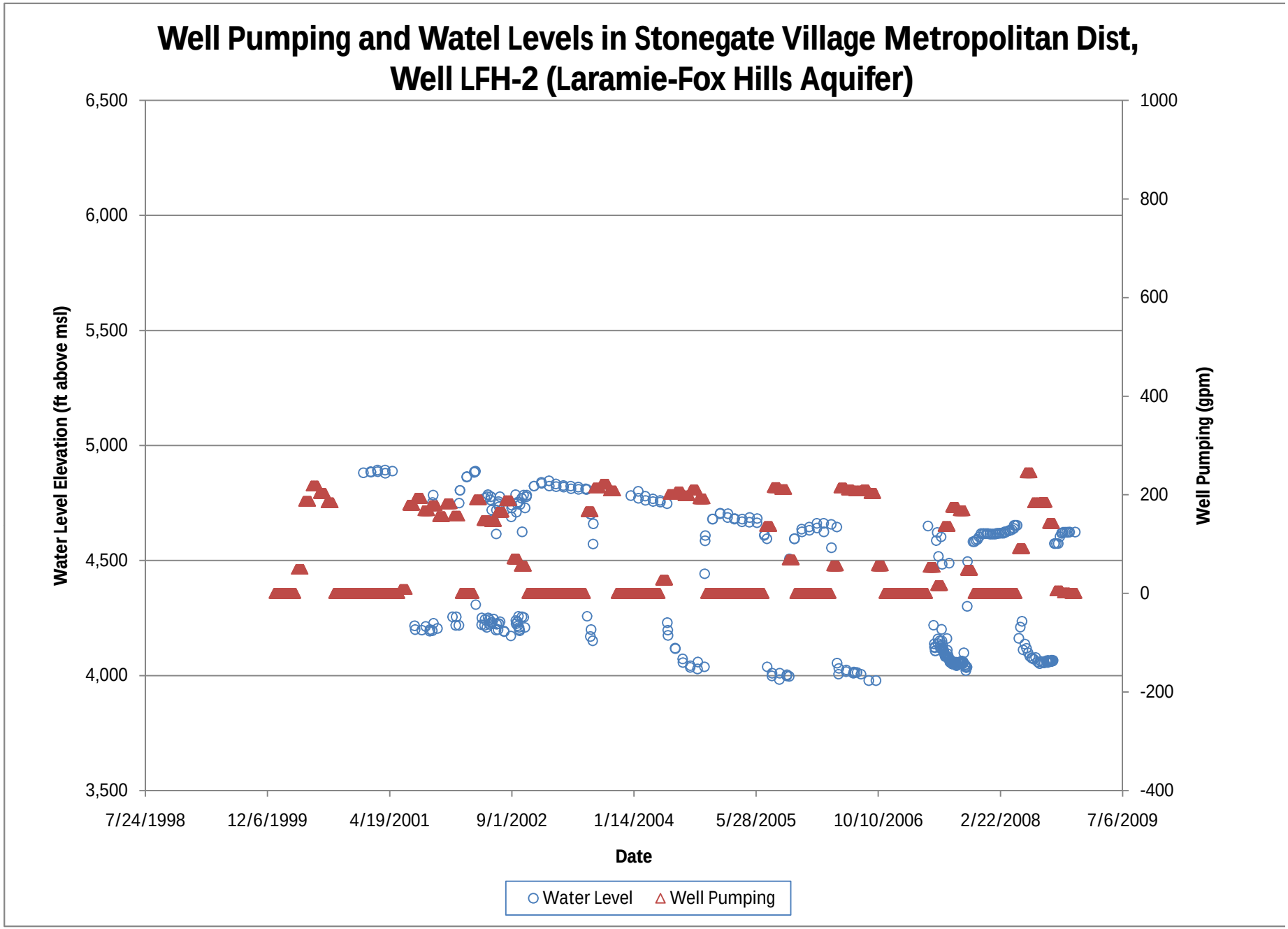

Well Pumping and Watel Levels in ACWWA,
Well LFH-5 (Laramie-Fox Hills Aquifer)
Water Level Elevation (ft above msl)
6,500
6,000
5,500
5,000
4,500
4,000
3,500
Well Pumping (gpm)
1000
800
600
400
200
0
-200
-400
3/24/2006
10/10/2006
4/28/2007
11/14/2007
6/1/2008
12/18/2008
7/6/2009
1/22/2010
Date
Water Level
Well Pumping

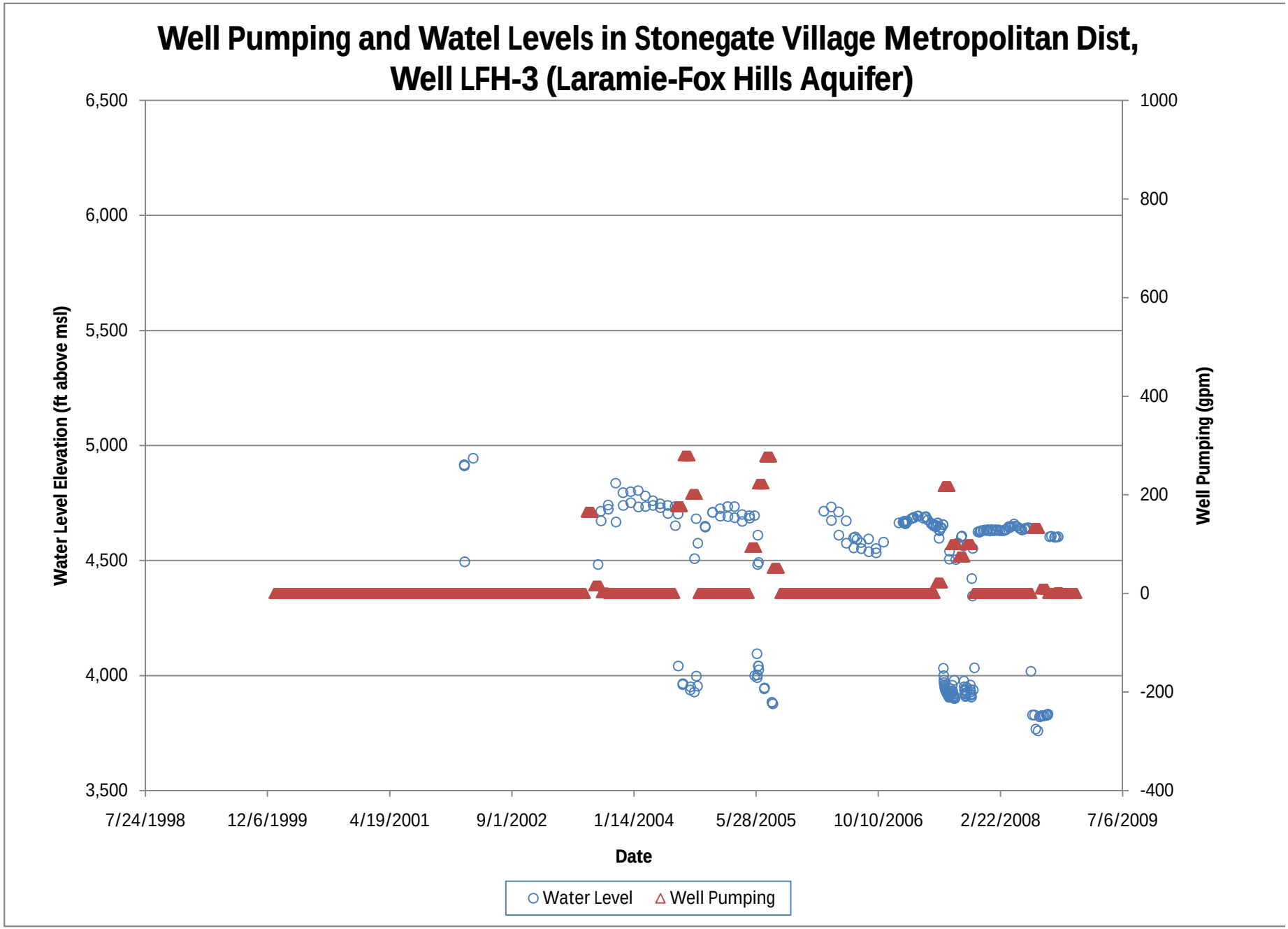

Well Pumping and Watel Levels in ACWWA,
Well Den-LFH (Laramie-Fox Hills Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6,500
6,000
5,500
5,000
4,500
4,000
3,500
1000
800
600
400
200
0
-200
-400
4/19/2001
9/1/2002
1/14/2004
5/28/2005
10/10/2006
2/22/2008
7/6/2009
Date
Water Level
Well Pumping

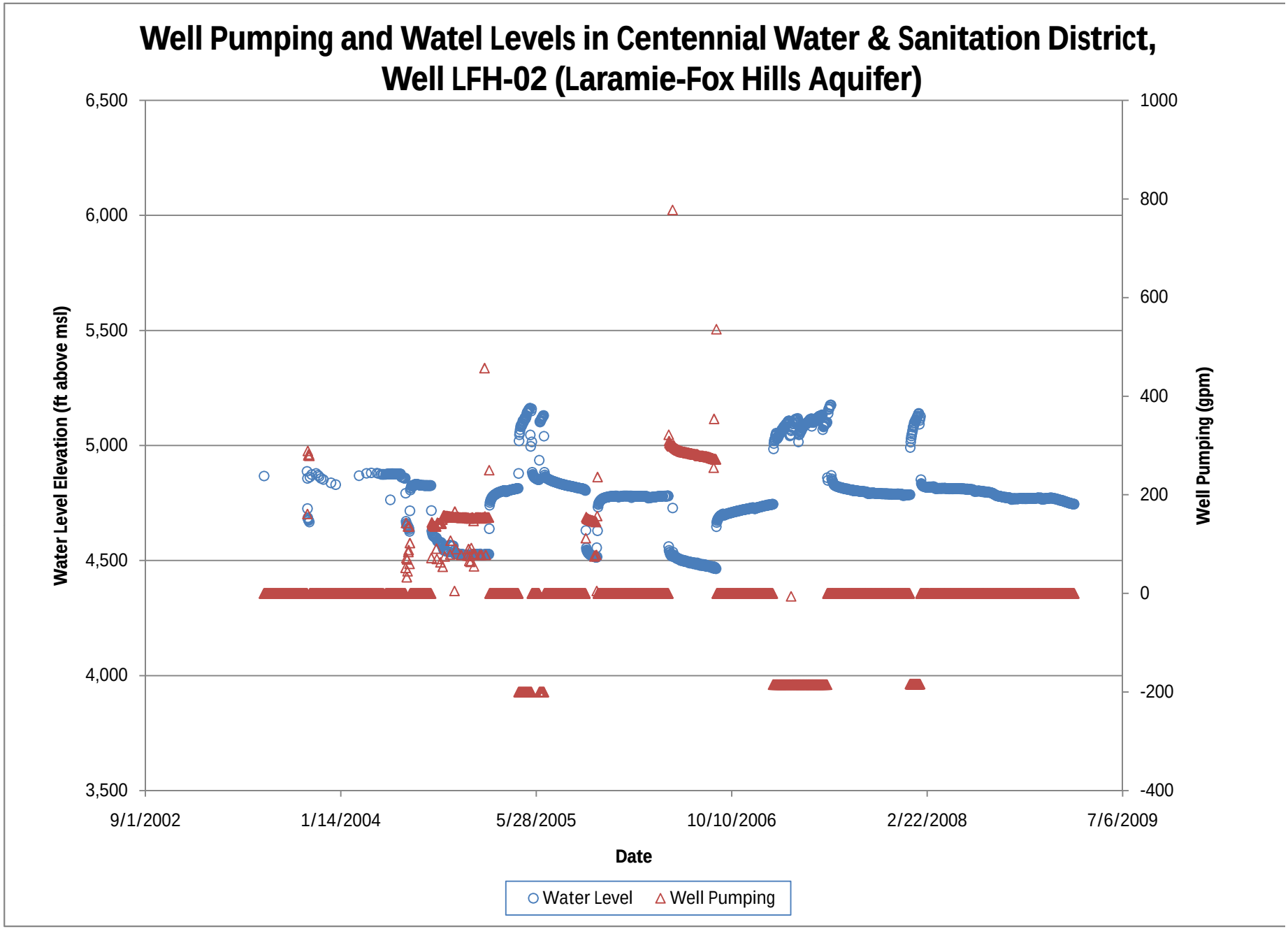

Well Pumping and Watel Levels in ACWWA,
Well Loyd-LFH (Laramie-Fox Hills Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6,500
6,000
5,500
5,000
4,500
4,000
3,500
1000
800
600
400
200
0
-200
-400
5/24/2002
7/13/2002
9/1/2002
10/21/2002
12/10/2002
1/29/2003
3/20/2003
5/9/2003
6/28/2003
8/17/2003
Date
Water Level
Well Pumping

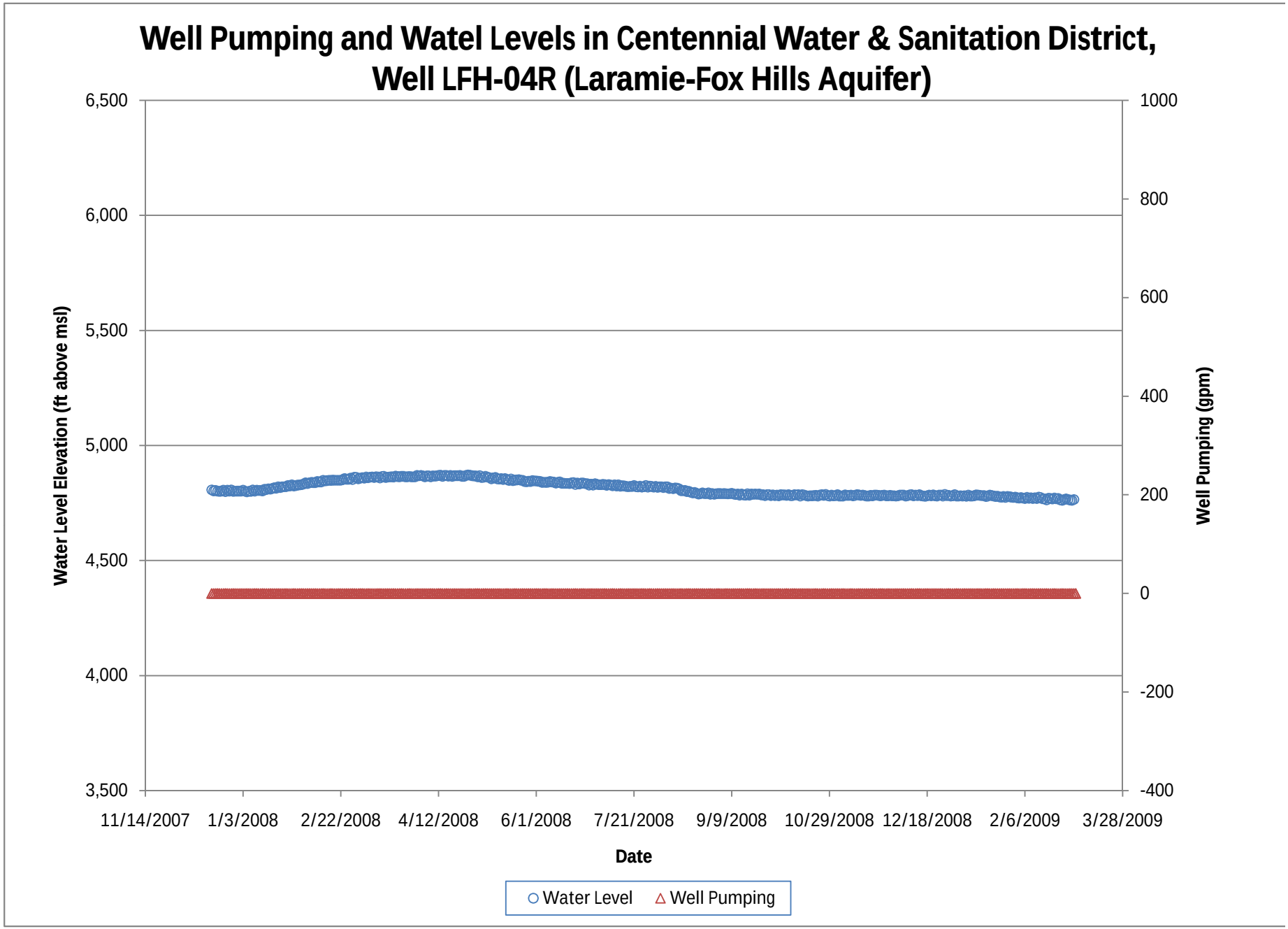

Well Pumping and Watel Levels in Meridian Metropolitan District, Well LFH-1 (Laramie-Fox Hills Aquifer)
Water Level Elevation (ft above msl)
6,500
6,000
5,500
5,000
4,500
4,000
3,500
Well Pumping (gpm)
1000
800
600
400
200
0
-200
-400
7/24/1998
12/6/1999
4/19/2001
9/1/2002
1/14/2004
5/28/2005
10/10/2006
2/22/2008
7/6/2009
Date
Water Level
Well Pumping

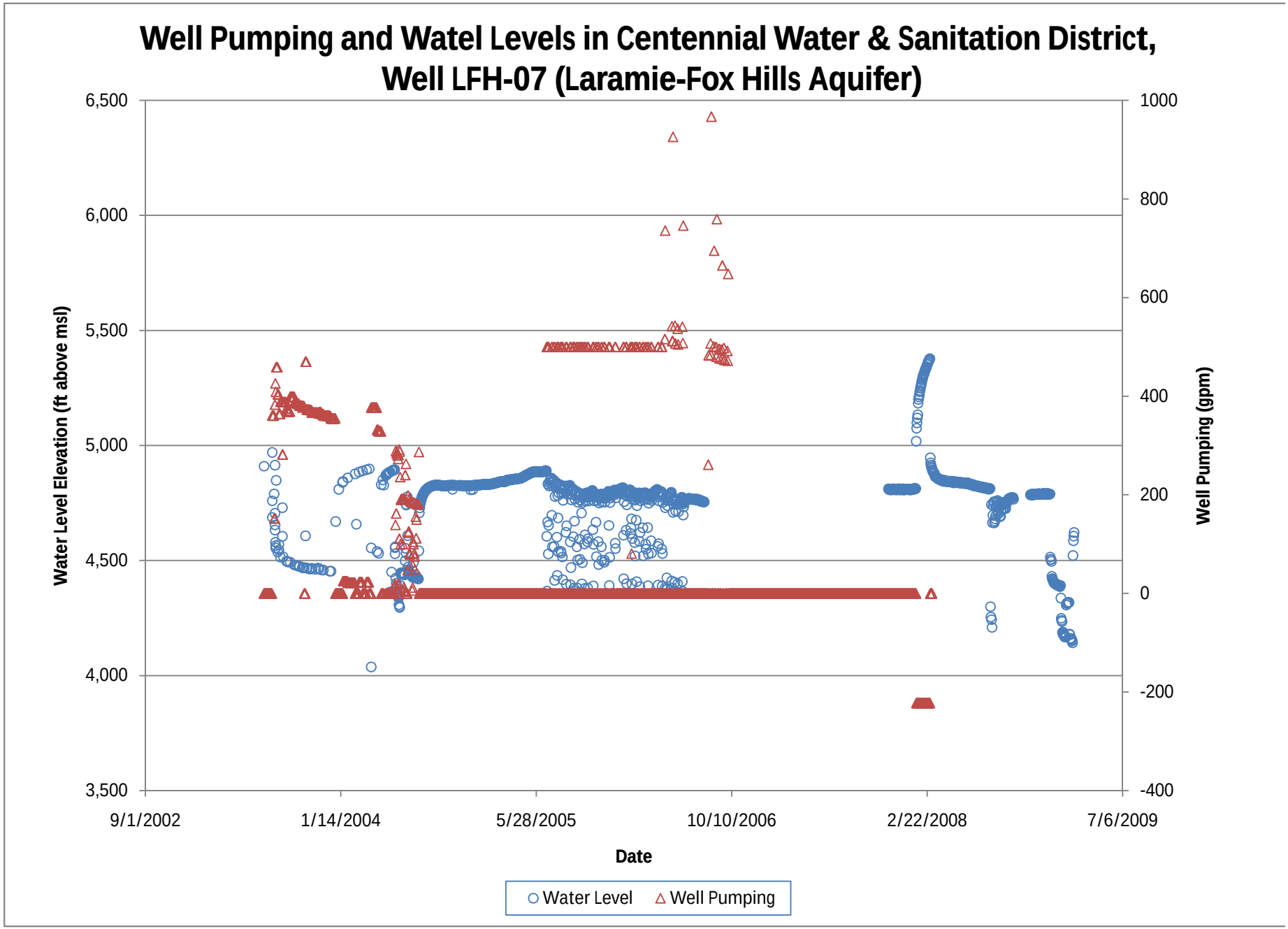

Well Pumping and Watel Levels in Stonegate Village Metropolitan Dist, Well LFH-1 (Laramie-Fox Hills Aquifer)
Water Level Elevation (ft above msl)
6,500
6,000
5,500
5,000
4,500
4,000
3,500
Well Pumping (gpm)
1000
800
600
400
200
0
-200
-400
7/24/1998
12/6/1999
4/19/2001
9/1/2002
1/14/2004
5/28/2005
10/10/2006
2/22/2008
7/6/2009
Date
Water Level
Well Pumping

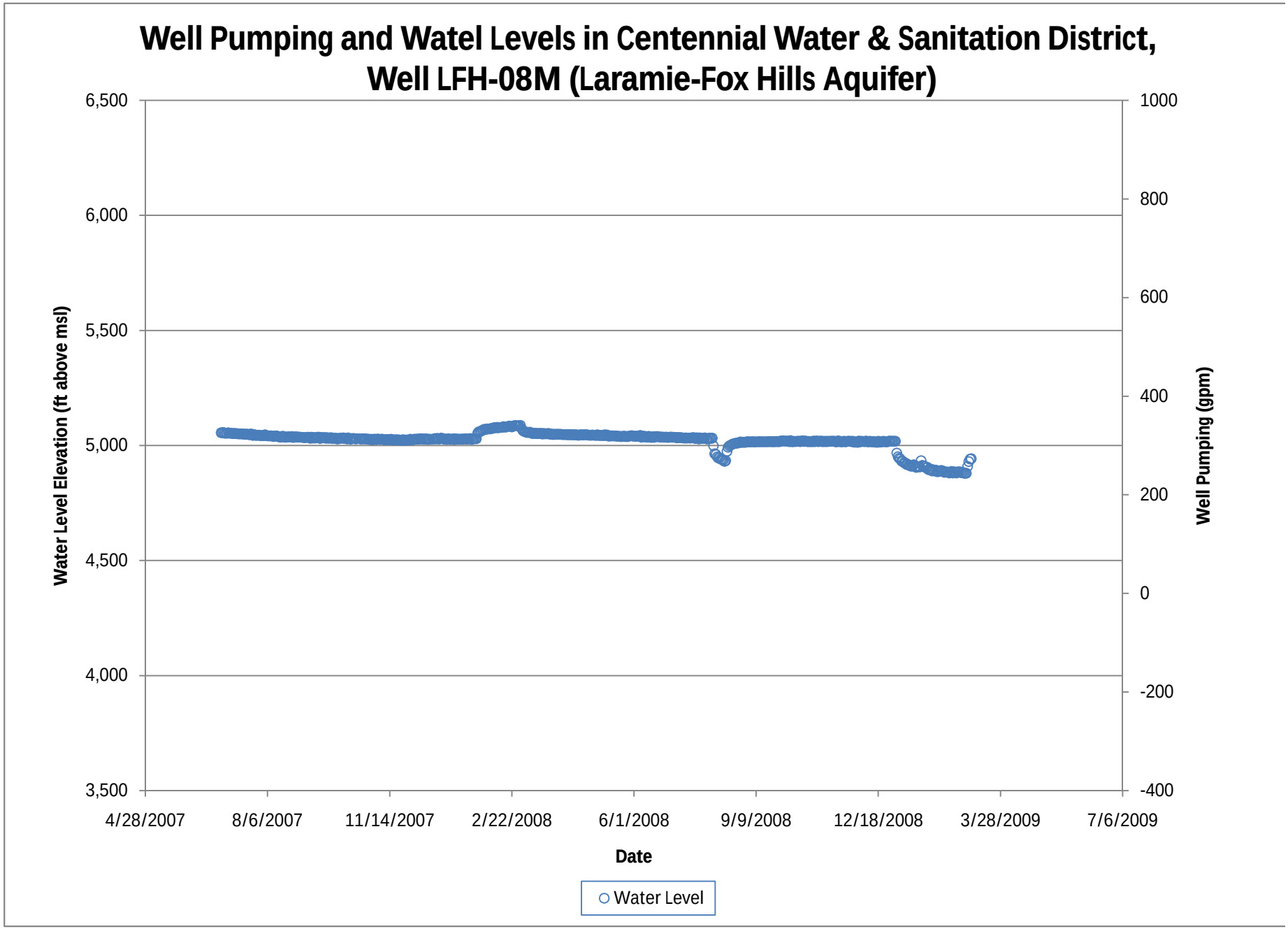

Well Pumping and Watel Levels in Stonegate Village Metropolitan Dist, Well LFH-2 (Laramie-Fox Hills Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6,500
6,000
5,500
5,000
4,500
4,000
3,500
1000
800
600
400
200
0
-200
-400
7/24/1998
12/6/1999
4/19/2001
9/1/2002
1/14/2004
5/28/2005
10/10/2006
2/22/2008
7/6/2009
Date
Water Level
Well Pumping

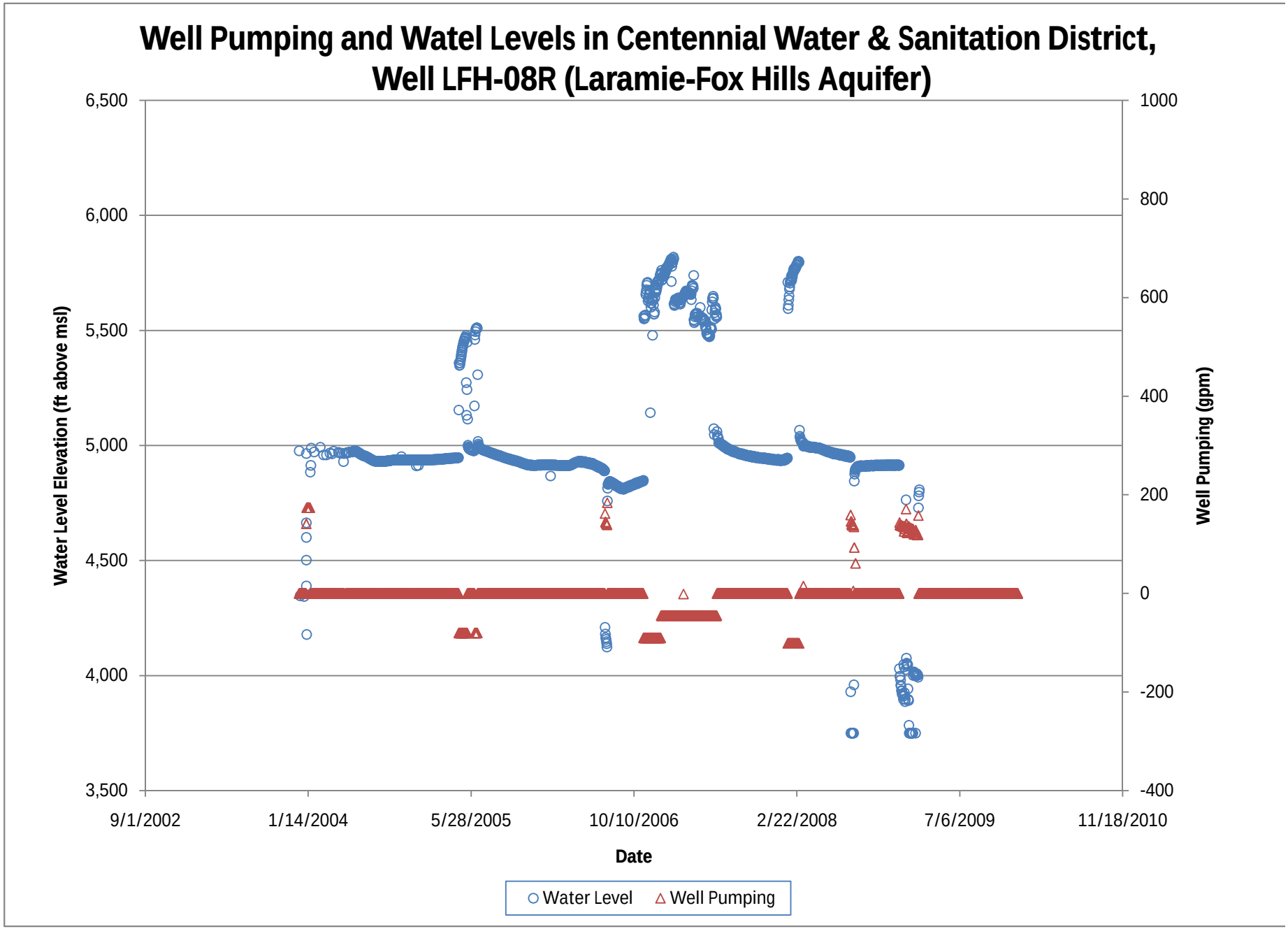

Well Pumping and Watel Levels in Stonegate Village Metropolitan Dist, Well LFH-3 (Laramie-Fox Hills Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6,500
6,000
5,500
5,000
4,500
4,000
3,500
1000
800
600
400
200
0
-200
-400
7/24/1998
12/6/1999
4/19/2001
9/1/2002
1/14/2004
5/28/2005
10/10/2006
2/22/2008
7/6/2009
Date
Water Level
Well Pumping

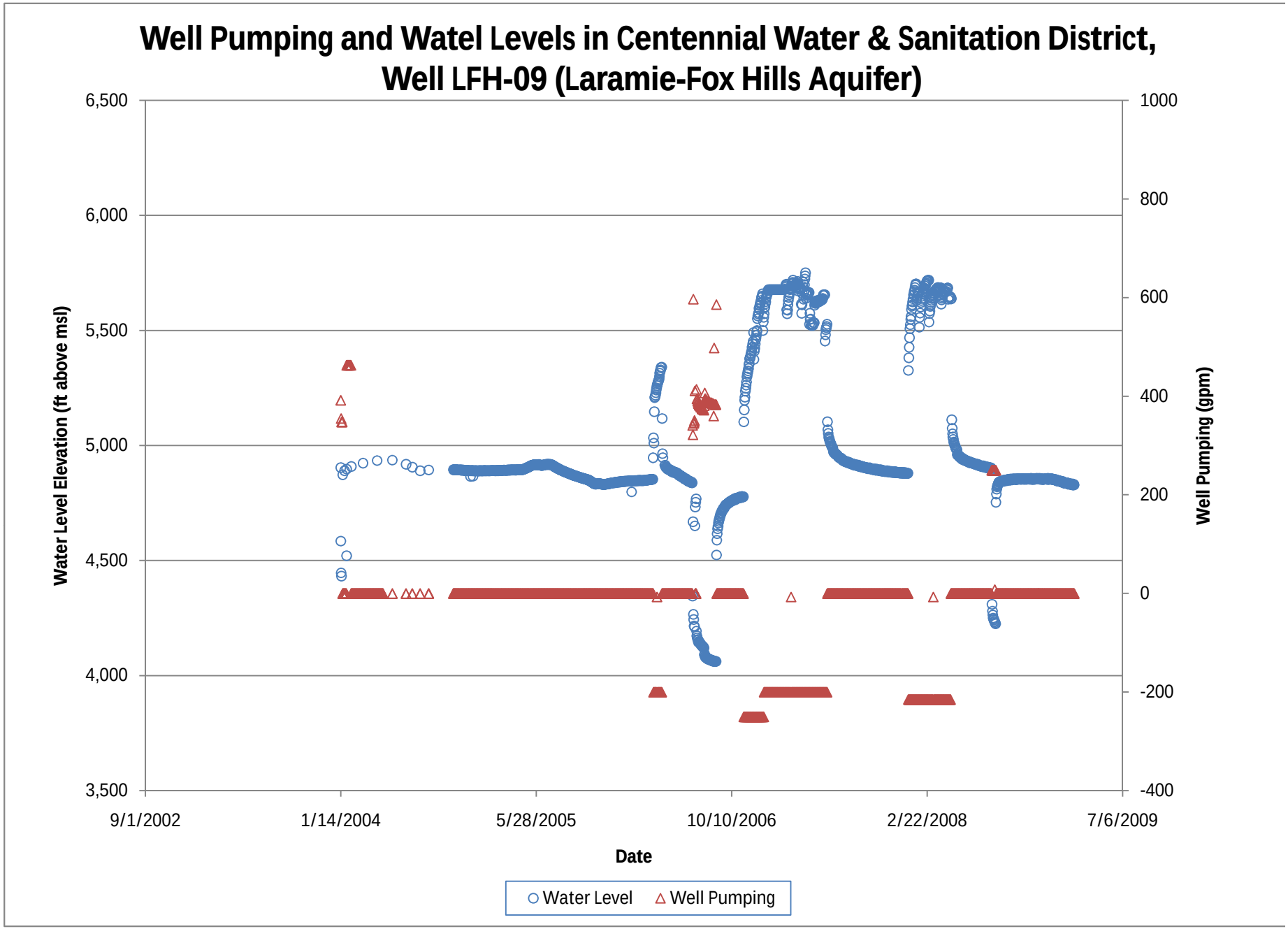

Well Pumping and Watel Levels in Centennial Water & Sanitation District, Well LFH-02 (Laramie-Fox Hills Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6,500
6,000
5,500
5,000
4,500
4,000
3,500
1000
800
600
400
200
0
-200
-400
9/1/2002
1/14/2004
5/28/2005
10/10/2006
2/22/2008
7/6/2009
Date
Water Level
Well Pumping

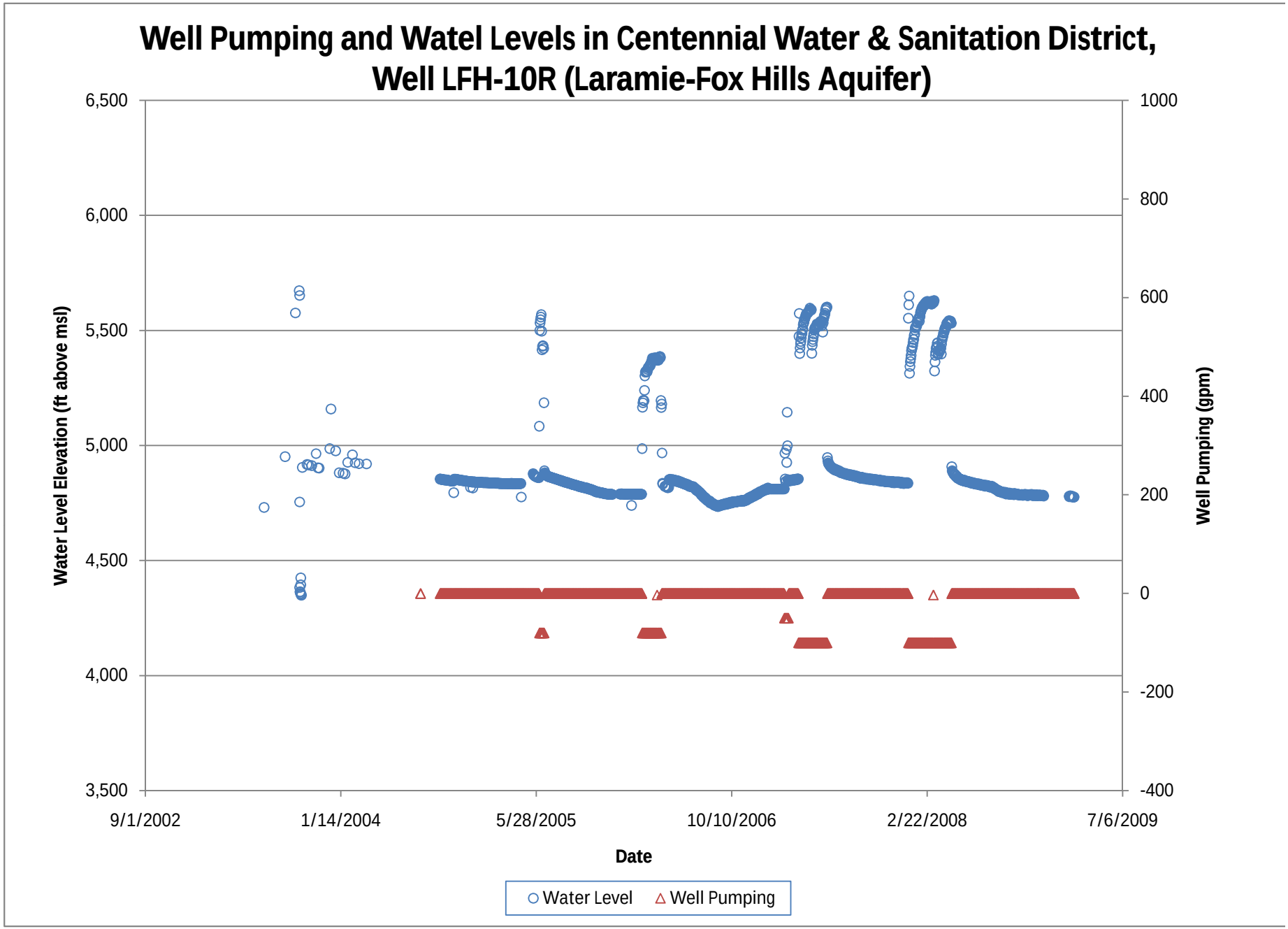

Well Pumping and Watel Levels in Centennial Water & Sanitation District, Well LFH-04R (Laramie-Fox Hills Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6,500
6,000
5,500
5,000
4,500
4,000
3,500
1000
800
600
400
200
0
-200
-400
11/14/2007
1/3/2008
2/22/2008
4/12/2008
6/1/2008
7/21/2008
9/9/2008
10/29/2008
12/18/2008
2/6/2009
3/28/2009
Date
Water Level
Well Pumping

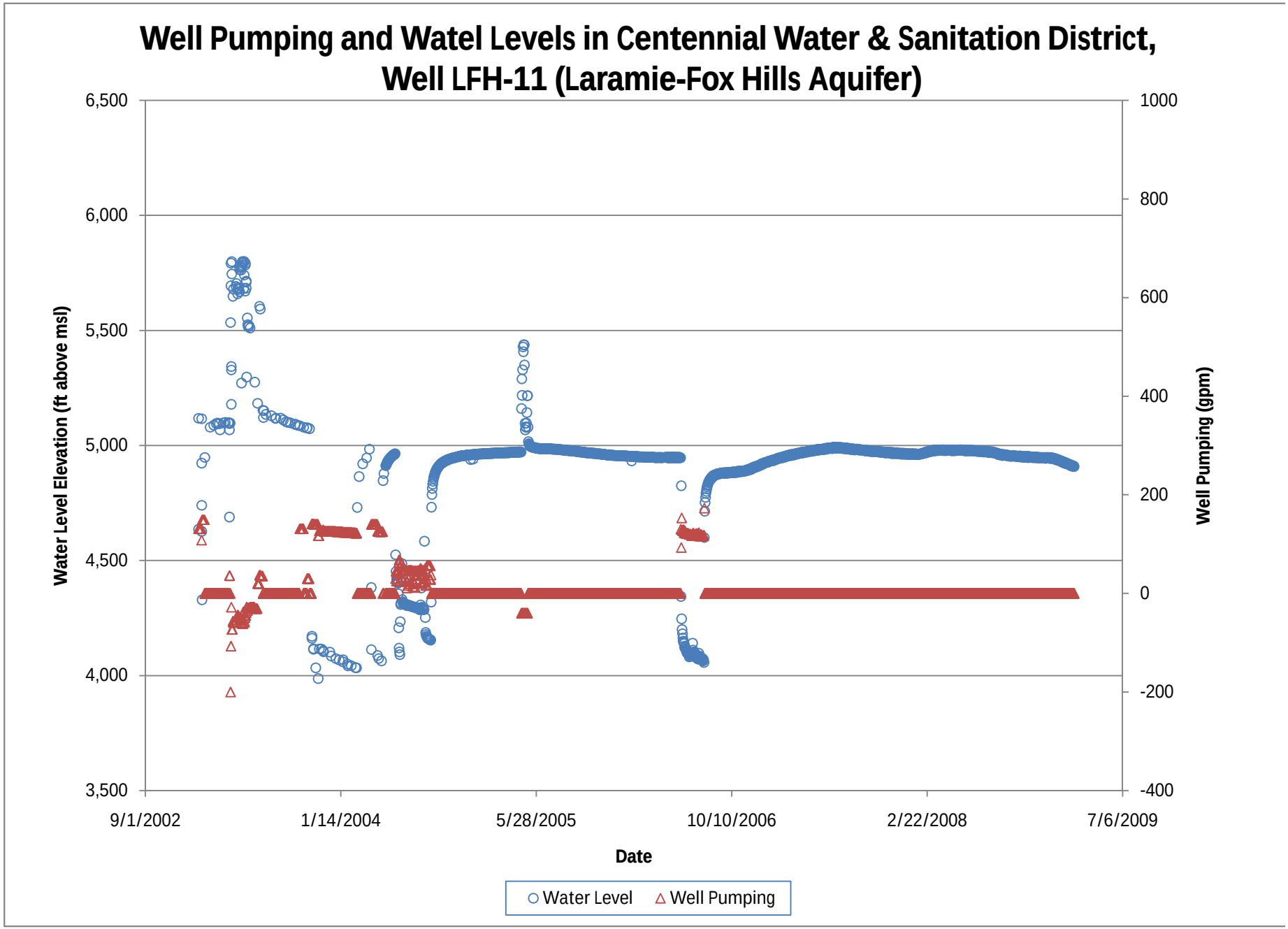

Well Pumping and Watel Levels in Centennial Water & Sanitation District, Well LFH-07 (Laramie-Fox Hills Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6,500
6,000
5,500
5,000
4,500
4,000
3,500
1000
800
600
400
200
0
-200
-400
9/1/2002
1/14/2004
5/28/2005
10/10/2006
2/22/2008
7/6/2009
Date
Water Level
Well Pumping

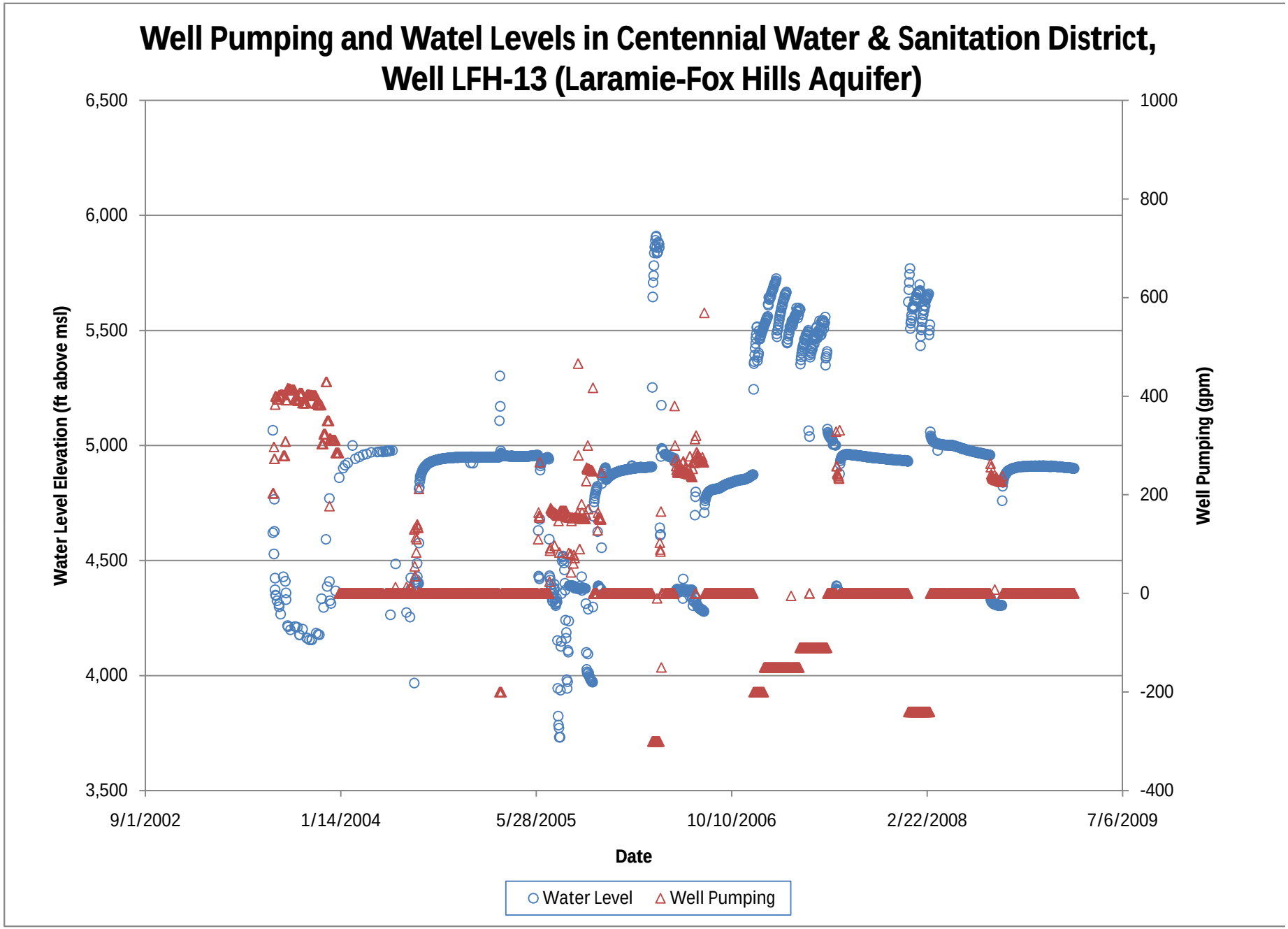

Well Pumping and Watel Levels in Centennial Water & Sanitation District, Well LFH-08M (Laramie-Fox Hills Aquifer)
Water Level Elevation (ft above msl)
6,500
6,000
5,500
5,000
4,500
4,000
3,500
Well Pumping (gpm)
1000
800
600
400
200
0
-200
-400
4/28/2007
8/6/2007
11/14/2007
2/22/2008
6/1/2008
9/9/2008
12/18/2008
3/28/2009
7/6/2009
Date
Water Level

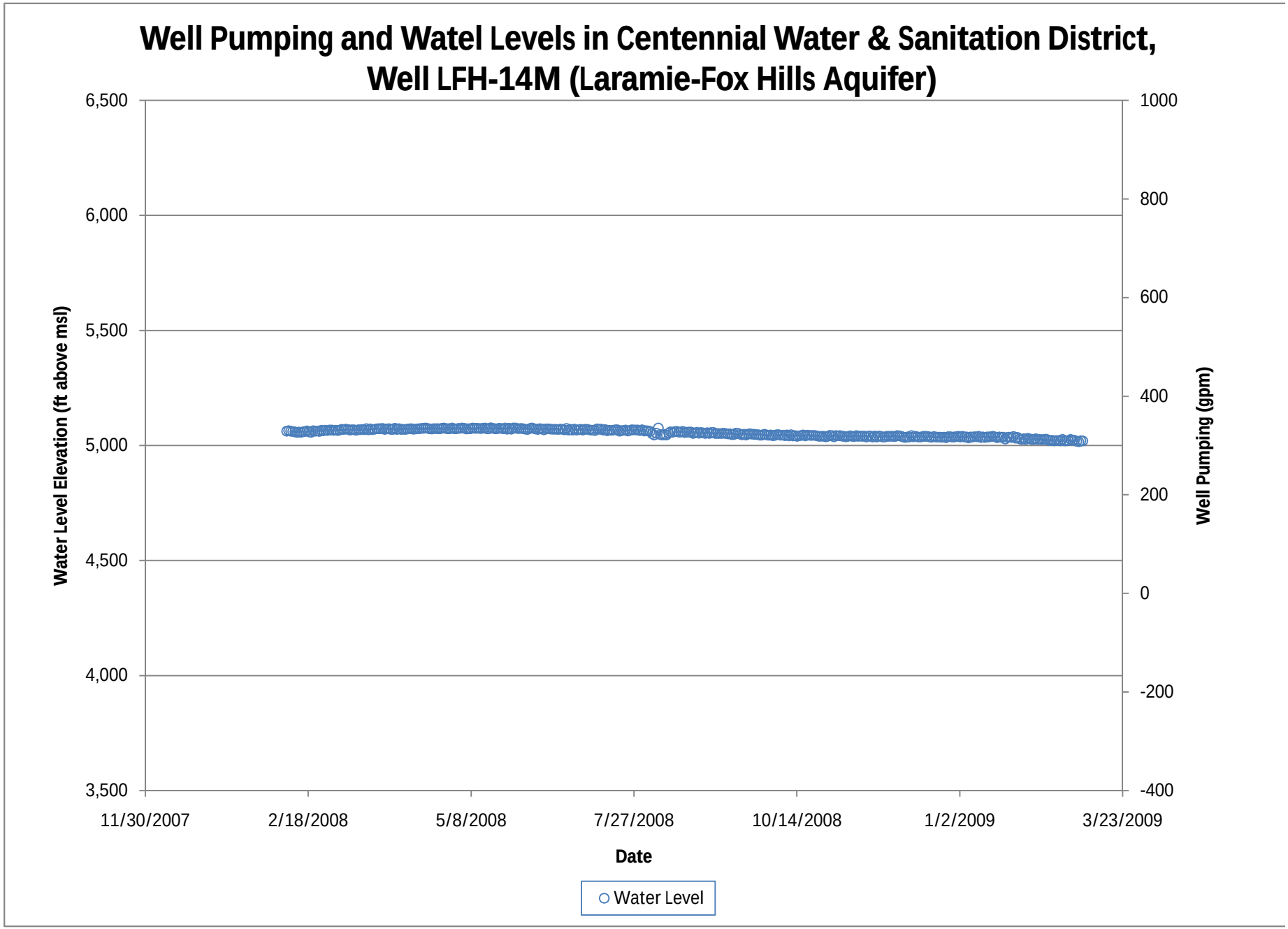

Well Pumping and Watel Levels in Centennial Water & Sanitation District, Well LFH-08R (Laramie-Fox Hills Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6,500
6,000
5,500
5,000
4,500
4,000
3,500
1000
800
600
400
200
0
-200
-400
9/1/2002
1/14/2004
5/28/2005
10/10/2006
2/22/2008
7/6/2009
11/18/2010
Date
Water Level
Well Pumping

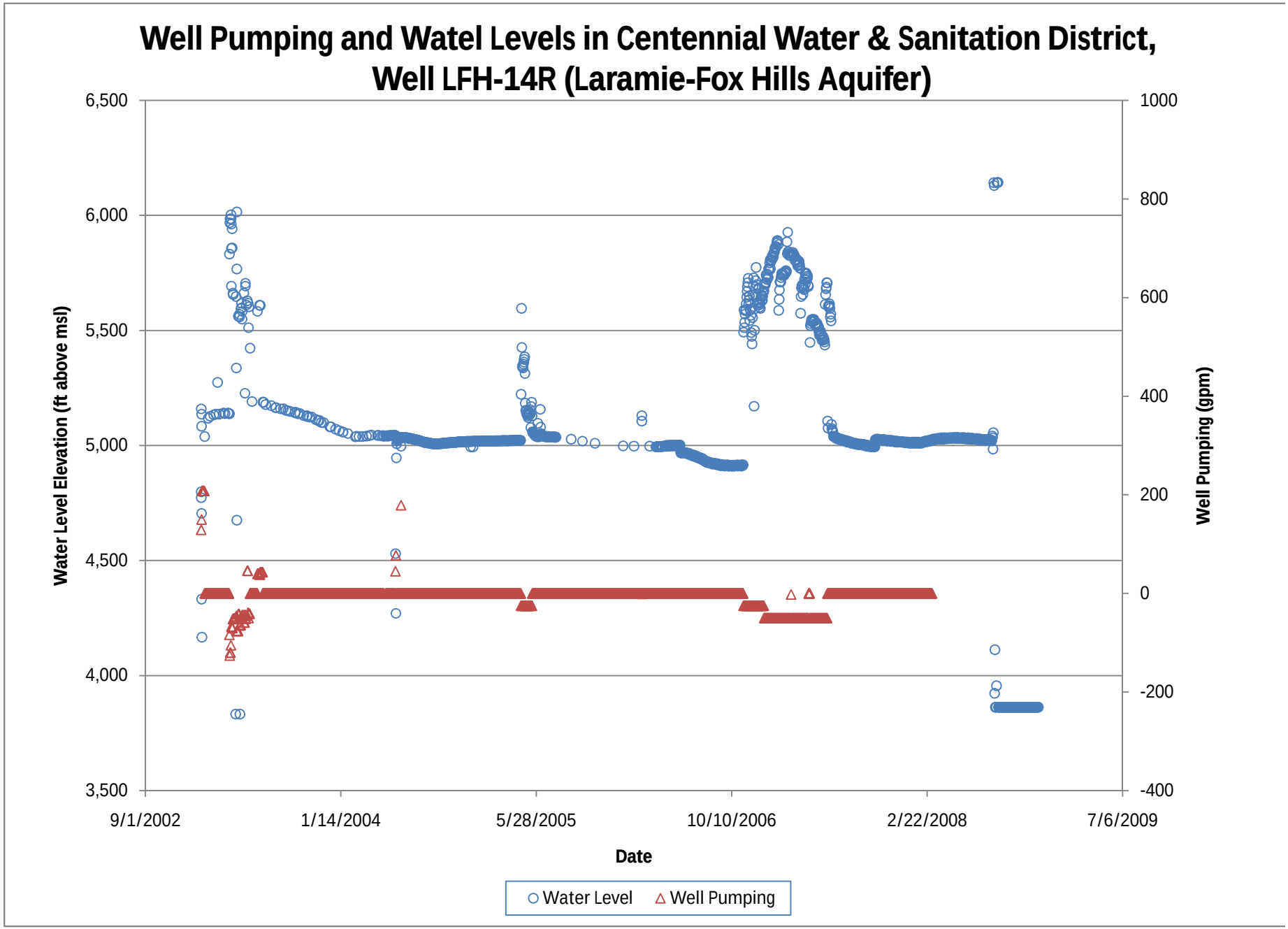

Well Pumping and Watel Levels in Centennial Water & Sanitation District, Well LFH-09 (Laramie-Fox Hills Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6,500
6,000
5,500
5,000
4,500
4,000
3,500
1000
800
600
400
200
0
-200
-400
9/1/2002
1/14/2004
5/28/2005
10/10/2006
2/22/2008
7/6/2009
Date
Water Level
Well Pumping

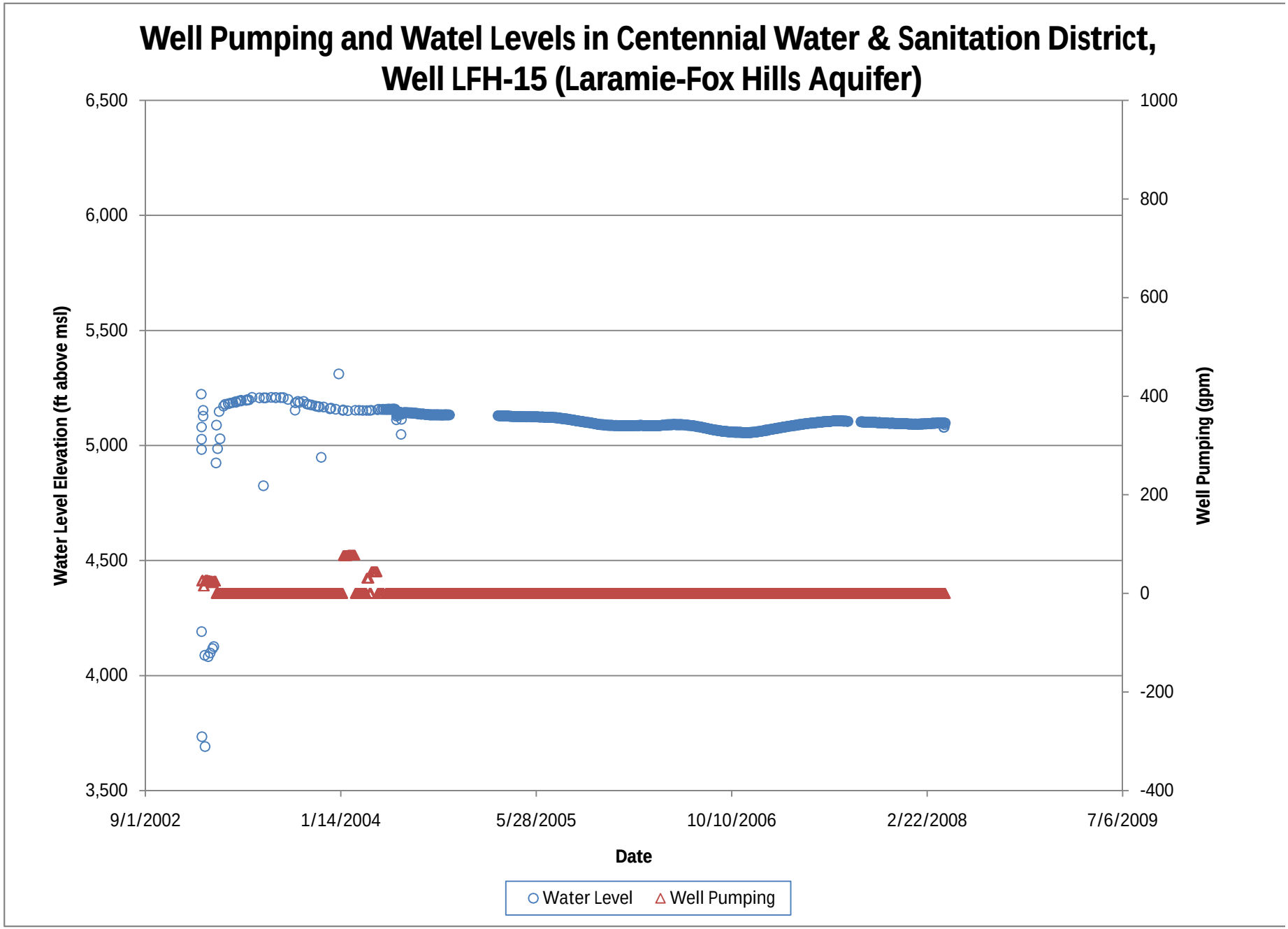

Well Pumping and Watel Levels in Centennial Water & Sanitation District, Well LFH-10R (Laramie-Fox Hills Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6,500
6,000
5,500
5,000
4,500
4,000
3,500
1000
800
600
400
200
0
-200
-400
9/1/2002
1/14/2004
5/28/2005
10/10/2006
2/22/2008
7/6/2009
Date
Water Level
Well Pumping


Well Pumping and Watel Levels in Centennial Water & Sanitation District, Well LFH-11 (Laramie-Fox Hills Aquifer)
Water Level Elevation (ft above msl)
6,500
6,000
5,500
5,000
4,500
4,000
3,500
Well Pumping (gpm)
1000
800
600
400
200
0
-200
-400
9/1/2002
1/14/2004
5/28/2005
10/10/2006
2/22/2008
7/6/2009
Date
Water Level
Well Pumping

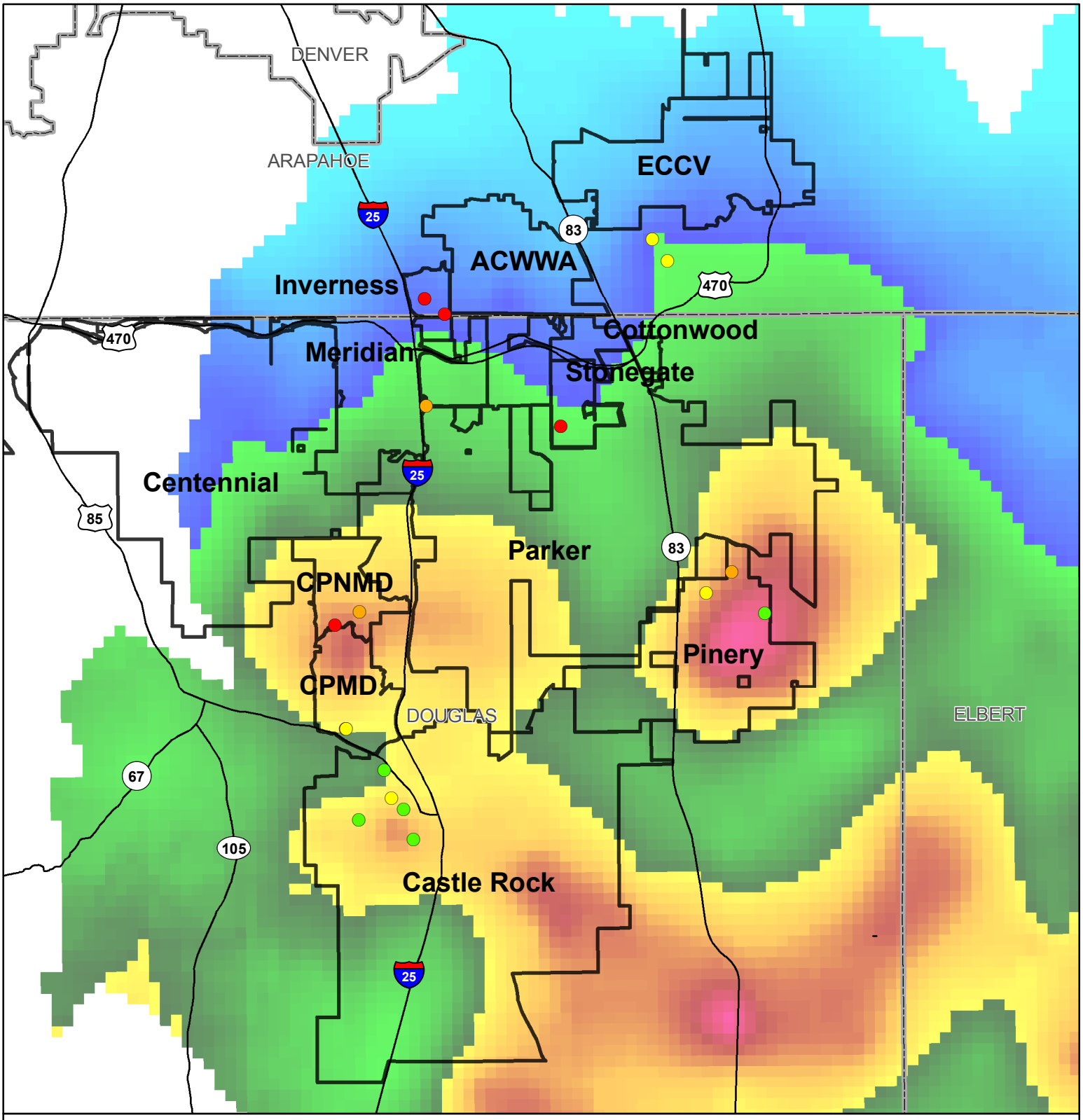

Well Pumping and Watel Levels in Centennial Water & Sanitation District, Well LFH-13 (Laramie-Fox Hills Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6,500
6,000
5,500
5,000
4,500
4,000
3,500
1000
800
600
400
200
0
-200
-400
9/1/2002
1/14/2004
5/28/2005
10/10/2006
2/22/2008
7/6/2009
Date
Water Level
Well Pumping


Well Pumping and Watel Levels in Centennial Water & Sanitation District, Well LFH-14M (Laramie-Fox Hills Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6,500
6,000
5,500
5,000
4,500
4,000
3,500
1000
800
600
400
200
0
-200
-400
11/30/2007
2/18/2008
5/8/2008
7/27/2008
10/14/2008
1/2/2009
3/23/2009
Date
Water Level


Well Pumping and Watel Levels in Centennial Water & Sanitation District, Well LFH-14R (Laramie-Fox Hills Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6,500
6,000
5,500
5,000
4,500
4,000
3,500
1000
800
600
400
200
0
-200
-400
9/1/2002
1/14/2004
5/28/2005
10/10/2006
2/22/2008
7/6/2009
Date
Water Level
Well Pumping


Well Pumping and Watel Levels in Centennial Water & Sanitation District, Well LFH-15 (Laramie-Fox Hills Aquifer)
Water Level Elevation (ft above msl)
Well Pumping (gpm)
6,500
6,000
5,500
5,000
4,500
4,000
3,500
1000
800
600
400
200
0
-200
-400
9/1/2002
1/14/2004
5/28/2005
10/10/2006
2/22/2008
7/6/2009
Date
Water Level
Well Pumping

# Appendix C




**Dawson Aquifer Sand thickness (ft)**

High : 578

Low : 9

**Transmissivity**

- < 146 ft²/day
- 146 to 195 ft²/day
- 195 to 261 ft²/day
- > 261 ft²/day

Highways

Counties

# Appendix C-1 - Dawson Transmissivity and Aquifer Sand Thickness

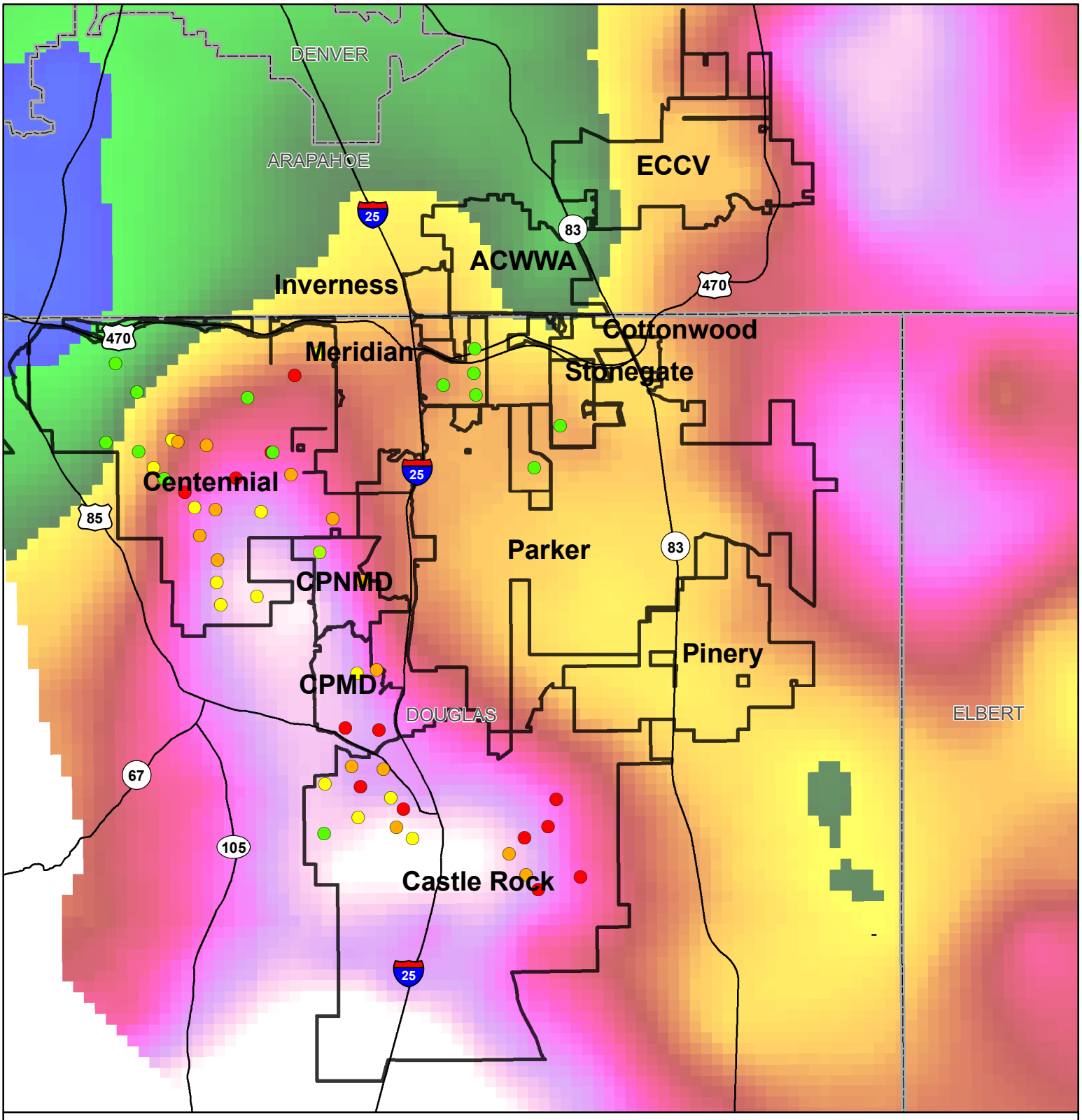
N W E S

0 2 4 8 Miles

SMWSA SOUTH METRO WATER SUPPLY AUTHORITY

CDM

03/16/2010




**Denver Aquifer Sand thickness (ft)**

High : 589

Low : 3

**Transmissivity**

- < 82 ft²/day
- 82 to 224 ft²/day
- 224 to 286 ft²/day
- > 286 ft²/day

Highways

Counties

# Appendix C-2 - Denver Transmissivity and Aquifer Sand Thickness

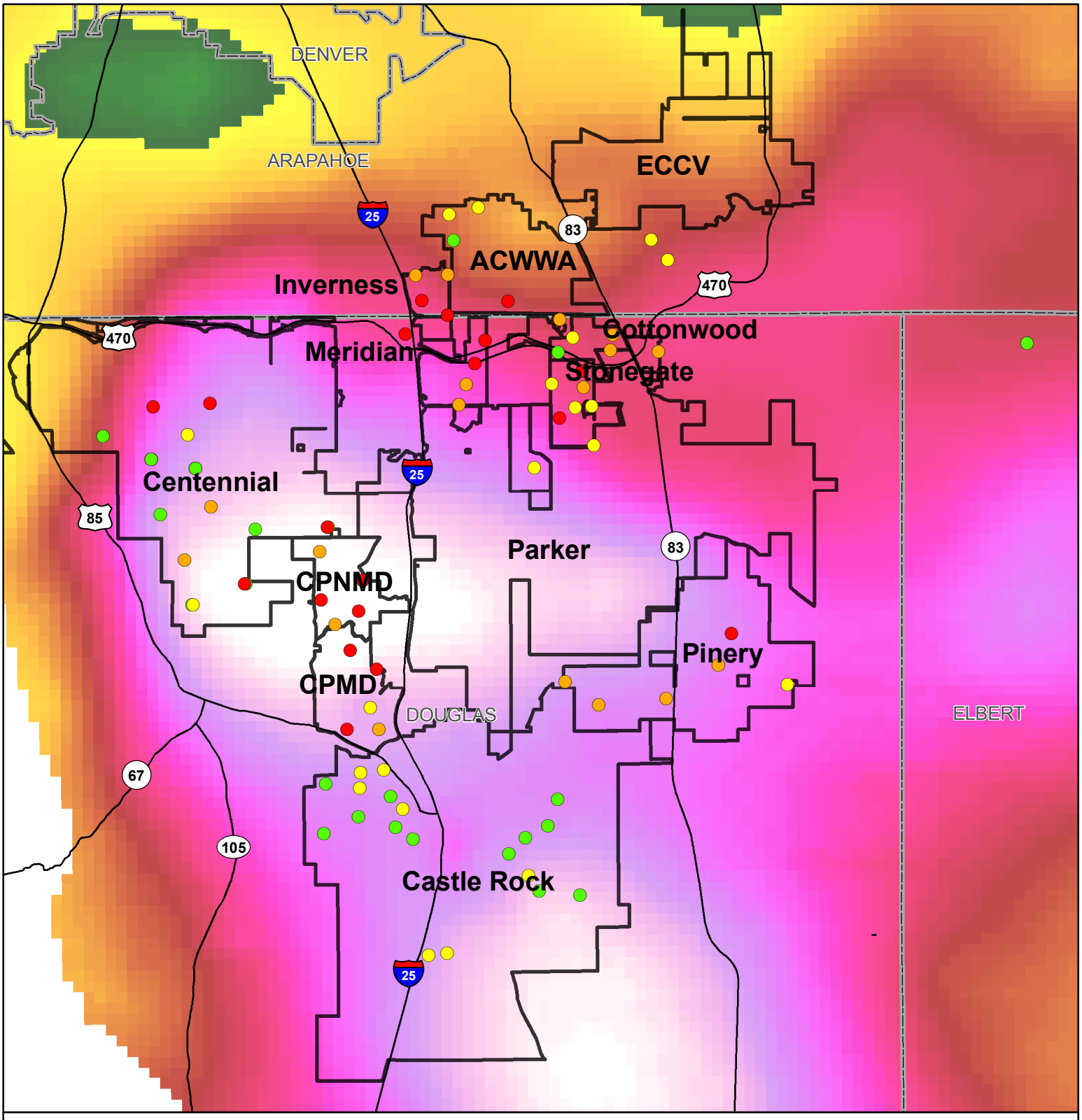
N W E S

0 2 4 8 Miles

SMWSA SOUTH METRO WATER SUPPLY AUTHORITY

CDM

03/16/2010




**Arapahoe Aquifer Sand thickness (ft)**

High : 385

Low : 8

**Transmissivity**

- < 482 ft²/day
- 482 to 889 ft²/day
- 889 to 1403 ft²/day
- > 1403 ft²/day

Highways

Counties

# Appendix C-3 - Arapahoe Transmissivity and Aquifer Sand Thickness

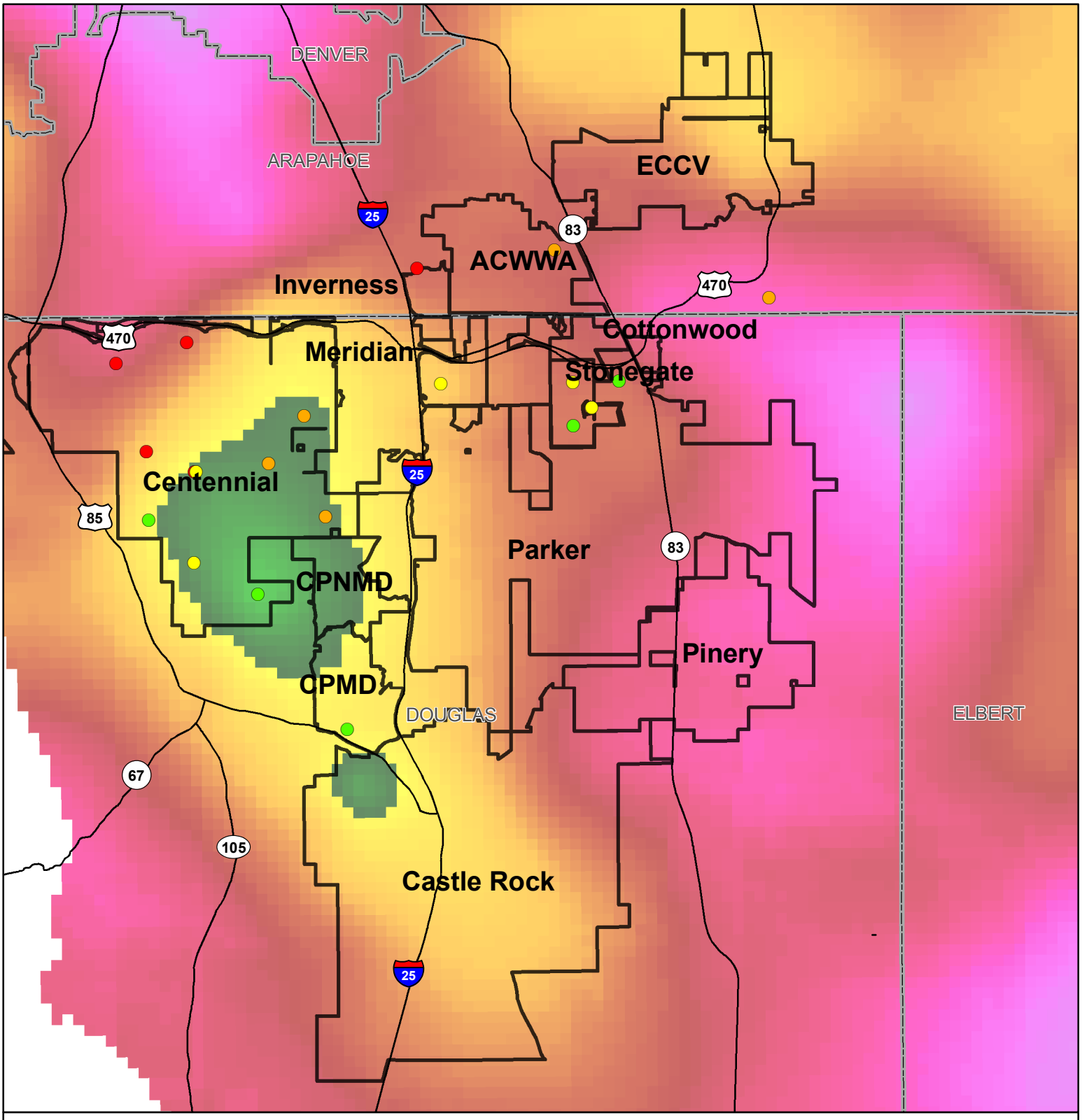
N W E S

0 2 4 8 Miles

SMWSA SOUTH METRO WATER SUPPLY AUTHORITY

CDM

03/16/2010




**LFH Aquifer Sand thinkness (ft)**

High : 251

Low : 6

**Transmissivity**

- < 42 ft²/day
- 42 to 101 ft²/day
- 101 to 157 ft²/day
- > 157 ft²/day

Highways

Counties

# Appendix C-4 - Laramie-Fox Hills Transmissivity and Aquifer Sand Thickness

N W E S

0 2 4 8 Miles

SMWSA SOUTH METRO WATER SUPPLY AUTHORITY

CDM

03/16/2010