

ANNUAL REPORT ON RESULTS OF MAMMOTH COMMUNITY  
WATER DISTRICT GROUNDWATER MONITORING PROGRAM  
FOR OCTOBER 2006-SEPTEMBER 2007

Prepared for  
Mammoth Community Water District  
Mammoth Lakes, California

by  
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December 12, 2007

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December 12, 2007

Mr. Gary Sisson, General Manager  
Mammoth Community Water District  
P.O. Box 597  
Mammoth Lakes, CA 93546

Re: Annual Report on Groundwater Monitoring

Dear Gary:

Submitted herewith is our annual report on the results of the District groundwater monitoring program for the period October 2006-September 2007. I appreciate the cooperation of District personnel in conducting this monitoring and providing data tabulations.

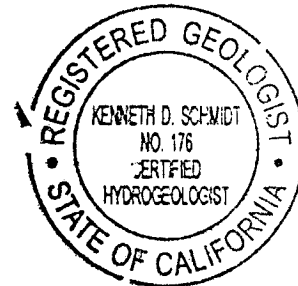
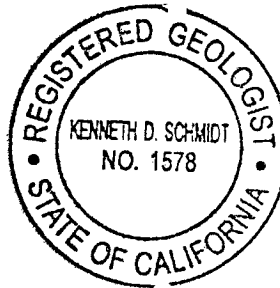
Sincerely yours,



Kenneth D. Schmidt

KDS/pe

cc: Steve Kronick



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INTRODUCTION

In Summer 1992, the Mammoth County Water District contracted for the drilling of five new test wells in Mammoth Lakes. One of these wells (No. 15) was converted to a supply well and pumping began on an emergency basis in Summer 1992. In December 1992, the California Department of Fish and Game filed an action against the District in Superior Court. Concerns were expressed by the Department about the potential impact of pumping of these wells on wildlife, vegetation, and fishery resources of Mammoth Creek and the Hot Creek headsprings, which is located downstream of the District wells. Kenneth D. Schmidt and Associates completed a hydrogeologic evaluation (July 6, 1993) on behalf of the District, to respond to these concerns. In August 1993, a settlement agreement was made between the Department and the District. As part of this agreement, the District was to:

1. Conduct routine monitoring in all District supply and monitor wells.
2. Install a new monitor well tapping consolidated rock at a location south of the District office.
3. Conduct monitoring in the new monitor well.
4. Prepare an annual interpretive report on the results of groundwater monitoring for the water year.

Data available to the District from Wells SC-1 and SC-2 (part of the Long Valley hydrologic monitoring program) were to be

included in this evaluation. This report comprises the fifteenth annual report pursuant to the settlement agreement. The Mammoth County Water District is now the Mammoth Community Water District.

#### SUMMARY AND CONCLUSIONS

The District pumped 1,936 acre-feet of water from eight supply wells during the 2007 water year. This was about seventy percent more than the pumpage for the previous water year. A comprehensive water-level monitoring program was conducted for District supply wells and monitor wells. In addition, water-level measurements were available for two other monitor wells east of the District wells. Flow measurements were not available for the springs at the University of California Valentine Reserve for the 2007 water year.

Water levels in most shallow wells tapping the uppermost glacial till strata fell during 2006-07, due to the decreased precipitation. Groundwater is generally present in the uppermost strata only in the westerly and central part of the area, in the meadow and near Mammoth Creek. Water levels in six of the District supply wells (No. 1, 6, 10, 15, 18, and 20) were lower in 2007 than in 2006, primarily due to the increased pumpage. Water levels in three other deep wells tapping the consolidated rock in or near the District well field fell during the 2007 water year. In contrast, water levels in deep wells farther to the east were either stable or rose during the 2007 water year. A water-level elevation contour map was prepared for September 2007. This map and other information indicate that the extent of the cone of depression due to pumping of District wells was limited in size, and did not extend



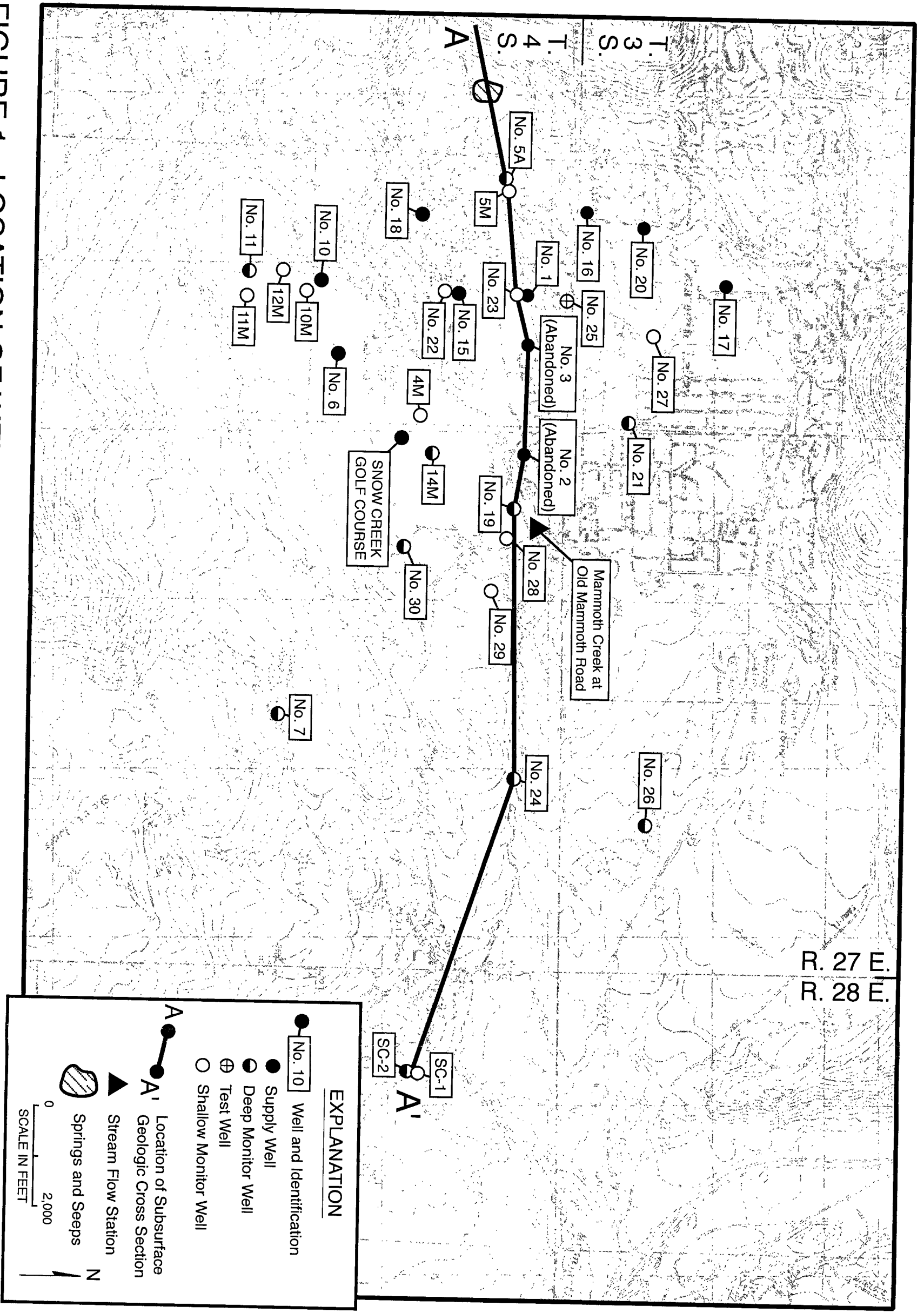
east of the easterly District monitor well (No. 24).

The results of water quality monitoring indicate no significant changes during the 2007 water year, compared to previously.

The results of the 2006-2007 monitoring indicate that District pumping did not influence Mammoth Creek streamflow. Flow data for the springs at the Valentine Reserve for the 2002-07 water years are not available. District pumping was not indicated to have influenced flows at the Valentine Reserve springs through the 2001 water year (the last year of available records). In addition, water-level declines due to pumping did not extend beyond the vicinity of the well field. Thus, there was no influence on the Hot Creek headsprings, which are much more distant from the District water supply wells than the monitor wells utilized for the District monitoring program.

#### WELL CONSTRUCTION DATA

Figure 1 shows locations of District wells, a private supply well, a subsurface geologic cross section, two other monitor wells to the east (SC-1 and SC-2), and the spring area at the Valentine Reserve. Table 1 summarizes construction data for the District supply wells. All of these wells tap consolidated rock, primarily basalt and scoria layers, and some also tap interbedded glacial till and conglomerate. Well No. 1 has been in service since the 1970's and Wells No. 6 and 10 have been in service since 1988. These three wells are termed the "earlier" District supply wells in this report. Well No. 15 was first put in service in July 1992 on an emergency basis. Well No. 18 was put in service in September



**EXPLANATION**

- No. 10 Well and Identification
- Supply Well
- Deep Monitor Well
- ⊕ Test Well
- Shallow Monitor Well
- A — A' Location of Subsurface Geologic Cross Section
- ▲ Stream Flow Station
- ▨ Springs and Seeps

SCALE IN FEET  
0 2,000

N

FIGURE 1 - LOCATION OF WELLS AND SUBSURFACE GEOLOGIC CROSS-SECTION A-A'

TABLE 1 - CONSTRUCTION DATA FOR DISTRICT SUPPLY WELLS

<u>Well No.</u>	<u>Date Drilled</u>	<u>Drilled Depth (feet)</u>	<u>Cased Depth (feet)</u>	<u>Perforated or Open Interval (feet)</u>	<u>Annular Seal (feet)</u>
1	1976	382	370	200-370	0-90
6	11/87	670	670	146-670	0-52
10	10/87	700	700	136-700	0-52
15	8/92	720	407	407-720	0-135
16	8/92	710	715	420-470 500-680	0-60
17	7/92	710	513	400-710	0-60
18	8/92	710	480	90-150 240-470	0-60
20	9/92	710	420	420-710	0-60

Wells No. 16, 17, 18, and 20 were modified in June 1994 in preparation for being put into service. The test wells that were drilled in 1992 and subsequently converted to production wells are termed herein the "new District supply wells".

1994. Wells No. 16 and 20 were put in service in March 1995; and Well No. 17 was put in service in June 1995. Wells put in service in the 1992-95 time period are termed the "newer" District supply wells in this report. Wells No. 2, 3, 4, 5, and 7 (shown in Figure 1) were not put in service by the District because of low well yields. Wells No. 2 and 3 were subsequently destroyed, whereas the other wells were converted to monitor wells. A small amount of water was pumped from Well No. 7 in Summer 2007 for use at the Boys Camp.

Test Well No. 25 was drilled in August 2002, and was not in service during the 2002-2007 water years. This well was drilled to a depth of 700 feet, at a site north of Well No. 1 and east of Well No. 16. This well has been used as a monitor well. Table 2 summarizes construction data for District monitor wells. Eight of these wells (No. 5A, 14M, 19, 21, 24, 25, 26, and 30) are deep and primarily tap water in fractured volcanic rock. Well No. 7 is a deep well located south of the basalt flow and taps water in a glacial moraine near Sherwin Creek. Well No. 11 is a deep well located south of the basalt flow and taps water in glacial till and granitic rocks. An annular seal was placed in Well No. 21 in July 1997, to preclude surface water and shallow groundwater from entering the well. Well No. 5M taps water in the shallow fractured volcanic rock, just beneath the glacial till. The remaining monitor wells are shallow and tap groundwater in the uppermost glacial till or alluvium.

TABLE 2 - CONSTRUCTION DATA FOR DISTRICT MONITOR WELLS

Well No.	Date Drilled	Drilled Depth (feet)	Cased Depth (feet)	Perforated or Open Interval (feet)	Annular Seal (feet)
4M	1984	89	89	69-89	0-50
5A	7/82 (8/93)	357	357	112-357	0-112
5M	8/93	80	80	20-75	0-20
7	8/87	480	480	290-480	0-50
10M	6/88	27	27	7-27	0-5
11	7/88	600	600	170-360	0-50
11M	6/88	43	43	5-43	0-5
12M	9/88	27	27	7-27	0-5
14M	9/88	520	501	100-310	0-100
19	8/92	700	344	200-700	0-140
21	10/92 (7/97)	640	145 (157)	145-640 (157-640)	(70-157)
22	9/92	85	85	55-85	0-25
23	9/92	65	65	30-65	0-25
24	8/93	450	430	300-450	0-20
25	8/02	700	530	340-530	0-60
26	5/06	708	686	621-686	0-80 & 595-620
27	1/06	97	87	67-87	0-64
28	12/05	90	87	47-57	0-45
29	11/05	97	97	67-87	57-65
30	12/05	640	600	77-97	0-60
				516-600	0-500

Well No. 5 was modified in August 1993, so as to be sealed off opposite the glacial till and be perforated only opposite the volcanic rock, and re-designated Well No. 5A. An annular seal was placed in No. 21 in July 1997, and the values in parentheses are for the modified well.

### SUBSURFACE GEOLOGIC SECTION A-A'

Cross Section A-A' was developed during a previous evaluation, and was updated (Figure 2) by adding more recent water-level data. The locations of wells used for this section are shown in Figure 1. Cross Section A-A' shows that the uppermost till layer and volcanic rocks are continuous along the section. Groundwater has been found in the uppermost glacial till layer only in the vicinity of District Wells No. 1, 4, 6, 10, 11, 12, and 15. Most of these wells are either in the meadow or near Mammoth Creek. Water production in the District supply wells is from highly fractured rock, often scoria layers, and sometimes from interbedded glacial till. The intervening less fractured rock probably acts as local confining layers. At Well No. 24, water was not found in the upper part of the basalt or in either of the till layers. Water in this well is in a fractured scoria layer. A lost circulation zone present in this well may influence the water level. In September 2007, there was a fairly uniform water-level slope (about 200 feet per mile) from Well No. 1 to No. 19 to No. 24. The part of the section east of Well No. 24 is oriented almost perpendicular to the direction of groundwater flow (shown later).

### PRECIPITATION

Precipitation (inches of water) is routinely measured at the Lake Mary Store, and is an indication of the potential recharge to groundwater. The mean annual precipitation from 1990-2007 was 29.8 inches. During water years 1991-94, the annual precipitation ranged from about 20 to 29 inches and averaged about 22.5 inches.

FIGURE 2  
SUBSURFACE GEOLOGIC CROSS SECTION A-A'  
(IN POCKET)

During water years 1995-2000, annual precipitation ranged from about 30 to 46 inches and averaged about 39 inches. During water years 2001-04, the annual precipitation ranged from about 20 to 25 inches and averaged 22.0 inches. During the 2005-06 water year, the precipitation was 50.7 inches. Precipitation at the Lake Mary Store was only 15.5 inches during the 2006-07 water year, or about half of the long-term average. Trends in precipitation are useful when evaluating water-level changes in wells that have been measured as part of this program.

#### DISTRICT PUMPAGE

Pumpage records for District supply wells are provided in Appendix A. Table 3 shows monthly pumpage from District wells during the 2007 water year. The total pumpage was 1,936 acre-feet, or about 73 percent more than that for the previous water year. Of this, 496 acre-feet were from Well No. 15, 400 acre-feet were from Well No. 6, 259 acre-feet were from Well No. 17, 243 acre-feet were from Well No. 10, 206 acre-feet were from Well No. 20, and 170 acre-feet were from Well No. 1. The remaining District pumpage (162 acre-feet) was from Wells No. 16 and 18. An estimated 44 acre-feet of water were pumped from the Snow Creek Golf Course Well (in the general vicinity of Well No. 14M) during the 2007 water year. This well is owned by a private entity. The amount of water pumped from this well this year was greater than that for the previous year. About 100,000 gallons were pumped from Well No. 7 for use at the Boys Camp during 2007.



**TABLE 3 - PUMPAGE FROM DISTRICT WELLS (ACRE- FEET)**

Well No.	Oct-06	Nov-06	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Total
<b>1</b>	6.520	0.071	0.035	2.081	3.681	0.113	11.021	17.098	38.206	39.061	41.564	10.785	<b>170.238</b>
<b>6</b>	0.000	0.000	0.294	0.319	3.681	40.393	3.583	0.098	29.546	96.638	97.865	29.350	<b>399.632</b>
<b>10</b>	2.675	0.436	0.031	0.319	4.282	7.613	0.031	32.693	54.675	64.736	58.650	17.239	<b>243.380</b>
<b>15</b>	18.650	2.748	0.393	0.982	3.926	3.926	1.178	80.883	115.828	119.755	111.902	35.534	<b>495.706</b>
<b>16</b>	0.000	0.000	0.098	0.589	0.098	0.000	0.049	0.000	15.067	43.828	40.933	11.387	<b>112.049</b>
<b>17</b>	11.092	2.650	0.000	0.098	0.098	0.000	7.755	48.491	57.325	61.055	55.656	15.018	<b>259.239</b>
<b>18</b>	0.025	0.000	0.025	0.025	0.025	0.000	0.025	1.202	0.025	32.540	8.761	7.117	<b>49.767</b>
<b>20</b>	0.098	0.098	0.035	0.073	0.034	1.192	2.679	0.569	47.181	74.985	62.693	16.018	<b>205.656</b>
<b>Total ac-ft</b>	<b>39,060</b>	<b>6,003</b>	<b>0,910</b>	<b>4,486</b>	<b>15,826</b>	<b>53,238</b>	<b>26,320</b>	<b>181,035</b>	<b>357,853</b>	<b>532,598</b>	<b>478,025</b>	<b>142,448</b>	<b>1,935,667</b>
Total MG	12.7335	1.957	0.296763	1.462431	5.159246	17.355561	8.580391	59.0175	116.6601	173.627	155.836	46.438	

**Records from Mammoth CWD.**

## WATER LEVELS

### District Supply Wells

Water-level measurements (static and pumping) for District supply wells are provided in Appendix A. Water-level hydrographs for the earlier wells (No. 1, 6, and 10) are provided in Appendix B. The years discussed for hydrographs in the following sections are for calendar years, unless specified otherwise.

#### New Wells

Figure 3 is a water-level and pumpage hydrograph for Well No. 15, extending back to when it was initially put in service in July 1992. In Summer 1992, the water level fell about 80 feet after several months of pumping, and normally ranged from about 260 to 280 feet during periods when the well was being significantly used through early 1995. During periods when the well was not used much for supply (i.e., May 1995-June 1998), the water level rose substantially. In June 1998, the depth to water in Well No. 15 was 156 feet, or the shallowest of record. In October 2003, depth to water in this well was 303 feet. The shallowest annual water level in this well fell from 156 feet in 1998 to 242 feet in 2004. The water level in this well in Summer 2005 was near that in Summer 2004. In 2006, the shallowest water level was about ten feet shallower than in 2005. In late Summer 2007, the water level was about 50 feet deeper than in 2006. Depth to water in Well No. 15 appears to be influenced primarily by the previous pumping history of the well and recharge.

Figure 4 is a water-level and pumpage hydrograph for Well No.

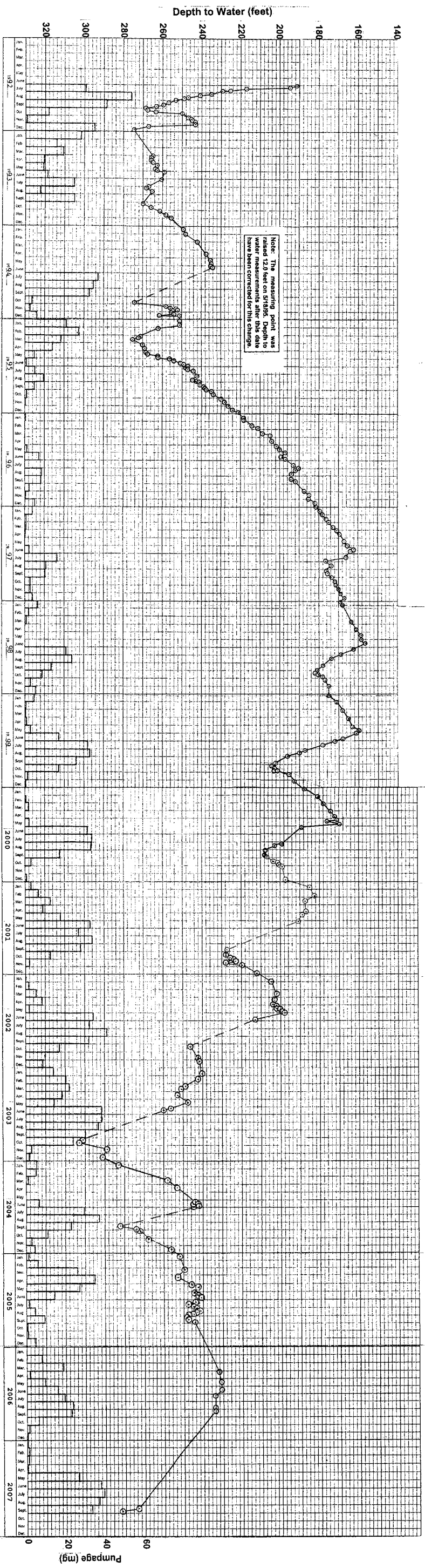


FIGURE 3-WATER-LEVEL AND PUMPAGE HYDROGRAPH FOR WELL NO. 15

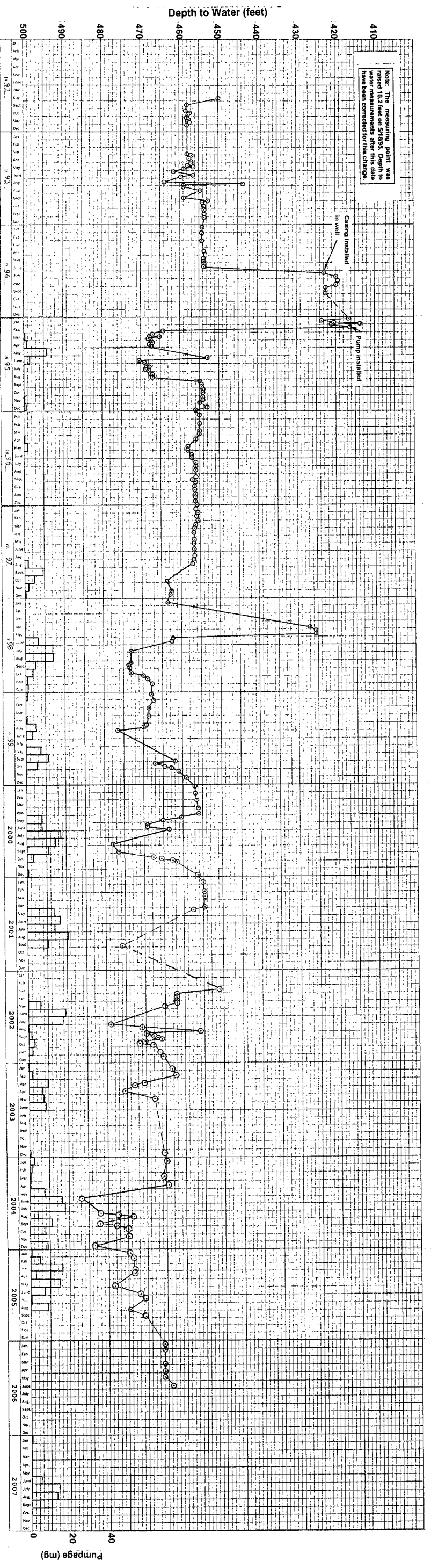


FIGURE 4-WATER-LEVEL AND PUMPAGE HYDROGRAPH FOR WELL NO. 16

16. The water level in this well changed substantially after the casing was installed (July 1994) and after the pump was installed (February 1995). After the casing was installed and prior to the pump installation, an access tube was not in the well, and the measurements during that period were apparently affected by cascading water. The measurements for July 1994-early February 1995, and for April-May, 1998 appear not to be representative. During heavy pumping periods of Well No. 20, the static level in Well No. 16 has been about 12 feet lower than during periods of lower pumping of Well No. 20. There were seasonal declines of about 20 to 30 feet during pumping periods of this well in 2002. Overall, shallow static levels in Well No. 16 were relatively stable between 1992 and 2003, and fell in 2004. In Summer 2004, water levels in this well were the lowest of record. This was likely due to the below normal precipitation in recent years. Water levels in this well slightly rose during 2005, and then rose about ten feet during the 2006 water year. There was essentially no pumpage from this well during the 2006 water year. Pumpage resumed in 2007. Because of a restriction in the sounding tube, the water level in this well hasn't been measured since July 2006.

Figure 5 is a water-level and pumpage hydrograph for Well No. 17. Measurements in early 1995 indicated that the water level apparently rose about eight feet, probably due to recharge. The water level in Well No. 17 appears to be influenced by pumpage of Well No. 20. During operational periods of both of these wells, the static level in Well No. 17 has been about four feet lower than

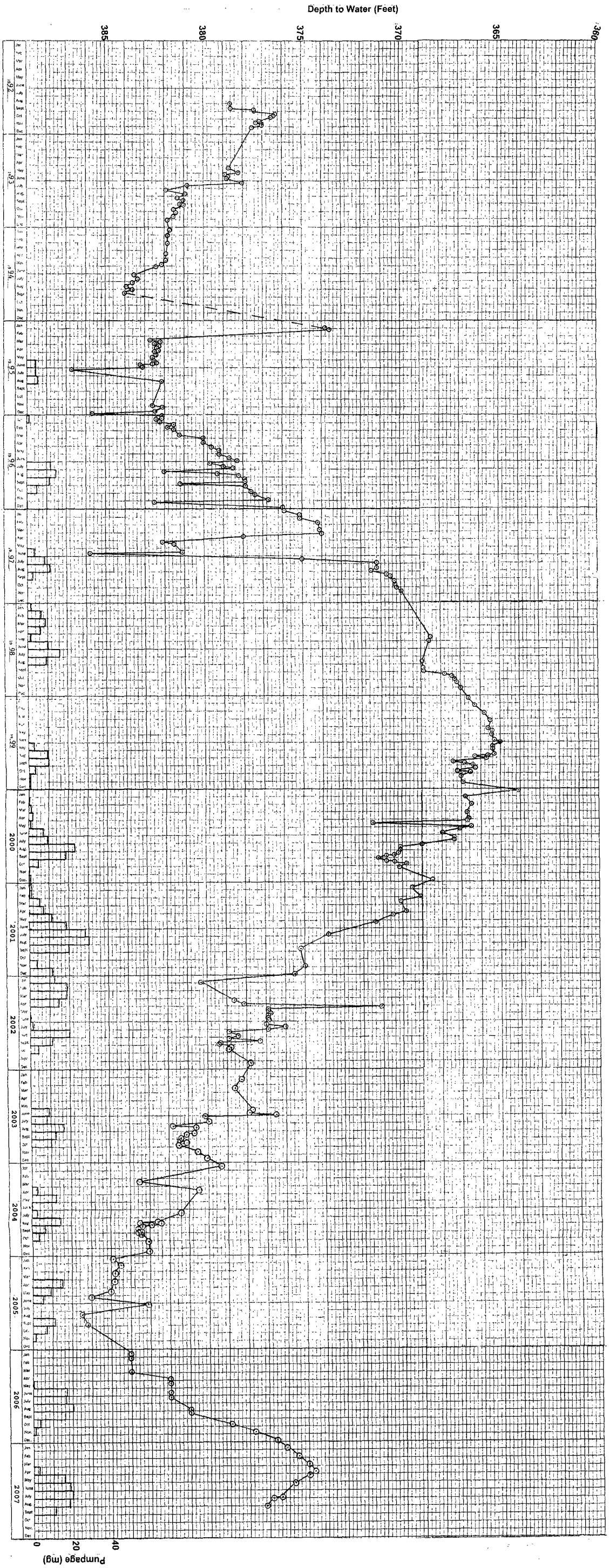


FIGURE 5-WATER-LEVEL AND PUMPAGE HYDROGRAPH FOR WELL NO. 17

during periods of little pumpage. The water level in Well No. 17 gradually rose during November 1995-August 1999, except during some pumping periods. The shallowest depth to water yet measured in this well was in January 2000. During 2000-2005, the water level in this well fell, due to heavier pumping of this well and less recharge compared to previously. During 2006 and early 2007, the water level in this well rose about nine feet, due to recharge. The water level fell about two feet between April and September, 2007.

Figure 6 shows water levels and pumpage for Well No. 18. The overall trend for this well during non-operational periods was a slight water-level rise through 1997. The water level was relatively constant during 1998-early 2002. In early June 1998, the water level in Well No. 18 was 30 feet deep, the shallowest yet measured. The water-level decline of about ten feet in this well during July 1998 appears to have been due to pumping of Wells No. 10 and 15. The water level in this well was 108 feet in September 2002, the lowest for the period of record. During 2002-05, water levels in this well stayed relatively constant. The water level rose almost 40 feet during the 2006 water year, primarily due to increased recharge. The water level in this well fell about 45 to 50 feet after March 2007, and this was primarily due to pumpage of the well.

Figure 7 is a water-level and pumpage hydrograph for Well No. 20. From 1994-98, the overall trend was a rising water level. The shallowest levels in Well No. 20 to date were in late 1998 and

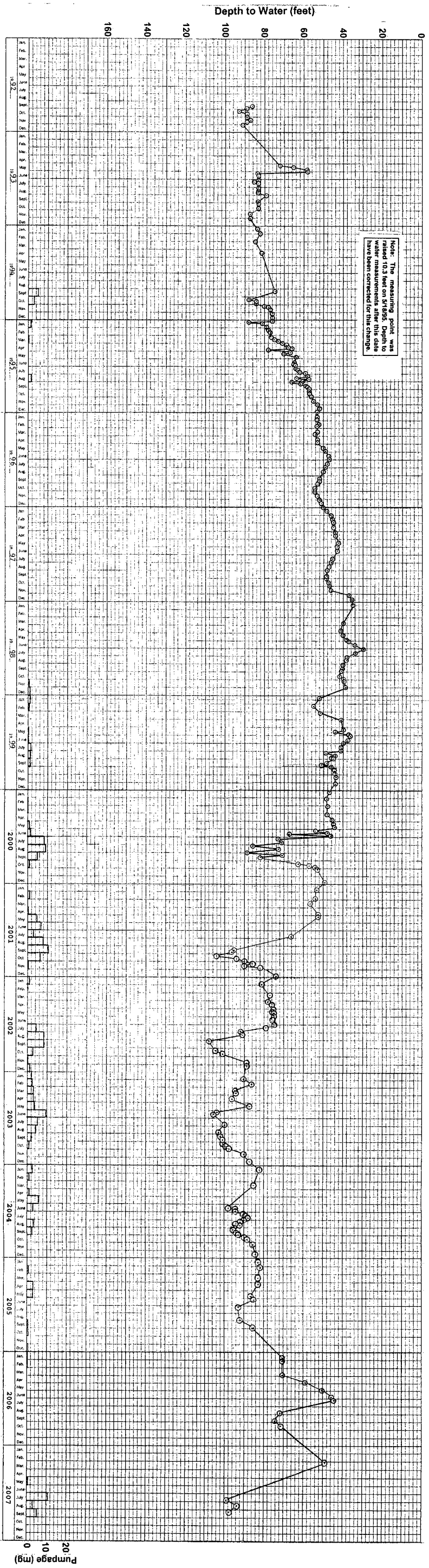


FIGURE 6-WATER-LEVEL AND PUMPAGE HYDROGRAPH FOR WELL NO. 18



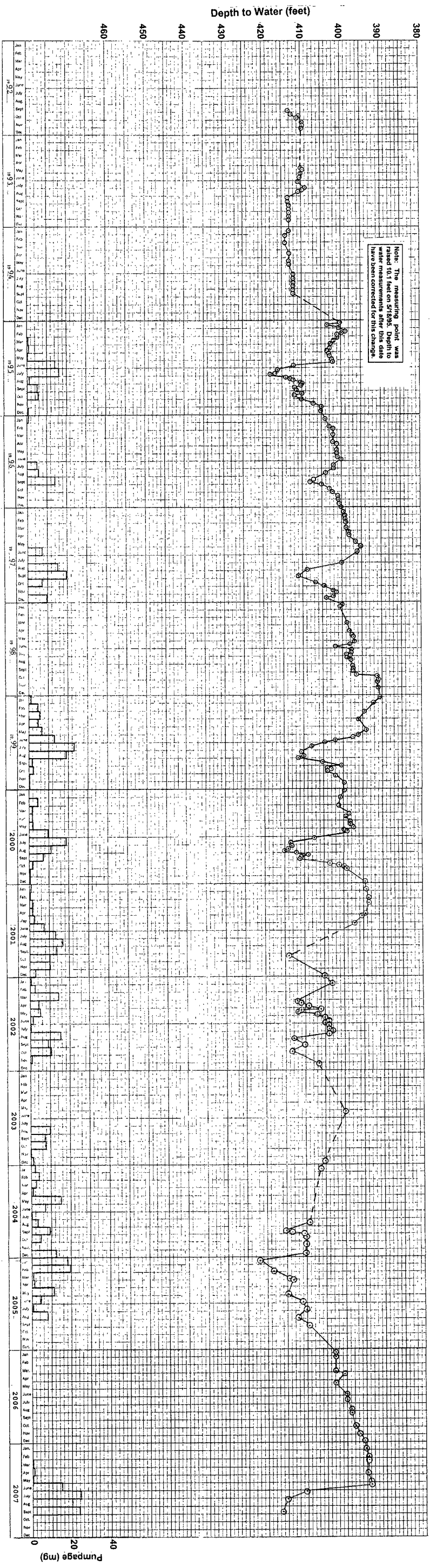


FIGURE 7-WATER-LEVEL AND PUMPAGE HYDROGRAPH FOR WELL NO. 20

early 1999. The water level in this well fell after early 2001. The water-level declines in this well during the summers of 1999-2002 were mainly due to pumping of the well itself. The water level in this well may also be affected by pumpage of Well No. 17. The water level in Well No. 20 recovered significantly in 2003, due to a lack of pumping prior to August. During 2002-05, water levels in this well stayed relatively constant. The water level rose almost 20 feet during 2006-07. After early June 2007, the water level in this well fell about 40 feet, primarily due to pumping of the well.

#### Earlier Wells

Water-level and pumpage hydrographs for Wells No. 1, 6, and 10 are provided in Appendix B. The static water level in Well No. 1 has ranged from about 160 to 200 feet during low pumping periods to an average of about 270 feet during heavy pumping periods (i.e., August 1994). Overall, the water level in this well rose between 1992 and 1997, slightly declined from 1997 to Spring 2002, fell during 2002-03, and then rose in 2004-05. In June 1998, depth to water in this well was 160 feet, or the shallowest measured since 1990. During the 2006 water year, the water level in this well was relatively stable until July, when it fell about 10 feet due to increased pumping of the well. The water level in Well No. 1 rose about 35 feet from July 2006 until March 2007. After March 2007, the water level had fallen about 60 feet by early August 2007 due to pumping of the well. The water level then began to rise due to a reduction in pumpage from the well.

The static water level in Well No. 6 has ranged from less than

30 feet during low pumping periods (after September 1995) to more than 160 feet during heavy pumping periods (August-September, 1994). During May-September, 1996, in part of 1997, and during late 1999 through Fall 2001, the static level in this well was at or above the land surface. This well wasn't pumped during September 1997-September 2001. After pumping of the well resumed in October 2001, the water level fell to about 50 to 70 feet deep through May 2003. The water level then rose more than 49 feet by June 2004. Later in Summer 2004, the water level fell to a depth of about 117 feet, due to increased pumping from the well. In September 2005, depth to water was 44 feet. The well was pumped only a small amount during water year 2006, and the water level had recovered to a depth of about seven feet by March 2006. The water level in Well No. 6 had fallen about 30 feet by July 2007 and another 30 feet by September 2007, primarily due to pumping of this well.

The static water level in Well No. 10 has ranged from less than 30 feet deep during the low pumping periods (July 1995), to more than 160 feet during heavy pumping periods (Summer 1993). During the 1996-2000 water years, depth to water was usually less than 30 feet, except for short periods. In August 2001, the well began to be pumped more and the water level was usually about 70 to 90 feet deep during the 2002 water year. During Summer 2005, the water level fell to a depth of about 137 feet, near the level in 1994. However, by late September 2005, depth to water was 63 feet, following the cessation of summer pumping. During the 2006 water

year, the water level rose to a depth ranging from about 10 to 15 feet deep. This was largely associated with a large reduction in pumping from Wells No. 6 and 10 during 2006. In 2007, the water level in this well fell about 55 feet, primarily due to pumping of the well.

#### Deep Monitor Wells

Water-level measurements for monitor wells are provided in Appendix C, and supplementary water-level hydrographs are provided in Appendix D. Transducers were installed in four of the deep monitor wells (No. 14M, No. 19, No. 21, and No. 24), and continuous water-level measurements commenced in December 1995.

Well No. 5A is located between Well No. 1 and the Valentine Reserve North Spring (Figure 1). Measurements for Well No. 5A indicate that depth to water has ranged from near the land surface to about seven feet. From 1995-99, the annual shallowest level was near the land surface, and overall the water level rose. Seasonal water level declines in this well ranged from about three to four feet during 2000-2002. These declines are indicated to have been due to pumping of Well No. 18 and possibly Well No. 15. The shallowest annual water level in Well No. 5A fell about six feet between 1999 and 2004. However, this level rose to a depth of about 2.5 feet in May 2005, to about 3.0 feet in June 2006, and was near the land surface in July 2007. This was associated with a decrease in pumpage from Well No. 18. The water level in this well fell about four feet after July 2007, probably primarily due to pumping of Well No. 18.

Well No. 7 is located in the Sherwin Creek campground, about one and a third miles east of Well No. 6. Measurements for Well No. 7 indicate that depth to water has ranged from 233 to 292 feet. The water level in this well appears to be primarily influenced by recharge from Sherwin Creek. The influence of recharge during 1995 and 2005-06 is apparent. Drawdowns of about 10 to 20 feet during 2000-2003 were apparently due to the pumping of the well itself. The shallowest annual level in this well fell about twenty feet between 1998 and 2003. The lower water levels in 2003 are attributed partly to more pumpage from the well than previously. Water levels in this well could not be measured in 2004-05 because of a malfunctioning sounding tube. The shallowest water level of record in Well No. 7 was measured in late July 2006, associated with more recharge. The water level in this well fell about 12 feet during Summer 2007, primarily due to pumpage of the well.

Well No. 11 is located in the meadow area, about one quarter mile south of Well No. 10. The water-level measurements for Well No. 11 indicate that the deepest level (51 feet) was in May 1993, and the shallowest levels were near the land surface during most of the period after July 1995. The water level in this well has been influenced by surface flow, particularly in the Bodle Ditch, which passes through the meadow area, and apparently by pumping of Wells No. 6 and 10. The water levels were deepest during drought conditions and heavy pumping of Wells No. 6 and 10. The shallowest water levels occurred during wet years and low or moderate pumping of Wells No. 6 and 10. As of 2007, the water level in this well was still near the land surface.

Well No. 14M is located about two-thirds mile east of Well No. 15. The manual water-level measurements for Well No. 14M (Figure 8) indicate that the depth to water normally ranged from about 350 to 360 feet prior to June 1995. The annual shallowest water level in this well rose between 1994 and 1998 and between 1999 and 2000. The rise was primarily associated with recharge and the reduction in pumping of Wells No. 6 and 10 at those times. In July 2002, depth to water in Well No. 14M was 235 feet, or the shallowest of record. The water level in this well fell about 95 feet between July 2000 and January 2002, primarily due to pumping of Wells No. 6 and 10. The water level in this well was relatively stable during 2003-04, then rose significantly in June 2005, apparently due to recharge. By November 2005, the water level fell back to near the previous levels. Recharge was indicated in 2006, as the water level rose about 55 feet. The water level in Well 14M then fell about 35 feet in 2007, associated with pumping of wells in the vicinity. The water level in this well shows the influence of recharge and pumping patterns of Wells No. 6 and 10, and the Snow Creek Golf Course well. Transducer measurements that are considered reliable are available for Well No. 14M for November 1, 1996-September 30, 2003, except for October 1997, June 1998, and March 2001. The transducer was recalibrated in May 2003, and the 2001-03 measurements agree well with the manual measurements. Reliable transducer measurements are also available from December 14, 2003 through July 31, 2004, December 10, 2004-July 6, 2005, August 12-October 30, 2005, November 30, 2005-May 26, 2006, and August 28,

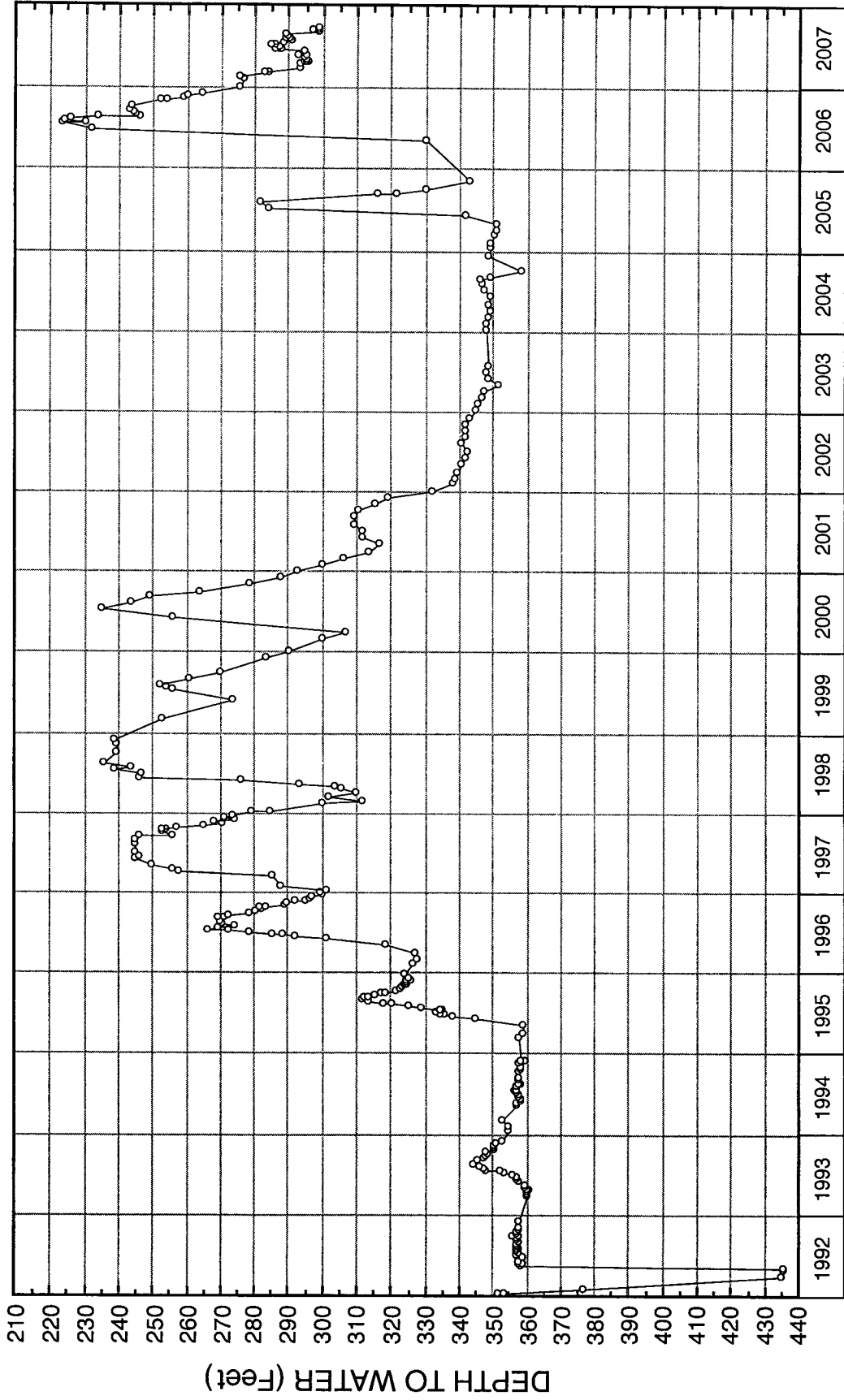


FIGURE 8 - WATER-LEVEL HYDROGRAPH FOR WELL No. 14M

2006-September 2, 2007. The transducer was recalibrated on April 1, 2007.

Well No. 19 is located about four-fifths of a mile east of Well No. 1. Based on manual measurements (Figure 9), the water level in Well No. 19 has ranged from about 312 to 357 feet deep. The water level in this well generally rose from 1995-98. In October 1997, depth to water was 312 feet, or the shallowest yet measured. During 1999, the water level in Well No. 19 fell about 30 feet, to below the levels in 1994 and early 1995. However, there was no decline during 2000-2004. During this period, depth to water in this well was usually about 340 to 345 feet. The water level in this well slightly rose in 2005 and 2006. After early March 2007, the water level fell about eight feet. Transducer readings that are considered fairly reliable are available for this well from November 1, 1996-September 10, 1997, from November 1, 1997-September 30, 1998, except for June 1998, and from May 4-September 30, 2003 (Appendix D). The transducer in Well No. 19 was recalibrated in May 2003. Reliable transducer measurements are also available from December 4, 2003 through the end of July 2004. The transducer was recalibrated on November 3, 2004 and measurements were reliable for the rest of the 2005 water year. The transducer was recalibrated on April 1, 2007. Reliable transducer measurements are available for October 1, 2005-February 22, 2006 and May 9-September 4, 2007.

Well No. 21 is located about three-fourths of a mile east of Well No. 20. Based on manual measurements, the water level in Well No. 21 (Figure 10) has ranged from about 231 to 370 feet in depth. The water level in this well rose significantly between early 1995



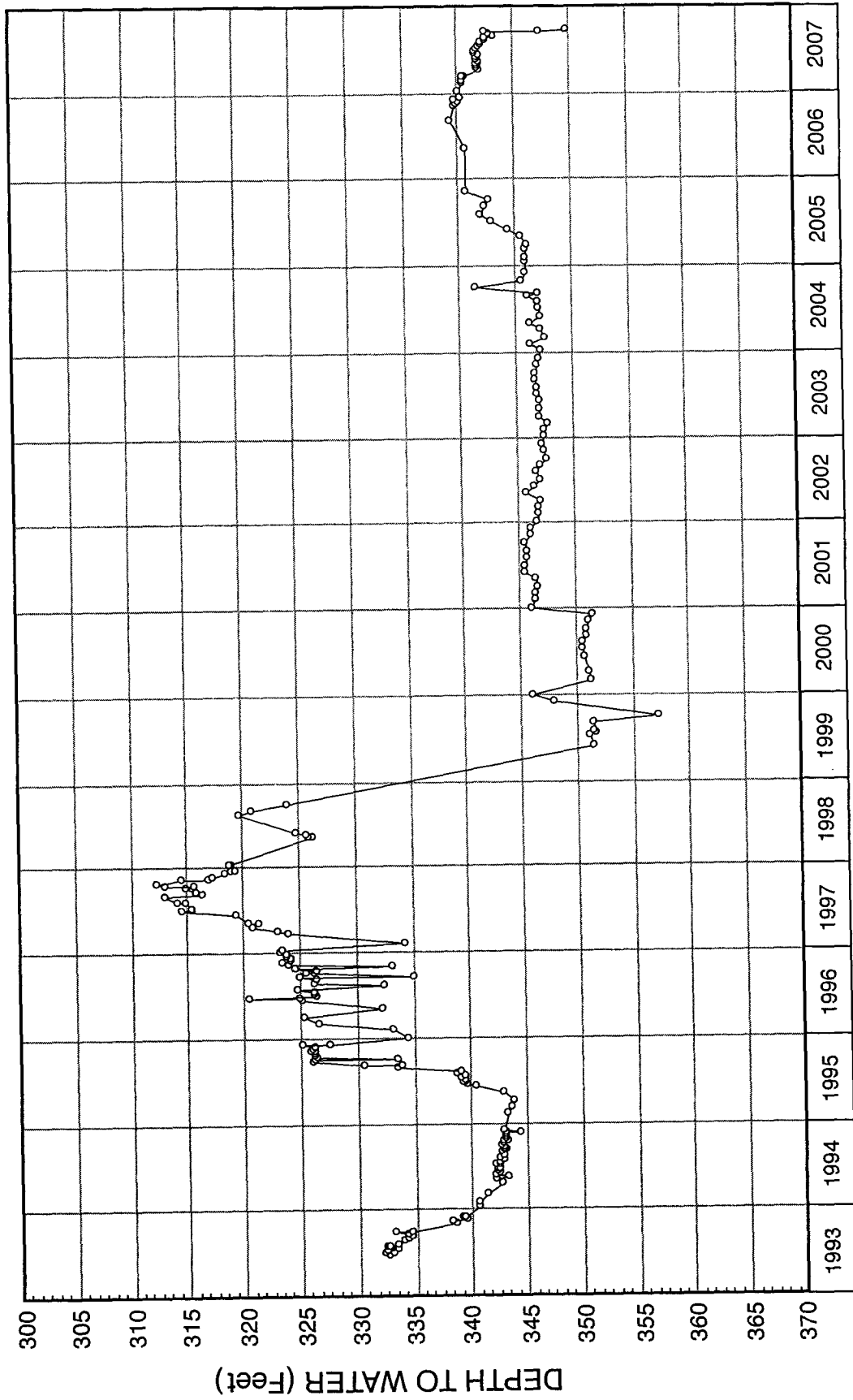


FIGURE 9 - WATER-LEVEL HYDROGRAPH FOR WELL No. 19

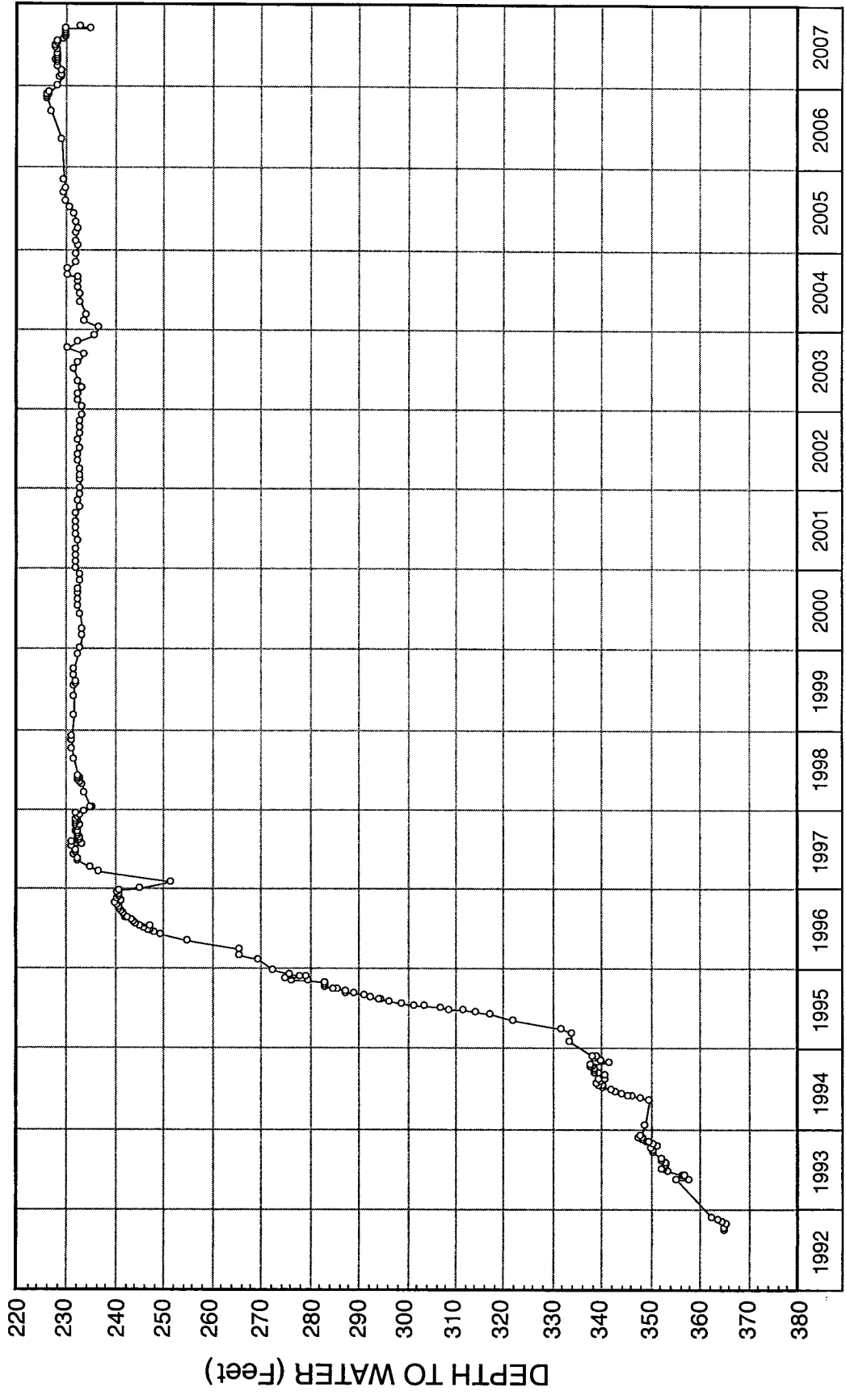


FIGURE 10 - WATER-LEVEL HYDROGRAPH FOR WELL No. 21

and late 1996. There was a water-level decline in this well from December 1996-February 1997, and the water level then rose through June 1997. Most of the rise is attributed to recharge, which may have been enhanced due to a lack of an annular seal in the well. An annular seal was placed in this well during July 1997. Since July 1997, the water level in this well has been relatively constant (about 230 to 235 feet deep). The water level rose about three and a half feet during the 2006 water year. After September 2007, the water level in this well fell about five feet. Transducer measurements that are considered reliable are available for Well No. 21 from November 1, 1996-May 31, 1997, November 1, 1997-September 30, 1998 (except for June 1998), and May 4, 1999-September 21, 2005 (Appendix D). The transducer in this well was recalibrated in May 2003 and in November 2004. Reliable transducer measurements are available for October 7, 2005-September 30, 2007. The transducer was recalibrated on April 1, 2007. The water-level measurements in this well have indicated no significant response due to pumping of District wells.

Well No. 24 is located about one mile east of Well No. 19. Figure 11 is a water-level hydrograph for Well No. 24, based on manual measurements. Measurements for this well began in Summer 1993, and depth to water has ranged from 352 to 394 feet. The water level rose after early 1995, to the shallowest depth yet measured in December 1998. The water level fell during 2002-03, and was relatively constant in 2004. After November 2004, the water level in Well No. 24 rose about nine feet. During the 2006

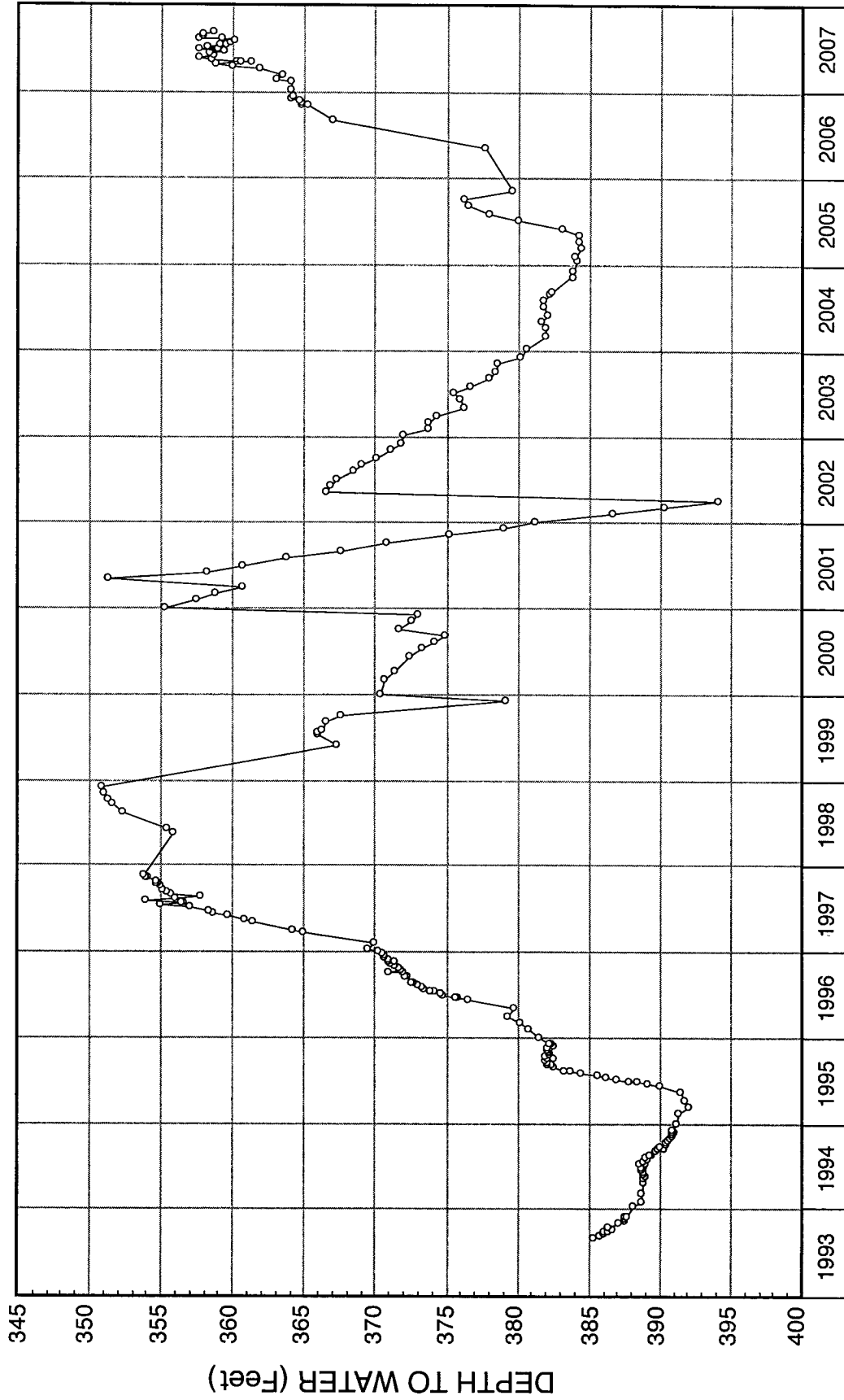


FIGURE 11 - WATER-LEVEL HYDROGRAPH FOR WELL No. 24

water year, the water level rose about ten feet. The water level in this well rose through May 2007, then stabilized. The water level in this well responds primarily to recharge, and no influence of District pumping is apparent. Transducer measurements are not available for this well between April 3, 1997 and April 30, 1998, due to equipment failure. The transducer was recalibrated on January 1, 2001. Transducer measurements for this well after this calibration were generally consistent with manual measurements through early October 2001. Transducer measurements between mid October 2001 and early May 2002 were found to not be reliable. The transducer was removed from the well and recalibrated on May 9, 2002. Reliable transducer measurements are available for the rest of the 2002 water year through the end of the 2005 water year, and for the 2006 water year. The transducer was recalibrated on April 7, 2006. Reliable transducer measurements for the 2007 water year are available through September 16.

In summary, water levels in Wells No. 19 and 21 were relatively constant after 2000, whereas the water level in Well No. 24 rose during early 2001, fell from May-October, 2001, rose through early 2002, fell consistently during the rest of 2002-03, and rose during 2005-07. The best explanation for the long-term water-level variations in Wells No. 19 and 21 is due to the amount of recharge, which is primarily related to climatic patterns. Water levels in these wells rose during and following periods of above average precipitation. In contrast, water levels in these wells temporarily fell or stayed about the same during periods of below normal precipitation (i.e. the 2001, 2002, and 2004 water years). Water

levels in Wells No. 19 and 21 haven't been noticeably influenced by District pumping in recent years. The water level in Well No. 24 appears to be influenced by factors unrelated to District pumping. The most likely factor is variations in recharge due to climatic conditions.

A water-level hydrograph for Well No. 26 is provided in Appendix D. Since June 2006, water levels have declined from a depth of 249 to 257 feet, primarily due to decreased recharge. Reliable transducer measurements for this well are available since December 11, 2006.

A water-level hydrograph for Well No. 25 is provided in Appendix D. Water-level measurements for the well commenced in late 2002. To date, the water level has responded primarily to pumpage of nearby District Well No. 1. Depth to water has ranged from 305 to 337 feet, and has been deepest during the late summer periods. Since 2002, water levels have risen, and the shallowest water level to date was in May 2007.

Figure 12 is a water-level hydrograph for SC-1, which taps groundwater in the upper part of the basalt east of the District wells. The water level in this well generally fell from June 1983 through early 1995. However, some water-level rise occurred during this period due to recharge. Significant recharge was evident during 1995, 1996, and 1998. The shallowest water levels measured in SC-1 were in June 1983 and late July 1995. In July 1998, depth to water in SC-1 was near that in August 1983. Overall, the water level in this well was relatively stable during 1996-2000. The shallowest annual water level then fell about seven feet between 2000 and 2002, rose slightly in 2003, and fell about five feet in

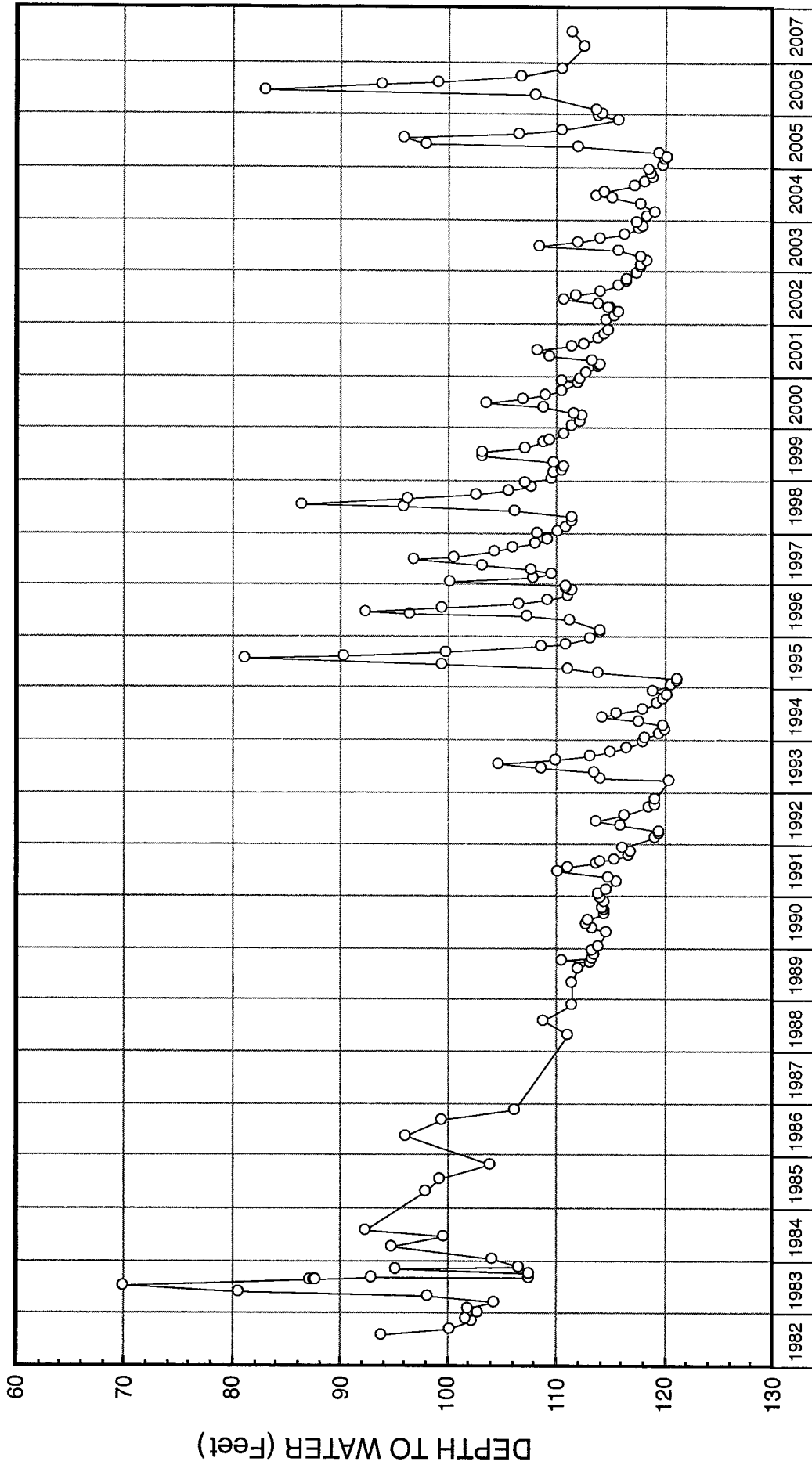


FIGURE 12 - WATER-LEVEL HYDROGRAPH FOR SC-1

2004. The shallowest seasonal water level then rose about 18 feet in 2005 and another 13 feet in early 2006. The seasonal low water level also rose between 2005 and 2007. These rises were due to increased recharge.

Figure 13 is a water-level hydrograph for SC-2, which taps groundwater in the deeper basalt near SC-1. Comparison of the hydrographs for SC-1 and SC-2 indicates that water levels in the two wells fluctuate similarly. However, the water-level rises are less in the deeper monitor well than in the shallower monitor well, as would be expected if the rises are mainly due to recharge, the source of which is from the land surface. The water level in SC-2 was about 156 feet deep in June 2004, or about the same as in June 1995. The water level in SC-2 generally rose during 1995-98, was relatively stable during 1999-2000, and fell about 27 feet from June 2000-December 2004. The water level in this well rose about seven feet between March and July of 2005. The water level then rose another ten feet during the 2006 water year and continued to rise in 2007. Water-level variations in SC-1 and SC-2 are indicated to be due to climatic variations and not due to District well pumpage. This conclusion is primarily based on the water-level hydrographs for Wells No. 19, 21, and 24 and water-level elevation data (Figures 2 and 18).

#### Shallow Monitor Wells

A water-level hydrograph for Well No. 22 is provided in Figure 14. Pumpage of nearby Well No. 15 is also plotted on this figure. The water level in Well No. 22 is not related to pumpage of Well No. 15, which taps groundwater in the deeper consolidated



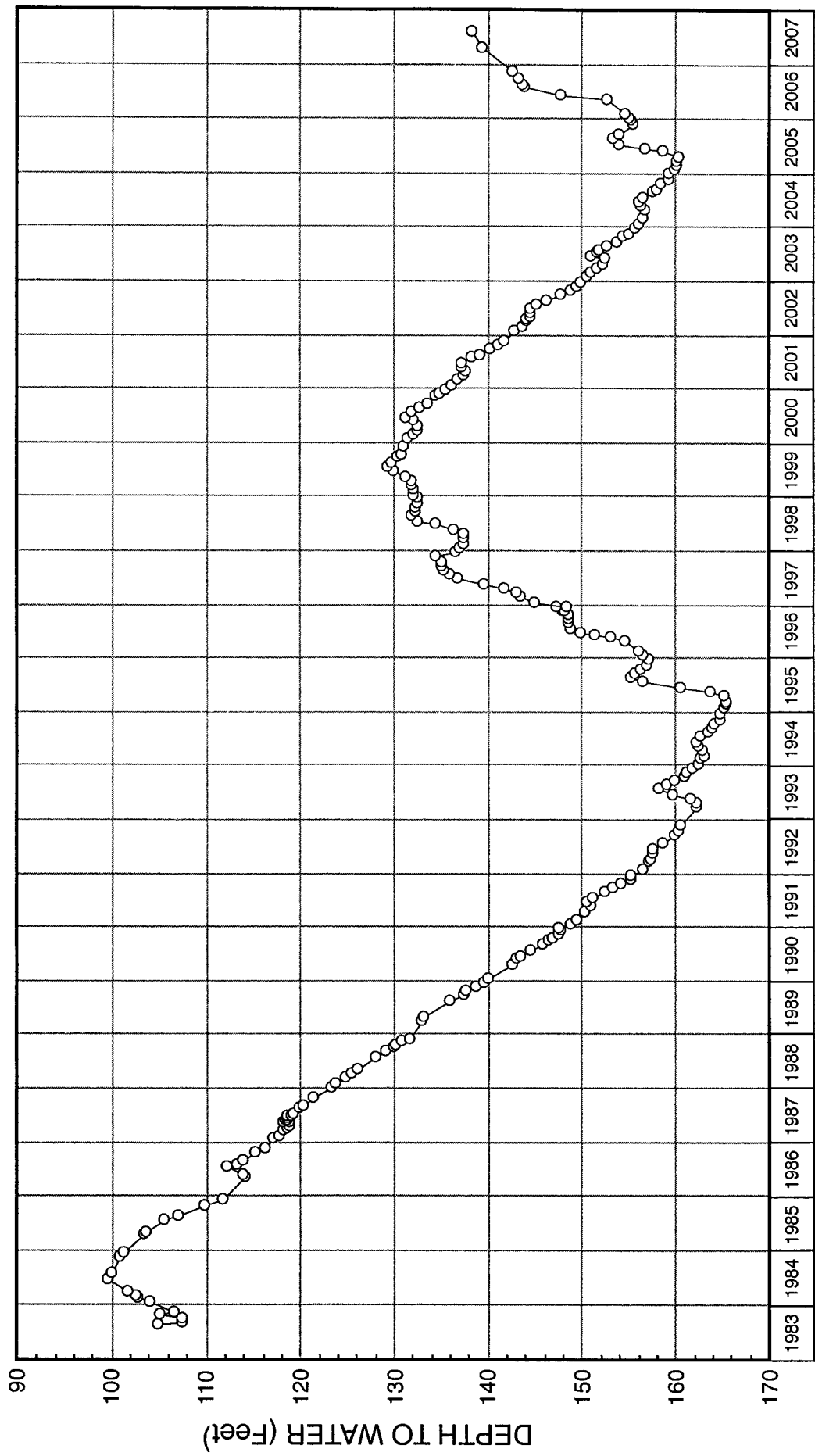


FIGURE 13 - WATER-LEVEL HYDROGRAPH FOR SC-2

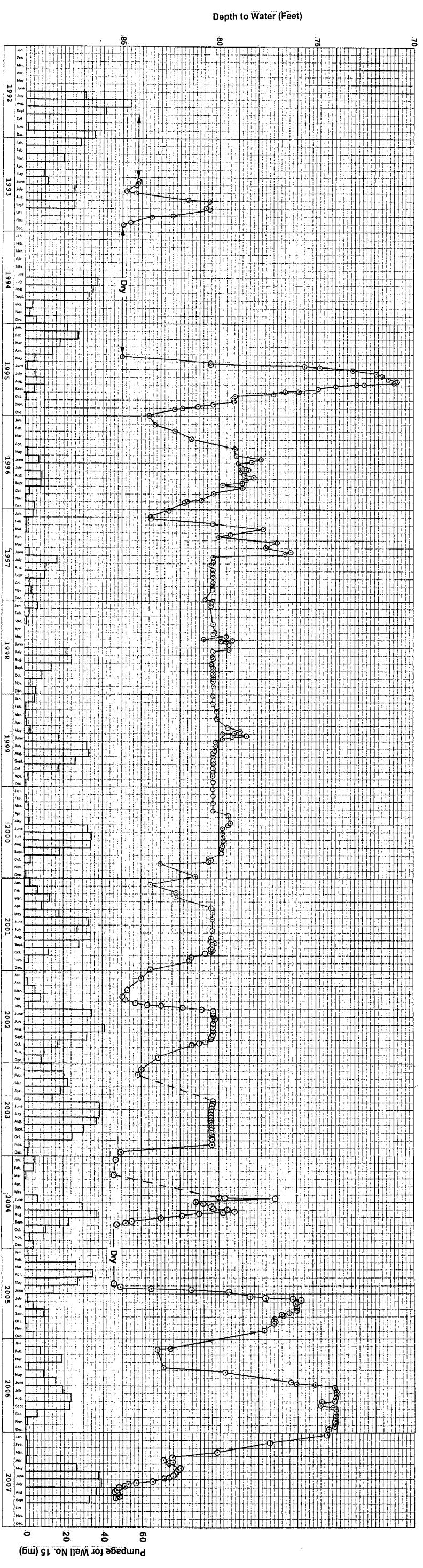
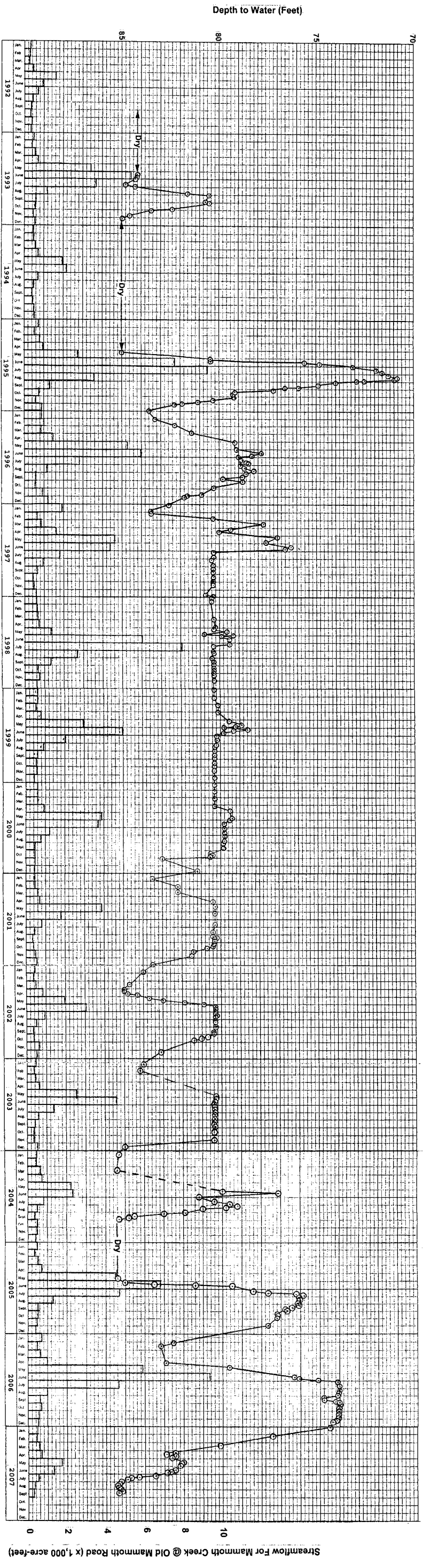


FIGURE 14-WATER-LEVEL HYDROGRAPH FOR WELL NO. 22 AND PUMPAGE FOR WELL NO. 15

rock. The water level in this well responds primarily to recharge from Mammoth Creek streamflow (Figure 15). Well No. 22 was dry until June 17, 1993 and during 1994-early 1995. There has been water in the well continuously since June 1995. The shallowest water level in Well No. 22 was in August 1995. Depth to water in this well rose about 12 feet during May-July, 1995, due to recharge corresponding to high flows (exceeding 40 cfs) in Mammoth Creek. During 1996-2006, the water-level trends in Well No. 22 also followed the pattern of streamflow in Mammoth Creek. Since early 1997, the water level in Well No. 22 was the lowest during December 2001-May 2002, September 2004, and May 2005 associated with low streamflow during or prior to those periods. During July-November, 2006, the water level in Well No. 22 was the shallowest since 1997. After January 2007, the water level in Well No. 22 fell to near the lowest historical level by August-September, 2007.

A water-level hydrograph based on manual measurements for Well No. 23 and pumpage for nearby Well No. 1 are shown in Figure 16. Depth to water in Well No. 23 has ranged from about 5 to 17 feet during the period of record. The shallowest water levels were in the spring and early summer of 1993, 1995, 2005, and 2006. Depth to water in this well is not influenced by pumpage of Well No. 1, which taps groundwater in the deeper consolidated rock. Well No. 23 is located relatively close to Mammoth Creek and is clearly influenced by recharge from streamflow (Figure 17), and possibly from other local sources of recharge. On August 1, 1996, a float-type continuous water-level recorder was installed in Well No. 23.

**FIGURE 15-WATER-LEVEL HYDROGRAPH FOR WELL NO. 22  
AND MAMMOTH CREEK STREAMFLOW**



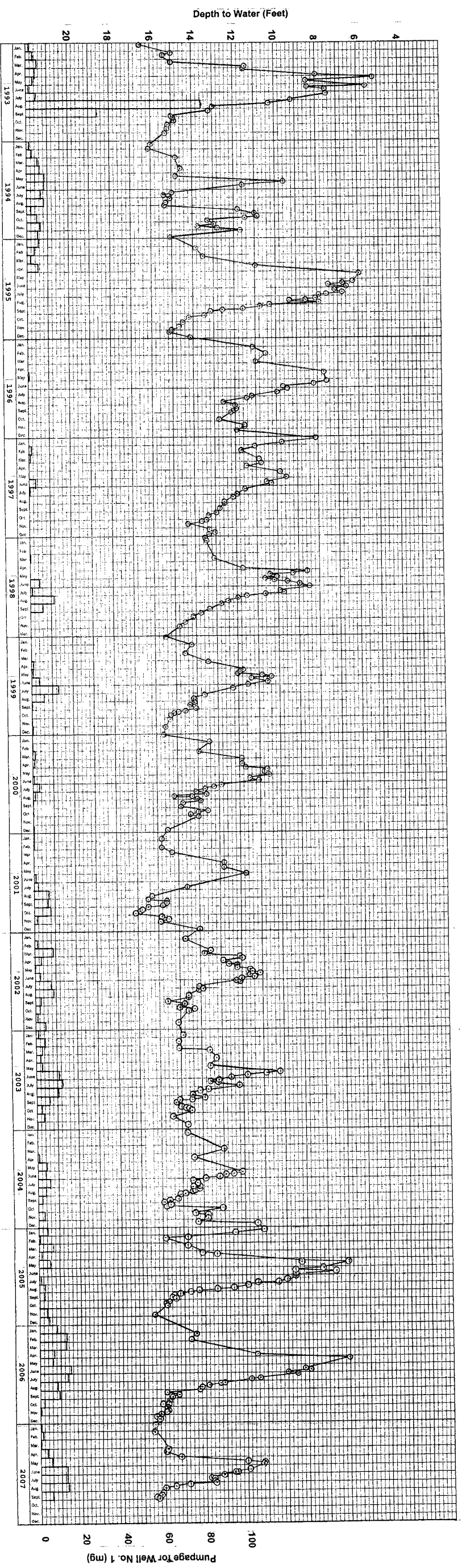
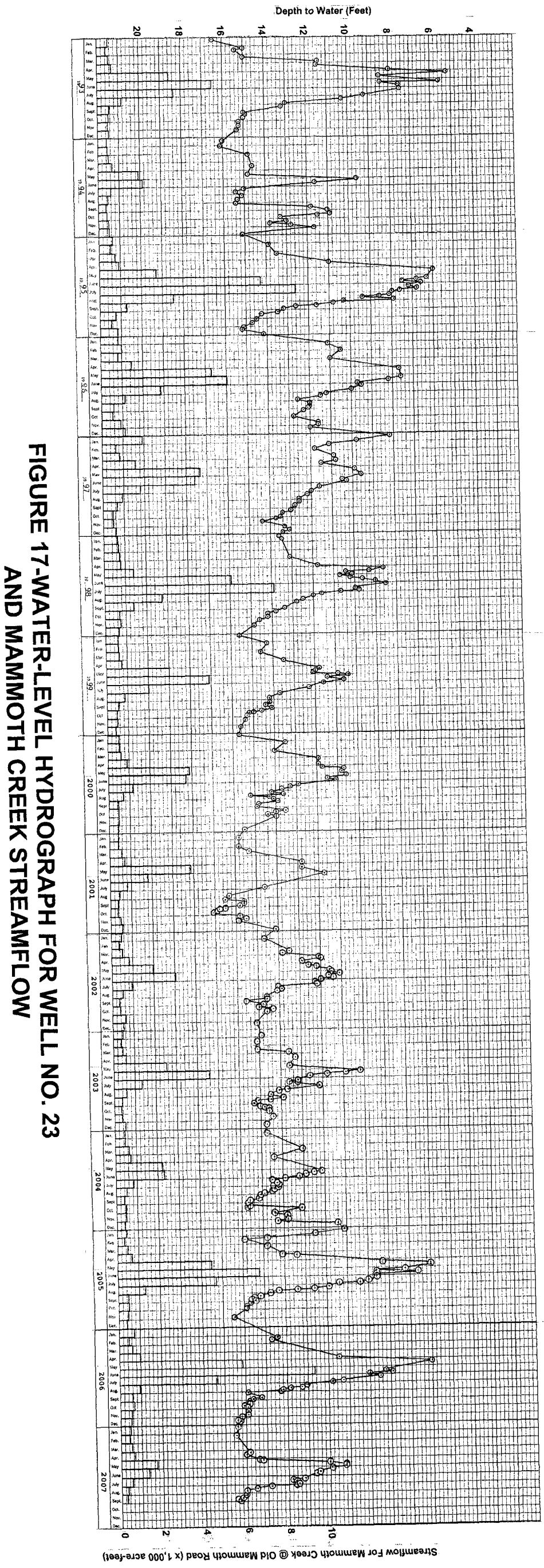


FIGURE 16-WATER-LEVEL HYDROGRAPH FOR WELL NO. 23 AND PUMPAGE FOR WELL NO. 1



**FIGURE 17-WATER-LEVEL HYDROGRAPH FOR WELL NO. 23  
AND MAMMOTH CREEK STREAMFLOW**

Some problems were experienced with this recorder, but reliable measurements were obtained during most of 1997-2005. No recorded measurements are available for the 2006 water year. A transducer has been operational in Well No. 23 since May 2007.

Water-level hydrographs for the remaining shallow monitor wells are provided in Appendix D. Well No. 4M is located in the meadow area east of District Wells No. 6 and 10. The water level in this well rose significantly between early 1995 and early 1998, due to significant surface water flow in the meadow. Depth to water fluctuations in this well have followed patterns of Bodle Ditch flows, rising during periods when flows are present in the ditch. In May 1998, the water levels in this well were the shallowest since 1988. The annual shallowest water level in this well fell about 20 feet between 1998 and 2004. In 2004, depth to water in this well was about the same as in 1989. However, in 2005, the shallowest annual water level was 24 feet deep, shallower than in 2004, and near the level in 2001. During May-June 2006, the water level was about 14 feet deep, the shallowest of record. After June 2007, the water level in Well No. 4M fell to a depth of about 32 feet.

Well No. 5M taps the shallow volcanic rock, and no water was observed in the overlying glacial till at the time of drilling of this well. Depth to water in Well No. 5M has ranged from about 2.5 to 9.5 feet. The shallowest levels have been in the spring and early summer, and the deepest in the summer. The annual shallowest water level in this well fell about four feet between 1998 and 2004, due to decreased recharge. The annual shallowest water level

rose about four feet in 2005, then fell about half a foot in 2006. By July 2007, the water level in this well was at the land surface. The water level then fell to about four feet deep by September 2007.

Well No. 10M was dry from October 1992 through June 10, 1993. Some water appeared in this well during June 17-August 19, 1993, and during June 6-June 20, 1996. The well was otherwise dry from late 1992 through December 4, 1996. During 1998-mid 2001, there was water in Well No. 10M most of the time. This well is adjacent to District Well No. 10, and the water level in Well No. 10M is primarily influenced by pumping of this well and also by local recharge. The influence of pumping of nearby Well No. 10 was demonstrated by an aquifer test when the well was newly developed. This influence on shallow groundwater is in contrast to that observed near District Well No. 15, where no such influence has been demonstrated. Well No. 10M was dry from July 2001 to Spring 2006, due to increased pumping from Well No. 10 during 2001-05. The water level in Well No. 10M then rose to the shallowest level of record (about 10 feet) by May 2006. After May 2006, the water level in this well fell, and the well became dry by June 2007.

Well No. 11M is located in the southwest part of the meadow area near the Bodle Ditch. Water levels in this well have seasonal fluctuations that correspond to flows in the ditch. The shallowest water levels have generally been in June-July. Water levels gradually declined during 1989-92, but rose significantly after 1992. The water level began to rise significantly in April 1996, and the shallowest level yet measured (about four feet deep) was in June 1996. The shallowest annual water level for Well No. 11M fell



about nine feet between 1998 and 2001, due to decreased recharge. However, the shallowest annual water level in this well in 2002 was higher than in 2001, and near the level in 2000. The shallowest annual water level in Well 11M was about two and a half feet higher in 2004 than in 2003. The shallowest annual water level in this well was relatively constant from 2002-04. In 2005 and 2006, the shallowest annual water levels were about five feet deep, near the shallowest of record. After June 2006, the water level in Well No. 11M fell to a depth of 28 feet in September 2007. Long-term water level fluctuations in Well No. 11M are related to wet and dry cycles and the associated recharge.

Well No. 12M is located in the western part of the meadow area. The water level in this well has responded significantly to a number of recharge events. The water level in this well began to rise significantly in April 1996, and reached the shallowest level of record in June 1996. The shallowest annual water level in Well No. 12M fell about nine feet between 1998 and 2004. However, the water level in this well rose about seven feet in 2005, and rose another foot in 2006. After June 2006, the water level in this well fell, and by August 2007 the well was dry. The long-term water-level trends for this well are due to recharge.

Water-level hydrographs for Wells No. 27 and 28 are provided in Appendix D. Depth to water in Well No. 27 has ranged from about 42 to 48 feet and has been relatively stable. Recharge appears to be the primary influence on water levels in this well. Depth to water in Well No. 28 has ranged from about 24 to 54 feet. Since August 2006, the water level in this well has fallen. In summary, the water levels in all of the shallow monitor wells generally rise

during wet periods and fall during dry periods. This is due to varying amounts of recharge during these periods.

#### Water-Level Elevation Contours

Figure 18 shows water-level elevation contours for early September 2007. The hydrologic boundary is shown north of Wells No. 1 and 5A and south of Wells No. 16 and 25. This boundary is believed to be present only west of a line connecting Wells No. 14M and 21. A cone of depression was evident due to pumping of District Wells No. 1, 6, 10, 15, 16, 17, and 20. This cone of depression did not extend east of Well No. 19. The overall direction of groundwater flow in early September 2007 was similar to that shown in the previous annual reports. This map shows only the horizontal component of groundwater flow in the basalt and interbedded glacial till. Other evidence (i.e., water levels in SC-1 and SC-2) indicates that there is also significant downward flow of groundwater in most of the area.

#### CHEMICAL QUALITY AND TEMPERATURE OF GROUNDWATER

The results of chemical analyses and temperatures of water for the supply wells during the 2007 water year are provided in Appendix E. Water samples have generally been collected monthly from the active supply wells since November 2006. The monitor wells were not sampled during the 2006-07 water year. Transducers are installed in most of the deep monitor wells to continuously measure water levels. Because of these transducers, it was not feasible to collect water samples from these wells during 2006-07. The coldest water (55°F or less) has normally been from shallow monitor wells in the meadow area and in water from the supply wells tapping consolidated rock, south of the hydrologic boundary. In contrast,

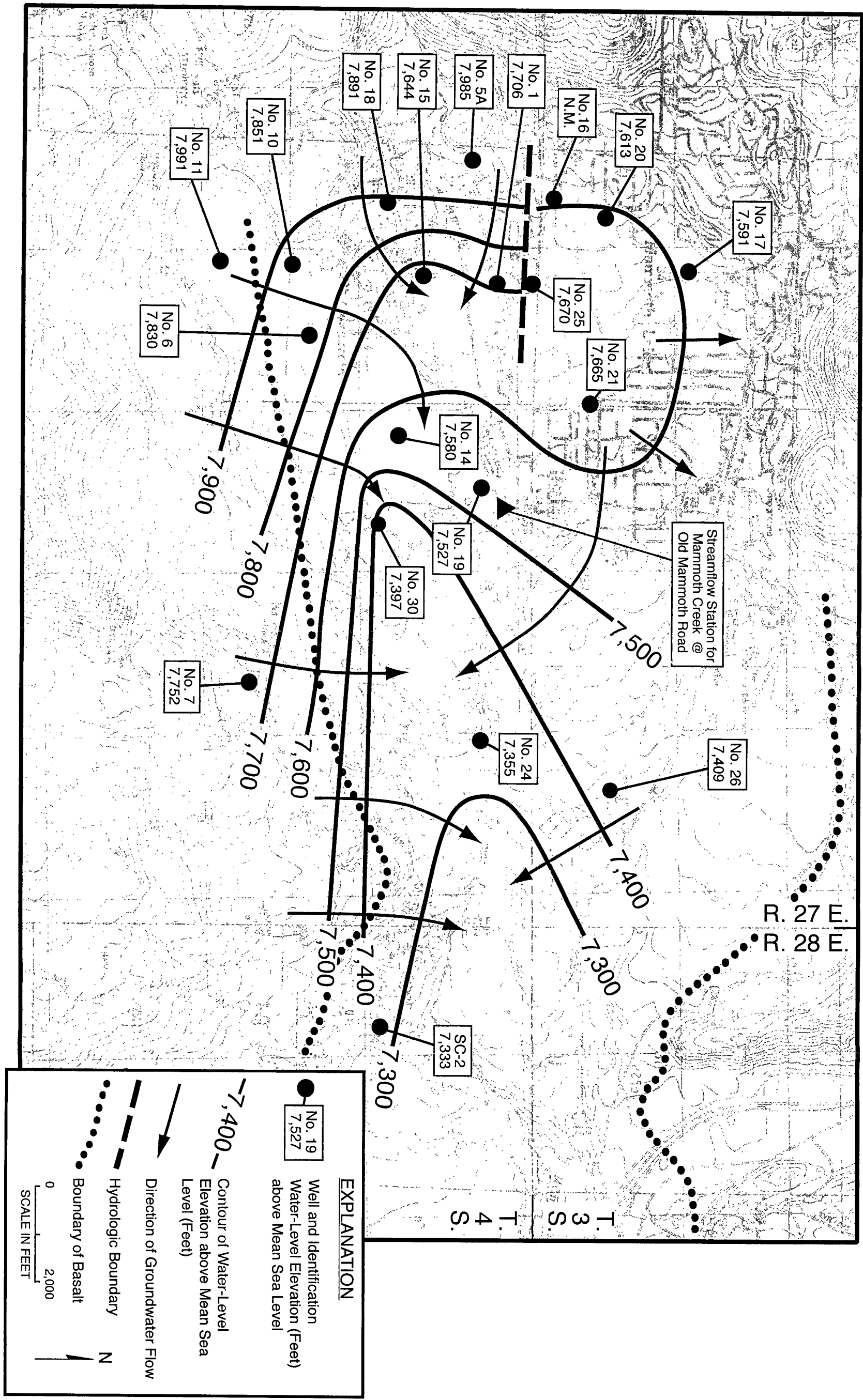


FIGURE 18 - WATER-LEVEL ELEVATIONS IN SEPTEMBER 2007

the warmest water (60°F or greater) has been from the wells tapping consolidated rock north of the hydrologic boundary, closer to the known area of relatively shallow geothermal water in Mammoth Lakes, and from Well No. 18 (south of this boundary). The lowest electrical conductivity values (less than 200 micromhos per centimeter at 25°C) have normally been for shallow monitor wells and Wells No. 7 and 11. The highest values (greater than 430 micromhos) have been for wells tapping the consolidated rock in the western part of the area.

Records for water from Well No. 20 indicate overall increases for temperature and electrical conductivity during 1996-2007. Water from Wells No. 16, 17, 18, and 20 showed an overall decrease in pH prior to 2004. These are the westernmost District supply wells. Low pH groundwater is known to be present beneath parts of Mammoth Mountain. However, pH values returned to near previous levels in 2004. The pH values then decreased in 2005 to the lowest levels yet measured. In 2006-07, the pH values slightly increased from those in 2005.

#### MAMMOTH CREEK STREAMFLOW

Records of streamflow at the outlet from Twin Lakes and the Old Mammoth Road crossing during the 2007 water year are provided in Appendix F. The mean monthly flow at the Old Mammoth Road crossing ranged from 5.1 cfs in September 2007 to 28 cfs in May 2007. In 2006, the flow at the Old Mammoth Road crossing began to rise in early May, and the highest flows were between May 2 and June 24.

Average daily flows are plotted in Appendix F for the two stations for each month during the 2007 water year. A comparison of these daily flows indicates that the streamflow at the Old Mammoth Road crossing normally equaled or exceeded that of the Twin Lakes outflow, except during January 20-February 10, 2007, and July 13-September 30, 2007. The downstream decrease in flow during January 20 to February 10 wasn't associated with District pumpage, which was less than 0.1 cfs. During July 13-September 30, 2007, the difference in streamflow between the two stations averaged about 1.6 cfs, and the District pumping averaged about 6.9 cfs. During August 2007, the difference in streamflow averaged 1.3 cfs, and the District well pumpage averaged 7.8 cfs. Thus the District pumpage doesn't directly correlate with these apparent losses in streamflow. One explanation for these small differences in flow is inaccuracy in streamflow measurements at low flows. The method of measurement of flow out of Twin Lakes was altered on May 23, 2002, pursuant to a request from the State Water Resources Control Board. According to the MCWD, the revised method is not as accurate as the weir plate that was previously used. Also, one or more diversions from Mammoth Creek may have been made during these periods. During October-November 2007, a comprehensive aquifer test was conducted by the District, using Well No. 15 as the pumped well. As part of the test streamflow and water levels in a number of wells were measured. The results will provide more information on the effect of District well pumpage.

#### VALENTINE RESERVE SPRINGFLOW

Commencing in 2001, flow measurements at the Valentine Reserve

were extended to another spring, which has a considerably larger flow than the previously monitored spring. Longer records are available for the previously monitored spring. However, no spring-flow records have been provided since 2001. Figure 19 shows flow of the previously monitored spring (1993-2001) and Mammoth Creek streamflow at Old Mammoth Road (1993-2007). The springflow correlated well with Mammoth Creek streamflow during the period of record. The lowest springflows were in 1993, 1994, and 2001, following periods of low winter precipitation. Springflow often increased in the fall prior to winter precipitation. This was primarily due to lower air temperatures and decreased evapotranspiration of shallow groundwater. Monitoring results for the previous years indicate no noticeable impact of District pumping on springflow at the Valentine Reserve.

#### DATA EVALUATION AND INTERPRETATION

Water-level hydrographs for most of the monitor wells tapping the uppermost glacial till strata in and near the District well field indicated falling water levels during the 2007 water year. Water-level hydrographs for the District supply wells indicated deeper water levels in 2007 than in 2006, primarily due to increased pumpage of District Wells. Water levels in wells tapping consolidated rocks in the area east of the District well field either stayed the same or rose during the 2007 water year.

The water-level elevation contour map for September 2007 confirms that the cone of depression due to pumping of District wells is localized, and does not extend east past Well No. 24.

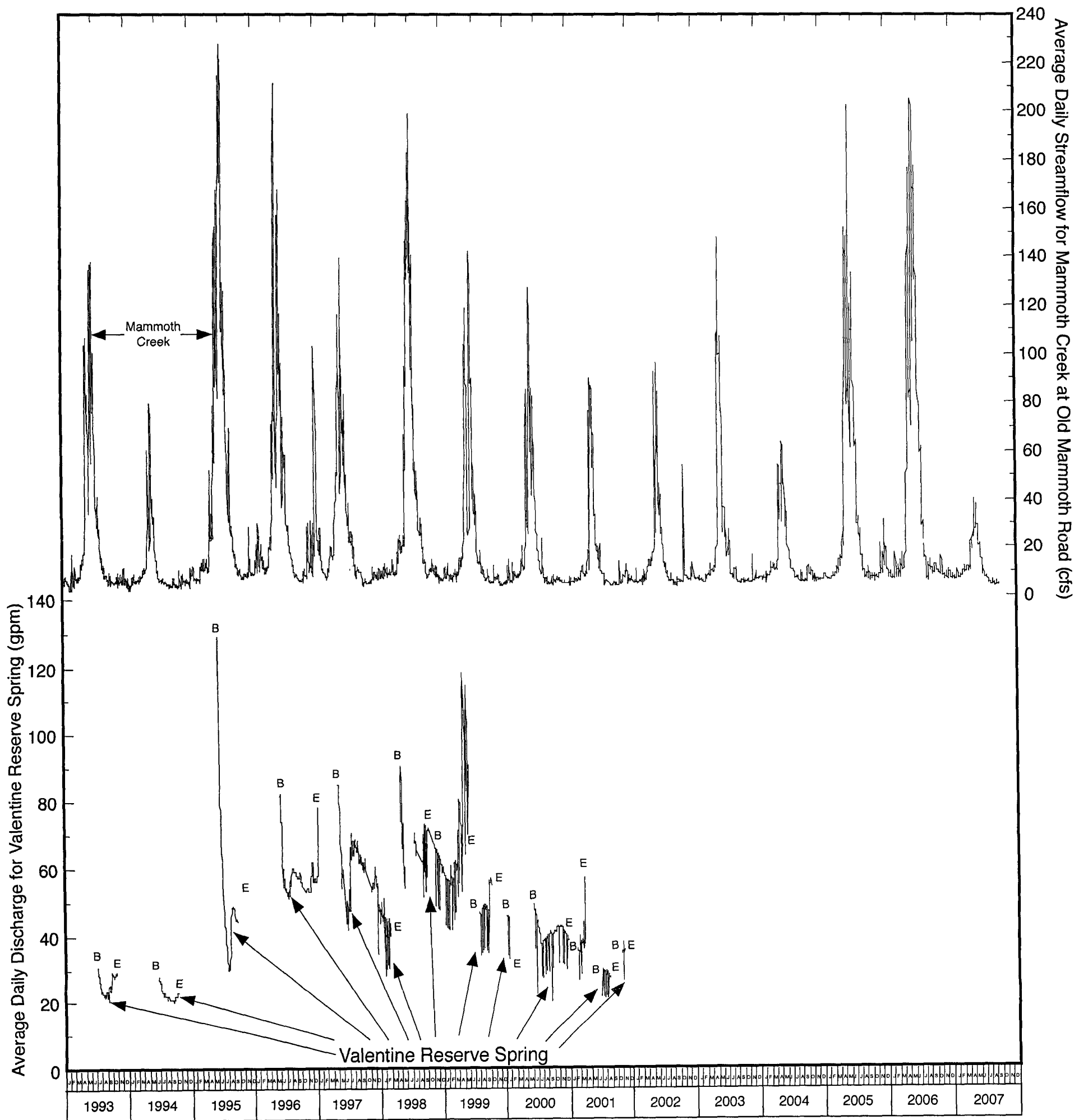


FIGURE 19 - FLOW FOR VALENTINE SPRING (1993-2001) AND MAMMOTH CREEK STREAMFLOW (1993-2007)

Because the water levels in the consolidated rock in the well field are well below the channel of Mammoth Creek, there is no apparent impact of District pumping on streamflow. There has been no impact on flow of the springs at the Valentine Reserve (for periods when records are available), on streamflow in Mammoth Creek, or on the flow of the Hot Creek headsprings due to pumping of the District supply wells.

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APPENDIX A

PUMPAGE AND WATER-LEVEL DATA  
FOR DISTRICT SUPPLY WELLS

**MAMMOTH COMMUNITY WATER DISTRICT  
ANNUAL PRODUCTION WELL PUMPAGE IN ACRE-FOOT  
OCTOBER THRU SEPTEMBER**

Year	Well 1	Well 6	Well 10	Well 15	Well 16	Well 17	Well 18	Well 20	Total
1989-90	365.500	267.900	422.600						1056.000
1990-91	442.900	478.200	340.700						1261.800
1991-92	333.600	546.300	794.900						1674.800
1992-93	222.300	483.300	994.400	606.100					2306.100
1993-94	164.600	256.100	542.600	320.500			14.500		1298.300
1994-95	97.000	224.000	312.000	361.000	51.000	44.000	19.000	115.000	1223.000
1995-96	0.000	19.000	610.000	78.000	8.000	121.000	0.000	91.000	927.000
1996-97	12.900	143.000	476.900	163.300	35.000	97.900	0.300	130.700	1060.000
1997-98	70.592	0.000	193.455	233.547	143.127	183.117	0.030	50.110	873.978
1998-99	70.534	0.000	126.221	408.098	101.239	67.681	20.328	242.589	1036.690
1999-00	19.742	0.000	198.482	417.773	196.123	201.546	74.337	180.957	1288.960
2000-01	51.126	0.000	432.638	536.147	242.233	393.840	107.699	179.534	1943.217
2001-02	136.712	291.681	984.687	525.840	136.883	344.245	88.037	233.521	2741.606
2002-03	189.629	327.706	845.644	826.307	121.914	153.031	121.350	87.853	2673.434
2003-04	80.390	433.472	372.810	414.822	189.252	157.546	62.945	162.798	1874.035
2004-05	83.509	357.840	707.730	438.380	222.331	138.601	20.221	215.313	2183.926
2005-06	316.597	11.975	147.785	386.123	0.147	241.862	4.736	12.663	1121.888
2006-07	170.238	399.632	243.380	495.706	112.049	259.239	49.767	205.656	1935.667
<b>Total</b>	<b>2827.869</b>	<b>4240.106</b>	<b>8746.932</b>	<b>6211.643</b>	<b>1559.298</b>	<b>2403.608</b>	<b>583.250</b>	<b>1907.694</b>	<b>28480</b>
<b>Mean</b>	<b>157.104</b>	<b>235.561</b>	<b>485.941</b>	<b>414.110</b>	<b>119.946</b>	<b>184.893</b>	<b>41.661</b>	<b>146.746</b>	<b>1582</b>
<b>Max</b>	<b>442.900</b>	<b>546.300</b>	<b>994.400</b>	<b>826.307</b>	<b>242.233</b>	<b>393.840</b>	<b>121.350</b>	<b>242.589</b>	<b>2742</b>
<b>Min</b>	<b>0.000</b>	<b>0.000</b>	<b>126.221</b>	<b>78.000</b>	<b>0.147</b>	<b>44.000</b>	<b>0.000</b>	<b>12.663</b>	<b>874</b>

MAMMOTH COMMUNITY WATER DISTRICT  
 PRODUCTION WELL NO. 1  
 (FLOW IN MILLION GALLONS)

DAY	2006		2007											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	0.162	0.000	0.000	0.000	0.000	0.000	0.000	0.376	0.291	0.370	0.328	0.300		
2	0.495	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.180	0.368	0.396	0.400		
3	0.356	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.327	0.310	0.538	0.468		
4	0.004	0.000	0.008	0.000	0.000	0.000	0.009	0.000	0.195	0.120	0.588	0.456		
5	0.045	0.000	0.000	0.000	0.000	0.010	0.000	0.000	0.192	0.308	0.584	0.176		
6	0.056	0.017	0.000	0.025	0.011	0.000	0.000	0.000	0.158	0.338	0.248	0.216		
7	0.000	0.000	0.000	0.353	0.000	0.010	0.000	0.000	0.100	0.292	0.434	0.576		
8	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.282	0.460	0.512		
9	0.209	0.000	0.000	0.021	0.000	0.000	0.000	0.001	0.000	0.240	0.698	0.176		
10	0.400	0.000	0.000	0.000	0.000	0.000	0.000	0.573	0.000	0.290	0.600	0.236		
11	0.276	0.000	0.000	0.000	0.225	0.000	0.000	0.451	0.109	0.190	0.524	0.168		
12	0.117	0.000	0.000	0.000	0.000	0.009	0.000	0.000	0.773	0.496	0.512	0.144		
13	0.000	0.003	0.000	0.114	0.000	0.000	0.000	0.000	0.558	0.540	0.540	0.148		
14	0.000	0.000	0.000	0.000	0.010	0.000	0.000	0.000	0.788	0.572	0.546	0.212		
15	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.043	0.761	0.274	0.172	0.244		
16	0.000	0.000	0.000	0.010	0.000	0.000	0.007	0.000	0.627	0.444	0.286	0.168		
17	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.623	0.392	0.606	0.244		
18	0.000	0.000	0.004	0.000	0.316	0.000	0.000	0.000	0.573	0.430	0.548	0.240		
19	0.000	0.000	0.000	0.000	0.639	0.000	0.000	0.000	0.648	0.356	0.560	0.300		
20	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.410	0.376	0.386	0.104		
21	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.378	0.512	0.598	0.000		
22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.355	0.434	0.756	0.216	0.000		
23	0.000	0.000	0.000	0.010	0.000	0.000	0.000	1.123	0.572	0.788	0.260	0.000		
24	0.003	0.000	0.000	0.001	0.000	0.000	0.000	1.061	0.558	0.486	0.560	0.000		
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.010	0.560	0.312	0.678	0.076		
26	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.547	0.596	0.184	0.334	0.000		
27	0.000	0.004	0.000	0.000	0.000	0.000	0.742	0.000	0.666	0.480	0.466	0.116		
28	0.000	0.000	0.000	0.126	0.000	0.000	0.961	0.000	0.616	0.696	0.312	0.116		
29	0.000	0.000	0.000	0.014		0.008	0.912	0.001	0.454	0.686	0.192	0.116		
30	0.003	0.000	0.000	0.000		0.000	0.952	0.003	0.308	0.422	0.172	0.000		
31	0.000		0.000	0.000		0.000		0.018		0.424	0.208	0.000		
TOTAL	2.126	0.023	0.012	0.679	1.200	0.037	3.593	5.574	12.455	12.734	13.550	5.912		
MEAN	0.069	0.001	0.000	0.022	0.043	0.001	0.120	0.180	0.415	0.411	0.437	0.191		
MAX	0.495	0.017	0.008	0.353	0.639	0.010	0.961	1.123	0.788	0.788	0.698	0.576		
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.120	0.172	0.000		
AC-FT	6.520	0.071	0.035	2.081	3.681	0.113	11.021	17.098	38.206	39.061	41.564	18.135		
TOTAL AC-FT OCT THRU SEP			177.587											
TOTAL AC-FT JAN THRU DEC							171.195							

MAMMOTH COMMUNITY WATER DISTRICT  
 PRODUCTION WELL NO. 6  
 (FLOW IN MILLION GALLONS)

DAY	2006		2007					TOTAL AC-FT OCT THRU SEP	TOTAL AC-FT JAN THRU DEC	TOTAL AC-FT		
	OCT	NOV	DEC	JAN	FEB	MAR	APR				MAY	JUN
1	0.000	0.000	0.000	0.000	0.000	0.048	0.000	0.032	0.000	1.088	0.960	1.008
2	0.000	0.000	0.000	0.000	0.000	0.000	0.464	0.000	0.000	1.152	1.104	0.960
3	0.000	0.000	0.000	0.000	0.000	0.000	0.112	0.000	0.000	1.136	1.104	1.024
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.104	1.088	1.008
5	0.000	0.000	0.000	0.000	0.000	0.576	0.000	0.000	0.000	1.040	1.088	0.912
6	0.000	0.000	0.016	0.060	0.000	0.848	0.000	0.000	0.000	1.072	1.088	0.912
7	0.000	0.000	0.000	0.000	0.000	0.816	0.000	0.000	0.000	1.088	1.088	0.992
8	0.000	0.000	0.032	0.034	0.000	0.928	0.000	0.000	0.000	1.120	0.928	0.944
9	0.000	0.000	0.000	0.010	0.000	0.928	0.000	0.000	0.000	1.040	1.072	0.880
10	0.000	0.000	0.000	0.000	0.000	0.656	0.000	0.000	0.000	1.024	1.056	0.928
11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.024	1.088	0.944
12	0.000	0.000	0.000	0.000	0.000	0.672	0.192	0.000	0.000	0.960	1.072	0.832
13	0.000	0.000	0.000	0.000	0.032	0.480	0.000	0.000	0.160	0.944	1.072	0.944
14	0.000	0.000	0.000	0.000	0.000	0.448	0.000	0.000	0.000	0.976	1.040	0.928
15	0.000	0.000	0.000	0.000	0.000	0.960	0.000	0.000	0.000	1.024	1.056	0.896
16	0.000	0.000	0.000	0.000	0.000	0.816	0.128	0.000	0.000	0.992	1.088	0.944
17	0.000	0.000	0.000	0.000	0.000	0.912	0.000	0.000	0.000	0.992	1.040	0.960
18	0.000	0.000	0.048	0.000	0.000	0.880	0.000	0.000	0.480	1.056	1.072	0.976
19	0.000	0.000	0.000	0.000	0.000	0.752	0.000	0.000	0.672	1.072	1.024	0.800
20	0.000	0.000	0.000	0.000	0.000	0.688	0.144	0.000	0.688	0.992	1.040	0.912
21	0.000	0.000	0.000	0.000	0.000	0.480	0.000	0.000	0.672	0.944	1.056	0.928
22	0.000	0.000	0.000	0.000	0.000	0.256	0.000	0.000	0.768	1.088	1.008	0.896
23	0.000	0.000	0.000	0.000	0.000	0.000	0.128	0.000	0.736	1.072	1.024	0.800
24	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800	1.040	1.024	0.864
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.704	0.736	0.960	0.976
26	0.000	0.000	0.000	0.000	0.736	0.720	0.000	0.000	0.464	0.896	0.928	0.768
27	0.000	0.000	0.000	0.000	0.080	0.256	0.000	0.000	0.608	0.992	1.008	0.848
28	0.000	0.000	0.000	0.000	0.352	0.000	0.000	0.000	0.864	0.976	0.960	0.752
29	0.000	0.000	0.000	0.000		0.048	0.000	0.000	0.848	0.960	0.960	0.688
30	0.000	0.000	0.000	0.000		0.000	0.000	0.000	1.168	0.848	0.928	0.688
31	0.000	0.000	0.000	0.000		0.000	0.000	0.000		1.056	0.880	
TOTAL	0.000	0.000	0.096	0.104	1.200	13.168	1.168	0.032	9.632	31.504	31.904	26.912
MEAN	0.000	0.000	0.003	0.003	0.043	0.425	0.039	0.001	0.321	1.016	1.029	0.897
MAX	0.000	0.000	0.048	0.060	0.736	0.960	0.464	0.032	1.168	1.152	1.104	1.024
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.736	0.880	0.688
AC-FT	0.000	0.000	0.294	0.319	3.681	40.393	3.583	0.098	29.546	96.638	97.865	82.552
TOTAL AC-FT OCT THRU SEP			354.969				494.945					

MAMMOTH COMMUNITY WATER DISTRICT  
 PRODUCTION WELL NO. 10  
 (FLOW IN MILLION GALLONS)

DAY	2006		2007											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	0.032	0.040	0.000	0.000	0.000	0.000	0.000	0.010	0.328	0.776	0.532	0.584		
2	0.036	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.454	0.792	0.644	0.580		
3	0.034	0.000	0.000	0.000	0.000	0.000	0.008	0.000	0.478	0.764	0.632	0.628		
4	0.006	0.000	0.010	0.000	0.000	0.000	0.000	0.328	0.500	0.740	0.656	0.644		
5	0.024	0.000	0.000	0.000	0.000	0.096	0.000	0.000	0.376	0.776	0.592	0.464		
6	0.044	0.020	0.000	0.060	0.008	0.084	0.000	0.000	0.056	0.744	0.696	0.528		
7	0.038	0.000	0.000	0.000	0.000	0.046	0.000	0.000	0.024	0.748	0.692	0.508		
8	0.028	0.000	0.000	0.034	0.000	0.134	0.000	0.000	0.152	0.744	0.436	0.524		
9	0.108	0.000	0.000	0.010	0.000	0.150	0.000	0.040	0.474	0.764	0.596	0.560		
10	0.110	0.000	0.000	0.000	0.000	0.342	0.000	0.098	0.430	0.728	0.648	0.600		
11	0.060	0.000	0.000	0.000	0.000	0.778	0.000	0.218	0.424	0.760	0.656	0.588		
12	0.020	0.000	0.000	0.000	0.000	0.362	0.000	0.250	0.386	0.728	0.652	0.564		
13	0.000	0.024	0.000	0.000	0.170	0.192	0.000	0.284	0.446	0.756	0.640	0.620		
14	0.000	0.032	0.000	0.000	0.000	0.008	0.000	0.416	0.636	0.576	0.660	0.624		
15	0.152	0.000	0.000	0.000	0.000	0.090	0.000	0.680	0.708	0.756	0.656	0.596		
16	0.020	0.000	0.000	0.000	0.098	0.036	0.000	0.832	0.828	0.712	0.664	0.624		
17	0.000	0.000	0.000	0.000	0.000	0.068	0.002	0.764	0.844	0.740	0.688	0.616		
18	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.786	0.812	0.696	0.620	0.648		
19	0.000	0.000	0.000	0.000	0.000	0.020	0.000	0.708	0.836	0.724	0.632	0.460		
20	0.000	0.000	0.000	0.000	0.042	0.022	0.000	0.694	0.804	0.724	0.684	0.444		
21	0.000	0.000	0.000	0.000	0.050	0.000	0.000	0.628	0.832	0.732	0.636	0.252		
22	0.000	0.000	0.000	0.000	0.112	0.000	0.000	0.198	0.816	0.716	0.628	0.328		
23	0.048	0.000	0.000	0.000	0.270	0.000	0.000	0.000	0.816	0.688	0.624	0.376		
24	0.000	0.000	0.000	0.000	0.226	0.000	0.000	0.000	0.796	0.688	0.608	0.452		
25	0.000	0.000	0.000	0.000	0.222	0.000	0.000	0.564	0.708	0.404	0.556	0.596		
26	0.000	0.000	0.000	0.000	0.000	0.054	0.000	0.886	0.668	0.508	0.568	0.660		
27	0.000	0.000	0.000	0.000	0.152	0.000	0.000	0.838	0.820	0.548	0.584	0.656		
28	0.000	0.000	0.000	0.000	0.046	0.000	0.000	0.822	0.788	0.468	0.556	0.688		
29	0.000	0.026	0.000	0.000		0.000	0.000	0.518	0.808	0.516	0.512	0.680		
30	0.046	0.000	0.000	0.000		0.000	0.000	0.020	0.776	0.468	0.620	0.672		
31	0.066		0.000	0.000		0.000		0.076		0.620	0.552			
<b>TOTAL</b>	0.872	0.142	0.010	0.104	1.396	2.482	0.010	10.658	17.824	21.104	19.120	16.764		
<b>MEAN</b>	0.028	0.005	0.000	0.003	0.050	0.080	0.000	0.344	0.594	0.681	0.617	0.559		
<b>MAX</b>	0.152	0.040	0.010	0.060	0.270	0.778	0.008	0.886	0.844	0.792	0.696	0.688		
<b>MIN</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.024	0.404	0.436	0.252		
<b>AC-FT</b>	2.675	0.436	0.031	0.319	4.282	7.613	0.031	32.693	54.675	64.736	58.650	51.423		
<b>TOTAL AC-FT OCT THRU SEP</b>	277.564													
<b>TOTAL AC-FT JAN THRU DEC</b>	279.724													



MAMMOTH COMMUNITY WATER DISTRICT  
 PRODUCTION WELL NO. 16  
 (FLOW IN MILLION GALLONS)

DAY	2006			2007			MAY	JUN	JUL	AUG	SEP	
	OCT	NOV	DEC	JAN	FEB	MAR						APR
1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.464	0.464	0.416	
2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.368	0.384	0.464	
3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.432	0.416	0.512	
4	0.000	0.000	0.016	0.000	0.000	0.000	0.016	0.000	0.400	0.496	0.464	
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.464	0.496	0.176	
6	0.000	0.000	0.000	0.032	0.000	0.000	0.000	0.000	0.432	0.464	0.256	
7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.464	0.448	0.400	
8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.448	0.416	0.336	
9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.464	0.384	0.320	
10	0.000	0.000	0.000	0.032	0.000	0.000	0.000	0.000	0.480	0.496	0.368	
11	0.000	0.000	0.000	0.112	0.000	0.000	0.000	0.000	0.496	0.496	0.400	
12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.240	0.480	0.224	
13	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.464	0.448	0.400	
14	0.000	0.000	0.016	0.000	0.000	0.000	0.000	0.000	0.416	0.336	0.416	
15	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.512	0.400	0.416	
16	0.000	0.000	0.000	0.048	0.000	0.000	0.000	0.000	0.432	0.496	0.400	
17	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.480	0.512	0.368	
18	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.496	0.496	0.480	
19	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.288	0.496	0.496	0.128	
20	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.448	0.480	0.416	0.272	
21	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.368	0.496	0.448	0.352	
22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.352	0.496	0.352	0.160	
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.480	0.496	0.432	0.208	
24	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.464	0.480	0.384	0.192	
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.432	0.480	0.416	0.176	
26	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.400	0.512	0.448	0.080	
27	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.432	0.480	0.496	0.304	
28	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.448	0.496	0.400	0.400	
29	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.432	0.496	0.272	0.336	
30	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.368	0.464	0.336	0.384	
31	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.464	0.464	0.320		
<b>TOTAL</b>	0.000	0.000	0.032	0.192	0.032	0.000	0.016	0.000	4.912	14.288	13.344	9.808
<b>MEAN</b>	0.000	0.000	0.001	0.006	0.001	0.000	0.001	0.000	0.164	0.461	0.430	0.327
<b>MAX</b>	0.000	0.000	0.016	0.112	0.032	0.000	0.016	0.000	0.480	0.512	0.512	0.512
<b>MIN</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.240	0.272	0.080
<b>AC-FT</b>	0.000	0.000	0.098	0.589	0.098	0.000	0.049	0.000	15.067	43.828	40.933	30.086
<b>TOTAL AC-FT OCT THRU SEP</b>			130.748									
<b>TOTAL AC-FT JAN THRU DEC</b>							143.509					





MAMMOTH COMMUNITY WATER DISTRICT  
 PRODUCTION WELL NO. 18  
 (FLOW IN MILLION GALLONS)

DAY	2006			2007			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
	OCT	NOV	DEC	JAN	FEB	MAR									
1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008	0.000	0.000	0.000	0.384	0.000	0.000
4	0.008	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.632	0.000	0.000
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.616	0.000	0.232
6	0.000	0.000	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.592	0.000	0.456
7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008	0.552	0.000	0.424
8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.464	0.000	0.400
9	0.000	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.448	0.000	0.424
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.408	0.000	0.384
11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.440	0.000	0.416
12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.408	0.000	0.144
13	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.424	0.016	0.232
14	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.424	0.000	0.376
15	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.424	0.000	0.376
16	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.432	0.000	0.384
17	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.416	0.000	0.360
18	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.416	0.224	0.384
19	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.416	0.320	0.184
20	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.424	0.304	0.000
21	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.400	0.168	0.000
22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.144	0.000	0.000	0.416	0.000	0.000
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.168	0.000	0.000	0.424	0.200	0.000
24	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.072	0.000	0.000	0.384	0.224	0.000
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.416	0.336	0.000
26	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.248	0.408	0.000
27	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.464	0.000
28	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.192	0.000
29	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
31	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL	0.008	0.000	0.008	0.008	0.008	0.000	0.008	0.008	0.000	0.392	0.008	0.008	10.608	2.856	5.176
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.013	0.000	0.000	0.342	0.092	0.173
MAX	0.008	0.000	0.008	0.008	0.008	0.000	0.008	0.008	0.000	0.168	0.008	0.008	0.632	0.464	0.456
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
AC-FT	0.025	0.000	0.025	0.025	0.025	0.000	0.025	0.025	0.000	1.202	0.025	0.025	32.540	8.761	15.877
TOTAL AC-FT OCT THRU SEP	58.528														
TOTAL AC-FT JAN THRU DEC	58.528														

MAMMOTH COMMUNITY WATER DISTRICT  
 PRODUCTION WELL NO. 20  
 (FLOW IN MILLION GALLONS)

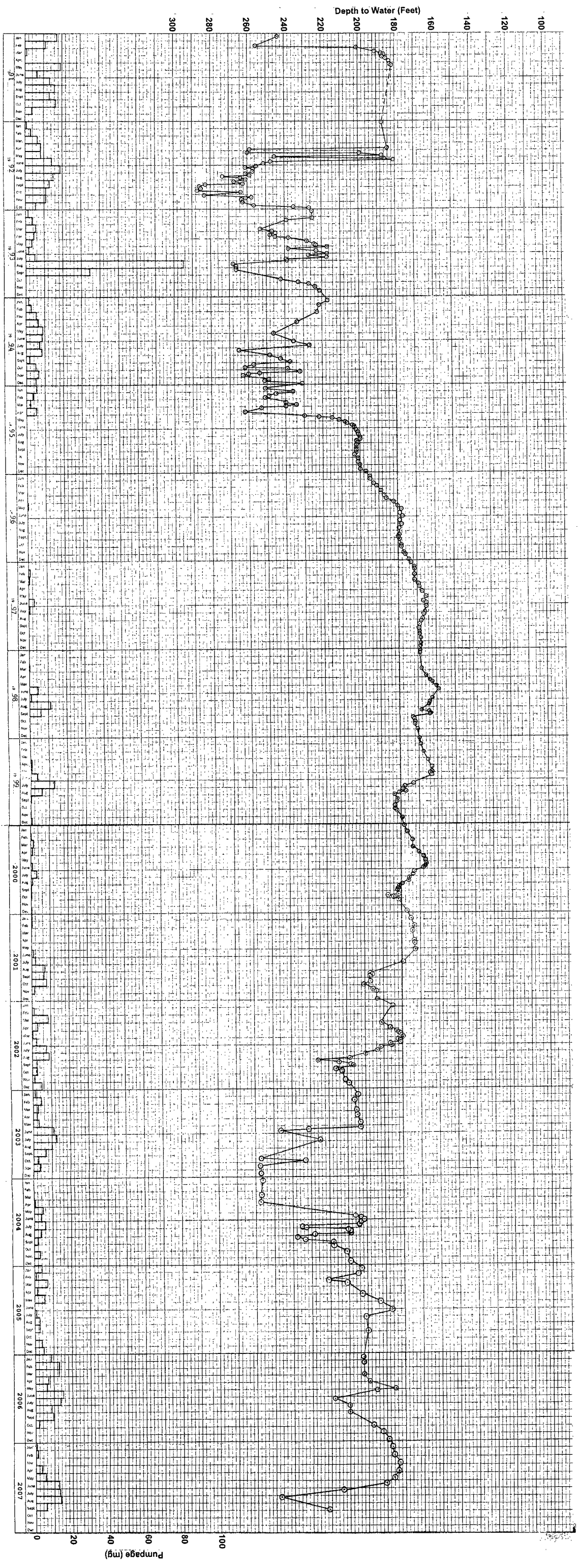
DAY	2006		2007											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.000	0.895	0.754	0.620		
2	0.000	0.032	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.891	0.604	0.614		
3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.874	0.704	0.696		
4	0.000	0.000	0.011	0.000	0.000	0.000	0.023	0.000	0.000	0.885	0.772	0.636		
5	0.032	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.869	0.762	0.232		
6	0.000	0.000	0.000	0.000	0.011	0.000	0.000	0.000	0.000	0.870	0.718	0.404		
7	0.000	0.000	0.000	0.000	0.000	0.021	0.000	0.000	0.011	0.862	0.730	0.540		
8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.112	0.000	0.855	0.638	0.500		
9	0.000	0.000	0.000	0.009	0.000	0.000	0.000	0.042	0.000	0.861	0.622	0.452		
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.774	0.750	0.528		
11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.906	0.740	0.544		
12	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.857	0.734	0.348		
13	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.517	0.734	0.556		
14	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.570	0.372	0.704	0.564		
15	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.055	0.467	0.646	0.568		
16	0.000	0.000	0.000	0.015	0.000	0.000	0.007	0.000	1.029	0.702	0.732	0.544		
17	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.004	0.761	0.722	0.540		
18	0.000	0.000	0.000	0.000	0.000	0.000	0.015	0.000	0.977	0.967	0.716	0.632		
19	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.980	0.831	0.710	0.188		
20	0.000	0.000	0.000	0.000	0.000	0.144	0.013	0.000	0.979	0.821	0.608	0.372		
21	0.000	0.000	0.000	0.000	0.000	0.114	0.000	0.000	0.845	0.812	0.640	0.480		
22	0.000	0.000	0.000	0.000	0.000	0.066	0.000	0.000	0.745	0.808	0.510	0.268		
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.955	0.804	0.622	0.304		
24	0.000	0.000	0.000	0.000	0.000	0.000	0.029	0.000	0.940	0.796	0.566	0.276		
25	0.000	0.000	0.000	0.000	0.000	0.000	0.182	0.000	0.833	0.794	0.624	0.264		
26	0.000	0.000	0.000	0.000	0.000	0.000	0.237	0.000	0.817	0.784	0.620	0.124		
27	0.000	0.000	0.000	0.000	0.000	0.037	0.358	0.000	0.924	0.778	0.702	0.452		
28	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.919	0.780	0.586	0.584		
29	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.897	0.772	0.480	0.500		
30	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.016	0.904	0.724	0.530	0.544		
31	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.756	0.458			
TOTAL	0.032	0.032	0.011	0.024	0.011	0.389	0.873	0.186	15.381	24.445	20.438	13.874		
MEAN	0.001	0.001	0.000	0.001	0.000	0.013	0.029	0.006	0.513	0.789	0.659	0.462		
MAX	0.032	0.032	0.011	0.015	0.011	0.144	0.358	0.112	1.055	0.967	0.772	0.696		
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.372	0.458	0.124		
AC-FT	0.098	0.098	0.035	0.073	0.034	1.192	2.679	0.569	47.181	74.985	62.693	42.558		
TOTAL AC-FT OCT THRU SEP			232.196				246.616							

**MAMMOTH COMMUNITY WATER DISTRICT  
PRODUCTION WELL WATER LEVEL DATA  
OCTOBER 2006 - SEPTEMBER 2007**

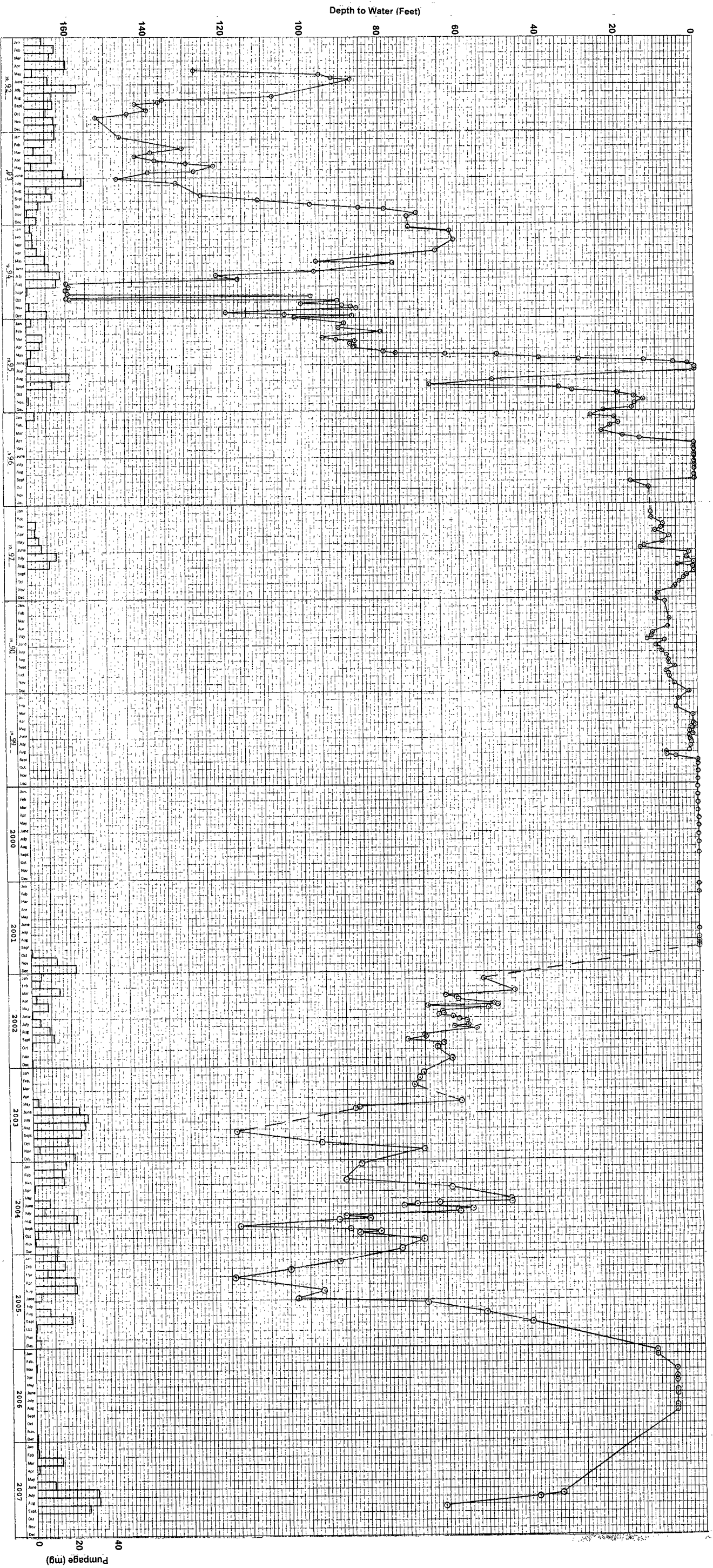
<b>Well No. 1</b>				<b>Well No. 6</b>			
Date	Static	Date	Pumping	Date	Static	Date	Pumping
10/31/06	197.00	10/03/06	266.00	07/26/07	36.13	07/31/07	125.06
11/27/06	192.00	11/06/06	201.00	08/01/07	42.09	08/24/07	138.14
12/27/06	189.00	12/04/06	193.00	09/06/07	65.95	09/25/07	142.38
01/27/06	187.00	01/07/07	235.00				
02/18/07	186.05	02/19/07	243.33				
03/27/07	183.34	03/12/07	206.86				
04/20/07	183.63	04/30/06	256.86				
05/22/07	186.19	05/25/06	264.13				
06/11/07	190.61	06/29/07	275.81				
07/05/07	213.69	07/24/07	287.92				
08/03/07	246.75	08/26/07	291.05				
09/27/07	221.81	09/08/07	285.22				
<b>Mean</b>	198.09		250.52		48.06		135.19
<b>Max</b>	183.34		193.00		36.13		125.06
<b>Min</b>	246.75		291.05		65.95		142.38
<b>Historical</b>							
<b>Mean</b>	197.33		252.95		47.23		153.20
<b>Max</b>	149.75		191.33		0.00		9.05
<b>Min</b>	268.10		295.00		160.00		200.02

<b>Well No. 10</b>				<b>Well No. 15</b>			
Date	Static	Date	Pumping	Date	Static	Date	Pumping
10/29/06	12.53	10/11/06	65.45	09/12/07	285.35	09/12/07	296.05
11/09/06	12.53	11/01/06	62.55	09/22/07	293.69	09/30/07	300.59
12/01/06	13.11	01/06/06	64.88				
01/10/06	13.69	02/13/07	69.50				
02/10/07	13.88	03/11/07	74.72				
03/04/07	15.23	05/28/07	76.84				
04/11/07	15.63	06/08/07	85.73				
05/08/07	15.63	07/24/07	110.27				
06/30/07	19.09	08/31/07	130.92				
07/02/07	46.52	09/28/07	146.38				
08/01/07	57.34						
09/02/07	76.27						
<b>Mean</b>	25.95		88.72		289.52		298.32
<b>Max</b>	12.53		62.55		285.35		296.05
<b>Min</b>	76.27		146.38		293.69		300.59
<b>Historical</b>							
<b>Mean</b>	55.81		126.65		226.05		263.75
<b>Max</b>	0.00		40.92		168.15		183.42
<b>Min</b>	164.00		200.00		315.10		327.50

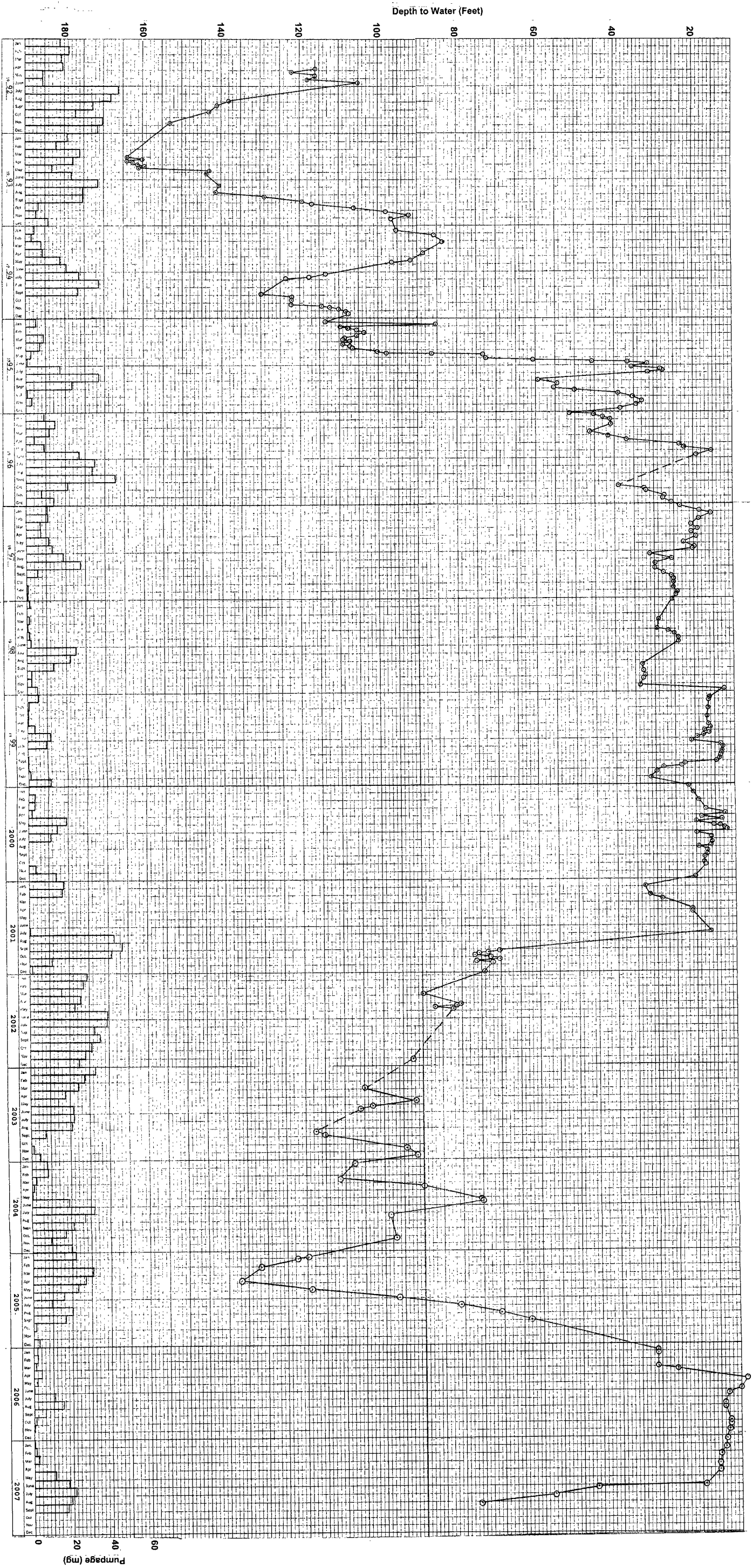
# WATER-LEVEL AND PUMPAGE HYDROGRAPH FOR WELL NO. 1



# WATER-LEVEL AND PUMPAGE HYDROGRAPH FOR WELL NO. 6



# WATER-LEVEL AND PUMPAGE HYDROGRAPH FOR WELL NO. 10



**APPENDIX C**  
**WATER-LEVEL MEASUREMENTS**  
**FOR MONITOR WELLS**



MAMMOTH COMMUNITY WATER DISTRICT  
MONITOR WELL LEVEL DATA

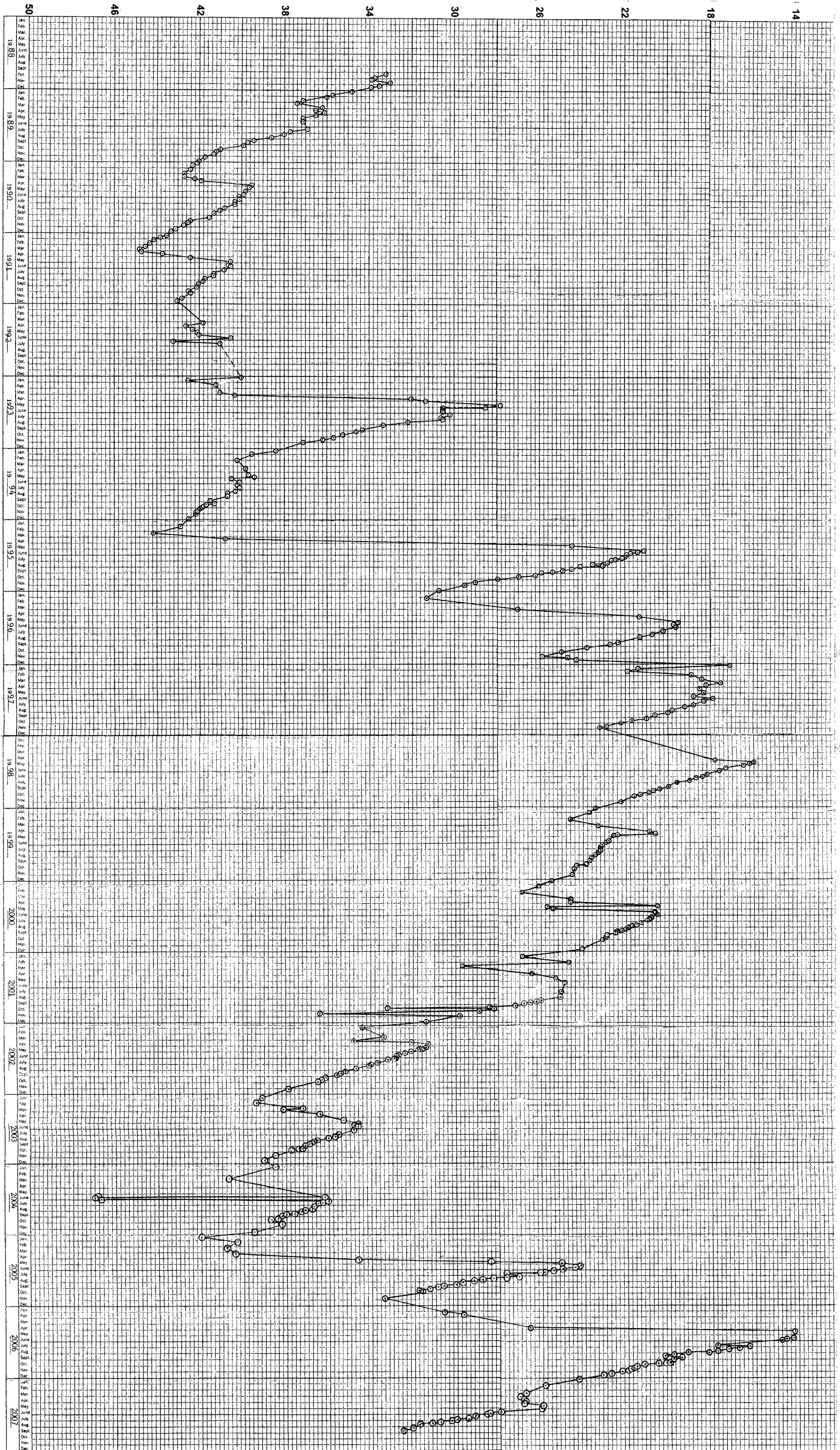
Date	Well 4M	Well 5A	Well 5M	Well 7	Well 10M	Well 11	Well 11M	Well 12M	Well 14M	Well 19	Well 21	Well 22	Well 23	Well 24	Well 25	Well 26	Well 27	Well 28	Well 29	Well 30
10/09/06	20.20	4.62	8.83	238.25	17.13	Artesian 5.5	16.6	9.26	243.5		74.05	15.78	314.68	250.85						
10/12/06	20.83	4.51	8.38	234.33	17.25	Artesian 6	17.02	9.72			74.06	15.82	313.01	251.05				32.3	63.1	458.7
10/19/06	29.70	4.43	8.35	234.91	16.71	Artesian 6	17.82	10.31			76.04	16.11	310.41	251.15				35.1	63.02	457.94
11/01/06	21.23	4.47	8.31	235.71	16.54	Artesian 6	17.84	10.81			74.05	15.86	308.21						63.07	457.39
11/01/06	21.58	4.47	8.32	235.71	16.77	Artesian 7.5	18.26	10.72			74.04	15.87	306.41	251.2			36.08	63.15	457.05	
11/02/06	21.73	4.42	8.29	236.01	16.27	Artesian 7.5	18.66	11.66	252.27	339.85	228.05		365.19							
11/08/06	21.89	4.27	8.18	236.61	16.6	Artesian 7.5	18.9	12.02	253.89	339.77	225.95	74.06	15.92	364.78	305.00	251.29	45.78	36.25		456.69
11/14/06	22.03	4.30	8.22	236.76	16.35	Artesian 7.5	19.13	11.83	258.05	339.95	226.14	74.07	15.85	364.79		251.51	46.03	37.19	63.45	456.47
11/21/06	22.33	4.22	8.11	237.40	16.31	Artesian 7.5	19.33	12.12	260.32	340.05	228.23	74.06	15.87	364.62	303.11	251.52	46.34	37.73	63.62	456.47
12/05/06	22.78	4.25	8.13	237.95	16.54	Artesian 7.5	19.53	13.06	260.25	339.75	226.12	74.06	16.19	364.12	302.13	251.54	45.92	37.93	63.75	454.95
12/06/06						Artesian 8			264.65	340.25	228.49	74.10	16.38	301.78	251.81	46.86	38.71	64.03	64.03	456.1
12/11/06	23.21	4.26	8.11	238.46	16.78	Artesian 8						74.36	16.25	301.09	251.91					
01/03/07	24.30	4.33	8.09	238.24	17.15	Artesian 8	20.6	14.21	275.37	340.16	228.26	74.48	15.48	364.06	299.17	252.40	47.42	40.37	65.15	455.2
02/08/07	25.90	4.49	8.00			Artesian 8		14.64	276.72	340.49	228.78	77.38	16.50	364.08	297.25	251.86	48.11	42.197	66.79	454.31
02/09/07				242.25	17.34	Artesian 8	20.08		275.93	340.49	228.78			364.08		251.86				
03/13/07	26.77	4.40	7.75			Artesian 8		15.53	283.98	340.63	228.86	80.08	13.66	362.87	295.97	252.03		42.982		
03/14/07					23.37	Artesian 8	20.18		283.09	340.53	228.81			363.52		251.81		43.863		
04/02/07	27.09	4.80	7.75	309.80	20.62	Artesian 8	20.75	16.1	283.25	341.92	228.27	82.45	15.86	361.80	294.80	252.62	43.53	45.00	69.9	454.35
04/16/07	26.92	4.69	7.65	309.79	19.22	Artesian 8	19.85	14.98	288.70	341.91	227.62	82.91	16.00	359.99	295.39	251.9	41.71	45.295	70.21	453.75
04/23/07	26.83	4.96	7.34	309.72	19.51	Artesian 8	19.77	14.66	284.61	341.8	227.89	82.41		358.78	292.15	252.09	42.67	45.36	69.87	454.13
04/30/07									286.10	342.05	227.89	82.62		360.31		252.34		45.546		
05/01/07					18.56				285.40	341.8	227.92		15.23	361.24		252.22		45.49		
05/02/07	26.92					Artesian 9	19.67	14.32	294.95	341.86	227.92			360.48	291.06	252.12		45.513		
05/14/07	25.98	4.01	7.51	246.75	20.06	Artesian 9.5	19.42	14.27	284.67	341.92	227.92	82	12.00	358.42	298.03	252.3	42.07	46.068	70.29	452.3
05/22/07	25.96	3.95	7.80	246.03	26.37	Artesian 9.5	19.66	15.04	293.01	341.91	228.03	82.13	11.21	357.61	294.59	252.64	42.13	46.376	70.56	451.97
05/29/07	26.10	4.08	7.94	247.45	26.4	Artesian 9.5	19.87	15.61	295.40	341.86	227.92	82.2	11.25	358.61	294.43	253.03	42.62	46.861	70.84	452.02
06/12/07	28.03	0.00	6.85	248.15	24.54	Artesian 8.5	20.13	15.84	294.52	341.94	227.97	82.4	11.90	358.37	305.83	253.49	43.01	47.835	70.96	452.82
06/20/07	28.47	0.00	7.15	258.43	29.38	Artesian 8.5	20.60	16.51	287.47	341.69	227.75	82.65	12.53	359.35	314.09	255.12	42.75	48.825	71.35	452.27
06/22/07									287.62	341.57	227.71			357.96		255.14		47.691		
06/25/07	28.60	0.00	7.30	258.02	29.4	Artesian 7.5	20.30	17.66	286.15	341.68	227.86	83.46	12.65	358.9	317.25	255.36	42.53	48.893	71.53	452.28
07/03/07	29.16	0.00	7.87	259.62	29.42	Artesian 7.5	22.03	21.26	287.36	341.8	227.89	82.66	13.16	358.19	318.98	254.7	43.33	48.959	72.19	452.86
07/11/07	29.23	0.35	7.92	309.56	29.39	Artesian 8.0	22.69	21.38	285.84	342.08	228.03	84.28	13.77	359.07	321.65	255.04	43.35	49.346	73.15	453.24
07/16/07	29.49	0.65	7.86	309.55	29.28	Artesian 7.5	23.30	22.43	284.74	342.04	228.13	84.67	13.63	359.56		255.11	43.32	49.824	73.23	453.72
07/24/07	30.06	0.96	8.12	309.62	29.36	Artesian 7.0	24.63	22.56	288.30	342.17	228.21	84.93	13.49	359.82		255.31	43.83	50.814	74.06	453.82
08/01/07	30.33	1.46	8.44	309.53	29.4	Artesian 6.5	25.25	22.75	291.21	342.22	229.45	85.22	13.55	360.15		256.32	44.13	51.461	74.09	453.21
08/08/07	30.77	1.48	8.60		29.4	Artesian 6	25.89	22.73	290.65	342.49	229.8	85.3	14.78	359.25		256.15	44.36	50.915	74.3	453.6
08/13/07	31.20	1.48	8.75		29.4	Artesian 5	26.52	22.71	289.27	342.58	229.8	85.39	15.52	357.68		256.31	44.59	51.323	74.51	453.99
08/21/07	31.65	1.56	8.77		29.4	Artesian 5	26.66	22.75	289.66	342.53	229.85	85.33	15.98	357.97		256.43	44.75	51.907	74.43	453.56
08/29/07	31.82	1.66	8.84		29.4	Artesian 5	27.21	22.81	289.93	342.97	229.91	85.15	16.07	358.59		256.57	45.02	52.582	74.41	453.62
09/05/07	32.07	1.82	8.98	248.65	29.41	Artesian 4.5	27.97	22.85	298.75	342.97	229.98	85.36	16.16			256.6	45.9	53.35	74.75	453.69
09/13/07	32.50	2.30	9.10	248.95	29.42	Artesian 4.5	28.29	22.89	298.75	342.97	229.98	85.36	16.41			256.74	46.03	53.184	74.91	453.98
09/18/07	32.61	2.90	9.10	249.10		Artesian 4.5	28.55	22.79	298.75	349.77	232.85	16.29			256.83	46.41	53.686	75.09	454.26	
09/25/07	32.54	3.81	9.65	249.22	29.4	Artesian 4.5	28.70	22.78	298.75	349.77	232.85	16.32			256.83	46.41	53.686	75.09	454.26	
10/03/07	33.20	5.10	9.80	249.45	29.42	Artesian 4.5	28.70	22.78							256.83	46.41	53.686	75.09	454.26	
Minimum	14.23	0.00	2.41	233.68	9.69	0.00	4.14	4.25	223.50	312.33	225.95	70.79	6.00	350.87	291.06	248.85	41.71	24.23	62.95	439.89
Maximum	46.95	7.48	9.80	309.80	32.48	50.50	39.17	27.00	360.71	357.25	365.42	86.22	17.10	394.14	337.05	256.83	48.11	54.41	75.50	464.95
Average*	29.10	3.75	7.41	256.12	23.23	9.42	19.75	16.13	314.28	338.01	264.20	80.65	12.91	373.92	314.93	252.95	44.70	41.55	68.87	455.69
Minimum*	14.23	0.00	2.41	233.66	9.69	0.00	4.14	4.25	223.50	312.33	225.95	70.79	6.00	350.87	291.06	248.85	41.71	24.23	62.95	439.89
Maximum*	46.95	7.48	9.80	309.80	32.48	50.50	39.17	27.00	360.71	357.25	365.42	86.22	17.10	394.14	337.05	256.83	48.11	54.41	75.50	464.95

\* long term mean, maximum, and minimum

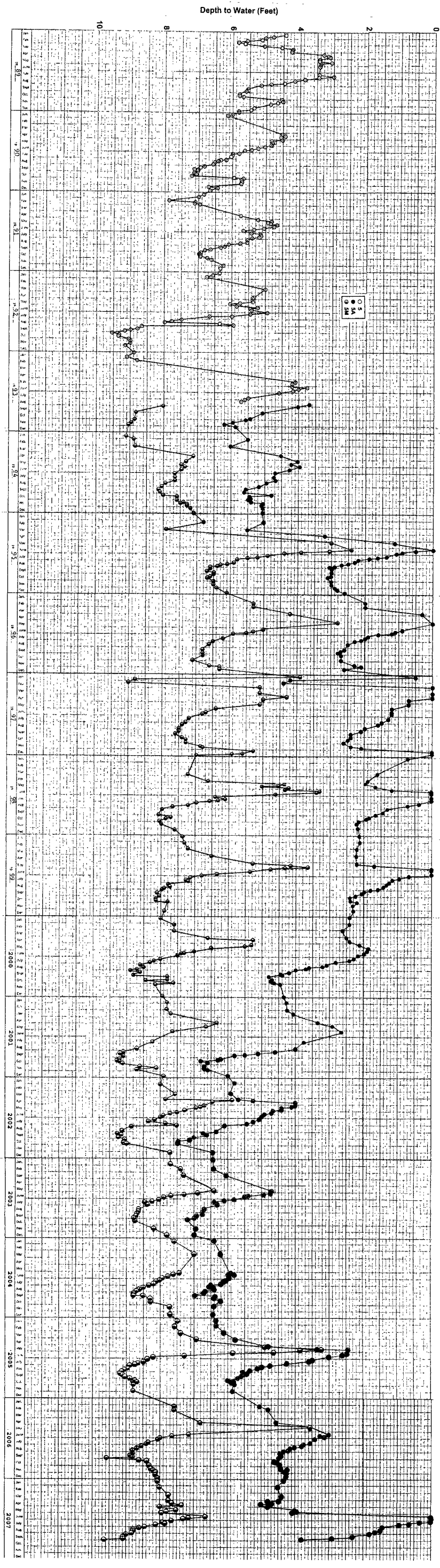
APPENDIX D

SUPPLEMENTARY WATER-LEVEL  
HYDROGRAPHS FOR MONITOR WELLS

Depth to Water (Feet)

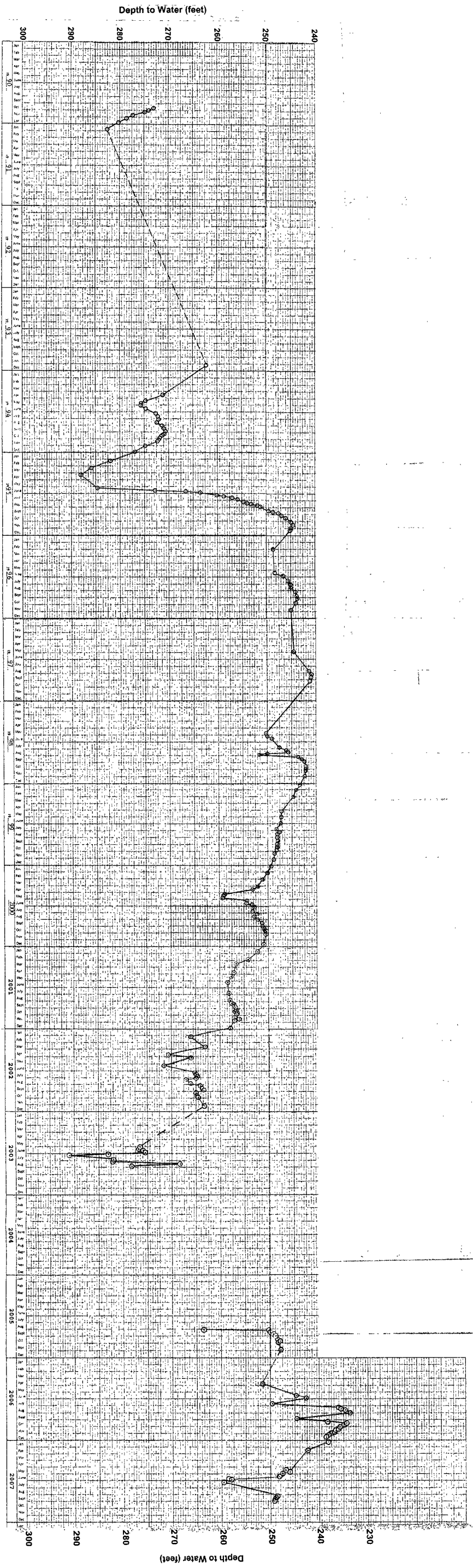


WATER-LEVEL HYDROGRAPH FOR WELL NO. 4M

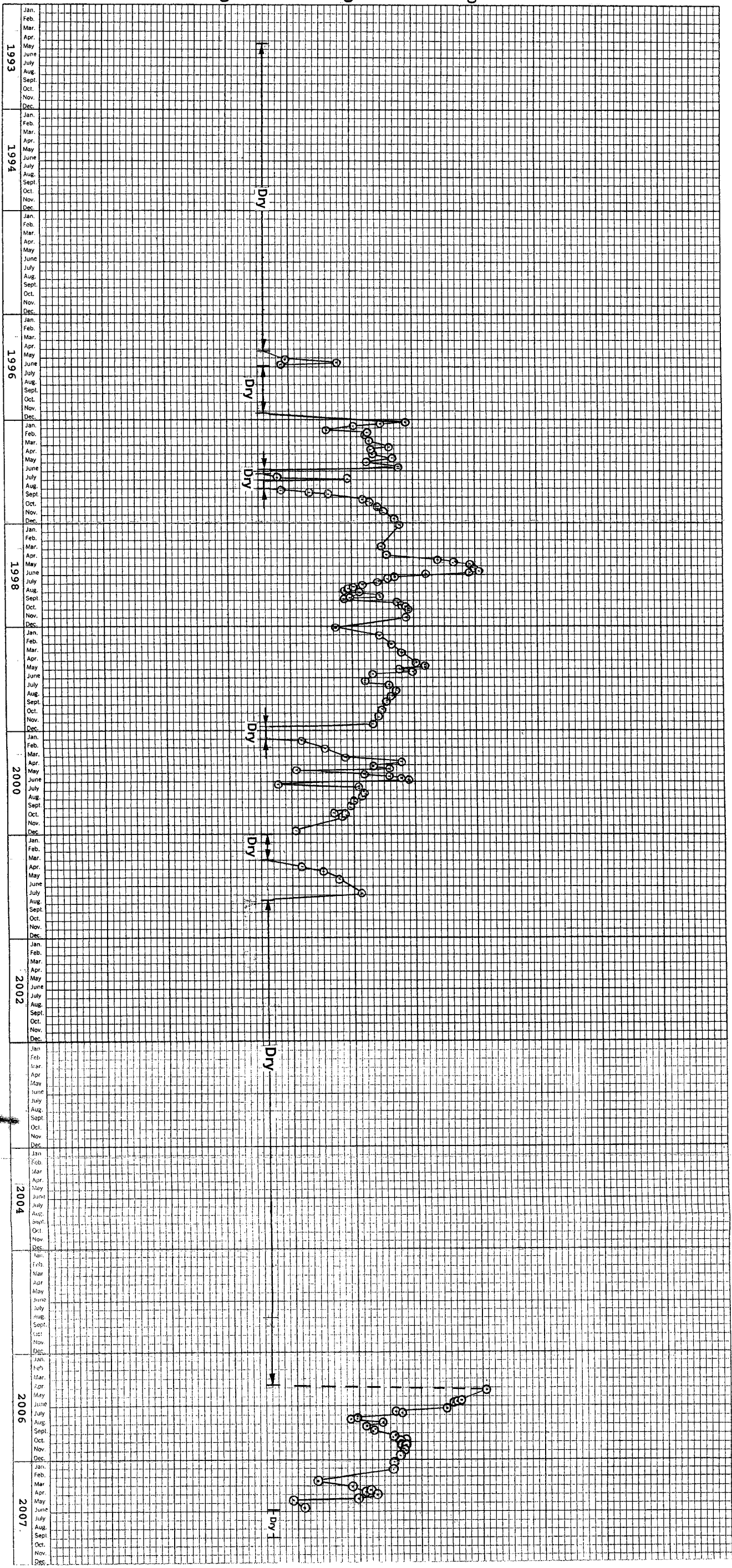


WATER-LEVEL HYDROGRAPH FOR WELL NO. 5, NO. 5A, AND NO. 5M

WATER-LEVEL HYDROGRAPH FOR WELL NO. 7



Depth to Water (feet)



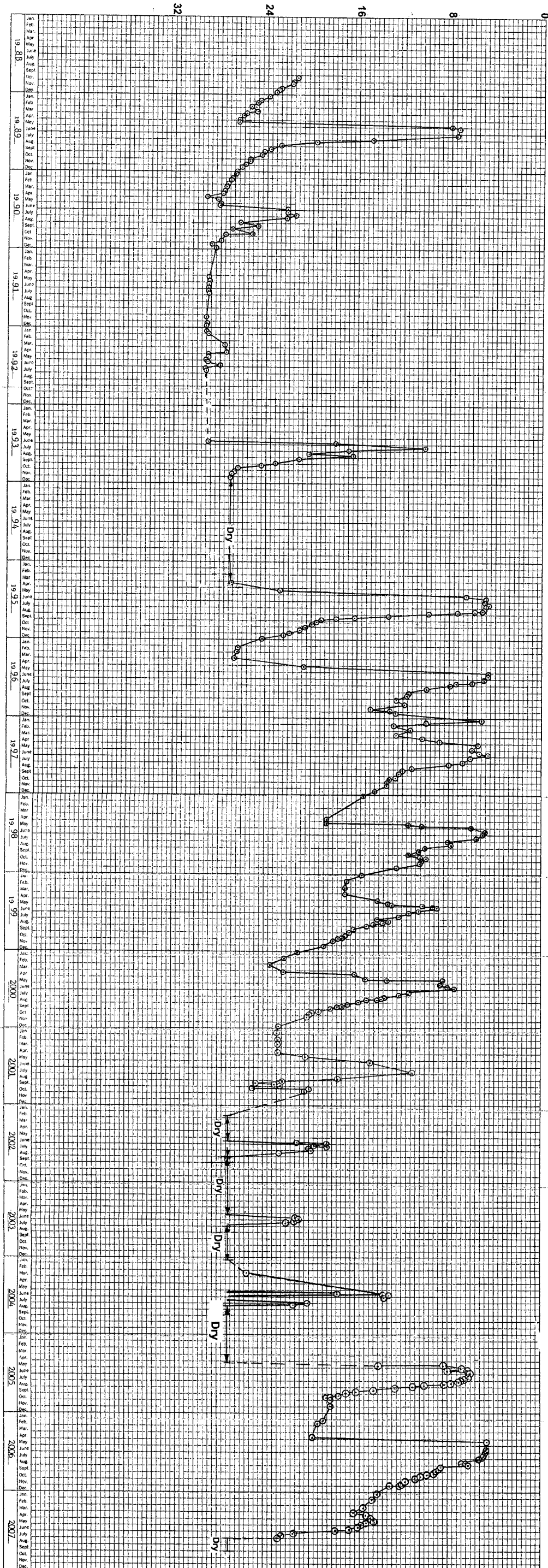
WATER-LEVEL HYDROGRAPH FOR WELL NO. 10M







Depth to Water (Feet)



WATER-LEVEL HYDROGRAPH FOR WELL NO. 12M

**APPENDIX E**

**CHEMICAL ANALYSES OF WATER FROM DISTRICT WELLS**

Production Well Site	Sample Date	Sample Time	Conductivity umho/cm	TDS* mg/L	Temp C	Temp F	pH	Dissolved Oxygen mg/L
1	06/06/96	8:20	240.0	168	8.3	47	7.40	
	09/12/97	10:15	190.0	96	9.4	49	7.20	
	07/06/98	14:30	210.0	120	8.3	47	7.40	
	07/14/99	9:20	208.0	165	8.9	48	7.60	
	08/22/00	7:45	210.0	156	9.4	49	7.20	
	07/27/01	8:30	220.0	140	9.4	49	6.50	
	09/05/02	7:50	232.0	116	8.9	48	6.60	
	09/25/03	9:15	277.0	182	5.6	42	7.10	
	07/20/04	10:30	210.0	160	7.2	45	7.50	
	10/11/05	12:45	207.0	135	9.4	49	7.05	3.33
	11/06/06	13:04	207.0	135	10.0	50	7.22	2.04
	12/04/06	12:45	202.0	131	9.2	49	7.03	2.05
	01/09/07		201.6	131	8.3	47	6.62	2.19
	02/06/07	9:25	250.1	163	8.3	47	6.95	2.27
	03/07/07	10:45	198.0	129	8.4	47	6.96	1.33
	04/16/07	13:04	192.2	125	8.3	47	6.98	0.88
	05/01/07	10:45	210.2	137	9.2	49	7.86	0.95
	06/07/07	9:40	206.2	134	9.2	49	7.26	0.85
	07/10/07	10:05	213.3	139	11.6	53	6.97	1.18
	08/07/07	11:12	234.0	152	8.6	48	7.00	4.35
	09/11/07	10:19	240.7	156	8.6	48	6.88	4.87
	10/02/07	11:00	238.6	155	8.5	47	7.04	5.48

\* analysis results from field instrument

Production Well Site	Sample Date	Sample Time	Conductivity umho/cm	TDS* mg/L	Temp C	Temp F	pH	Dissolved Oxygen mg/L
6	06/06/96	9:05	470.0	283	9.4	49	7.50	
	09/12/97	9:25	397.0	198	11.7	53	7.10	
	07/07/98	8:20	300.0	160	10.6	51	8.20	
	07/14/99	8:45	305.0	172	10.0	50	7.60	
	07/28/00	8:15	310.0	166	10.0	50	7.40	
	07/26/01	10:00	380.0	230	10.6	51	7.40	
	09/05/02	14:30	350.0	190	10.6	51	7.20	
	09/25/03	11:00	427.0	287	6.7	44	7.40	
	07/20/04	9:45	420.0	290	10.0	50	7.60	
	10/11/05	14:20	437.0	284	10.6	51	7.38	4.20
	11/06/06	11:07	433.0		10.0	50	7.40	2.11
	12/04/06	11:17	448.0	291	9.8	50	7.40	1.74
	01/09/07		429.1	279	9.3	49	7.26	1.08
	02/06/07	1:53	434.1	282	9.4	49	7.22	1.37
	03/06/07	13:35	207.3	135	9.7	49	7.35	1.58
	04/16/07	9:40	406.9	264	9.5	49	7.30	0.99
	05/01/07	9:00	396.1	257	10.4	51	6.81	0.81
	06/07/07	1:50	420.1	273	10.1	50	7.49	0.80
	07/10/07	14:55	423.8	275	11.4	53	7.04	1.50
	08/07/07	11:12	392.4	255	9.0	48	7.24	0.93
	09/11/07	9:55	417.3	271	8.8	48	7.29	1.66
	10/02/07	14:57	410.4	267	8.9	48	7.4	1.26

\* analysis results from field instrument

Production Well Site	Sample Date	Sample Time	Conductivity umho/cm	TDS* mg/L	Temp C	Temp F	pH	Dissolved Oxygen mg/L
10	06/06/96	9:20	465.0	315	10.0	50	7.30	
	09/12/97	9:14	359.0	179	12.8	55	7.20	
	06/30/98	13:25	350.0	240	9.4	49	7.60	
	07/14/99	8:30	353.0	231	9.4	49	7.50	
	07/28/00	8:30	360.0	228	10.0	50	7.50	
	07/26/01	10:15	470.0	300	10.6	51	6.60	
	09/05/02	8:10	410.0	225	10.6	51	7.00	
	09/25/03							
	07/20/04	10:04	430.0	280	10.0	50	7.50	
	10/11/05	15:20	389.0	253	13.9	57	7.14	3.44
	11/06/06	9:00	270.0		13.3	56	7.06	
	12/04/06	10:37	270.0	176	13.2	56	7.17	2.19
	01/09/07		539.0	350	11.7	53	7.23	2.33
	02/06/07	1:15	267.9	174	13.9	57	7.81	2.02
	03/06/07	14:20	303.9	198	11.9	53	6.96	1.37
	04/17/07	9:45	272.4	177	11.6	53	7.18	0.99
	05/01/07	9:24	258.8	168	13.5	56	6.97	0.80
	06/07/07	1:15	319.2	207	13.2	56	7.26	0.90
	07/10/07	14:29	354.1	230	13.6	56	6.55	1.05
	08/07/07	13:26	351.2	228	13.0	55	7.04	3.06
09/11/07	9:20	370.0	241	12.7	55	7.00	1.36	
10/02/07	13:54	376.2	245	12.5	55	7.02	0.95	

\* analysis results from field instrument

Production Well Site	Sample Date	Sample Time	Conductivity umho/cm	TDS* mg/L	Temp C	Temp F	pH	Dissolved Oxygen mg/L
15	06/06/96	9:45	240.0	152	12.8	55	7.40	
	09/12/97	9:19	288.0	144	12.8	55	7.20	
	06/30/98	13:45	360.0	210	11.7	53	7.50	
	07/14/99	9:05	355.0	190	12.8	55	7.60	
	08/22/00	8:10	350.0	187	12.2	54	7.30	
	07/02/01	10:40	330.0	220	12.8	55	7.40	
	09/05/02	8:20	290.0	185	11.7	53	7.20	
	09/25/03	10:00	415.0	279	10.0	50	7.20	
	07/20/04	9:15	300.0	200	10.0	50	7.60	
	10/11/05	13:20	234.0	152	18.3	65	7.34	3.44
	11/06/06	10:04	270.0		10.6	51	7.42	1.60
	12/04/06	9:30	223.0	145	8.9	48	7.39	1.65
	01/09/07		222.4	145	9.4	49	7.38	1.94
	02/06/07	9:57	216.8	141	8.3	47	7.71	1.29
	03/06/07	10:30	214.7	140	9.2	49	7.17	1.46
	04/17/07	8:38	219.7	143	8.7	48	7.31	0.76
	05/01/07	10:15	219.6	143	9.6	49	7.69	0.98
	06/07/07	9:20	300.6	195	11.8	53	7.69	1.02
	07/10/07	10:55	331.1	215	13.5	56	7.22	1.50
	08/07/07	13:43	338.6	220	12.7	55	7.20	2.79
09/11/07	8:40	364.2	237	13.0	55	7.25	2.00	
10/02/07	14:24	365.2	237	12.88	55	7.29	3.64	

\* analysis results from field instrument

Production Well Site	Sample Date	Sample Time	Conductivity umho/cm	TDS* mg/L	Temp C	Temp F	pH	Dissolved Oxygen mg/L
16	07/11/96	9:00	660.0	432	21.1	70	7.50	
	09/11/97	10:11	632.0	317	22.8	73	7.10	
	07/06/98	14:35	710.0	500	21.1	70	7.10	
	08/20/99	10:30	690.0	480	21.1	70	7.20	
	08/22/00	8:25	695.0	485	23.3	74	7.30	
	07/02/01	9:30	710.0	490	21.1	70	6.90	
	09/09/02	8:00	705.0	480	21.1	70	6.70	
	09/25/03							
	08/03/04		550.0	360	21.7	71	7.20	
	10/11/05	11:00	518.0	337	18.9	66	6.58	
	11/06/06							
	12/04/06	2:03	549.0	357	18.1	65	6.59	1.43
	02/06/07	10:55	569.0	370	19.4	67	6.53	1.33
	03/07/07	9:00	553.0	359	18.5	65	6.55	1.11
	04/16/07	13:26	560.0	364	18.9	66	6.39	0.96
	07/10/07	9:45	658.0	428	25.2	77	6.71	1.05
	08/09/07	10:33	689.0	448	25.6	78	6.65	1.71
	09/11/07	10:31	707.5	460	26.1	79	6.70	0.39
	10/02/07	10:18	711.3	462	26.2	79	6.69	0.30

\* analysis results from field instrument

Production Well Site	Sample Date	Sample Time	Conductivity umho/cm	TDS mg/L	Temp C	Temp F	pH	Dissolved Oxygen mg/L
17	07/11/96	8:45	360.0	265	18.3	65	7.30	
	07/06/98	9:15	350.0	280	15.6	60	7.10	
	08/20/99	10:10	350.0	280	16.1	61	7.20	
	08/22/00	8:40	355.0	276	17.2	63	7.20	
	07/02/01	9:10	410.0	310	15.6	60	6.70	
	09/03/02	8:30	400.0	290	16.1	61	6.60	
	09/25/03	8:55	420.0	282	16.7	62	6.50	
	08/03/04		410.0	270	15.6	60	7.50	
	10/11/05	12:20	484.0	315	23.9	75	6.78	2.75
	11/06/06	12:30	472.0	307	23.3	74	7.06	1.25
	12/04/06	2:35	478.0	311	22.8	73	7.05	2.61
	01/09/07		463.1	301	22.2	72	6.99	1.22
	02/06/07	8:15	453.9	295	22.8	73	6.81	0.92
	03/07/07	9:30	448.6	292	23.3	74	6.76	1.14
	04/16/07	14:40	414.2	269	21.6	71	6.64	1.05
	05/01/07	11:05	384.4	250	21.1	70	6.71	0.92
	06/07/07	10:40	444.3	289	22.9	73	7.29	0.83
	07/10/07	15:10	448.7	292	23.7	75	6.87	0.75
	08/09/07	9:55	496.5	323	25.6	78	6.74	2.27
	09/11/07	11:02	390.0	254	21.9	71	6.88	0.44
	10/02/07	11:27	510.5	332	25.8	78	6.58	2.86

\* analysis results from field instrument



Production Well Site	Sample Date	Sample Time	Conductivity umho/cm	TDS* mg/L	Temp C	Temp F	pH	Dissolved Oxygen mg/L
18	07/11/96	8:15	540.0	332	8.3	47	7.10	
	09/12/97	13:40	500.0	251	20.0	68	7.10	
	07/06/98	14:15	490.0	350	21.1	70	6.90	
	08/20/99	11:30	510.0	355	19.4	67	7.10	
	08/22/00	8:20	505.0	346	20.0	68	7.10	
	07/02/01	10:15	530.0	370	19.4	67	6.40	
	09/05/02	8:45	535.0	310	18.3	65	6.80	
	09/25/03	10:40	637.0	434	15.6	60	6.70	
	08/03/04		560.0	370	16.7	62	7.30	
	10/11/05	13:20	559.0	363	18.9	66	6.58	2.86
	11/06/06	10:40	543.0	353	18.3	65	6.91	2.34
	12/04/06	10:04	539.0	350	18.7	66	6.68	0.94
	01/09/07		539.0	350	18.1	65	6.63	1.94
	02/06/07	10:35	541.0	352	18.3	65	6.73	2.02
	03/06/07	12:33	456.5	297	18.3	65	6.61	0.70
	04/17/07	9:00	537.0	349	18.2	65	6.59	0.83
	05/01/07	9:50	535.0	348	18.8	66	6.54	0.72
	06/07/07	12:50	542.0	352	18.8	66	6.97	1.02
	07/10/07	13:50	545.0	354	17.5	64	6.52	0.98
	08/09/07	9:26	509.2	331	18.5	65	6.62	2.48
09/11/07	8:59	551.5	358	16.7	62	6.57	0.76	
10/02/07	13:13	534.0	347	18.3	65	6.55	0.22	

\* analysis results from field instrument

Production Well Site	Sample Date	Sample Time	Conductivity umho/cm	TDS* mg/L	Temp C	Temp F	pH	Dissolved Oxygen mg/L
20	07/11/96	9:20	217.0	164	15.0	59	7.10	
	09/11/97	9:57	336.0	168	16.1	61	6.90	
	08/20/99	11:00	310.0	210	15.6	60	7.10	
	08/22/00	9:00	305.0	190	16.1	61	7.10	
	07/27/01	8:45	340.0	250	15.6	60	6.80	
	09/05/02	9:30	400.0	195	17.2	63	6.60	
	09/25/03	9:05	387.0	259	13.3	56	6.70	
	08/03/04		290.0	200	15.6	60	7.20	
	10/11/05	11:15	293.0	190	16.1	61	6.53	6.80
	12/04/06	1:35	260.0	169	13.3	56	6.75	3.58
	01/09/07		253.1	165	13.0	55	6.73	4.05
	02/06/07	8:51	250.1	163	12.8	55	6.71	3.18
	03/07/07	10:10	262.0	170	12.7	55	6.65	1.78
	04/16/07	13:44	270.1	176	14.1	57	7.27	1.54
	05/01/07	12:45	283.3	184	16.0	61	6.54	1.16
	06/07/07	10:20	269.4	175	13.7	57	7.25	1.14
	07/10/07	10:20	373.3	243	18.5	65	6.61	1.07
	08/09/07	10:50	388.4	252	18.3	65	6.50	7.64
	09/11/07	10:47	406.3	264	18.9	56	6.59	8.97
	10/02/07	10:33	410.4	267	19.1	66	6.58	7.33

\* analysis results from field instrument

**MAMMOTH COMMUNITY WATER DISTRICT  
MONITOR WELL WATER QUALITY**

<b>Monitor Well Site</b>	<b>Sample Date</b>	<b>Sample Time</b>	<b>Conductivity umho/cm</b>	<b>TDS mg/L</b>	<b>Temp F</b>	<b>pH</b>
<b>4M</b>	09/09/96	8:05	162	84	47	7.4
	09/24/97	8:03	93	47	45	7.2
	09/04/98	7:45	99	53	45	7.2
	08/26/99	7:40	103	49	44	7.2
	08/22/00	7:45	101	52	45	7.2
	08/28/01	7:50	120	92	45	7.0
	09/20/02	8:00	102	75	45	7.1
	09/30/03	13:05	132		44	6.5
	10/05/05	15:45	119	77	48	8.9
<b>5A</b>	09/09/96	8:30	674	339	60	6.7
	09/24/97	8:35	662	331	58	6.8
	09/04/98	8:20	660	332	58	6.8
	08/26/99	8:10	669	330	58	6.9
	08/22/00	8:15	659	328	59	6.8
	08/28/01	8:20	660	390	60	6.8
	09/20/02	8:15	632	330	58	6.9
	09/30/03	13:55	690	470	50	6.6
	10/05/05	12:55	607	395	59	6.3
<b>5M</b>	09/09/96	8:40	430	217	56	6.4
	No sample due to USGS chart recorder					
	09/04/98	8:30	450	226	56	6.5
	08/26/99	8:15	428	219	55	6.7
	08/22/00	8:20	441	223	55	6.5
	08/28/01	8:25	420	250	57	6.5
	09/20/02	8:20	431	217	56	6.5
	09/30/03	14:05	470	317	49	6.2
	10/05/05	13:05	423	275	55	5.6
<b>7</b>	No sample					
	09/02/97	10:15	101	50	49	7.4
	09/10/98	9:45	110	51	49	7.2
	08/27/99	8:30	104	53	50	7.2
	08/22/00	10:30	108	55	51	7.2
	08/28/01	9:10	105	60	50	7.0
	09/20/02	13:10	110	58	51	7.0
	09/30/03	No access to pump/motor in well				
	10/05/05	No access to pump/motor in well				
<b>10M</b>	No water in well to sample					
	09/16/97	14:05	358	180	50	7.3
	09/04/98	8:45	349	175	50	7.2
	08/26/99	8:35	333	162	50	7.1
	08/22/00	8:40	340	160	49	7.2
	08/28/01	9:40	No water in well			
	09/20/02	8:35	No water in well			
	09/30/03	No water in well				
	10/05/05	No water in well				

**MAMMOTH COMMUNITY WATER DISTRICT  
MONITOR WELL WATER QUALITY**

<b>Monitor Well Site</b>	<b>Sample Date</b>	<b>Sample Time</b>	<b>Conductivity umho/cm</b>	<b>TDS mg/L</b>	<b>Temp F</b>	<b>pH</b>
<b>11</b>	09/09/96	9:30	96	50	51	7.4
	09/16/97	14:20	106	53	53	7.3
	09/04/98	9:20	104	50	50	7.3
	08/26/99	9:00	101	61	51	7.3
	08/22/00	9:10	105	60	50	7.3
	08/28/01	9:55	100	59	50	7.2
	09/20/02	8:50	98	51	52	7.4
	09/30/03	13:22	119	76	45	7.1
	10/05/05	13:50	120	78	53	7.6
	<b>11M</b>	09/09/96	9:40	283	144	52
09/16/97		14:30	350	175	51	7.5
09/04/98		9:25	350	175	50	7.3
08/26/99		9:10	310	162	51	7.3
08/22/00		9:20	320	168	52	7.3
08/28/01		10:10	340	185	51	7.4
09/20/02		9:05	325	161	52	7.4
09/30/03		13:30			42	7.1
10/05/05		14:00	330	215	51	7.6
<b>12M</b>		09/09/96	10:05	267	137	52
	09/16/97	14:02	364	182	50	7.5
	09/04/98	9:05	359	180	50	7.4
	08/26/99	8:45	370	189	51	7.5
	08/22/00	8:55	368	188	52	7.4
	08/28/01	10:25	350	205	50	7.4
	09/20/02	8:40	No water in well			
	09/30/03		No water in well			
	10/05/05	13:30	300	195	53	8.0
	<b>14</b>	09/09/96	No sample due to transducer in well.			
09/16/97		No sample due to transducer in well.				
09/04/98		No sample due to transducer in well.				
08/26/99		No sample due to transducer in well.				
08/22/00		No sample due to transducer in well.				
09/04/01		No sample due to transducer in well.				
09/20/02		No sample due to transducer in well.				
09/30/03		No sample due to transducer in well.				
10/05/05	No sample due to transducer in well.					
<b>19</b>	09/09/96	No sample due to transducer in well.				
	09/16/97	No sample due to transducer in well.				
	09/04/98	No sample due to transducer in well.				
	08/26/99	No sample due to transducer in well.				
	08/22/00	No sample due to transducer in well.				
	09/04/01	No sample due to transducer in well.				
	09/20/02	No sample due to transducer in well.				
	09/30/03	No sample due to transducer in well.				
10/05/05	No sample due to transducer in well.					

**MAMMOTH COMMUNITY WATER DISTRICT  
MONITOR WELL WATER QUALITY**

<b>Monitor Well Site</b>	<b>Sample Date</b>	<b>Sample Time</b>	<b>Conductivity umho/cm</b>	<b>TDS mg/L</b>	<b>Temp F</b>	<b>pH</b>
<b>21</b>	09/09/96	No sample due to transducer in well.				
	09/16/97	No sample due to transducer in well.				
	09/04/98	No sample due to transducer in well.				
	08/26/99	No sample due to transducer in well.				
	08/22/00	No sample due to transducer in well.				
	09/04/01	No sample due to transducer in well.				
	09/20/02	No sample due to transducer in well.				
	09/30/03	No sample due to transducer in well.				
	10/05/05	No sample due to transducer in well.				
<b>22</b>	09/09/96	No sample				
	09/16/97	No sample				
	09/10/98	8:00	115	57	48	7.1
	08/27/99	9:15	111	61	47	7.1
	08/22/00	9:45	114	64	48	7.1
	08/28/01	13:15	115	71	48	7.2
	09/20/02	9:20	121	63	48	7.2
	09/30/03	14:18			44	6.9
	10/05/05	14:30	281	183	50	7.2
<b>23</b>	09/09/96	10:50	93	47	52	7.3
	09/16/97	10:05	95	48	50	7.3
	09/04/98	10:00	98	50	50	7.3
	08/27/99	9:45	91	49	50	7.2
	08/22/00	10:00	96	51	50	7.1
	08/28/01	13:30	84	45	48	7.2
	09/20/02	9:35	90	47	49	7.1
	09/30/03	14:45	151	98	47	7.2
	10/06/05	10:45	57	37	53	7.5
<b>24</b>	09/09/96	No sample due to transducer in well.				
	09/16/97	No sample due to transducer in well.				
	09/04/98	No sample due to transducer in well.				
	08/27/99	No sample due to transducer in well.				
	08/22/00	No sample due to transducer in well.				
	09/04/01	No sample due to transducer in well.				
	09/20/02	No sample due to transducer in well.				
	09/30/03	No sample due to transducer in well.				
10/05/05	No sample due to transducer in well.					

**APPENDIX F**

**MAMMOTH CREEK STREAMFLOW**

Twin Lakes Outflow

Day	Daily discharge in cubic feet per second											
	2006						2007					
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.33	8.70	5.79	8.09	9.33	6.91	6.91	14.86	31.02	9.33	8.70	7.49
2	8.09	7.49	5.79	8.09	8.70	6.91	6.91	22.88	30.08	10.63	8.70	7.49
3	8.09	7.49	5.79	8.09	8.70	6.91	6.91	0.00	29.14	11.31	8.70	6.91
4	7.49	8.09	5.79	8.09	8.70	6.91	6.91	0.00	28.22	11.31	8.70	6.91
5	7.49	8.09	5.79	8.09	8.70	6.34	6.34	0.00	25.50	11.31	8.09	6.91
6	7.49	8.70	5.79	8.09	8.70	6.91	6.91	19.54	24.62	11.99	6.91	7.49
7	7.49	8.09	6.34	8.09	8.09	6.91	6.91	20.36	22.03	11.31	6.91	7.49
8	7.49	8.09	8.09	8.09	8.09	6.91	6.91	20.36	24.62	10.63	6.91	7.49
9	9.33	7.49	6.91	8.09	10.63	6.91	6.91	20.36	21.19	9.33	6.91	7.49
10	9.33	7.49	6.34	8.09	11.99	6.91	6.91	22.03	20.36	9.33	6.91	7.49
11	9.33	8.09	6.91	8.09	10.63	6.91	6.91	23.75	21.19	9.98	6.91	6.91
12	9.33	8.70	6.34	8.09	8.09	6.91	6.91	22.88	21.19	9.33	6.91	6.91
13	8.70	14.13	6.34	8.09	7.49	6.91	6.91	22.88	21.19	9.33	6.91	6.34
14	8.70	10.63	6.34	8.09	7.49	6.91	6.91	25.50	22.88	9.33	6.91	6.34
15	8.70	9.98	8.70	8.09	6.91	6.91	6.91	0.00	18.73	9.98	6.91	6.34
16	8.09	8.09	7.49	8.09	7.49	6.91	6.91	0.00	20.36	9.33	6.91	6.91
17	8.09	8.09	7.49	8.09	7.49	6.91	6.91	27.30	21.19	9.33	6.34	6.91
18	8.09	7.49	7.49	8.09	8.09	6.91	6.91	35.89	20.36	9.33	6.34	6.91
19	8.09	7.49	7.49	8.09	6.91	6.34	6.34	37.90	21.19	8.70	6.34	6.91
20	8.09	7.49	7.49	8.09	6.91	6.91	6.91	36.89	21.19	9.33	6.34	5.79
21	8.09	6.91	8.70	8.09	6.91	6.34	6.34	36.89	21.19	9.33	6.91	5.79
22	8.09	6.34	8.09	8.70	6.91	6.34	6.34	31.98	20.36	9.33	6.91	5.79
23	8.09	6.34	8.09	9.33	8.09	6.91	6.91	27.30	20.36	9.33	6.91	5.79
24	7.49	6.34	7.49	9.33	7.49	6.91	6.91	27.30	19.54	9.98	6.91	5.79
25	7.49	6.34	7.49	9.33	6.91	6.91	6.91	27.30	-	9.33	6.91	6.34
26	8.09	7.49	11.31	9.33	8.09	6.91	6.91	28.22	14.86	9.33	6.91	6.34
27	8.09	6.34	9.33	9.33	8.09	9.33	9.33	31.98	14.86	9.98	7.49	5.79
28	8.09	5.79	8.70	9.33	6.91	6.91	6.91	35.89	14.86	9.98	7.49	5.25
29	7.49	5.79	8.70	9.33	6.91	6.91	6.91	35.89	11.31	9.98	7.49	5.79
30	7.49	5.79	8.09	9.33	6.91	6.91	6.91	34.90	9.33	9.33	7.49	5.79
31	8.09	8.09	8.09	9.33	6.91	6.91	6.91	32.94	8.70	8.70	8.70	8.70
Mean	8.2	7.8	7.4	8.5	8.2	6.9	6.9	23.4	21.1	9.8	6.9	6.6
Maximum	9.3	14.1	11.3	9.3	12.0	9.3	9.3	37.9	31.0	12.0	9.3	7.5
Minimum	7.5	5.8	5.8	8.1	6.9	6.3	6.3	0.0	9.3	8.7	6.3	5.3

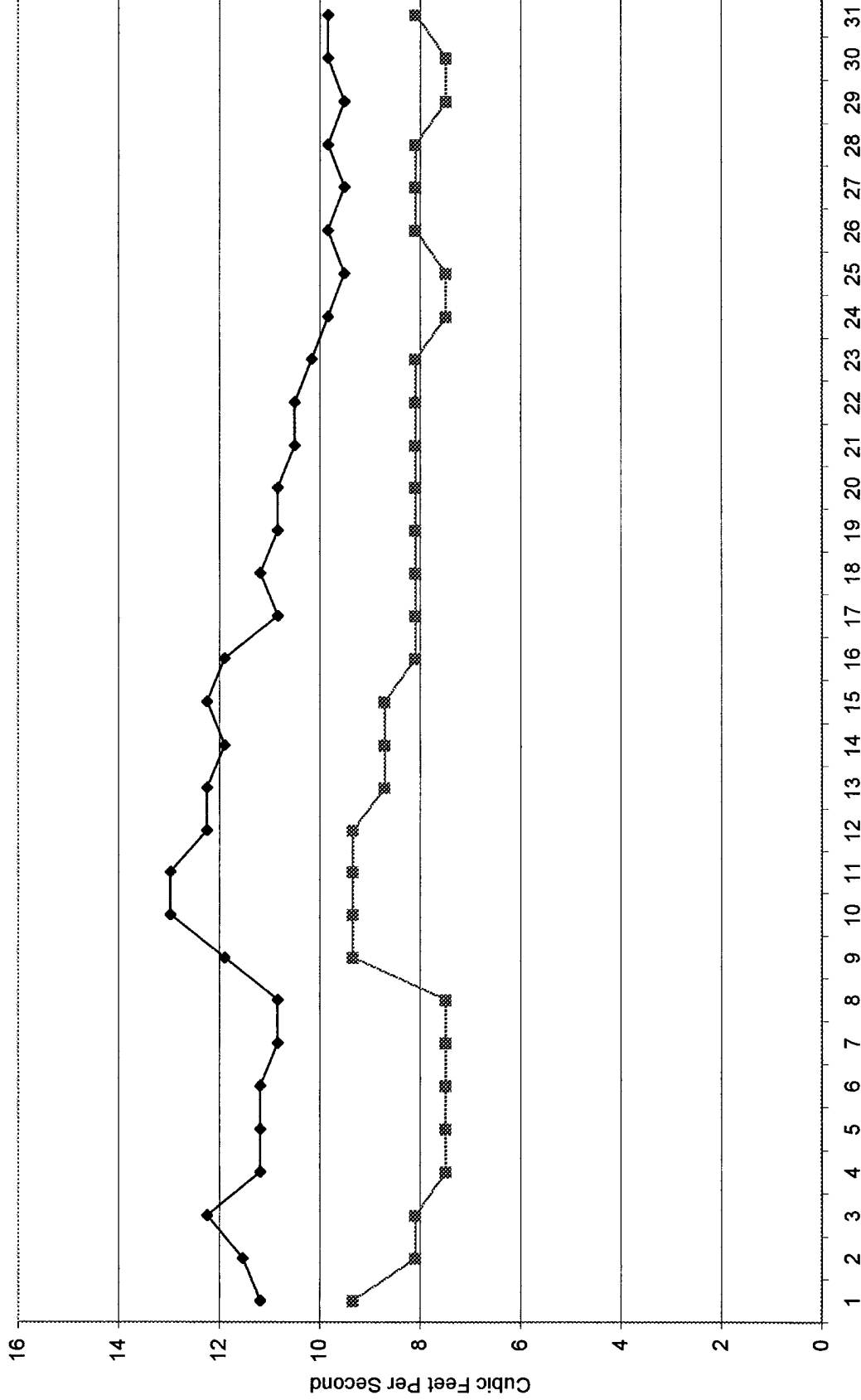
MAMMOTH CREEK AT OLD MAMMOTH ROAD

Day	2006			2007			Mammoth Creek at Old Mammoth Road											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP						
1	11.19	9.84	8.22	7.82	7.44	8.82	10.50	16.01	35.68	8.87	6.76	5.42						
2	11.54	9.84	8.22	7.44	6.87	8.42	10.17	22.36	34.08	10.17	6.48	5.42						
3	12.24	8.87	8.42	8.62	6.68	8.42	10.50	23.26	32.00	11.19	6.20	5.60						
4	11.19	8.87	7.82	9.03	6.87	8.42	10.84	22.36	29.47	11.19	5.92	4.75						
5	11.19	8.87	8.02	7.05	7.05	8.42	10.84	20.59	29.47	10.50	5.65	4.58						
6	11.19	9.84	8.02	9.03	7.63	8.42	11.54	20.15	27.02	11.89	5.39	5.95						
7	10.84	9.84	8.02	7.82	7.44	8.42	11.54	20.15	24.18	11.89	5.39	5.77						
8	10.84	9.51	8.62	8.22	7.63	8.42	11.54	19.72	25.11	10.84	5.95	5.60						
9	11.89	8.87	9.44	7.24	8.62	8.42	11.89	19.30	23.26	9.19	5.95	5.42						
10	12.97	10.84	9.86	7.24	10.29	8.62	11.89	20.59	21.91	9.51	5.95	5.25						
11	12.97	10.84	8.82	6.68	11.15	8.82	11.89	23.72	23.26	9.51	5.77	5.08						
12	12.24	9.19	9.03	8.82	8.62	9.65	9.84	23.72	24.18	9.19	5.60	5.08						
13	12.24	16.84	8.62	-	8.02	10.29	10.50	23.26	23.26	8.87	5.60	4.58						
14	11.89	14.37	8.82	8.82	7.63	10.29	10.84	27.02	25.58	8.87	5.42	4.26						
15	12.24	11.37	8.22	7.44	7.63	10.29	11.19	24.18	21.03	8.24	5.42	4.58						
16	11.89	10.72	7.44	7.82	7.82	10.50	10.84	24.18	21.03	8.24	5.42	4.42						
17	10.84	9.23	7.82	7.82	8.62	10.50	10.84	27.99	21.47	7.94	5.25	4.75						
18	11.19	9.03	6.87	7.82	8.62	10.50	9.84	38.94	21.03	7.64	4.75	5.60						
19	10.84	8.82	8.22	9.03	7.24	10.50	10.84	40.62	21.47	7.64	4.91	4.75						
20	10.84	8.82	8.22	7.63	7.63	10.17	10.50	40.62	21.91	7.64	5.08	4.75						
21	10.50	8.82	10.07	7.05	7.63	9.84	12.24	39.50	21.91	7.64	5.08	5.77						
22	10.50	8.22	8.82	8.22	7.82	9.51	11.89	38.94	21.47	7.64	5.08	6.13						
23	10.17	8.62	9.03	7.44	7.82	9.51	10.84	29.97	21.47	7.64	4.91	5.08						
24	9.84	8.22	9.44	7.63	7.05	10.17	10.50	27.99	21.03	8.55	4.91	4.91						
25	9.51	8.82	8.82	7.44	7.05	10.50	10.84	27.99	19.30	8.24	4.91	4.91						
26	9.84	8.82	9.86	7.44	7.05	12.24	10.84	29.47	17.22	7.94	4.91	4.91						
27	9.51	7.82	10.72	7.24	8.42	11.89	11.19	35.14	15.62	7.64	5.42	5.08						
28	9.84	6.68	9.86	7.63	8.82	9.51	12.24	36.21	15.23	7.64	5.60	5.42						
29	9.51	9.03	9.86	7.44	9.84	12.60	12.60	38.39	11.19	7.64	5.25	4.58						
30	9.84	8.42	8.82	7.44	9.84	13.33	13.33	37.30	8.87	7.64	6.87	5.08						
31	9.84		8.42	6.87	9.84			35.14		7.34	6.31							
Mean	11.0	9.6	8.7	7.8	7.9	9.6	11.2	28.2	22.7	8.9	5.6	5.1						
Maximum	13.0	16.8	10.7	9.0	11.2	12.2	13.3	40.6	35.7	11.9	6.9	6.1						
Minimum	9.5	6.7	6.9	6.7	6.7	8.4	9.8	16.0	8.9	7.3	4.7	4.3						



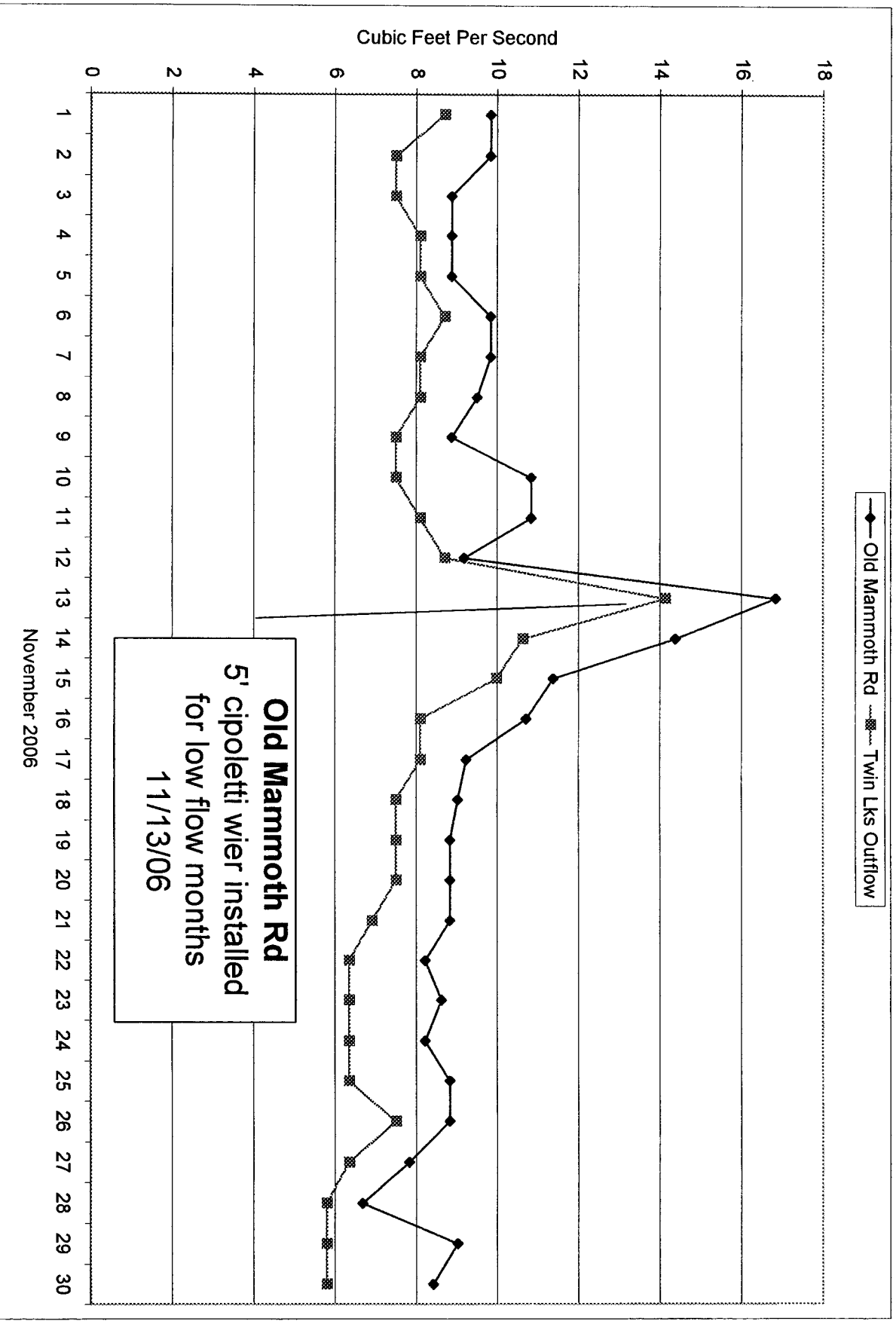
# MAMMOTH CREEK STREAM FLOW COMPARISON

—◆— Old Mammoth Rd    - - - ■ - - - Twin Lks Outflow



October 2006

MAMMOTH CREEK STREAM FLOW COMPARISON

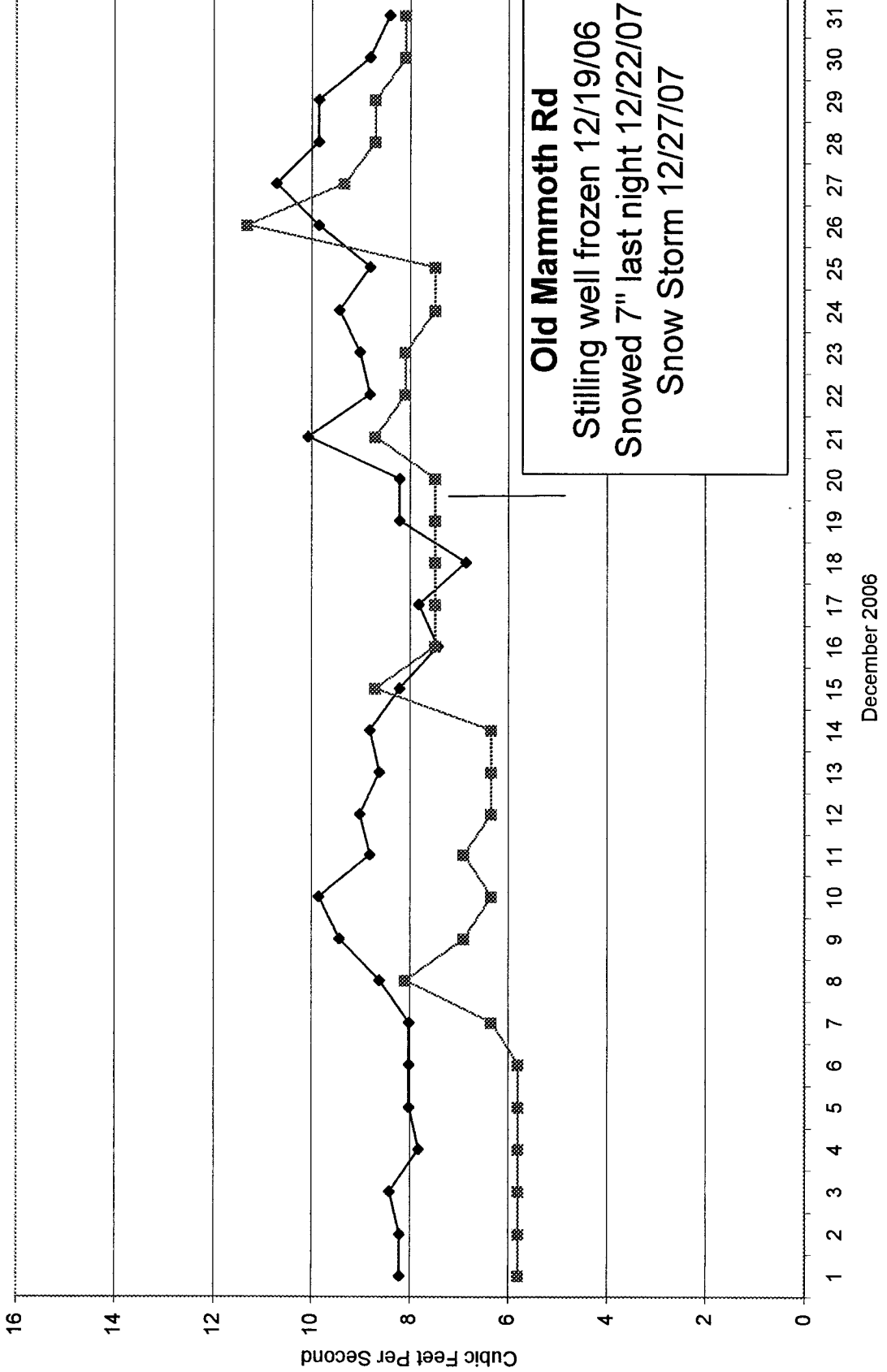


**Old Mammoth Rd**  
 5' cipoletti wier installed  
 for low flow months  
 11/13/06

November 2006

MAMMOTH CREEK STREAM FLOW COMPARISON

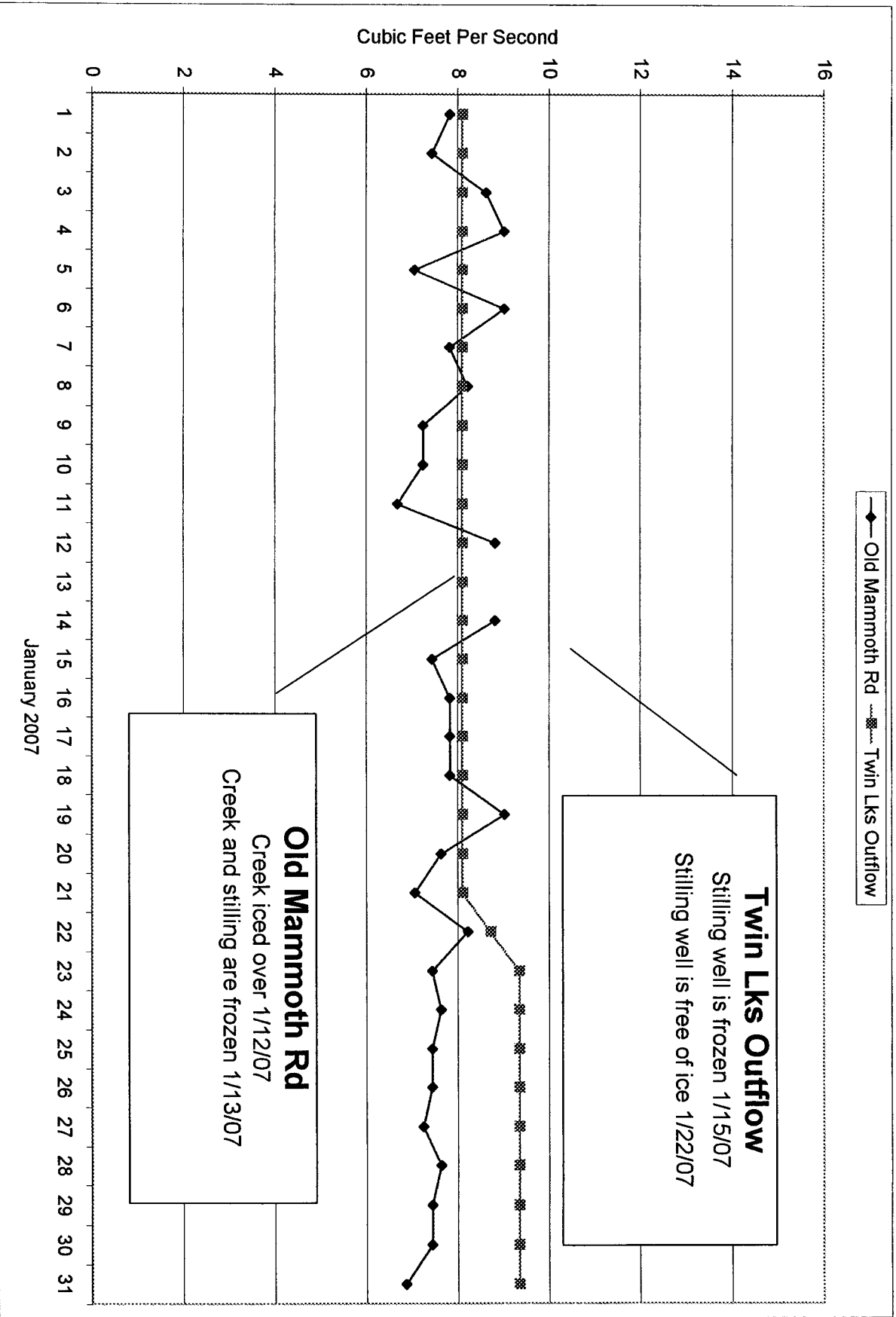
—◆— Old Mammoth Rd    - - - ■ - - - Twin Lks Outflow



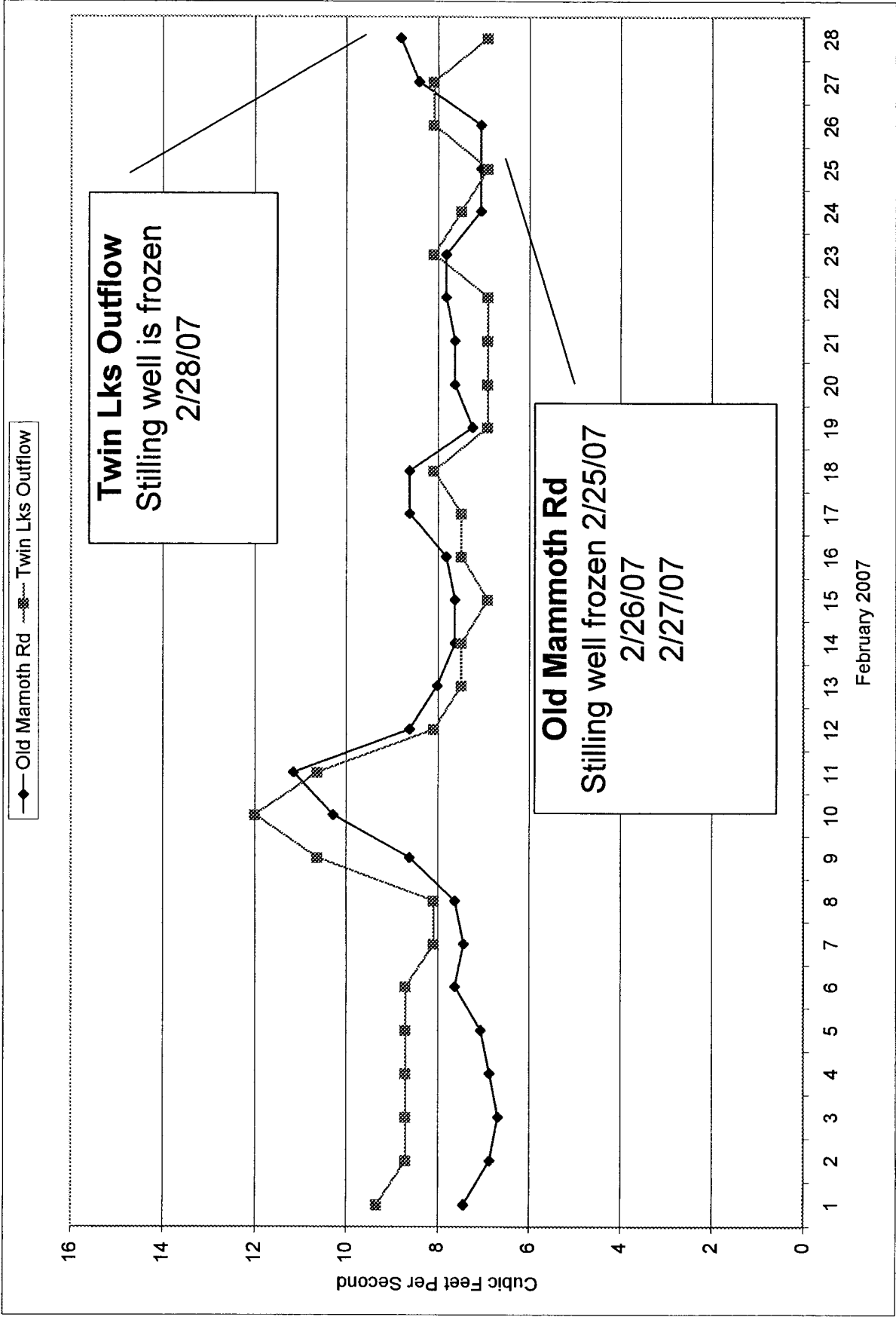
**Old Mammoth Rd**  
 Stilling well frozen 12/19/06  
 Snowed 7" last night 12/22/07  
 Snow Storm 12/27/07

December 2006

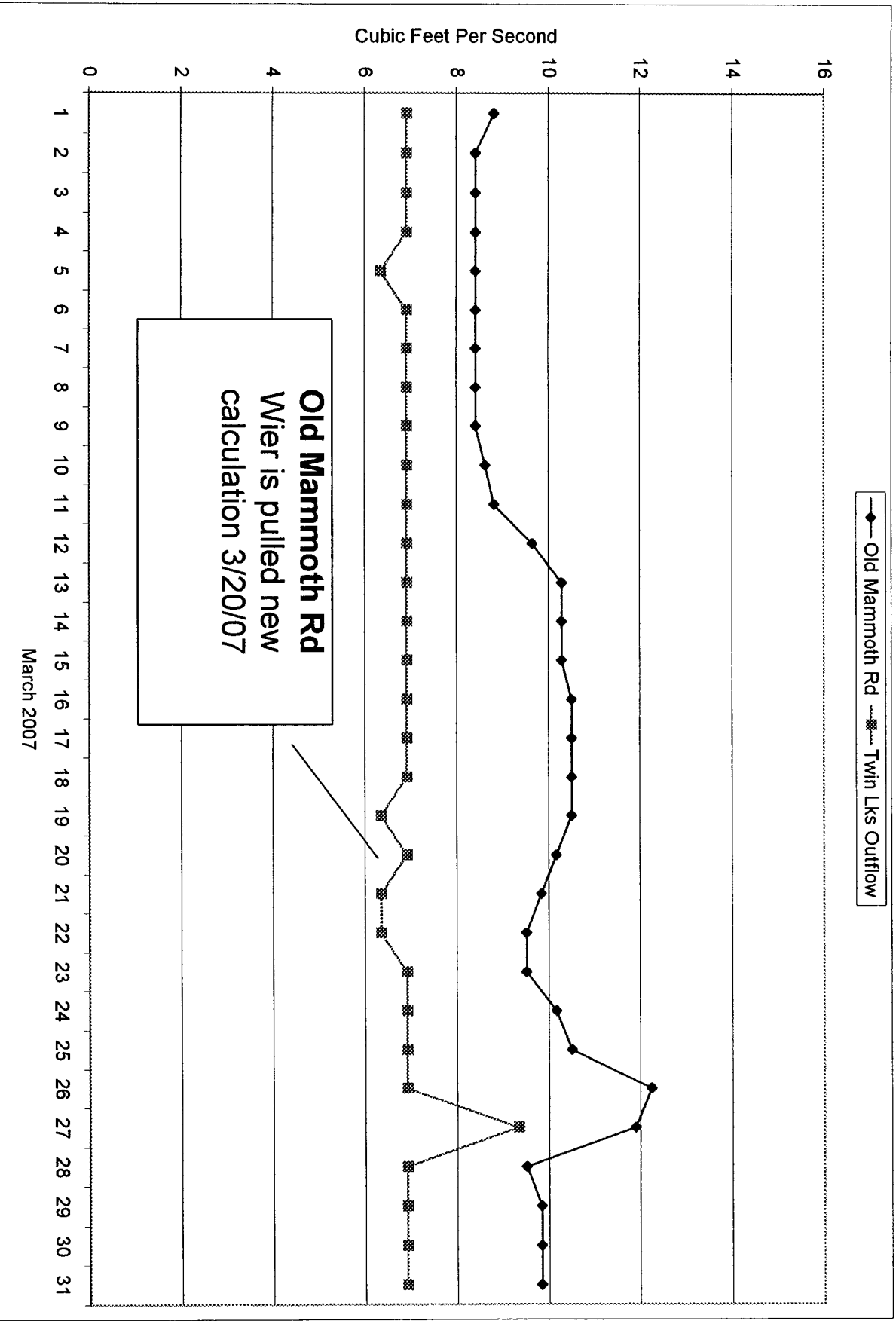
MAMMOTH CREEK STREAM FLOW COMPARISON



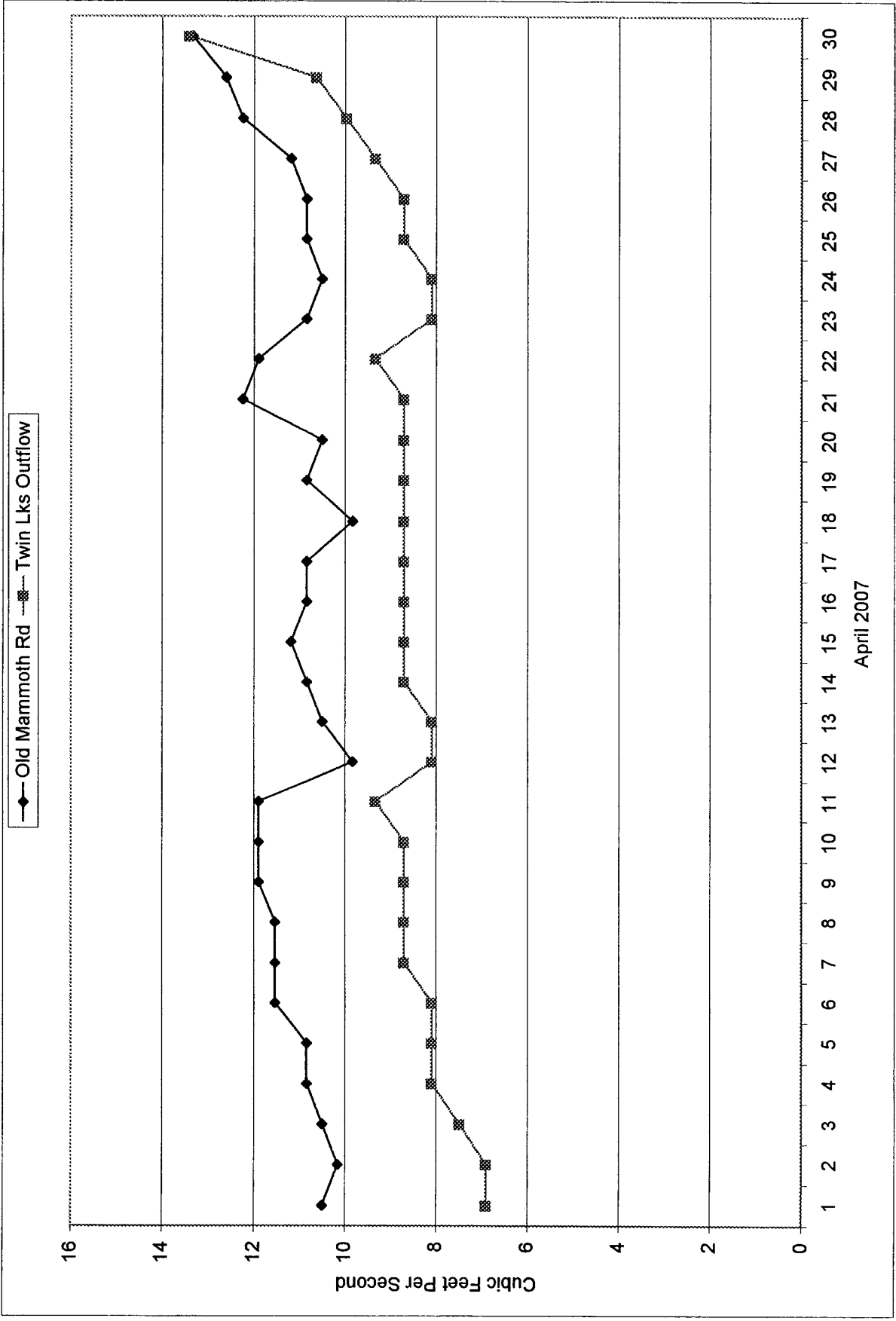
MAMMOTH CREEK STREAM FLOW COMPARISON



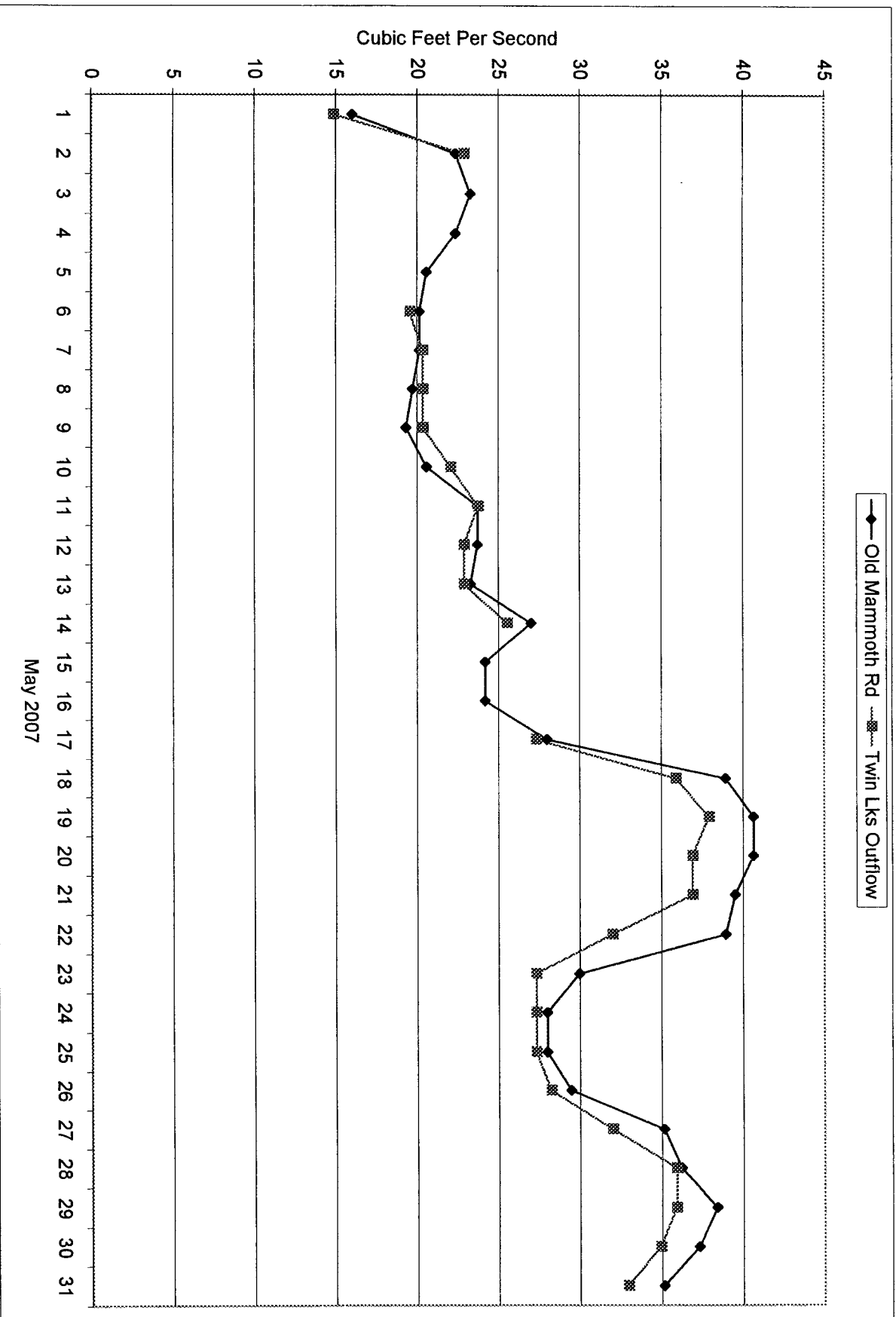
MAMMOTH CREEK STREAM FLOW COMPARISON



MAMMOTH CREEK STREAM FLOW COMPARISON

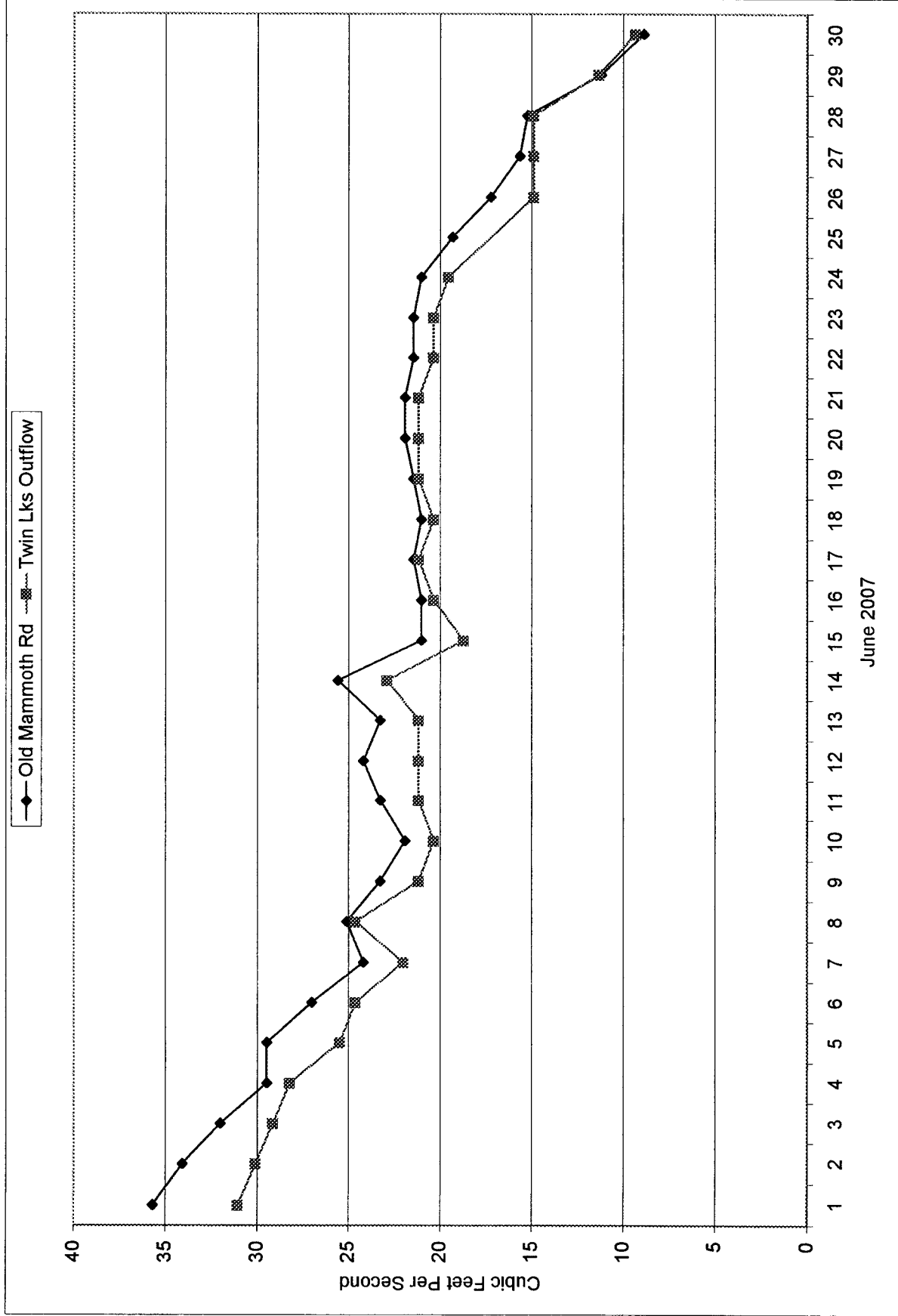


MANMOTH CREEK STREAM FLOW COMPARISON

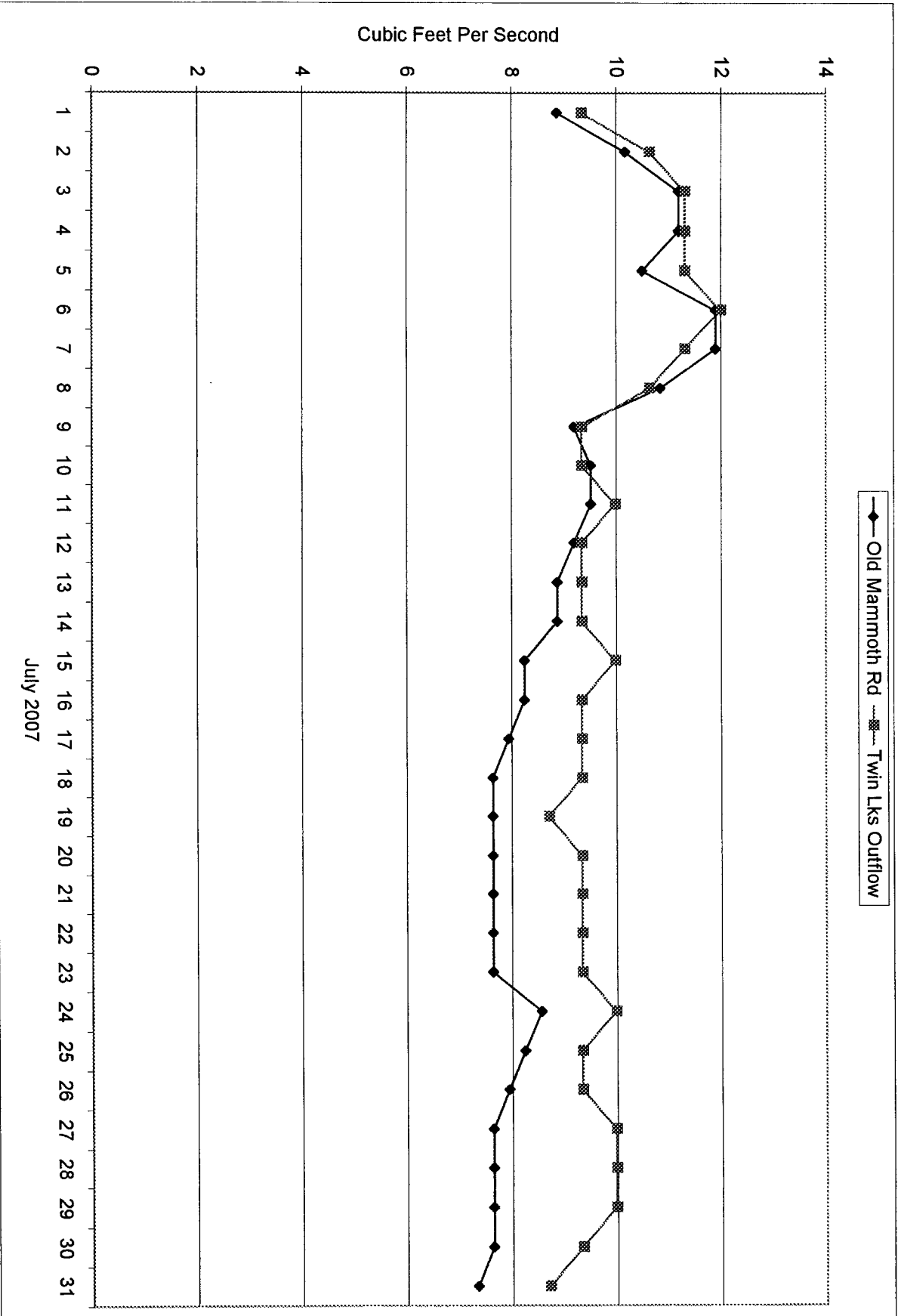




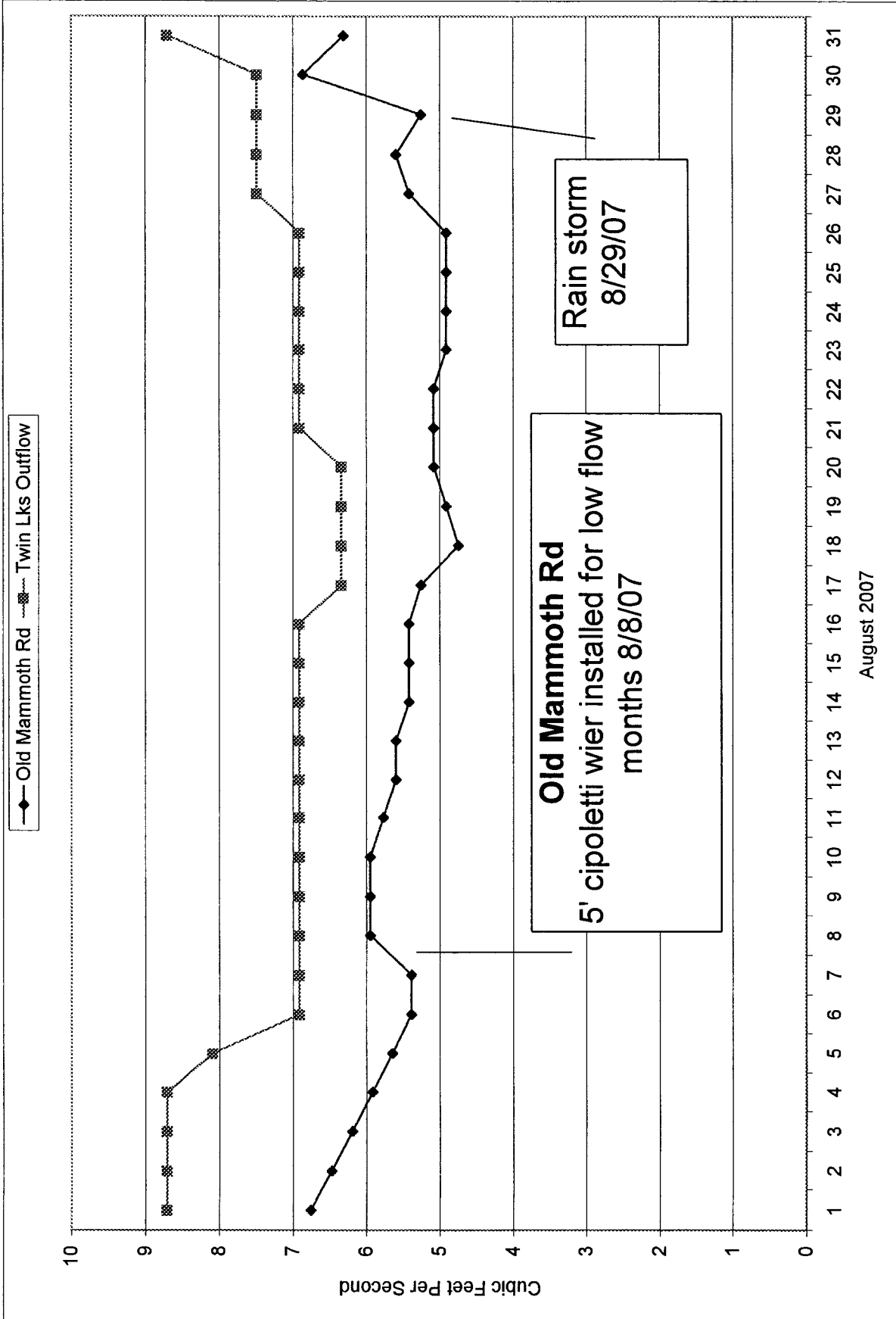
MAMMOTH CREEK STREAM FLOW COMPARISON



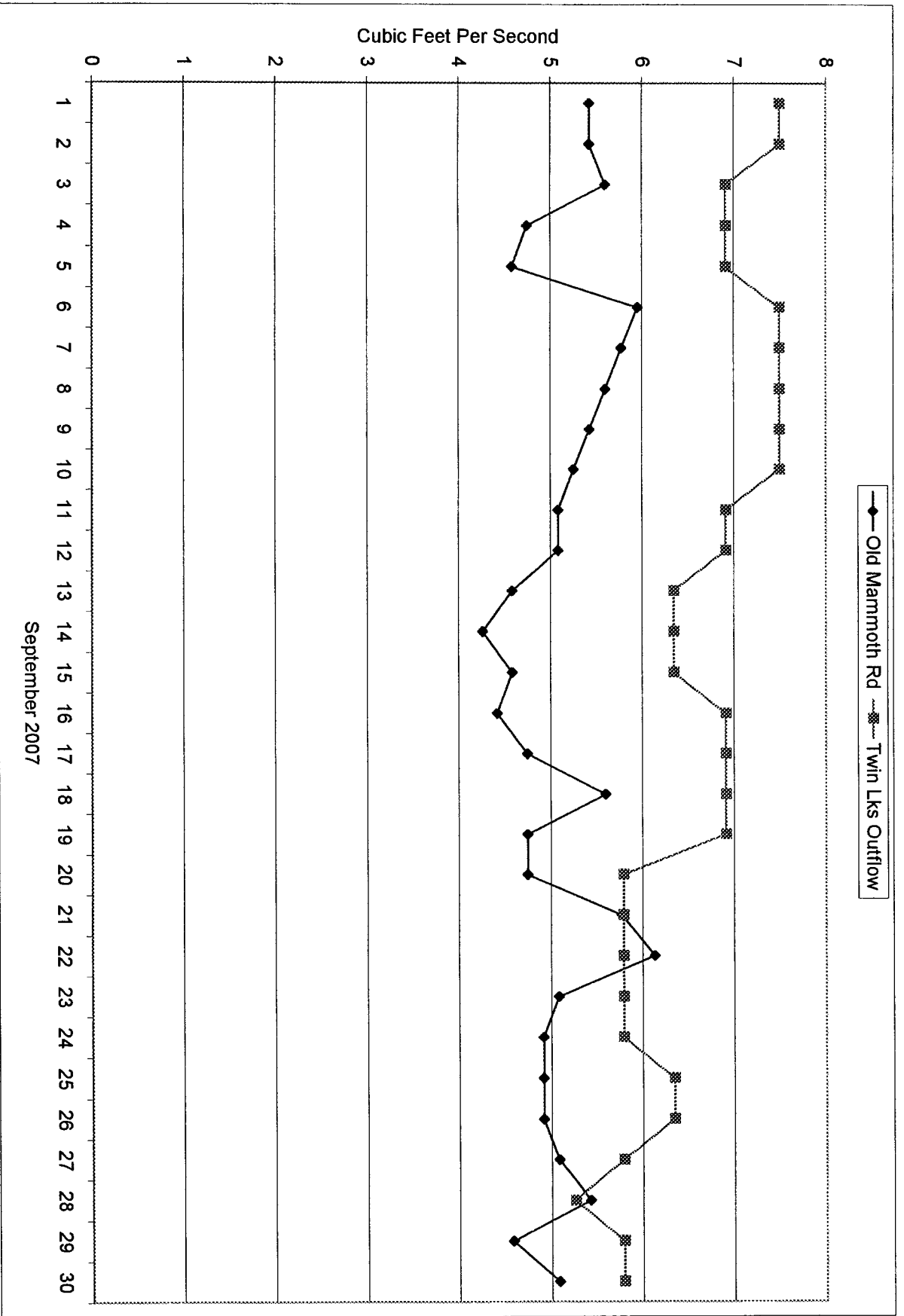
MAMMOTH CREEK STREAM FLOW COMPARISON



MAMMOTH CREEK STREAM FLOW COMPARISON



# MAMMOTH CREEK STREAM FLOW COMPARISON



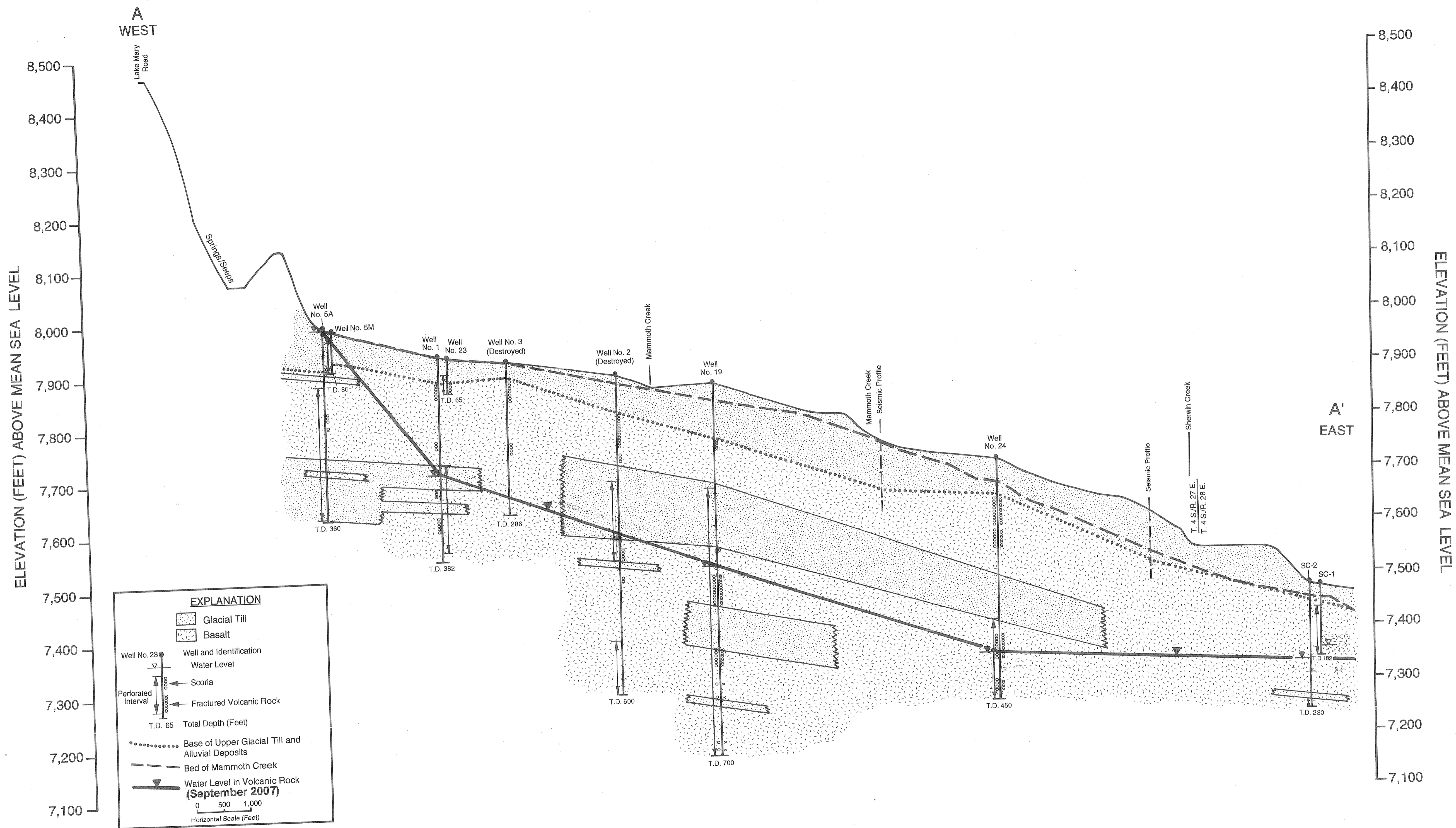


FIGURE 2 - SUBSURFACE GEOLOGIC CROSS SECTION A - A'