ANNUAL REPORT ON RESULTS OF MAMMOTH COMMUNITY WATER DISTRICT GROUNDWATER MONITORING PROGRAM FOR OCTOBER 2007-SEPTEMBER 2008

Prepared for
Mammoth Community Water District
Mammoth Lakes, California

by
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TABLE OF CONTENTS

Continued:

TABLE OF CONTENTS
(Continued)

LIST OF TABLES

LIST OF ILLUSTRATIONS

Continued:

LIST OF ILLUSTRATIONS
(Continued:)

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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 (KDSA) 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 sixteenth 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 2,377 acre-feet of water from eight supply wells during the 2008 water year. This was twenty-three 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 2008 water year.

Water levels in most shallow wells tapping the uppermost glacial till strata fell during 2007-08, due to the low 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 five of the District supply wells (No. 1, 6, 10, 15, and 17) were lower in 2008 than in 2007, 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 2008 water year. In contrast,

water levels in deep wells farther to the east were either stable or rose during the 2008 water year. A water-level elevation contour map was prepared for September 2008. 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 during the 2008 water year indicated the same trends as previous monitoring.

The results of the 2007-2008 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

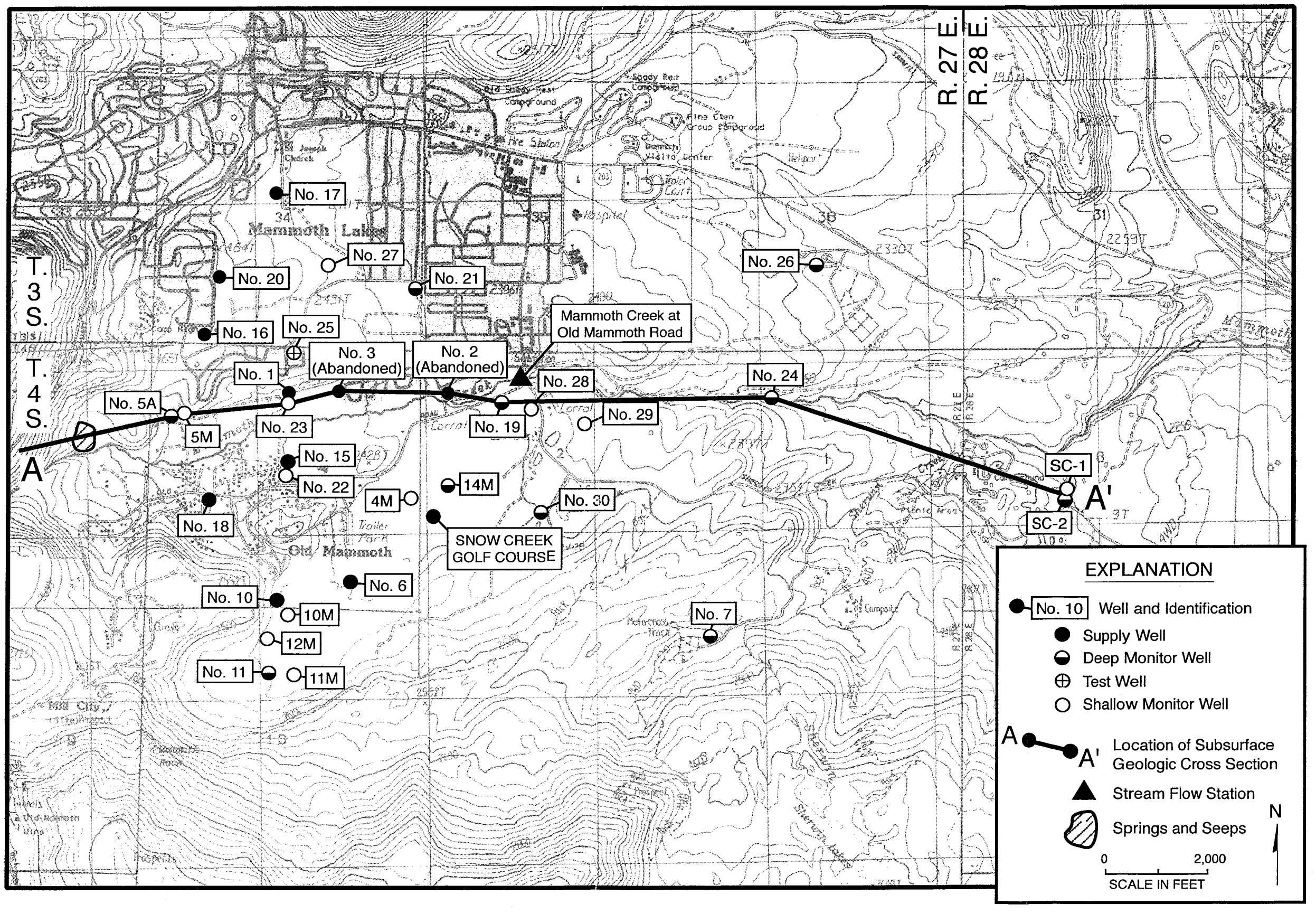

FIGURE 1 - LOCATION OF WELLS AND SUBSURFACE GEOLOGIC CROSS-SECTION A-A'

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 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 2008 for use at the Boys Camp.

Test Well No. 25 was drilled in August 2002, and was not in service during the 2002-2008 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

TABLE 1 - CONSTRUCTION DATA FOR DISTRICT SUPPLY WELLS

Well No.	Date Drilled	Drilled Depth (feet)	Cased Depth (feet)	Perforated or Open Interval (feet)	Annular Seal (feet)
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".

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
				67-87	57-65
29	11/05	97	97	77-97	0-60
30	12/05	640	600	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.

deep well located south of the basalt flow and taps water in a glacial morraine 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.

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

FIGURE 2

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

in a fractured scoria layer. A lost circulation zone present in this well may influence the water level. In September 2008, 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 1990-2008 was 29.1 inches. During water years 1991-94, the annual precipitation ranged from about 20 to 29 inches and averaged about 22.5 inches. 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 and 16.3 inches during the 2007-08 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 2008 water year. The total pumpage was 2,377 acre-feet, or about 23 percent more than that for the previous water year. Of this, 800 acre-feet were from Well No. 15, 541 acre-feet were from Well No. 10, 420 acre-feet were from Well No. 6, 268 acre-feet were from Well No. 17, 147 acre-feet were from Well No. 20, and 127 acre-feet were from Well No. 1. The remaining District pumpage (74 acre-feet) was from Wells No. 16 and 18. An estimated 83 acre-feet of water were pumped from the Snow Creek Golf Course Well (in the general vicinity of Well No. 14M) during the 2008 water year. This well is owned by a private entity. The amount of water pumped from this well this year was almost double that for the previous year. About 100,000 gallons were pumped from Well No. 7 for use at the Boys Camp during 2008.

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.

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

Well No.	Oct-07	Nov-07	Dec-07	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Total
1	0.233	0.319	13.865	12.761	17.018	11.745	1.243	2.428	1.734	9.283	29.849	26.359	**126.837**
6	42.405	27.681	48.344	5.693	0.000	0.000	0.000	1.620	50.748	67.337	88.049	87.755	**419.632**
10	5.301	17.374	37.742	64.147	76.319	77.571	67.853	38.994	0.000	9.031	77.301	69.252	**540.883**
15	57.521	49.080	58.503	42.601	61.448	74.798	47.117	68.319	90.896	83.043	84.025	82.454	**799.804**
16	12.859	0.000	0.736	0.393	0.000	0.098	0.883	0.000	0.442	0.049	22.920	28.172	**66.552**
17	9.325	2.061	0.393	0.000	0.098	1.374	3.436	33.865	55.362	59.583	62.135	39.951	**267.583**
18	0.049	0.025	0.025	0.025	0.025	0.908	0.025	0.000	1.448	5.276	0.417	0.000	**8.221**
20	14.650	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	40.804	42.184	49.485	**147.123**
Total ac-ft	**142.344**	**96.540**	**159.607**	**125.620**	**154.908**	**166.494**	**120.556**	**145.225**	**200.630**	**274.406**	**406.880**	**383.426**	**2376.635**
Total MG	46.404	31.472	52.032	40.952	50.5	54.277	39.30119	47.3435	65.40531	89.45625	132.6428	124.997	

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 2007, 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. In September 2008, depth to water in Well No. 15 was 310 feet, the deepest of record. 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. 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 mea-

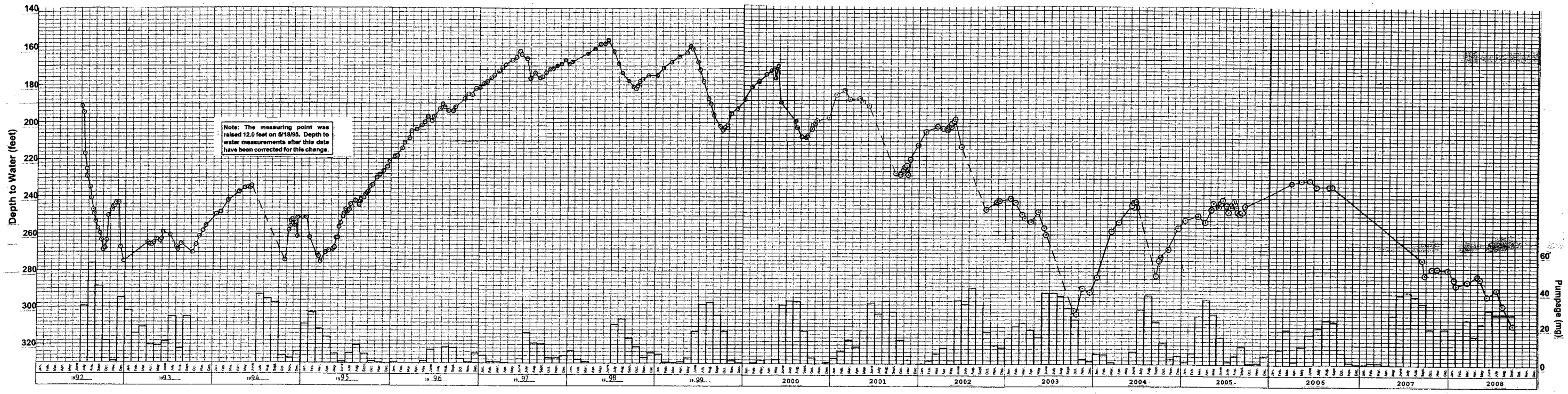

FIGURE 3-WATER-LEVEL AND PUMPAGE HYDROGRAPH FOR WELL NO. 15

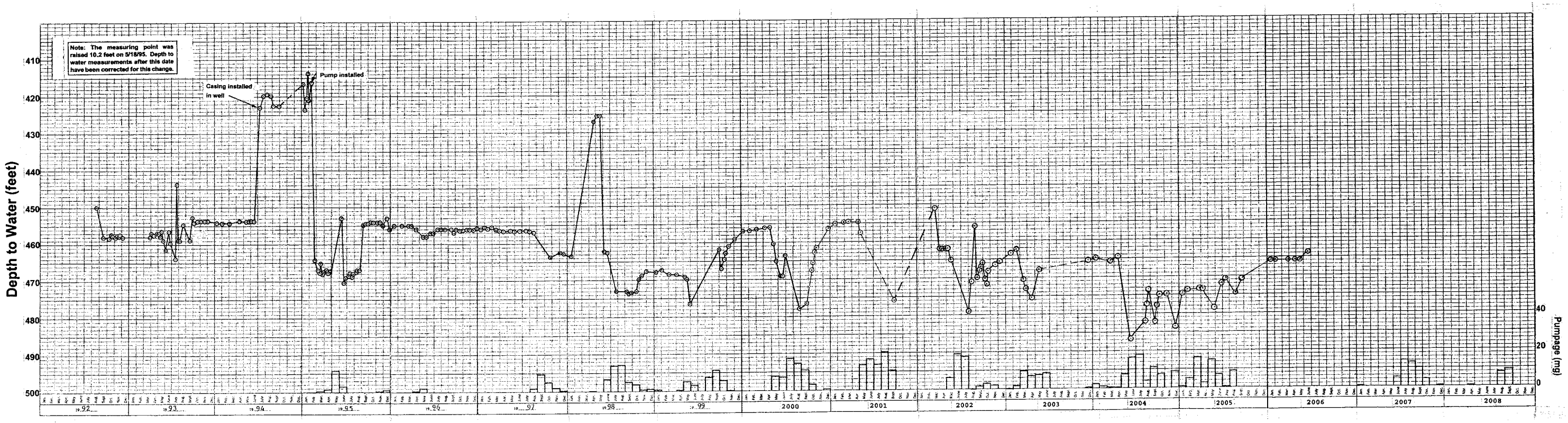

FIGURE 4-WATER-LEVEL AND PUMPAGE HYDROGRAPH FOR WELL NO. 16

surements 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 previous 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 from Well No. 16 resumed in 2007 and in 2008. 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 during periods of little pumpage. The water level in Well No. 17 gradually rose during November 1995-August 1999, except during some

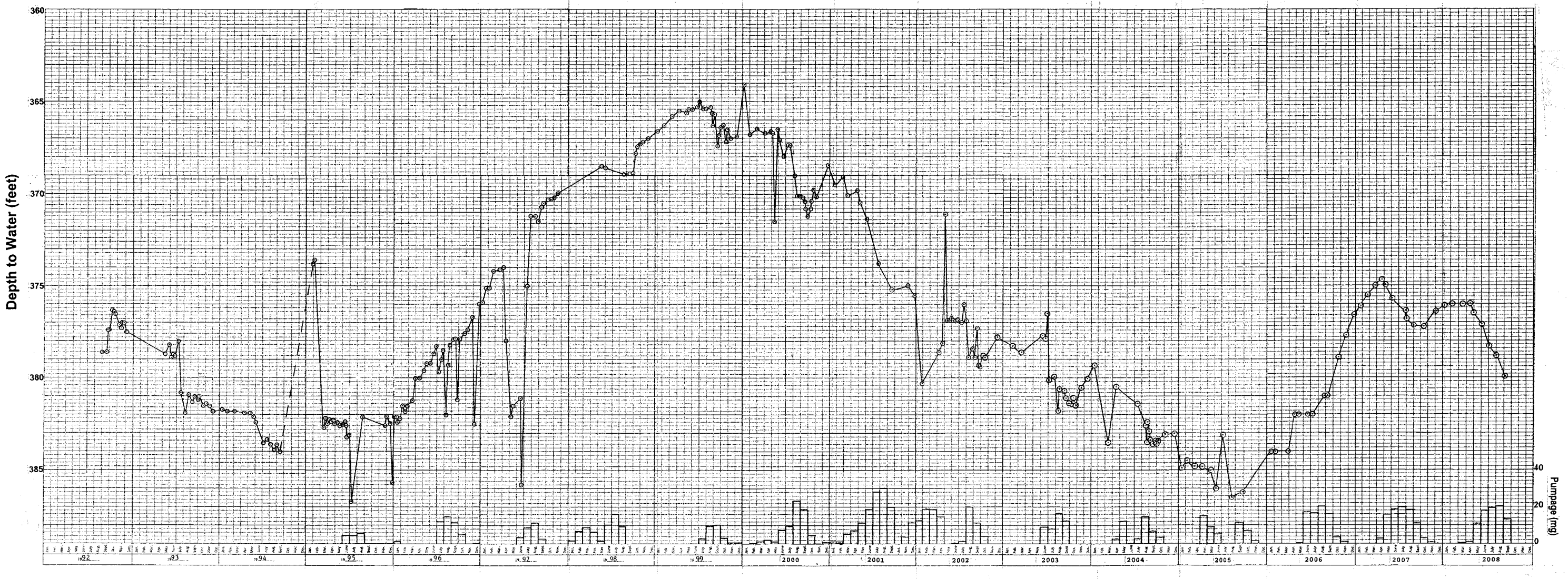

FIGURE 5-WATER-LEVEL AND PUMPAGE HYDROGRAPH FOR WELL NO. 17

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. The water level in Well No. 17 rose about a foot in late 2007 and early 2008, and the water level then fell about four feet through September 2008.

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. The water level in this well has stayed about 100 feet deep since 2007.

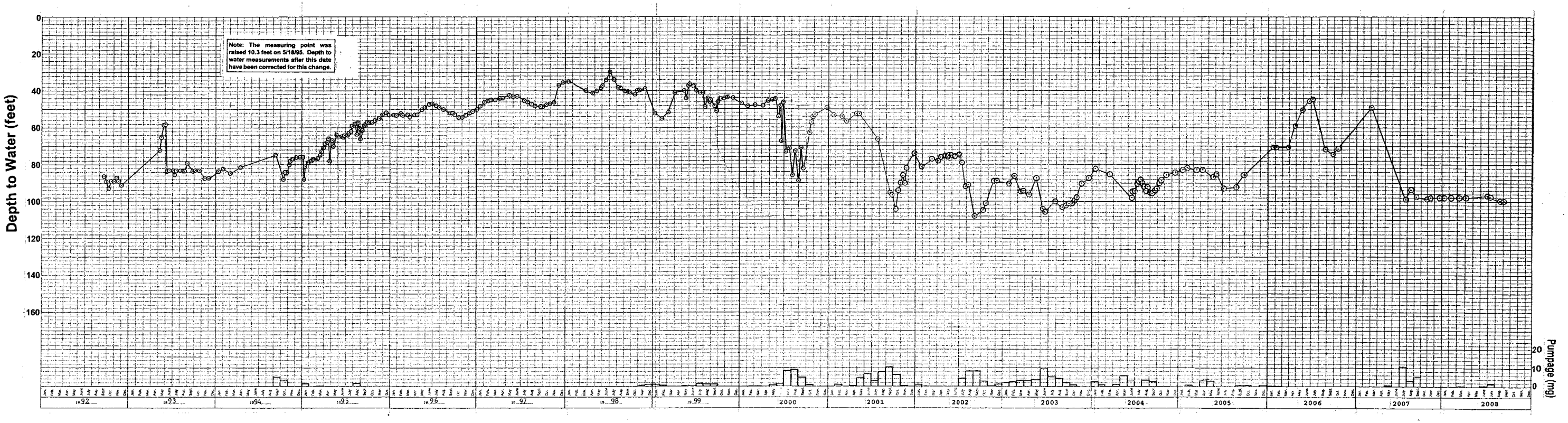

FIGURE 6-WATER-LEVEL AND PUMPAGE HYDROGRAPH FOR WELL NO. 18

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 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. The water level rose after September 2007 through August 2008, then fell in September 2008.

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

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

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 rose to about 18 feet due to a reduction in pumpage from the well. During June-September, 2008, the water level in Well No. 1 fell 47 feet.

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 water level in Well No. 6 rose 33 feet between September and November 2007. The water level in Well No. 6 then fell almost 50 feet between November 2007 and September 2008, associated with pumping the 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. The water level in Well No. 10 rose almost 20 feet during September-November 2007, due to a reduction in pumpage. The water level then fell about 30 feet during November 2007-March 2008. The water level in Well No. 10 rose about 10 feet during March-July, 2008, and then fell almost 30 feet during July-September, 2008. The water-level declines during 2007-08 were associated with 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. The water level in Well No. 5A rose two and a half feet during September 2007-July 2008, then fell two and a half feet during July-September, 2008.

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. The water level in Well No. 7 fell 15 feet between September 2007 and June 2008. The water level then rose almost 10 feet during June, then fell about 10 feet through the end of August 2008. The water level in Well No. 7 rose two feet in September 2008.

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 2008, 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 2006-07, associated with pumping of wells in the vicinity. The water level in Well No. 14M rose about 10 feet after April 2007, then had fallen about 50 feet by August 2008. The

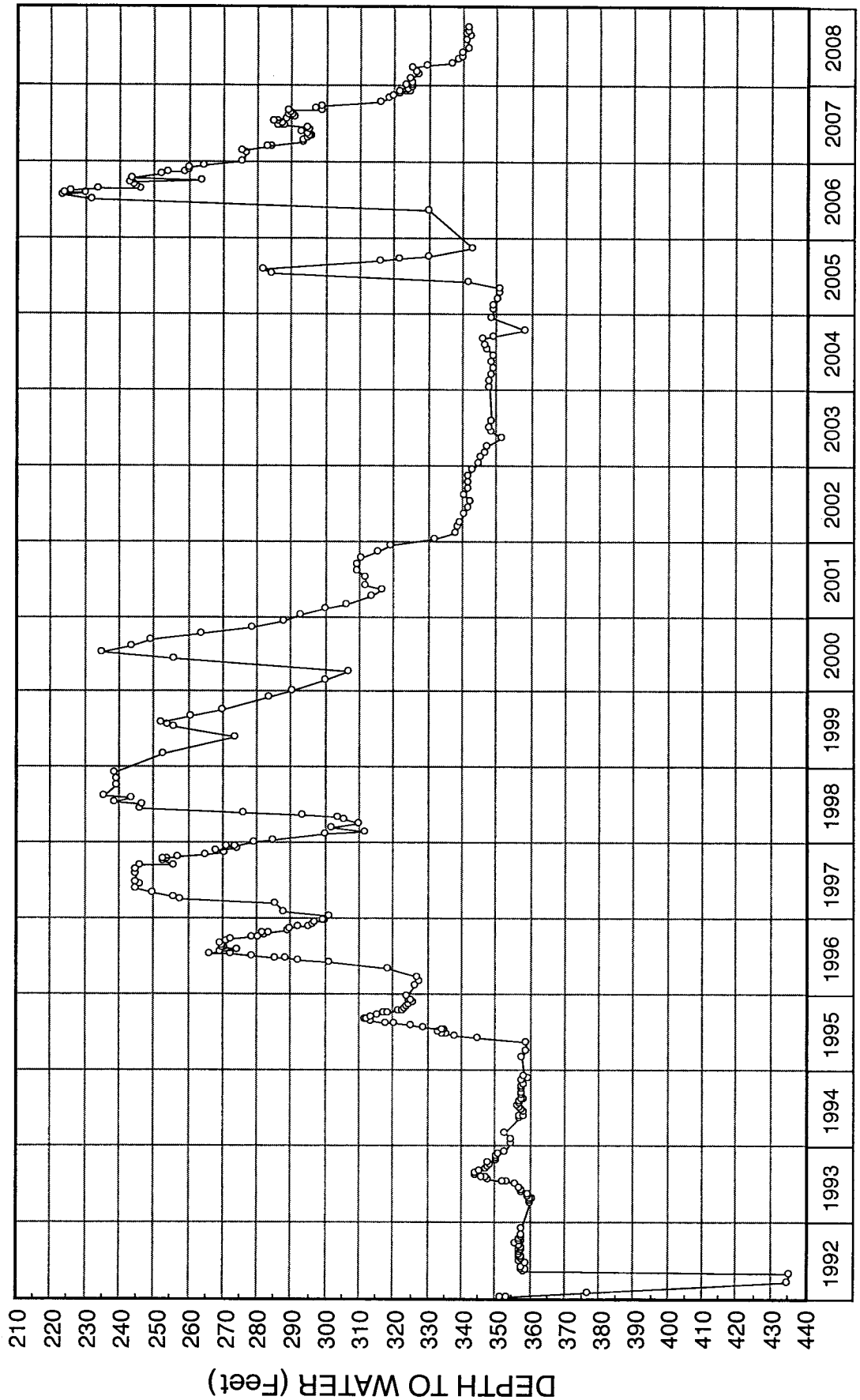

FIGURE 8 - WATER-LEVEL HYDROGRAPH FOR WELL NO. 14M

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, 2007-December 7, 2007. The transducer was recalibrated on April 1, 2007. There was a data logger failure in December 2007, and water levels could only be measured with an electric sounder after that time.

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 sightly rose in 2005 and 2006. Since 2006, the water levels in this well have been relatively stable. Transducer

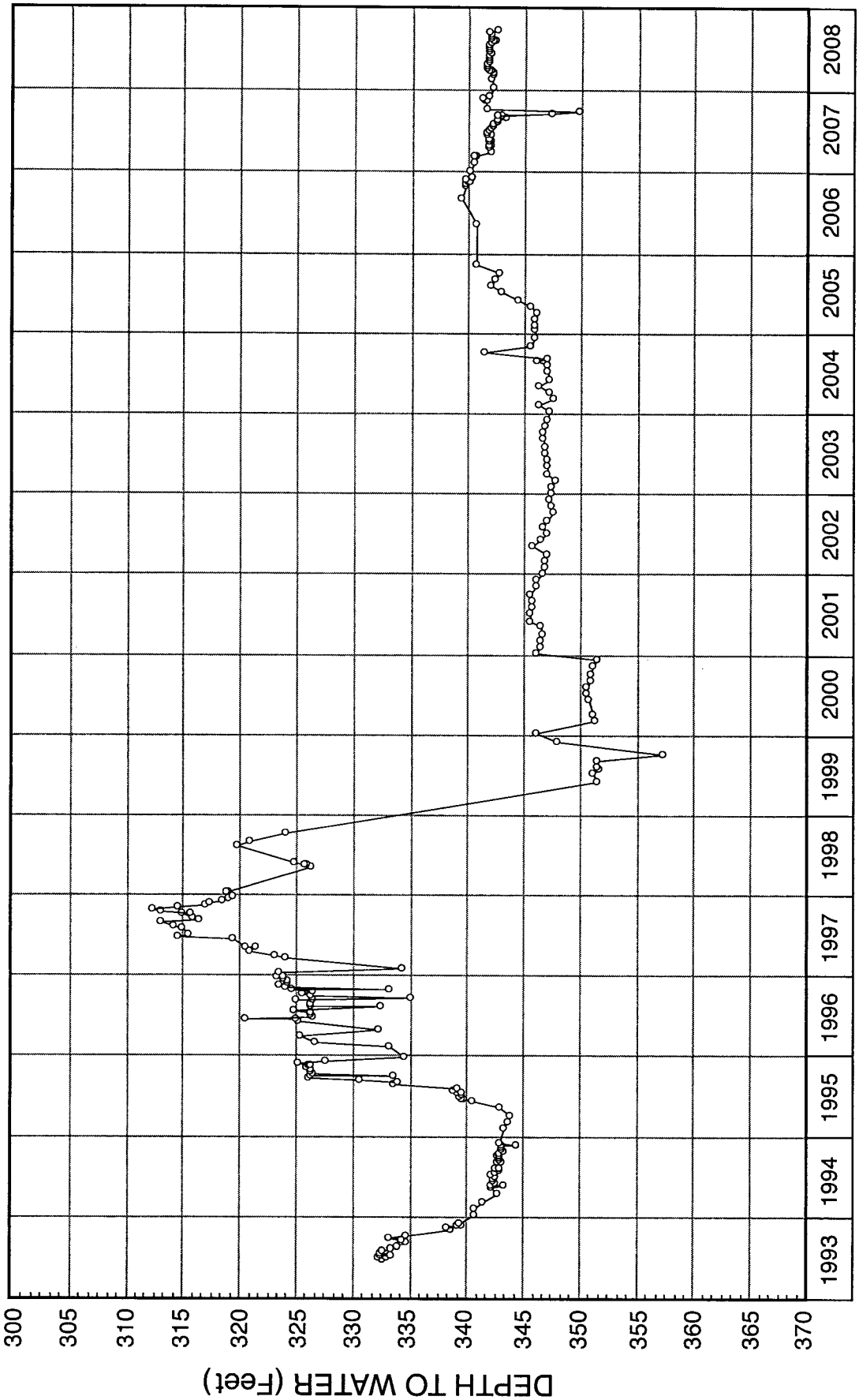

FIGURE 9 - WATER-LEVEL HYDROGRAPH FOR WELL NO. 19

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-November 6, 2007. The data logger in this well was removed on November 6, 2007 and placed in another well.

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 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. In September

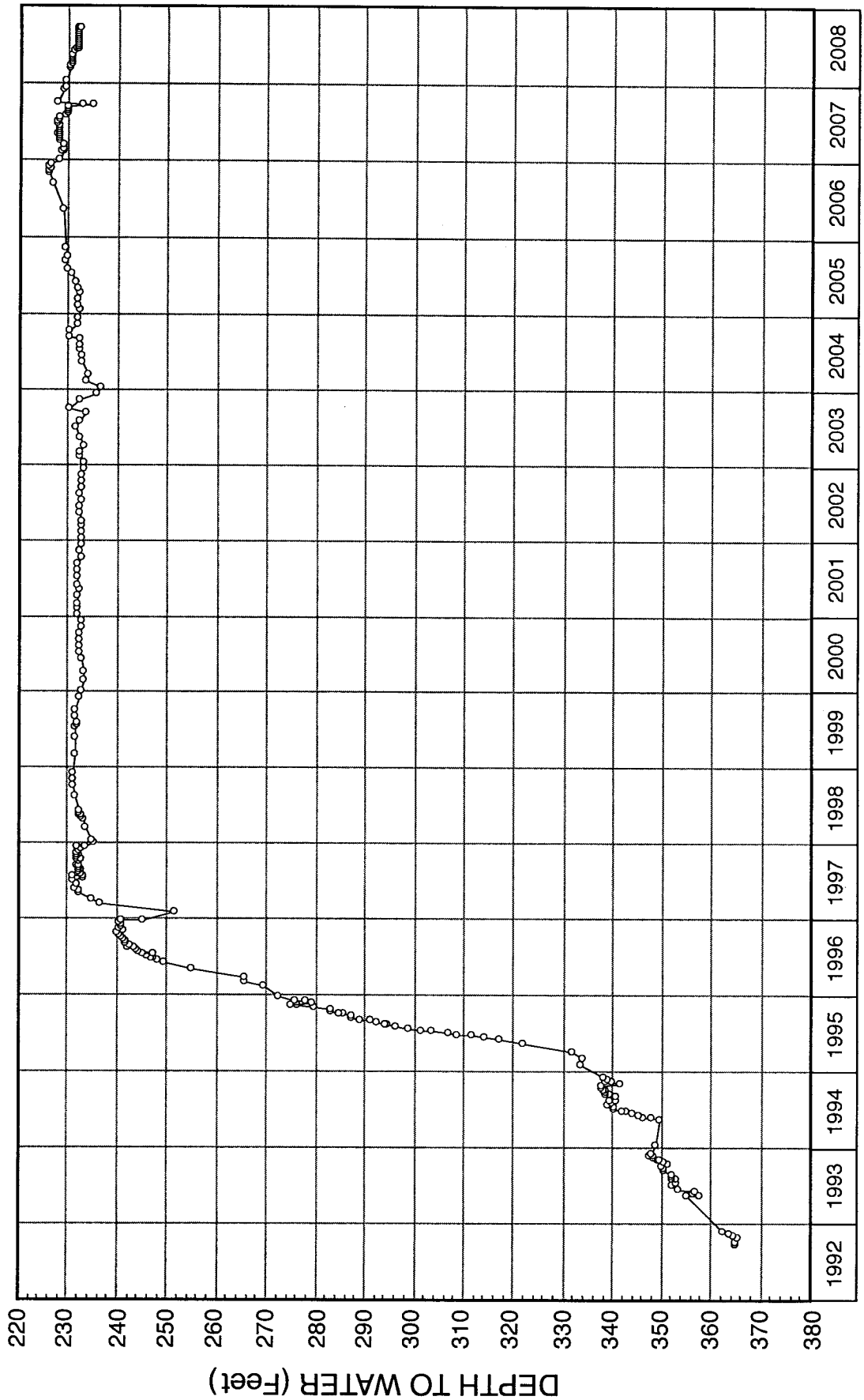

FIGURE 10 - WATER-LEVEL HYDROGRAPH FOR WELL NO. 21

2007, the water level in this well temporarily fell about five feet, and then recovered. The water level in this well fell about four feet during October 2007-September 2008. 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 data logger in this well was removed before October 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 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 fell about 13 feet between August 2007 and August 2008.

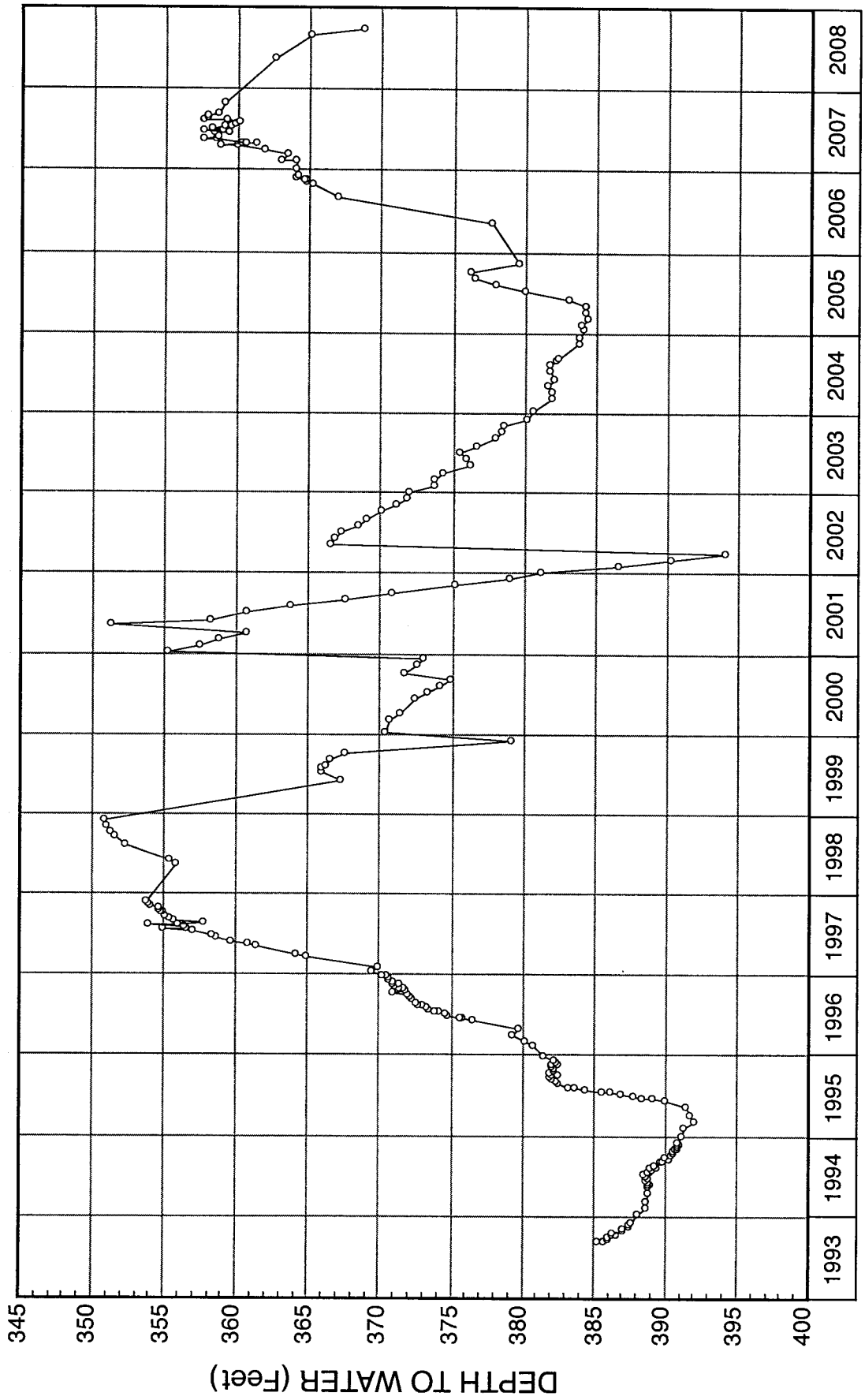

FIGURE 11 - WATER-LEVEL HYDROGRAPH FOR WELL NO. 24

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. All of the data from the data logger for the 2008 water year was lost by the District.

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, rose during 2005-07, and were relatively stable or slightly declined during the 2008 water year. 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.

Water-level hydrographs for Well No. 25, 26, and 30 are provided in Appendix D. Water-level measurements for Well No. 25 commenced in late 2002 and are available through July 2007. No water-level measurements have been made since then, as the District was preparing to put the well in service. To date, the water level in Well No. 25 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. During 2002-2007, water levels in this well rose, and the shallowest measured water level to date was in May 2007.

Since June 2006, water levels in Well No. 26 have declined from a depth of 249 to 257 feet, primarily due to decreased recharge. Reliable transducer measurements for this well are available from December 11, 2007-December 13, 2007. The data logger in this well was removed on December 13, 2007 and re-installed on

April 1, 2008. The data logger was operational for April 1-16, 2008, and then was removed for the rest of the water year.

Water levels in Well No. 30 fell eight feet during October 2007-September 2008. A data logger was installed in this well on June 25, 2008 and was operational through the end of the water year.

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 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. The water level in Well SC-1 rose about three feet during April-July, 2008, then fell about three feet during July-September, 2008.

Figure 13 is a water-level hydrograph for SC-2, which taps

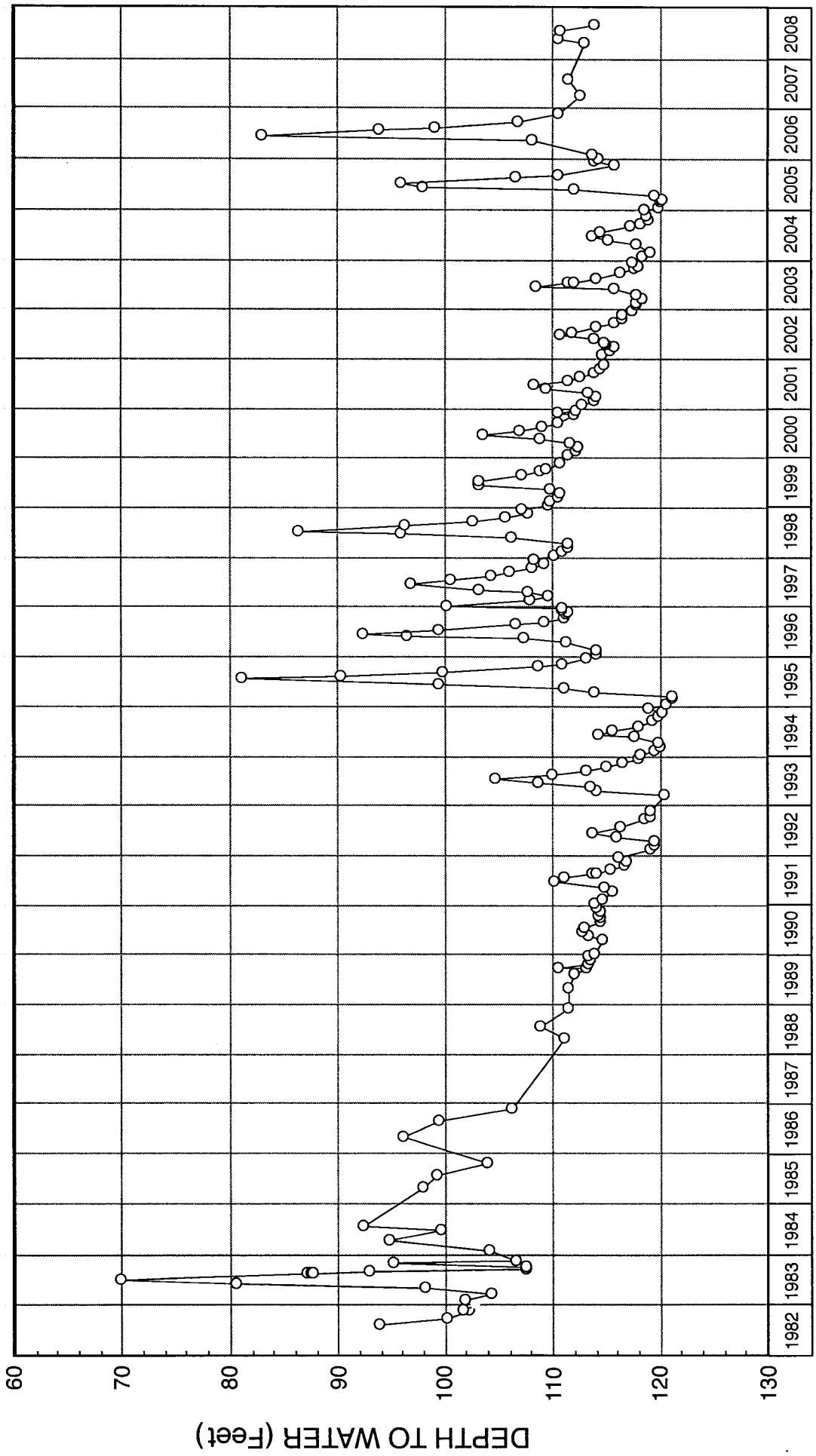

FIGURE 12 - WATER-LEVEL HYDROGRAPH FOR SC-1

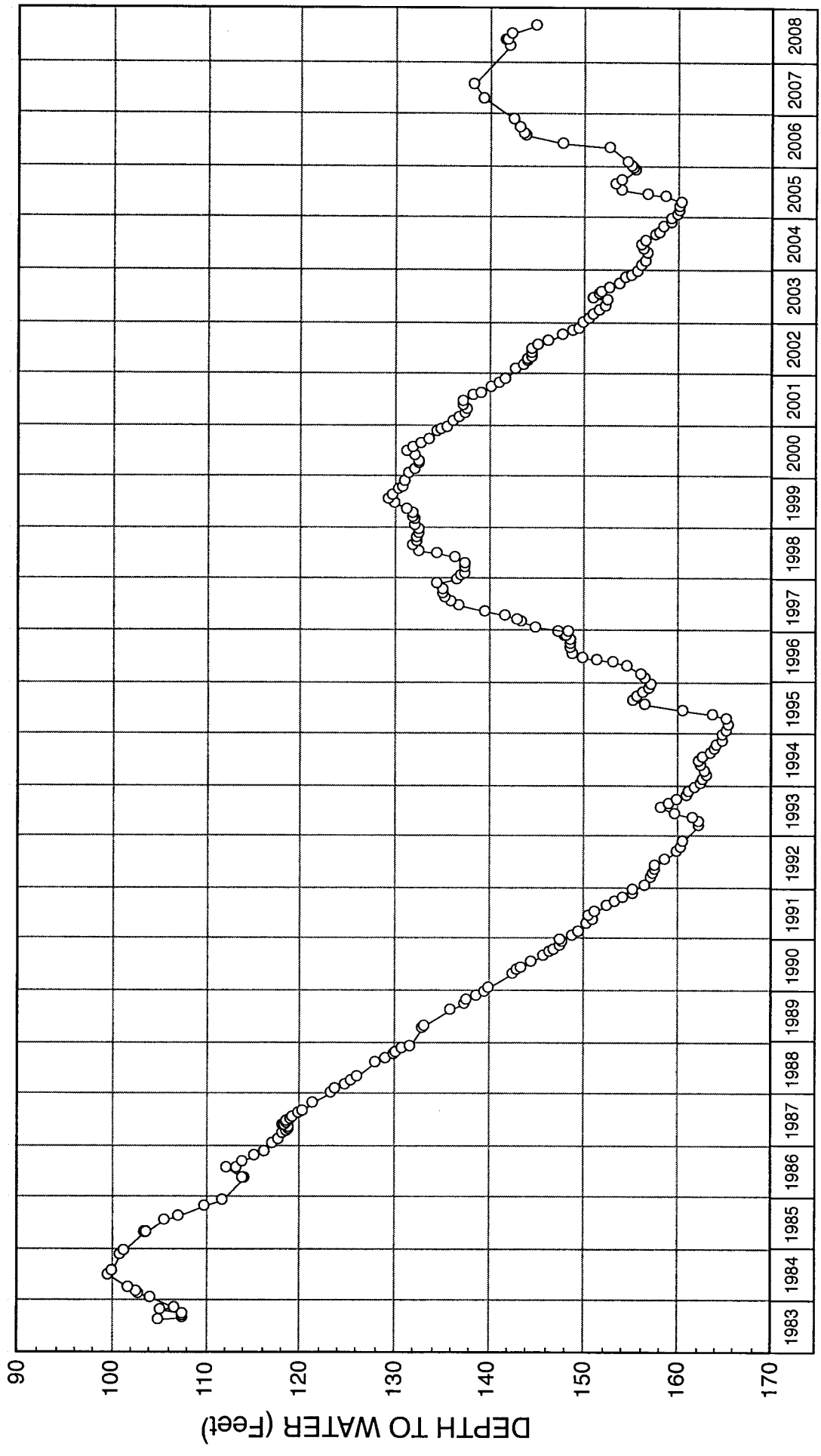

FIGURE 13 - WATER-LEVEL HYDROGRAPH FOR SC-2

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. The water level in this well fell about five feet during October 2007-September 2008. 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

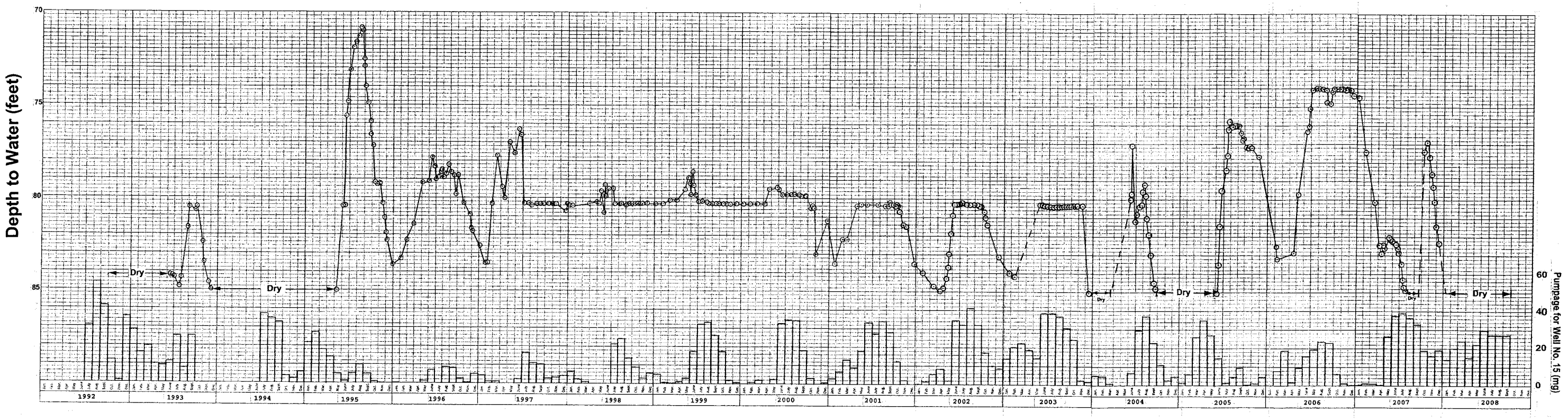

FIGURE 14-WATER-LEVEL HYDROGRAPH FOR WELL NO. 22 AND PUMPAGE FOR WELL NO. 15

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. 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 1996-2007, the water-level trends in Well No. 22 also followed the pattern of streamflow in Mammoth Creek. Between early 1997 and May 2005, 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. The temporary water-level rise in October 2007 was due to the District adding water to the well on September 30, 2007 in an attempt to redevelop it prior to a subsequent pump test. Water levels in Well No. 22 were frequently measured during a two-week pump test on Well No. 15 during October 24-November 7, 2007. Measurements indicated no influence of pumping Well No. 15 on water levels in Well No. 22 (KDSA, 2008). The well was dry from February 2008 through the rest of the 2008 water year.

A water-level hydrograph based primarily on manual measurements for Well No. 23 and pumpage for nearby Well No. 1 are shown

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

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 2007. 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. 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 was operational in Well No. 23 from May 2007-March 26,2008. The data logger was non-operational from March 26-May 13, 2008, and then was operational for the rest of the water year.

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

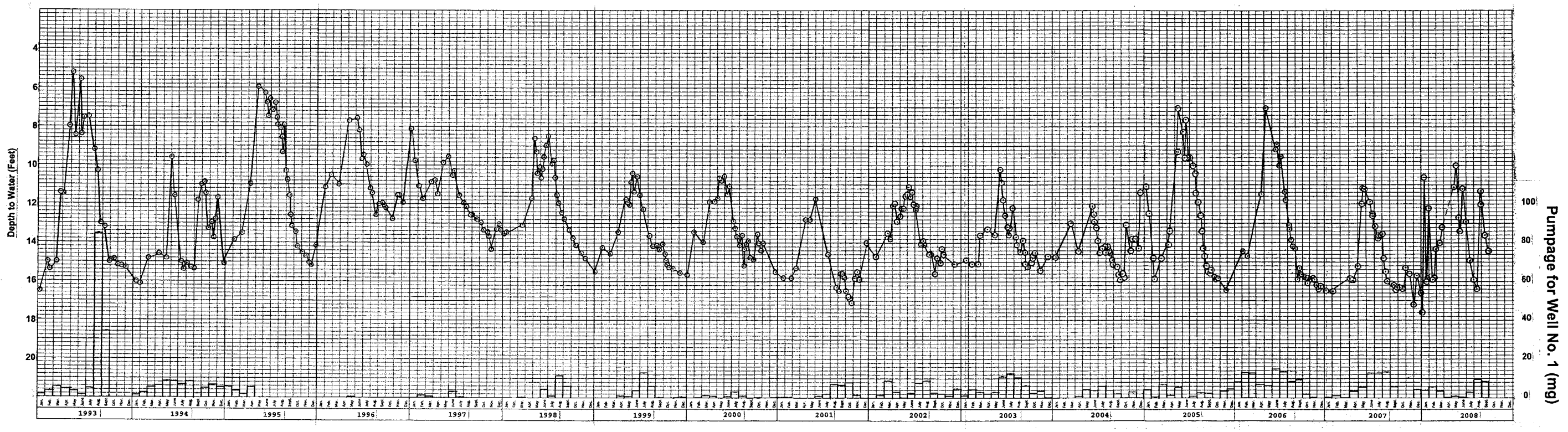

FIGURE 16-WATER-LEVEL HYDROGRAPH FOR WELL NO. 23 AND PUMPAGE FOR WELL NO. 1

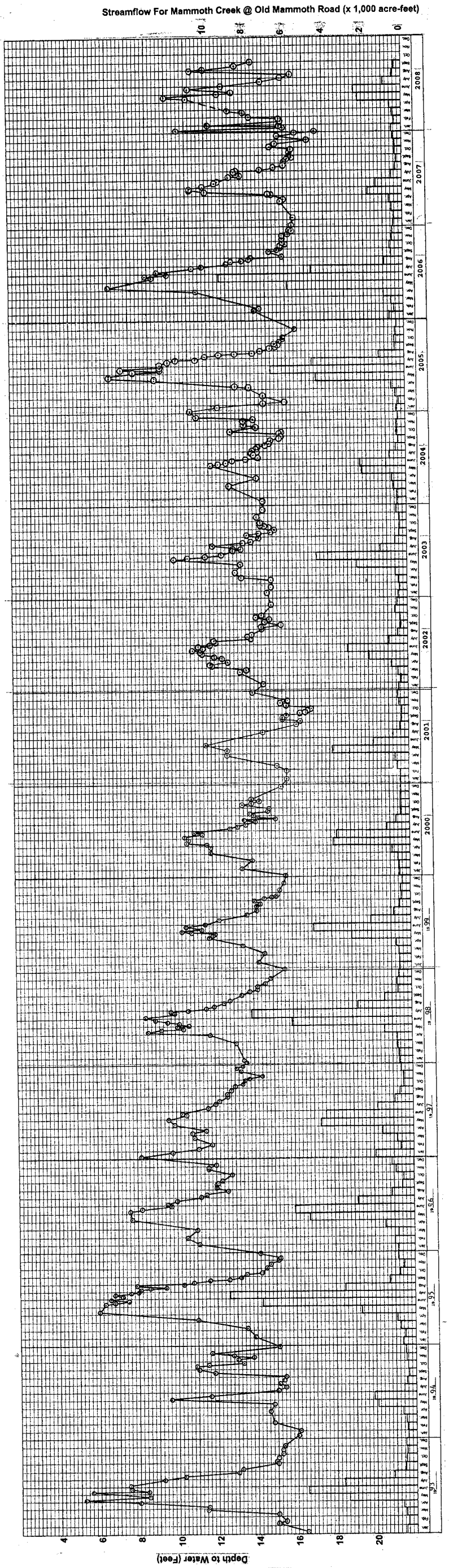

FIGURE 17-WATER-LEVEL HYDROGRAPH FOR WELL NO. 23 AND MAMMOTH CREEK STREAMFLOW

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 shallowest 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 40 feet by March 2008. The water level rose five feet during March-May 2008, then fell three feet by the end of September 2008.

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. The water level rose four feet during October 2007-May 2008, then fell four feet during May-September 2008.

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. The well was dry during June 2007-September 2008.

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 water level for Well No. 11M fell about nine feet between 1998 and 2001, due to decreased recharge. However, the shallowest water level in this well in 2002 was higher than in 2001, and near the level in 2000. The shallowest water level in

Well 11M was about two and a half feet higher in 2004 than in 2003. The shallowest water level in this well was relatively constant from 2002-04. In 2005 and 2006, the shallowest 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. The water level fell one foot during September 2007-March 2008, then rose 13 feet during March-July, 2008. The water level then fell six feet during July-September, 2008. 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 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 2007. After June 2006, the water level in this well fell, and by August 2007 the well was dry. The water level in this well rose after December 2007, and by June 2008 had risen about seven feet. The water level rose about one foot by mid-August 2008. In late August, the water level fell about 1.5 feet, then remained stable in September 2008. The long-term water-level trends for this well are due to recharge.

Water-level hydrographs for Wells No. 27, 28, and 29 are provided in Appendix D. Depth to water in Well No. 27 has ranged from about 39 to 60 feet. The water level has risen in the spring and fallen during the summer and fall. Overall, the water level in this well has been 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 71 feet. Since August 2006, the water level in this well has fallen. Depth to water in Well No. 29 has ranged from 63 feet to 89 feet. The water level in this well rose during June-October, 2007, then fell thereafter. 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 2008. 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 2008 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

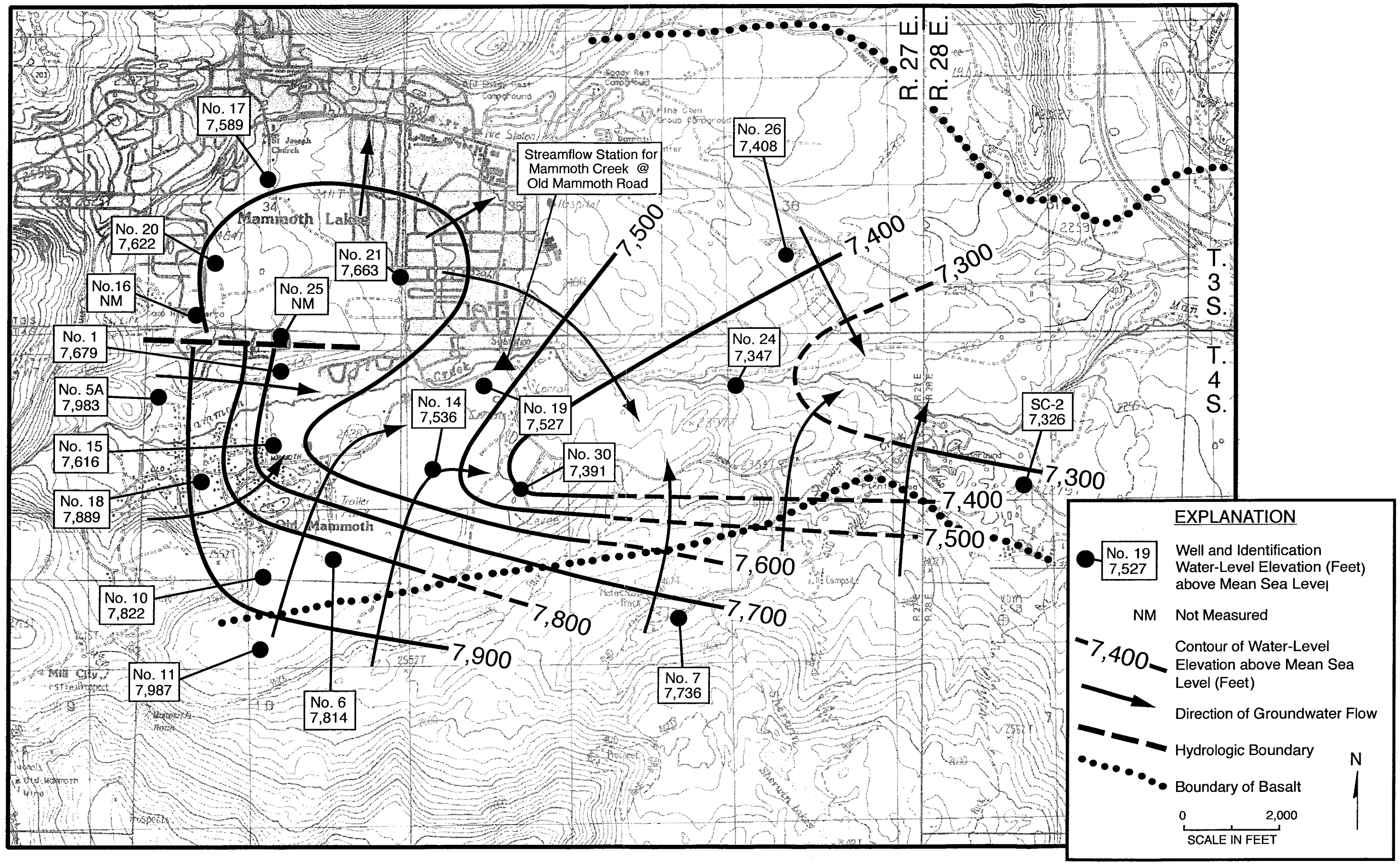

FIGURE 18 - WATER-LEVEL ELEVATIONS IN SEPTEMBER 2008

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 2008 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 2007-08 water year. Transducers are installed in a number 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 2007-08. 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, 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 indicated some temporary increases for temperature and electrical conductivity during 1996-2008. Water from Wells No. 16, 17, 18, and 20 showed an overall decrease in pH during 1996-2008. These are the westernmost District supply wells. Low pH groundwater is known to be present beneath parts of Mammoth Mountain. In 2006-08, the pH values in water from these wells were generally low.

MAMMOTH CREEK STREAMFLOW

Records of streamflow at the outlet from Twin Lakes and the Old Mammoth Road crossing during the 2008 water year are provided in Appendix F. The mean monthly flow at the Old Mammoth Road crossing ranged from 5.8 cfs in September 2008 to 41 cfs in June 2008. In 2007, the flow at the Old Mammoth Road crossing was higher during November 11-12, December 10-11 and 19-21, and January 5-12 and 27-31.

Average daily flows for the upstream (Twin Lakes) and downstream (Old Mammoth Road) stations during the 2008 water year are plotted in Appendix F. 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 October 1-9, October 21-November 10, November 13-20, January 13-21, February 7-29, March 1-13, March 15-19, and September 19-30. Dur-

ing these periods, the downstream streamflow was usually about 0.5 to 1.5 cfs less than the upstream flow. Pumpage from District wells was calculated for each of these periods. During these periods the total District well pumpage ranged from about 0.9 to 5.7 cfs. Except for October 1-9, 2007 and September 19-30, 2008, the total District pumpage ranged from 0.9 to 2.7 cfs. The District well pumpage doesn't directly correlate with these apparent losses in streamflow. For example, when the District pumpage increased, the streamflow increased. 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 24-November 7, 2007, a comprehensive aquifer test was conducted by the District, using Well No. 15 as the pumped well. As part of the test, pumpage of Well No. 15, streamflow at Old Mammoth Road, and water levels in a number of wells were measured. The results indicated no influence of pumping Well No. 15 on streamflow in Mammoth Creek (KDSA, 2008).

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 springflow 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 (1993-2008). 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 2008 water year. Water-level hydrographs for the District supply wells indicated deeper water levels in 2008 than in 2007, 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 fell during the 2008 water year.

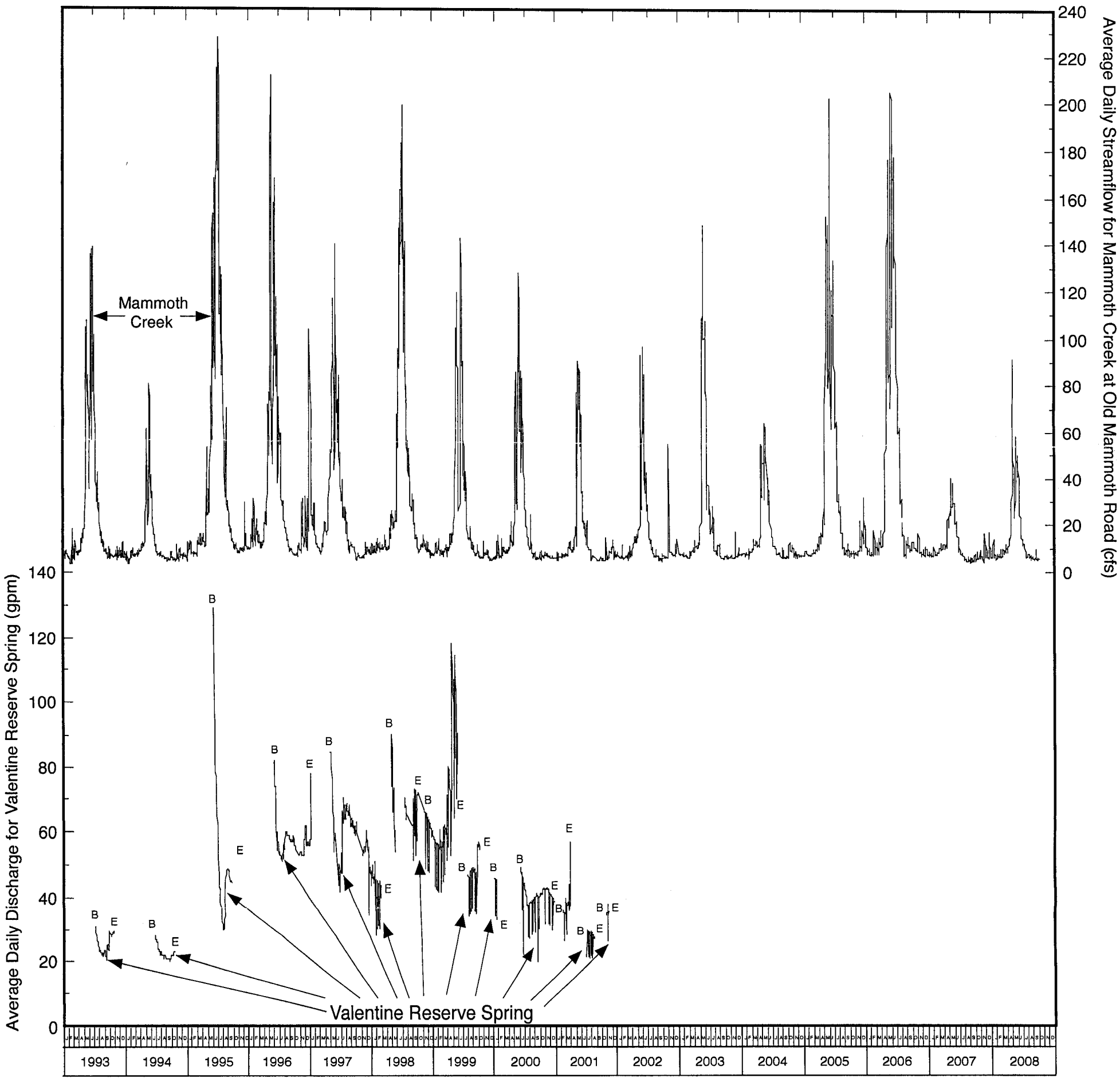

FIGURE 19 - FLOW FOR VALENTINE SPRING (1993-2001) AND MAMMOTH CREEK STREAMFLOW (1993-2008)

The water-level elevation contour map for September 2008 confirms that the cone of depression due to pumping of District wells is localized, and does not extend east past Well No. 24. 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-FEET
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	4.786	12.663	1121.938
2006-07	170.238	399.632	243.380	495.706	112.049	259.239	49.767	205.656	1935.667
2007-08	126.837	419.632	540.883	799.804	66.552	267.583	8.221	147.123	2376.635
Total	2954.706	4659.738	9287.815	7011.447	1625.850	2671.191	591.521	2054.817	30857
Mean	155.511	245.249	488.832	438.215	116.132	190.799	39.435	146.773	1624
Max	442.900	546.300	994.400	826.307	242.233	393.840	121.350	242.589	2742
Min	0.000	0.000	126.221	78.000	0.147	44.000	0.000	12.663	874

Annual Pumpage

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

DAY	2007 OCT	NOV	DEC	2008 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.000	0.000	0.000	0.000	0.000	0.292	0.008	0.000	0.000	0.000	0.366	0.422
2	0.076	0.000	0.000	0.120	0.196	0.436	0.089	0.000	0.001	0.205	0.346	0.258
3	0.000	0.000	0.000	0.268	0.216	0.100	0.102	0.000	0.000	0.248	0.281	0.217
4	0.000	0.000	0.000	0.136	0.428	0.064	0.000	0.000	0.002	0.055	0.182	0.145
5	0.000	0.000	0.000	0.000	0.008	0.000	0.000	0.004	0.000	0.000	0.611	0.155
6	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.098	0.109
7	0.000	0.000	0.080	0.000	0.000	0.000	0.187	0.000	0.000	0.000	0.337	0.210
8	0.000	0.000	0.000	0.000	0.000	0.448	0.000	0.000	0.000	0.249	0.057	0.176
9	0.000	0.000	0.000	0.468	0.664	0.308	0.000	0.010	0.087	0.159	0.313	0.185
10	0.000	0.000	0.000	0.628	0.480	0.568	0.000	0.234	0.000	0.145	0.000	0.148
11	0.000	0.000	0.008	0.584	0.088	0.184	0.000	0.041	0.187	0.085	0.186	0.283
12	0.000	0.000	0.000	0.788	0.000	0.044	0.000	0.156	0.000	0.081	0.612	0.719
13	0.000	0.000	0.000	0.716	0.000	0.008	0.000	0.152	0.000	0.139	0.275	0.348
14	0.000	0.000	0.000	0.184	0.176	0.000	0.002	0.000	0.000	0.086	0.584	0.385
15	0.000	0.072	0.000	0.004	0.392	0.336	0.000	0.000	0.000	0.139	0.382	0.277
16	0.000	0.000	0.000	0.000	0.524	0.144	0.000	0.000	0.009	0.043	0.193	0.448
17	0.000	0.000	0.000	0.000	0.524	0.000	0.000	0.000	0.000	0.000	0.236	0.422
18	0.000	0.000	0.000	0.008	0.528	0.136	0.000	0.000	0.014	0.000	0.279	0.182
19	0.000	0.008	0.020	0.000	0.236	0.000	0.000	0.000	0.000	0.000	0.404	0.185
20	0.000	0.000	0.600	0.000	0.072	0.000	0.000	0.179	0.000	0.000	0.152	0.369
21	0.000	0.000	0.808	0.008	0.000	0.000	0.004	0.000	0.000	0.000	0.348	0.186
22	0.000	0.000	0.476	0.000	0.000	0.000	0.000	0.015	0.000	0.002	0.522	0.333
23	0.000	0.000	0.796	0.000	0.000	0.000	0.006	0.000	0.002	0.000	0.681	0.151
24	0.000	0.000	0.248	0.000	0.500	0.004	0.000	0.000	0.000	0.000	0.306	0.367
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.180	0.367
26	0.000	0.000	0.000	0.000	0.032	0.256	0.000	0.000	0.000	0.000	0.264	0.366
27	0.000	0.000	0.000	0.116	0.152	0.004	0.000	0.000	0.000	0.000	0.149	0.403
28	0.000	0.000	0.564	0.128	0.000	0.137	0.006	0.000	0.000	0.517	0.233	0.388
29	0.000	0.024	0.212	0.000	0.332	0.354	0.000	0.000	0.050	0.166	0.418	0.149
30	0.000	0.000	0.432	0.004		0.000	0.000	0.000	0.213	0.350	0.321	0.241
31	0.000		0.276	0.000		0.002		0.000		0.359	0.422	0.000
TOTAL	0.076	0.104	4.520	4.160	5.548	3.829	0.405	0.792	0.565	3.026	9.731	8.593
MEAN	0.002	0.003	0.146	0.134	0.191	0.124	0.014	0.026	0.019	0.098	0.314	0.277
MAX	0.076	0.072	0.808	0.788	0.664	0.568	0.187	0.234	0.213	0.517	0.681	0.719
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
AC-FT	0.233	0.319	13.865	12.761	17.018	11.745	1.243	2.428	1.734	9.283	29.849	26.359
TOTAL AC-FT OCT THRU SEP:			126.837									

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

	2007			2008								
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.784	0.000	0.896	0.000	0.000	0.000	0.000	0.000	0.048	0.752	0.480	1.088
2	0.832	0.000	0.848	0.000	0.000	0.000	0.000	0.000	0.272	0.704	0.928	1.056
3	0.720	0.000	0.816	0.176	0.000	0.000	0.000	0.000	0.240	0.656	0.960	1.056
4	0.960	0.000	0.800	0.000	0.000	0.000	0.000	0.000	0.112	0.880	0.976	0.928
5	0.976	0.000	0.864	0.000	0.000	0.000	0.000	0.000	0.224	0.976	0.928	1.056
6	0.976	0.000	0.896	0.000	0.000	0.000	0.000	0.000	0.224	0.880	0.896	0.960
7	0.992	0.000	0.976	0.000	0.000	0.000	0.000	0.000	0.288	0.848	0.656	0.928
8	0.912	0.000	0.864	0.000	0.000	0.000	0.000	0.000	0.256	0.768	0.976	1.088
9	0.944	0.000	0.816	0.000	0.000	0.000	0.000	0.000	0.384	0.736	0.992	1.088
10	0.896	0.000	0.912	0.000	0.000	0.000	0.000	0.000	0.928	0.608	1.152	1.024
11	0.848	0.000	0.800	0.000	0.000	0.000	0.000	0.000	0.720	0.784	0.976	0.896
12	0.736	0.000	0.832	0.000	0.000	0.000	0.000	0.000	0.256	0.912	0.928	0.928
13	0.768	0.000	0.544	0.000	0.000	0.000	0.000	0.000	0.624	0.896	0.816	0.928
14	0.768	0.000	1.024	0.000	0.000	0.000	0.000	0.000	0.576	0.816	0.656	0.960
15	0.720	0.624	0.960	0.000	0.000	0.000	0.000	0.000	0.592	0.880	0.880	1.024
16	0.768	0.928	0.928	0.624	0.000	0.000	0.000	0.000	0.544	0.768	0.992	1.024
17	0.192	0.912	0.320	0.656	0.000	0.000	0.000	0.000	0.624	0.752	0.896	0.928
18	0.016	0.848	0.240	0.400	0.000	0.000	0.000	0.000	0.528	0.800	0.720	0.960
19	0.000	0.256	0.016	0.000	0.000	0.000	0.000	0.000	0.560	0.864	0.752	1.024
20	0.000	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.624	0.784	0.928	0.928
21	0.016	0.032	0.000	0.000	0.000	0.000	0.000	0.000	0.672	0.784	1.136	1.024
22	0.000	0.048	0.000	0.000	0.000	0.000	0.000	0.128	0.576	0.752	0.768	0.992
23	0.000	0.080	0.000	0.000	0.000	0.000	0.000	0.144	0.752	0.816	0.768	0.928
24	0.000	0.176	0.320	0.000	0.000	0.000	0.000	0.000	0.752	0.704	1.088	0.864
25	0.000	0.928	0.208	0.000	0.000	0.000	0.000	0.032	0.912	0.784	1.120	0.768
26	0.000	0.864	0.208	0.000	0.000	0.000	0.000	0.048	0.736	0.848	1.056	0.928
27	0.000	0.800	0.048	0.000	0.000	0.000	0.000	0.000	0.848	0.848	1.088	0.832
28	0.000	0.752	0.032	0.000	0.000	0.000	0.000	0.000	0.800	0.336	1.024	0.864
29	0.000	0.720	0.352	0.000	0	0.000	0.000	0.000	0.864	0.000	1.056	0.832
30	0.000	1.040	0.000	0.000		0.000	0.000	0.000	1.008	0.016	1.088	0.704
31	0.000		0.240	0.000		0.000		0.176		0.000	1.024	
TOTAL	13.824	9.024	15.760	1.856	0.000	0.000	0.000	0.528	16.544	21.952	28.704	28.608
MEAN	0.446	0.301	0.508	0.060	0.000	0.000	0.000	0.017	0.551	0.708	0.926	0.954
MAX	0.992	1.040	1.024	0.656	0.000	0.000	0.000	0.176	1.008	0.976	1.152	1.088
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.048	0.000	0.480	0.704
AC-FT	42.405	27.681	48.344	5.693	0.000	0.000	0.000	1.620	50.748	67.337	88.049	87.755
TOTAL AC-FT OCT THRU SEP:			419.632									

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

DAY	2007 OCT	NOV	DEC	2008 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.672	0.000	0.000	0.936	0.912	0.904	0.832	0.896	0.000	0.000	0.800	0.784
2	0.688	0.000	0.000	0.864	0.872	0.808	0.648	0.928	0.000	0.000	0.928	0.784
3	0.344	0.000	0.056	0.872	0.848	0.632	0.640	0.864	0.000	0.000	0.880	0.768
4	0.000	0.000	0.000	0.856	0.896	0.912	0.688	0.840	0.000	0.000	0.784	0.784
5	0.000	0.000	0.024	0.912	0.928	0.832	0.736	0.848	0.000	0.000	0.768	0.768
6	0.000	0.000	0.000	0.824	0.904	0.880	0.840	0.928	0.000	0.000	0.768	0.784
7	0.000	0.000	0.000	0.816	0.960	0.880	0.656	0.904	0.000	0.000	0.928	0.752
8	0.000	0.000	0.000	0.848	0.920	0.896	0.784	0.904	0.000	0.000	0.880	0.800
9	0.000	0.000	0.000	0.384	0.832	0.872	0.696	0.896	0.000	0.000	0.864	0.720
10	0.000	0.000	0.000	0.272	0.808	0.512	0.752	0.912	0.000	0.000	0.880	0.784
11	0.000	0.000	0.008	0.376	0.920	0.704	0.832	0.904	0.000	0.000	0.784	0.736
12	0.000	0.000	0.000	0.328	0.712	0.728	0.776	0.880	0.000	0.000	0.784	0.784
13	0.000	0.000	0.000	0.288	0.936	0.792	0.704	0.904	0.000	0.000	0.752	0.768
14	0.000	0.016	0.000	0.688	0.768	0.792	0.736	0.880	0.000	0.000	0.768	0.752
15	0.008	0.096	0.000	0.784	0.872	0.816	0.728	0.224	0.000	0.016	0.768	0.752
16	0.000	0.000	0.000	0.360	0.904	0.864	0.680	0.000	0.000	0.000	0.848	0.768
17	0.016	0.000	0.568	0.120	0.904	0.680	0.664	0.000	0.000	0.016	0.880	0.752
18	0.000	0.000	1.008	0.536	0.840	0.784	0.688	0.000	0.000	0.000	0.752	0.768
19	0.000	0.664	0.856	0.928	0.832	0.752	0.728	0.000	0.000	0.000	0.736	0.736
20	0.000	1.032	0.432	0.888	0.920	0.752	0.760	0.000	0.000	0.000	0.752	0.768
21	0.000	0.880	0.312	0.904	0.824	0.744	0.736	0.000	0.000	0.000	0.848	0.720
22	0.000	1.000	0.440	0.048	0.904	0.904	0.744	0.000	0.000	0.000	0.816	0.752
23	0.000	1.008	0.800	0.312	0.928	0.856	0.624	0.000	0.000	0.016	0.832	0.672
24	0.000	0.872	1.016	0.672	0.856	0.888	0.736	0.000	0.000	0.000	0.816	0.768
25	0.000	0.032	0.984	0.928	0.872	0.864	0.712	0.000	0.000	0.000	0.800	0.736
26	0.000	0.024	0.976	0.968	0.816	0.888	0.800	0.000	0.000	0.000	0.816	0.704
27	0.000	0.000	0.984	0.936	0.704	0.864	0.784	0.000	0.000	0.000	0.816	0.736
28	0.000	0.000	0.968	0.792	0.824	0.888	0.752	0.000	0.000	0.432	0.768	0.736
29	0.000	0.016	0.952	0.880	0.664	0.856	0.880	0.000	0.000	0.880	0.800	0.752
30	0.000	0.024	0.960	0.800		0.880	0.784	0.000	0.000	0.816	0.768	0.688
31	0.000		0.960	0.792		0.864		0.000		0.768	0.816	
TOTAL	1.728	5.664	12.304	20.912	24.880	25.288	22.120	12.712	0.000	2.944	25.200	22.576
MEAN	0.056	0.189	0.397	0.675	0.858	0.816	0.737	0.410	0.000	0.095	0.813	0.753
MAX	0.688	1.032	1.016	0.968	0.960	0.912	0.880	0.928	0.000	0.880	0.928	0.800
MIN	0.000	0.000	0.000	0.048	0.664	0.512	0.624	0.000	0.000	0.000	0.736	0.672
AC-FT	5.301	17.374	37.742	64.147	76.319	77.571	67.853	38.994	0.000	9.031	77.301	69.252
TOTAL AC-FT OCT THRU SEP:			540.883									

MAMMOTH COMMUNITY WATER DISTRICT
PRODUCTION WELL NO. 15
(FLOW IN MILLION GALLONS)

DAY	2007 OCT	NOV	DEC	2008 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.152	1.088	0.448	0.896	0.704	0.832	0.512	0.512	1.024	0.832	0.832	0.896
2	1.088	1.152	0.448	0.576	0.768	0.768	0.576	0.448	0.960	0.896	0.896	0.960
3	0.960	1.024	0.704	0.448	0.768	0.832	0.576	0.512	1.024	0.832	0.960	0.960
4	1.088	1.216	0.448	0.448	0.448	0.704	0.576	0.448	0.960	0.960	0.832	0.896
5	0.960	1.024	0.448	0.320	0.448	0.704	0.640	0.640	0.960	0.896	0.768	0.960
6	0.896	1.152	0.384	0.320	0.448	0.832	0.704	0.640	1.024	1.024	0.832	0.960
7	0.960	0.384	0.448	0.320	0.448	0.832	0.640	0.704	1.024	0.832	0.704	0.896
8	0.832	0.000	0.640	0.320	0.704	0.896	0.768	0.832	0.896	0.768	0.832	0.960
9	0.768	0.000	0.512	0.064	0.832	0.768	0.576	0.896	1.024	0.896	0.960	0.960
10	0.640	0.000	0.512	0.064	0.704	0.448	0.512	0.768	1.024	0.896	0.960	0.896
11	0.704	0.000	0.384	0.128	0.576	0.576	0.640	0.960	0.960	0.832	0.768	0.832
12	0.192	0.000	0.320	0.128	0.832	0.640	0.640	0.896	0.960	0.896	0.768	0.896
13	0.000	0.000	0.384	0.064	0.640	0.768	0.640	0.832	0.960	1.024	0.832	0.896
14	0.064	0.000	0.832	0.448	0.512	0.768	0.512	0.832	1.024	0.896	0.768	0.896
15	0.064	0.384	0.640	0.128	0.640	0.576	0.384	0.704	1.024	0.832	0.832	0.896
16	0.000	0.448	0.640	0.128	0.896	0.832	0.448	1.024	0.960	0.896	0.960	0.896
17	0.000	0.512	0.448	0.000	1.088	0.704	0.384	1.024	1.024	0.832	0.960	0.896
18	0.000	0.576	0.832	0.192	0.768	0.768	0.384	0.960	1.024	0.768	0.768	0.960
19	0.000	0.192	0.576	0.576	0.832	0.768	0.384	1.024	0.960	0.960	0.832	0.896
20	0.000	0.832	0.192	0.768	0.896	0.704	0.448	1.024	1.024	0.960	0.832	0.832
21	0.000	0.640	0.128	0.768	0.704	0.768	0.384	0.896	0.960	0.768	0.960	0.960
22	0.000	0.832	0.128	0.896	0.768	0.896	0.256	1.024	1.024	0.832	0.960	0.832
23	0.000	0.832	0.384	1.024	1.024	0.960	0.256	0.832	0.960	0.832	0.960	0.832
24	0.512	0.832	0.896	0.704	0.768	0.896	0.384	0.768	1.024	0.768	0.960	0.896
25	1.152	0.576	1.024	0.640	0.448	0.896	0.320	0.832	0.960	0.832	0.960	0.896
26	1.088	0.448	0.960	0.832	0.640	1.024	0.512	0.768	1.024	1.024	0.960	0.896
27	1.152	0.576	1.088	0.960	0.576	0.896	0.576	0.256	0.960	0.896	0.896	0.832
28	1.152	0.384	1.088	0.512	0.512	0.896	0.640	0.320	0.960	0.832	0.960	0.768
29	1.088	0.448	1.088	0.512	0.640	0.896	0.512	0.064	0.960	0.896	0.960	0.896
30	1.152	0.448	1.024	0.320		0.960	0.576	0.128	0.960	0.768	0.960	0.832
31	1.088		1.024	0.384		0.576		0.704		0.896	0.960	
TOTAL	18.752	16.000	19.072	13.888	20.032	24.384	15.360	22.272	29.632	27.072	27.392	26.880
MEAN	0.605	0.533	0.615	0.448	0.691	0.787	0.512	0.718	0.988	0.873	0.884	0.896
MAX	1.152	1.216	1.088	1.024	1.088	1.024	0.768	1.024	1.024	1.024	0.960	0.960
MIN	0.000	0.000	0.128	0.000	0.448	0.448	0.256	0.064	0.896	0.768	0.704	0.768
AC-FT	57.521	49.080	58.503	42.601	61.448	74.798	47.117	68.319	90.896	83.043	84.025	82.454

TOTAL AC-FT OCT THRU SEP: 799.804

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

DAY	2007 OCT	NOV	DEC	2008 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.432	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.032	0.384
2	0.432	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.320
3	0.288	0.000	0.000	0.112	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.432
4	0.544	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.000	0.016	0.336
5	0.432	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.048	0.000	0.000	0.480
6	0.368	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.016	0.416
7	0.352	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.384
8	0.352	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.512
9	0.272	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.464
10	0.208	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.368
11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.272
12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.144	0.352
13	0.000	0.000	0.000	0.000	0.000	0.032	0.000	0.000	0.000	0.000	0.224	0.320
14	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.208	0.288
15	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.320	0.416
16	0.000	0.000	0.000	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.368	0.384
17	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.320	0.320
18	0.000	0.000	0.016	0.000	0.000	0.000	0.000	0.000	0.016	0.000	0.240	0.176
19	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.288	0.256
20	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.416	0.208
21	0.000	0.000	0.000	0.000	0.000	0.000	0.064	0.000	0.000	0.000	0.336	0.272
22	0.000	0.000	0.000	0.000	0.000	0.000	0.032	0.000	0.000	0.000	0.512	0.240
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.464	0.336
24	0.000	0.000	0.000	0.000	0.000	0.000	0.160	0.000	0.000	0.000	0.464	0.160
25	0.192	0.000	0.000	0.000	0.000	0.000	0.032	0.000	0.000	0.000	0.464	0.128
26	0.320	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.432	0.224
27	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.416	0.224
28	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.416	0.128
29	0.000	0.000	0.064	0.000		0.000	0.000	0.000	0.000	0.000	0.496	0.288
30	0.000	0.000	0.144	0.000		0.000	0.000	0.000	0.000	0.016	0.416	0.096
31	0.000		0.016	0.000		0.000		0.000		0.000	0.464	
TOTAL	4.192	0.000	0.240	0.128	0.000	0.032	0.288	0.000	0.144	0.016	7.472	9.184
MEAN	0.135	0.000	0.008	0.004	0.000	0.001	0.010	0.000	0.005	0.001	0.241	0.306
MAX	0.544	0.000	0.144	0.112	0.000	0.032	0.160	0.000	0.080	0.016	0.512	0.512
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.096
AC-FT	12.859	0.000	0.736	0.393	0.000	0.098	0.883	0.000	0.442	0.049	22.920	28.172
TOTAL AC-FT OCT THRU SEP:			66.552									

MAMMOTH COMMUNITY WATER DISTRICT
PRODUCTION WELL NO. 17
(FLOW IN MILLION GALLONS)

	2007			2008								
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.384	0.000	0.000	0.000	0.000	0.000	0.000	0.320	0.384	0.704	0.768	0.576
2	0.384	0.000	0.000	0.000	0.000	0.000	0.000	0.384	0.416	0.704	0.736	0.576
3	0.416	0.000	0.096	0.000	0.000	0.000	0.000	0.352	0.480	0.736	0.672	0.544
4	0.096	0.000	0.000	0.000	0.000	0.000	0.000	0.160	0.384	0.640	0.672	0.608
5	0.000	0.000	0.000	0.000	0.032	0.000	0.000	0.160	0.288	0.704	0.672	0.576
6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.608	0.416	0.640	0.672	0.672
7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.480	0.480	0.704	0.672	0.576
8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.480	0.480	0.672	0.640	0.576
9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.448	0.576	0.672	0.640	0.576
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.576	0.576	0.736	0.704	0.352
11	0.000	0.000	0.032	0.000	0.000	0.000	0.000	0.416	0.608	0.704	0.608	0.512
12	0.224	0.000	0.000	0.000	0.000	0.000	0.000	0.384	0.576	0.672	0.704	0.384
13	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.416	0.608	0.672	0.640	0.416
14	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.704	0.640	0.512	0.672	0.544
15	0.000	0.672	0.000	0.000	0.000	0.000	0.000	0.480	0.768	0.416	0.640	0.448
16	0.032	0.000	0.000	0.000	0.000	0.000	0.000	0.608	0.672	0.320	0.672	0.512
17	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.704	0.640	0.448	0.640	0.256
18	0.000	0.000	0.000	0.000	0.000	0.000	0.128	0.576	0.672	0.576	0.640	0.320
19	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.640	0.704	0.640	0.640	0.352
20	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.768	0.672	0.640	0.608	0.352
21	0.128	0.000	0.000	0.000	0.000	0.000	0.000	0.576	0.736	0.448	0.640	0.320
22	0.352	0.000	0.000	0.000	0.000	0.000	0.096	0.000	0.704	0.672	0.640	0.320
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.704	0.640	0.608	0.320
24	0.448	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.704	0.608	0.608	0.512
25	0.128	0.000	0.000	0.000	0.000	0.128	0.096	0.000	0.704	0.672	0.640	0.416
26	0.000	0.000	0.000	0.000	0.000	0.128	0.000	0.000	0.704	0.704	0.672	0.384
27	0.000	0.000	0.000	0.000	0.000	0.192	0.000	0.000	0.704	0.704	0.608	0.448
28	0.448	0.000	0.000	0.000	0.000	0.000	0.384	0.000	0.672	0.608	0.704	0.448
29	0.000	0.000	0.000	0.000	0.000	0.000	0.192	0.096	0.736	0.704	0.640	0.128
30	0.000	0.000	0.000	0.000		0.000	0.224	0.320	0.640	0.608	0.608	0.000
31	0.000		0.000	0.000		0.000		0.384		0.544	0.576	
TOTAL	3.040	0.672	0.128	0.000	0.032	0.448	1.120	11.040	18.048	19.424	20.256	13.024
MEAN	0.098	0.022	0.004	0.000	0.001	0.014	0.037	0.356	0.602	0.627	0.653	0.434
MAX	0.448	0.672	0.096	0.000	0.032	0.192	0.384	0.768	0.768	0.736	0.768	0.672
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.288	0.320	0.576	0.000
AC-FT	9.325	2.061	0.393	0.000	0.098	1.374	3.436	33.865	55.362	59.583	62.135	39.951

TOTAL AC-FT OCT THRU SEP: 267.583

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

	2007			2008								
DAY	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	0.008	0.000	0.000	0.000	0.136	0.000
2	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.016	0.000	0.000
3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	0.000	0.000	0.000	0.000	0.000	0.016	0.000	0.000	0.000	0.064	0.000	0.000
5	0.000	0.000	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.080	0.000	0.000
6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.000	0.000
7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.128	0.000	0.000
8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.016	0.000	0.000
9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.048	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.104	0.000	0.000
11	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.016	0.000	0.000
13	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008	0.000	0.000
14	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.040	0.000	0.000
15	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.104	0.000	0.000
16	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.024	0.000	0.000
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
18	0.000	0.000	0.000	0.000	0.000	0.120	0.000	0.000	0.008	0.000	0.000	0.000
19	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.000	0.000	0.000	0.000	0.000	0.160	0.000	0.000	0.000	0.000	0.000	0.000
21	0.000	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
24	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.072	0.000	0.000	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
27	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.016	0.000	0.000	0.000
28	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.024	0.000	0.000
29	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.096	0.320	0.000	0.000
30	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.280	0.368	0.000	0.000
31	0.000		0.000	0.000		0.000		0.000		0.280	0.000	
TOTAL	0.016	0.008	0.008	0.008	0.008	0.296	0.008	0.000	0.472	1.720	0.136	0.000
MEAN	0.001	0.000	0.000	0.000	0.000	0.010	0.000	0.000	0.016	0.055	0.004	0.000
MAX	0.016	0.008	0.008	0.008	0.008	0.160	0.008	0.000	0.280	0.368	0.136	0.000
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
AC-FT	0.049	0.025	0.025	0.025	0.025	0.908	0.025	0.000	1.448	5.276	0.417	0.000
TOTAL AC-FT OCT THRU SEP:			8.221									

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

	2007			2008								
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.580	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.895	0.040	0.704
2	0.580	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.891	0.000	0.632
3	0.408	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.874	0.000	0.708
4	0.684	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.885	0.000	0.576
5	0.564	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.869	0.064	0.832
6	0.508	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.870	0.008	0.700
7	0.492	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.862	0.052	0.660
8	0.460	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.855	0.000	0.804
9	0.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.861	0.000	0.784
10	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.774	0.000	0.776
11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.906	0.204	0.604
12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.857	0.644	0.696
13	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.517	0.456	0.620
14	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.372	0.428	0.596
15	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.467	0.584	0.652
16	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.702	0.452	0.644
17	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.761	0.568	0.484
18	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008	0.420	0.356
19	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.496	0.460
20	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.688	0.376
21	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.064	0.624	0.464
22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.888	0.412
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.788	0.552
24	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.792	0.324
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.828	0.196
26	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.784	0.340
27	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.784	0.372
28	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.712	0.196
29	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.856	0.448
30	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.008	0.736	0.164
31	0.000		0.000	0.000		0.000		0.000		0.004	0.856	
TOTAL	4.776	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	13.302	13.752	16.132
MEAN	0.154	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.429	0.444	0.538
MAX	0.684	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.906	0.888	0.832
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.164
AC-FT	14.650	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	40.804	42.184	49.485

TOTAL AC-FT OCT THRU SEP: 147.123

MAMMOTH COMMUNITY WATER DISTRICT
PRODUCTION WELL WATER LEVEL DATA
OCTOBER 2007 - SEPTEMBER 2008

Well No. 1			
Date	Static	Date	Pumping
10/26/07	211.98	10/02/07	245.75
11/30/07	209.28	11/15/07	240.91
12/18/07	208.00	12/24/07	303.02
01/27/08	212.08	01/14/08	303.16
02/02/08	211.13	02/18/08	282.36
03/26/08	214.41	03/11/08	281.36
04/30/08	204.92	04/07/08	251.16
05/30/08	203.48	05/13/08	259.00
06/01/08	202.92	06/30/08	259.28
07/02/08	208.06	07/31/08	269.98
08/11/08	230.89	08/23/08	289.83
09/11/08	249.59	09/28/08	291.11
Mean	213.90		273.08
Min	202.92		240.91
Max	249.59		303.16
Historical			
Mean	197.82		254.42
Min	149.75		191.33
Max	268.10		303.16

Well No. 6			
Date	Static	Date	Pumping
10/31/07	38.44	10/07/07	147.77
11/15/07	33.05	11/30/07	141.22
12/22/07	51.52	12/16/07	145.84
01/14/08	53.45	01/17/08	140.06
02/01/08	57.69	05/31/08	144.56
03/01/08	62.50	06/16/08	142.41
04/09/08	64.17	07/25/08	149.38
05/20/08	71.54	08/13/08	148.63
06/04/08	68.36	09/04/08	154.32
07/31/08	75.48		
08/01/08	78.23		
09/02/08	82.01		
Mean	61.37		146.02
Min	33.05		140.06
Max	82.01		154.32
Historical			
Mean	47.27		152.86
Min	0.00		9.05
Max	160.00		200.02

Well No. 10			
Date	Static	Date	Pumping
10/31/07	63.72	10/11/07	234.25
11/15/07	56.95	11/24/07	179.78
12/01/07	70.47	12/19/07	184.42
01/14/08	77.63	01/07/08	178.05
02/03/08	84.77	02/05/08	173.03
03/03/08	87.86	03/31/08	171.67
04/25/08	86.89	04/30/08	173.22
05/28/08	76.84	05/07/08	174.95
08/01/08	77.47	08/17/08	175.53
09/02/08	105.41	08/17/08	175.53
		09/30/08	188.64
Mean	213.90		273.08
Min	202.92		240.91
Max	249.59		303.16
Historical			
Mean	56.42		128.96
Min	0.00		40.92
Max	164.00		234.25

Well No. 15			
Date	Static	Date	Pumping
10/24/07	289.86	10/08/07	301.27
11/15/07	290.11	11/29/07	364.23
12/30/07	291.08	12/01/07	364.23
01/23/08	295.45	01/14/08	345.27
02/01/08	299.15	02/01/08	345.36
03/12/08	297.26	03/13/08	344.61
04/26/08	294.23	04/27/08	344.77
05/06/08	295.48	05/01/08	344.94
06/08/08	305.21	06/11/08	364.23
07/15/08	301.45	07/18/08	351.84
08/07/08	310.15	08/26/08	355.17
09/23/08	321.35	09/05/08	364.98
Mean	299.23		349.24
Min	289.86		301.27
Max	321.35		364.98
Historical			
Mean	226.25		267.93
Min	168.15		183.42
Max	315.10		364.23

MAMMOTH COMMUNITY WATER DISTRICT
PRODUCTION WELL WATER LEVEL DATA
OCTOBER 2007 - SEPTEMBER 2008

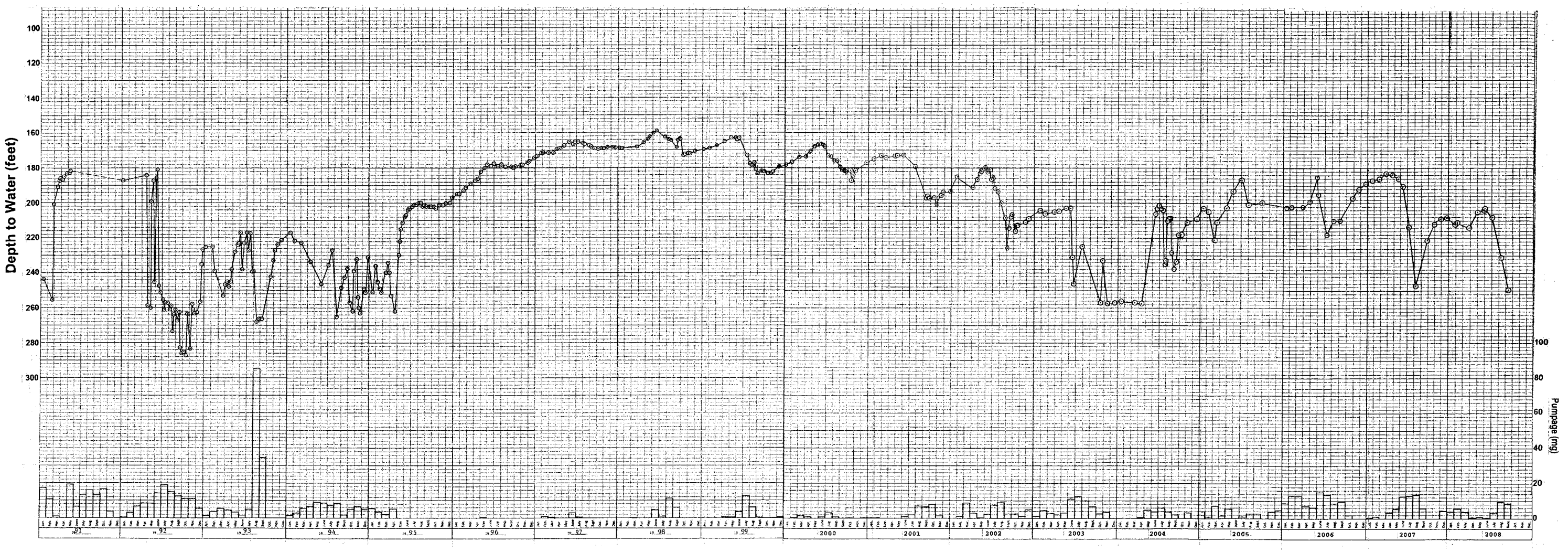
Well No. 17			
Date	Static	Date	Pumping
10/16/07	377.16	10/01/07	383.45
11/30/07	376.42	11/15/07	382.98
12/01/07	376.42	12/03/07	382.63
01/04/08	376.08	03/27/08	381.47
02/03/08	376.00	04/28/08	381.89
03/15/08	376.03	05/18/08	383.66
04/15/08	376.03	06/28/08	384.00
05/01/08	376.48	07/28/08	384.61
06/04/08	377.11	08/29/08	386.02
07/01/08	378.34	09/17/08	386.48
08/01/08	378.75		
09/01/08	379.94		
Mean	377.06		383.72
Min	376.00		381.47
Max	379.94		386.48
Historical			
Mean	376.05		382.20
Min	364.06		369.52
Max	409.90		393.47

Well No. 20			
Date	Static	Date	Pumping
10/31/07	421.44	10/05/07	538.16
11/30/07	416.69	08/29/08	537.41
12/13/07	415.75	09/14/08	540.44
01/08/08	412.06		
02/07/08	414.26		
03/11/08	409.85		
04/09/08	413.02		
05/06/08	411.41		
06/10/08	415.23		
07/15/08	410.56		
08/13/08	407.56		
09/12/08	417.62		
Mean	413.79		538.67
Min	407.56		537.41
Max	421.44		540.44
Historical			
Mean	412.50		487.53
Min	376.20		417.80
Max	470.95		541.97

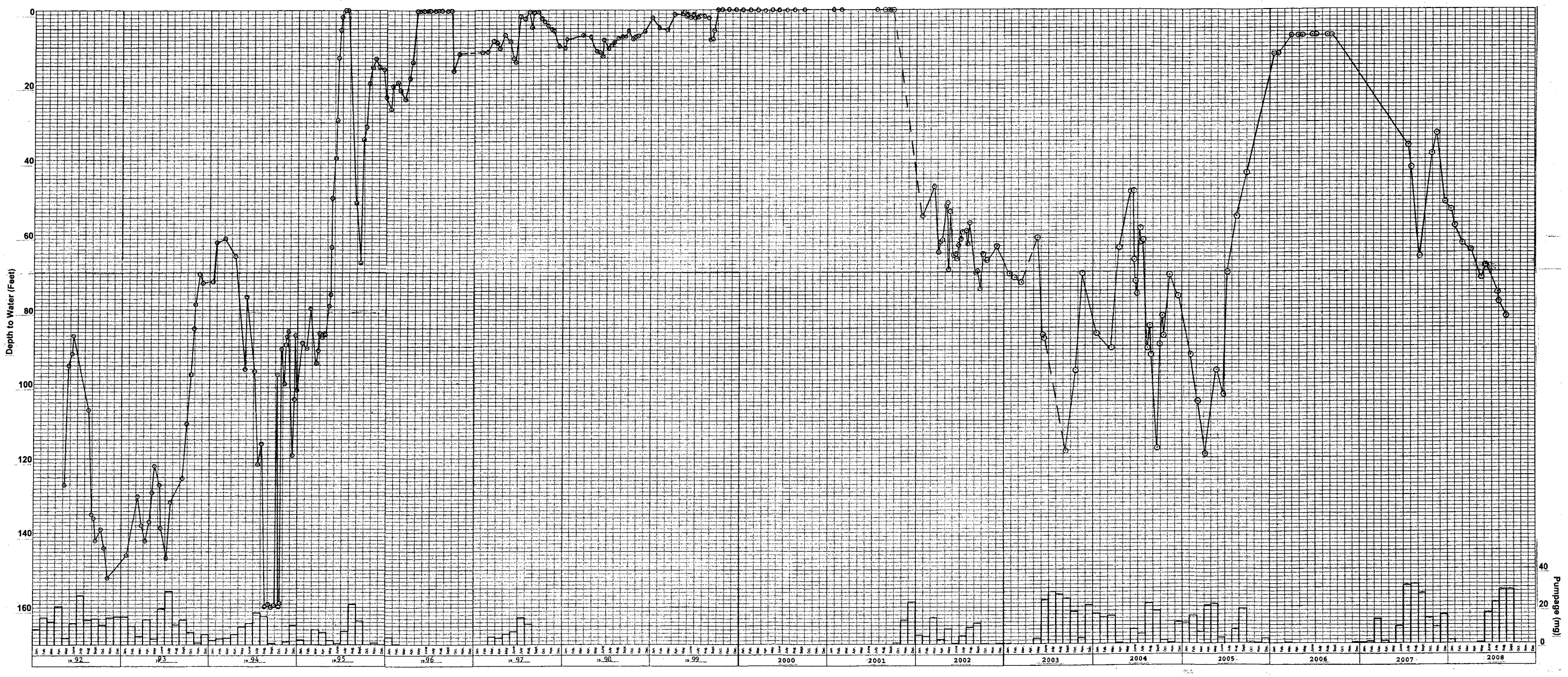
Well No. 18			
Date	Static	Date	Pumping
10/29/07	109.53	10/02/07	191.44
11/19/07	108.69	11/15/07	165.08
12/18/07	108.69	02/05/08	156.22
01/09/08	108.41	03/20/08	163.66
02/03/08	108.41	04/22/08	111.56
03/04/08	108.13	05/09/08	109.53
04/01/08	108.69	06/25/08	172.25
06/25/08	107.53	07/31/08	198.95
07/04/08	107.81	08/01/08	198.59
08/14/08	109.84		
09/01/08	109.84		
Mean	108.69		163.03
Min	107.53		109.53
Max	109.84		198.95
Historical			
Mean	72.77		222.92
Min	40.00		72.22
Max	171.67		361.28

APPENDIX B

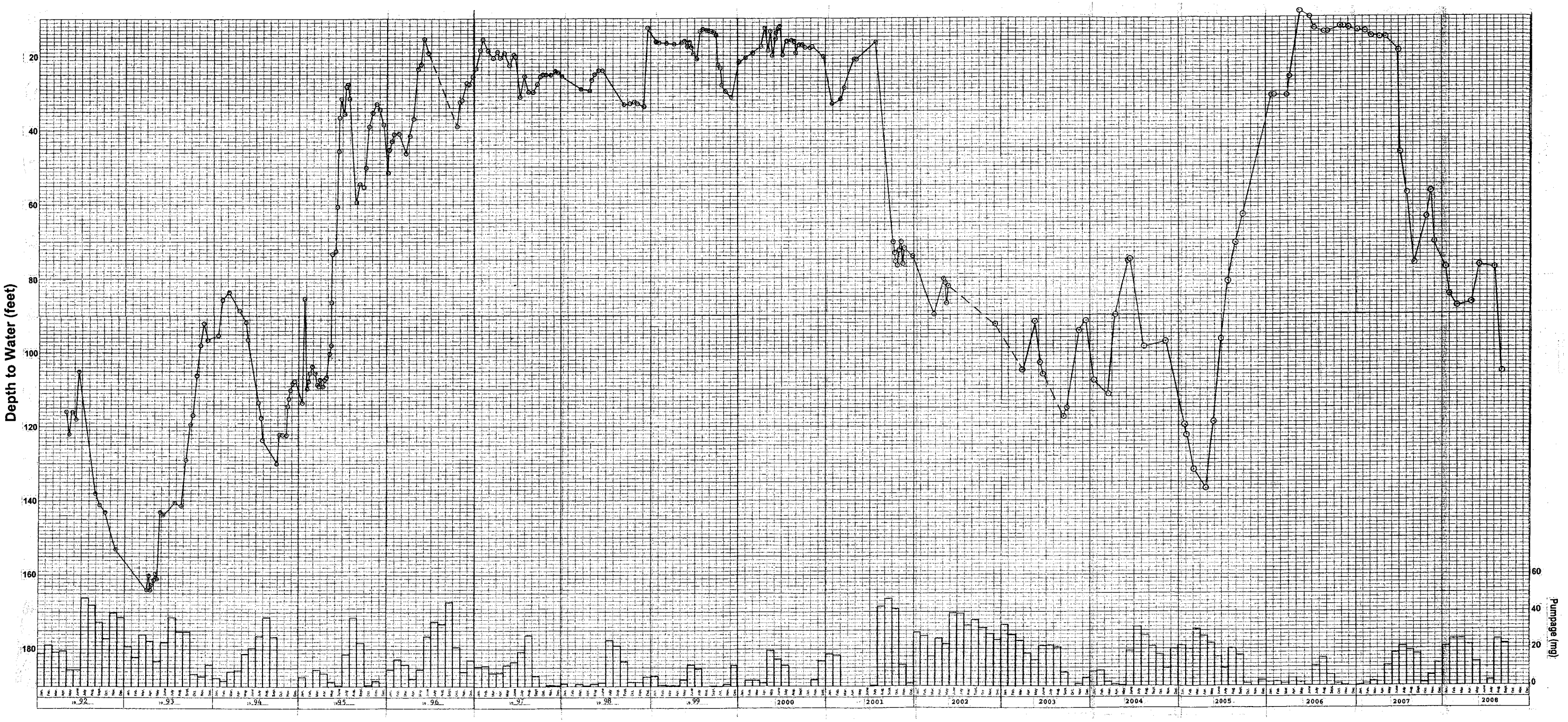
PUMPAGE AND WATER-LEVEL HYDROGRAPHS FOR EARLIER SUPPLY WELLS



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

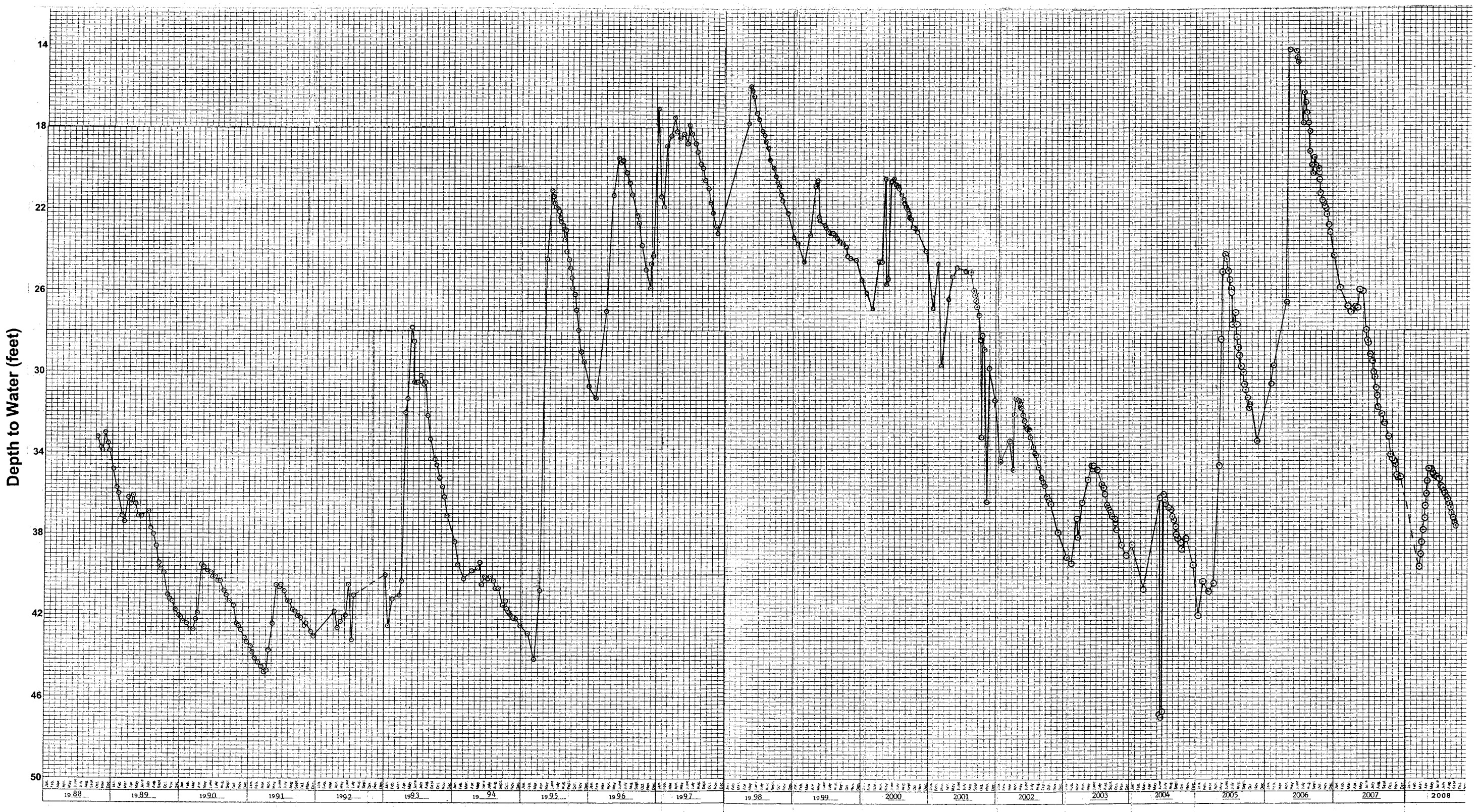
MAMMOTH COMMUNITY WATER DISTRICT
MONITOR WELL LEVEL DATA
OCT 07 - SEP 08

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
10/03/07	33.20	5.10	9.80	249.45	29.42	Artesian 4.5'	28.70	22.78			227.78		16.32				46.83	54.41	75.5	454.3
10/09/07	33.18	5.54	8.65	249.85	29.42	Artesian 4.0'	28.76										47.21		75.84	454.52
10/10/07									315.93	341.56										
10/17/07	33.79	5.30	8.56									75.81								453.9
10/24/07	34.10	5.60	8.52	250.25	29.41	Artesian 4.0'	28.86					76.85	16.42	359.06			48.32		76.41	454.13
10/30/07	34.26	5.64	8.53	251.33	29.4	Artesian 4.0'	28.81					77.7					48.52		76.67	454.61
11/06/07	34.42	5.56	8.38	252.72	29.4	Artesian 4.0'	28.83					78.56				255.13	48.80	50.53	76.93	453.73
11/14/07	34.56	5.62	8.42	252.98	29.42	Artesian 4.0'	28.85			341.49		79.26					48.97		77.12	453.8
11/20/07	35.11	5.62	8.44	252.96	29.41	Artesian 4.0'	28.84			341.55		80.14					49.74		77.45	453.82
11/28/07	35.19	5.45	8.30		29.41	Artesian 4.0'	28.87	26.29		341.23	229.15	81.44					50.28		77.83	453.69
12/07/07	35.21	5.64	8.29		29.4	Artesian 4.0'	28.89	26.30		341.85	229.21	82.32					50.43			
01/10/08		5.51	8.05	254.38	29.44	Artesian 4.6'	29.26	22.92		342.15	229.41	85.5					55.26		79.45	454.06
02/20/08		5.33	7.97			Artesian 4.0'				342.05		85.5					58.32			
02/26/08																256.26				
02/27/08																				
03/12/08	39.62	5.15	7.89	253.04	29.43	Artesian 3.5'	29.45			342.25	230.08	85.5							80.15	455.12
03/19/08	39.02	4.97	7.61			Artesian 3.5'				342.11	230.12	85.5							80.70	455.28
03/26/08	38.41	4.78	7.33			Artesian 3.5'		24.15		342.03	230.41	85.5					59.62		81.25	455.44
04/02/08	37.81	4.60	7.05			Artesian 3.5'				341.75	230.5	85.5							81.81	455.60
04/09/08	37.20	4.42	6.78			Artesian 3.5'				341.66	230.52	85.5							82.36	455.76
04/16/08	36.60	4.23	6.50			Artesian 3.5'				341.55	230.56	85.5				255.84			82.91	455.92
04/23/08	35.99	4.05	6.22	258.30	29.43	Artesian 3.5'	27.72	23.84		341.61	230.62	85.5				256.12	52.13		83.47	456.08
04/30/08	35.39	3.86	5.94		29.42	Artesian 3.5'	26.00	23.53		341.59	230.77	85.5				256.2	44.64		84.02	456.24
05/08/08	34.78	3.68	5.66		29.42	Artesian 3.0'	24.28	23.21		341.75	230.86	85.5				256.08	37.16		84.58	456.40
05/12/08									339.96					362.53						
05/13/08																		70.69		
05/15/08																				
05/20/08	34.83	3.57	6.46	263.55	29.42	Artesian 3.0'	23.92	22.90		341.81		85.5				255.54	38.90		85.66	457.42
05/29/08	34.97	3.61	6.99	264.20	29.45	Artesian 3.0'	20.95	22.95		341.77	231.11	85.5				255.12	40.26		86.79	457.78
06/06/08	35.06	3.48	7.20	262.10	29.46	Artesian 3.0'	19.94	22.54		341.83	231.72	85.5				255.51	41.12		86.68	458.12
06/11/08																		70.71		
06/12/08	35.14	3.36	7.41	259.99	29.44	Artesian 3.0'	18.93	22.13		341.93	231.8	85.5				255.27	41.97		86.58	458.46
06/19/08	35.23	3.23	7.61	257.89	29.45	Artesian 3.0'	17.92	21.71		341.88	231.78	85.5				255.32	42.83		86.48	458.80
06/25/08																				458.80
07/01/08	35.31	3.10	7.82	255.78	29.44	Artesian 3.0'	16.91	21.30		341.75	231.85	85.5				255.48	43.68		86.37	
07/08/08	35.55	3.65	8.11	264.81	29.42	Artesian 4.0'	17.86	21.95		341.83	231.88	85.5				255.65	43.92		86.51	
07/15/08	35.71	3.67	8.26	264.96	29.43	Artesian 3.0'	17.90	21.86		341.9	231.91	85.5				255.87	44.50		86.66	
07/22/08	35.87	3.68	8.41	265.11	29.43	Artesian 3.0'	17.94	21.76		341.86	231.94	85.5				256.12	45.09		86.82	
07/30/08	36.03	3.70	8.56	265.25	29.44	Artesian 2.5'	17.98	21.67		341.94	231.97	85.5				255.83	45.69		86.97	
08/06/08	36.18	3.72	8.70	265.40	29.44	Artesian 2.0'	18.01	21.57		342.36	232.00	85.5				255.75	46.29		87.12	
08/13/08	36.34	3.73	8.85	265.55	29.45	Artesian 2.0'	18.05	21.48		342.15	232.03	85.5				255.85	46.91		87.28	
08/21/08	36.50	3.75	9.00	274.91	29.45	Artesian 1.5'	18.09	21.38		342.03	232.06	85.5				255.98	47.53		87.43	
08/26/08									341.91					365.15				71.29		460.86
08/28/08	36.72	4.10	9.14	265.43	29.42	Artesian 1'	19.08	22.80		341.93	232.08	85.5				256.05	48.21		87.55	
09/04/08	36.94	4.46	9.28	264.92	29.43	Artesian 1'	21.21	22.80		341.96	232.10	85.5				256.1	48.56		87.63	
09/11/08	37.17	4.82	9.42	264.41	29.43	Artesian 1'	21.06	22.80		341.91	232.12	85.5				256.02	49.16		87.86	
09/18/08	37.39	5.17	9.57	263.90	29.44	Artesian 1'	22.15	22.80		341.88	232.14	85.5				255.9	49.57		88.21	
09/25/08	37.62	5.53	9.72	263.39	29.44	Artesian 1'	23.21	22.80		342.64	232.16	85.5		368.81		255.88	50.02		88.41	
Minimum	33.18	3.10	5.66	249.45	29.40	0.00	16.91	21.30	315.93	341.23	227.78	75.81	16.32	359.06	0.00	255.12	37.16	54.41	75.50	453.69
Maximum	39.62	5.64	9.80	274.91	29.46	0.00	29.45	26.30	341.91	342.36	232.06	85.50	16.42	368.81	0.00	256.26	59.62	71.29	87.43	460.86
Average*	29.10	3.75	7.41	254.84	23.67	9.42	19.96	16.47	314.28	338.01	263.30	80.88	12.92	373.92	314.93	252.95	45.69	41.90	74.19	455.82
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	37.16	24.23	62.95	439.69
Maximum*	46.95	7.48	9.80	290.95	32.48	50.50	39.17	27.00	360.71	357.25	365.42	86.22	17.10	394.14	337.05	256.83	59.62	60.53	87.43	464.95

Note: Well 22 water-level measurements from October 2007-January 2008 were influenced by the addition of water to the well on September 30, 2007 in an attempt to redevelop the well.

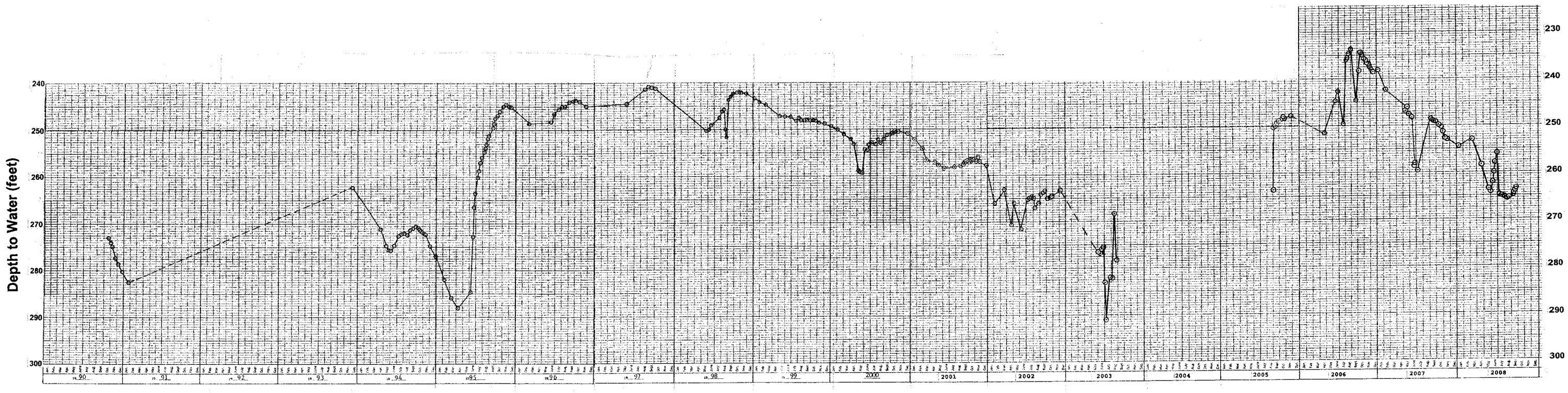
APPENDIX D

SUPPLEMENTARY WATER-LEVEL HYDROGRAPHS FOR MONITOR WELLS

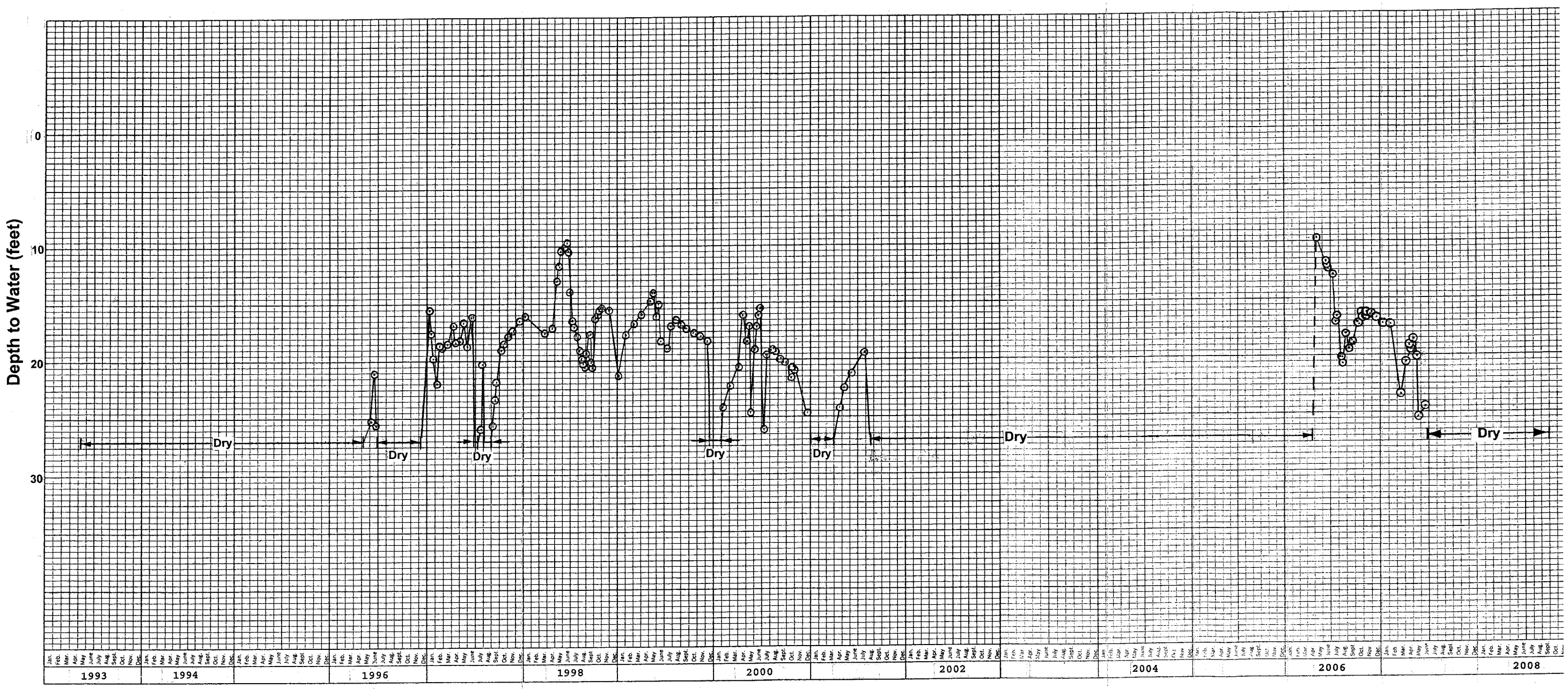


WATER-LEVEL HYDROGRAPH FOR WELL NO. 4M

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

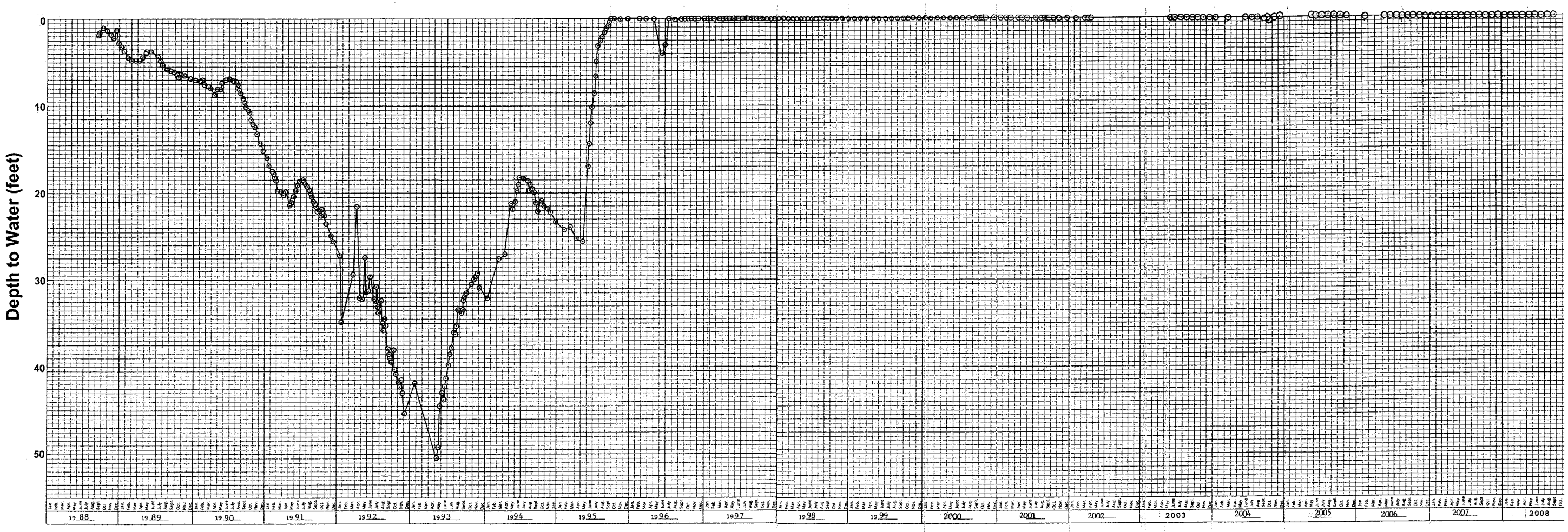


WATER-LEVEL HYDROGRAPH FOR WELL NO. 7

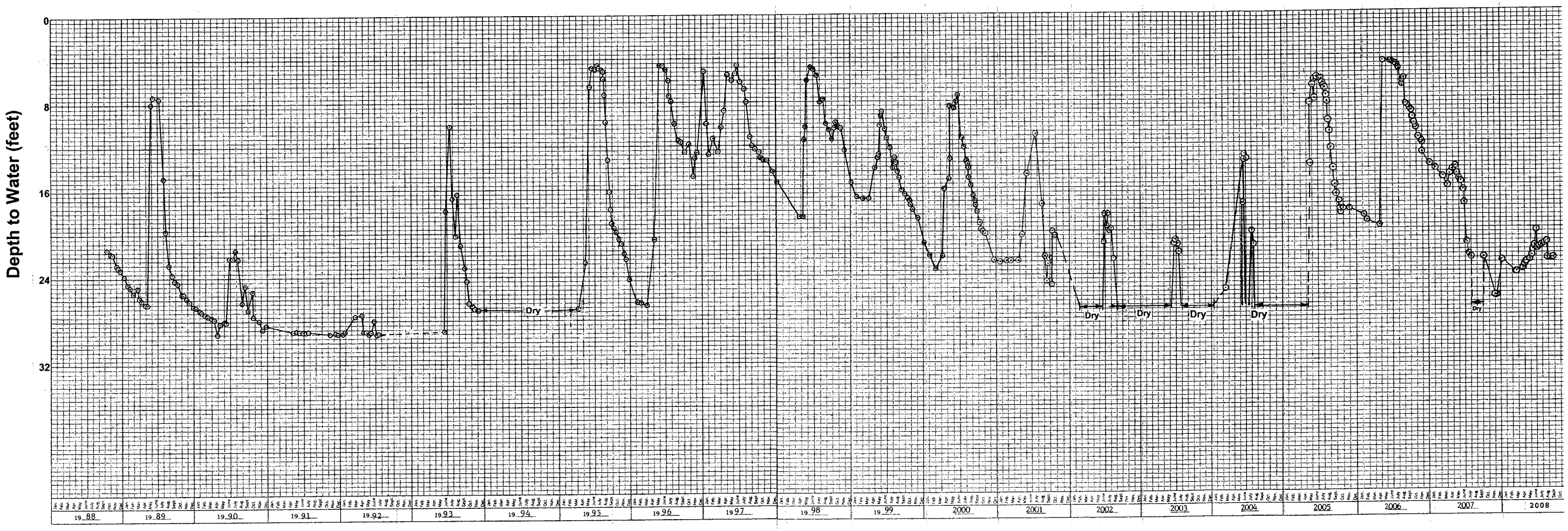


WATER-LEVEL HYDROGRAPH FOR WELL NO. 10M

WATER-LEVEL HYDROGRAPH FOR WELL NO. 11M

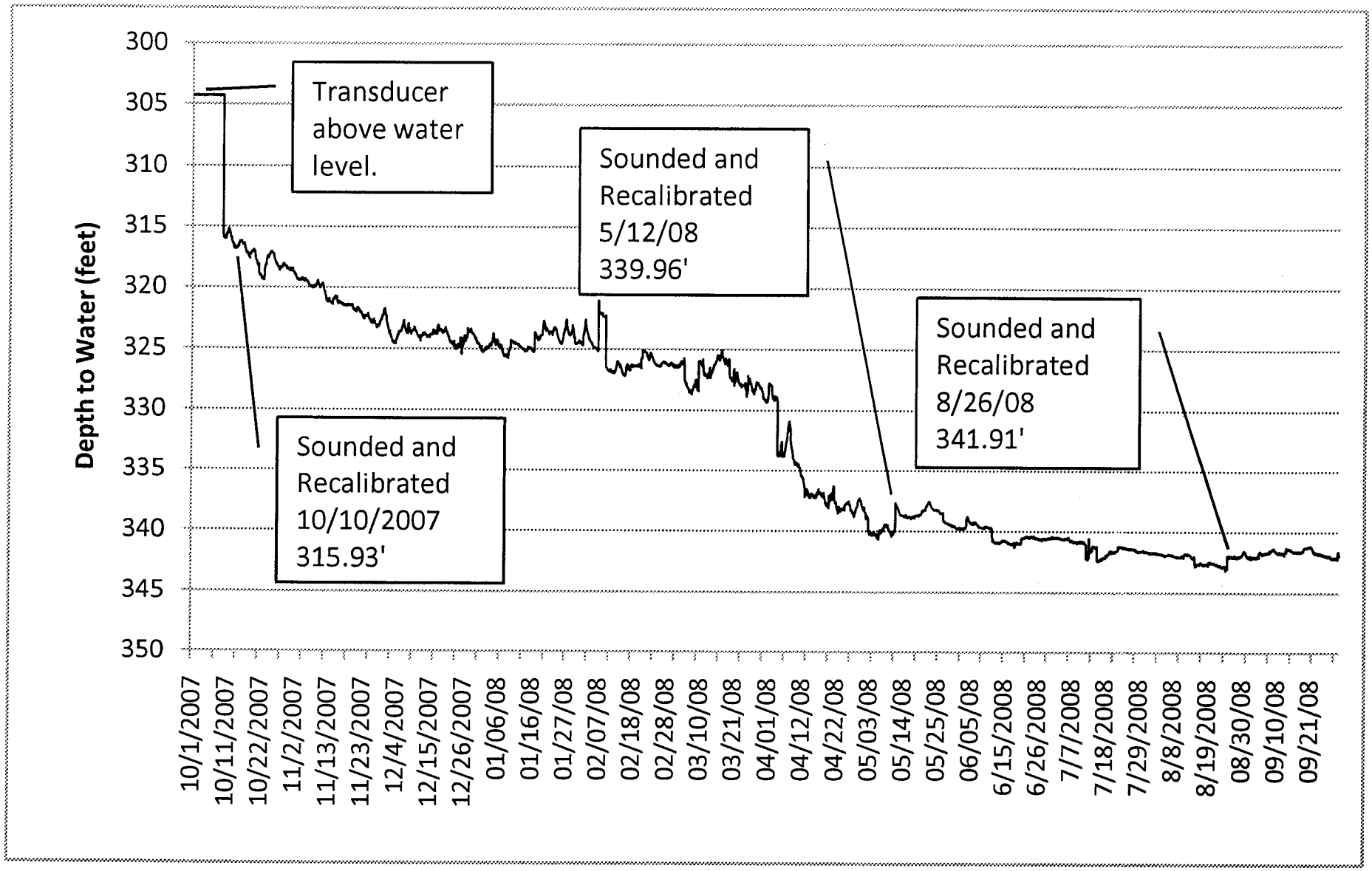


WATER-LEVEL HYDROGRAPH FOR WELL NO. 11



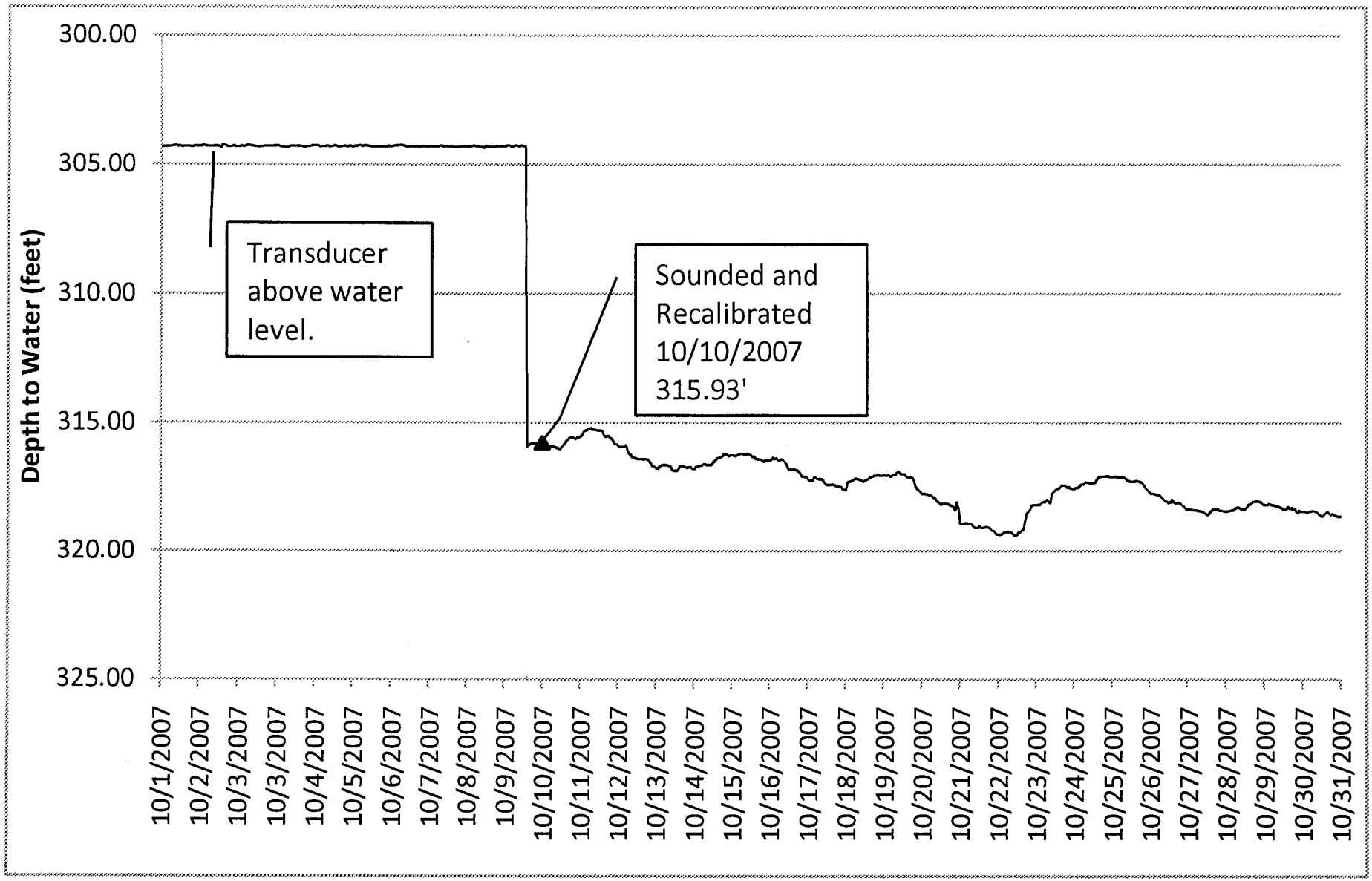
WATER-LEVEL HYDROGRAPH FOR WELL NO. 12M

ALL YEAR



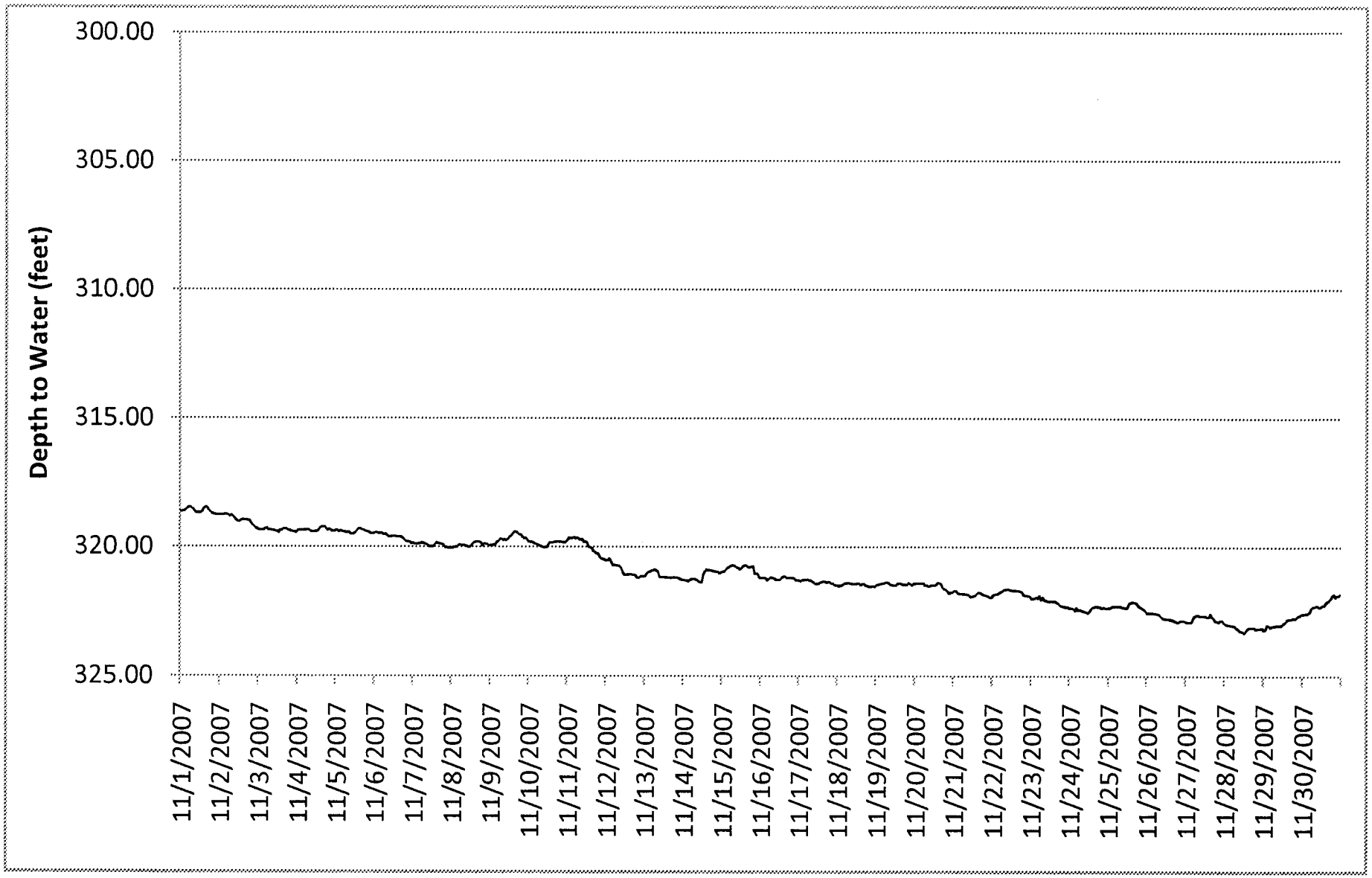
WATER LEVEL HYDROGRAPH FOR MW-14M

OCTOBER 2007



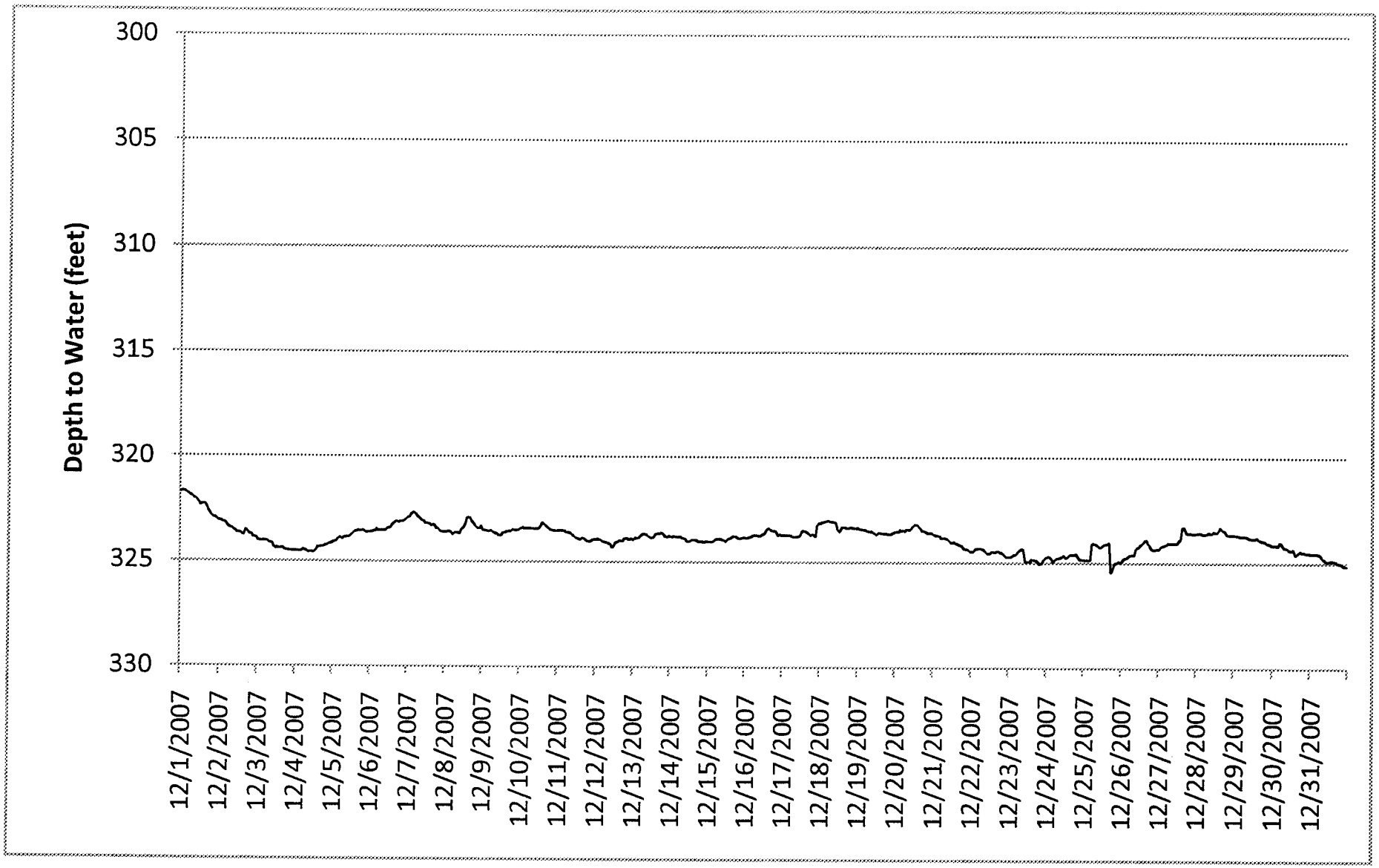
WATER LEVEL HYDROGRAPH FOR MW-14M

NOVEMBER 2007



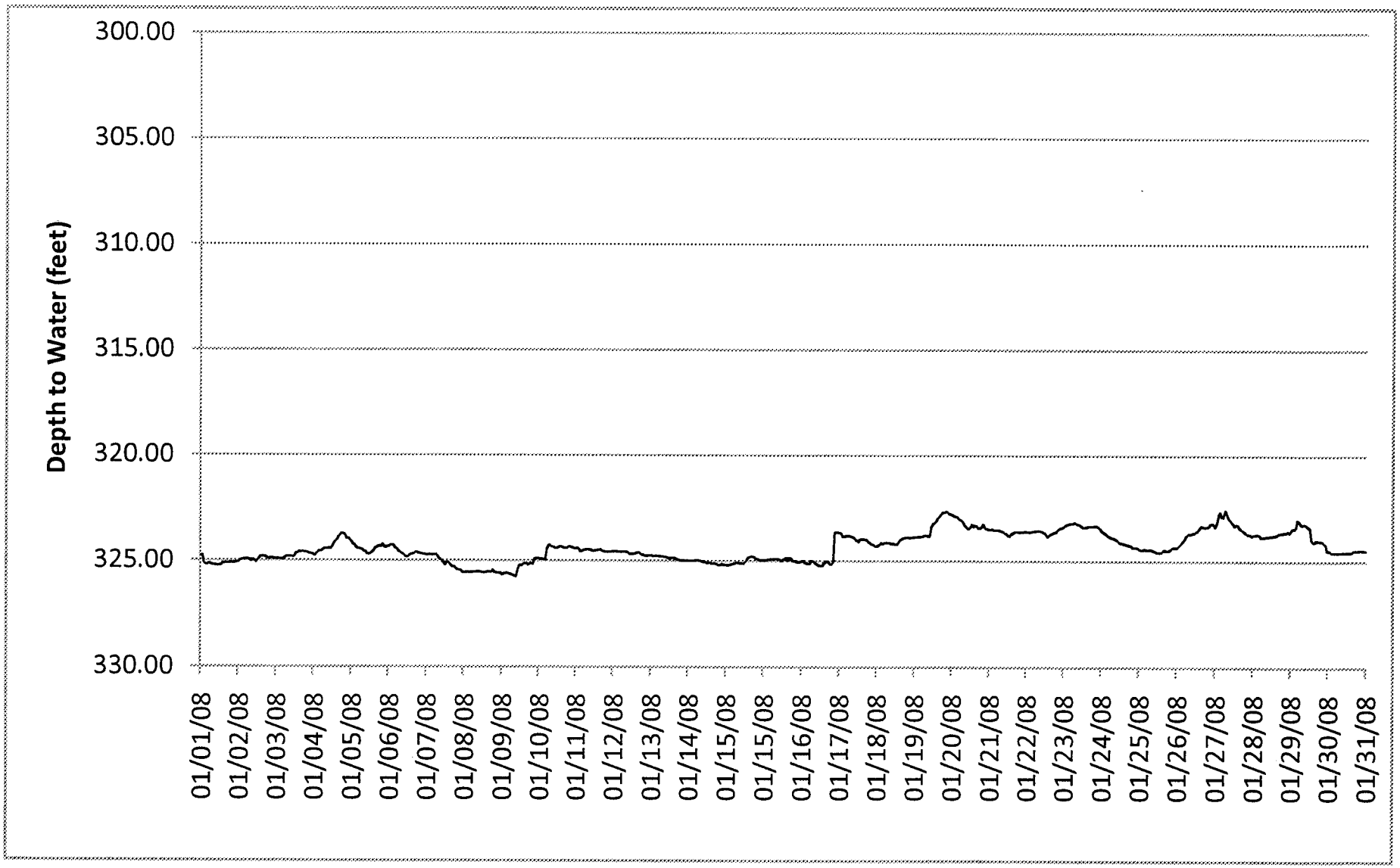
WATER LEVEL HYDROGRAPH FOR MW-14M

DECEMBER 07



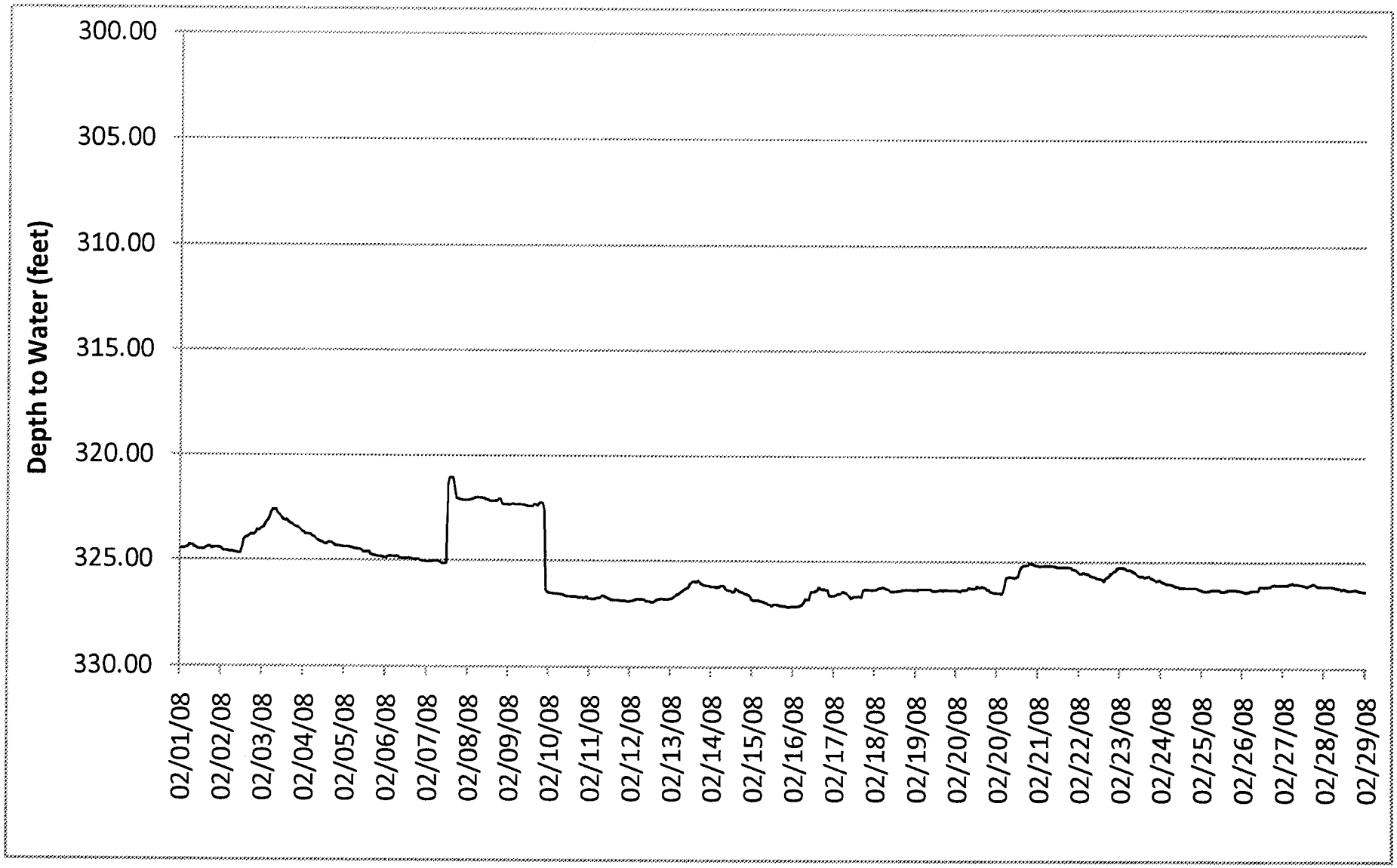
WATER LEVEL HYDROGRAPH FOR MW-14M

JANUARY 2008



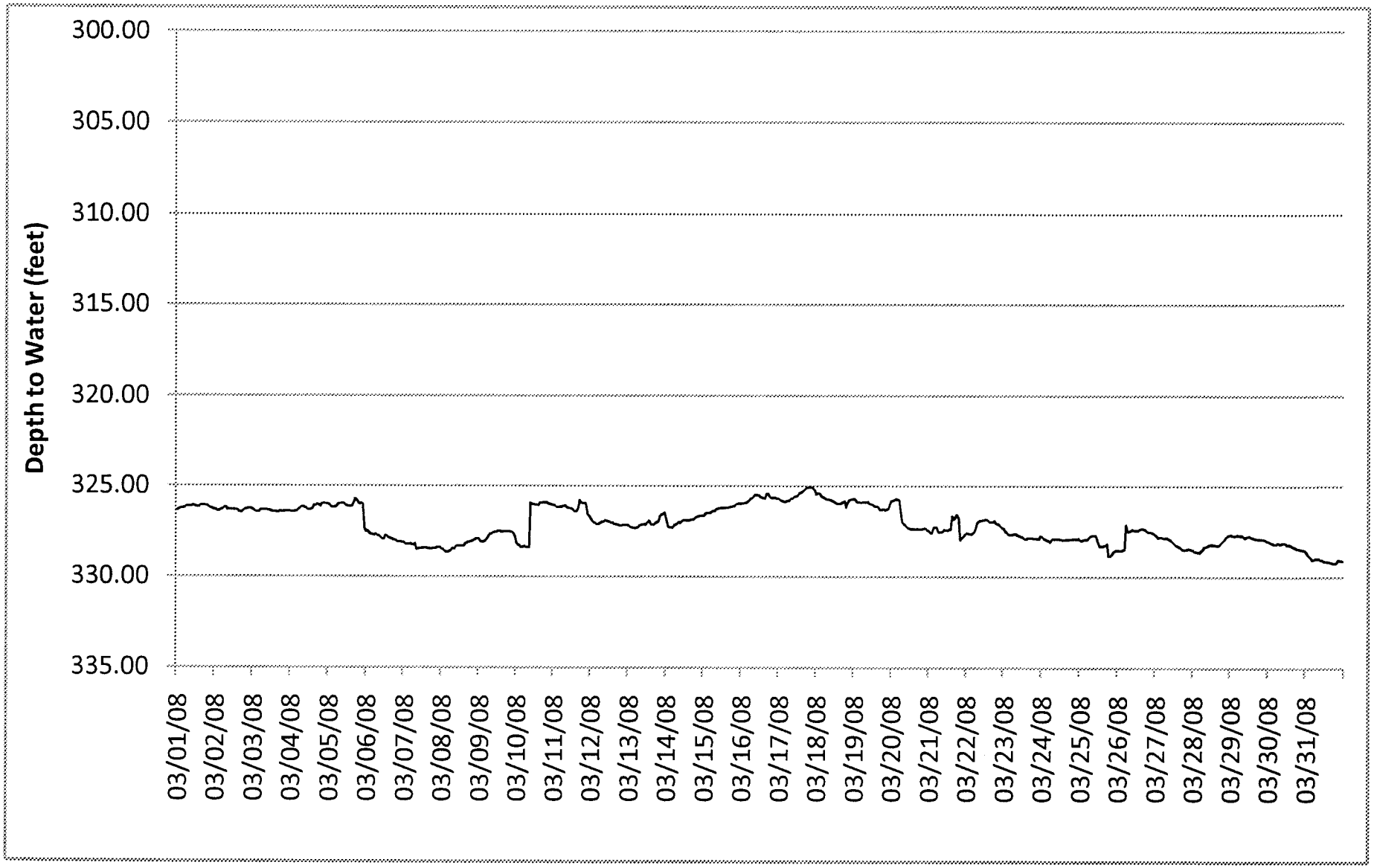
WATER LEVEL HYDROGRAPH FOR MW-14M

FEBRUARY 2008



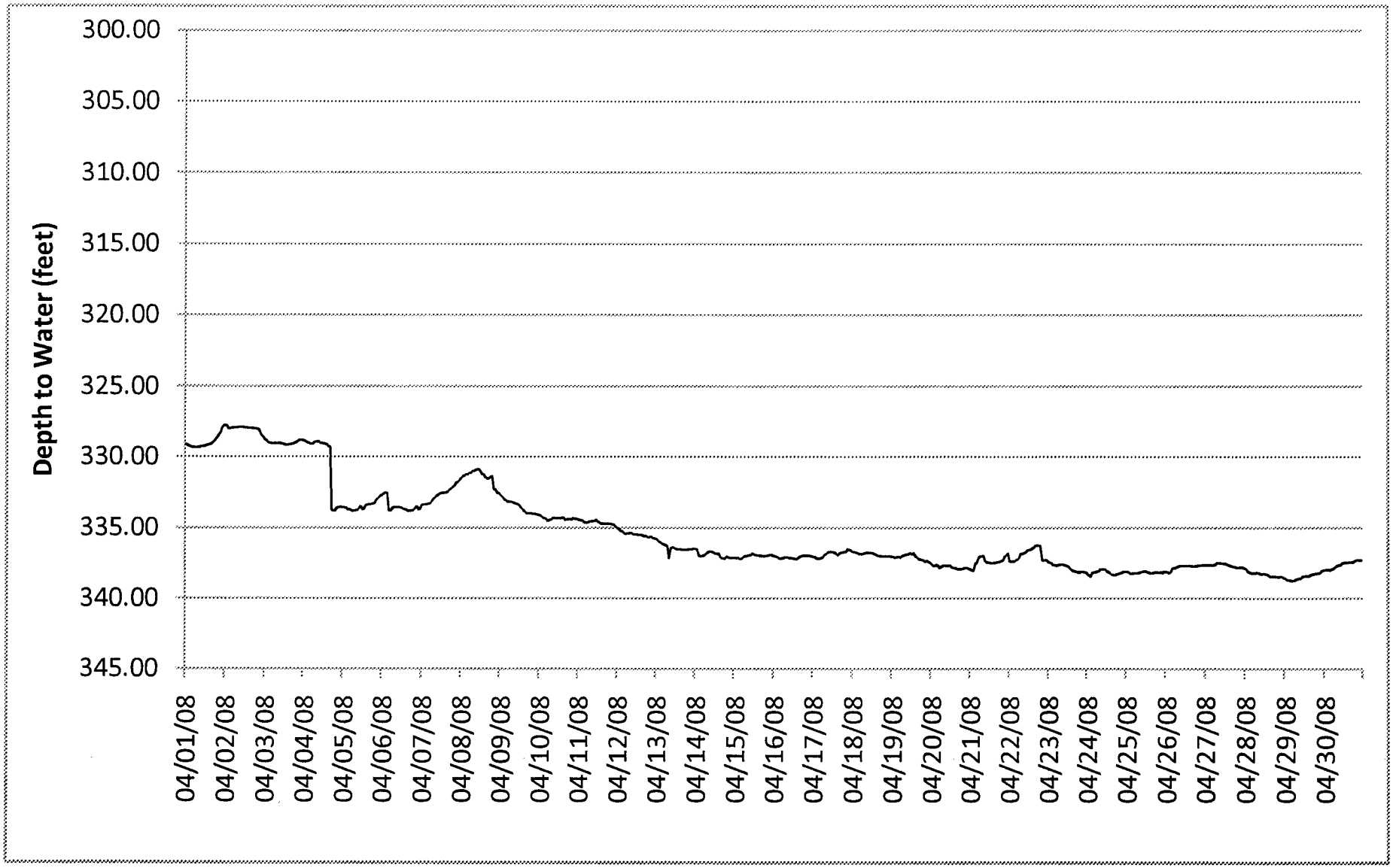
WATER LEVEL HYDROGRAPH FOR MW-14M

MARCH 2008



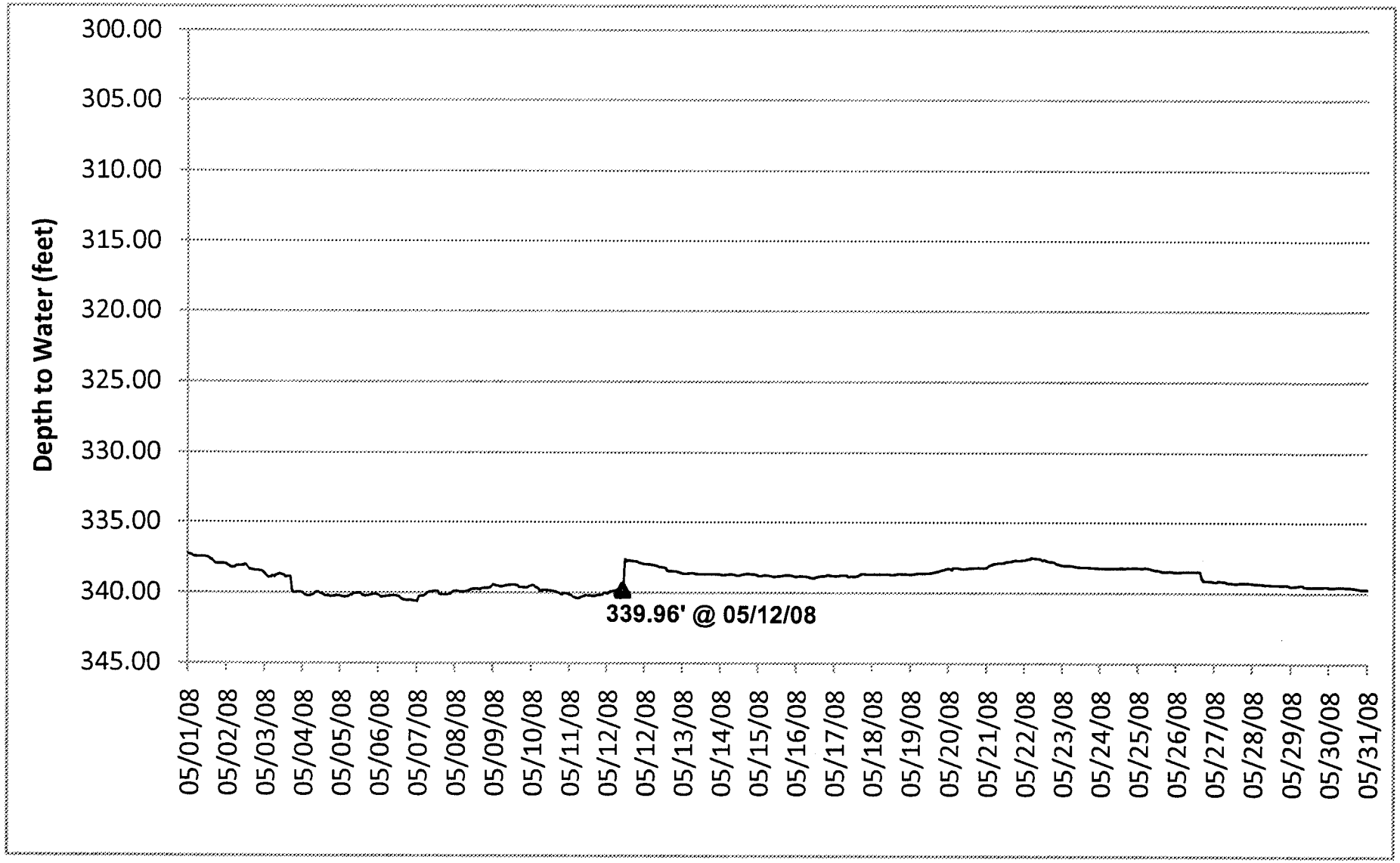
WATER LEVEL HYDROGRAPH FOR MW-14M

APRIL 2008



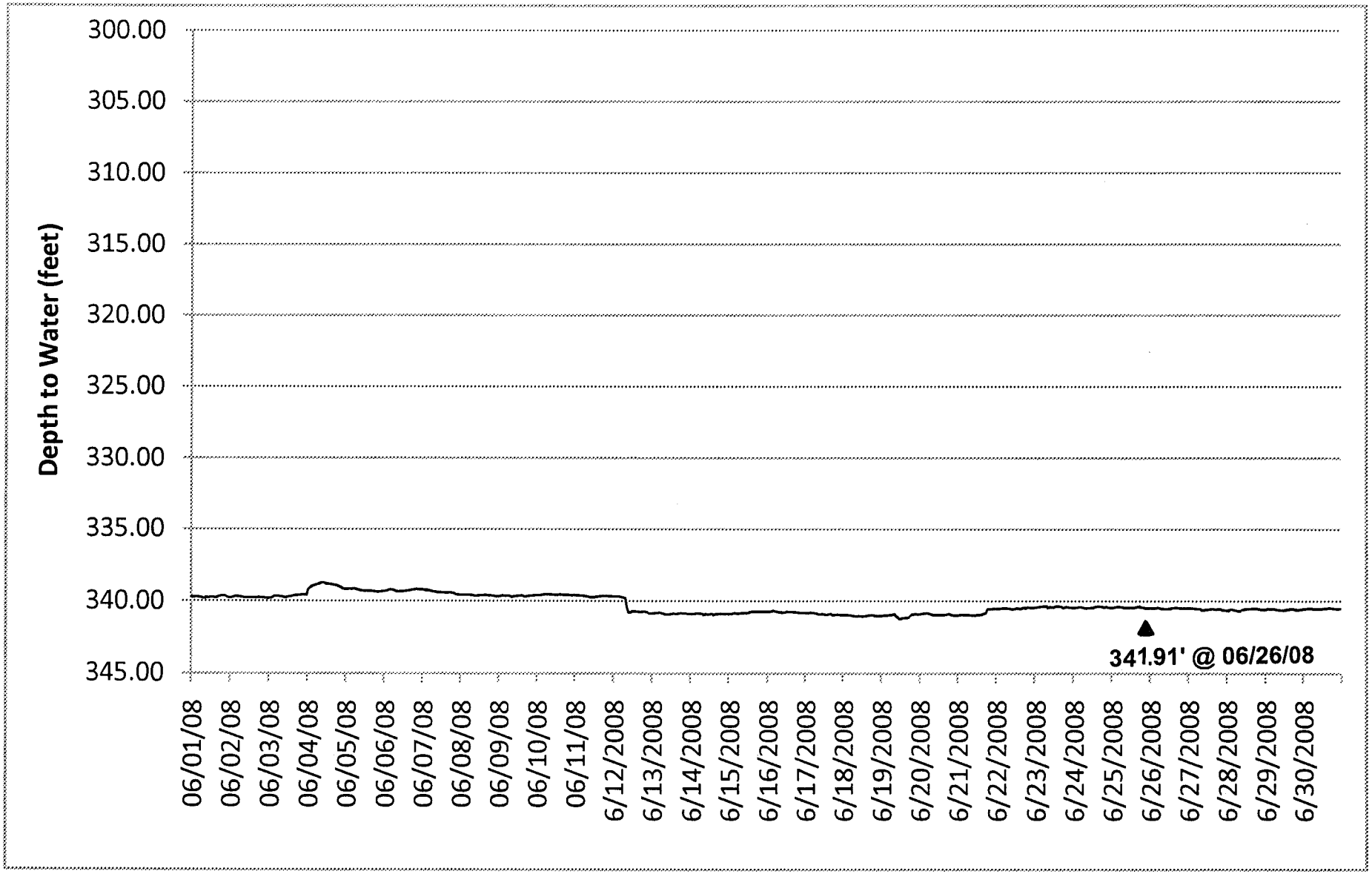
WATER LEVEL HYDROGRAPH FOR MW-14M

MAY 2008



WATER LEVEL HYDROGRAPH FOR MW-14M

JUNE 2008



WATER LEVEL HYDROGRAPH FOR MW-14M

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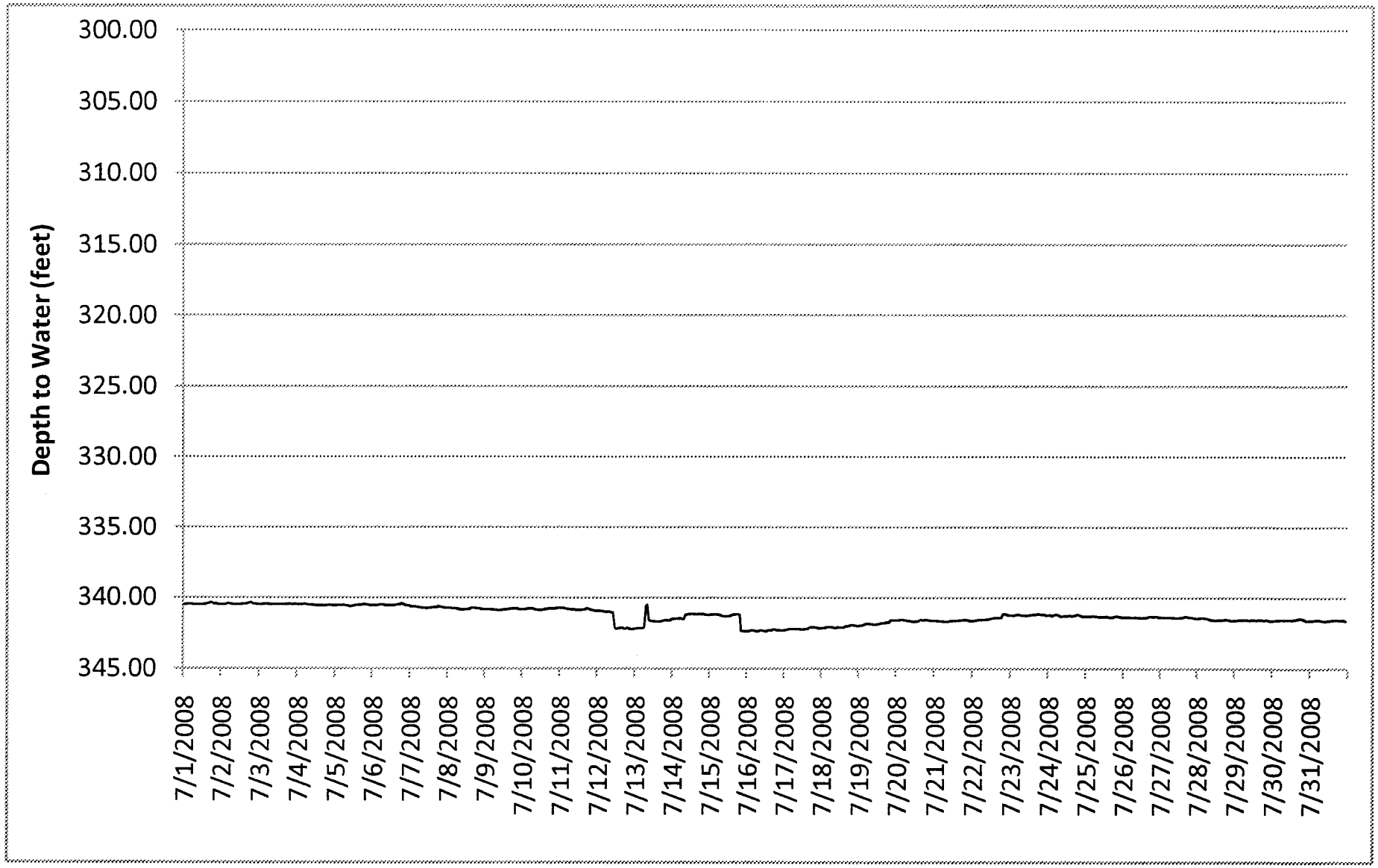
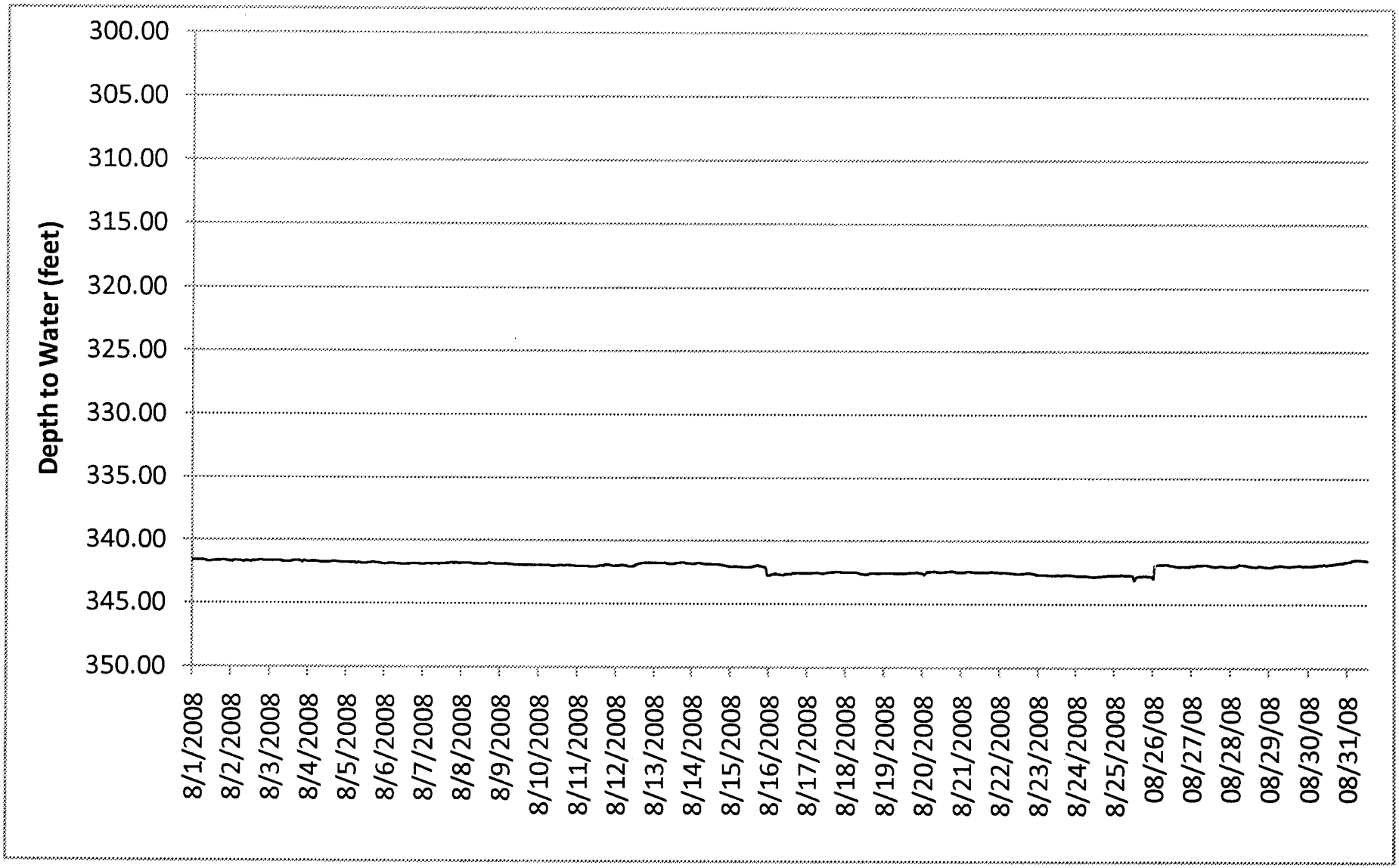


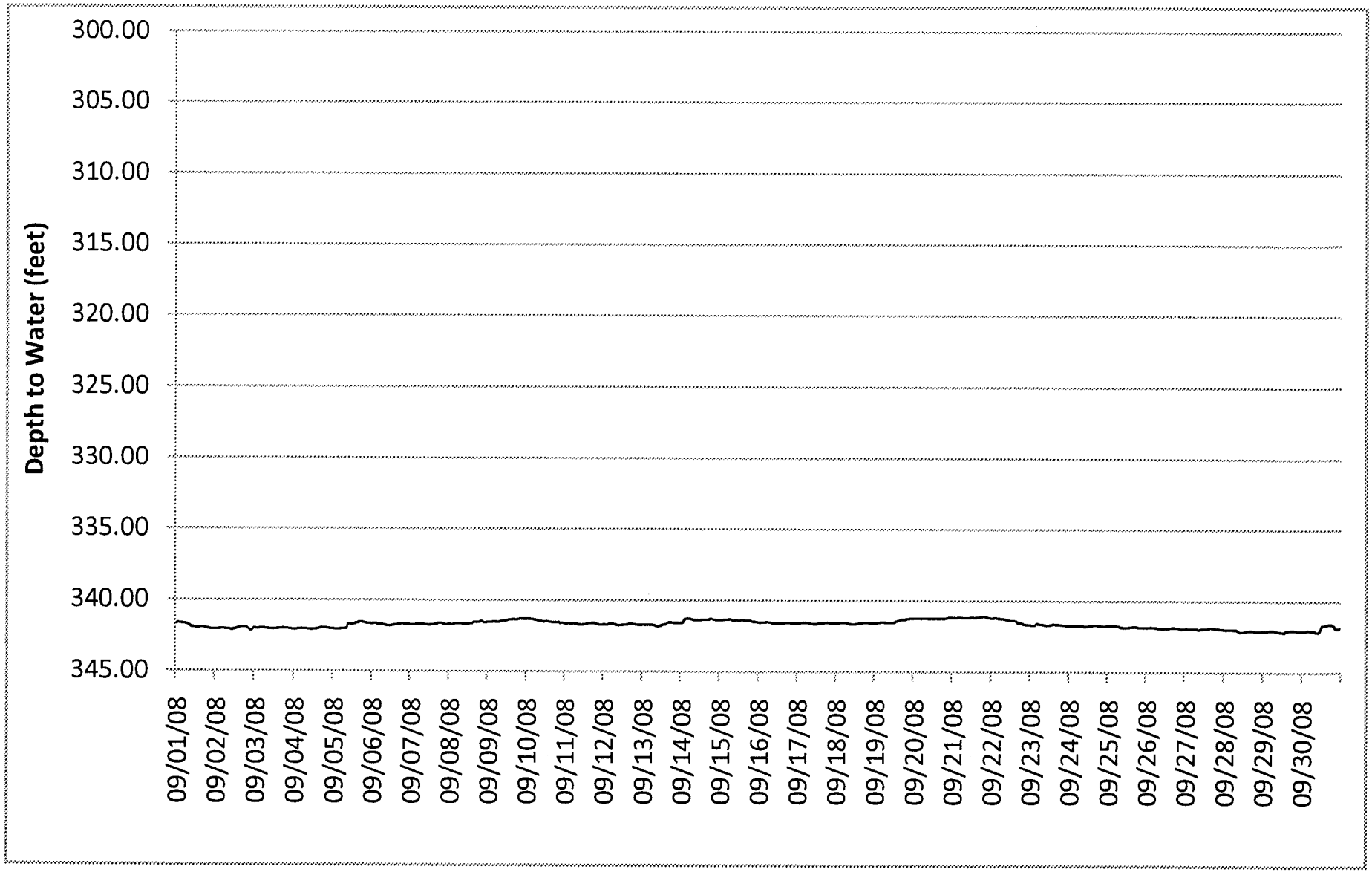
WATER LEVEL HYDROGRAPH FOR MW-14M

AUGUST 2008



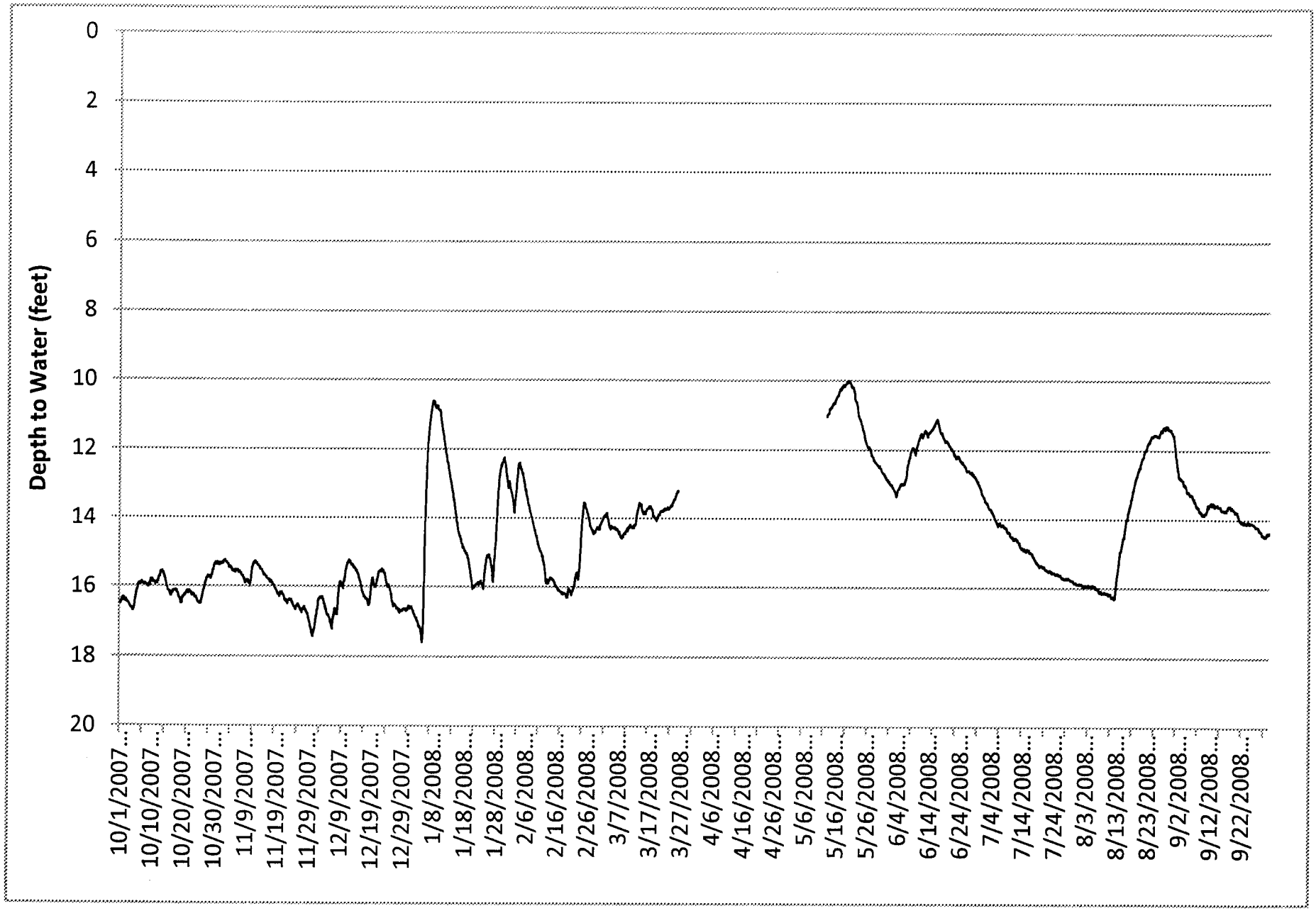
WATER LEVEL HYDROGRAPH FOR MW-14M

SEPTEMBER 2008

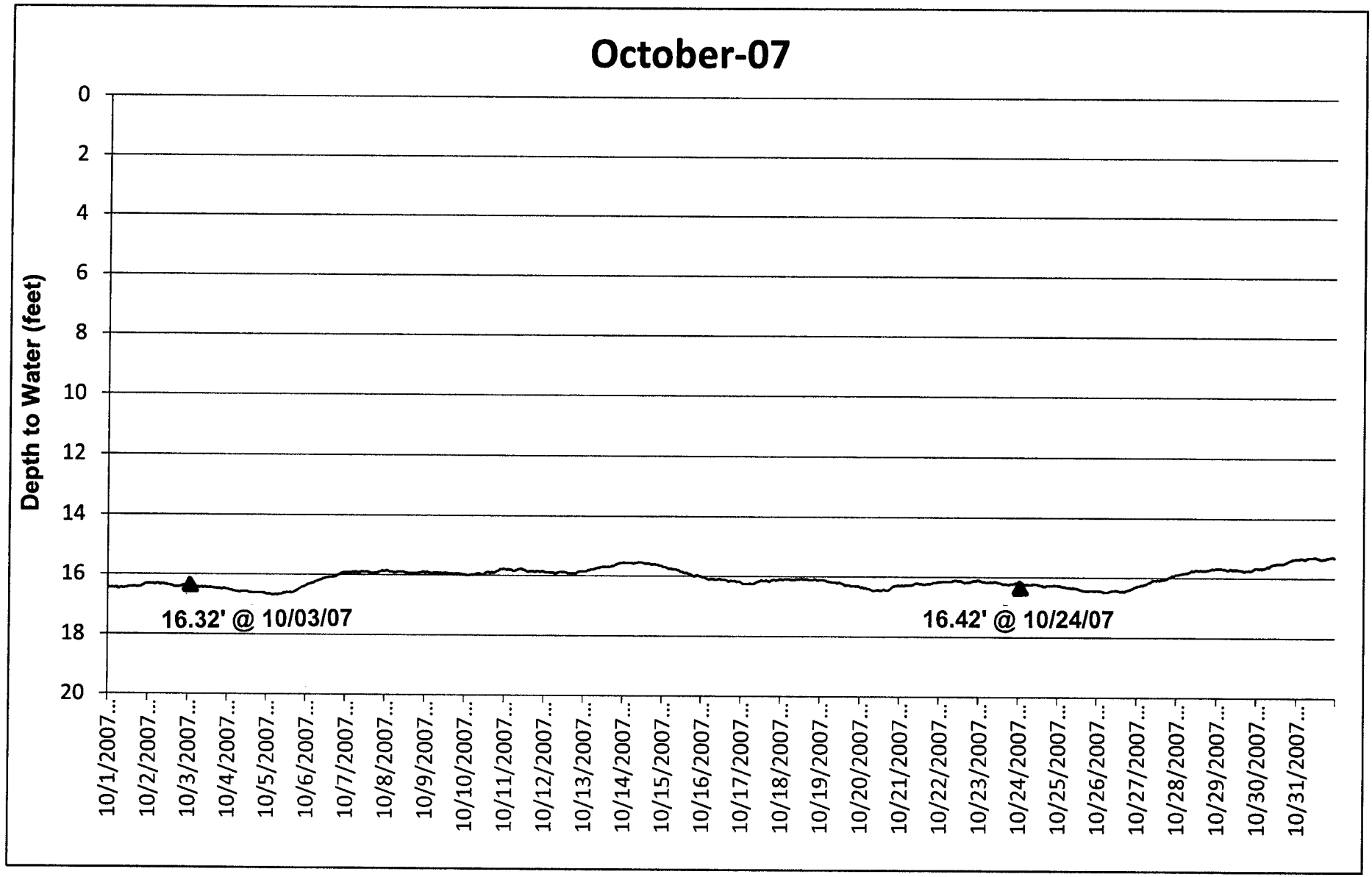


WATER LEVEL HYDROGRAPH FOR MW-14M

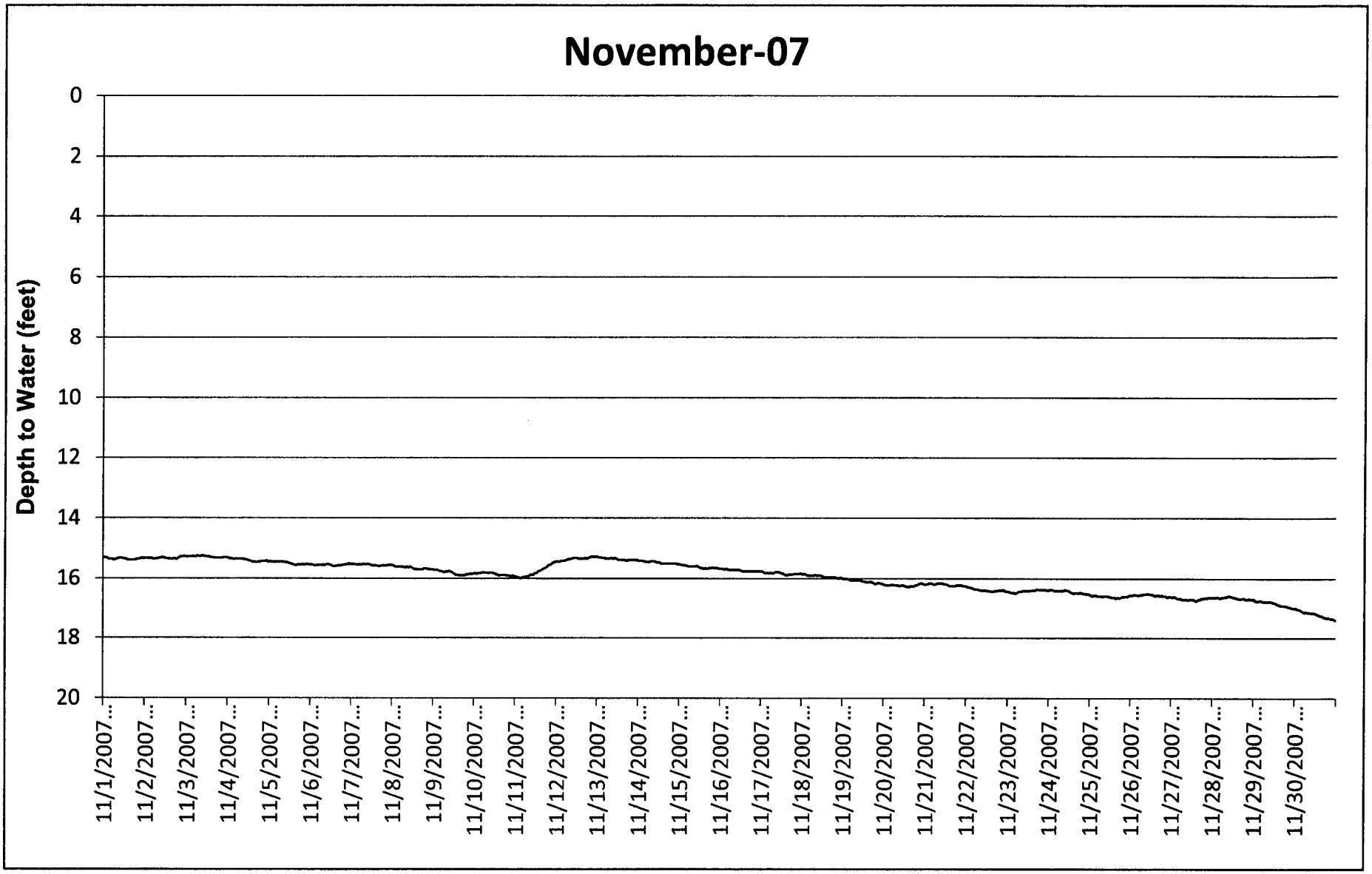
ALL YEAR



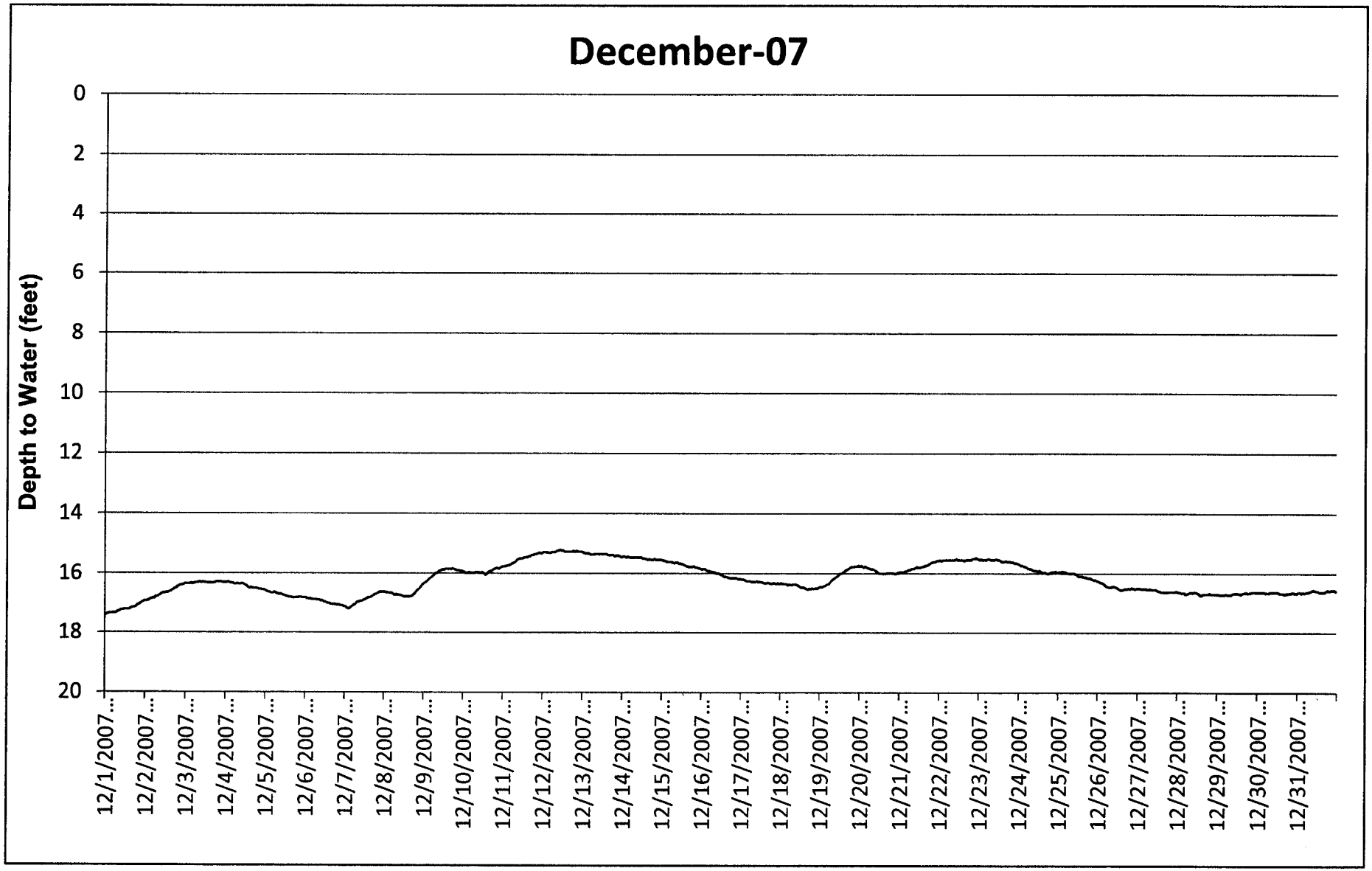
WATER LEVEL HYDROGRAPH FPR MW-23M



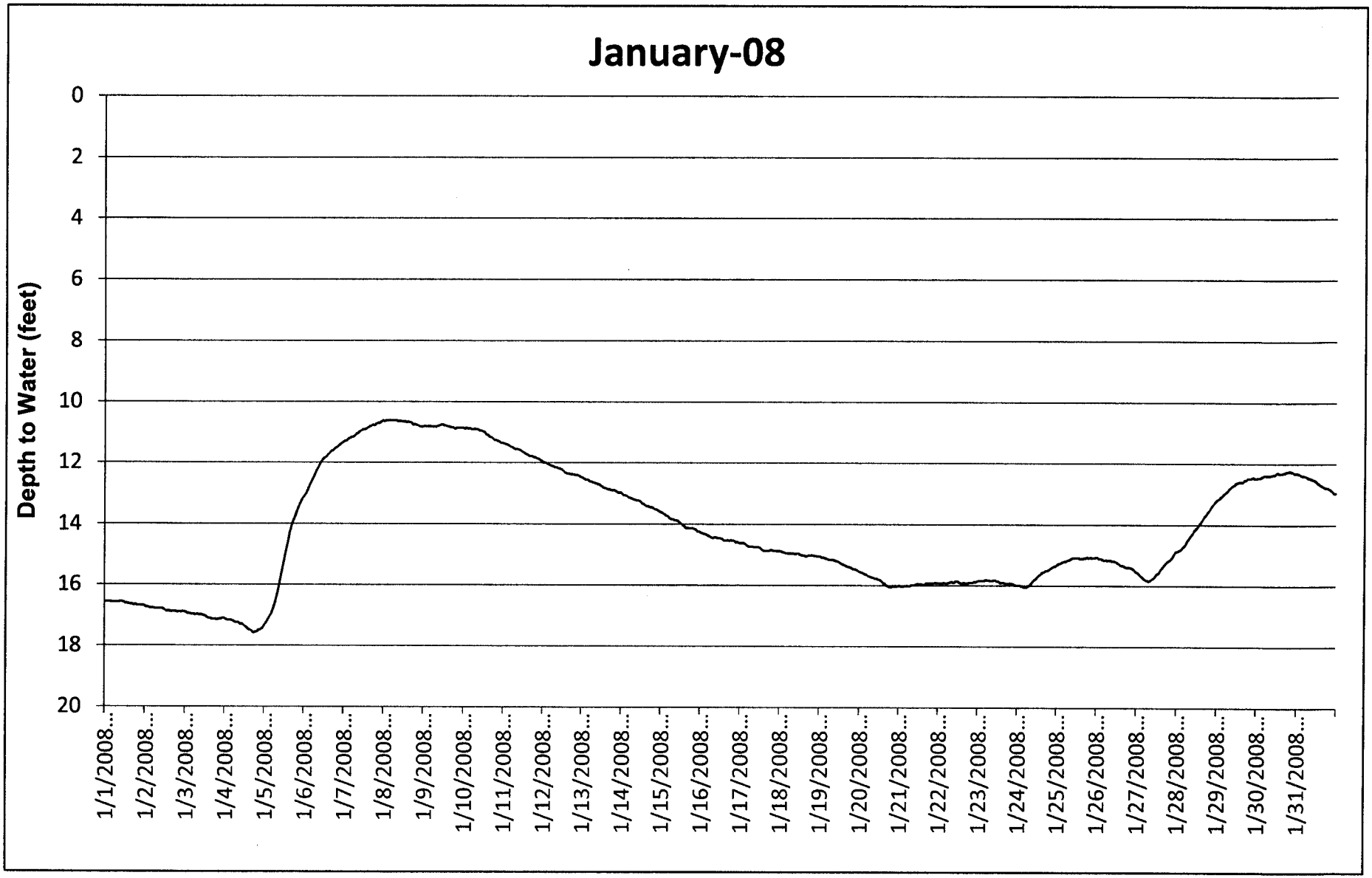
WATER LEVEL HYDROGRAPH FOR MW-23M



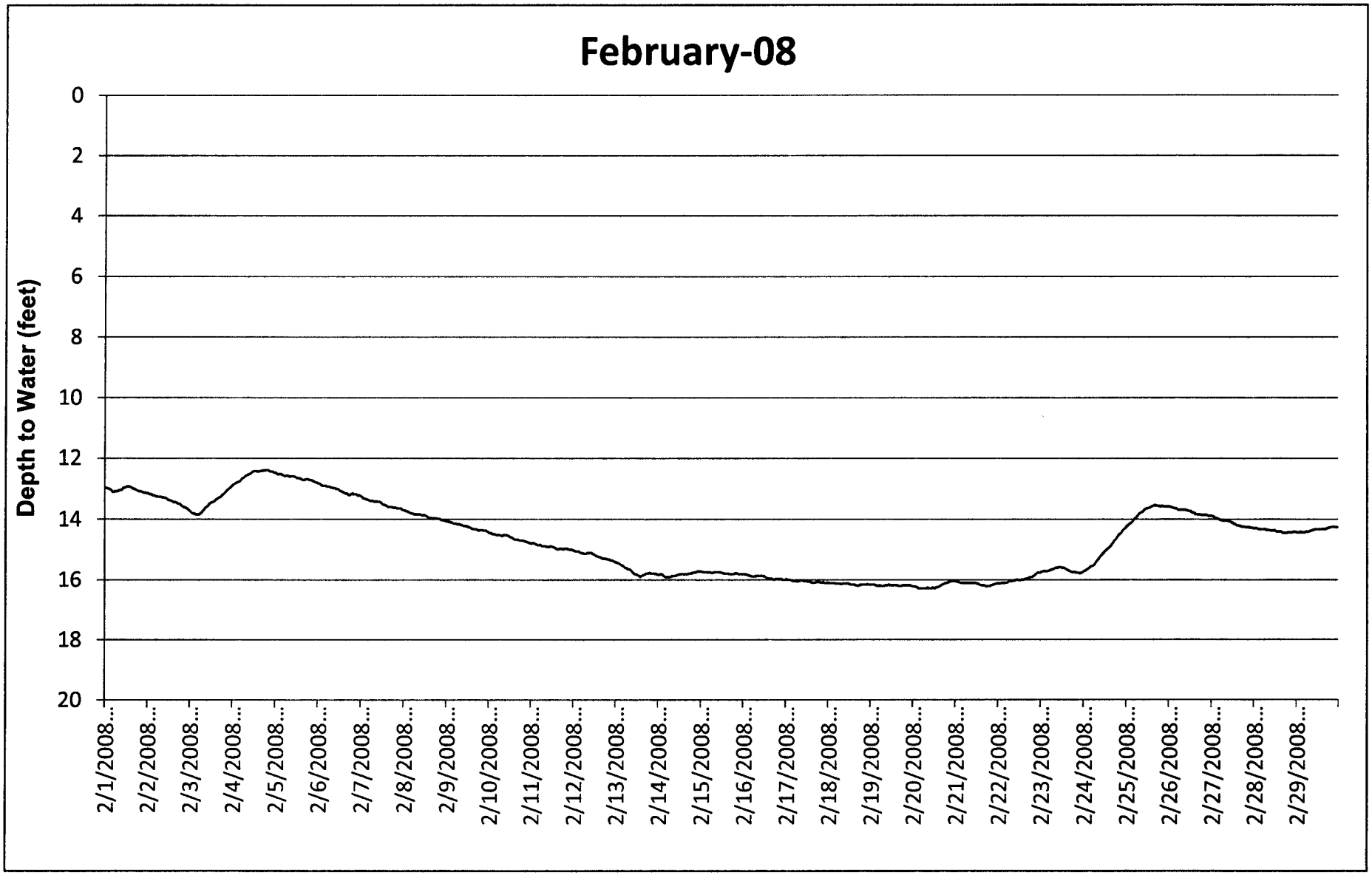
WATER LEVEL HYDROGRAPH FOR MW-23M



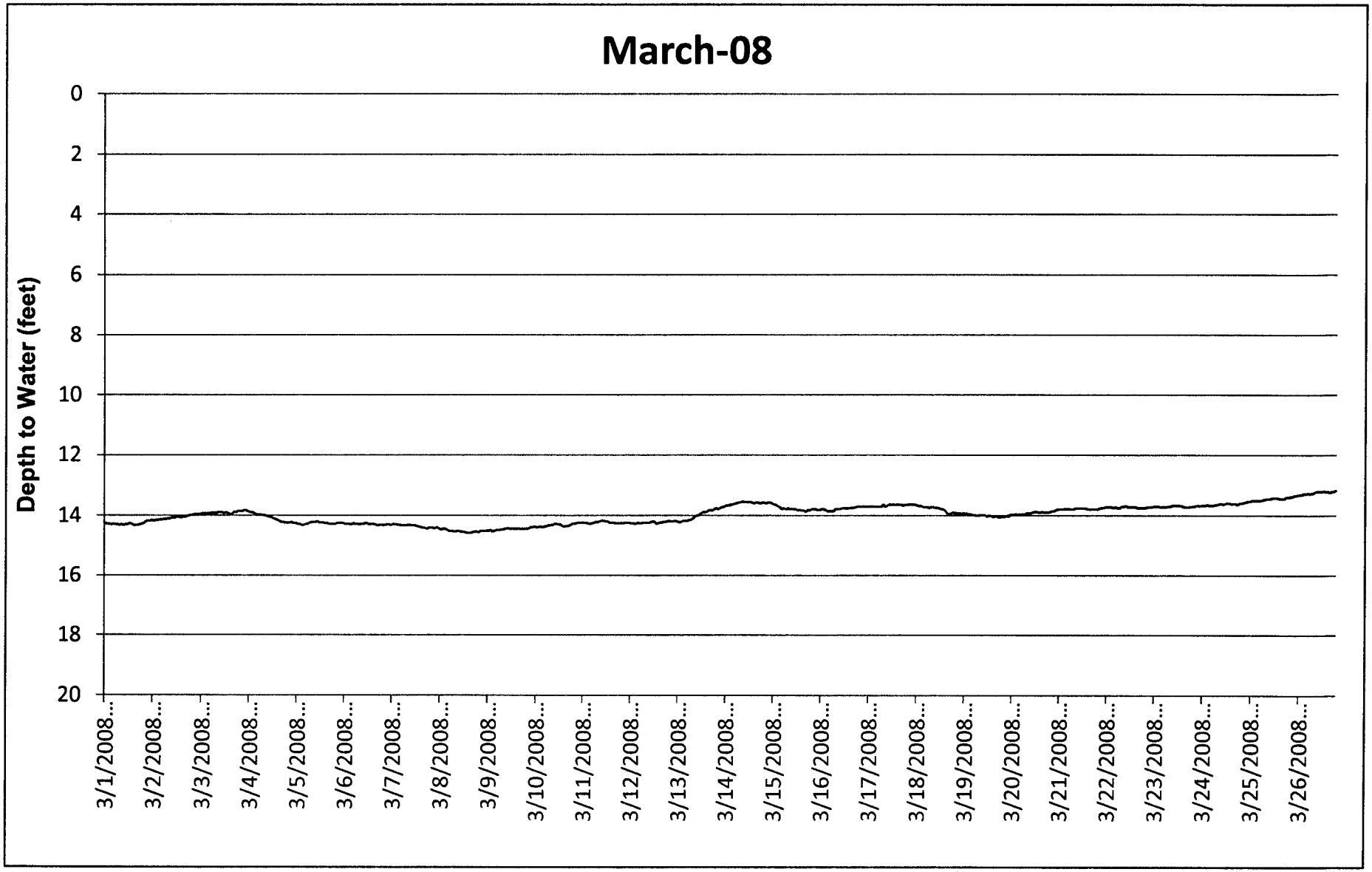
WATER LEVEL HYDROGRAPH FOR MW-23M



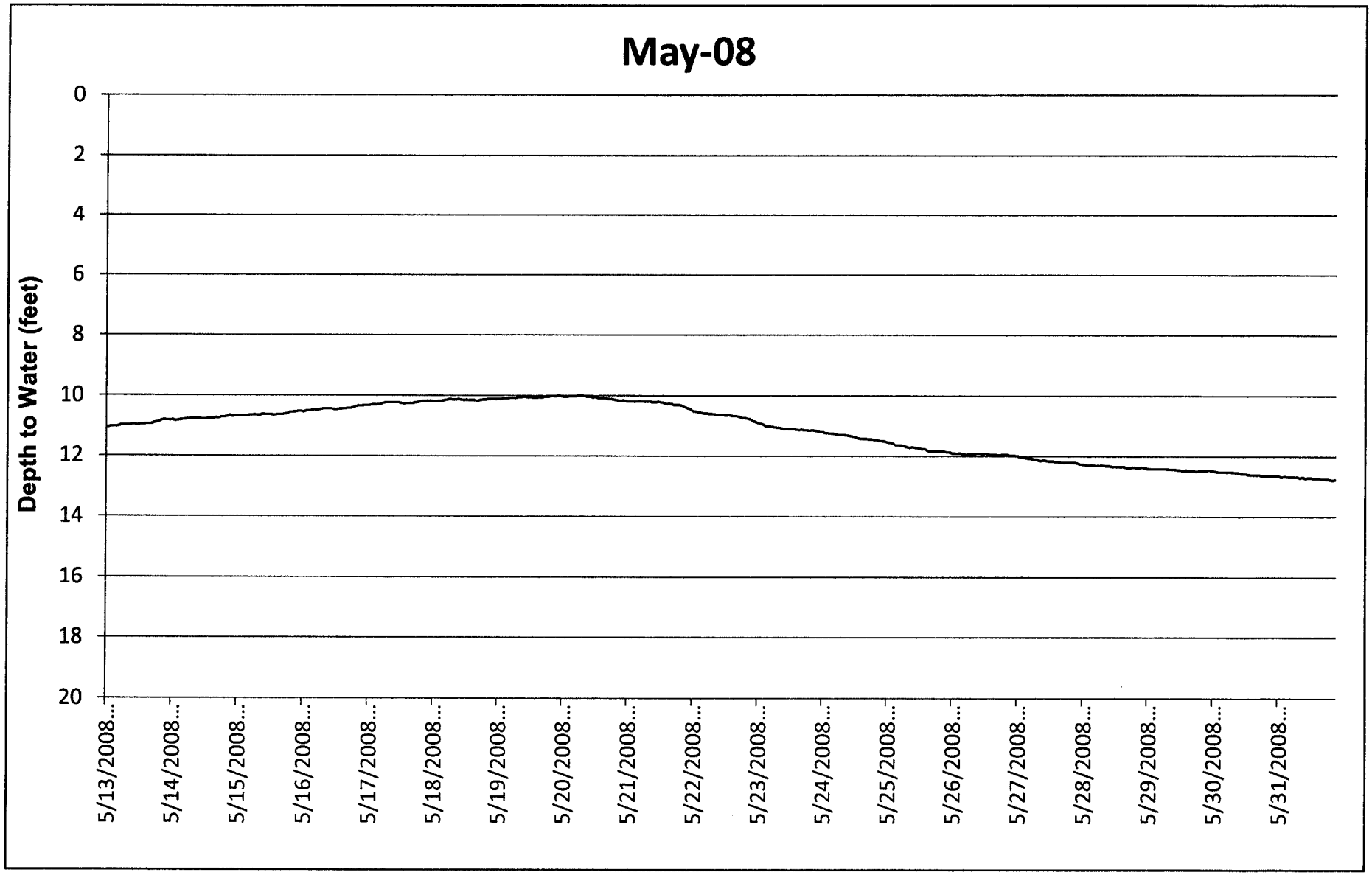
WATER LEVEL HYDROGRAPH FOR MW-23M



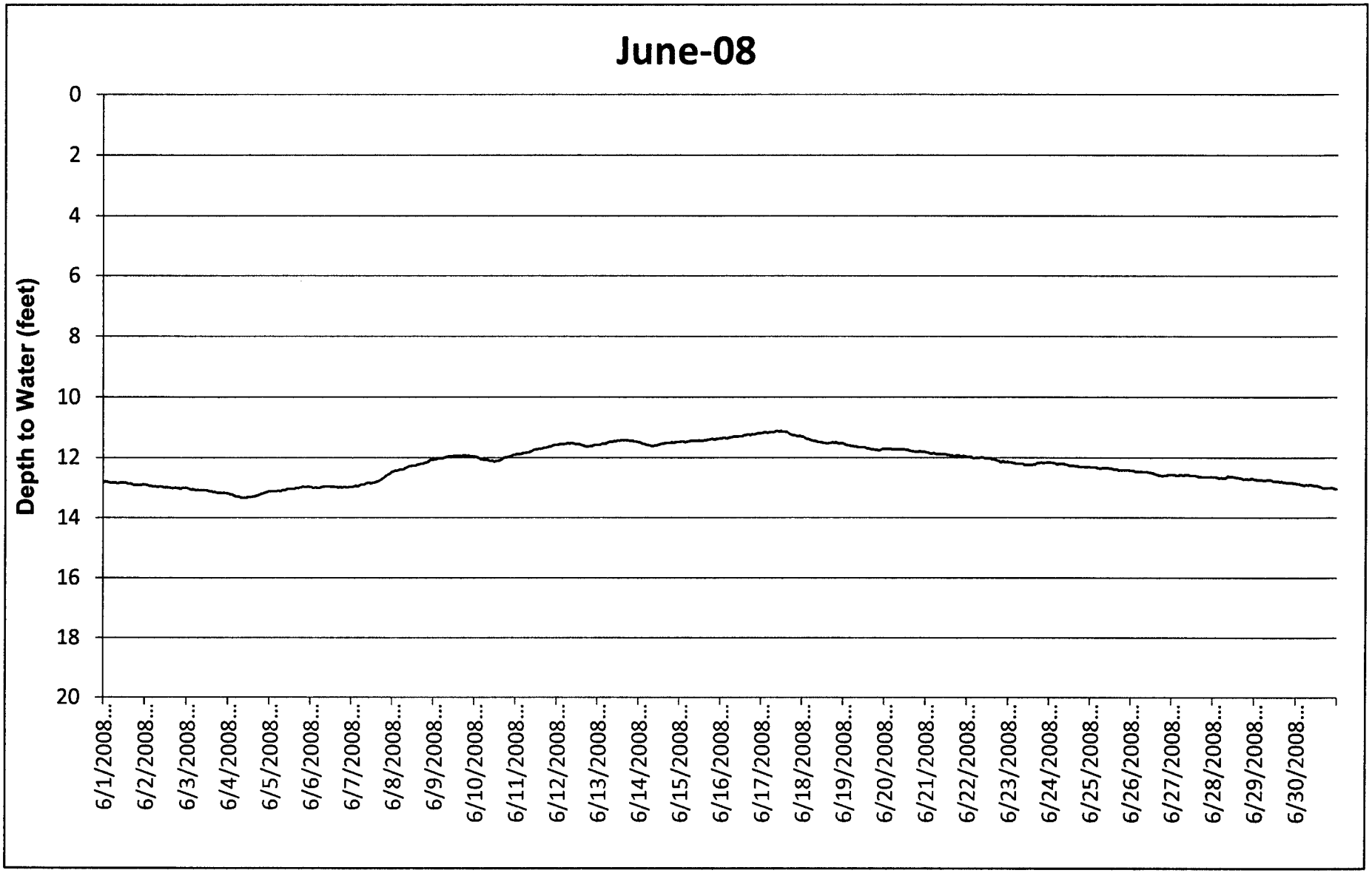
WATER LEVEL HYDROGRAPH FOR MW-23M



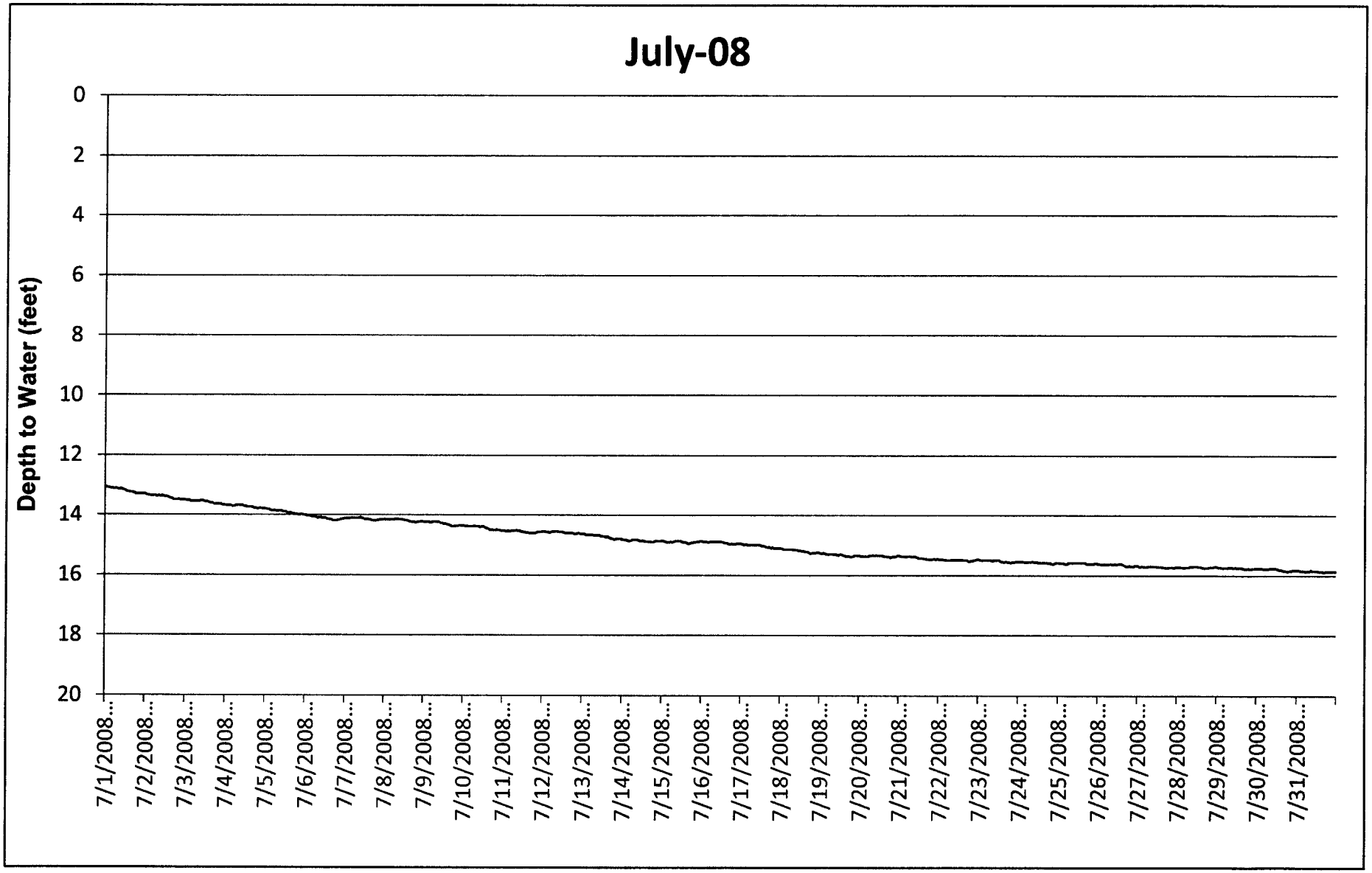
WATER LEVEL HYDROGRAPH FOR MW-23M



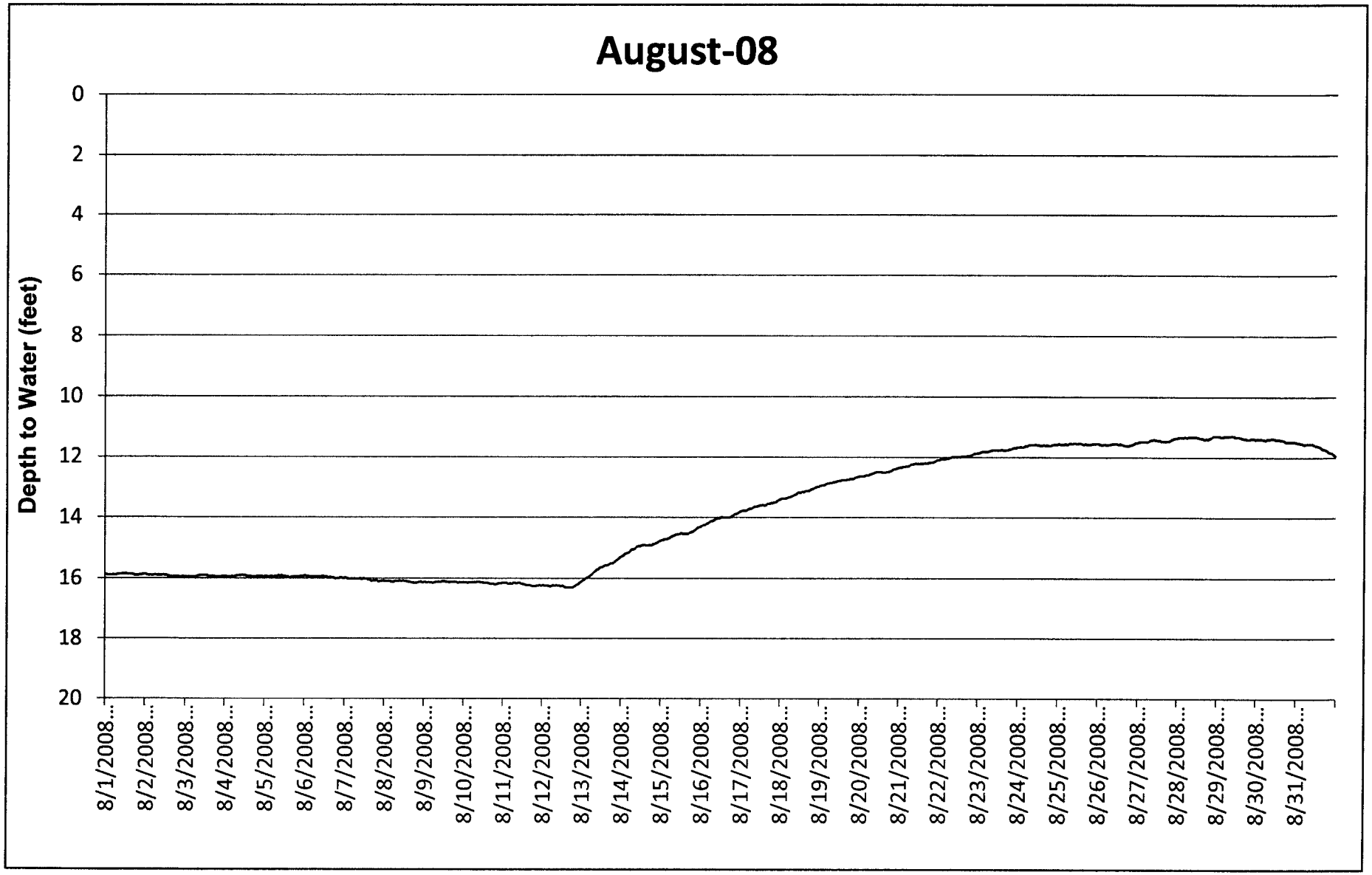
WATER LEVEL HYDROGRAPH FOR MW-23M



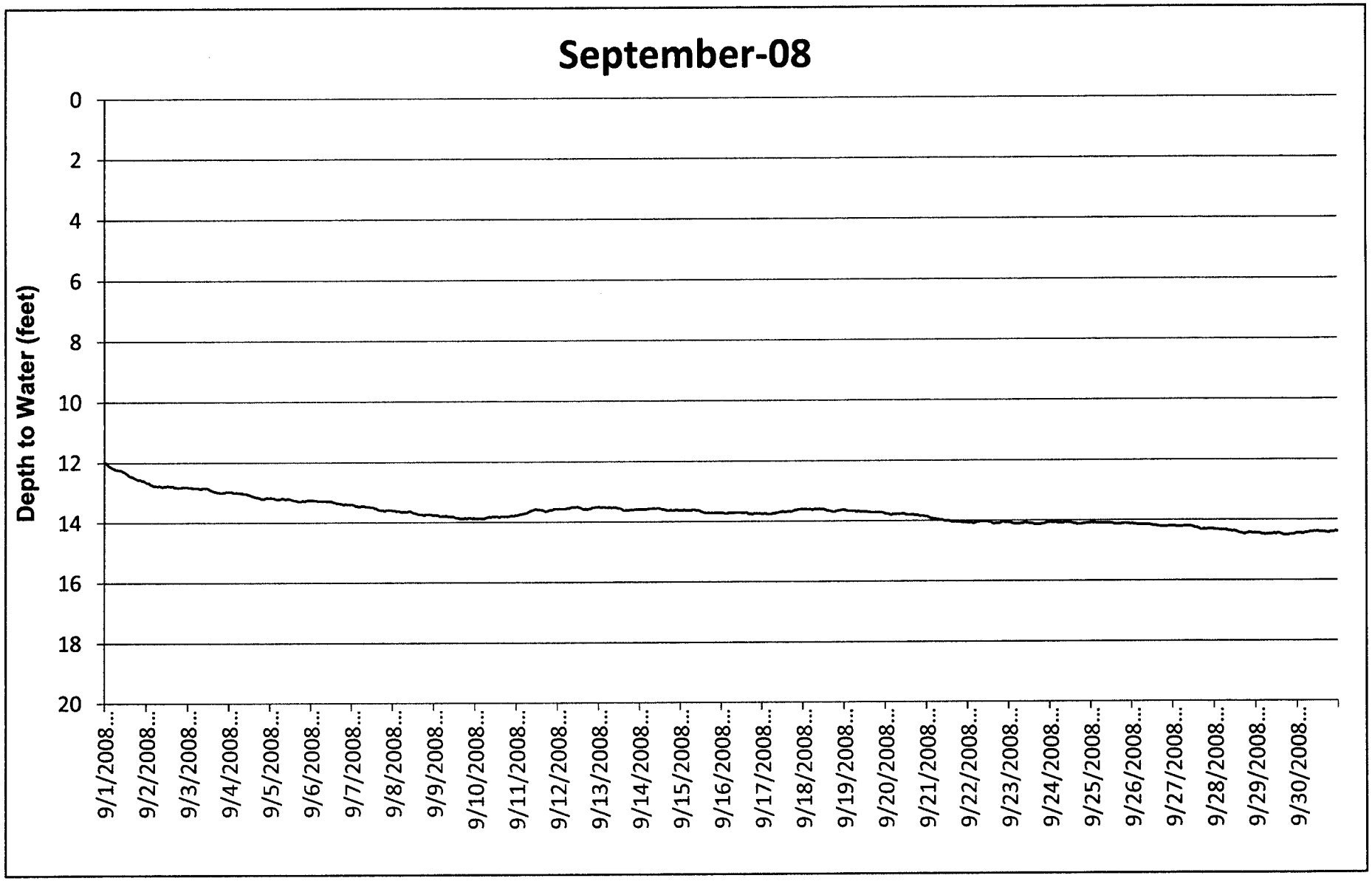
WATER LEVEL HYDROGRAPH FOR MW-23M



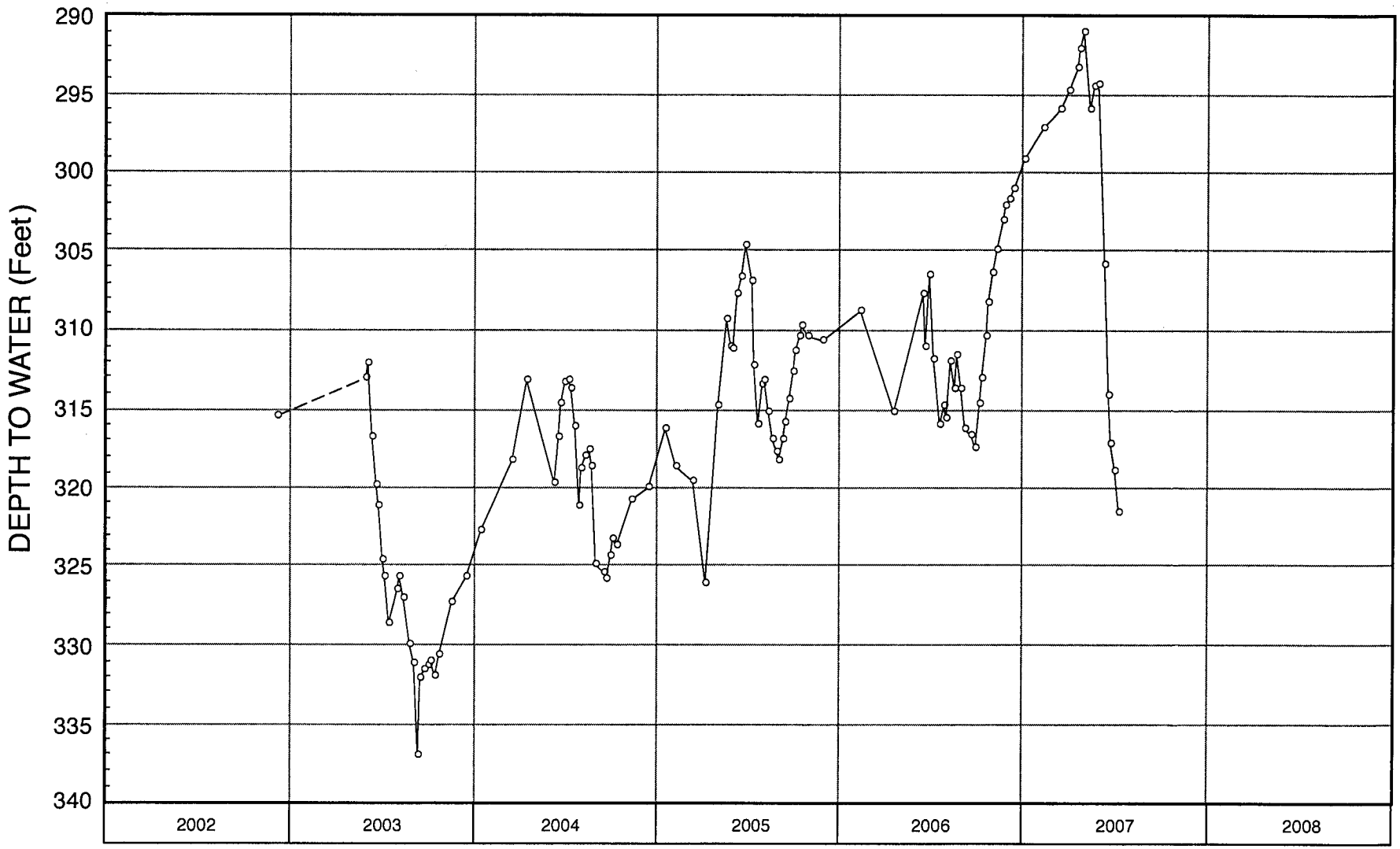
WATER LEVEL HYDROGRAPH FOR MW-23M



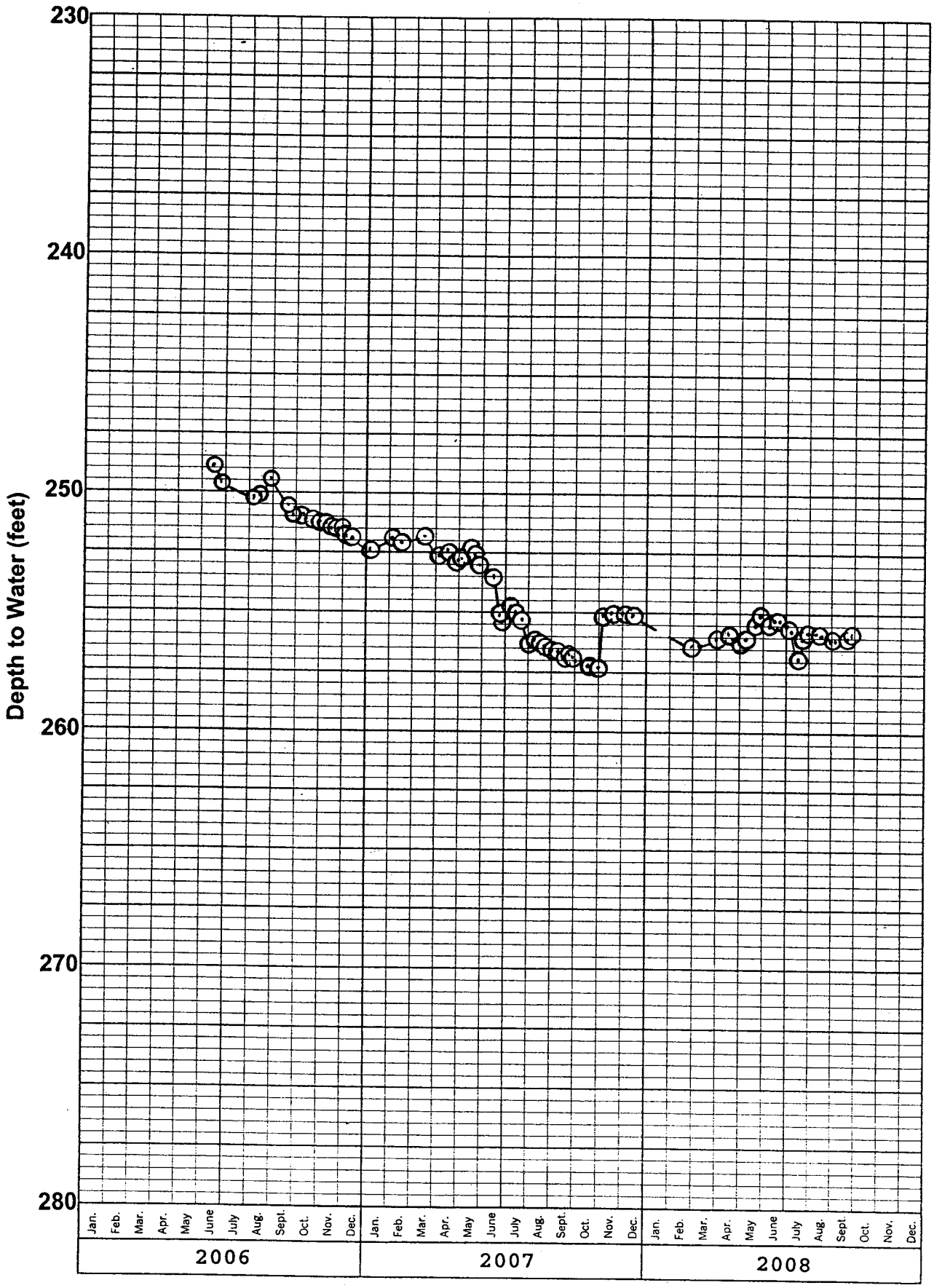
WATER LEVEL HYDROGRAPH FOR MW-23M



WATER LEVEL HYDROGRAPH FOR MW-23M

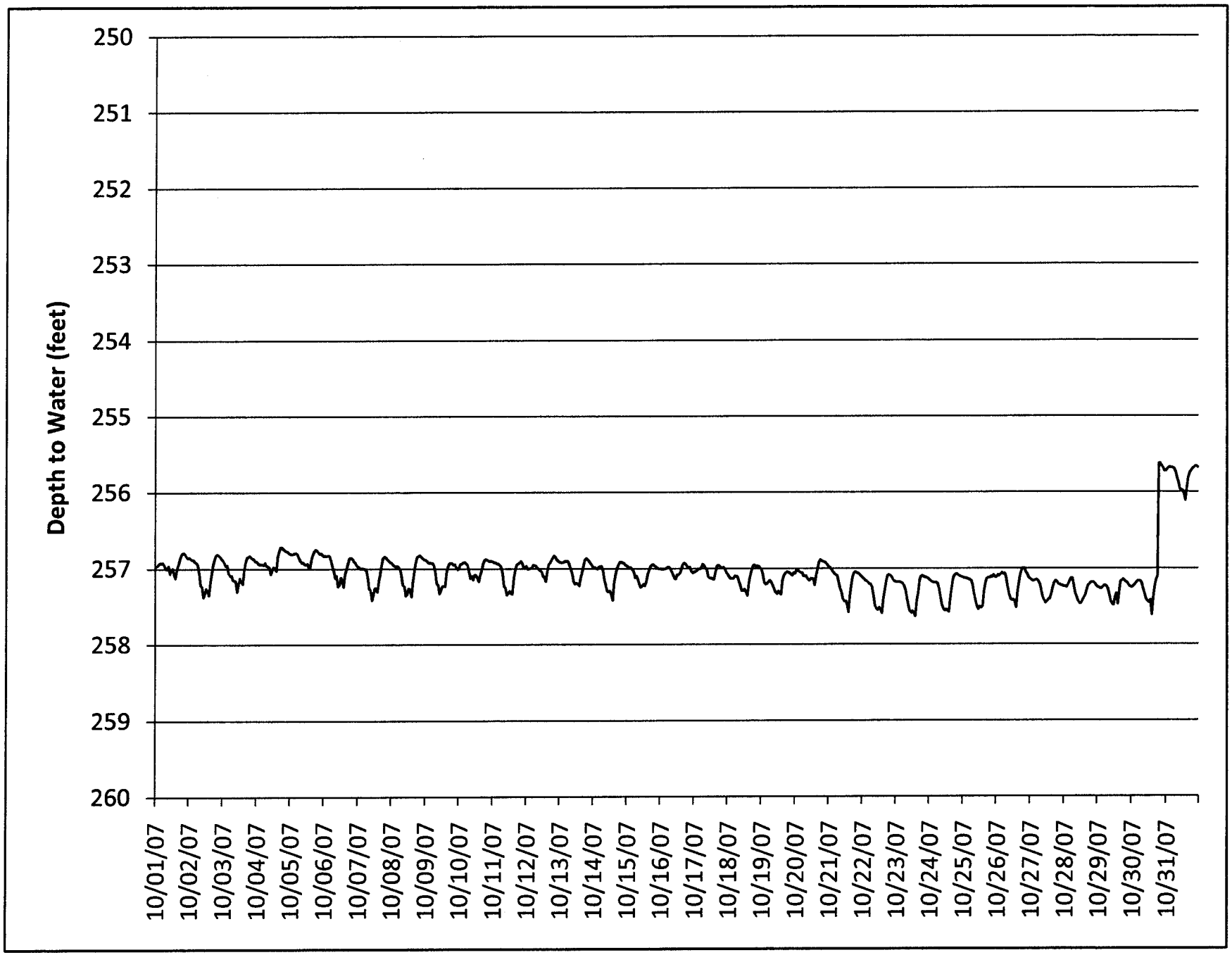


WATER-LEVEL HYDROGRAPH FOR WELL NO. 25



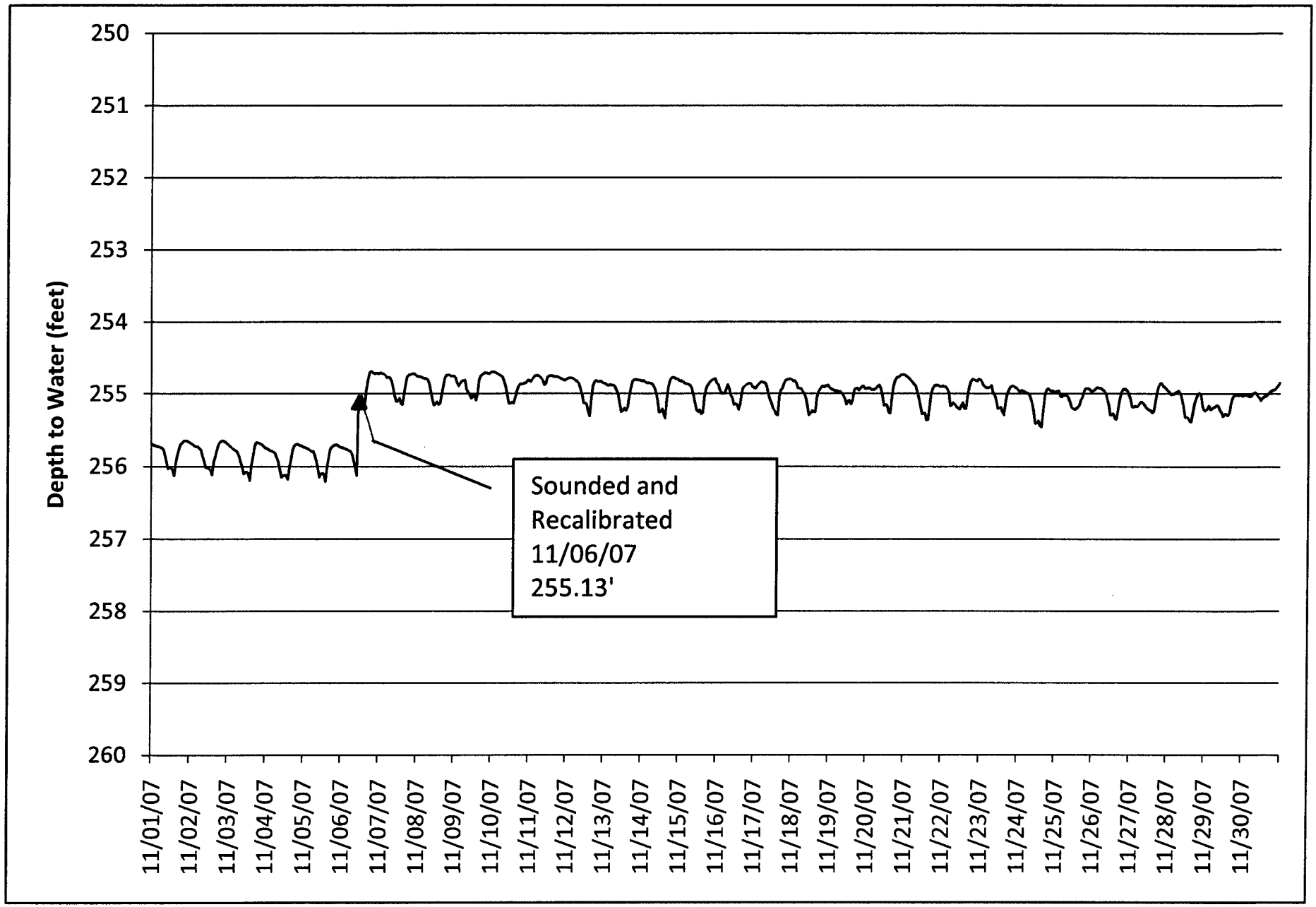
WATER-LEVEL HYDROGRAPH FOR WELL NO. 26

OCTOBER 07



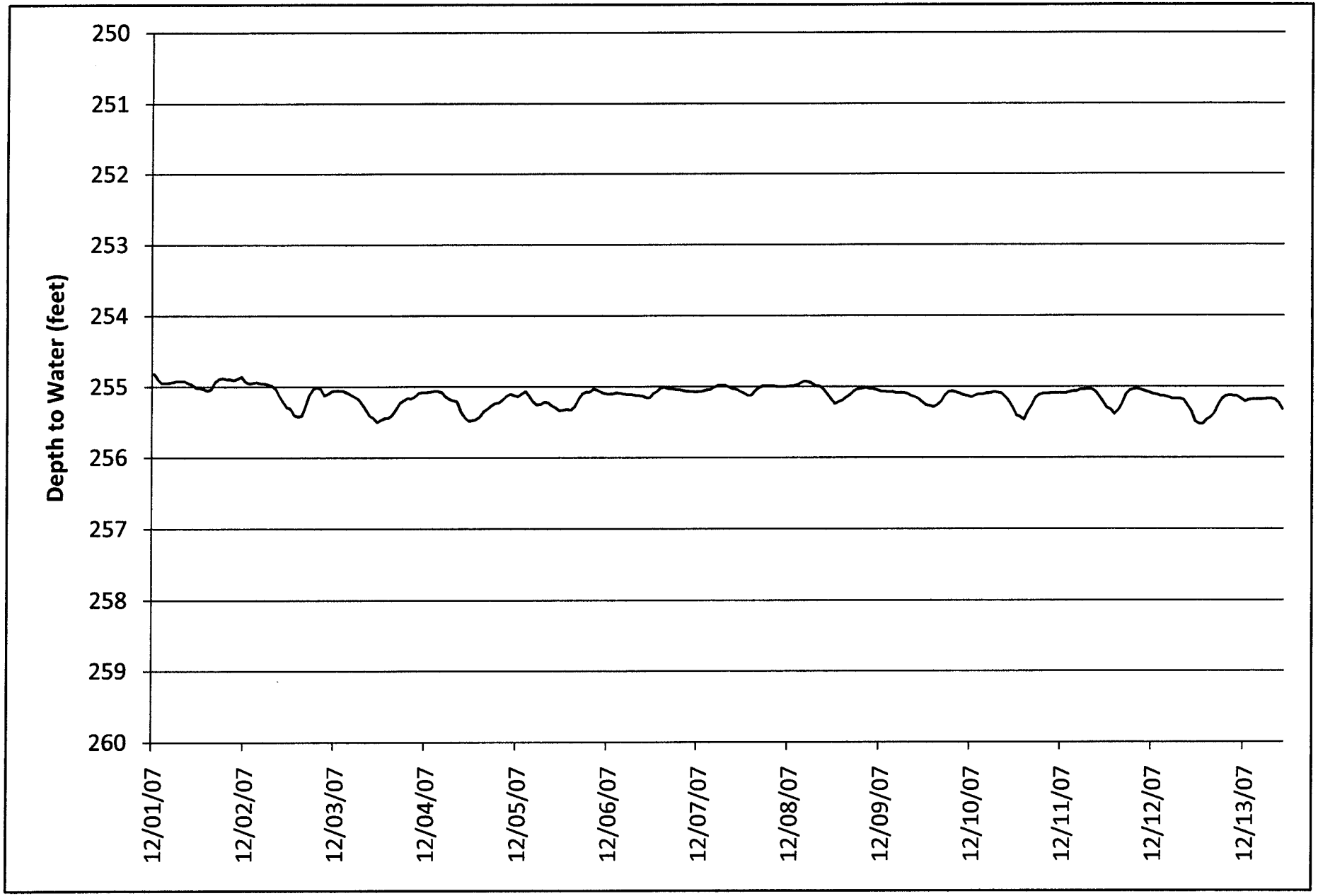
WATER LEVEL HYDROGRAPH FOR MW-26M

NOVEMBER 07



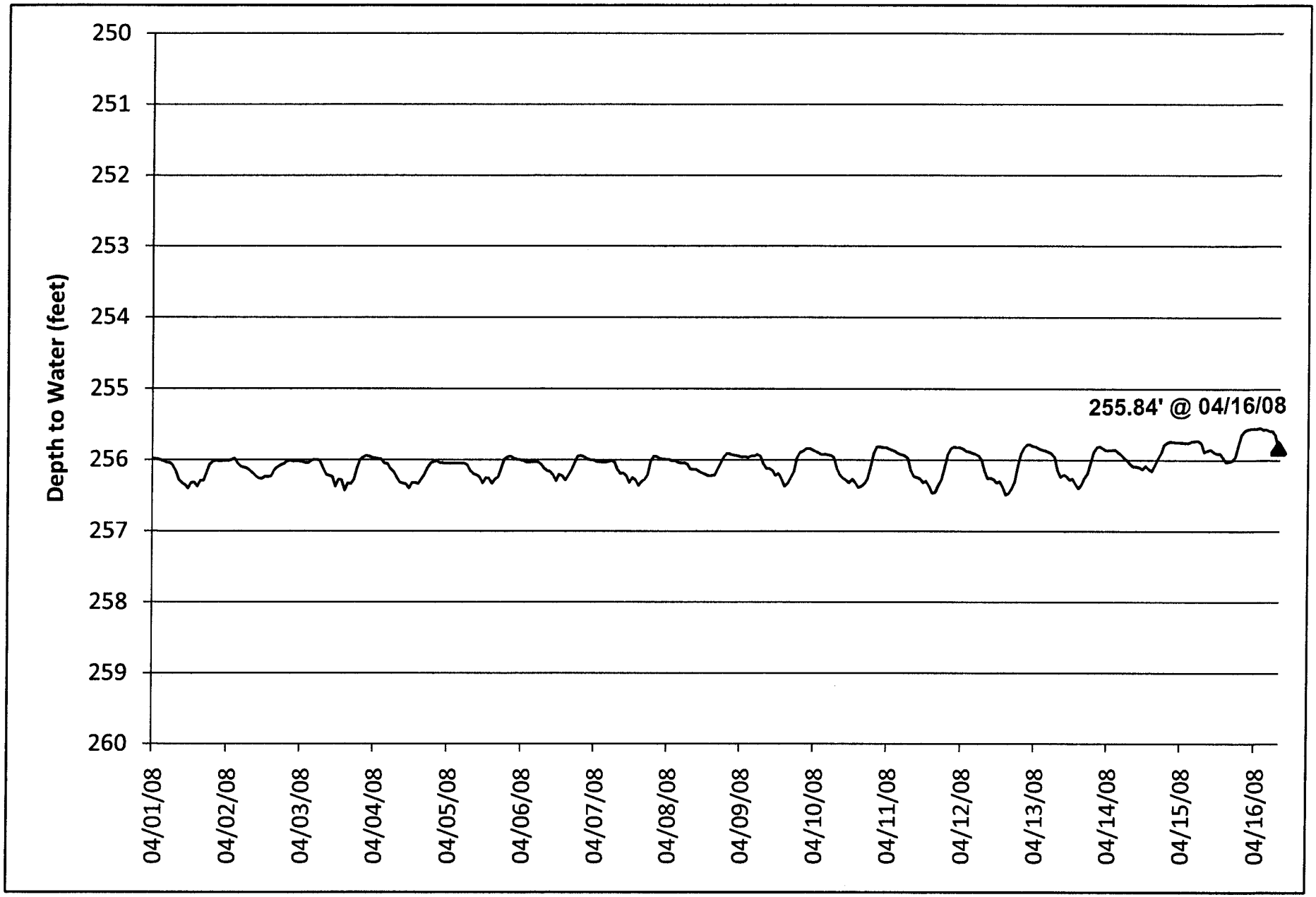
WATER LEVEL HYDROGRAPH FOR MW-26M

DECEMBER 07

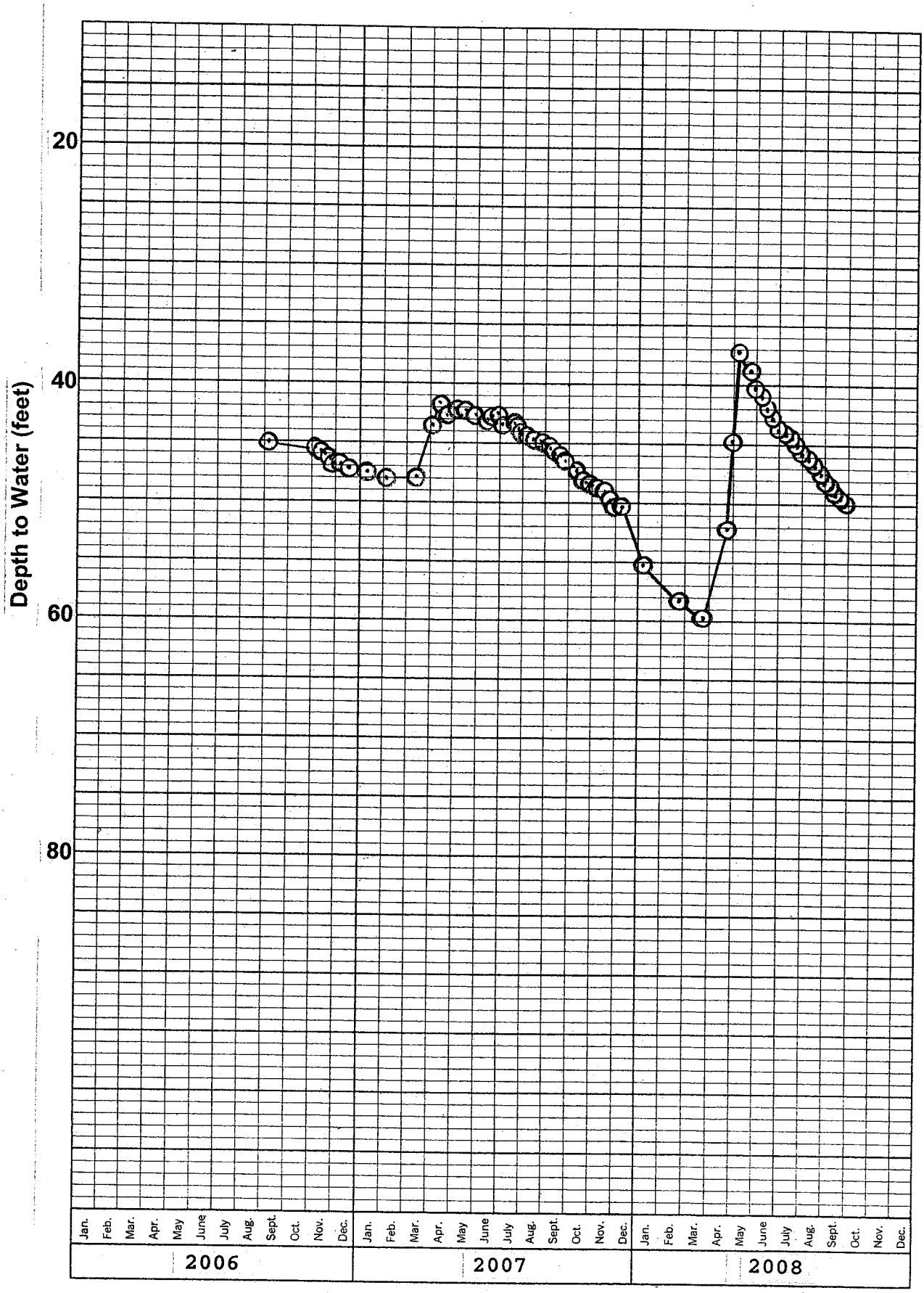


WATER LEVEL HYDROGRAPH FOR MW-26M

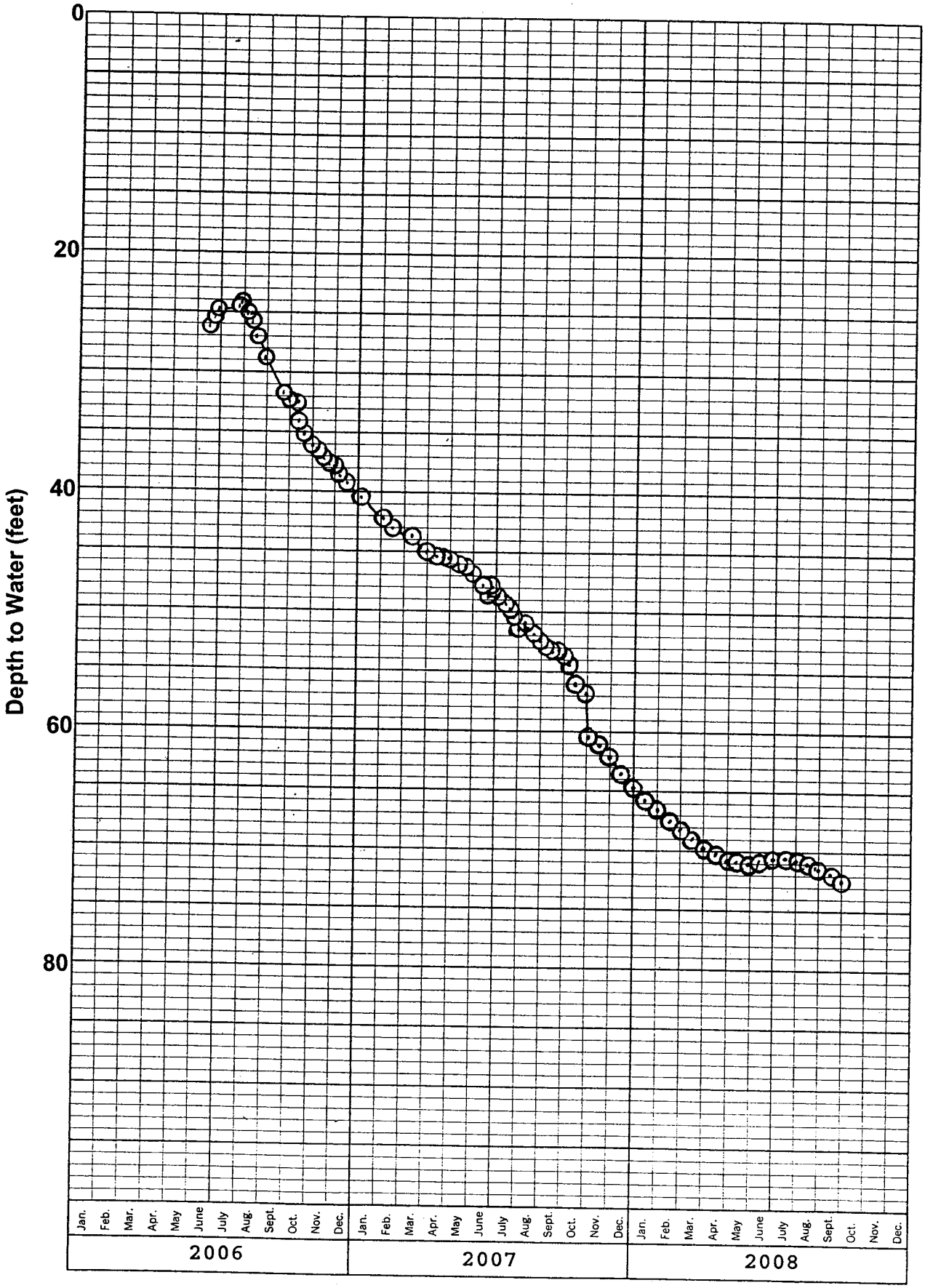
APRIL 08



WATER LEVEL HYDROGRAPH FOR MW-26M

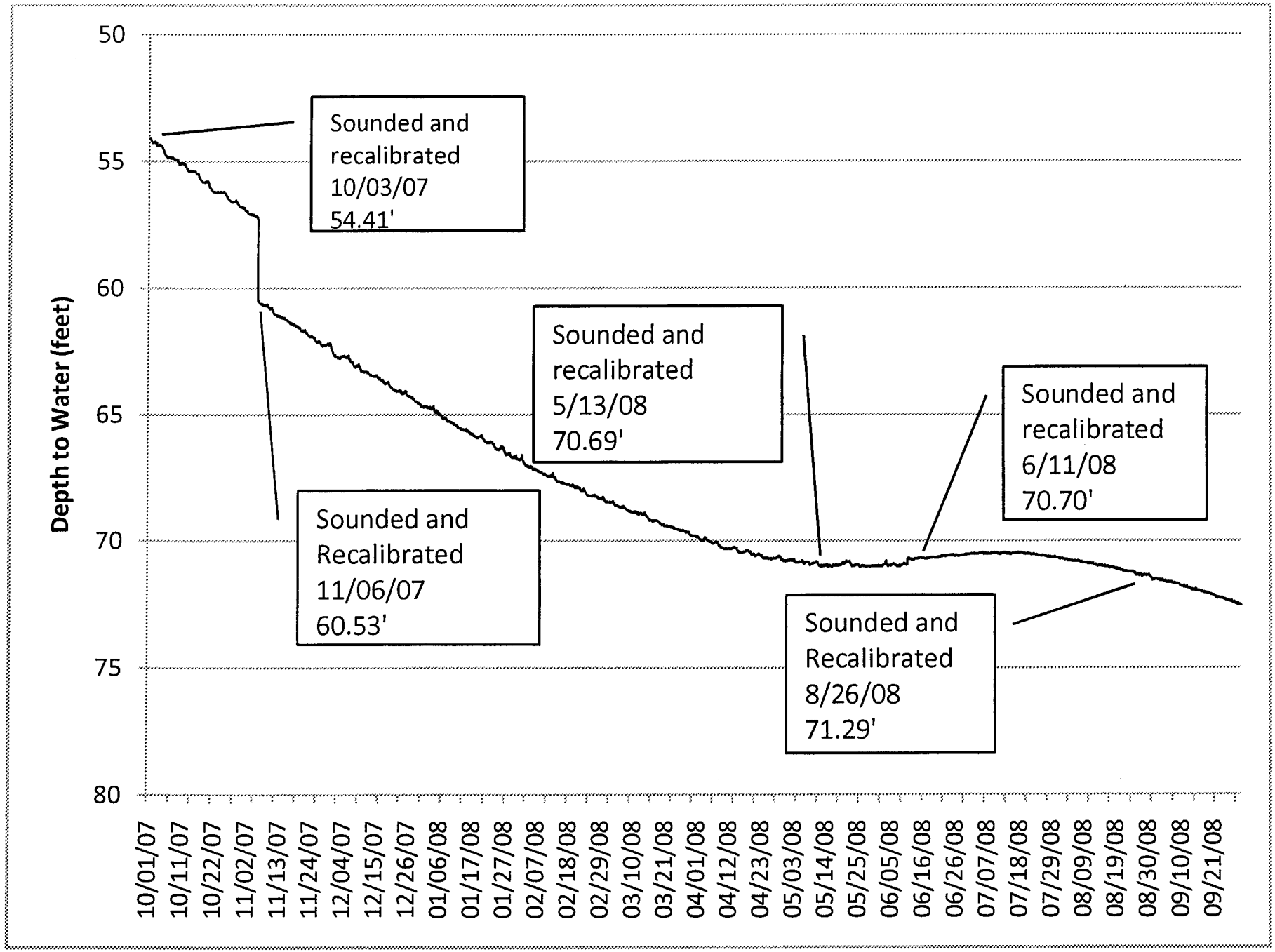


WATER-LEVEL HYDROGRAPH FOR WELL NO. 27

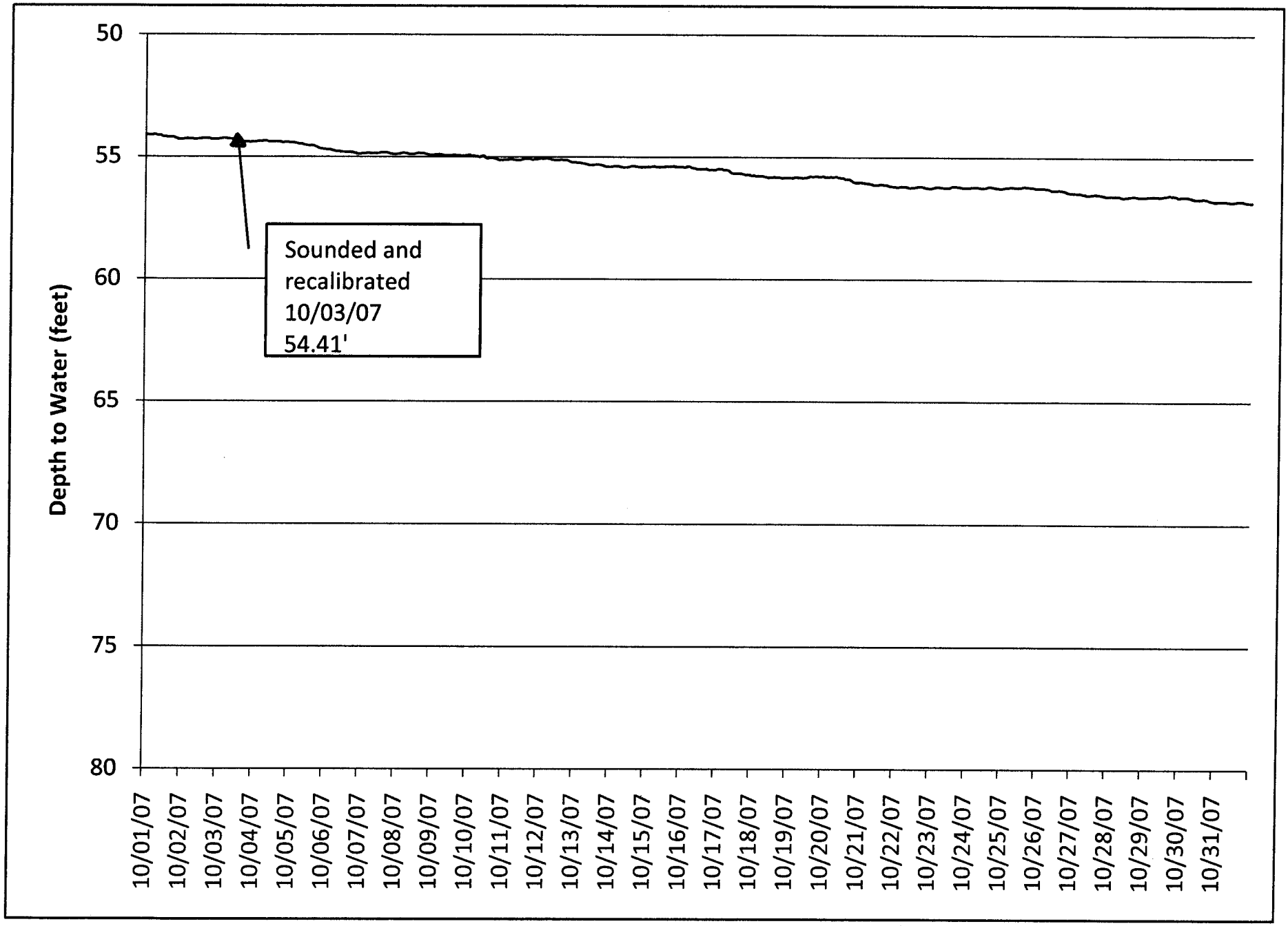


WATER-LEVEL HYDROGRAPH FOR WELL NO. 28

ALL YEAR

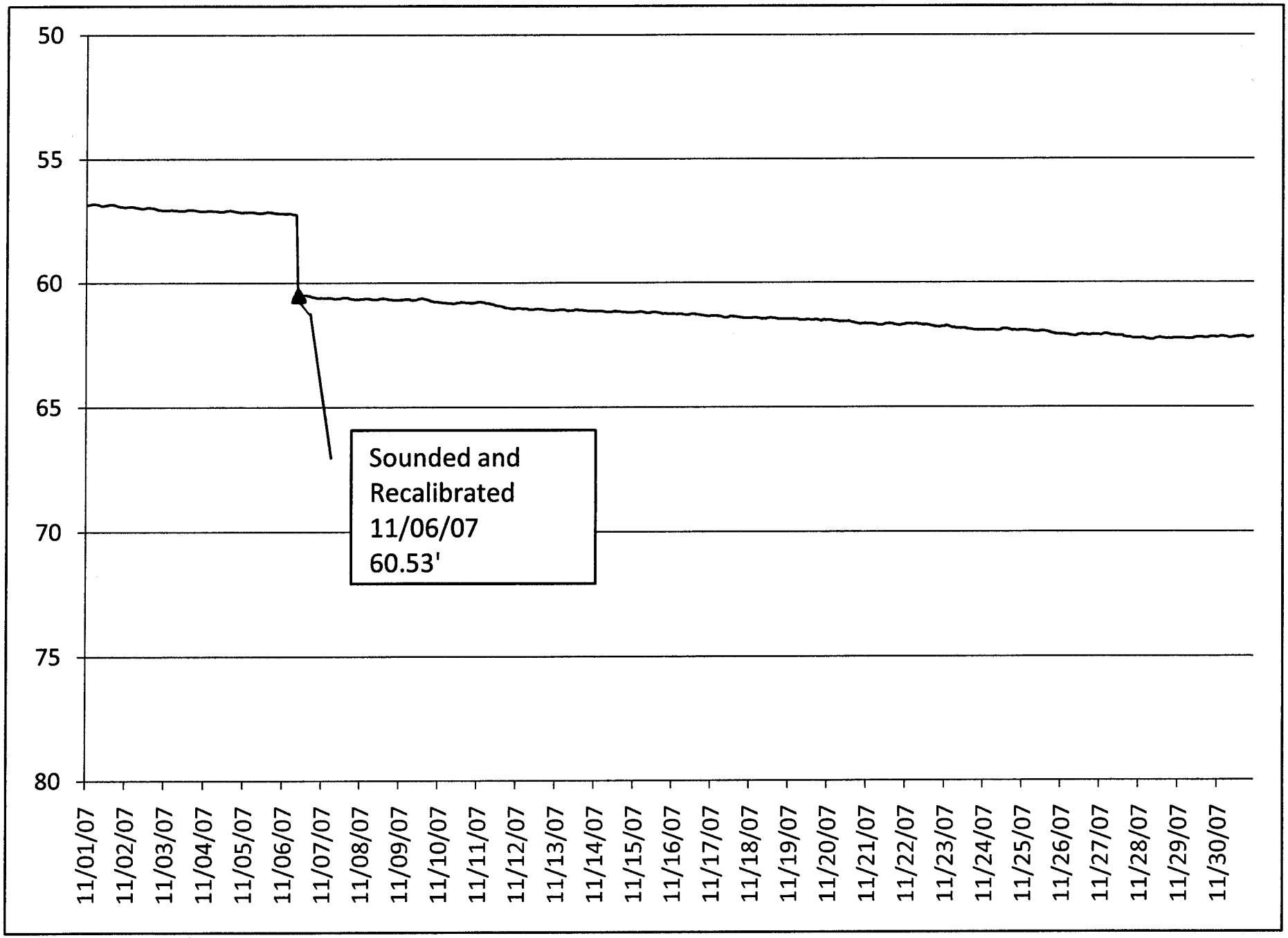


WATER LEVEL HYDROGRAPH FOR MW-28M



WATER LEVEL HYDROGRAPH FOR MW-28M

NOVEMBER 2007



WATER LEVEL HYDROGRAPH FOR MW-28M

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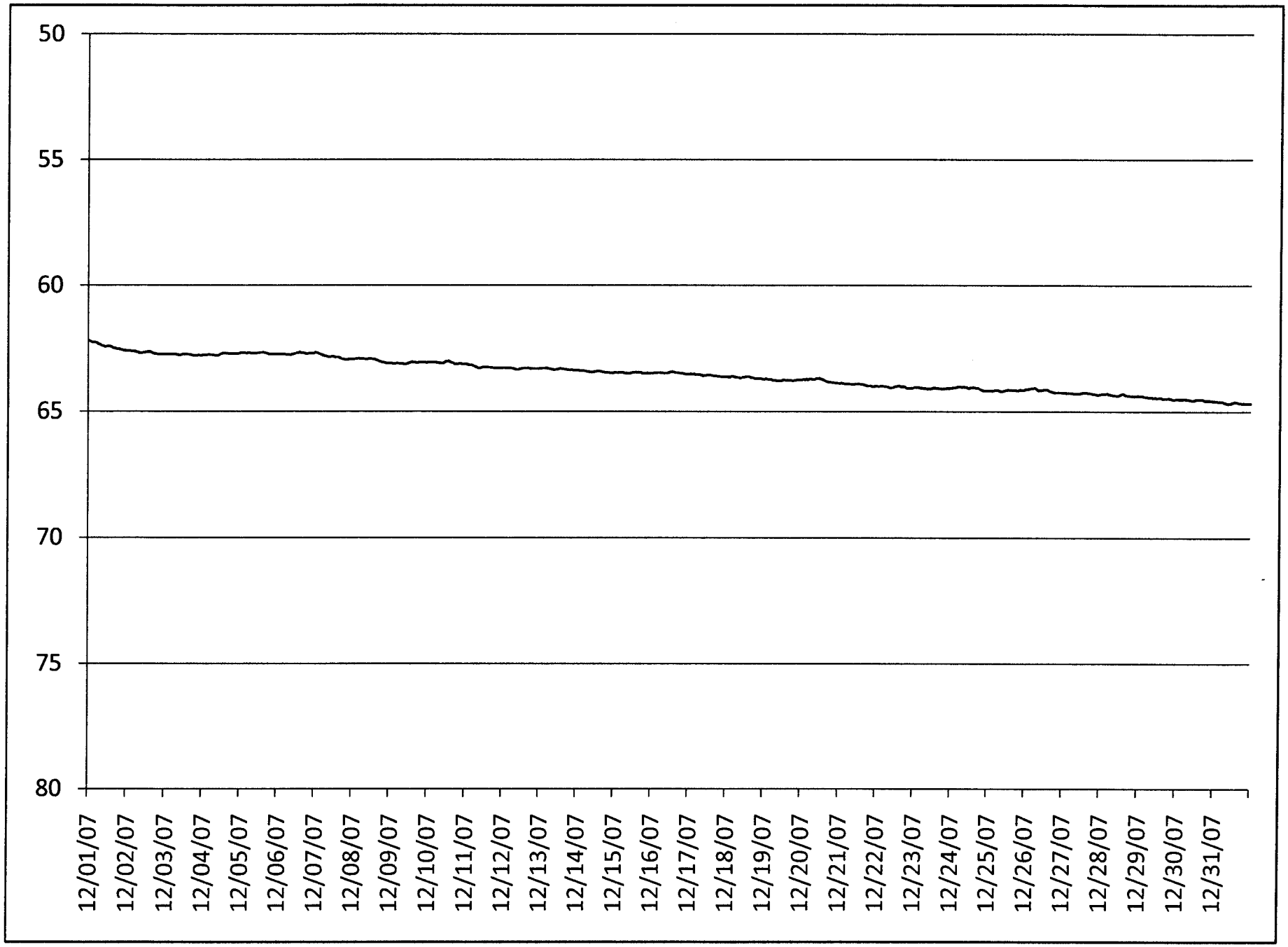
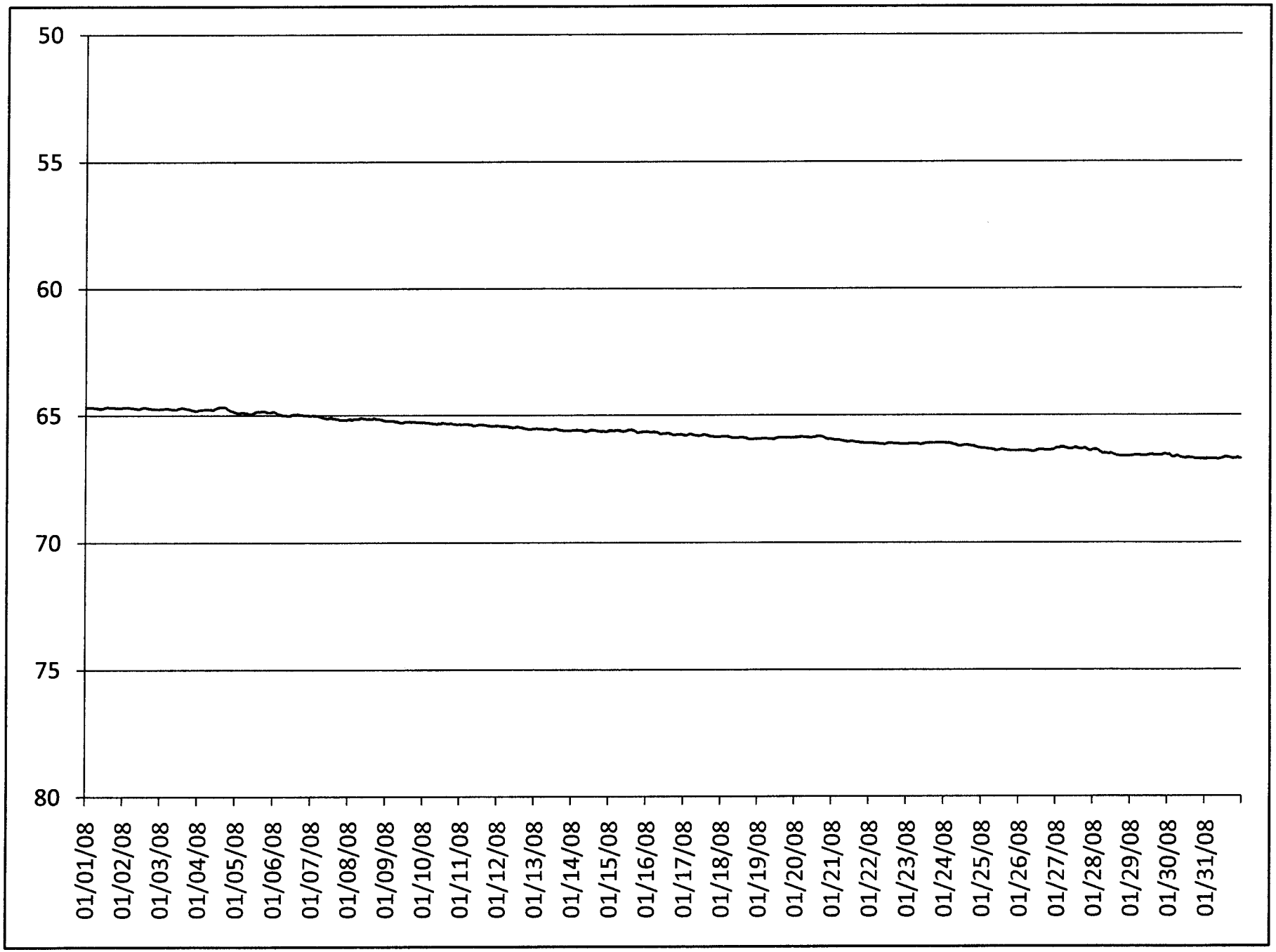


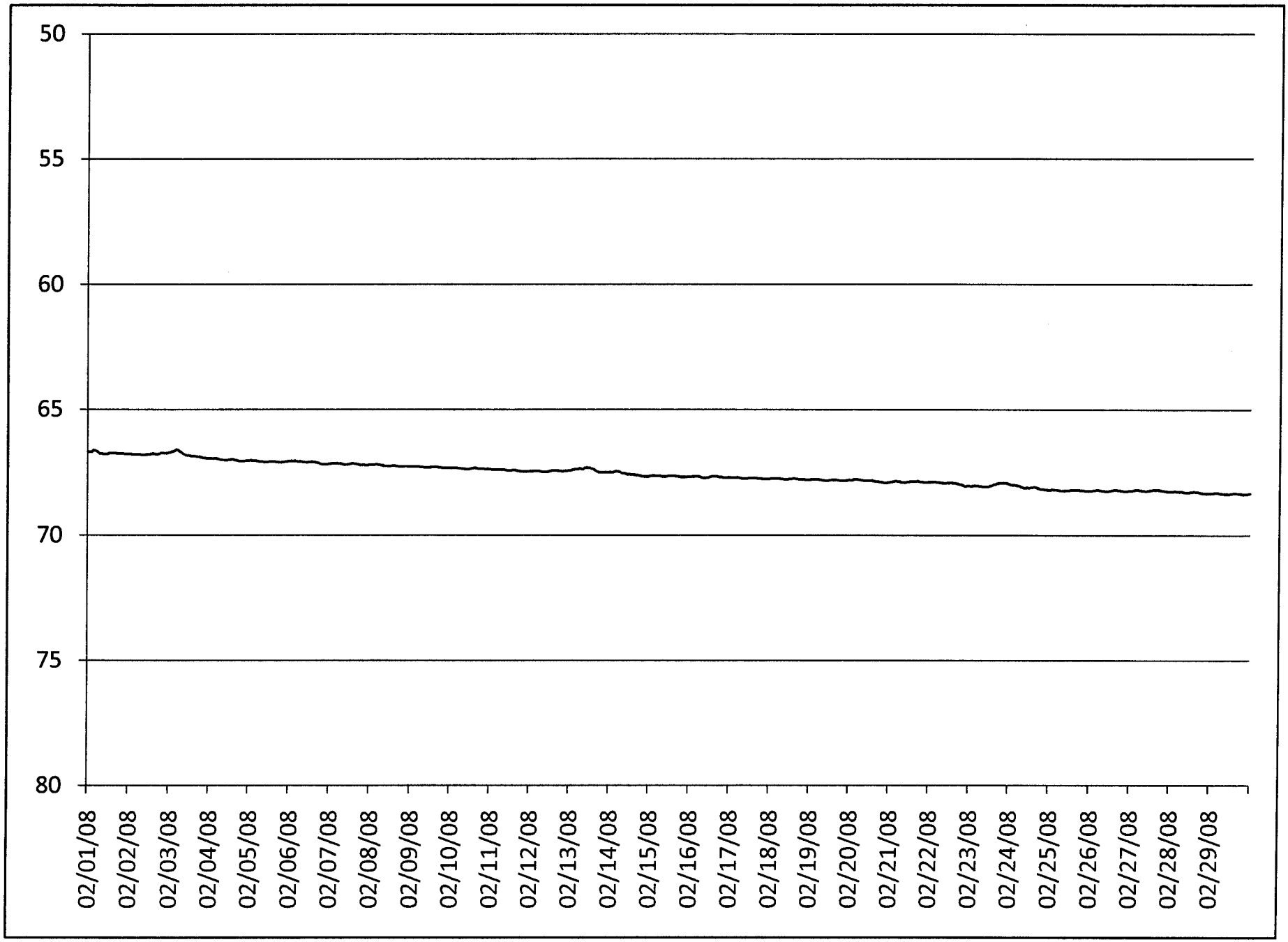
WATER LEVEL HYDROGRAPH FOR MW-28M

JANUARY 2008



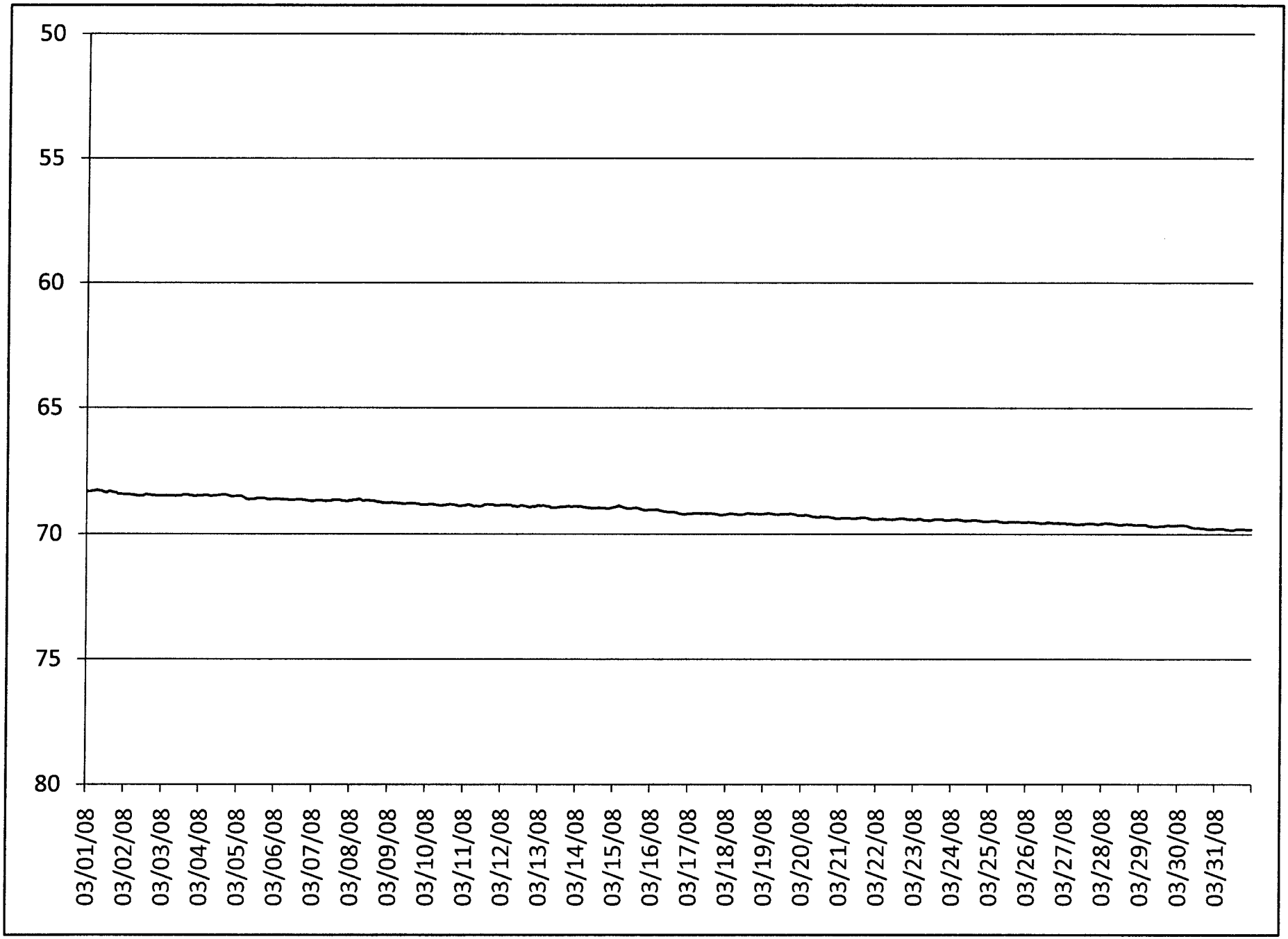
WATER LEVEL HYDROGRAPH FOR MW-28M

FEBRUARY 2008



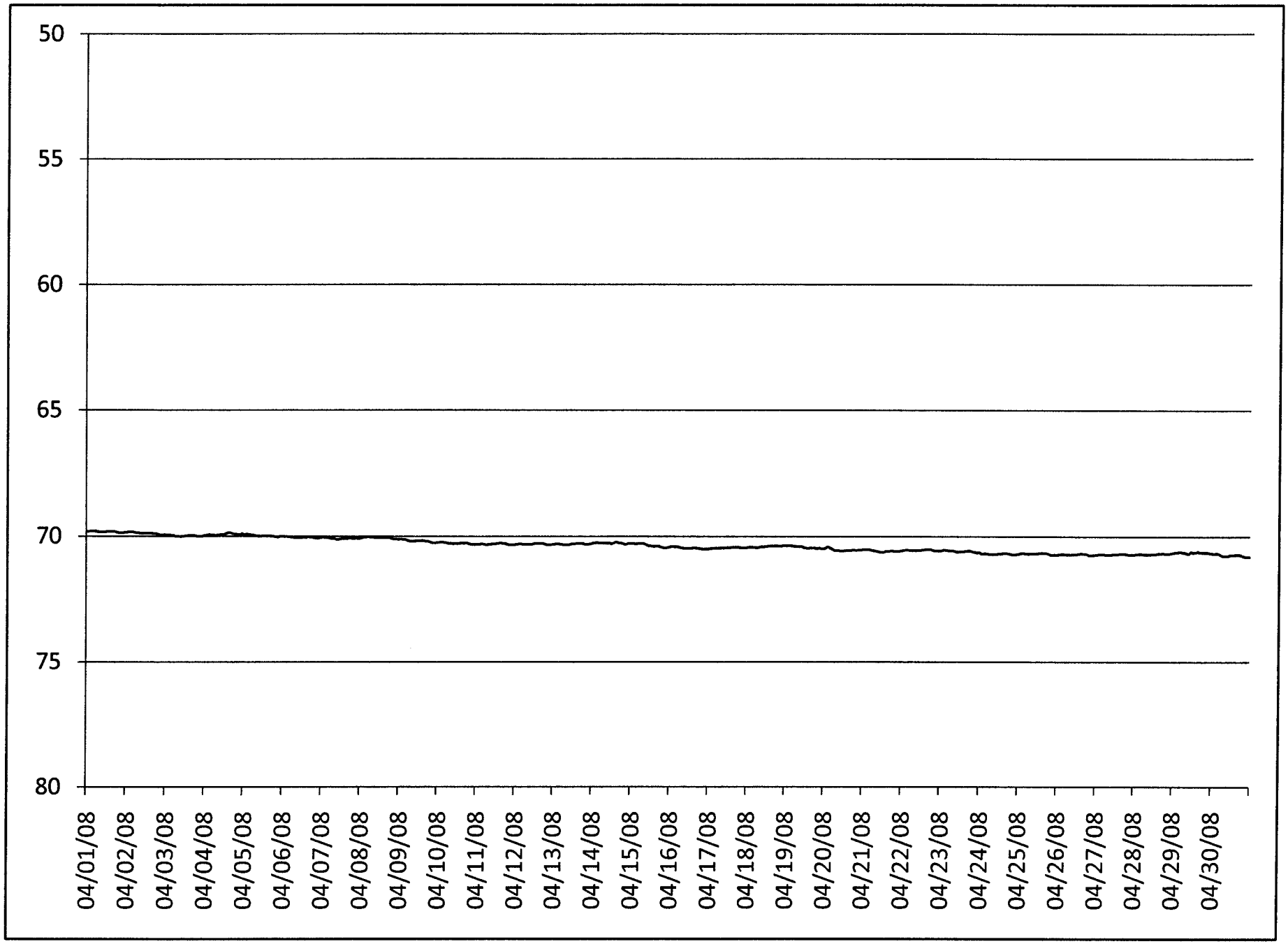
WATER LEVEL HYDROGRAPH FOR MW-28M

MARCH 2008



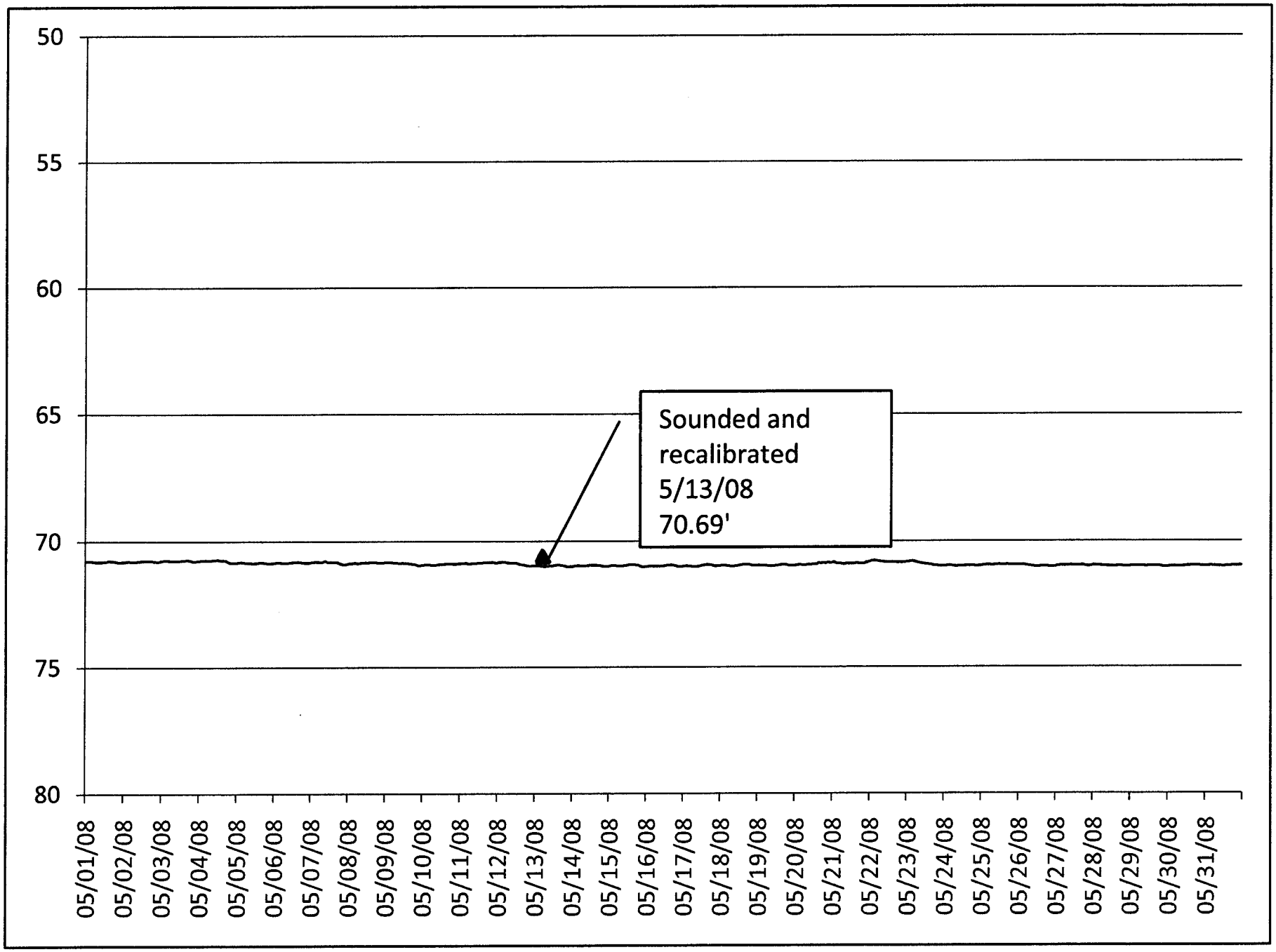
WATER LEVEL HYDROGRAPH FOR MW-28M

APRIL 2008



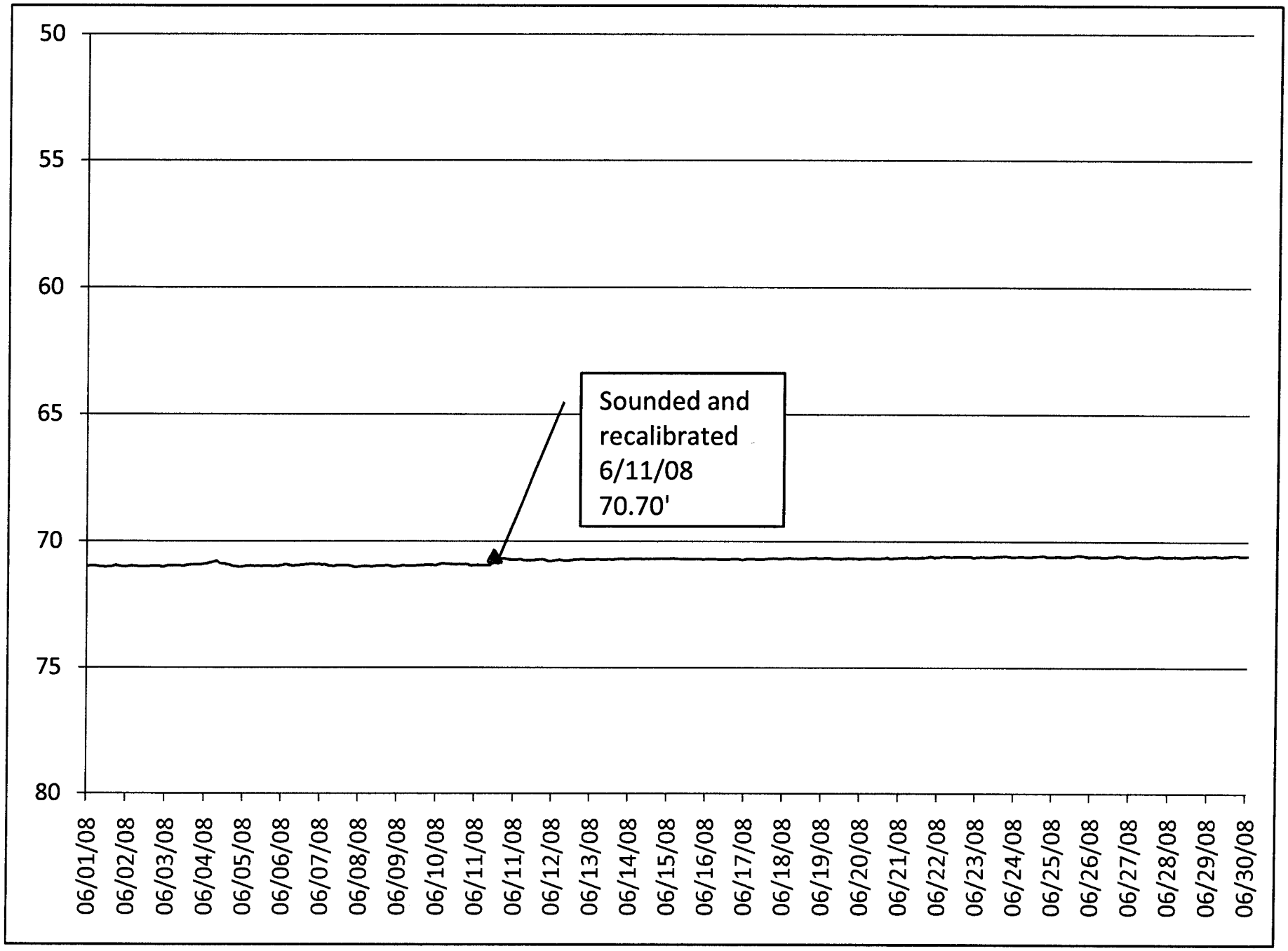
WATER LEVEL HYDROGRAPH FOR MW-28M

MAY 2008



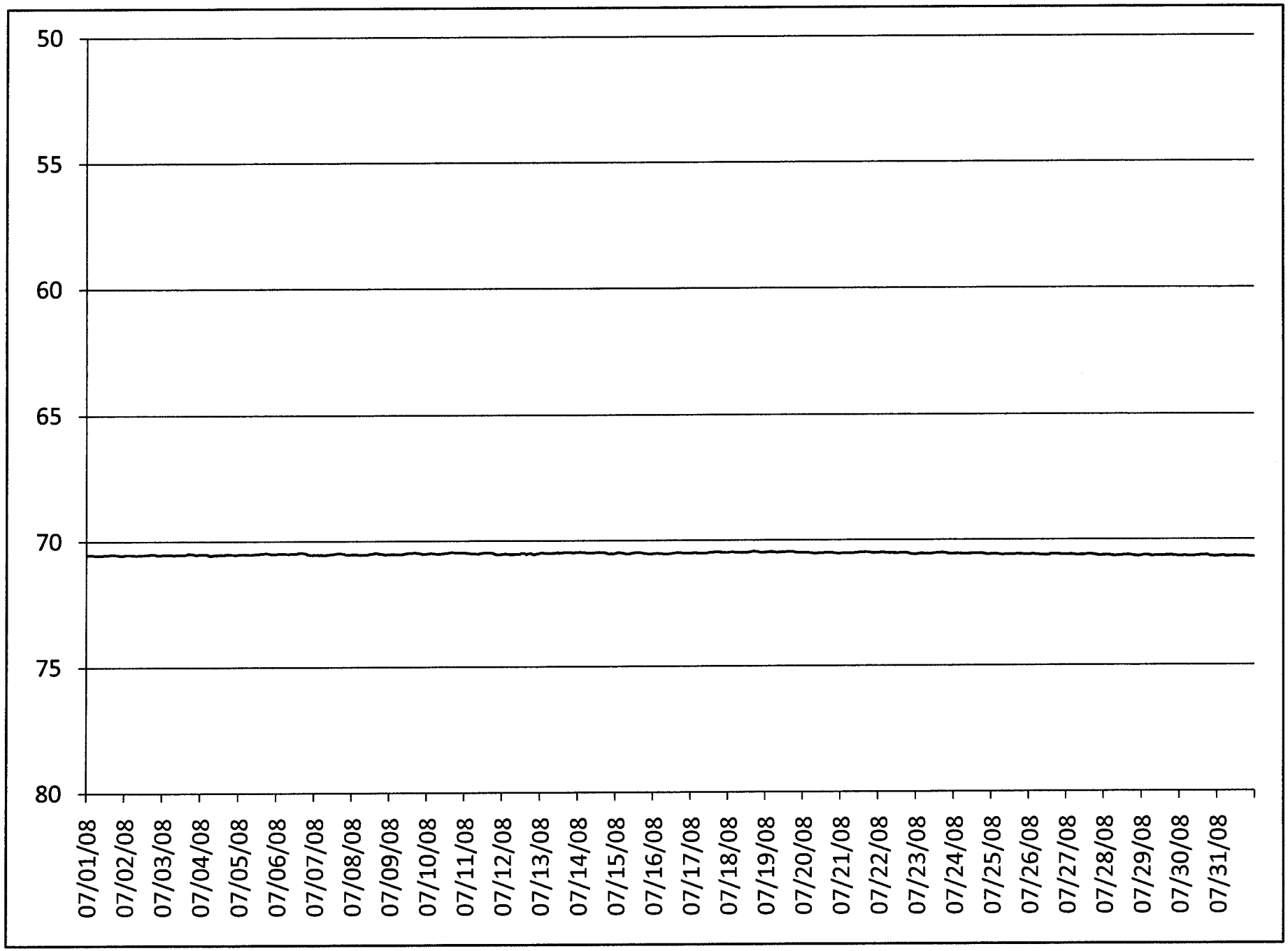
WATER LEVEL HYDROGRAPH FOR MW-28M

JUNE 2008



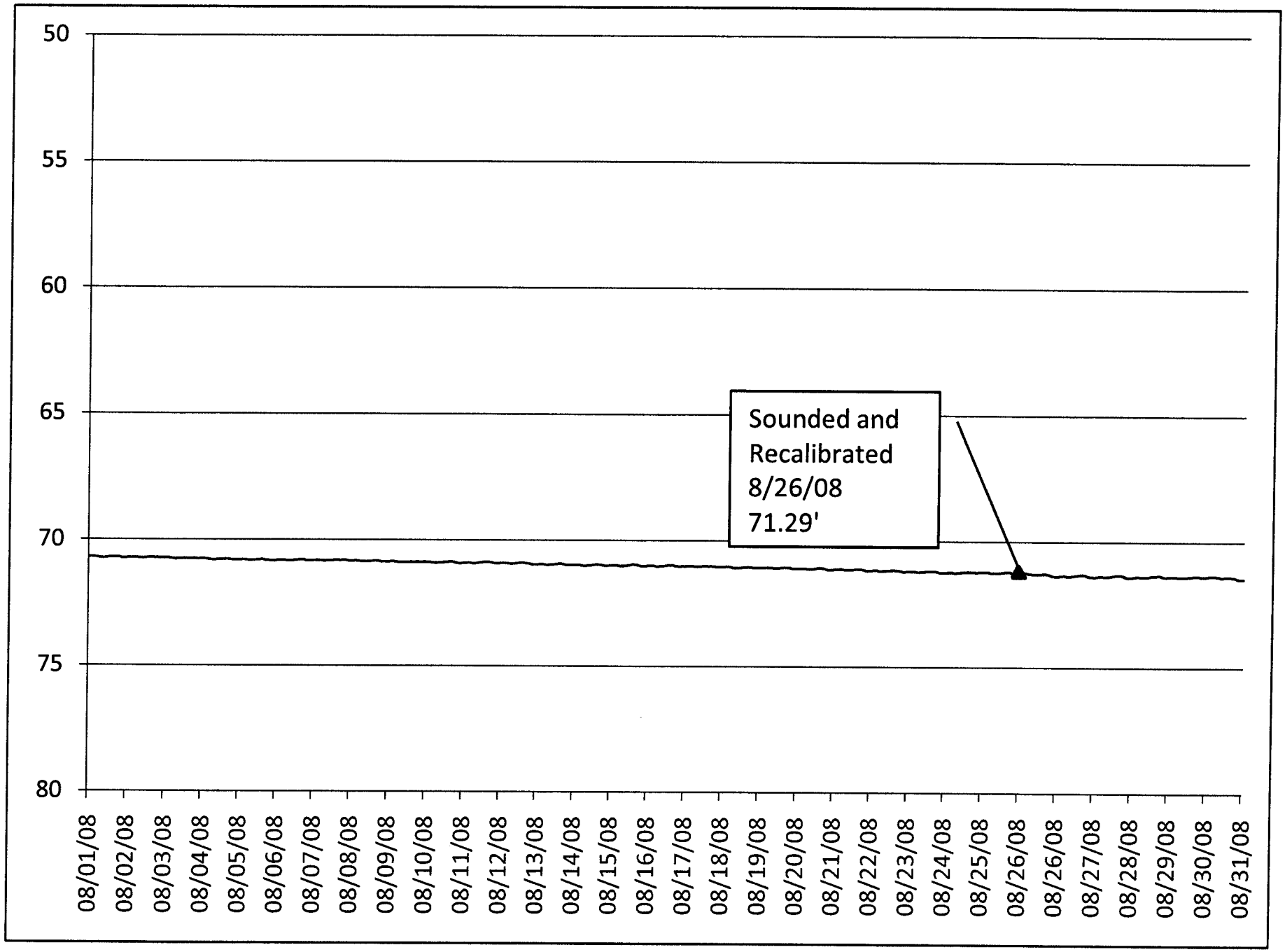
WATER LEVEL HYDROGRAPH FOR MW-28M

JULY 2008



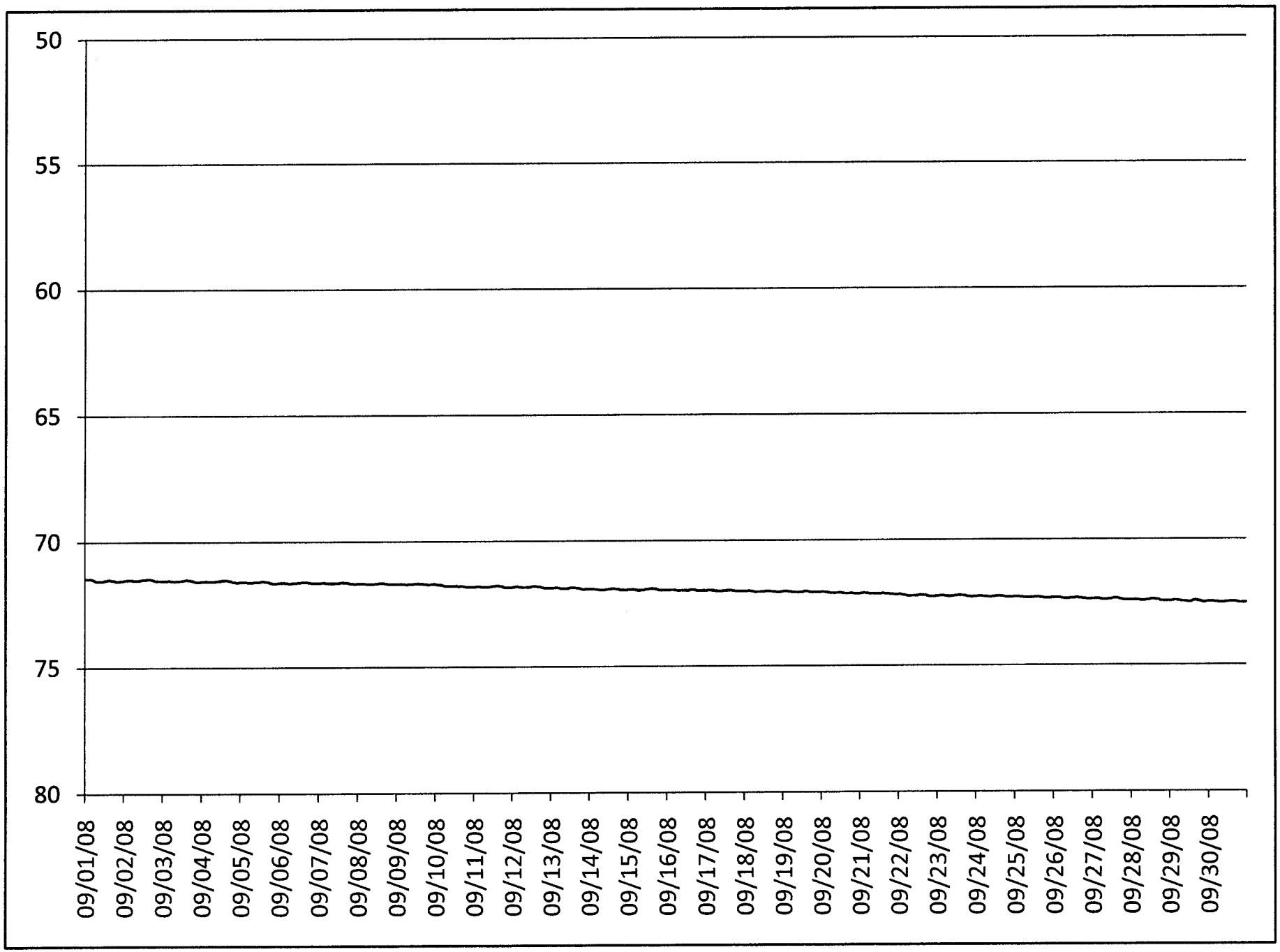
WATER LEVEL HYDROGRAPH FOR MW-28M

AUGUST 2008

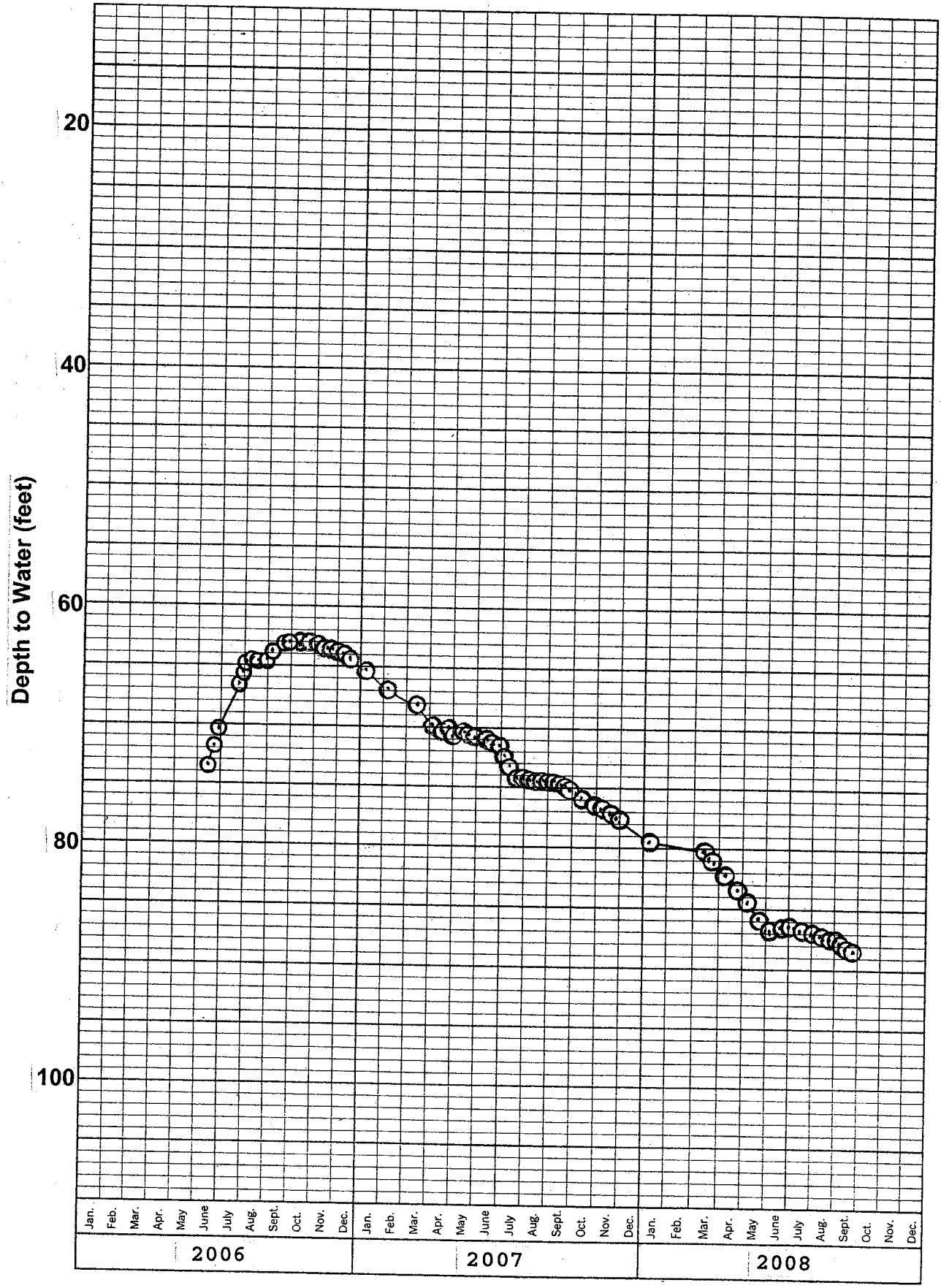


WATER LEVEL HYDROGRAPH FOR MW-28M

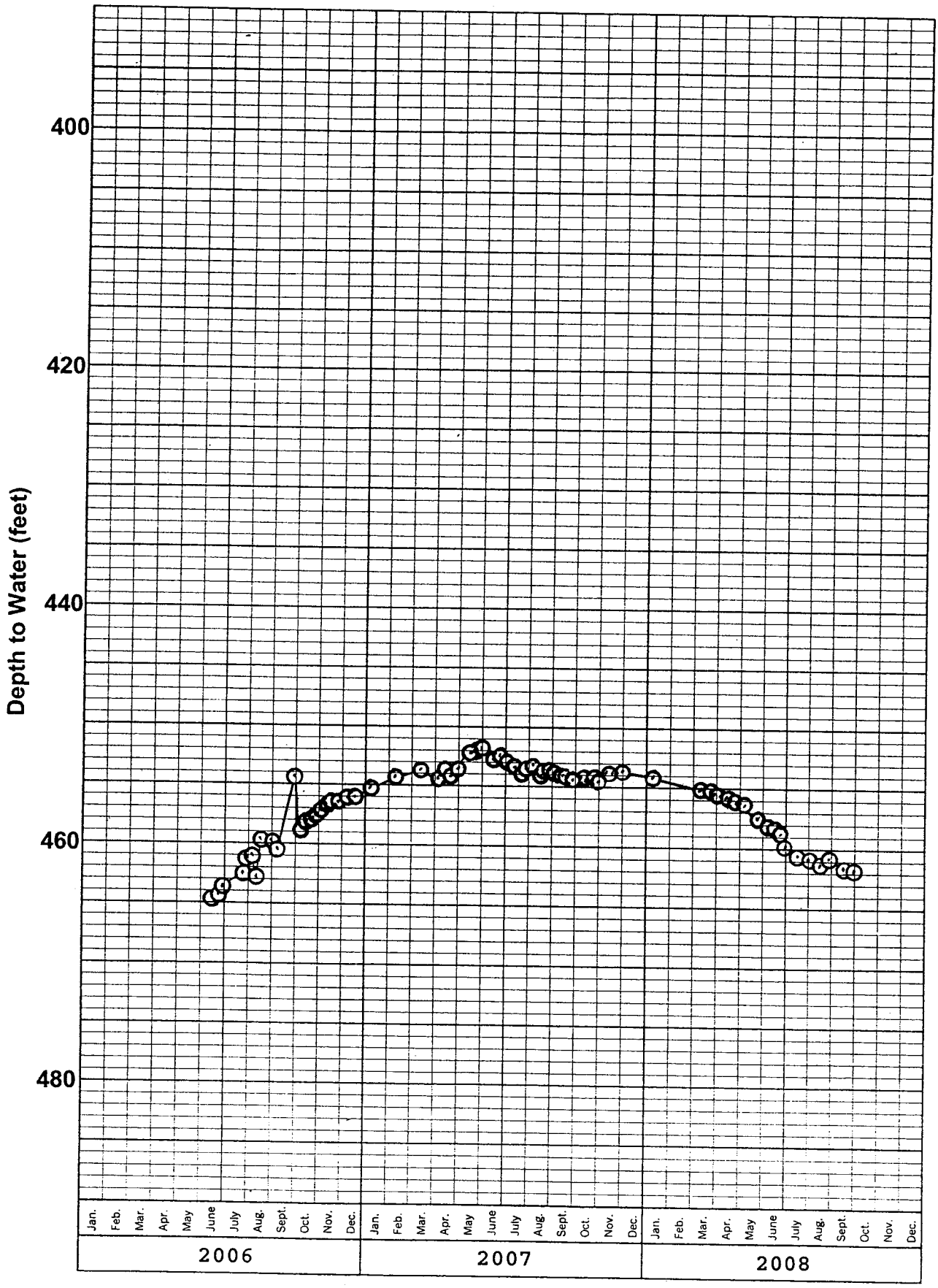
SEPTEMBER 2008



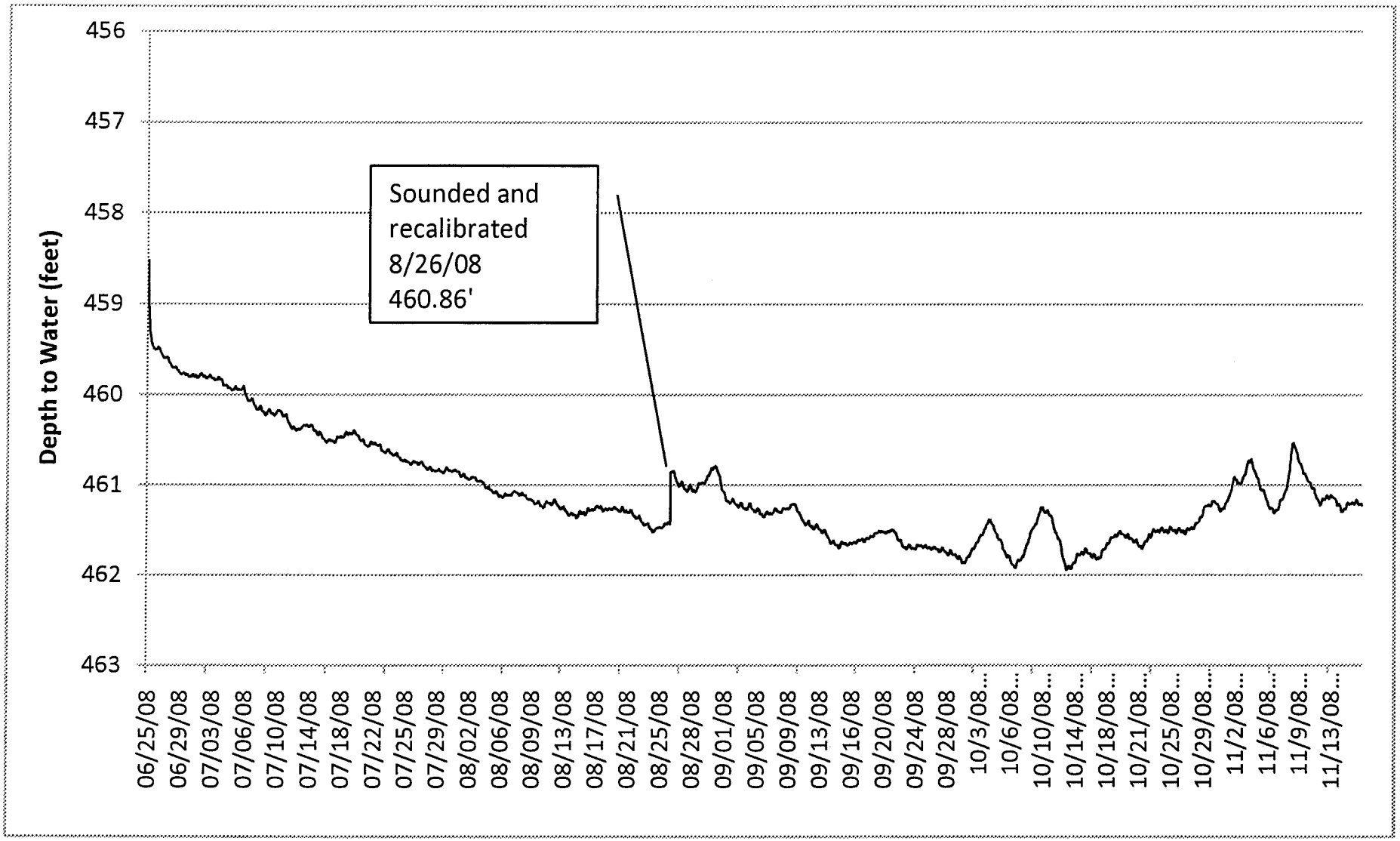
WATER LEVEL HYDROGRAPH FOR MW-28M



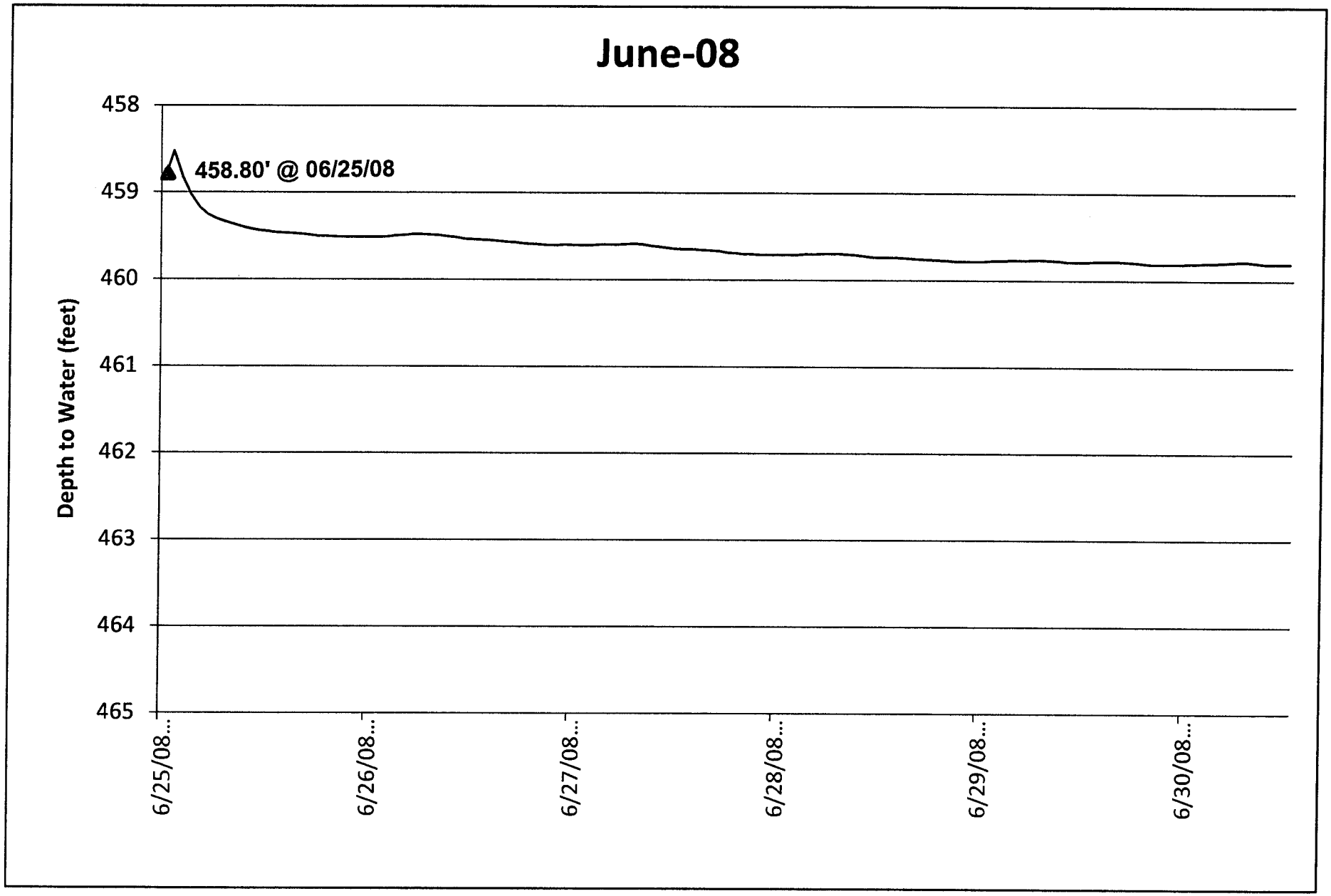
WATER-LEVEL HYDROGRAPH FOR WELL NO. 29



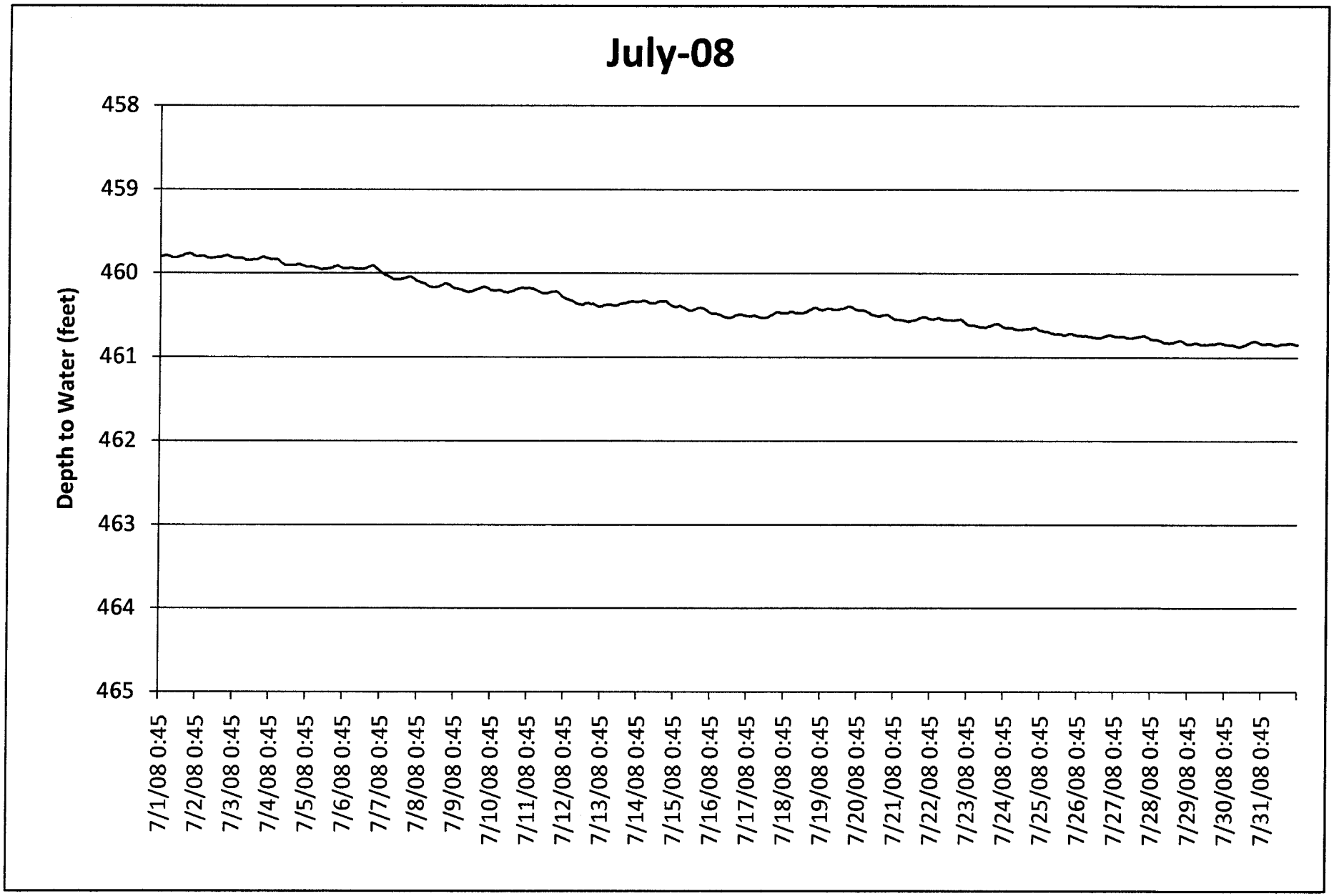
WATER-LEVEL HYDROGRAPH FOR WELL NO. 30



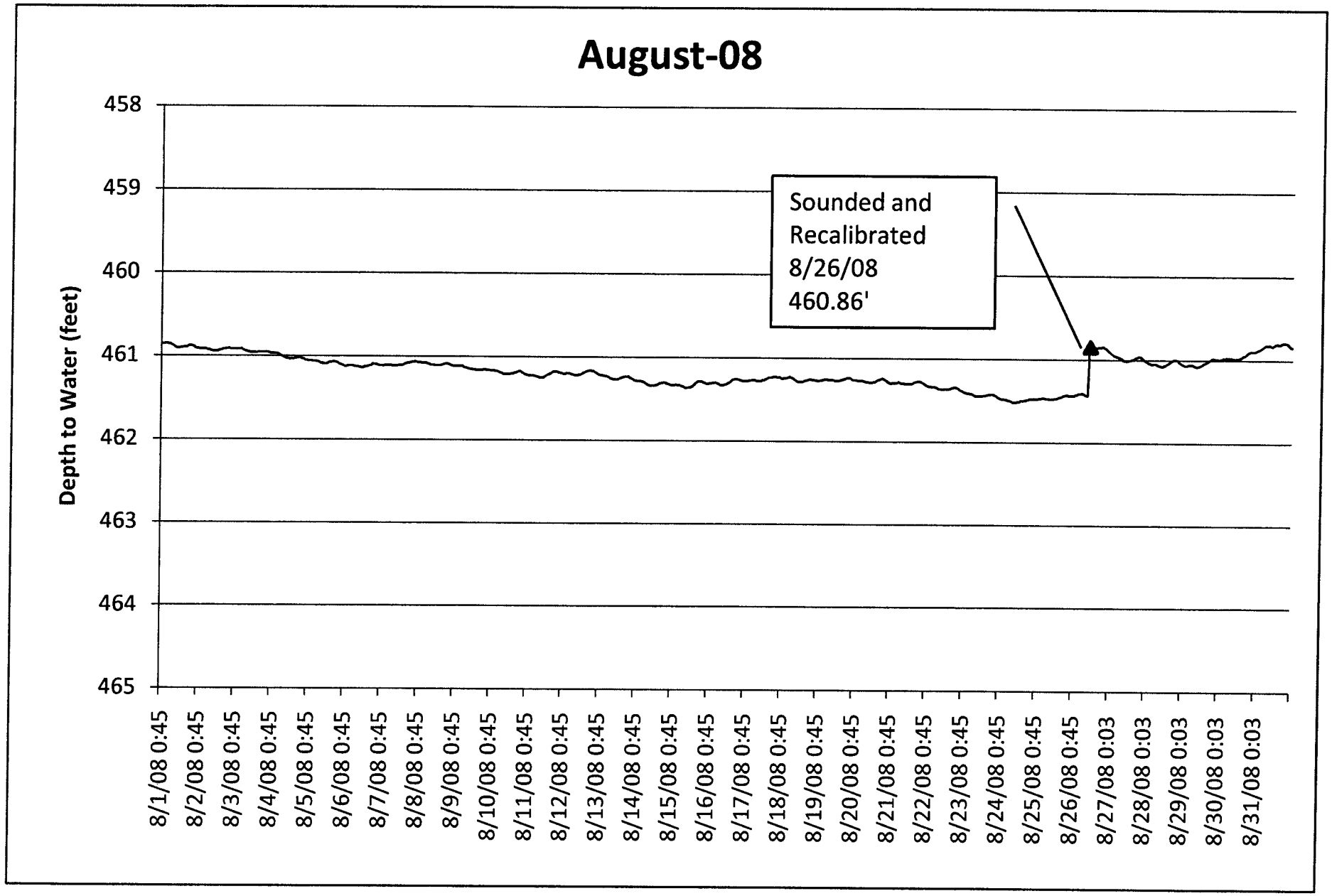
WATER LEVEL HYDROGRAPH FOR MW-30M



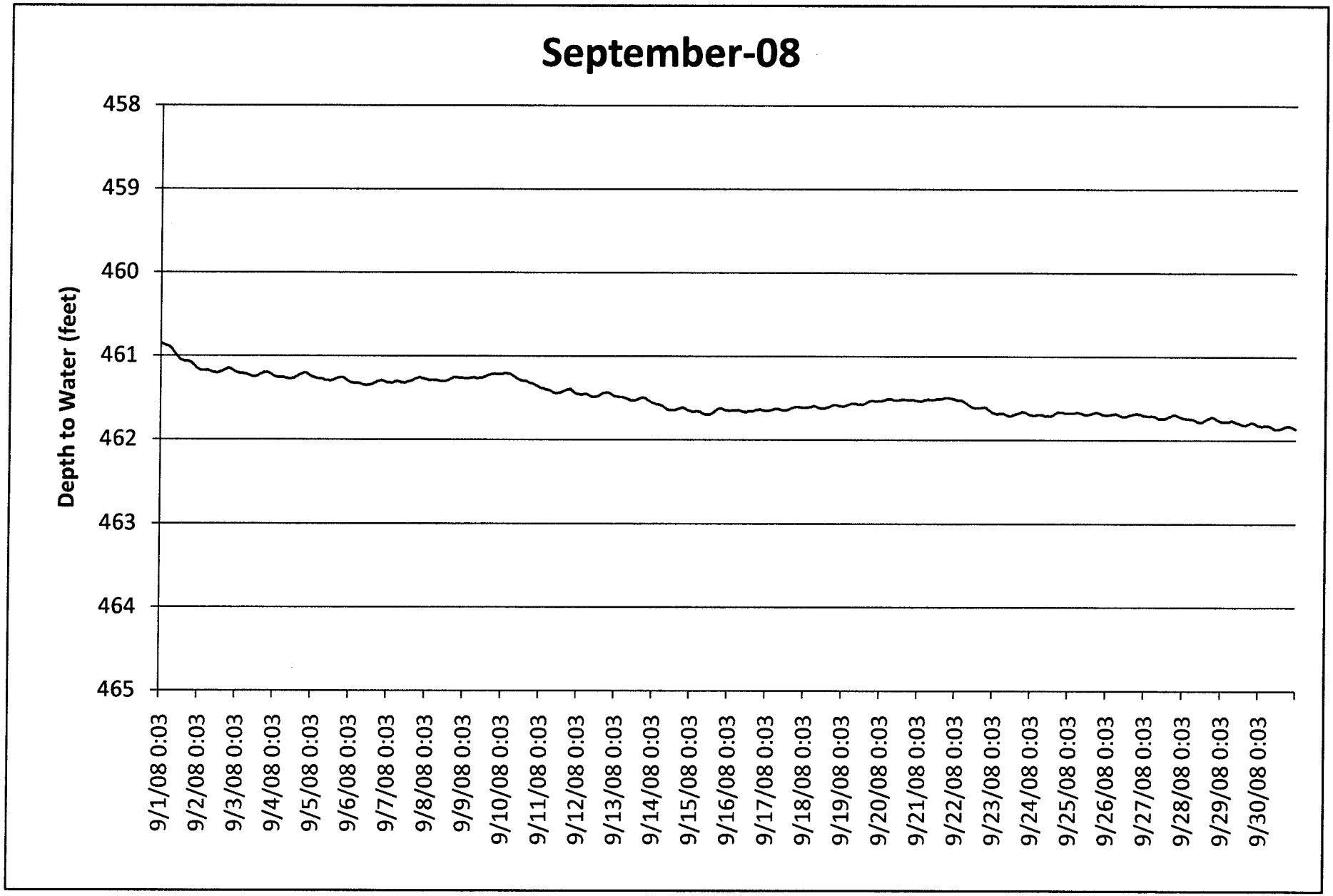
WATER LEVEL HYDROGRAPH FOR MW-30M



WATER LEVEL HYDROGRAPH FOR MW-30M



WATER LEVEL HYDROGRAPH FOR MW-30M



WATER LEVEL HYDROGRAPH FOR MW-30M

APPENDIX E

CHEMICAL ANALYSES OF WATER FROM DISTRICT WELLS

PRODUCTION WELL
WATER QUALITY

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	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	
1	09/12/97	10:15		190.0	96	9.4	49	7.20	
1	07/06/98	14:30		210.0	120	8.3	47	7.40	
1	07/14/99	9:20		208.0	165	8.9	48	7.60	
1	08/22/00	7:45		210.0	156	9.4	49	7.20	
1	07/27/01	8:30		220.0	140	9.4	49	6.50	
1	09/05/02	7:50		232.0	116	8.9	48	6.60	
1	09/25/03	9:15		277.0	182	5.6	42	7.10	
1	07/20/04	10:30		210.0	160	7.2	45	7.50	
1	10/11/05	12:45		207.0	135	9.4	49	7.05	3.33
1	11/06/06	13:04	207.0			10.0	50	7.22	2.04
1	12/04/06	12:45	202.0	139.0		9.2	49	7.03	2.05
1	01/09/07		201.6	138.5		8.3	47	6.62	2.19
1	02/06/07	9:25	250.1	192.0		8.3	47	6.95	2.27
1	03/07/07	10:45	198.0	134.9		8.4	47	6.96	1.33
1	04/16/07	13:04	192.2	133.0		8.3	47	6.98	0.88
1	05/01/07	10:45	210.2	149.1		9.2	49	7.86	0.95
1	06/07/07	9:40	206.2	150.5		9.2	49	7.26	0.85
1	07/10/07	10:05	213.3	164.3		11.6	53	6.97	1.18
1	08/07/07	11:12	234.0			8.6	48	7.00	4.35
1	09/11/07	10:19	240.7	165.5		8.6	48	6.88	4.87
1	10/02/07	11:00	238.6	163.6		8.5	47	7.04	5.48
1	11/19/07	13:52	224.0	152.4	145.6	8.3	47	7.08	7.21
1	12/11/07	15:25	218.6	148.3	142.1	8.2	47	6.91	5.40
1	01/09/08	11:19	227.4	154.3	147.8	8.2	47	6.85	6.89
1	02/05/08	9:48	231.0	157.6	150.2	8.4	47	6.95	8.81
1	03/13/08	9:51	234.8	160.7	152.6	8.5	47	6.89	5.12
1	04/01/08	8:41	224.4	153.2	145.9	8.4	47	6.76	4.47
1	05/09/08	10:42	210.2	142.6	136.6	8.2	47	6.69	5.32
1	06/18/08	13:02	211.4	143.3	137.4	8.1	47	6.94	4.87
1	07/30/08	11:10	215.1	146.2	139.8	8.2	47	6.81	4.45
1	08/19/08	10:54	233.0	159.1	151.4	8.4	47	6.85	4.43
1	09/11/08	11:07	236.5	161.9	153.7	8.5	47	7.03	5.97
1	10/21/08	14:06	233.1	159.9	151.5	8.6	47	6.86	6.18

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	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		
6	09/12/97	9:25		397.0	198	11.7	53	7.10		
6	07/07/98	8:20		300.0	160	10.6	51	8.20		
6	07/14/99	8:45		305.0	172	10.0	50	7.60		
6	07/28/00	8:15		310.0	166	10.0	50	7.40		
6	07/26/01	10:00		380.0	230	10.6	51	7.40		
6	09/05/02	14:30		350.0	190	10.6	51	7.20		
6	09/25/03	11:00		427.0	287	6.7	44	7.40		
6	07/20/04	9:45		420.0	290	10.0	50	7.60		
6	10/11/05	14:20		437.0	284	10.6	51	7.38	4.20	
6	11/06/06	11:07	433.0			10.0	50	7.40	2.11	Artesianing
6	12/04/06	11:17	448.0	318.0		9.8	50	7.40	1.74	
6	01/09/07		429.1	301.7		9.3	49	7.26	1.08	
6	02/06/07	1:53	434.1	303.2		9.4	49	7.22	1.37	
6	03/06/07	13:35	207.3	147.0		9.7	49	7.35	1.58	
6	04/16/07	9:40	406.9	285.1		9.5	49	7.30	0.99	
6	05/01/07	9:00	396.1	287.4		10.4	51	6.81	0.81	
6	06/07/07	1:50	420.1	304.1		10.1	50	7.49	0.80	
6	07/10/07	14:55	423.8	321.3		11.4	53	7.04	1.50	
6	08/07/07	11:12	392.4			9.0	48	7.24	0.93	
6	09/11/07	9:55	417.3	288.1		8.8	48	7.29	1.66	
6	10/02/07	14:57	410.4	284.0		8.9	48	7.4	1.26	
6	11/19/07	10:54	406.6	278.2	264.3	8.5	47	7.36	0.46	
6	12/11/07	14:27	407.5	279.8	264.9	8.6	47	7.20	0.68	
6	06/18/08	10:52	410.4	282.1	266.7	8.6	48	7.21	2.22	
6	07/30/08	10:08	400.0	279.9	260	9.3	49	7.05	1.01	
6	08/19/08	9:21	397.7	275.9	258.5	9.0	48	7.01	1.43	
6	09/11/08	10:46	402.4	277.5	261.5	8.8	48	7.34	1.37	
6	10/21/08	10:43	387.1	263.6	251.6	8.3	47	6.89	1.01	

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	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		
10	09/12/97	9:14		359.0	179	12.8	55	7.20		
10	06/30/98	13:25		350.0	240	9.4	49	7.60		
10	07/14/99	8:30		353.0	231	9.4	49	7.50		
10	07/28/00	8:30		360.0	228	10.0	50	7.50		
10	07/26/01	10:15		470.0	300	10.6	51	6.60		
10	09/05/02	8:10		410.0	225	10.6	51	7.00		
10	09/25/03									Well out of service
10	07/20/04	10:04		430.0	280	10.0	50	7.50		
10	10/11/05	15:20		389.0	253	13.9	57	7.14	3.44	
10	11/06/06	9:00	270.0			13.3	56	7.06		
10	12/04/06	10:37	270.0	205.3		13.2	56	7.17	2.19	
10	01/09/07		539.0	466.0		11.7	53	7.23	2.33	
10	02/06/07	1:15	267.9	208.0		13.9	57	7.81	2.02	
10	03/06/07	14:20	303.9	227.6		11.9	53	6.96	1.37	
10	04/17/07	9:45	272.4	205.1		11.6	53	7.18	0.99	
10	05/01/07	9:24	258.8	205.6		13.5	56	6.97	0.80	
10	06/07/07	1:15	319.2	249.8		13.2	56	7.26	0.90	
10	07/10/07	14:29	354.1	280.4		13.6	56	6.55	1.05	
10	08/07/07	13:26	351.2			13.0	55	7.04	3.06	
10	09/11/07	9:20	370.0	282.7		12.7	55	7.00	1.36	
10	10/02/07	13:54	376.2	286.5		12.5	55	7.02	0.95	
10	11/19/07	10:05	361.5	283.8	235	13.8	56	7.02	1.35	
10	12/11/07	13:53	332.6	256.2	216.2	13.0	55	7.04	1.46	
10	01/10/08	10:59	385.0	292.0	250.3	12.4	54	6.86	1.39	
10	02/05/08	14:11	385.8	291.4	250.8	12.2	54	6.83	0.93	
10	03/14/08	9:48	388.9	291.8	252.8	11.9	53	6.79	2.51	
10	04/01/08	9:13	398.9	298.1	259.3	11.8	53	6.84	1.25	
10	05/09/08	9:51	399.6	299.4	259.7	11.9	53	6.57	0.93	
10	07/30/08	9:36	411.5	321.1	267.5	13.5	56	6.84	1.96	
10	08/19/08	10:32	411.1	315.7	267.2	12.9	55	6.76	1.29	
10	09/11/08	10:21	420.8	322.5	273.5	12.8	55	6.93	1.31	
10	10/21/08	11:04	414.7	316.9	269.6	12.7	55	6.63	1.51	

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	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	
15	09/12/97	9:19		288.0	144	12.8	55	7.20	
15	06/30/98	13:45		360.0	210	11.7	53	7.50	
15	07/14/99	9:05		355.0	190	12.8	55	7.60	
15	08/22/00	8:10		350.0	187	12.2	54	7.30	
15	07/02/01	10:40		330.0	220	12.8	55	7.40	
15	09/05/02	8:20		290.0	185	11.7	53	7.20	
15	09/25/03	10:00		415.0	279	10.0	50	7.20	
15	07/20/04	9:15		300.0	200	10.0	50	7.60	
15	10/11/05	13:20		234.0	152	18.3	65	7.34	3.44
15	11/06/06	10:04	270.0			10.6	51	7.42	1.60
15	12/04/06	9:30	223.0			8.9	48	7.39	1.65
15	01/09/07		222.4	154.4		9.4	49	7.38	1.94
15	02/06/07	9:57	216.8	149.4		8.3	47	7.71	1.29
15	03/06/07	10:30	214.7	150.2		9.2	49	7.17	1.46
15	04/17/07	8:38	219.7	156.2		8.7	48	7.31	0.76
15	05/01/07	10:15	219.6	157.4		9.6	49	7.69	0.98
15	06/07/07	9:20	300.6	226.0		11.8	53	7.69	1.02
15	07/10/07	10:55	331.1	259.8		13.5	56	7.22	1.50
15	08/07/07	13:43	338.6			12.7	55	7.20	2.79
15	09/11/07	8:40	364.2	280.9		13.0	55	7.25	2.00
15	10/02/07	14:24	365.2	280.6		12.88	55	7.29	3.64
15	11/19/07	10:28	327.8	244.4	213.1	11.7	53	7.35	1.39
15	12/11/07	14:57	330.2	246.1	214.7	11.7	56	7.33	1.41
15	01/09/08	15:30	336.4	252.5	218.6	12.0	54	7.13	1.31
15	02/05/08	11:16	343.2	259.0	223.1	12.2	54	7.26	1.52
15	03/14/08	10:03	356.9	272.6	232	12.6	55	7.18	1.13
15	04/01/08	9:32	364.8	279.4	237.1	12.8	55	7.33	1.42
15	05/09/08	9:35	332.0	249.4	215.8	12.0	54	6.77	1.36
15	06/18/08	9:30	351.6	268.8	228.6	12.7	55	7.10	1.18
15	07/30/08	8:56	354.7	271.5	230.6	12.7	55	6.99	1.33
15	08/19/08	9:54	357.2	275.3	232.2	13.0	55	7.07	2.75
15	09/11/08	10:03	378.1	294.1	245.8	13.4	56	7.09	1.34
15	10/21/08	10:09	356.9	274.8	232	13.0	55	6.83	1.72

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	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		
16	09/11/97	10:11		632.0	317	22.8	73	7.10		
16	07/06/98	14:35		710.0	500	21.1	70	7.10		
16	08/20/99	10:30		690.0	480	21.1	70	7.20		
16	08/22/00	8:25		695.0	485	23.3	74	7.30		
16	07/02/01	9:30		710.0	490	21.1	70	6.90		
16	09/09/02	8:00		705.0	480	21.1	70	6.70		
16	09/25/03									Well out of service
16	08/03/04			550.0	360	21.7	71	7.20		
16	10/11/05	11:00		518.0	337	18.9	66	6.58		
16	11/06/06									Well out of service
16	12/04/06	2:03	549.0	473.0		18.1	65	6.59	1.43	
16	02/06/07	10:55	569.0	501.0		19.4	67	6.53	1.33	
16	03/07/07	9:00	553.0	480.0		18.5	65	6.55	1.11	
16	04/16/07	13:26	560.0	492.0		18.9	66	6.39	0.96	
16	07/10/07	9:45	658.0	669.0		25.2	77	6.71	1.05	
16	08/09/07	10:33	689.0			25.6	78	6.65	1.71	
16	09/11/07	10:31	707.5	721.7		26.1	79	6.70	0.39	
16	10/02/07	10:18	711.3	727.1		26.2	79	6.69	0.30	
16	01/09/08	12:35	525.3	464.6	341.4	19.0	79	6.41	0.63	
16	02/05/08	9:28	520.6	459.0	338.4	18.8	66	6.43	0.64	
16	03/13/08	8:54	536.1	476.8	348.5	19.2	67	6.36	0.55	
16	04/01/08	10:14	532.4	470.3	346.1	18.9	66	6.38	0.31	
16	05/09/08	12:21	524.3	463.3	340.8	18.9	66	6.32	0.35	
16	06/18/08	13:16	566.5	515.4	368.2	20.3	69	6.36	0.73	
16	07/30/08	10:54	531.1	469.2	345.2	18.9	66	6.23	0.48	
16	08/19/08	11:05	670.4	662.7	435.8	24.4	76	6.36	0.58	
16	09/11/08	13:18	709.5	723.5	461.2	26.0	79	6.42	0.39	
16	10/21/08	14:32	508.4	447.7	330.5	18.8	66	6.10	0.60	

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	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	
17	07/06/98	9:15		350.0	280	15.6	60	7.10	
17	08/20/99	10:10		350.0	280	16.1	61	7.20	
17	08/22/00	8:40		355.0	276	17.2	63	7.20	
17	07/02/01	9:10		410.0	310	15.6	60	6.70	
17	09/03/02	8:30		400.0	290	16.1	61	6.60	
17	09/25/03	8:55		420.0	282	16.7	62	6.50	
17	08/03/04			410.0	270	15.6	60	7.50	
17	10/11/05	12:20		484.0	315	23.9	75	6.78	2.75
17	11/06/06	12:30	472.0			23.3	74	7.06	1.25
17	12/04/06	2:35	478.0	452.0		22.8	73	7.05	2.61
17	01/09/07		463.1	442.1		22.2	72	6.99	1.22
17	02/06/07	8:15	453.9	430.4		22.8	73	6.81	0.92
17	03/07/07	9:30	448.6	421.8		23.3	74	6.76	1.14
17	04/16/07	14:40	414.2	384.8		21.6	71	6.64	1.05
17	05/01/07	11:05	384.4	357.3		21.1	70	6.71	0.92
17	06/07/07	10:40	444.3	425.1		22.9	73	7.29	0.83
17	07/10/07	15:10	448.7	433.4		23.7	75	6.87	0.75
17	08/09/07	9:55	496.5			25.6	78	6.74	2.27
17	09/11/07	11:02	390.0	367.2		21.9	71	6.88	0.44
17	10/02/07	11:27	510.5	517.8		25.8	78	6.58	2.86
17	11/19/07	14:13	498.0	497.9	323.7	25.0	77	6.8	2.81
17	12/11/07	15:48	490.9	488.2	319.1	24.7	79	6.81	4.58
17	01/09/08	13:07	474.0	469.9	308.1	24.5	79	6.71	2.62
17	02/05/08	13:11	468.4	460.7	304.4	24.2	75	6.77	2.85
17	03/13/08	9:20	460.4	451.6	299.2	24.0	75	6.68	2.91
17	03/13/08	9:20	460.4	451.6	299.2	24.0	75	6.68	2.91
17	04/01/08	10:42	461.8	449.8	300.2	23.6	75	6.65	2.75
17	05/09/08	12:41	458.6	445.3	298.1	23.5	74	6.68	2.46
17	06/18/08	13:40	488.4	488.7	317.5	25.0	77	6.66	2.33
17	07/30/08	12:43	466.1	461.3	303	24.5	76	6.56	1.74
17	08/19/08	13:03	509.7	522.1	331.3	26.3	79	6.55	1.90
17	09/11/08	11:23	524.8	543.9	341.1	26.9	80	6.64	2.06
17	10/21/08	15:08	497.8	506.9	323.5	26.0	79	6.52	2.82

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	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	
18	09/12/97	13:40		500.0	251	20.0	68	7.10	
18	07/06/98	14:15		490.0	350	21.1	70	6.90	
18	08/20/99	11:30		510.0	355	19.4	67	7.10	
18	08/22/00	8:20		505.0	346	20.0	68	7.10	
18	07/02/01	10:15		530.0	370	19.4	67	6.40	
18	09/05/02	8:45		535.0	310	18.3	65	6.80	
18	09/25/03	10:40		637.0	434	15.6	60	6.70	
18	08/03/04			560.0	370	16.7	62	7.30	
18	10/11/05	13:20		559.0	363	18.9	66	6.58	2.86
18	11/06/06	10:40	543.0			18.3	65	6.91	2.34
18	12/04/06	10:04	539.0	462.0		18.7	66	6.68	0.94
18	01/09/07		539.0	466.0		18.1	65	6.63	1.94
18	02/06/07	10:35	541.0	476.0		18.3	65	6.73	2.02
18	03/06/07	12:33	456.5	406.8		18.3	65	6.61	0.70
18	04/17/07	9:00	537.0	470.0		18.2	65	6.59	0.83
18	05/01/07	9:50	535.0	467.0		18.8	66	6.54	0.72
18	06/07/07	12:50	542.0	481.0		18.8	66	6.97	1.02
18	07/10/07	13:50	545.0	480.0		17.5	64	6.52	0.98
18	08/09/07	9:26	509.2			18.5	65	6.62	2.48
18	09/11/07	8:59	551.5	464.3		16.7	62	6.57	0.76
18	10/02/07	13:13	534.0	465.6		18.3	65	6.55	0.22
18	11/19/07	9:47	498.3	428.6	323.9	17.7	64	6.60	1.06
18	12/11/07	13:22	504.0	433.1	327.6	17.6	66	6.58	1.24
18	01/09/08	15:11	510.9	440.0	332.1	17.7	64	6.44	0.49
18	02/05/08	15:29	516.6	448.9	335.8	18.1	65	6.48	1.05
18	04/01/08	9:54	504.3	434.4	327.8	17.7	64	6.47	0.37
18	05/09/08	10:09	464.4	396.8	301.9	17.4	67	6.36	0.54
18	06/18/08	10:15	479.3	411.2	311.5	17.6	64	6.31	0.65
18	07/30/08	9:16	565.7	473.1	367.7	16.4	62	6.31	2.84
18	10/21/08	10:25	563.7	502.2	366.4	19.3	68	6.26	6.17

PRODUCTION WELL
WATER QUALITY

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	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	
20	09/11/97	9:57		336.0	168	16.1	61	6.90	
20	08/20/99	11:00		310.0	210	15.6	60	7.10	
20	08/22/00	9:00		305.0	190	16.1	61	7.10	
20	07/27/01	8:45		340.0	250	15.6	60	6.80	
20	09/05/02	9:30		400.0	195	17.2	63	6.60	
20	09/25/03	9:05		387.0	259	13.3	56	6.70	
20	08/03/04			290.0	200	15.6	60	7.20	
20	10/11/05	11:15		293.0	190	16.1	61	6.53	6.80
20	12/04/06	1:35	260.0	200.0		13.3	56	6.75	3.58
20	01/09/07		253.1	195.1		13.0	55	6.73	4.05
20	02/06/07	8:51	250.1	430.4		12.8	55	6.71	3.18
20	03/07/07	10:10	262.0	200.7		12.7	55	6.65	1.78
20	04/16/07	13:44	270.1	216.4		14.1	57	7.27	1.54
20	05/01/07	12:45	283.3	235.8		16.0	61	6.54	1.16
20	06/07/07	10:20	269.4	213.5		13.7	57	7.25	1.14
20	07/10/07	10:20	373.3			18.5	65	6.61	1.07
20	08/09/07	10:50	388.4			18.3	65	6.50	7.64
20	09/11/07	10:47	406.3	358.9		18.9	66	6.59	8.97
20	10/02/07	10:33	410.4	364.3		19.1	66	6.58	7.33
20	07/30/08	11:28	270.7	207.4	176	12.8	55	6.37	9.50
20	08/19/08	11:32	338.6	277.0	220	15.5	60	6.22	7.97
20	09/11/08	13:07	392.5	341.4	255	18.2	65	6.36	6.48
20	10/21/08	14:48	344.0	278.0	224	15.0	59	6.14	11.30

MAMMOTH COMMUNITY WATER DISTRICT
MONITOR WELL WATER QUALITY

Monitor Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	Conductivity umho/cm	TDS mg/L	Temp F	pH
4M	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
5A	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
5M	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
7	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				

MAMMOTH COMMUNITY WATER DISTRICT
MONITOR WELL WATER QUALITY

Monitor Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	Conductivity umho/cm	TDS mg/L	Temp F	pH
10M	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			
11	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
11M	09/09/96	9:40		283	144	52	7.5
	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
12M	09/09/96	10:05		267	137	52	7.5
	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

MAMMOTH COMMUNITY WATER DISTRICT
MONITOR WELL WATER QUALITY

Monitor Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	Conductivity umho/cm	TDS mg/L	Temp F	pH
14	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.					
19	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.					
21	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.					
22	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

MAMMOTH COMMUNITY WATER DISTRICT
MONITOR WELL WATER QUALITY

Monitor Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	Conductivity umho/cm	TDS mg/L	Temp F	pH
23	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
24	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

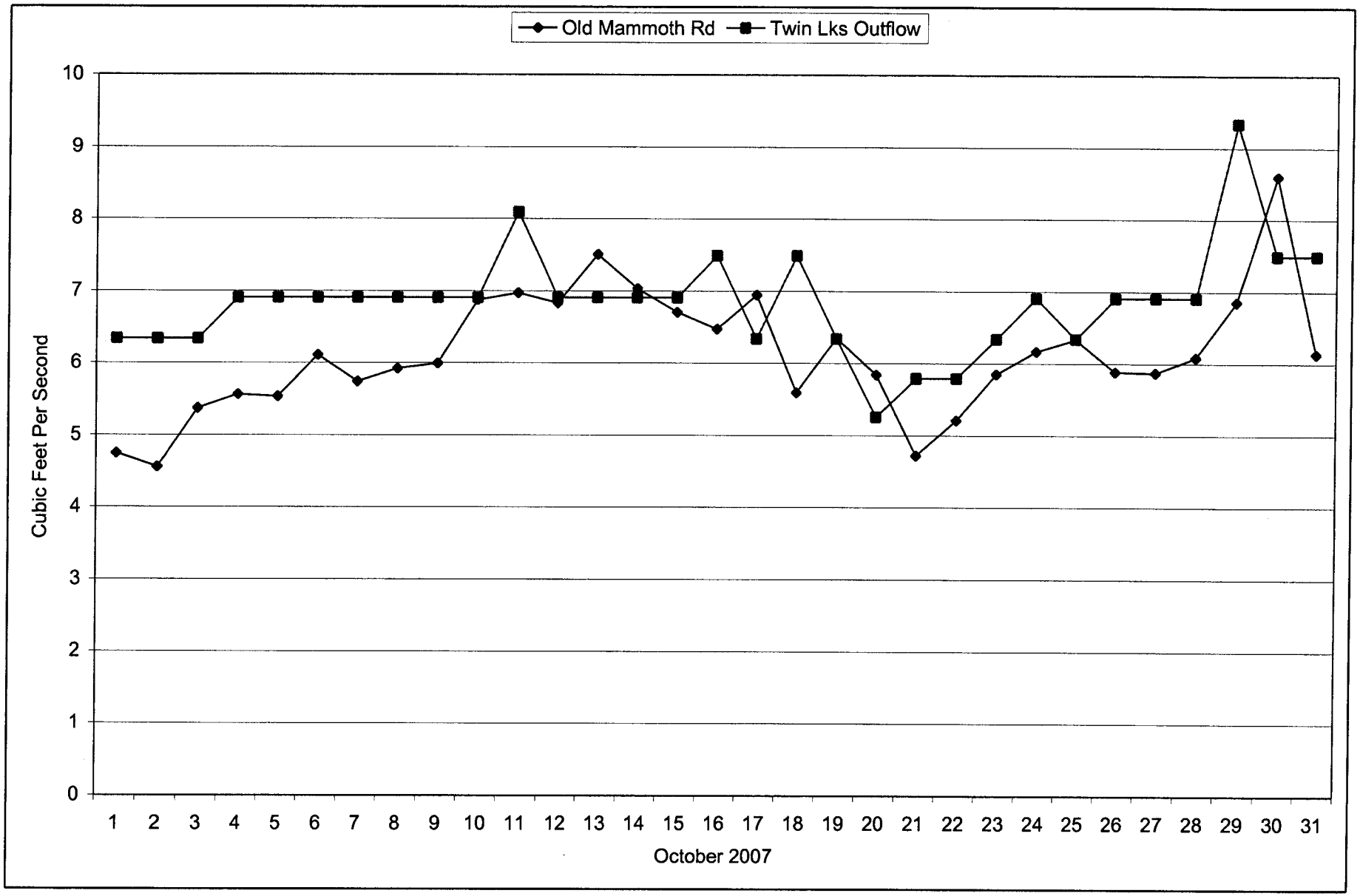
MAMMOTH CREEK STREAMFLOW

Daily discharge in cubic feet per second					Twin lakes Outflow							
	2007			2008								
Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.3	6.9	-	5.8	6.3	9.3	5.8	8.1	19.5	22.0	7.5	4.7
2	6.3	6.9	-	5.8	6.3	9.3	5.8	8.1	21.2	21.2	6.9	5.8
3	6.3	6.9	5.8	18.7	6.3	9.3	6.3	8.7	24.6	20.4	6.3	5.8
4	6.9	6.9	-	17.1	6.3	8.7	6.3	8.7	29.1	17.9	5.8	5.8
5	6.9	6.9	-	16.4	6.3	8.7	6.3	8.1	32.0	17.9	5.8	5.8
6	6.9	6.9	10.6	12.7	6.3	8.7	6.3	12.0	43.1	17.1	6.9	5.8
7	6.9	6.9	10.6	10.6	6.3	8.7	5.3	12.0	-	15.6	5.8	5.8
8	6.9	7.5	6.9	10.6	6.9	8.7	5.3	16.4	-	15.6	5.8	5.3
9	6.9	6.9	6.9	8.1	6.9	8.7	5.8	17.1	45.2	14.9	5.8	5.8
10	6.9	7.5	6.9	7.5	6.9	8.1	5.8	17.9	48.5	14.1	5.8	5.8
11	8.1	8.1	6.9	6.9	6.9	8.7	5.8	19.5	46.3	12.0	6.3	6.3
12	6.9	6.9	6.9	6.9	6.9	8.7	5.8	22.0	42.0	12.0	6.3	5.8
13	6.9	6.9	6.9	6.9	6.9	8.7	5.8	24.6	-	12.0	6.3	5.8
14	6.9	6.9	6.9	6.9	6.3	8.1	5.8	23.7	-	11.3	6.3	5.8
15	6.9	6.9	6.3	6.9	6.9	8.1	6.3	26.4	43.1	12.0	6.9	5.8
16	7.5	8.1	6.3	6.9	6.9	8.1	5.8	70.9	42.0	11.3	6.9	6.3
17	6.3	8.1	12.7	6.9	7.5	8.1	6.3	63.5	38.9	10.6	7.5	6.3
18	7.5	11.3	8.7	6.9	7.5	8.7	5.3	64.7	40.0	9.3	7.5	6.3
19	6.3	10.6	9.3	6.9	7.5	8.1	5.3	72.1	34.9	10.0	7.5	5.8
20	5.3	6.9	8.7	6.9	8.1	8.1	5.3	73.4	-	9.3	7.5	5.8
21	5.8	6.3	7.5	6.9	8.1	7.5	5.3	55.3	-	10.0	7.5	5.8
22	5.8	5.8	6.9	6.9	8.1	7.5	5.3	47.4	36.9	9.3	6.9	5.8
23	6.3	5.8	6.9	6.9	8.1	7.5	6.3	41.0	36.9	10.0	6.9	6.3
24	6.9	5.8	6.3	7.5	8.1	7.5	5.8	38.9	34.9	10.0	6.9	5.8
25	6.3	5.8	6.3	7.5	8.1	7.5	6.3	33.9	30.1	9.3	7.5	5.8
26	6.9	5.8	6.3	7.5	8.1	6.9	6.9	25.5	29.1	8.7	7.5	5.8
27	6.9	5.8	6.3	7.5	8.1	6.9	8.1	23.7	28.2	8.7	6.9	5.8
28	6.9	5.3	6.3	7.5	8.7	6.9	8.1	22.0	27.3	10.0	6.9	5.8
29	9.3	5.3	6.3	7.5	9.3	6.9	8.7	20.4	26.4	10.0	5.8	6.9
30	7.5	-	6.3	7.5		6.9	8.1	19.5	23.7	10.0	6.9	6.3
31	7.5		5.8	7.5		6.3		19.5		10.0	6.3	
Mean	6.8	7.0	7.4	8.5	7.3	8.1	6.2	29.8	34.3	12.7	6.7	5.9
Maximum	9.3	11.3	12.7	18.7	9.3	9.3	8.7	73.4	48.5	22.0	7.5	6.9
Minimum	5.3	5.3	5.8	5.8	6.3	6.3	5.3	8.1	19.5	8.7	5.8	4.7

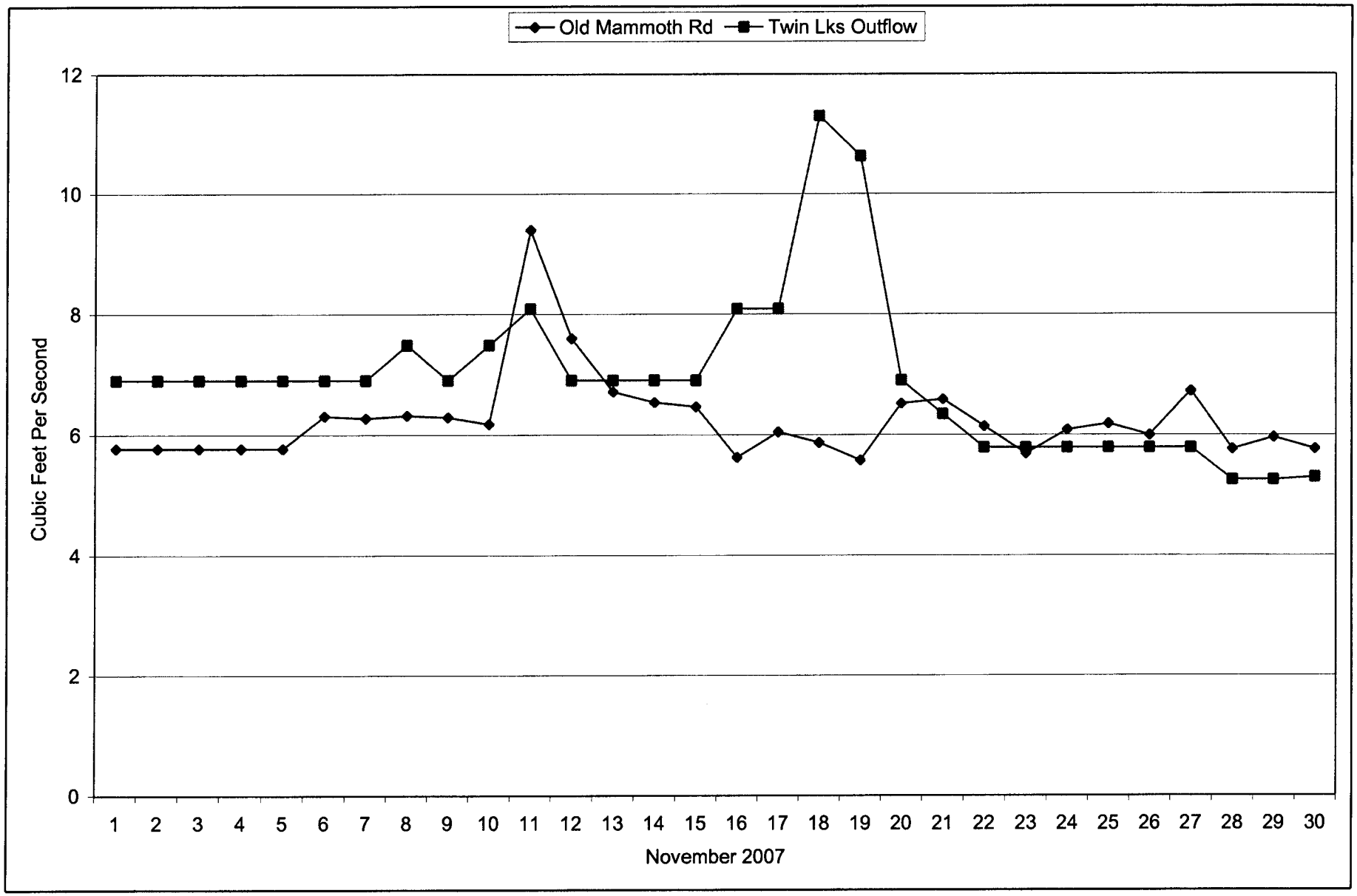
Daily discharge in cubic feet per second — Mammoth Creek at Old Mammoth Road

Day	2007 OCT	NOV	DEC	2008 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.75	5.77	4.05	5.95	7.41	7.47	7.74	12.5	23.5	24.0	10.2	5.15
2	4.56	5.77	7.60	5.87	7.56	6.98	7.96	12.4	23.8	24.2	8.9	6.57
3	5.37	5.77	7.18	5.58	5.99	6.98	8.11	12.6	25.7	23.2	7.3	5.95
4	5.57	5.77	5.52	5.64	7.47	6.67	8.80	12.5	30.6	21.6	7.3	5.74
5	5.54	5.77	5.68	11.06	9.04	6.62	8.76	13.2	35.8	19.4	7.9	6.10
6	6.11	6.31	6.68	16.75	7.79	6.54	9.42	15.8	39.3	19.2	7.3	5.90
7	5.74	6.27	9.25	15.46	6.95	6.65	8.78	18.2	49.6	18.1	7.3	5.85
8	5.92	6.32	6.54	11.45	6.49	6.70	8.54	20.1	53.4	17.3	7.6	5.79
9	5.99	6.29	6.34	9.97	6.04	6.85	8.02	22.1	50.1	17.2	7.6	6.02
10	6.88	6.18	16.63	9.61	5.82	7.03	8.75	23.5	50.3	16.6	7.6	6.03
11	6.97	9.40	10.21	8.63	5.64	7.36	9.08	26.7	58.3	15.2	6.4	6.56
12	6.83	7.60	6.45	7.85	5.93	7.66	9.81	29.0	47.8	14.3	6.6	6.45
13	7.51	6.72	6.30	6.74	6.01	9.64	10.74	30.3	48.0	14.1	6.8	5.88
14	7.03	6.54	6.76	6.28	5.41	7.75	11.68	30.5	47.0	13.9	6.9	5.79
15	6.71	6.46	6.47	6.29	5.14	6.81	10.37	33.5	49.0	13.8	7.0	5.71
16	6.47	5.63	6.14	6.21	5.60	6.69	9.52	42.1	49.9	13.6	7.3	5.80
17	6.95	6.05	6.17	6.19	5.72	6.33	9.81	56.4	45.9	13.3	7.7	6.40
18	5.59	5.87	6.54	6.24	5.94	6.63	10.08	69.4	44.0	12.2	7.7	6.10
19	6.35	5.58	11.48	6.28	5.95	7.28	9.83	82.0	43.1	11.9	7.8	5.91
20	5.84	6.52	8.72	6.35	6.27	7.53	8.28	90.8	40.5	11.3	7.7	5.71
21	4.72	6.59	8.59	6.46	6.28	7.96	9.21	84.1	40.6	11.6	7.5	5.49
22	5.21	6.14	7.79	6.67	7.68	8.26	10.22	64.2	40.8	12.1	6.9	5.24
23	5.85	5.69	7.35	6.89	6.41	8.70	10.75	50.1	43.6	11.6	6.8	5.67
24	6.17	6.08	7.08	7.32	7.45	9.13	9.59	47.7	40.3	11.4	6.8	5.60
25	6.33	6.18	6.19	7.52	7.80	9.66	10.69	44.5	37.5	10.8	7.1	5.35
26	5.88	5.99	6.32	6.73	6.68	9.88	11.53	36.9	33.9	10.6	6.4	5.34
27	5.87	6.73	8.09	9.50	6.63	9.00	12.75	30.3	34.3	10.4	6.6	5.32
28	6.08	5.76	7.43	11.41	6.41	9.00	13.59	28.6	31.5	10.6	6.7	5.40
29	6.86	5.96	6.24	13.72	7.12	8.80	14.46	26.2	30.3	11.9	6.6	6.06
30	8.60	5.77	6.13	10.12		8.61	12.60	23.4	28.9	11.4	6.3	6.18
31	6.13		6.05	8.57		7.69		23.0		11.4	7.0	
Mean	6.1	6.3	7.4	8.4	6.6	7.7	10.0	35.9	40.6	14.8	7.3	5.8
Maximum	8.6	9.4	16.6	16.7	9.0	9.9	14.5	90.8	58.3	24.2	10.2	6.6
Minimum	4.6	5.6	4.1	5.6	5.1	6.3	7.7	12.4	23.5	10.4	6.3	5.1

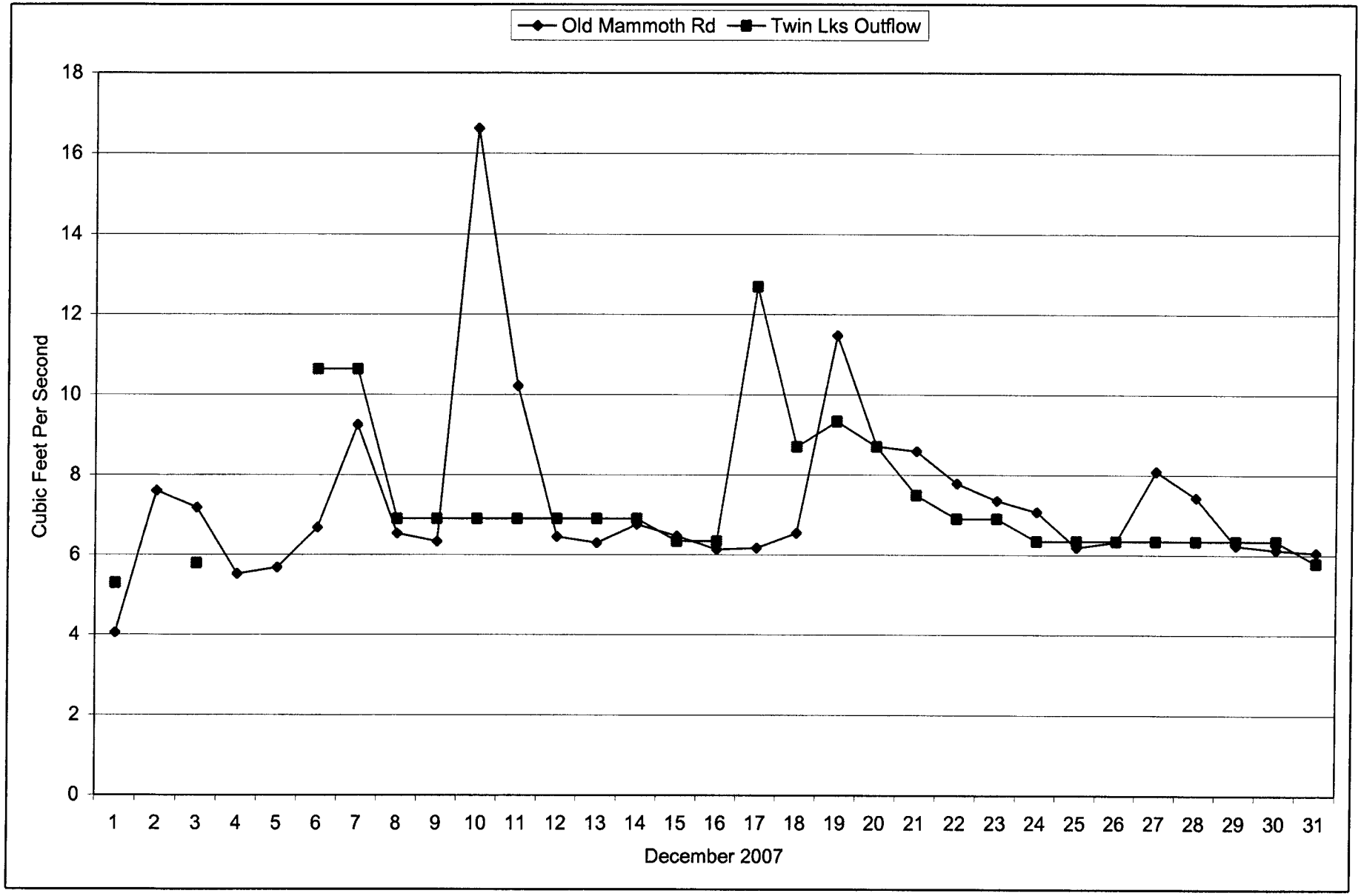
MAMMOTH CREEK STREAMFLOW COMPARISON



MAMMOTH CREEK STREAMFLOW COMPARISON



MAMMOTH CREEK STREAMFLOW COMPARISON



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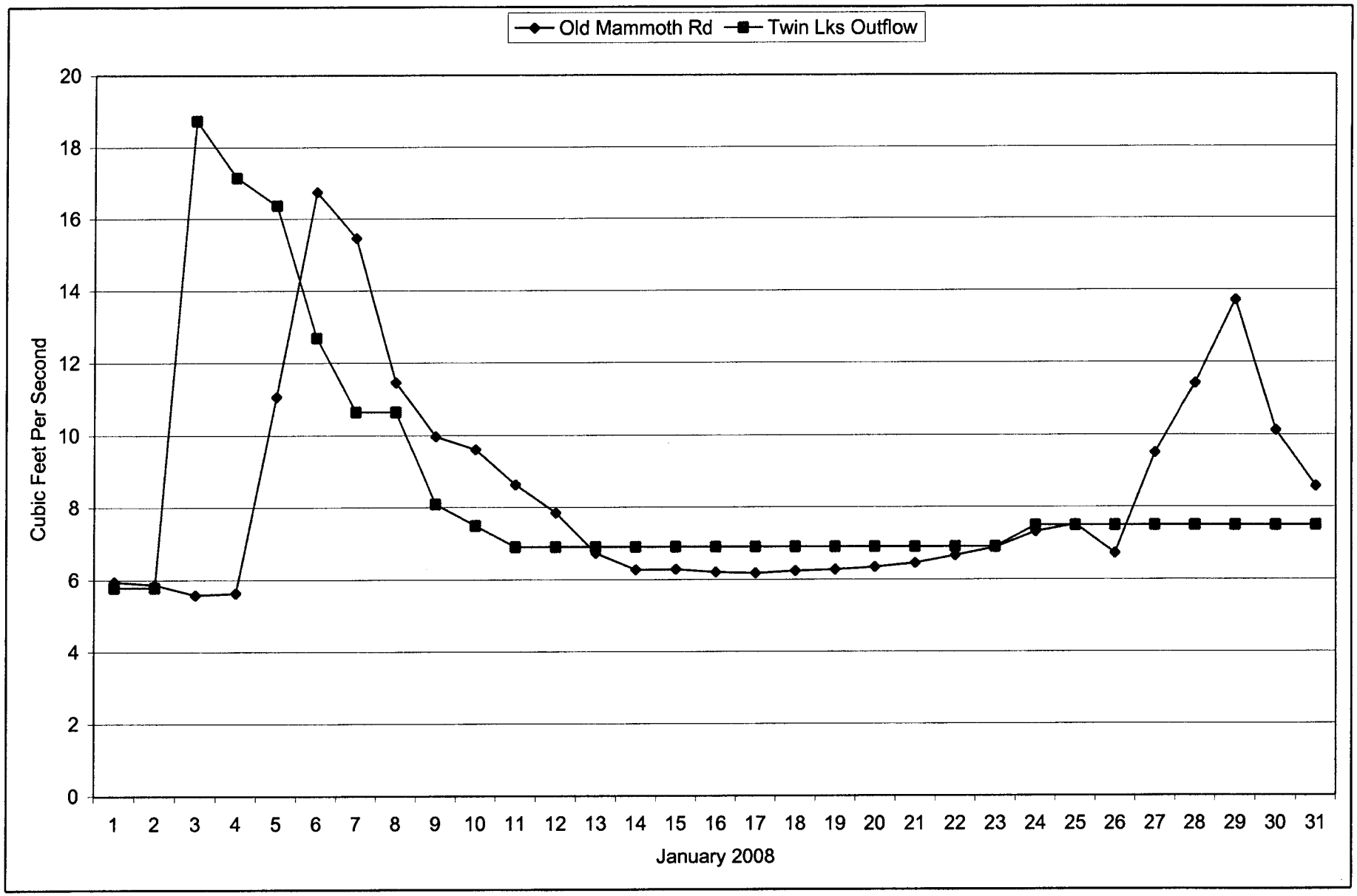

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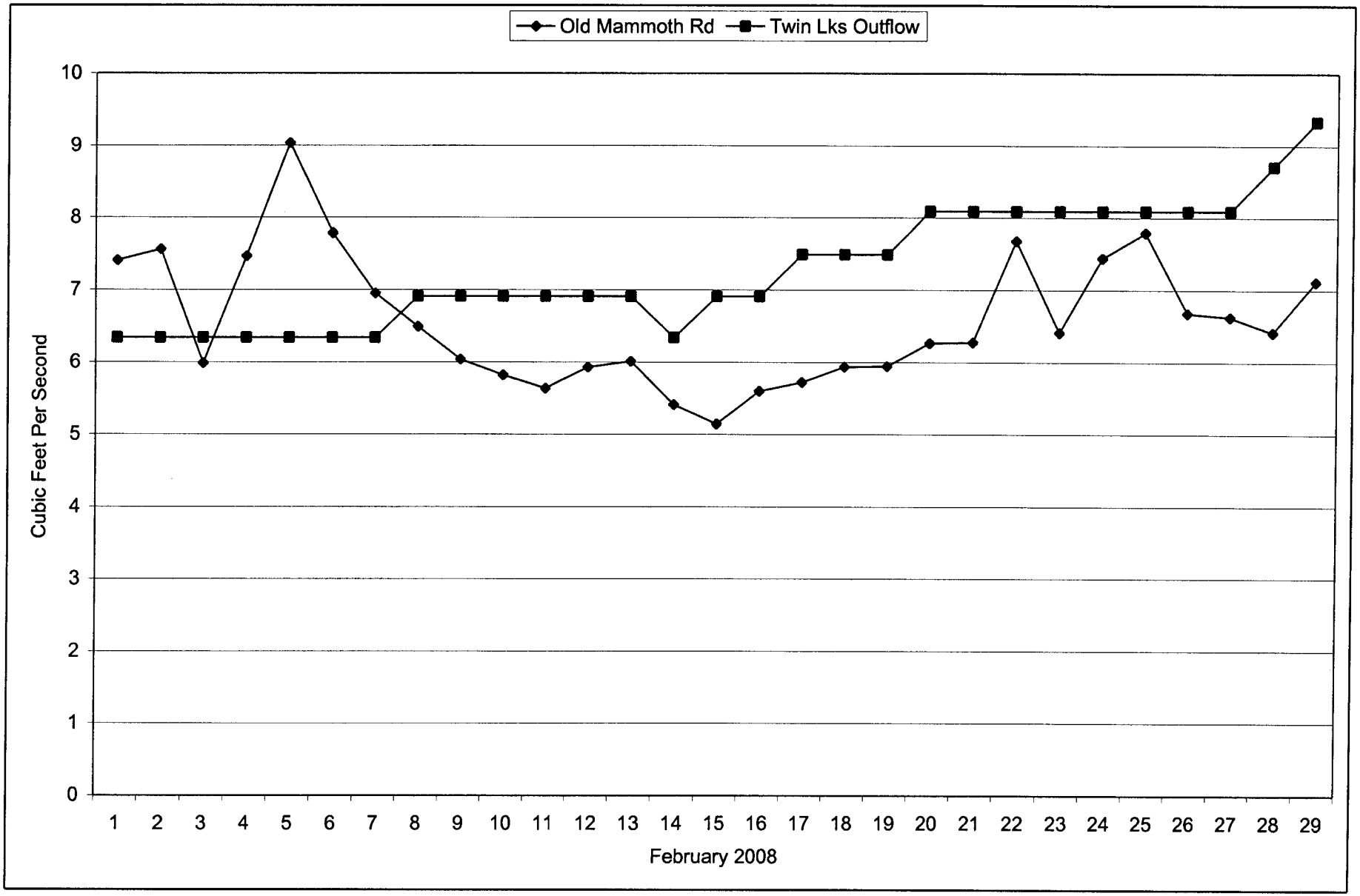

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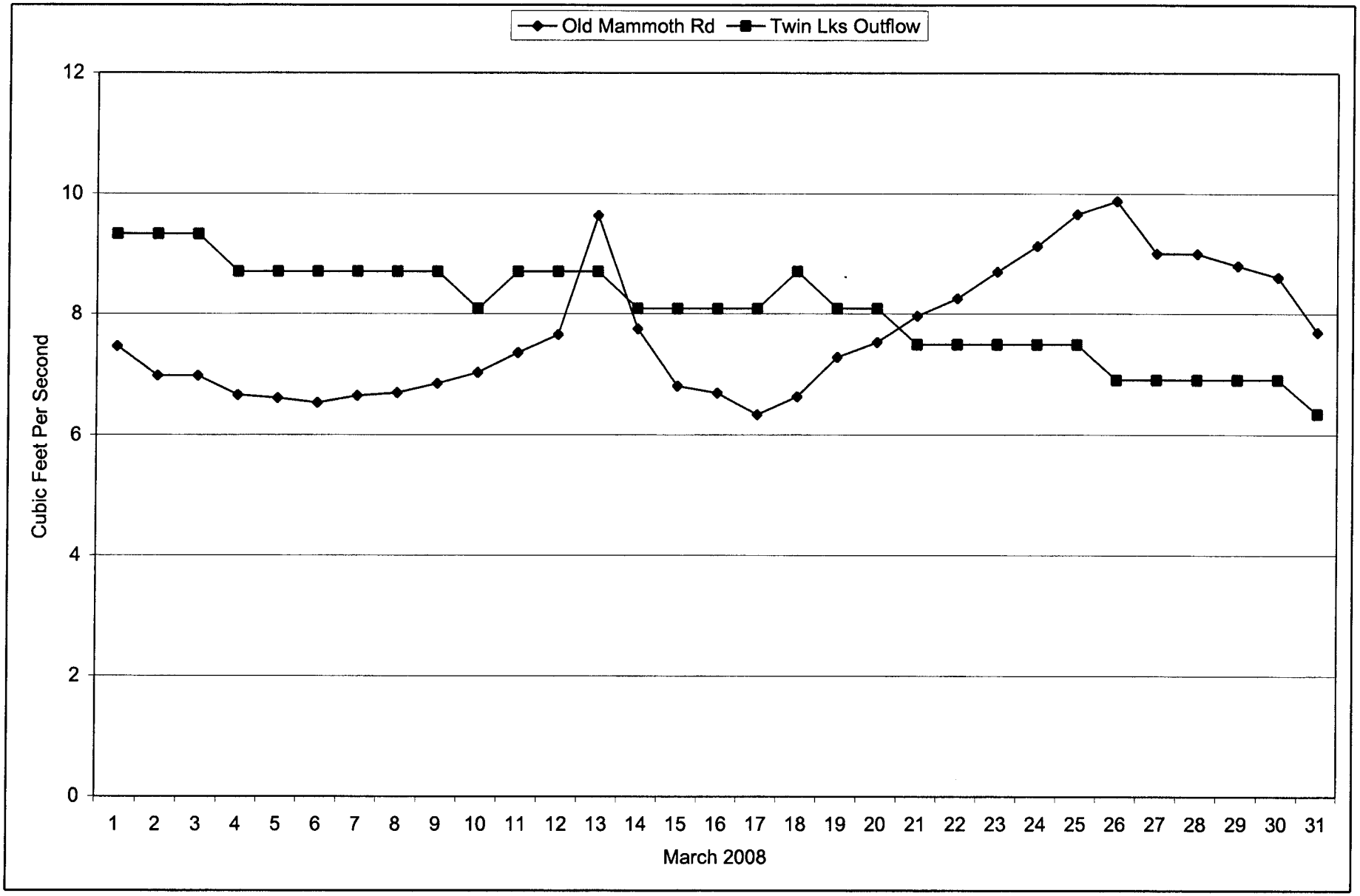

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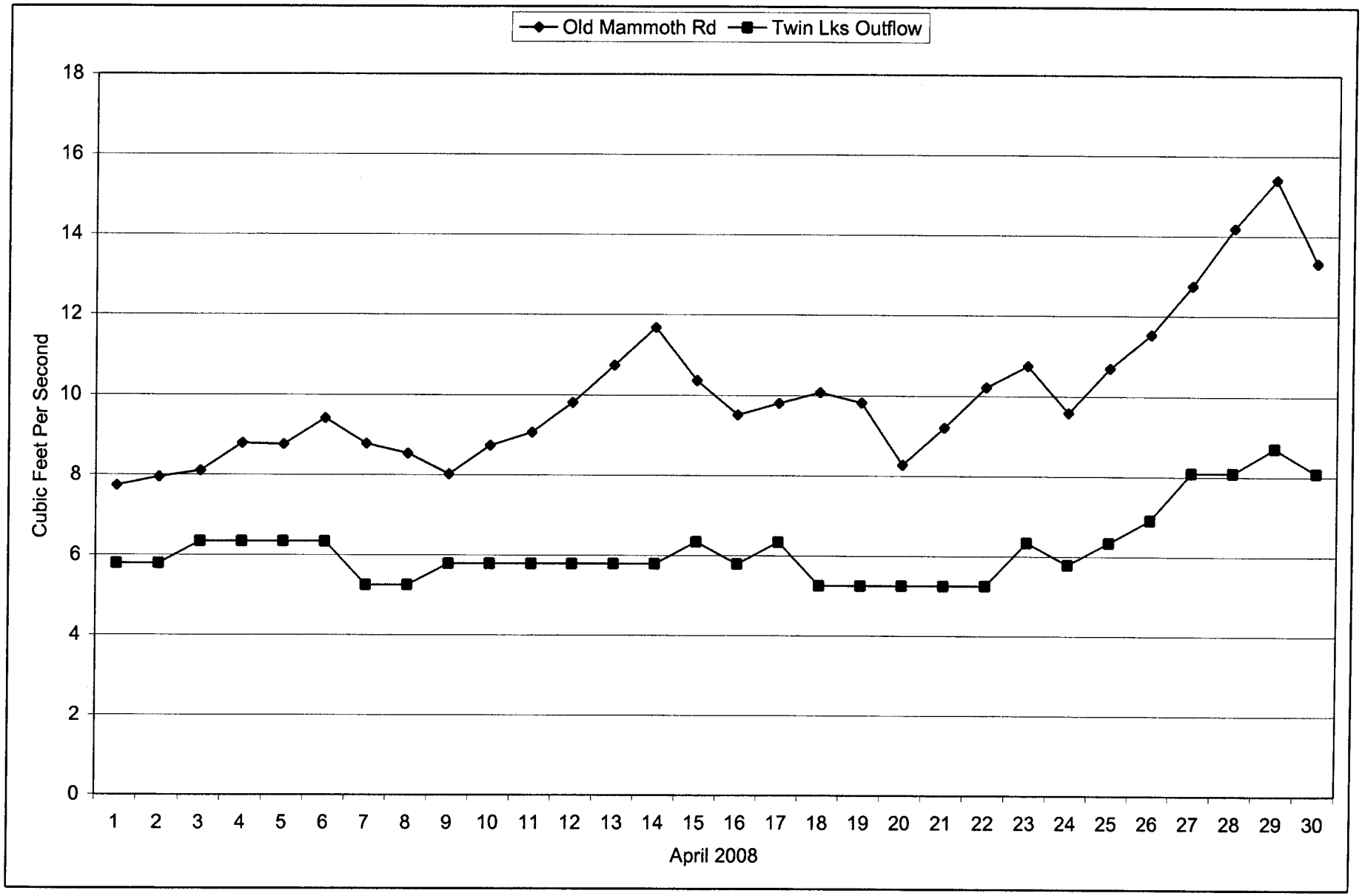

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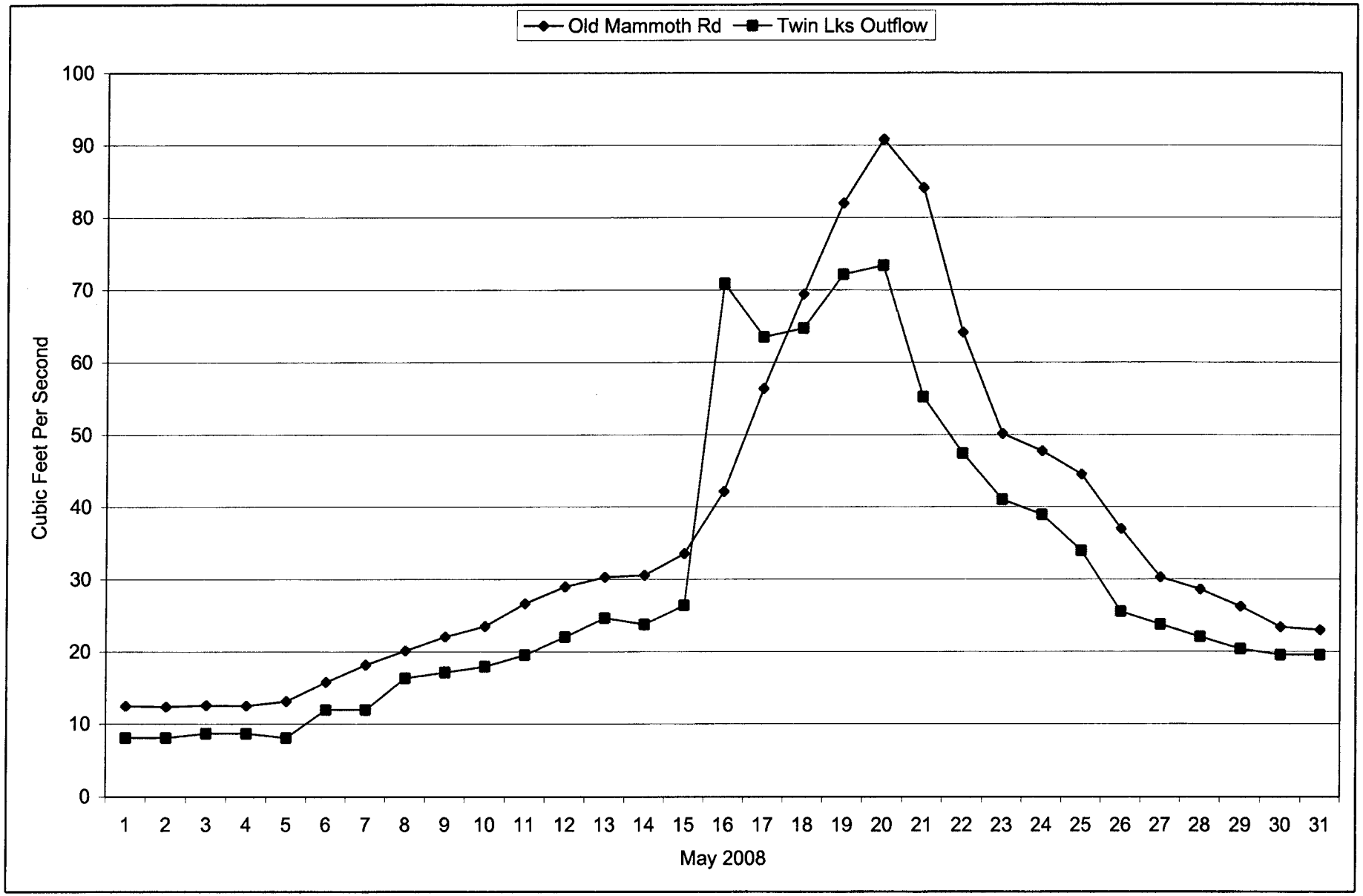
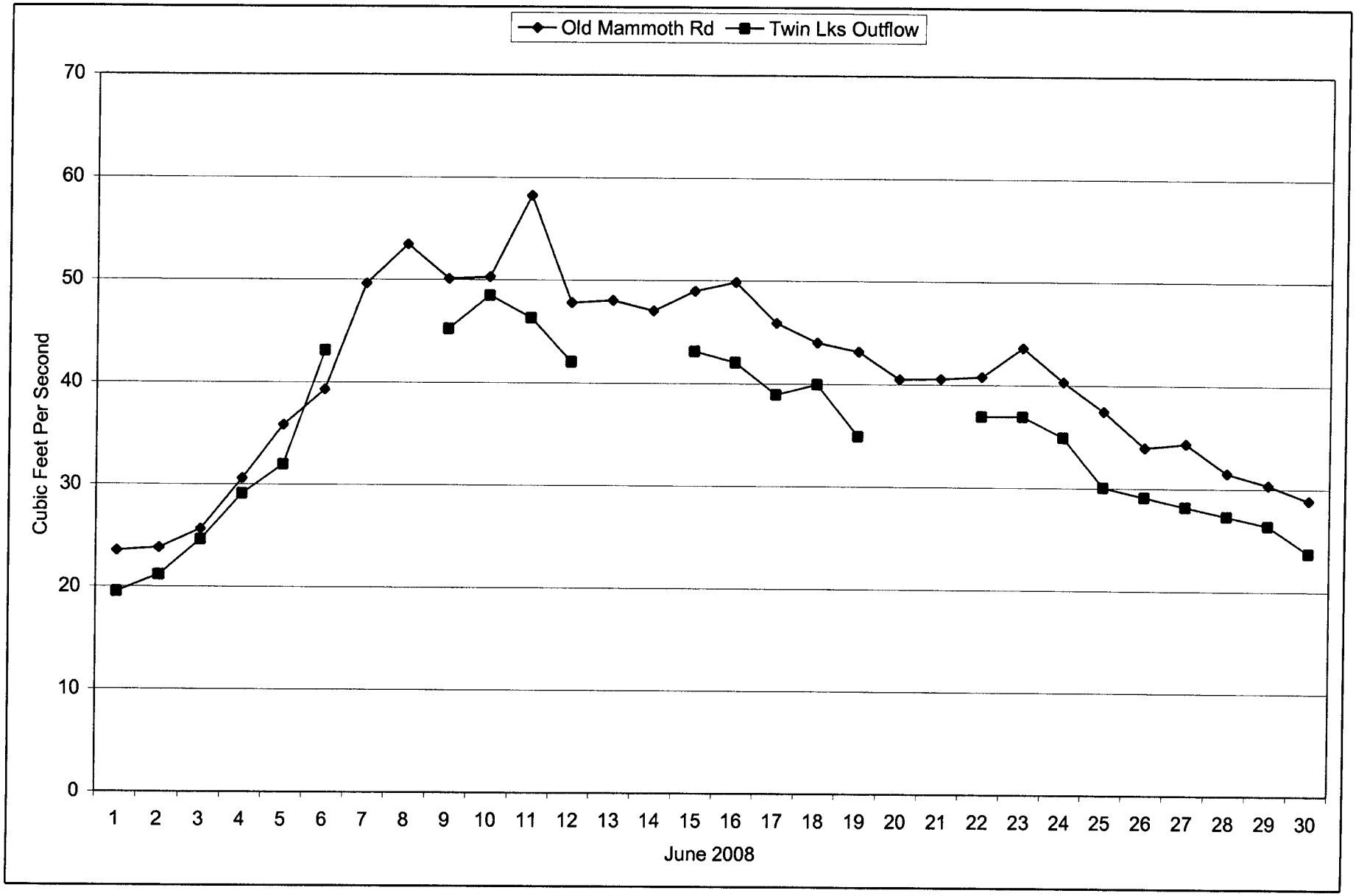


MAMMOTH CREEK STREAMFLOW COMPARISON



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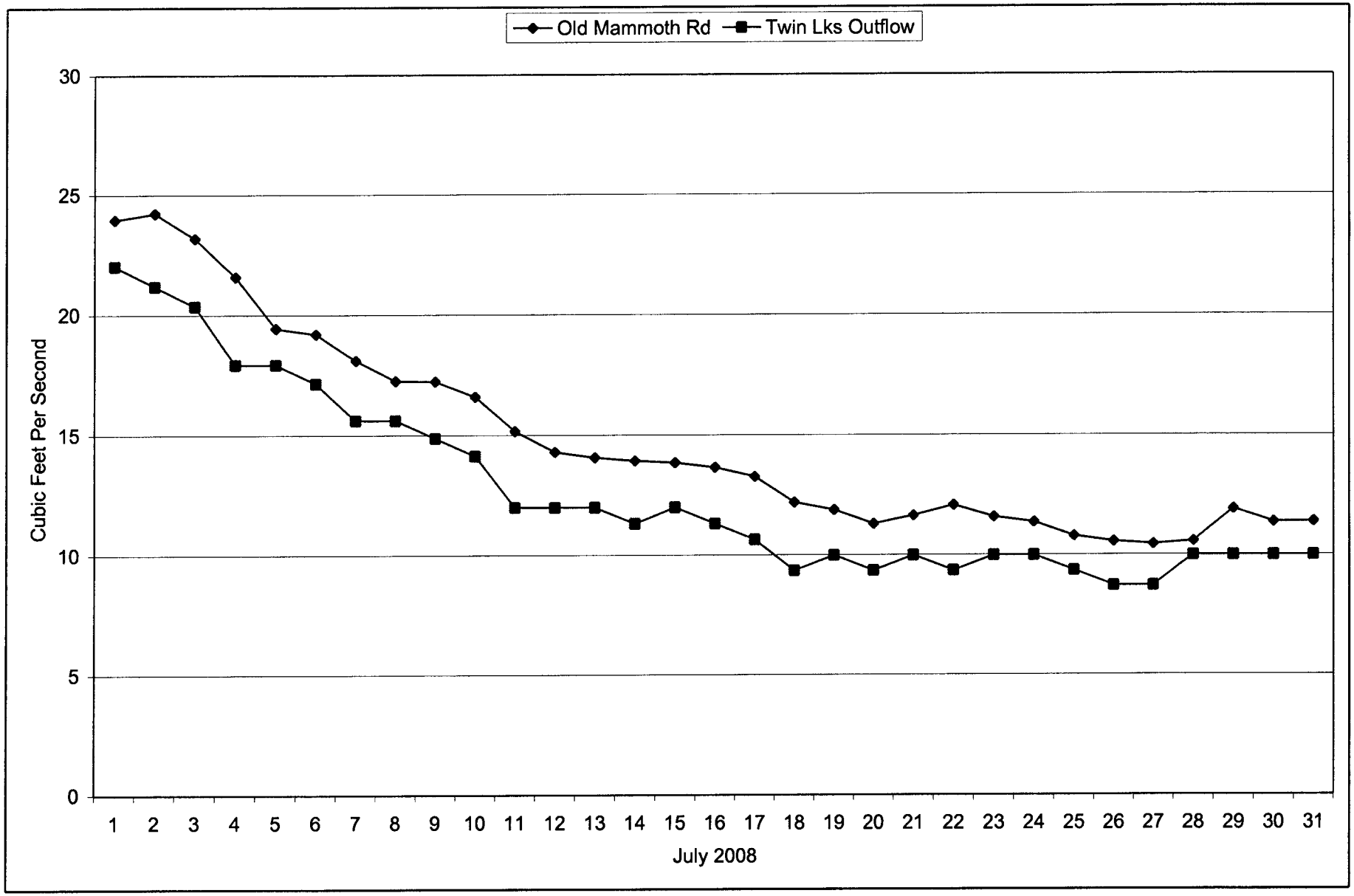
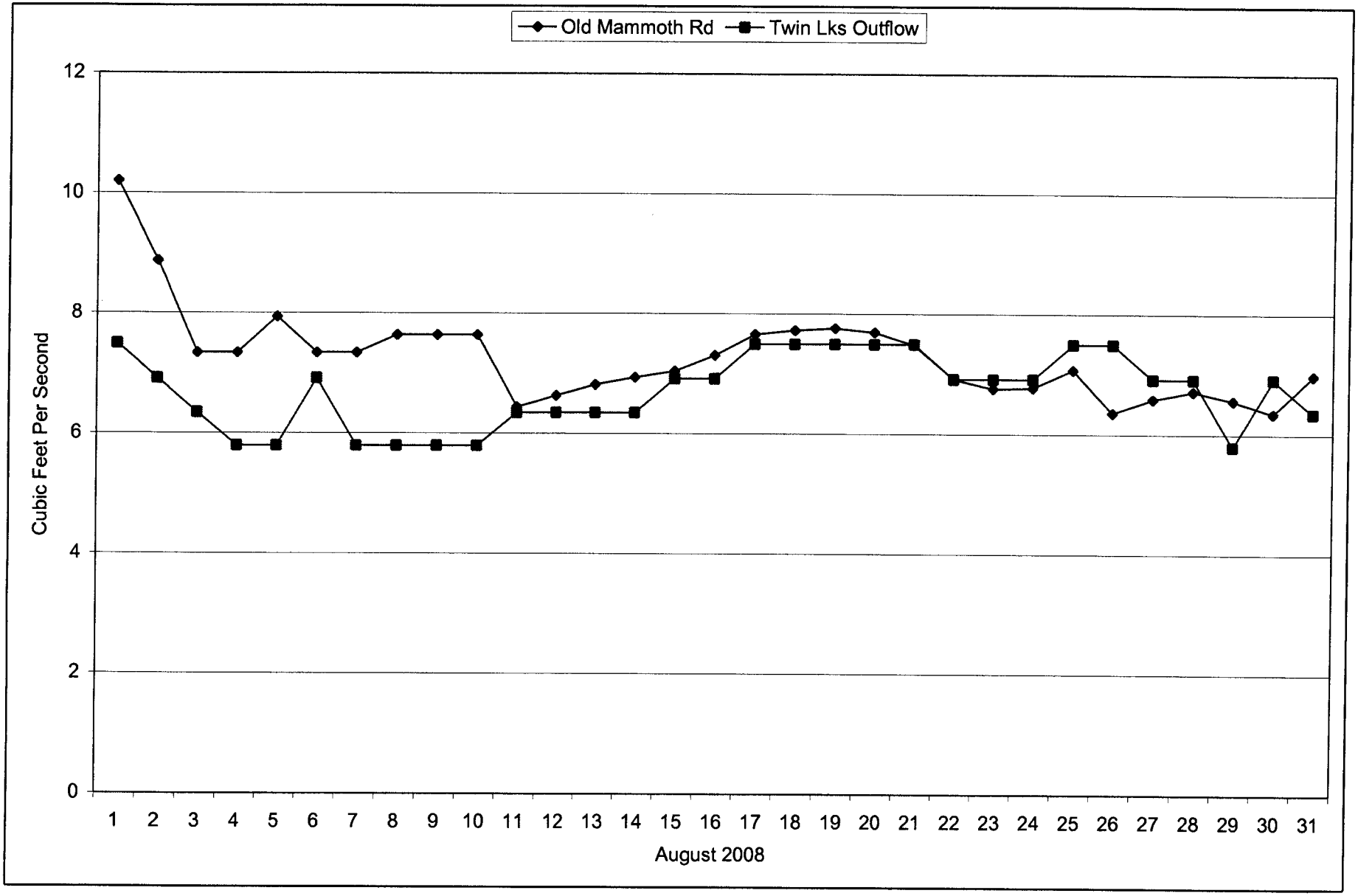
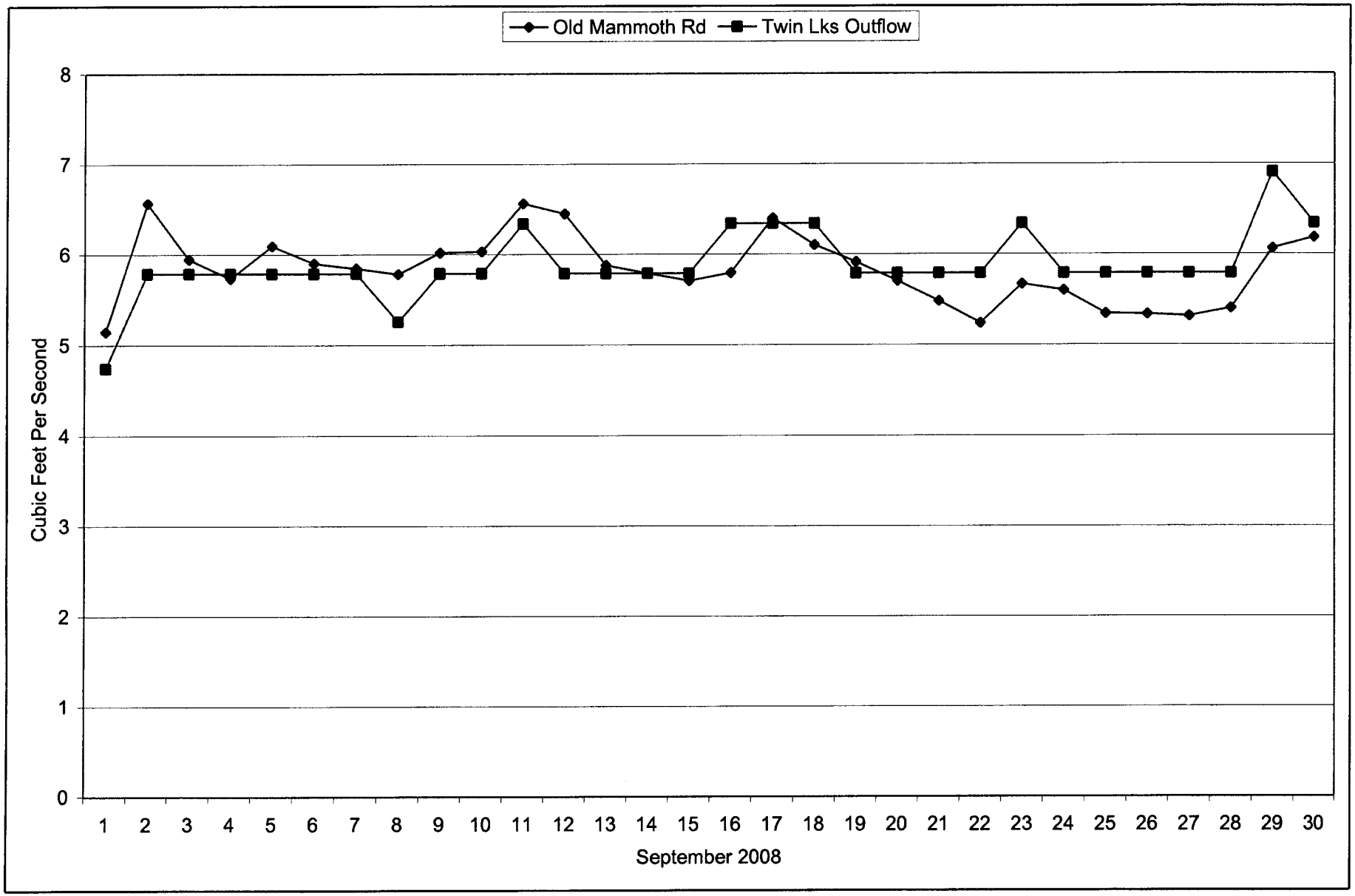


MAMMOTH CREEK STREAMFLOW COMPARISON



MAMMOTH CREEK STREAMFLOW COMPARISON



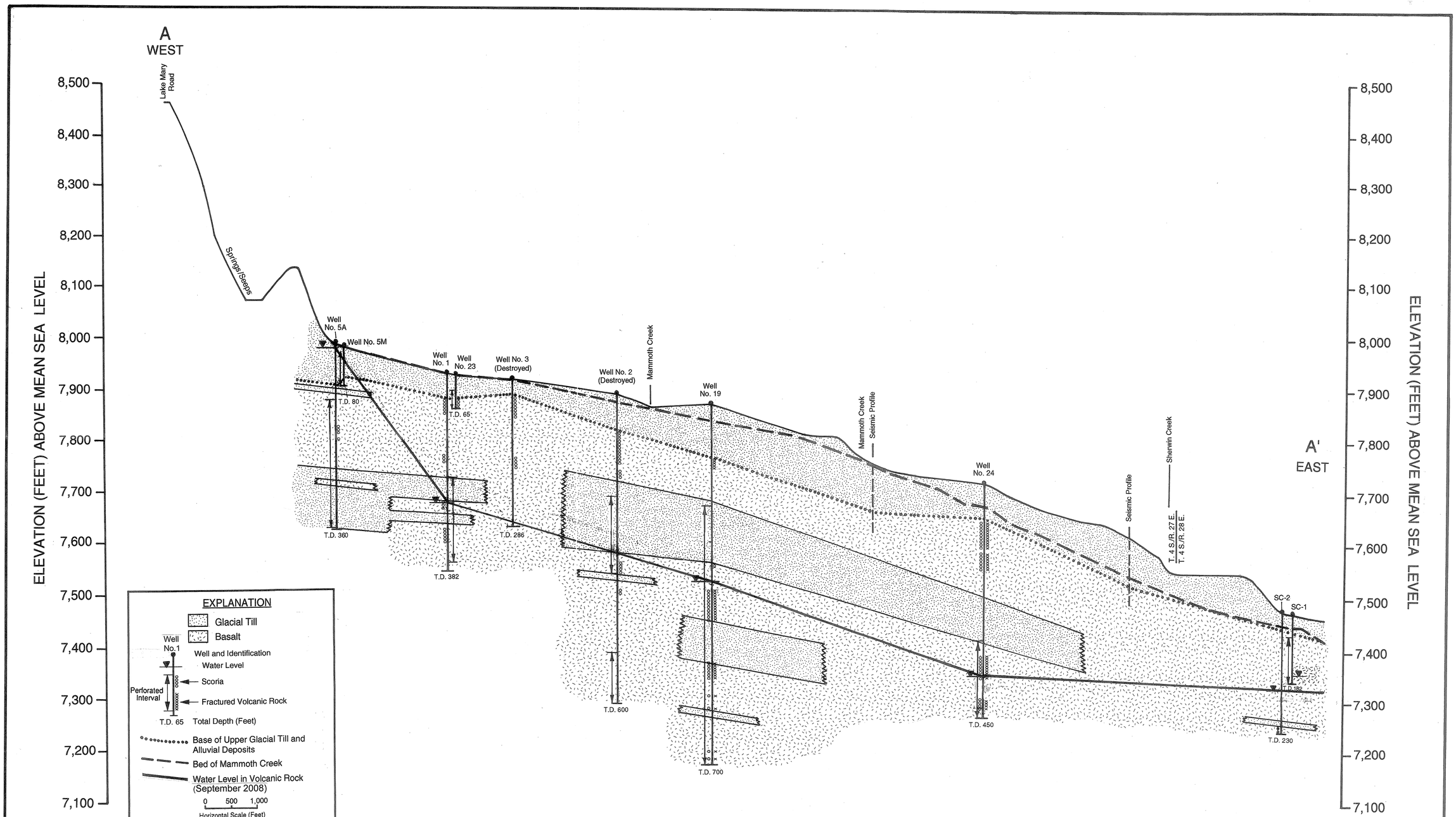


FIGURE 2 - SUBSURFACE GEOLOGIC CROSS SECTION A - A'