ANNUAL REPORT ON RESULTS OF MAMMOTH COMMUNITY WATER DISTRICT GROUNDWATER MONITORING PROGRAM FOR OCTOBER 2013-SEPTEMBER 2014

Prepared for
Mammoth Community Water District
Mammoth Lakes, California

by
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December 2014

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December 19, 2014

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

Re: Annual Report on Groundwater Monitoring

Dear Pat:

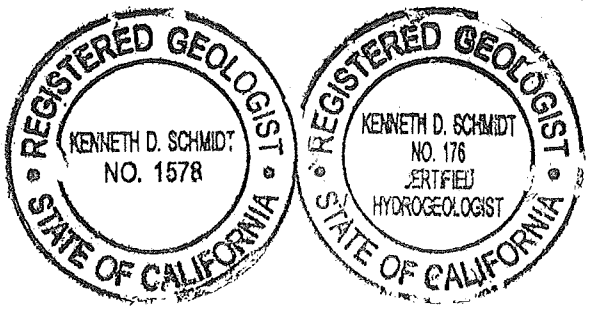
Submitted herewith is our annual report on the results of the District groundwater monitoring program for the period October 2013-September 2014. I appreciate the cooperation of District personnel in conducting this monitoring and providing data tabulations.

Sincerely yours,

Kenneth D. Schmidt
Geologist No. 1578
Certified Hydrogeologist
No. 176

KDS/td

cc: Steve Kronick



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ANNUAL REPORT ON RESULTS OF MAMMOTH COMMUNITY WATER DISTRICT GROUNDWATER MONITORING PROGRAM FOR OCTOBER 2013-SEPTEMBER 2014

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 wild-life, 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 annual interpretive reports 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 twenty-second annual report pursuant to the settlement agreement. The Mammoth County Water District is now the Mammoth Community Water District.

SUMMARY AND CONCLUSIONS

The District pumped 1,698 acre-feet of water from nine supply wells during the 2014 water year. This was 50 acre-feet less than the pumpage for the previous water year, and 28 percent greater than the mean pumpage for 1983-2013. 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 2014 water year.

Water levels in most shallow wells tapping the uppermost glacial till fell during 2014, as the precipitation during the past three years was below average. 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 most of the District supply wells and in most other deep wells tapping the consolidated rock in or near the District well field fell during the 2014 water year. Water levels in most deep wells east of the District well field also fell. A water-level elevation contour map was prepared for September 2014. 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 to the east to District Monitor Well No. 24 or 26.

The results of water quality monitoring during the 2014 water year indicated the same trends as previous monitoring.

The results of the 2014 water year monitoring indicate that District pumping did not influence Mammoth Creek streamflow. Flow data for the springs at the Valentine Reserve for the 2002-13 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 District well field. Thus, there was no influence on the Hot Creek headsprings, which are much more distant from the District water supply wells than the monitor wells utilized for the District monitoring program.

WELL CONSTRUCTION DATA

Figure 1 shows locations of District wells, a private supply well, a subsurface geologic cross section, two other monitor wells to the east (SC-1 and SC-2), and the spring area at the Valentine Reserve. Table 1 summarizes construction data for the District supply wells. District supply well No. 25 was first put in service in February 2014. Well No. 25 was drilled in August 2002, and was not pumped during the 2002-2013 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 had been previously used as a monitor well. 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 after 1991 are termed the "newer" District supply wells in this report. Wells

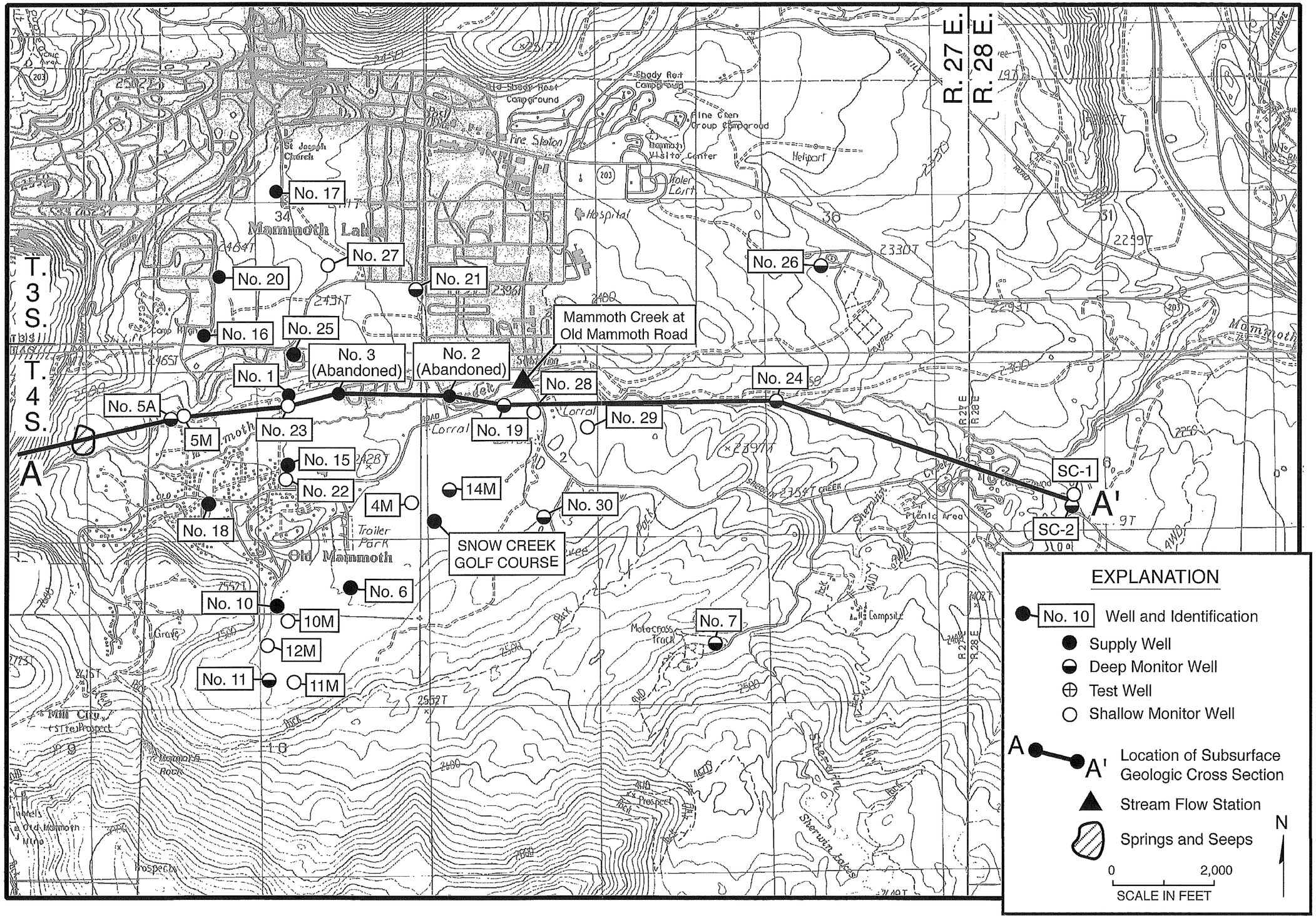

FIGURE 1 - LOCATION OF WELLS AND SUBSURFACE GEOLOGIC CROSS-SECTION A-A'

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
25	8/02	700	530	340-530	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".

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 2014 for use at the Boys Camp. Table 2 summarizes construction data for District monitor wells. Seven of these wells (No. 5A, 14M, 19, 21, 24, 26, and 30) are relatively deep and primarily tap water in fractured volcanic rock. 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. 7 is a deep monitor 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. 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

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
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.

FIGURE 2

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

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, scoria layers, and sometimes from interbedded glacial till. The intervening less fractured rock probably acts as local confining layers. At Well No. 24, water was not found in the upper part of the basalt or in either of the till layers. Water in this well is in a fractured scoria layer. A lost circulation zone present in this well may influence the water level. In September 2014, 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 1990-2014 was 27.5 inches. The range in annual precipitation has been large, as the following discussion indicates. Annual precipitation at the Lake Mary

Store averaged only 15.9 inches during the 2006-08 water years. During water years 1991-94 and 2001-04 the annual precipitation averaged 22.0 to 22.5 inches. During water years 1995-2000, annual precipitation averaged about 39 inches. During the 2005-06 water year, the annual precipitation was 47.4 inches. During the 2012-14 water years, the average annual precipitation was 16.9 inches, close to that for 2006-08. Since 2006, there has been only one above average precipitation year (2010-11). 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 2014 water year. The total pumpage was 1,698 acre-feet, or 50 acre-feet less than for the previous water year. Of this, 460 acre-feet were from Well No. 6, 411 acre-feet were from Well No. 10, 335 acre feet were from Well No. 15, and 204 acre-feet were from Well No. 17 (values are rounded to the nearest acre-foot). The remaining District pumpage (288 acre-feet) was from Wells No. 1, 16, 18, 20, and 25. Records for the Snow Creek Golf Course Well (in the vicinity of Well No. 14M) show that 75 acre-feet were

TABLE 3-PUMPAGE FROM DISTRICT WELLS

MG Totals	Months and Years													
	2013			2014									MG	ACFT
Wells	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep		
1	0.33	0.05	2.74	2.63	0.85	0.14	0.01	3.98	5.85	1.61	1.59	1.15	20.92	64.17
6	17.10	11.95	12.85	15.38	8.60	9.24	1.41	11.51	19.63	20.04	16.48	5.62	149.81	459.55
10	7.10	4.09	7.84	5.11	14.32	3.49	9.87	12.74	21.26	13.61	17.48	17.23	134.14	411.47
15	2.05	0.13	1.28	5.63	5.13	3.96	2.82	4.48	13.82	21.59	25.60	22.69	109.17	334.88
16	0.00	0.00	0.00	0.00	0.07	0.04	0.95	4.32	3.22	1.47	2.97	2.42	15.45	47.40
17	0.96	0.00	0.00	0.00	6.75	2.21	0.01	0.11	8.45	20.61	11.25	16.04	66.39	203.66
18	0.03	0.06	0.03	0.03	0.00	0.18	0.24	0.90	0.99	2.10	0.36	0.00	4.93	15.11
20	0.00	0.00	0.00	0.00	4.32	1.33	0.01	0.08	4.97	7.51	2.95	8.97	30.14	92.44
25	0.00	0.00	0.00	0.00	0.07	0.08	0.04	2.71	3.46	5.19	8.38	2.83	22.75	69.79
MG	27.57	16.28	24.75	28.79	40.11	20.66	15.35	40.82	81.66	93.73	87.05	76.95	553.70	1698.47
ACFT	84.58	49.93	75.91	88.31	123.02	63.38	47.09	125.21	250.48	287.51	267.02	236.03	1698.47	

pumped during the 2014 water year. This well is owned by a private entity. About 100,000 gallons were pumped from Well No. 7 for use at the Boys Camp during 2014.

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.

Newer 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

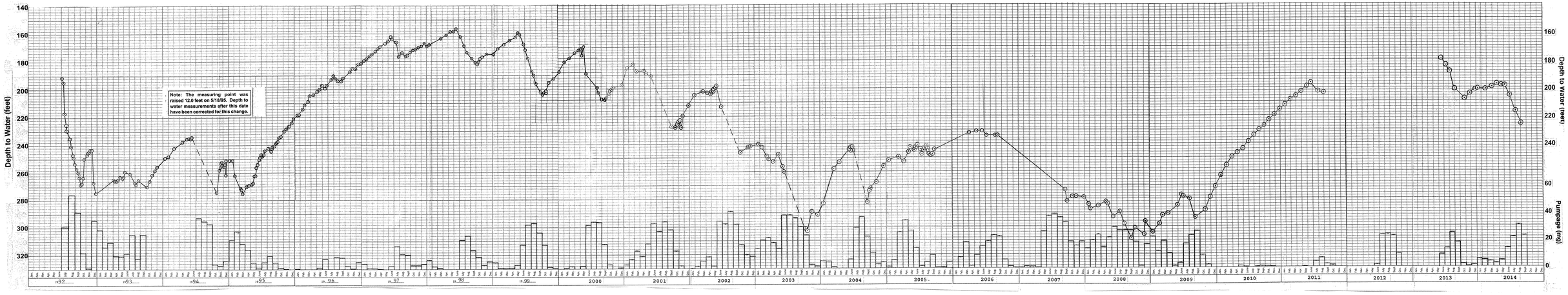

FIGURE 3-WATER-LEVEL AND PUMPAGE HYDROGRAPH FOR WELL NO. 15

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 shallowest 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. The water level rose about 30 feet between late 2008 and mid-2009 and then fell about 17 feet after July 2009. The water level in this well rose substantially between September 2009 and June 2011, primarily due to substantially reduced pumping from this well. Depth to water in Well No. 15 was 198 feet in late June 2011. There are no water-level measurements after September 2011 and before June 18, 2013, because the transducer failed and could not be removed for replacement. The transducer in Well No. 15 was replaced on June 18, 2013. The water level was relatively shallow in June 2013 and fell about 22 feet by the end of the 2013 water year, associated with pumping of this well. The water level in Well No. 15 rose 10 feet between mid October 2013 and June 2014, then fell 28 feet by the end of the water year. 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

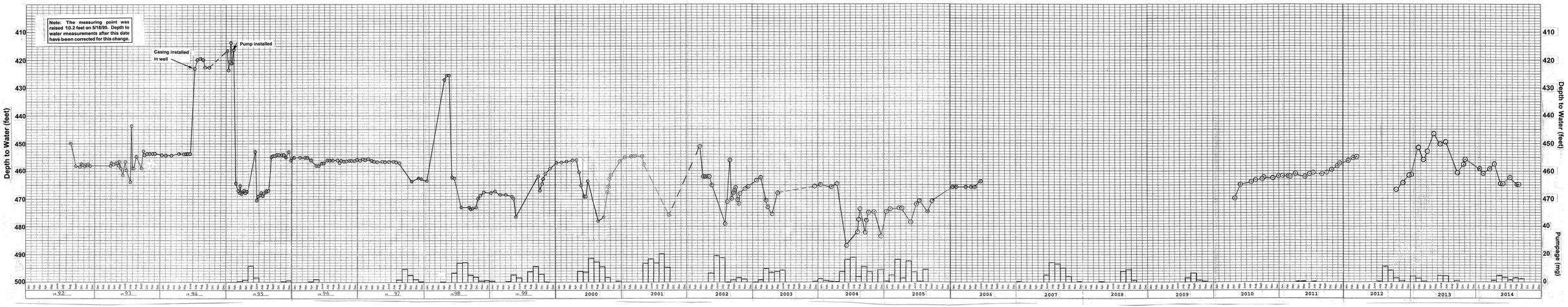

FIGURE 4-WATER-LEVEL AND PUMPAGE HYDROGRAPH FOR WELL NO. 16

the casing was installed (July 1994) and after the pump was installed (February 1995). After the casing was installed and prior to the pump installation, an access tube was not in the well, and the measurements during that period were apparently affected by cascading water. The measurements for July 1994-early February 1995, and for April-May, 1998 appear to not 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 Well No. 16 in 2002. Overall, shallow static levels in Well No. 16 were relatively stable between 1992 and 2003, and fell in 2004. Water levels in this well were the lowest of record in Summer 2004. This is 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 wasn't measured between July 2006 and mid April 2010. In April 2010, a transducer was installed and reliable transducer records are available from April 19, 2010 through March 2012. The water level in this well rose seven

feet between April-September 2010, and then rose slightly through September 2011. The water level rose five feet from September 2011 through March 2012. The transducer failed after March 2012 and was replaced on October 16, 2012. The water level in this well rose about 20 feet between October 16, 2012 and May 2013. The water level then fell about 11 feet by the end of the 2013 water year. The water level in Well No. 16 rose five feet between September and November 2013, then fell about nine feet by the end of the water year. Pumpage from this well was relatively small during the 2013 and 2014 water years.

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 also 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 relatively short periods. The shallowest depth to water yet measured in this well was in January 2000. The water level in this well fell during 2000-2005 due to heavier pumping of this well and less recharge compared to previously. The water level in this well rose about nine feet during

TAB 019

TAB 019

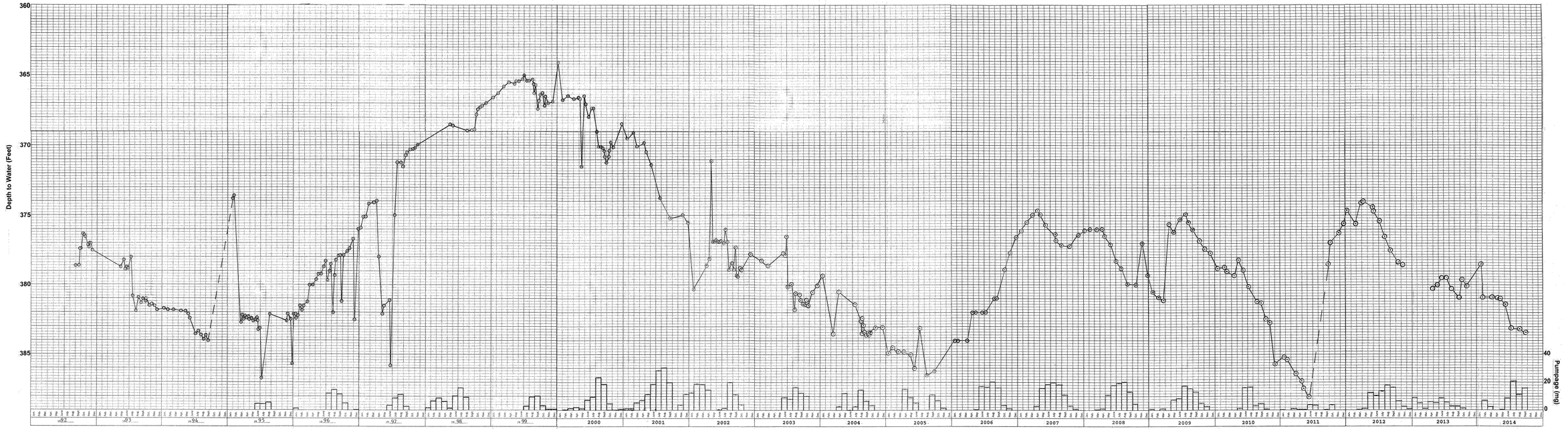

FIGURE 5-WATER-LEVEL AND PUMPAGE HYDROGRAPH FOR WELL NO. 17

2006 and early 2007 due to recharge. 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. The water level rose three feet in November 2008 and then fell four feet through March 2009. The water level then rose six feet through July 2009, and then fell one foot through September 2009. The water level in Well No. 17 fell through January 2010, was stable for January-June, 2010, then fell from June to November 2010 due to pumping of the well. The water level slightly rose through January 2011, then fell through June 2011 due to pumping. After pumping of Well No. 17 stopped, the water level rose about 14 feet through early April 2012. The water level then fell three and a half feet by the end of September 2012. The transducer in Well No. 17 failed on November 11, 2012. The transducer was repaired and water-level measurements were resumed on April 29, 2013. The water level rose about one foot between April 29 and mid-July 2013, then fell about a foot and a half by the end of the 2013 water year. The water level in Well No. 17 rose about two and a half feet between October 2013 and January 2014, then fell about five feet by the end of the water year.

Figure 6 shows water levels and pumpage for Well No. 18. The overall trend for this well during non-operational periods was a

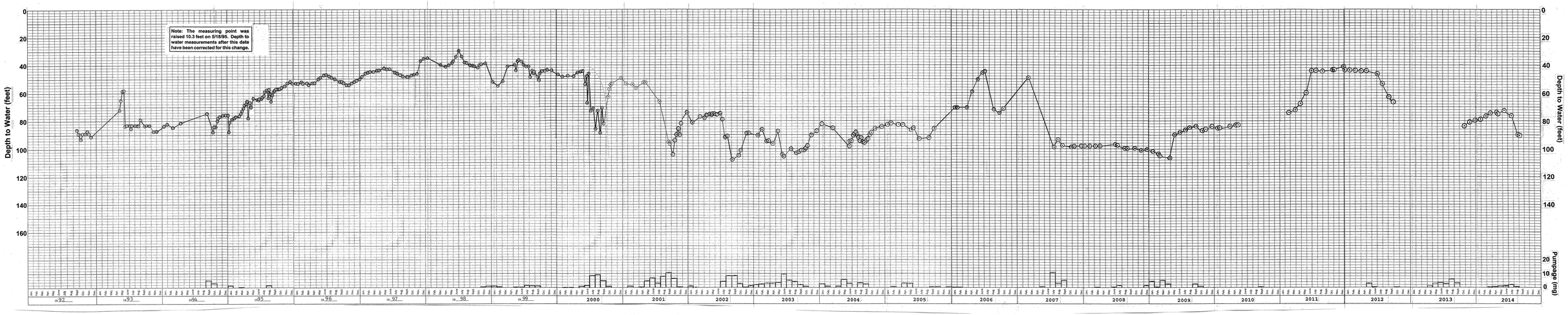

FIGURE 6-WATER-LEVEL AND PUMPAGE HYDROGRAPH FOR WELL NO. 18

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. Water levels in this well stayed relatively constant during 2002-05. 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 stayed about 100 feet deep between July 2007 and December 2008, fell about six feet by April 2009 (due to pumping of the well), then rose about 20 feet by September 2009. There was little pumpage from this well during 2010-11, and the water level rose to a depth of about 44 feet by July 2011. The water level was stable through June 2012, and then fell about 17 feet by the end of September 2012. The transducer was taken off-line in October 2012 for a water treatment facility upgrade, and no measurements are available for the 2013 water year. Water-level measurements were resumed in October 2013. The water level in Well No. 18 rose about 11 feet between October 2013 and June

2014, then fell about 18 feet by the end of the water year.

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. The water level rose ten feet from November 2008 to June 2009, then fell eight feet through September 2009 (due to pumpage of the well). The water level rose between January and April 2010, when the pumpage from the well was small, and remained relatively stable through February 2011 due to low pumpage. The water level fell about five feet due to pumping of the well in July and August 2011, then recovered after pumping stopped. The water level rose 28 feet from September 2011 through

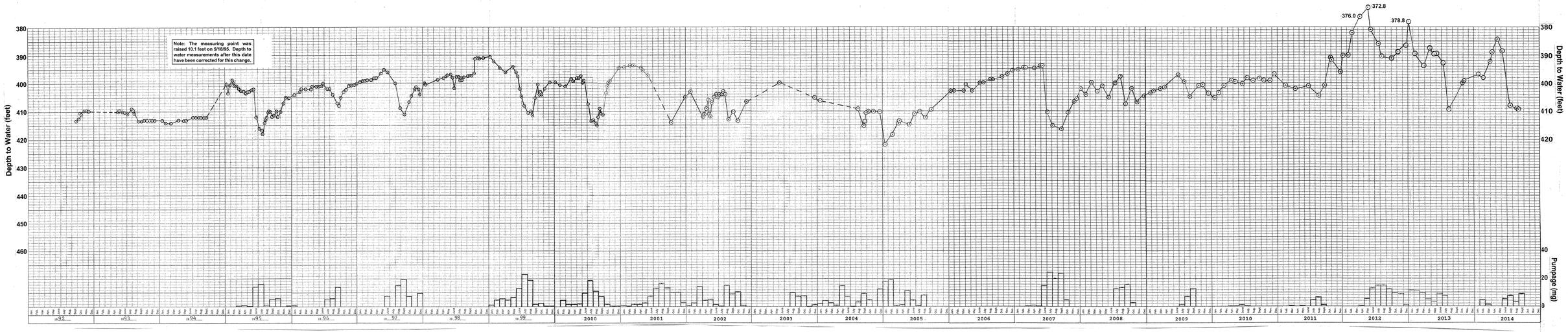

FIGURE 7-WATER-LEVEL AND PUMPAGE HYDROGRAPH FOR WELL NO. 20

May 2012, then fell 18 feet by the end of September 2012, primarily due to pumping of the well. The water level then rose about 12 feet through January 2013. The water level then fell about 31 feet by early August 2013, associated with pumping of this well. No water-level measurements are available for the rest of the water year. Water-level measurement were resumed in October 2013. The water level rose about 10 feet between August and October 2013 and about 15 feet from October 2013 through May 2014, then fell 25 feet through the end of the 2014 water year.

Figure 8 is a water-level and pumpage hydrograph for Well No. 25. Well No. 25 is located north of District Well No. 1. Although Well No. 25 has been equipped as a supply well, it was not pumped through the end of the 2013 water year. Water-level measurements for Well No. 25 commenced in late 2002 and are available through July 2007 and in 2014. Water levels in this well were not measured between July 2007 and February 2011 because of no access. Prior to 2008, the water level in Well No. 25 responded primarily to pumpage of nearby District Well No. 1. Depth to water has ranged from 291 to 337 feet, and has been greatest during the late summer when Well No. 1 has been pumping. The water level in this well rose during 2002-2007, and the shallowest measured water level to date was in May 2007. In February 2014 Well No. 25 was put in service as a supply well, and level

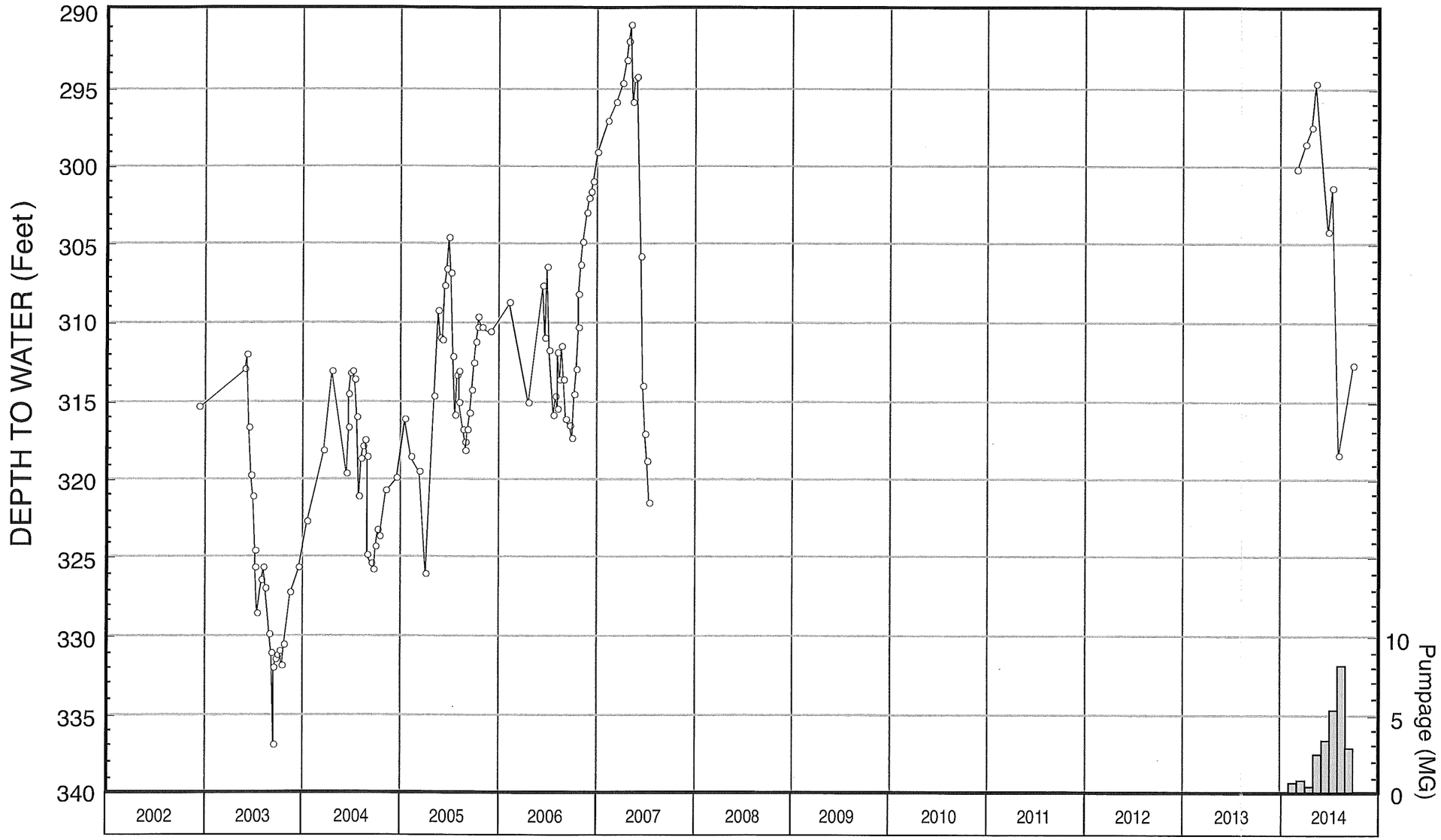

FIGURE 8 - WATER-LEVEL HYDROGRAPH FOR WELL NO. 25

measurements were also resumed at the same time. After March 2014, the water level fell from about 295 to 318 feet in depth by August 2014. The water level then rose about six and a half feet when pumpage was decreased.

Earlier Wells

Water-level and pumpage hydrographs for Wells No. 1, 6, and 10 are provided in Appendix B. The static water level in Well No. 1 has ranged from about 160 to 200 feet during low pumping periods to an average of about 270 feet during heavy pumping periods (i.e., August 1994). Overall, the water level in this well rose between 1992 and 1997, slightly declined from 1997 to Spring 2002, fell during 2002-03, and then rose in 2004-05. In June 1998, depth to water in this well was 160 feet, or the shallowest measured since 1990. During the 2006 water year, the water level in this well was relatively stable until July, when it fell about 10 feet due to increased pumping of the well. The water level in Well No. 1 rose about 35 feet from July 2006 until March 2007. After March 2007, the water level had fallen about 60 feet by early August 2007 due to pumping of the well. The water level then rose about 18 feet due to a reduction in pumpage from the well. The water level in Well No. 1 fell 47 feet during June-September, 2008 due to pumpage of the well.

The water level rose 57 feet by July 2009, and then fell about 20 feet by September 2009, due to pumpage of the well. After September 2009, the water level generally rose, when pumpage from the well was minimal. The water level in Well No. 1 rose about 15 feet between October 2010 and April 2011, then fell about 17 feet through August 2011. After August, the water level rose about three feet by the end of September 2011, and remained stable through June 2012. The water level fell 22 feet from June through August 2012 primarily due to pumping of the well, then rose about 17 feet through December 2012. The water level then fell about 20 feet by early April 2013, associated with pumping of this well. The water level then rose about 18 feet by late April 2013, associated with decreased pumping of the well. The water level then remained relatively constant through July 13, 2013, then fell about 14 feet by the end of the 2013 water year. Between September 2013 and April 2014, the water level in Well No. 1 rose about 47 feet. After April 2014, the water level fell about 33 feet by the end of the 2014 water year.

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 water level then rose about 65 feet through June 2009, then fell about 25 feet through September 2009 due to pumping of the well. The water level in Well No. 6 then rose through December 2009, before falling about 25 feet by May 2010. The water level rose 30 feet by June 2010, then fell about 35 feet by September 2010. The water level in Well No. 6 rose 56 feet between October 2010 and July 2011, then fell about two feet through the end of September 2011. The water level was stable from September 2011 through June 2012, and then

fell 54 feet by the end of the 2012 water year. This decline was primary due to pumping of Wells No. 6 and 10. The water level in Well No. 6 rose about 26 feet from November 11, 2012 through early June 2013, associated with decreased pumping. The water level then fell 77 feet through early September 2013. This was associated with increased pumpage from Wells No. 6 and 10 after May 2013. The water level in Well No. 1 rose about 19 feet between September and November of 2013, then was relatively stable through January 2014. The water level then fell about six feet by February 2014. The water level then rose about 13 feet by May 2014. The water level then fell about 44 feet by July 2014, due primarily to pumpage of Wells No. 6 and 10. The water level in July 2014 was the deepest since 1994. The water level then rose about 13 feet by the end of the 2014 water year.

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, depth to water was 63 feet by

late September 2005, 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. 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. After September 2008, the water level rose about 60 feet through June 2009, then fell about 10 feet through September 2009. The water level in Well No. 10 then gradually rose through December 2009, then fell more than 30 feet by May 2010. The water level then rose more than 35 feet through June 2010, before falling an equal amount by September 2010. The water level in Well No. 10 rose 68 feet from October 2010 to August 2011, then fell three feet by the end of September 2011. The water level was relatively stable through June 2012, and then fell 66 feet by the end of the 2012 water year. This decline was also primarily due to pumping of Wells No. 6 and 10. The water level in Well No.

10 could not be measured from January 12 through March 13, 2013. The water level is indicated to have risen about 40 feet between October 12, 2012 and early June 2013. The water level then fell about 72 feet by early September 2013, associated with increased pumping of Wells No. 6 and 10. The water level rose about 11 feet from September to November 2013, then remained stable through January 2014. The water level fell about nine feet by February 2014, then rose about seven feet by May 2014. The water level in Well No. 10 then fell about 37 feet by the end of the 2014 water year. The water level at the end of the 2014 water year was the deepest since 1993.

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. The transducers in Wells No. 19 and 21 were subsequently removed, and installed in Wells No. 26 and 30.

Well No. 5A is located between Well No. 1 and the Valentine Reserve North Spring (Figure 1). Depth to water in Well No. 5A has ranged from near the land surface to about seven feet. The

water-level measurements for this well are pressure levels, and are not indicative of unconfined conditions near the land surface. 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 Well No. 5A 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. The water level rose two and a half feet between October 2008 and June 2009, then fell about two feet by September 2009. The water level in this well was relatively stable through April 2010, then rose about two and a half feet by May 2010. The water level then fell through September 2010. The water level in Well No. 5A fell one foot between October 2010 and January 2011, then rose five feet through May 2011. The water level then fell four

feet by January 2012, then rose about three feet through May 2012. The water level then fell three feet by the end of September 2012. The water level rose about two feet between late October 2012 and early May 2013, then fell about two and a half feet by the end of the 2013 water year. The water level rose about one foot between September 2013 and February 2014 and then was stable through May 2014. The water level then fell about one foot by the end of the 2014 water year.

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 234 to 292 feet. 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. This well has been pumped for the Boy's Camp. 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 (234 feet) 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. The water level fell about ten feet between September 2008 and May 2009, and then rose three feet by June 2009. The water level in Well No. 7 was relatively stable through June 2010, then rose about 12 feet by August 2010. The water level in the well rose about 19 feet between December 2010 and July 2011, then fell about 19 feet by October 2011. The water level then the rose three feet through December 2011. The water level then fell one foot through January 2012, then rose about 14 feet through May 2012. The water level then fell nine feet by the end of September 2012. The water level fell about eight feet between the end of the 2012 water year and mid-February 2013, then rose about 10 feet by early March 2013. The water level then fell about 17 feet through early June 2013. The water level then rose about eight feet through mid-June 2013. The water level then fell slightly and remained stable through the end of the 2013 water year. The water level in Well No. 7 fell about 20 feet between September 2013 and August 2014. The water level in this well has primarily been influenced by recharge from Sherwin Creek.

Well No. 11 is located in the meadow area, about one quarter mile south of Well No. 10. The deepest level (51 feet) in Well No. 11 was in May 1993, and the shallowest levels were near the land surface during most of the period after July 1995. After June 2014, the water level in this well fell to a depth of about six and a half feet. Water levels in this well represent pressure levels, and are not indicative of unconfined deposits near the land surface. 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. The water level in this well was still near the land surface during the 2013 water year. 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 prior to 1996.

Well No. 14M is located about two-thirds mile east of Well No. 15. The manual water-level measurements for Well No. 14M (Figure 9) 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. These rises were primarily associated with recharge and the reduction in pumping of Wells No. 6 and 10 at

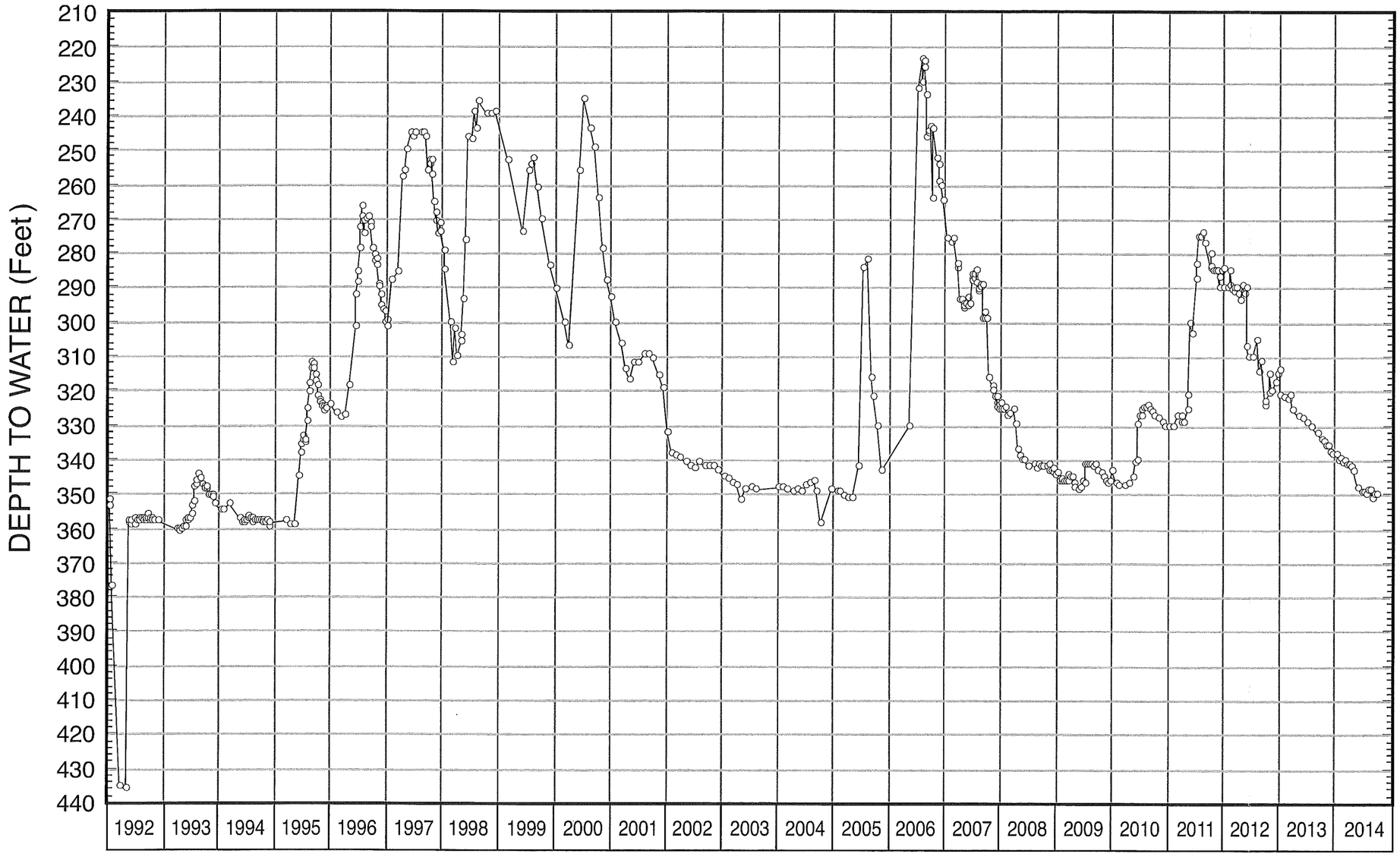

FIGURE 9 - WATER-LEVEL HYDROGRAPH FOR WELL NO. 14M

those times. 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 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 had fallen to near the levels prior to this recharge. Recharge was indicated in 2006, as the water level rose about 55 feet, to the shallowest level of record (223 feet) in July. 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 April 2008, associated with this pumping. The water level in Well No. 14M was relatively stable from May 2008 through May 2010. The water level then rose about 25 feet by August 2010. The water level in this well was relatively stable from October 2010 through April 2011, then rose 55 feet through August 2011. After August 2011, the water level fell about 51 feet through September 2012. The water level then rose about 11 feet through January 2013, then fell about 21 feet by the end of the 2013 water year. The water level in Well No. 14M fell about 16 feet between September 2013 and June 2014, and was then relatively stable for the rest of the 2014 water year. The water level in this well is influenced by 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 early September 2007. The transducer was in operation by October 10, 2007. Reliable transducer measurements are available from October 10, 2007 to December 10, 2009. The transducer started malfunctioning on December 10, 2009, and a new transducer was installed as of August 19, 2010. Reliable transducer measurements are available for the rest of the 2010 and for the 2011, 2012, 2013, and 2014 water years. The transducer was recalibrated on October 14, 2013, and May 29, 2014.

Well No. 19 is located about four-fifths of a mile east of Well No. 1. Based on manual measurements (Figure 10), 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, during

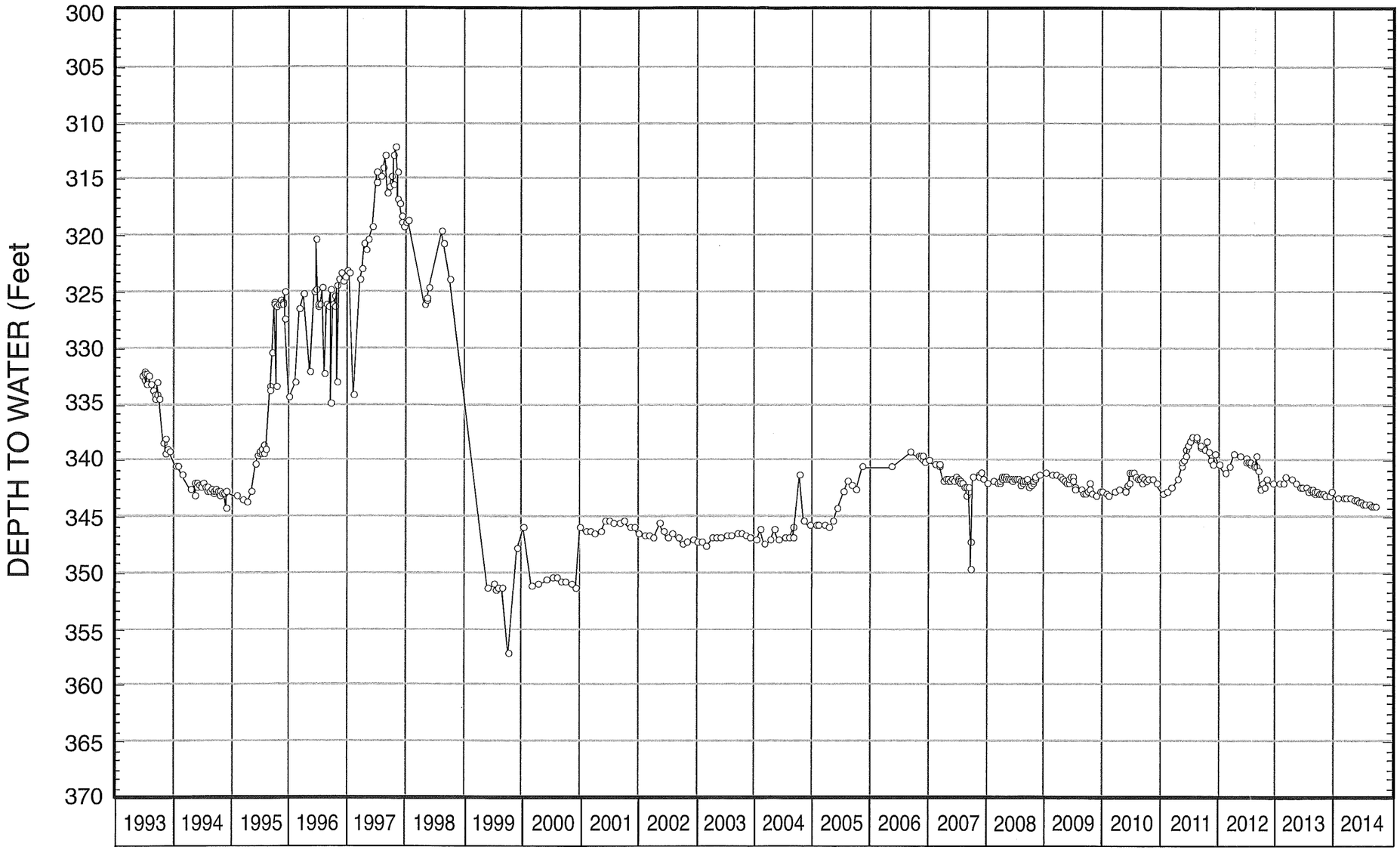

FIGURE 10 - WATER-LEVEL HYDROGRAPH FOR WELL NO. 19

a series of wet years. In October 1997, depth to water was 312 feet, or the shallowest of record. During 1999, the water level in Well No. 19 fell about 30 feet, to below the levels in 1994 and early 1995. However, there was no decline during 2000-2004. During this period, depth to water in this well was usually about 340 to 345 feet. The water level in this well slightly rose in 2005 and 2006. From 2006 through March 2011, the water levels in this well were relatively stable. The water level in Well No. 19 rose five feet between March and June 2011, and slightly declined through November 2011. The water level was then stable through August 2012, then fell three feet through the end of September 2012. The water level rose about a foot through March 2013, then fell about two feet by the end of the 2013 water year. The water level gradually fell about one foot during the 2014 water year. The water level in this well has responded primarily to recharge patterns. Transducer readings that are considered fairly reliable are available for this well from November 1, 1996-September 10, 1997, from November 1, 1997-September 30, 1998, except for June 1998, and from May 4-September 30, 2003 (Appendix D). The transducer in Well No. 19 was recalibrated in May 2003. Reliable transducer measurements are also available from December 4, 2003 through the end of July 2004. The transducer was recalibrated on November 3, 2004 and

measurements were reliable for the rest of the 2005 water year. The transducer was recalibrated on April 1, 2007. Reliable transducer measurements are available for October 1, 2005-February 22, 2006 and May 9-November 6, 2007. The transducer 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 11) 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 slightly risen. The water level rose about three and a half feet during the 2006 water year. In September 2007, the water level in this well temporarily fell about five feet, and then recovered. The water level in this well temporarily fell about four feet during October 2007-September 2008, then recovered by October 2008. During October 2008-May 2011, the water level in this well was relatively stable. The water level then rose four feet by June 2011, then was stable through October 2011. The

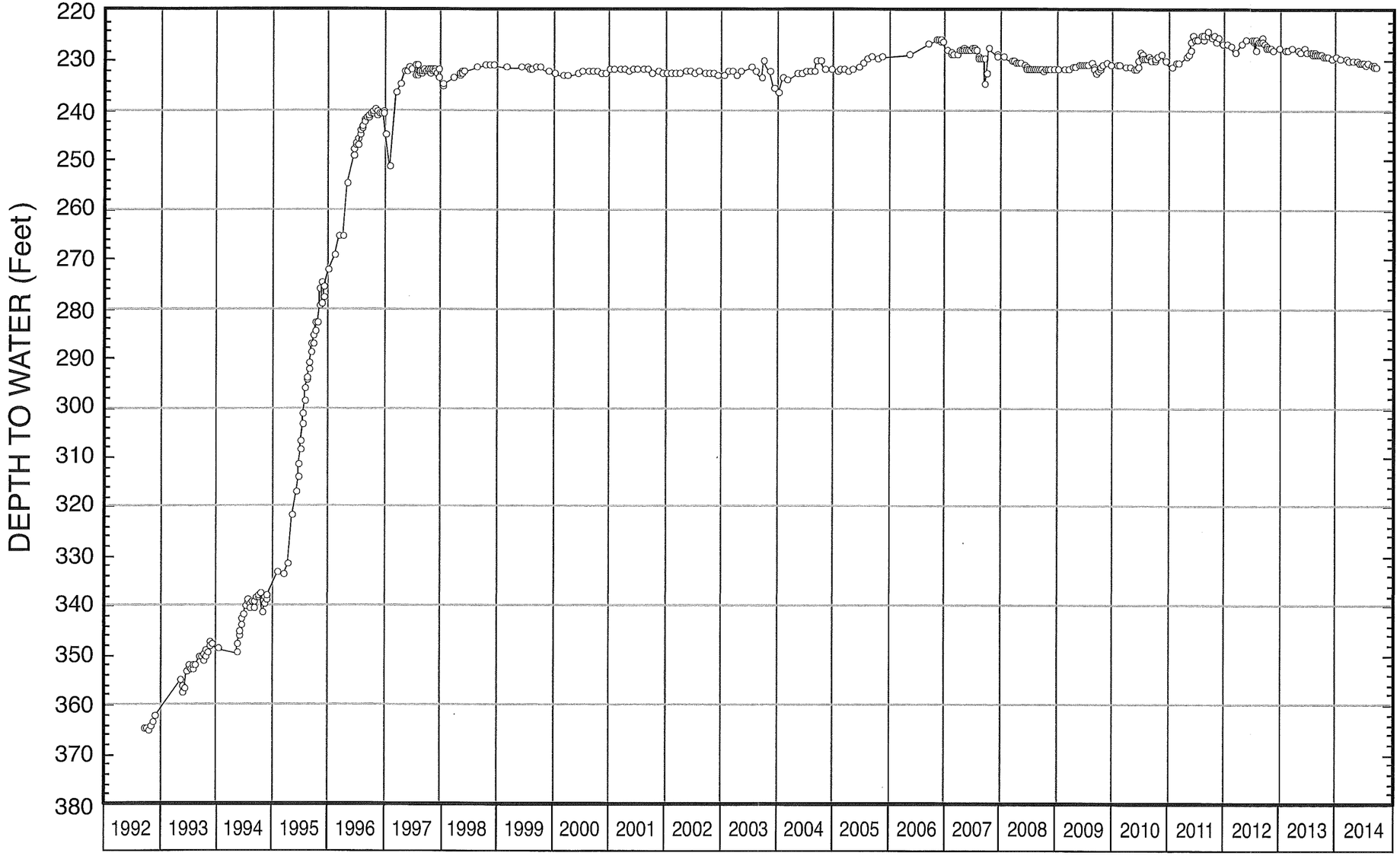

FIGURE 11 - WATER-LEVEL HYDROGRAPH FOR WELL NO. 21

water level fell three feet through March 2012, then rose three feet through May 2012, and then remained stable through August 2012. The water level then fell two feet by the end of Septemeber 2012, and only fell slightly through the end of the 2013 water year. During the 2014 water year, the water level gradually fell about two feet. The water-level measurements in this well have indicated no significant response due to pumping of District wells. Rather, the changes are primarily related to the presence or lack of recharge. Transducer measurements that are considered reliable are available for Well No. 21 from November 1, 1996-May 31, 1997, November 1, 1997-September 30, 1998 (except for June 1998), and May 4, 1999-September 21, 2005 (Appendix D). The transducer in this well was recalibrated in May 2003 and in November 2004. Reliable transducer measurements are available for October 7, 2005-September 30, 2007. The transducer in this well was removed at the end of September 2007. Because of the small water-level fluctuations that have occurred, manual measurements are adequate.

Well No. 24 is located about one mile east of Well No. 19. Figure 12 is a water-level hydrograph for Well No. 24, based on manual and transducer measurements. Measurements for this well began in Summer 1993, and depth to water has ranged from 352 to

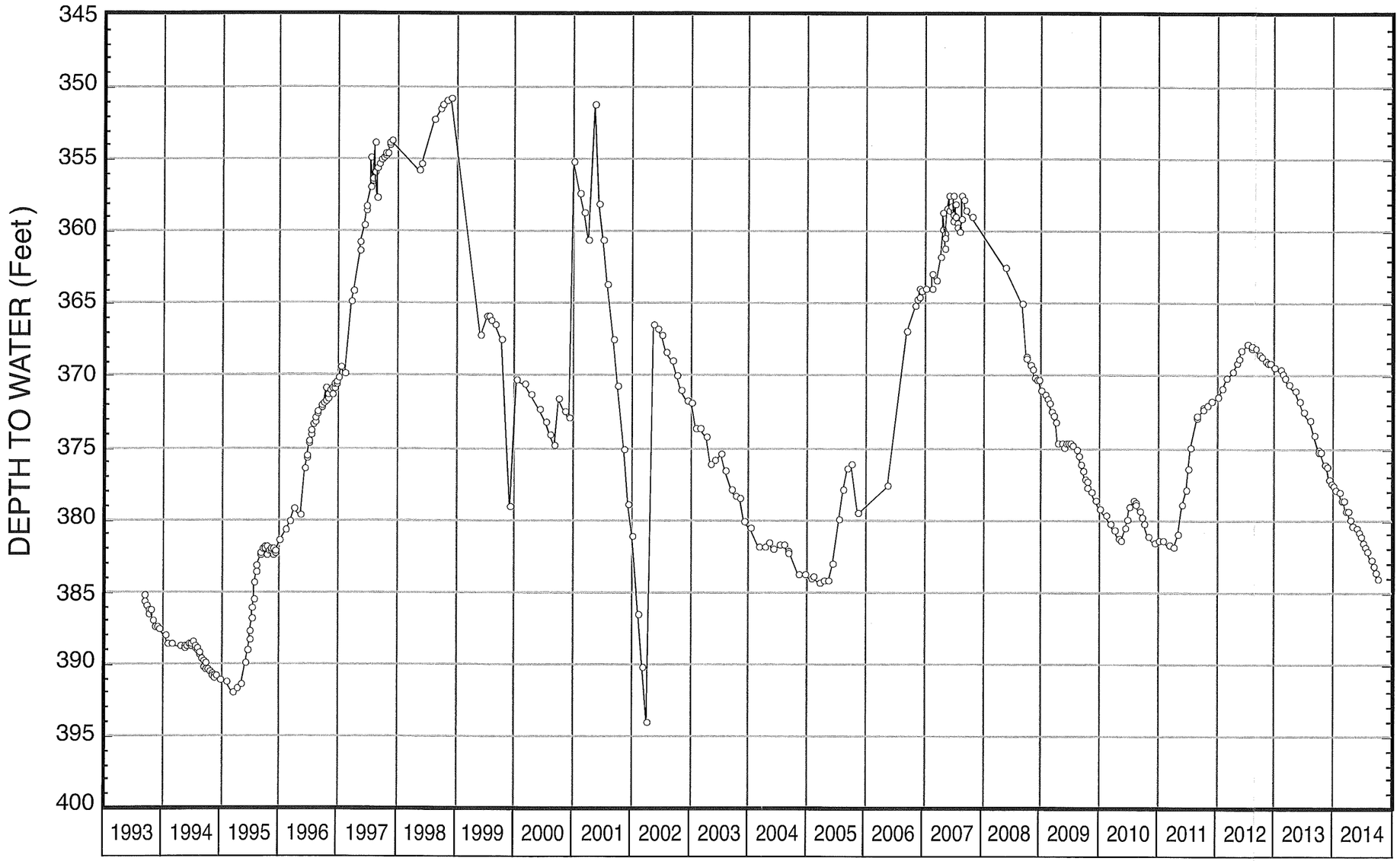

FIGURE 12 - WATER-LEVEL HYDROGRAPH FOR WELL NO. 24

394 feet. The water level rose after early 1995, to the shallowest depth of record (351 feet) 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 25 feet between August 2007 and May 2010. The water level then rose about four feet through July 2010. The water level in Well No. 24 then fell about four feet by October 2010 and then was relatively stable through May 2011. After May 2011, the water level rose about 14 feet through June 2012. The water level was then relatively stable through the end of September 2012. From the end of the 2012 water year to the end of the 2013 water year, the water level fell about six feet. During the 2014 water year the water level fell about nine feet. The water level in this well has responded 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, 2007. All of the data from the data logger for the 2008 water year was lost by the District. The transducer was recalibrated and reactivated on October 7, 2009, and reliable records are available for the rest of 2009 and for the 2010, 2011, 2012, 2013, and 2014 water years.

Water-level hydrographs for Wells No. 26 and 30 are provided in Appendix D. Well No. 26 is located to the east, north of Well No. 24. This well is unusual compared to the other deep District monitor wells, as it taps water producing materials only between depths of 621 and 686 feet. One purpose of the well was to monitor possible effects of geothermal water production in the Basalt Canyon area. The water level in Well No. 26 fell from a depth of 249 feet in June 2006 (the shallowest level of record) to about 256 feet in September 2008. After March 2009, the water level in this well began to fluctuate more and

to often be deeper than previously. The deepest water levels prior to 2014 (about 269 feet) were in late 2009 and early 2010. After January 2010, the water level in this well rose about eleven feet by June 2010, and then fell about seven feet by September 2010. The water level in Well No. 26 was stable from October 2010 through March 2011, then rose about 11 feet through May 2011. The water level then fell about six feet through March 2012, then rose about three feet through May 2012. The water level then fell about four feet through July 2012. There were no measurements between late July 2012, and late May 2013 due to a transducer failure. The water level then fell about five feet by early June 2013, then fell about two and a half feet by the end of the 2013 water year. During the 2014 water year, water levels fell an additional five feet, to the deepest level of record (270 feet) at the end of the water year. The water-level changes in this well are indicated to be primarily due to the extent of recharge. However, geothermal water pumpage in the Basalt Canyon area, which started in July 2006, could be responsible for part of the water-level fluctuations. Geothermal water pumping records are available from July 10, 2006 through March 2013. The nearest producing well is 57-25, located about 3,860 feet north of Well No. 26. An average of about 1,900 gpm was produced from this well prior to October 2008. After this, the

average production was about 2,600 gpm. Pumping was continuous except for four periods when there was no pumpage (October 8-13, 2008, October 4-9, 2010, November 5-11, 2011, and May 27-June 11, 2012). The other producing Well (66-25) is located about one mile north of Well No. 26. The production from this well averaged about 2,600 gpm. It was not producing during October 4-9, 2010 and March 26-31, 2013. It is inconclusive as to whether or not the water-level trends in Well No. 26 were influenced by the pumping of geothermal water in Basalt Canyon.

Reliable transducer measurements for this well are available from December 11, 2006-December 13, 2007. The transducer in this well was removed on December 13, 2007 and reinstalled on April 1, 2008. The transducer was operational from April 1 to 16, 2008, and then was removed for the rest of the water year. The transducer was reinstalled in April 2009 and was operational through the end of the water year. The transducer started malfunctioning on February 4, 2010 and a new transducer was installed on August 16, 2010. The transducer was removed on July 25, 2012 and reinstalled on July 31, 2012. Reliable measurements are available after August 16, 2010, except for late July 2012 through late May 2013. The transducer was recalibrated in late May 2013.

Well No. 30 is located east of the Snow Creek Golf Course.

The shallowest level of record (452 feet) was in March 2007. Water levels in Well No. 30 rose 13 feet between June 2006 and May 2007, and then fell 14 feet between October 2007 and September 2009. The water level in this well fell about two feet during October-December, 2010, to the lowest level of record (468 feet) at the end of the period. The water level then rose about ten feet through May 2012, and then fell three feet through the end of September 2012. The water level rose slightly and was relatively stable through early 2013. The water level then fell about 14 feet by the end of the 2013 water year. During the 2014 water year, the water level fell another eight feet to the deepest level of record by the end of the water year. The water level in this well primarily responds to recharge. A transducer was installed in this well on June 25, 2008 and was operational through the end of the 2009 water year. The transducer malfunctioned in Well No. 30 for 2010 water year. A new transducer was installed in January 2011, and reliable measurements are available since then.

Figure 13 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, there were some water-level rises during this period due to recharge. Significant recharge

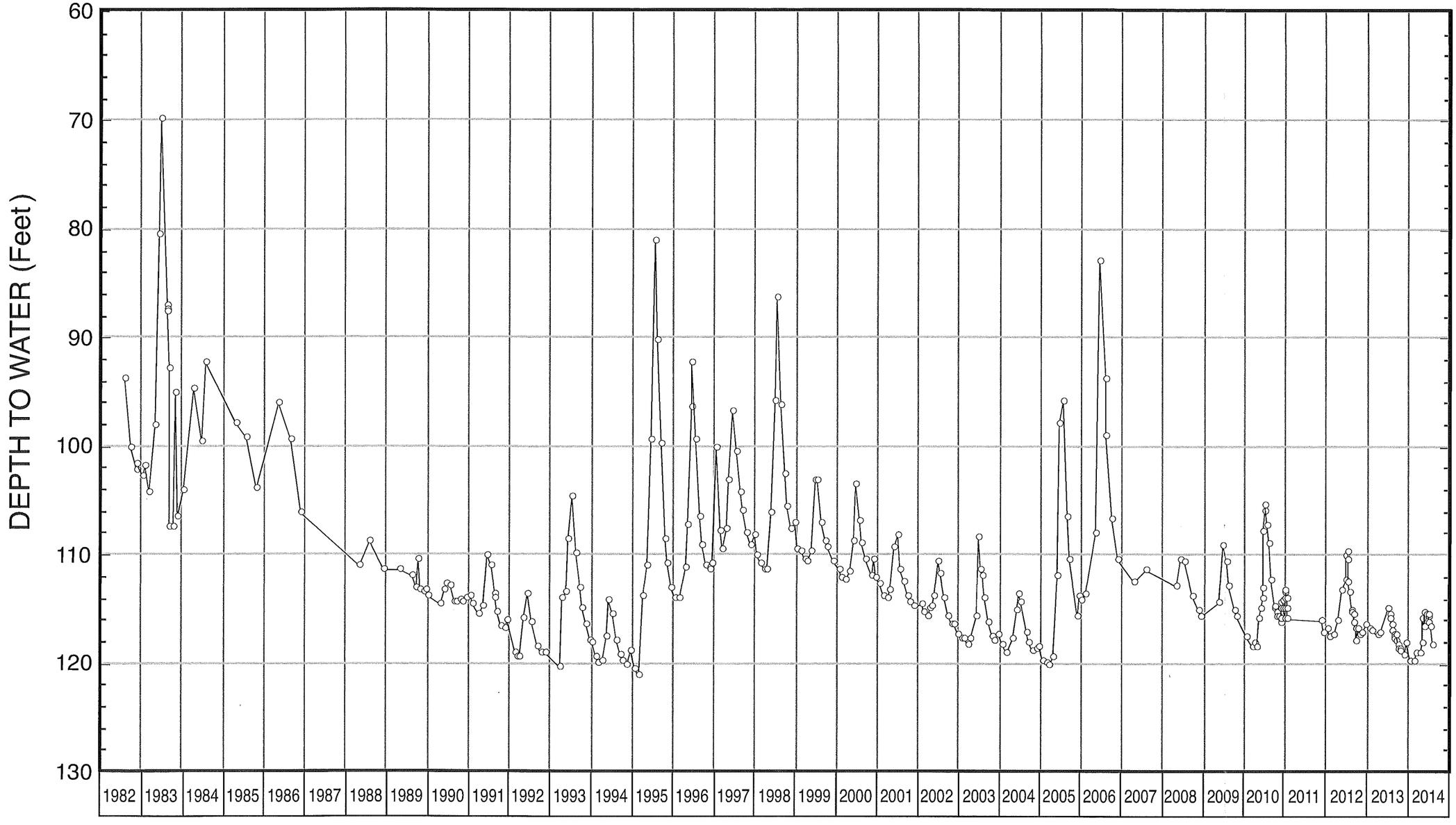

FIGURE 13 - WATER-LEVEL HYDROGRAPH FOR SC-1

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 six feet during July-December, 2008. The water level then rose about six feet through June 2009 and then fell about ten feet through February 2010. The water level then rose about 12 feet by July 2010, and then fell about 10 feet by September 2010. The water level in SC-1 was relatively stable between October 2010 and January 2011. The U.S. Geological Survey discontinued water-level measurements in Wells SC-1 and SC-2 after January 2011. The District resumed water-level measurements in Wells SC-1 and SC-2 in November 2011. The water level in SC-1 fell about two feet from November 2011 through March 2012. The water level then rose about eight feet by late

June 2012, and then fell eight feet by the end of September 2012. The water level was relatively stable through May 2013, then fell about four feet by the end of the 2013 water year. The water level was relatively stable between October 2013 and February 2014. The water level then rose about four feet by June 2014, then fell about three feet in August. No water-level measurements were available for September 2014 because the U.S. Geological Survey resumed water-level measurements in Wells SC-1 and SC-2 in September 2014. These water-level measurements won't be available until January 2015.

Figure 14 is a water-level hydrograph for SC-2, which taps groundwater in the deeper basalt near SC-1. Comparison of the hydrographs for SC-1 and SC-2 indicates that water levels in the two wells fluctuate similarly. However, the water-level rises are less in the deeper monitor well than in the shallower monitor well, as would be expected if the rises are mainly due to recharge 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 29 feet from June 2000-March 2005. The water level in this well rose about seven feet between March and July of 2005, then fell about four feet by November 2005. The water level rose about 18 feet by July 2007. The water level in

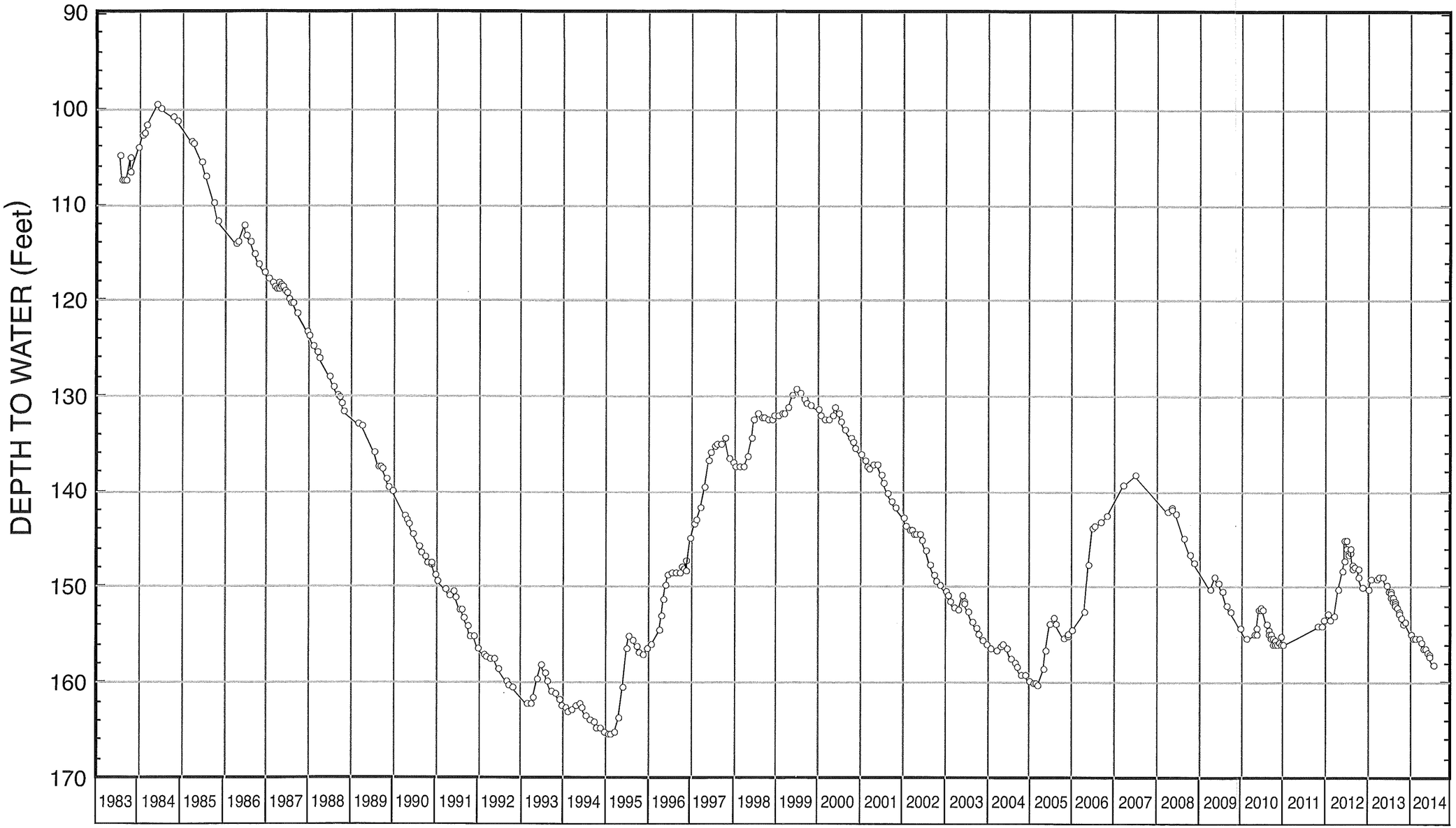

FIGURE 14 - WATER-LEVEL HYDROGRAPH FOR SC-2

this well fell about 12 feet during October 2007-May 2009. The water level then rose two feet by June 2009 and then fell seven feet by March 2010. The water level then rose about four feet by July 2010, and then fell about four feet by September 2010. The water level in SC-2 was relatively stable during October 2010-January 2011, after which measurements were temporarily discontinued. Measurements in SC-2 were restarted in November 2011 and the water level rose four feet between January 2011 and April 2012, and then rose eight feet by July 2012. The water level then fell about three feet by the end of September 2012. The water level fell slightly through November 2012 and was relatively stable through June 2013. The water level then fell about four feet by the end of the 2013 water year. The water level fell about six feet between September 2013 and August 2014. Measurements were not available for September 2014. Water-level variations in SC-1 and SC-2 are indicated to be due to climatic variations and possibly other factors, such as geothermal water pumping at Casa Diablo, and are not due to District well pumpage. This conclusion is primarily based on the water-level hydrographs for the easterly District wells and water-level elevation data (Figures 2 and 19).

Shallow Monitor Wells

A water-level hydrograph for Well No. 22 is provided in Figure 15. Pumpage of nearby Well No. 15 is also plotted on this

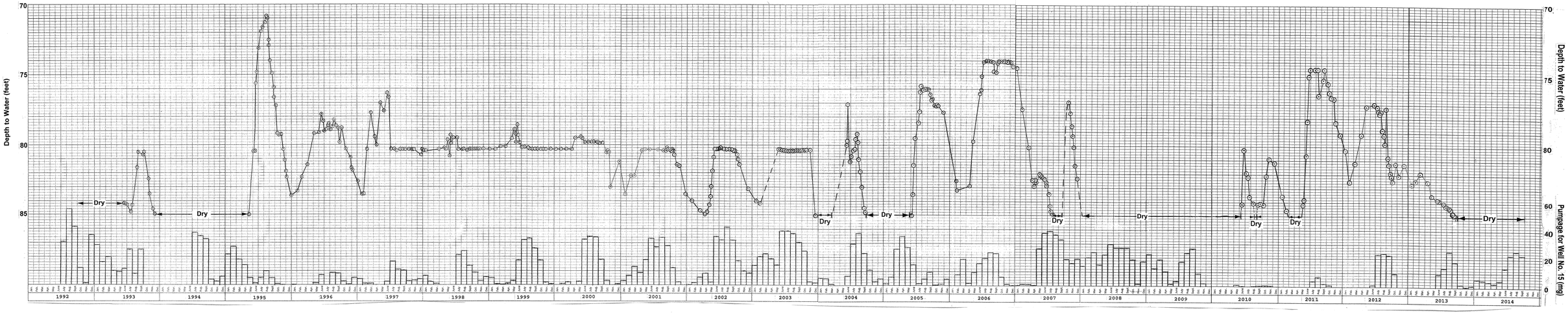

FIGURE 15-WATER-LEVEL HYDROGRAPH FOR WELL NO. 22 AND PUMPAGE FOR WELL NO. 15

figure. The water level in Well No. 22 is not related to pumpage of Well No. 15, which taps groundwater in the deeper consolidated rock. The water level in Well No. 22 responds primarily to recharge from Mammoth Creek streamflow (Figure 16). Well No. 22 was dry until June 17, 1993 and during 1994-early 1995. The shallowest water level of record in Well No. 22 (71 feet) 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. Well No. 22 was dry during early 2004 and late 2004 and early 2005. This was 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. Well No. 22 was dry in August 2007 and from January 2008 to June 2010. 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 water level rose almost five feet by June

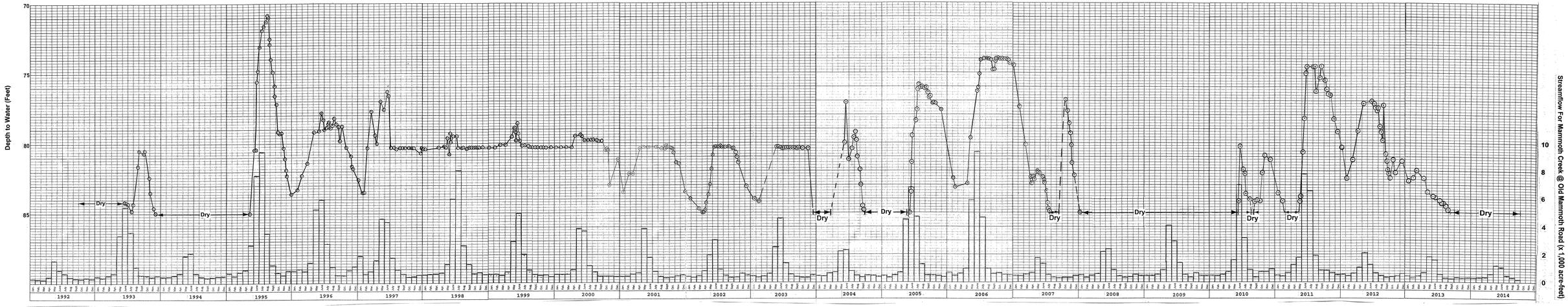

FIGURE 16-WATER-LEVEL HYDROGRAPH FOR WELL NO. 22 AND MAMMOTH CREEK STREAMFLOW

2010, then fell about four feet by September 2010. The water level rose three feet during October-November, 2010, then fell about four feet during November 2010-February 2011. The well was dry through May 2011. The water level then rose at least 11 feet through June 2011. The water level fell about two feet in August 2011, then rose two feet by October 2011. The water level then fell eight feet through February 2012, then rose more than five feet through June 2012. The water level then fell about five feet by the end of September 2012. The water level in Well No. 22 was relatively stable through March 2013 and then fell about three feet by the end of August 2013. The well was then dry for the rest of the 2013 water year and for the 2014 water year.

Water-level hydrographs based primarily on manual measurements for Well No. 23 and pumpage for nearby Well No. 1 are shown in Figure 17. Depth to water in Well No. 23 has ranged from about 5 to 18 feet during the period of record. The shallowest water levels were in 1993, 1995, 2005, 2006, 2010, and 2011. 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 18), and possibly from other local sources of recharge. The deepest

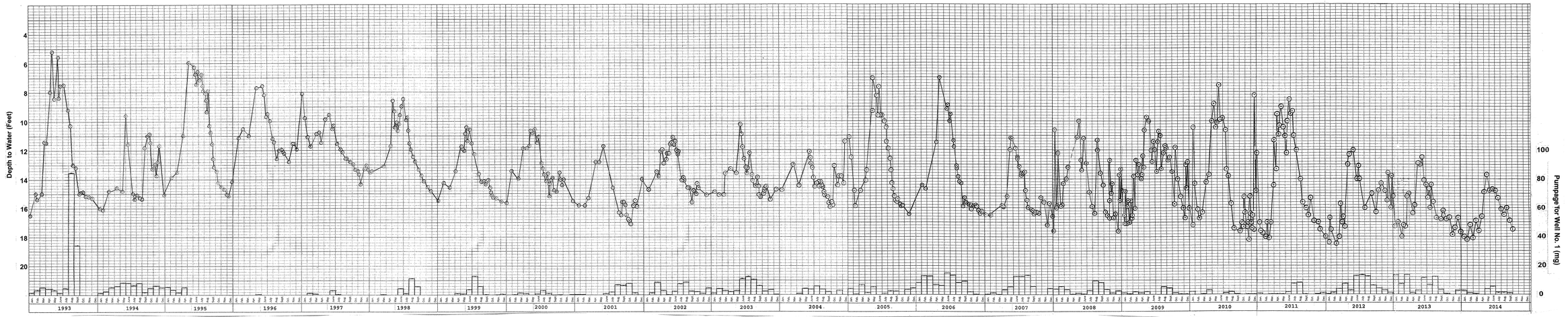

FIGURE 17-WATER-LEVEL HYDROGRAPH FOR WELL NO. 23 AND PUMPAGE FOR WELL NO. 1

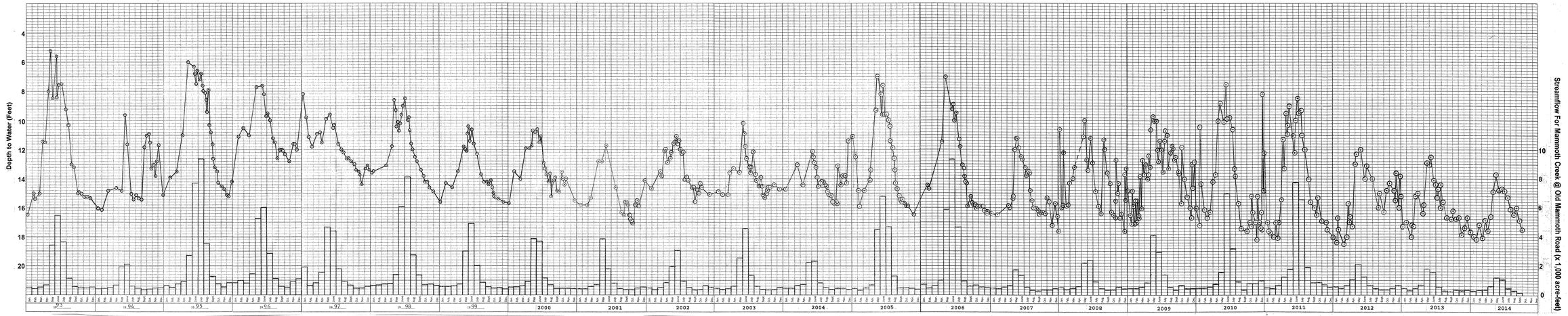

FIGURE 18-WATER-LEVEL HYDROGRAPH FOR WELL NO. 23 AND MAMMOTH CREEK STREAMFLOW

water levels in Well No. 23 were during late 2010 and early 2011, late 2011 and early 2012, and late 2013 and early 2014. 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. Transducer measurements are not available for the 2006 water year. Reliable transducer records for Well No. 23 are available from May 2007-March 26, 2008. The transducer was non-operational from March 26-May 13, 2008. Reliable transducer records are available for the rest of the 2008 water year, and for the 2009-2014 water years.

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 Well No. 4M rose significantly between early 1995 and early 1998, due to significant surface water flow in the meadow. In May 1998, the water levels in this well were the shallowest since 1988. The annual shallowest water level in this well fell about 20 feet between 1998 and 2004. In 2004, depth to water in this well was about the same as in 1989. However, in 2005, the shallowest annual water level was 24 feet deep, shallower than in 2004, and near the 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. The water level rose five feet through July 2009, then fell about four feet by January 2010. The water level then rose about eight and a half feet by June 2010. The water level then fell about five and a half feet by November 2010, then rose 19 feet through May 2011. The water level then fell about 16 feet through February 2012, then rose about seven feet by June 2012. The water level then fell about four feet by the end of September 2012. The water level then fell another eight feet by the end of the 2013 water year. Between September 2013 and April 2014, the water level fell about five feet. The water level in Well No. 4M was then stable through the end of the water year. These stable levels were the deepest levels in Well No. 4M since 2005. Depth to water fluctuations in this well have followed patterns of Bodle Ditch flows, rising during periods when flows were present in the ditch, and falling when there were no flows.

Well No. 5M is located about one-half mile east of Well No. 1. 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. The water level rose five feet through May 2009, then fell four and a half feet through the end of September 2009. The water level rose gradually through March 2010 then rose about five and a half feet by May 2010. The water level then fell about 2.7 feet by September 2010, and rose about five feet during October 2010-May 2011. The water level then fell about five feet through the end of September 2011. The water level rose two feet through May 2012, then fell about two feet through the end of September 2012. The water level then rose more than two feet by April 2013, then fell almost three feet by September 2013. The transducer in this well was not operative from October 2013 through May 2014. Between June 2014 and the end of the 2014 water year, the water level fell about one foot. The water-level changes in this well have been due to

the presence or absence of recharge. Reliable transducer measurements for this well are available from October 2008 through September 2013 and after May 29, 2014.

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-January 2011. The water level rose at least 18 feet through May 2011 then fell 13 feet through July 2011. The water level then rose five feet through September 2011. The water level then fell about seven feet and the well became dry from January to April 2012. The

water level rose about nine feet through June 2012, then fell during the rest of the water year until the well became dry. The well remained dry during the 2014 water year.

Well No. 11M is located in the southwest part of the meadow area near the Bodle Ditch. Water levels in this well have had seasonal fluctuations that corresponded to flows in the ditch. The shallowest water levels have generally been in June-July. Water levels gradually declined during 1989-92, but rose significantly after 1992. The water level began to rise significantly in April 1996, and the shallowest level yet measured (about four feet deep) was in June 1996. The shallowest annual water level for Well No. 11M fell about nine feet between 1998 and 2001, due to decreased recharge. However, the shallowest water level in this well in 2002 was higher than in 2001, and near the shallowest 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.

The water level gradually rose eight feet through June 2009, then rose ten feet by July 2009. The water level then fell 14 feet through November 2009. The water level then rose about 17 feet through June 2010. The water level then fell about 12 feet by September 2010. The water level in this well then rose 10 feet through June 2011, then fell about 16 feet through April 2012. The water level then rose about nine feet through June 2012, then fell more than 13 feet through the end of September 2012. The water level then fell slightly through March 2013, and then rose about eight feet by the end of June 2013. The water level then fell about eight feet through the end of the 2013 water year. Between September 2013 and February 2014, the water level fell about four feet. The water level was then stable through May 2014, then fell three feet by the end of the 2014 water year. A transducer was installed in this well for the first time in May 9, 2012 and reliable transducer records are available through the end of the 2014 water year. 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 (4.5 feet) 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. The well was dry from September 2008 through June 2009. The water level then rose 21 feet through July 2009, then fell about 16 feet through November 2009. The water level then rose about 17 feet by June 2010. The water level then fell about 12 feet through February 2011. The water level in Well No. 12M then rose 12 feet through June 2011, and then fell about 11 feet through May 2012. The water level then rose nine feet through June 2012, then fell eight feet by the end of July 2012. The top of the well was vandalized and no records are available for the 2013-2014 water year. The long-term water-level trends for this well are due to recharge.

Water-level hydrographs for Wells No. 27, 28, and 29 are pro-

vided in Appendix D. Well No. 27 is located east of Well No. 20. Depth to water in Well No. 27 has ranged from about 32 to 60 feet. The water level has risen in the spring and fallen during the summer and fall. The water level was about 48 to 50 feet deep from September 2009 to April 2010, then rose to 32 feet in June 2010. The water level fell about four feet during October-December, 2010, then rose about 21 feet to the shallowest level of record (28 feet) by May 2011. The water level then fell about 20 feet through March 2012, then rose about seven feet through May 2012. The water level then fell about nine feet through the end of September 2012. The water level fell about five feet through November 2012 and then was relatively stable through February 2013. The water level then rose about 14 feet by April 2013, and then fell about 15 feet by the end of the 2013 water year. During the 2014 water year, the water level fell about 16 feet, to the deepest level of record at the end of the water year. Overall, the water level in this well has been stable or has slightly risen. Recharge appears to be the primary influence on water levels in this well. A transducer was installed in Well No. 27 in February 2011, and reliable measurements are available since that time.

Well No. 28 is located south of the Old Mammoth Road stream

The water level in this well rose about 11 feet during June-October, 2007, then fell about 35 feet through March 2010, to the lowest level of record (98 feet). The water level then rose about six feet through September 2010. The water level in Well No. 29 fell two feet during October 2010-February 2011, then rose 23 feet through September 2011. The water level then fell about 11 feet through March 2012, then rose about seven feet through May 2012. The water level then fell five feet by the end of September 2012. The water level fell about 12 feet during the 2013 water year. The water level in this well fell about four feet between September 2013 and February 2014, and the well was dry thereafter. The water-level changes in this well are due to the presence or absence of recharge. In summary, the water levels in most of the shallow monitor wells generally have risen during wet periods and fallen during dry periods. This is due to varying amounts of recharge during these periods.

Water-Level Elevation Contours

Figure 19 shows water-level elevation contours for early September 2014. The hydrologic boundary is shown north of Wells No. 1 and 5A and south of Wells No. 16 and 25. This boundary

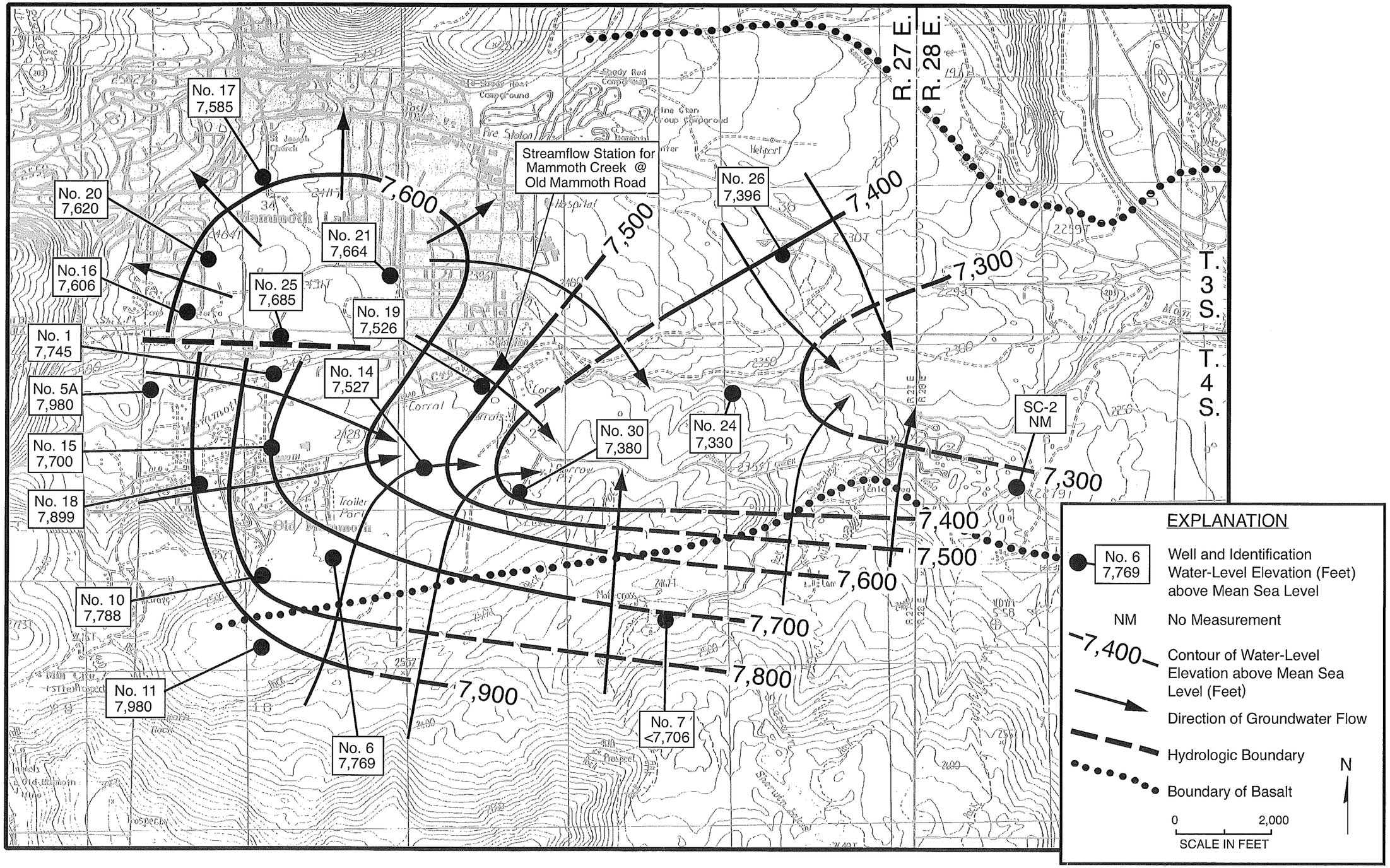

FIGURE 19 - WATER-LEVEL ELEVATIONS IN SEPTEMBER 2014

is believed to be present only west of a line connecting Wells No. 14M and 21. A cone of depression was evidently due to pumping of District Wells No. 6, 10, 15, and 17. This cone of depression did not extend east of Well No. 19. The overall direction of groundwater flow in early-September 2014 was similar to that shown in the previous annual reports. This map shows only the horizontal component of groundwater flow in the basalt and interbedded glacial till. Other evidence (i.e., water levels in SC-1 and SC-2) indicates that there is also significant downward flow of groundwater in most of the area.

CHEMICAL QUALITY AND TEMPERATURE OF GROUNDWATER

The results of chemical analyses and temperatures of water for the supply wells during the 2014 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 2007-14 water years. 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 2007-14 water years. 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 some of the wells tapping consolidated rock north of the hydrologic boundary (ie, Well No. 17), 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 periodic temporary increases for temperature and electrical conductivity during 1996-2014. Water from Wells No. 16, 17, 18, and 20 showed an overall decrease in pH during 1996-2009. These are the westernmost District supply wells. Low pH groundwater is known to be present beneath parts of Mammoth Mountain. During 2011-14, the pH values in water from these wells usually ranged from about 6.4 to 7.0, similar to the range in the late 1990's.

MAMMOTH CREEK STREAMFLOW

Records of streamflow at the outlet from Twin Lakes and the

Old Mammoth Road crossing during the 2014 water year are provided in Appendix F. The mean monthly flow at the Old Mammoth Road crossing ranged from 3.0 cfs in September 2013 to 52 cfs in May 2013.

Average daily flows for the upstream (Twin Lakes) and downstream (Old Mammoth Road) stations during the 2014 water year are plotted in Appendix F. A comparison of these daily flows indicates that the streamflow at the Old Mammoth Road crossing generally equaled or exceeded that of the Twin Lakes outflow, except during part of October and November 2013, part of January and February 2014, and during July-September 2014. During part of October and November 2013 the downstream decrease in streamflow was usually less than about 2.5 cfs. During part of January and February, 2013, the downstream decrease in streamflow was usually was 2 cfs or less. During July-September 2014, the downstream decrease was usually less than about 4 cfs.

More information on the possible effect of District pumping can be obtained by evaluating daily records. Figures 20, 21, and 22 show differences in daily streamflow and total pumpage from District wells for the three periods when the streamflow was lower at the Old Mammoth Road Station. Figure 20 shows the comparison for October-December, 2013. In October there was an apparent correlation between decreased District pumpage and the downstream decrease in streamflow. However, during November and December there was little such cor-

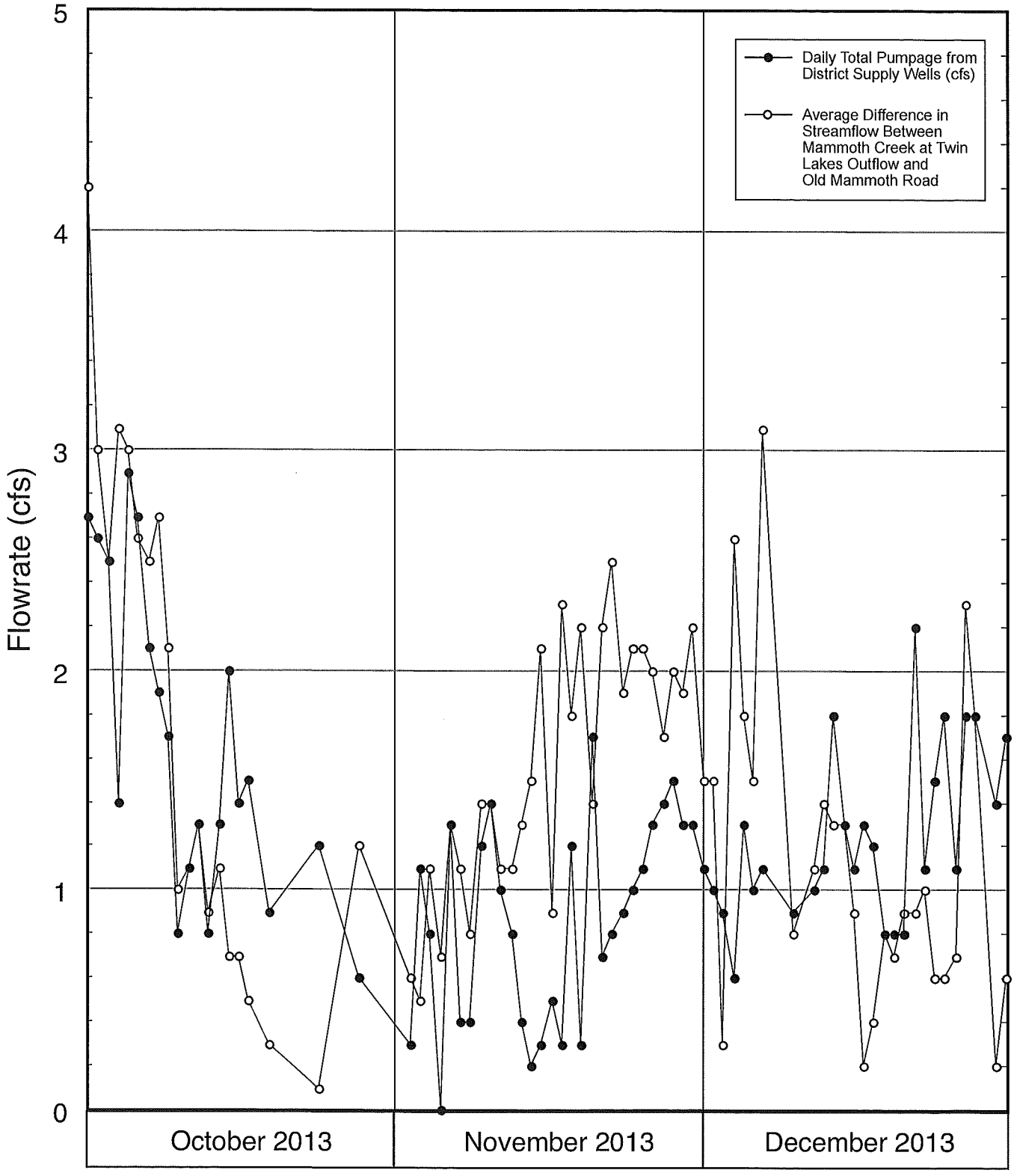

FIGURE 20 - RELATIONSHIP BETWEEN DIFFERENCE IN MAMMOTH CREEK STREAMFLOW AT TWIN LAKES OUTFLOW AND OLD MAMMOTH ROAD, AND DISTRICT SUPPLY WELL PUMPAGE (OCTOBER-DECEMBER 2013)

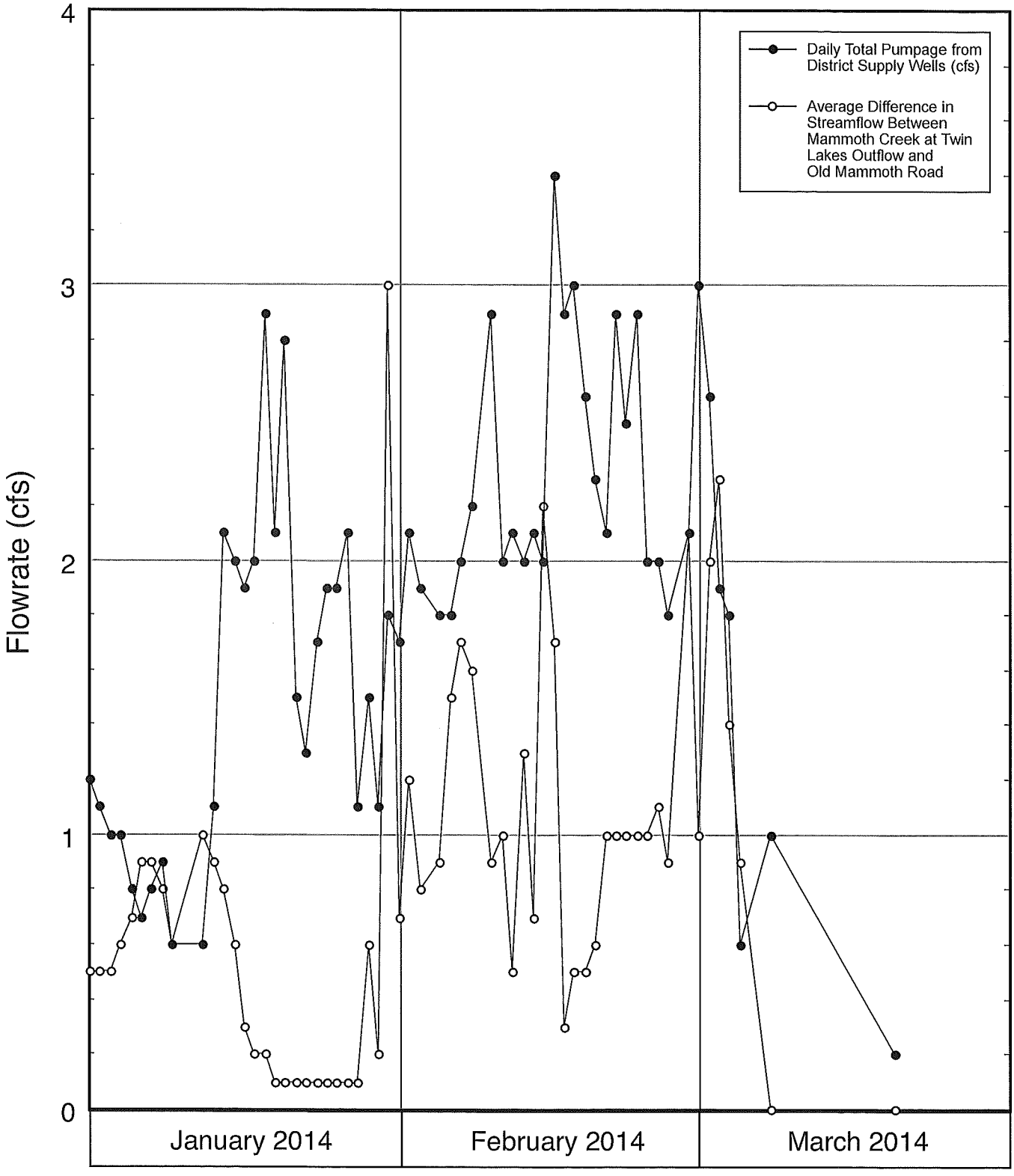

FIGURE 21 - RELATIONSHIP BETWEEN DIFFERENCE IN MAMMOTH CREEK STREAMFLOW AT TWIN LAKES OUTFLOW AND OLD MAMMOTH ROAD, AND DISTRICT SUPPLY WELL PUMPAGE (JANUARY-MARCH 2014)

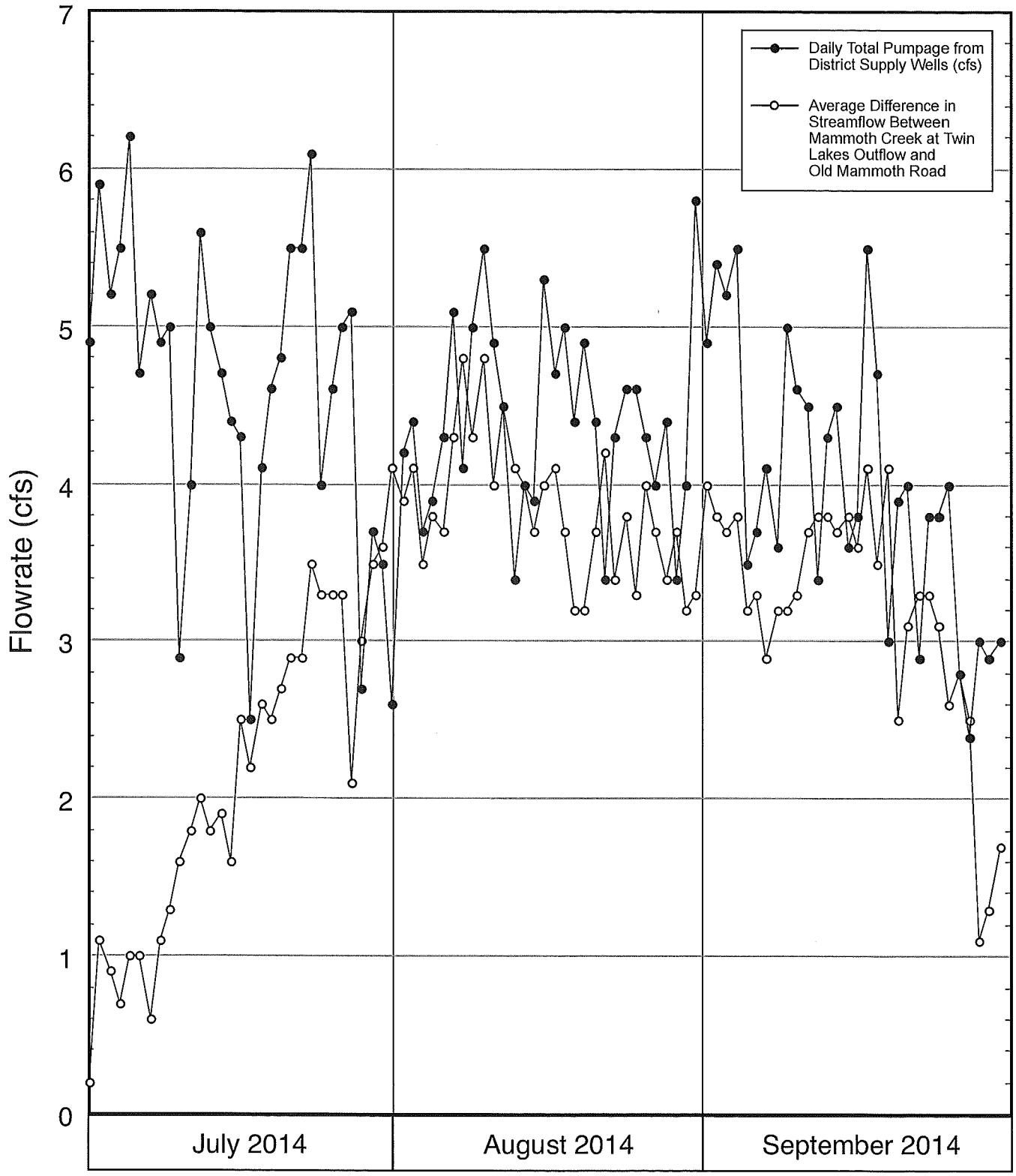

FIGURE 22 - RELATIONSHIP BETWEEN DIFFERENCE IN MAMMOTH CREEK STREAMFLOW AT TWIN LAKES OUTFLOW AND OLD MAMMOTH ROAD, AND DISTRICT SUPPLY WELL PUMPAGE (JULY-SEPTEMBER 2014)

relation.

Figure 21 shows the comparison for January-March, 2014. There was thus no correlation between District well pumpage and the downstream decrease in streamflow during this period. Instead, an inverse relationship was indicated, that is, when district pumpage was greater, the decrease in downstream streamflow was less.

Figure 22 shows the comparison for July-September, 2014. During this period District pumping gradually decreased, but the difference in streamflow increased through early August, then was relatively constant through mid-September, then decreased. Thus there was no correlation of District pumpage with the decreases in downstream streamflow.

Thus for the preponderance of data, there was no correlation between District pumpage and the downstream decreases in streamflow. The most likely reason for the downstream decreases in streamflow is less groundwater inflow to Mammoth Creek due to drought conditions, which results in lower groundwater levels to the sides and upgradient of the creek. 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). The results of monitoring changes in streamflow and District pumpage have shown no effect of this pumpage on streamflow.

VALENTINE RESERVE SPRINGFLOW

Commencing in 2001, flow measurements at the Valentine Reserve were extended to another spring, which had a considerably larger flow than the previously monitored spring. Longer records were available for the previously monitored spring. However, no springflow records have been provided since 2001. Figure 23 shows flow of the previously monitored spring (1993-2001) and Mammoth Creek streamflow at Old Mammoth Road (1993-2014). 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.

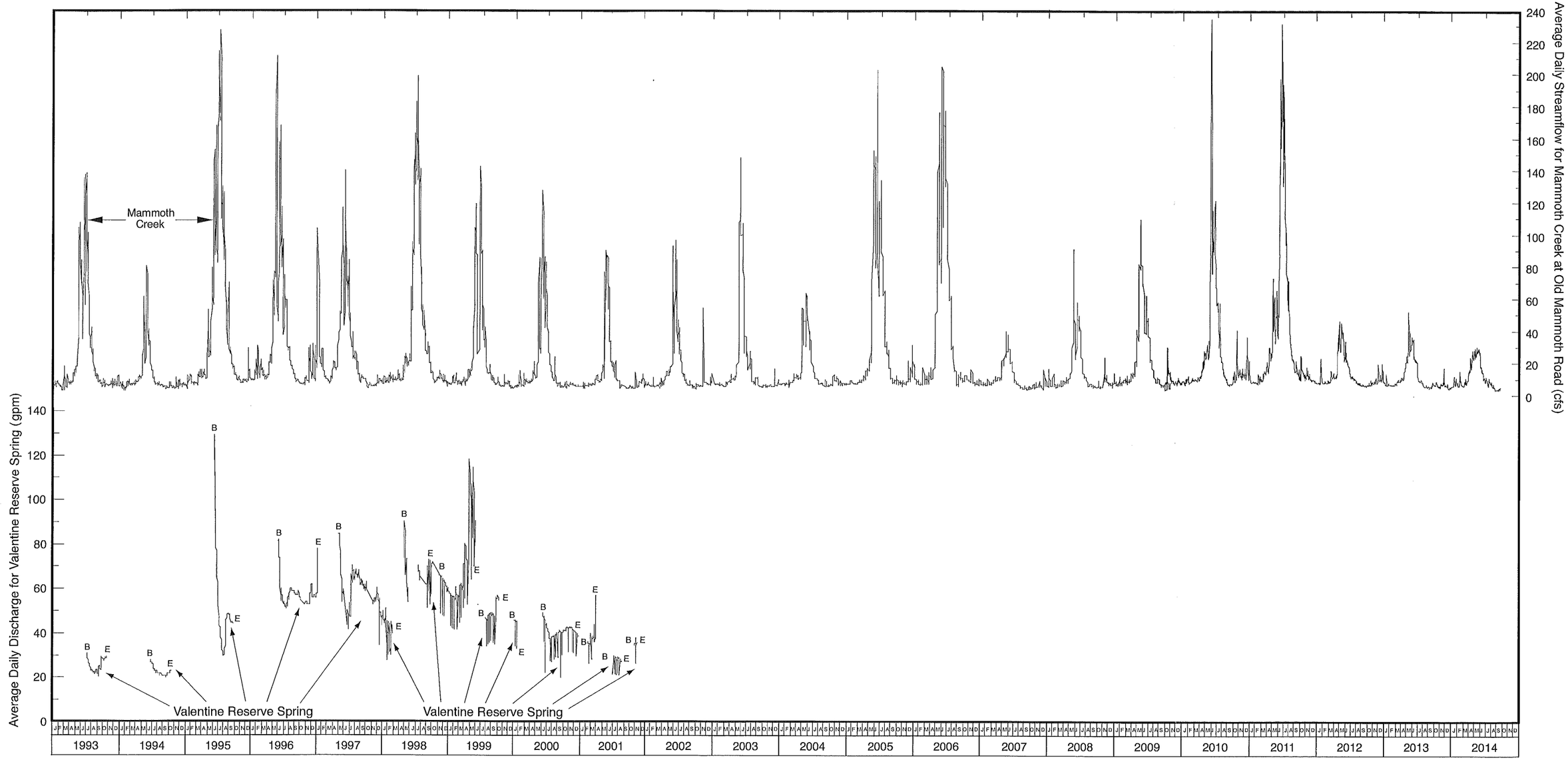

FIGURE 23 - FLOW FOR VALENTINE SPRING (1993-2001) AND MAMMOTH CREEK STREAMFLOW (1993-2014)

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 declining water levels during the 2014 water year. Water-level hydrographs for most of the District supply wells (tapping the basalt and interbedded glacial fill) indicated declining water levels during the 2014 water year. There were significant water-level declines in Wells No. 6 and 10, which provided more than 50 percent of the District pumpage during the water year. These declines were primarily associated with the pumpage of these. Water levels in most wells tapping consolidated rocks in the area east of the District well field fell during the 2014 water year, apparently due to the continuing dry period of the past three years.

The water-level elevation contour map for September 2014 confirms that the cone of depression due to pumping of District wells is localized, and did not extend east to Well No. 24. Because the water levels in the consolidated rock in the well field are well below the channel of Mammoth Creek, there has been 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), or on the flow

of the Hot Creek headsprings due to pumping of the District supply wells.

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A
WEST

A'
EAST

ELEVATION (FEET) ABOVE MEAN SEA LEVEL

8,500
8,400
8,300
8,200
8,100
8,000
7,900
7,800
7,700
7,600
7,500
7,400
7,300
7,200
7,100

Lake Mary Road
Springs/Seeps
Well No. 5A
Well No. 5M
Well No. 1
Well No. 23
Well No. 3 (Destroyed)
Well No. 2 (Destroyed)
Mammoth Creek
Well No. 19
Mammoth Creek Seismic Profile
Well No. 24
Seismic Profile
Sherwin Creek
T. 4 S./R. 27 E.
T. 4 S./R. 28 E.
SC-2
SC-1

T.D. 80
T.D. 65
T.D. 360
T.D. 286
T.D. 382
T.D. 600
T.D. 700
T.D. 450
T.D. 182
T.D. 230

EXPLANATION

Glacial Till
Basalt
Well No.23 — Well and Identification
Water Level
Perforated Interval — Scoria
Fractured Volcanic Rock
T.D. 65 — Total Depth (Feet)
Base of Upper Glacial Till and Alluvial Deposits
Bed of Mammoth Creek
Water Level in Volcanic Rock (September 2014)
0 500 1,000
Horizontal Scale (Feet)

FIGURE 2 - SUBSURFACE GEOLOGIC CROSS SECTION A - A'

APPENDIX A

PUMPAGE AND WATER-LEVEL DATA FOR DISTRICT SUPPLY WELLS

MAMMOTH COMMUNITY WATER DISTRICT
TOTAL ANNUAL PUMPAGE
HISTORIC

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total MG	Total ACFT
1983-1984	0.00	0.03	1.99	2.14	0.01	3.46	0.01	3.43	7.19	17.97	1.59	6.32	44.11	135.31
1984-1985	0.00	0.74	8.20	7.11	1.82	6.38	4.36	11.57	8.45	12.75	20.10	12.40	93.87	287.94
1985-1986	5.82	4.30	7.02	4.63	3.67	3.22	0.87	5.75	9.72	13.71	21.64	3.31	83.65	256.60
1986-1987	0.00	9.26	10.35	12.95	9.09	12.89	13.49	14.35	22.18	25.60	22.79	18.53	171.48	526.01
1987-1988	7.39	8.92	15.23	15.32	17.67	18.97	7.78	12.98	18.95	15.85	16.73	17.53	173.32	531.66
1988-1989	9.43	19.20	23.44	28.78	23.16	27.01	2.03	2.98	7.77	62.73	55.23	45.08	306.83	941.19
1989-1990	15.12	18.66	23.64	16.63	18.18	12.33	23.57	13.99	38.57	45.93	58.80	62.66	348.07	1067.70
1990-1991	31.26	23.09	27.27	55.85	43.16	0.00	32.07	30.84	15.31	39.06	58.66	57.97	414.54	1271.59
1991-1992	32.15	53.14	26.23	26.06	39.35	36.29	48.05	24.80	52.15	96.86	134.69	100.77	670.52	2056.82
1992-1993	85.02	51.46	81.72	62.40	75.59	37.44	42.58	28.97	73.03	78.32	77.67	59.25	753.44	2311.17
1993-1994	14.95	0.48	7.73	24.76	9.84	26.92	21.09	29.36	40.53	79.60	103.25	64.57	423.07	1297.77
1994-1995	16.59	11.26	32.43	37.27	32.11	35.27	32.79	19.97	18.98	45.75	77.74	43.02	403.17	1236.71
1995-1996	6.01	4.02	16.36	12.16	12.80	11.15	4.61	10.57	38.20	58.80	74.64	52.67	301.99	926.35
1996-1997	27.29	7.57	19.26	14.69	12.66	12.04	11.41	17.65	28.78	66.08	78.57	46.42	342.40	1050.31
1997-1998	13.72	4.77	13.56	8.74	8.25	9.91	6.47	2.00	22.27	75.80	80.22	38.06	283.78	870.49
1998-1999	14.58	5.69	12.75	12.36	5.53	5.59	5.67	18.73	56.93	80.67	74.96	50.60	344.05	1055.37
1999-2000	24.72	3.80	12.25	15.85	7.56	9.33	5.37	32.53	72.28	101.80	91.34	55.90	432.74	1327.42
2000-2001	8.99	3.69	15.36	16.91	25.45	19.52	48.09	50.41	82.94	88.02	158.63	135.89	653.90	2005.83
2001-2002	78.82	42.42	38.59	48.01	55.96	77.66	58.41	44.16	96.84	106.65	134.88	111.35	893.74	2741.55
2002-2003	71.15	41.84	38.96	51.01	56.78	62.34	48.38	45.89	122.49	114.56	125.63	91.19	870.22	2669.37
2003-2004	63.26	10.10	27.05	36.09	33.08	20.98	5.63	45.38	63.56	93.19	117.67	93.15	609.14	1868.51
2004-2005	45.71	15.22	57.26	57.42	56.22	74.21	63.50	60.60	73.84	112.16	97.98	58.76	772.87	2370.75
2005-2006	10.69	6.61	15.81	10.80	23.47	32.80	14.69	19.52	48.24	60.61	67.68	54.78	365.68	1121.72
2006-2007	12.73	1.96	0.30	1.47	5.16	17.36	8.58	59.02	116.66	173.63	155.84	122.96	675.65	2072.55
2007-2008	46.40	31.47	52.03	59.72	50.50	54.28	39.30	47.34	65.41	76.24	132.64	125.00	780.33	2393.66
2008-2009	57.72	5.29	42.39	45.27	15.75	52.59	35.18	20.82	26.48	71.10	90.82	98.79	562.18	1724.49
2009-2010	25.23	17.68	9.67	21.95	20.10	16.45	46.32	33.97	29.98	67.32	56.91	47.67	393.25	1206.29
2010-2011	5.10	3.52	7.70	5.65	1.71	2.90	2.01	1.51	16.42	48.60	35.27	11.84	142.23	436.27
2011-2012	6.44	0.85	3.30	0.78	1.61	6.33	14.38	24.35	46.48	132.18	141.42	120.93	499.05	1530.83
2012-2013	54.50	14.93	2.73	38.30	41.52	24.30	13.90	15.46	74.48	98.37	100.89	76.32	555.69	1704.56
2013-2014	27.57	16.28	24.75	28.79	40.11	20.66	15.35	40.82	81.66	93.73	87.05	76.95	553.70	1698.47
Mean	26.40	14.14	21.78	25.16	24.12	24.21	21.80	25.47	47.64	72.70	82.32	63.25	448.99	1377.27
Maximum	85.02	53.14	81.72	62.40	75.59	77.66	63.50	60.60	122.49	173.63	158.63	135.89	893.74	2741.55
Minimum	0.00	0.03	0.30	0.78	0.01	0.00	0.01	1.51	7.19	12.75	1.59	3.31	44.11	135.31
Ave MGD	0.85	0.47	0.70	0.81	0.86	0.78	0.73	0.82	1.59	2.35	2.66	2.11		

MAMMOTH COMMUNITY WATER DISTRICT

TOTAL PUMPAGE

Well 1

2013 - 2014

MG Totals												
	2013			2014								
Row Labels	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.02	0.00	0.00	0.51	0.13	0.00	0.00	0.07	0.00	0.27	0.30	0.09
2	0.00	0.00	0.00	0.47	0.12	0.00	0.00	0.10	0.16	0.00	0.19	0.13
3	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.00	0.33	0.12	0.19	0.00
4	0.00	0.00	0.00	0.42	0.20	0.00	0.00	0.15	0.29	0.00	0.00	0.12
5	0.04	0.00	0.00	0.32	0.10	0.00	0.00	0.12	0.31	0.00	0.00	0.00
6	0.00	0.04	0.00	0.17	0.06	0.00	0.00	0.11	0.22	0.00	0.00	0.00
7	0.00	0.00	0.00	0.08	0.07	0.00	0.00	0.03	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.22	0.00	0.00	0.00
9	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.03	0.37	0.00	0.00	0.00
10	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48	0.00	0.00	0.01
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.48	0.00	0.00	0.00
13	0.00	0.01	0.00	0.07	0.00	0.02	0.00	0.10	0.27	0.00	0.00	0.00
14	0.00	0.00	0.00	0.01	0.00	0.06	0.00	0.00	0.19	0.01	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.32	0.00	0.00	0.20
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.31	0.01	0.09	0.00
17	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.07	0.10
19	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.27	0.00	0.00	0.02	0.00
20	0.00	0.00	0.00	0.00	0.05	0.04	0.00	0.13	0.00	0.00	0.06	0.00
21	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.08	0.00	0.00	0.11	0.00
22	0.00	0.00	0.01	0.08	0.00	0.00	0.00	0.07	0.00	0.00	0.03	0.09
23	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.04	0.16
24	0.00	0.00	0.43	0.00	0.00	0.00	0.01	0.24	0.00	0.04	0.11	0.06
25	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.48	0.05	0.00	0.13	0.05
26	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.45	0.04	0.02	0.10	0.00
27	0.00	0.00	0.23	0.00	0.00	0.01	0.00	0.51	0.09	0.08	0.00	0.04
28	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.06	0.26	0.05	0.12	0.11
29	0.00	0.00	0.50	0.00		0.00	0.00	0.29	0.37	0.16	0.00	0.00
30	0.00	0.00	0.33	0.00		0.00	0.00	0.00	0.28	0.49	0.00	0.00
31	0.00		0.23	0.00		0.00		0.00		0.36	0.02	
Grand Total	0.33	0.05	2.74	2.63	0.85	0.14	0.01	3.98	5.85	1.61	1.59	1.15

MAMMOTH COMMUNITY WATER DISTRICT

TOTAL PUMPAGE

Well 6

2013 - 2014

MG Totals												
	2013			2014								
Row Labels	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.83	0.25	0.54	0.24	0.57	0.16	0.01	0.00	0.83	0.76	0.55	0.59
2	0.85	0.21	0.66	0.23	0.58	0.17	0.00	0.00	0.63	0.74	0.68	0.60
3	0.83	0.40	0.37	0.22	0.64	0.00	0.01	0.00	0.64	0.74	0.61	0.60
4	0.73	0.27	0.41	0.24	0.56	0.07	0.00	0.00	0.64	0.74	0.24	0.38
5	0.82	0.00	0.57	0.17	0.50	0.00	0.01	0.00	0.63	0.73	0.15	0.06
6	0.83	0.54	0.62	0.14	0.40	0.00	0.00	0.00	0.64	0.72	0.52	0.00
7	0.84	0.26	0.62	0.40	0.27	0.00	0.00	0.00	0.81	0.55	0.70	0.14
8	0.73	0.27	0.55	0.42	0.39	0.50	0.22	0.00	0.80	0.59	0.68	0.01
9	0.80	0.40	0.40	0.33	0.70	0.32	0.01	0.00	0.62	0.56	0.65	0.07
10	0.22	0.64	0.55	0.48	0.38	0.60	0.15	0.00	0.62	0.61	0.64	0.16
11	0.46	0.45	0.13	0.64	0.37	0.50	0.20	0.00	0.63	0.69	0.63	0.13
12	0.44	0.33	0.52	0.39	0.42	0.33	0.17	0.15	0.62	0.72	0.63	0.00
13	0.46	0.16	0.57	0.38	0.46	0.43	0.22	0.25	0.62	0.71	0.42	0.07
14	0.71	0.13	0.71	0.82	0.14	0.52	0.05	0.57	0.62	0.69	0.27	0.18
15	0.57	0.17	0.66	0.72	0.26	0.60	0.01	0.48	0.61	0.71	0.11	0.17
16	0.33	0.34	0.49	0.55	0.20	0.54	0.00	0.41	0.60	0.64	0.33	0.34
17	0.49	0.20	0.74	0.63	0.22	0.50	0.00	0.72	0.62	0.71	0.35	0.11
18	0.23	0.75	0.65	0.76	0.22	0.53	0.01	0.83	0.63	0.32	0.22	0.08
19	0.40	0.15	0.51	0.75	0.14	0.50	0.00	0.55	0.71	0.74	0.65	0.02
20	0.57	0.56	0.07	0.82	0.16	0.10	0.01	0.26	0.62	0.70	0.66	0.09
21	0.69	0.33	0.01	0.34	0.24	0.46	0.22	0.37	0.79	0.69	0.64	0.48
22	0.49	0.48	0.34	0.48	0.19	0.45	0.08	0.50	0.78	0.67	0.63	0.00
23	0.43	0.59	0.05	0.64	0.18	0.80	0.01	0.43	0.65	0.68	0.62	0.08
24	0.40	0.62	0.08	0.61	0.13	0.45	0.03	0.88	0.59	0.67	0.62	0.08
25	0.43	0.50	0.25	0.64	0.00	0.30	0.00	0.86	0.61	0.67	0.62	0.26
26	0.48	0.56	0.15	0.60	0.11	0.35	0.00	0.82	0.55	0.67	0.62	0.26
27	0.43	0.54	0.37	0.48	0.13	0.04	0.00	0.67	0.56	0.66	0.61	0.14
28	0.40	0.63	0.26	0.55	0.06	0.00	0.00	0.60	0.60	0.66	0.61	0.30
29	0.36	0.61	0.31	0.55		0.01	0.00	0.68	0.78	0.51	0.61	0.20
30	0.42	0.63	0.19	0.61		0.00	0.00	0.68	0.61	0.36	0.61	0.00
31	0.43		0.54	0.57		0.03		0.76		0.40	0.60	
Grand Total	17.10	11.95	12.85	15.38	8.60	9.24	1.41	11.51	19.63	20.04	16.48	5.62

MAMMOTH COMMUNITY WATER DISTRICT

TOTAL PUMPAGE

Well 10 2013 - 2014

MG Totals												
	2013			2014								
Row Labels	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.52	0.01	0.20	0.01	0.00	0.00	0.54	0.00	0.92	0.86	0.43	0.57
2	0.55	0.00	0.01	0.00	0.16	0.00	0.59	0.00	0.69	0.84	0.84	0.56
3	0.64	0.31	0.21	0.00	0.01	0.00	0.53	0.00	0.69	0.84	0.84	0.26
4	0.15	0.24	0.00	0.01	0.00	0.00	0.58	0.00	0.69	0.86	0.66	0.62
5	0.66	0.00	0.27	0.00	0.29	0.00	0.63	0.00	0.67	0.84	0.61	0.66
6	0.65	0.25	0.04	0.12	0.69	0.00	0.57	0.09	0.69	0.83	0.78	0.60
7	0.38	0.00	0.08	0.06	0.48	0.00	0.45	0.38	0.90	0.62	0.84	0.67
8	0.40	0.01	0.25	0.16	0.72	0.01	0.26	0.45	0.89	0.64	0.85	0.66
9	0.30	0.37	0.17	0.00	0.92	0.11	0.47	0.34	0.67	0.61	0.83	0.84
10	0.01	0.23	0.06	0.01	0.63	0.27	0.24	0.52	0.66	0.64	0.82	0.82
11	0.22	0.19	0.05	0.00	0.74	0.08	0.24	0.53	0.67	0.01	0.76	0.83
12	0.01	0.05	0.11	0.00	0.68	0.01	0.22	0.42	0.66	0.26	0.89	0.48
13	0.07	0.06	0.17	0.20	0.77	0.00	0.26	0.30	0.66	0.48	0.81	0.83
14	0.13	0.00	0.26	0.13	0.76	0.00	0.26	0.58	0.67	0.33	0.71	0.80
15	0.34	0.00	0.16	0.32	0.69	0.00	0.57	0.50	0.65	0.47	0.62	0.40
16	0.33	0.00	0.25	0.41	0.63	0.01	0.42	0.43	0.65	0.21	0.85	0.65
17	0.49	0.00	0.09	0.52	0.75	0.00	0.58	0.76	0.67	0.18	0.84	0.84
18	0.23	0.01	0.01	0.72	0.67	0.01	0.57	0.71	0.67	0.08	0.84	0.69
19	0.18	0.02	0.01	0.10	0.41	0.00	0.57	0.51	0.77	0.09	0.47	0.51
20	0.08	0.52	0.42	0.58	0.58	0.00	0.46	0.28	0.68	0.36	0.37	0.54
21	0.17	0.15	0.50	0.21	0.91	0.00	0.44	0.29	0.88	0.25	0.27	0.16
22	0.05	0.02	0.79	0.01	0.69	0.00	0.26	0.15	0.88	0.44	0.06	0.14
23	0.14	0.00	0.35	0.21	0.76	0.43	0.12	0.19	0.72	0.35	0.11	0.55
24	0.20	0.01	0.48	0.21	0.58	0.17	0.02	0.45	0.64	0.50	0.34	0.64
25	0.01	0.23	0.64	0.20	0.58	0.01	0.00	0.47	0.66	0.09	0.25	0.64
26	0.00	0.26	0.42	0.26	0.22	0.00	0.00	0.93	0.58	0.28	0.33	0.41
27	0.20	0.34	0.57	0.12	0.00	0.19	0.00	0.52	0.50	0.37	0.17	0.20
28	0.01	0.32	0.37	0.13	0.00	0.44	0.00	0.61	0.64	0.19	0.32	0.43
29	0.01	0.26	0.45	0.00		0.70	0.00	0.74	0.86	0.21	0.06	0.67
30	0.00	0.24	0.13	0.15		0.50	0.00	0.75	0.68	0.42	0.22	0.53
31	0.00		0.31	0.28		0.56		0.83		0.46	0.68	
Grand Total	7.10	4.09	7.84	5.11	14.32	3.49	9.87	12.74	21.26	13.61	17.48	17.23

MAMMOTH COMMUNITY WATER DISTRICT

TOTAL PUMPAGE

Well 15

2013 - 2014

MG Totals												
	2013			2014								
Row Labels	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.384	0.000	0.000	0.000	0.640	0.893	0.000	0.384	0.000	0.640	0.160	0.922
2	0.256	0.000	0.000	0.000	0.384	0.661	0.000	0.384	0.128	0.640	0.657	0.935
3	0.128	0.000	0.000	0.000	0.128	0.610	0.000	0.256	0.128	0.896	0.668	0.941
4	0.000	0.000	0.000	0.000	0.384	0.512	0.000	0.384	0.256	0.256	0.944	0.962
5	0.384	0.000	0.000	0.000	0.256	0.384	0.000	0.256	0.384	0.512	0.844	0.755
6	0.256	0.000	0.000	0.000	0.128	0.384	0.000	0.128	0.256	0.896	0.653	0.787
7	0.128	0.000	0.000	0.000	0.256	0.384	0.000	0.000	0.128	0.640	0.729	0.788
8	0.128	0.000	0.000	0.000	0.256	0.128	0.000	0.000	0.384	0.896	0.363	0.763
9	0.000	0.000	0.000	0.000	0.256	0.000	0.000	0.000	0.512	0.512	0.818	0.960
10	0.000	0.000	0.000	0.000	0.256	0.000	0.000	0.000	0.768	0.640	0.945	0.939
11	0.000	0.000	0.000	0.000	0.256	0.000	0.000	0.000	0.512	0.512	0.817	0.955
12	0.000	0.128	0.000	0.000	0.000	0.000	0.000	0.128	0.512	0.640	0.728	0.791
13	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.512	1.024	0.461	0.956
14	0.000	0.000	0.128	0.384	0.000	0.000	0.000	0.000	0.384	0.768	0.835	0.938
15	0.128	0.000	0.000	0.256	0.256	0.000	0.000	0.512	0.768	0.896	0.775	0.474
16	0.128	0.000	0.000	0.256	0.256	0.000	0.000	0.128	0.640	0.768	0.961	0.517
17	0.000	0.000	0.000	0.128	0.101	0.000	0.000	0.128	0.512	0.768	0.960	0.960
18	0.000	0.000	0.128	0.384	0.027	0.000	0.128	0.256	0.512	0.640	0.960	0.956
19	0.000	0.000	0.000	0.512	0.000	0.000	0.000	0.640	0.640	0.896	0.919	0.572
20	0.000	0.000	0.000	0.384	0.000	0.000	0.000	0.256	0.128	0.896	0.944	0.647
21	0.000	0.000	0.000	0.384	0.000	0.000	0.000	0.000	0.384	0.896	0.962	0.717
22	0.000	0.000	0.256	0.256	0.000	0.000	0.128	0.000	0.640	0.896	0.962	0.870
23	0.128	0.000	0.000	0.256	0.000	0.000	0.128	0.000	0.512	0.896	0.956	0.767
24	0.000	0.000	0.000	0.384	0.000	0.000	0.384	0.000	0.512	0.768	0.942	0.793
25	0.000	0.000	0.000	0.384	0.000	0.000	0.256	0.000	0.640	0.768	0.956	0.797
26	0.000	0.000	0.000	0.512	0.256	0.000	0.256	0.000	0.512	0.768	0.941	0.583
27	0.000	0.000	0.000	0.128	0.512	0.000	0.384	0.128	0.384	0.896	0.941	0.458
28	0.000	0.000	0.256	0.256	0.524	0.000	0.384	0.384	0.512	0.896	0.955	0.184
29	0.000	0.000	0.256	0.128		0.000	0.384	0.128	1.024	0.128	0.962	0.239
30	0.000	0.000	0.256	0.384		0.000	0.384	0.000	0.640	0.153	0.935	0.764
31	0.000		0.000	0.256		0.000		0.000		0.192	0.941	
Grand Total	2.048	0.128	1.280	5.632	5.132	3.956	2.816	4.480	13.824	21.593	25.595	22.688

MAMMOTH COMMUNITY WATER DISTRICT

TOTAL PUMPAGE

2013 - 2014

Well 16

MG Totals												
	2013			2014								
Row Labels	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.22	0.23	0.00	0.13	0.06
2	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.18	0.15	0.00	0.16	0.24
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.25	0.11
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.27	0.09
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.32	0.07
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.21	0.07
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.25	0.07
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.18	0.00	0.21	0.07
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.21	0.00	0.28	0.07
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.22	0.00	0.34	0.07
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.22	0.00	0.31	0.05
12	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.38	0.21	0.00	0.17	0.06
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.18	0.00	0.06	0.06
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.23	0.00	0.00	0.06
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.21	0.00	0.00	0.06
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.25	0.01	0.00	0.08
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.24	0.00	0.00	0.18
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.08	0.00	0.00	0.18
19	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.24	0.01	0.00	0.00	0.19
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.20
21	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.04	0.00	0.18
22	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.15	0.05	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.20	0.08	0.00	0.09
24	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.07	0.25	0.00	0.06
25	0.00	0.00	0.00	0.00	0.01	0.00	0.18	0.00	0.07	0.05	0.00	0.02
26	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.09	0.06	0.00	0.00	0.03
27	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.19	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.15	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.15	0.00	0.00
30	0.00	0.00	0.00	0.00		0.00	0.06	0.14	0.00	0.43	0.00	0.00
31	0.00		0.00	0.00		0.00		0.23		0.39	0.00	
Grand Total	0.00	0.00	0.00	0.00	0.07	0.04	0.95	4.32	3.22	1.47	2.97	2.42

MAMMOTH COMMUNITY WATER DISTRICT

TOTAL PUMPAGE

Well 17

2013 - 2014

MG Totals												
	2013			2014								
Row Labels	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.00	0.00	0.00	0.00	0.00	0.52	0.00	0.00	0.00	0.42	0.00	0.52
2	0.00	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.00	0.38	0.00	0.54
3	0.00	0.00	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.55	0.00	0.83
4	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.73	0.00	0.81
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.01	0.41
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82	0.01	0.53
7	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.66	0.01	0.56
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71	0.01	0.48
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.94	0.01	0.80
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.01	0.56
11	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.01	0.58
12	0.36	0.00	0.00	0.00	0.11	0.29	0.00	0.00	0.06	0.64	0.00	0.51
13	0.00	0.00	0.00	0.00	0.07	0.17	0.00	0.08	0.00	0.97	0.21	0.51
14	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.03	0.00	0.98	0.54	0.53
15	0.27	0.00	0.00	0.00	0.57	0.00	0.00	0.00	0.00	0.64	0.70	0.61
16	0.10	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00	0.82	0.80	0.47
17	0.00	0.00	0.00	0.00	0.52	0.00	0.00	0.00	0.00	0.74	0.60	0.79
18	0.00	0.00	0.00	0.00	0.45	0.00	0.00	0.00	0.35	0.40	0.77	0.53
19	0.00	0.00	0.00	0.00	0.48	0.00	0.00	0.00	0.77	0.60	0.54	0.27
20	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.63	0.67	0.76	0.53
21	0.00	0.00	0.00	0.00	0.45	0.00	0.00	0.00	0.86	0.76	0.58	0.52
22	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.78	0.90	0.35	0.50
23	0.00	0.00	0.00	0.00	0.55	0.00	0.00	0.00	0.70	0.93	0.69	0.46
24	0.19	0.00	0.00	0.00	0.36	0.00	0.01	0.00	0.72	0.89	0.59	0.50
25	0.00	0.00	0.00	0.00	0.41	0.08	0.00	0.00	0.72	0.59	0.65	0.50
26	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.69	0.78	0.53	0.30
27	0.00	0.00	0.00	0.00	0.30	0.02	0.00	0.00	0.62	0.79	0.57	0.43
28	0.00	0.00	0.00	0.00	0.46	0.00	0.00	0.00	0.50	0.92	0.57	0.59
29	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.62	0.25	0.38	0.47
30	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.43	0.01	0.56	0.41
31	0.00		0.00	0.00		0.00		0.00		0.01	0.79	
Grand Total	0.96	0.00	0.00	0.00	6.75	2.21	0.01	0.11	8.45	20.61	11.25	16.04

MAMMOTH COMMUNITY WATER DISTRICT

TOTAL PUMPAGE

Well 18

2013 - 2014

MG Totals												
	2013			2014								
Row Labels	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.32	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.32	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.13	0.00	0.32	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.01	0.00
6	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.12	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.16	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.06	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00
13	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.19	0.10	0.00	0.00	0.00
14	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.10	0.03	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.06	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.19	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.03	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.00	0.00
29	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.06	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.16	0.05	0.00	0.00
31	0.00		0.00	0.00		0.00		0.00		0.00	0.00	
Grand Total	0.03	0.06	0.03	0.03	0.00	0.18	0.24	0.90	0.99	2.10	0.36	0.00

MAMMOTH COMMUNITY WATER DISTRICT

TOTAL PUMPAGE

2013 - 2014

Well 20

MG Totals												
	2013			2014								
Row Labels	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.00	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.24	0.00	0.10
2	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.22	0.00	0.31
3	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.32	0.00	0.48
4	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.42	0.00	0.46
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.25	0.23
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.28	0.30
7	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.38	0.33	0.32
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.27	0.27
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.37	0.45
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.45	0.32
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.33
12	0.00	0.00	0.00	0.00	0.07	0.10	0.00	0.00	0.04	0.01	0.26	0.29
13	0.00	0.00	0.00	0.00	0.04	0.11	0.00	0.06	0.00	0.01	0.08	0.29
14	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.02	0.00	0.01	0.01	0.30
15	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00	0.01	0.01	0.34
16	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.03	0.01	0.28
17	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.00	0.01	0.01	0.45
18	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.21	0.00	0.01	0.30
19	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.45	0.01	0.01	0.15
20	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.37	0.01	0.01	0.30
21	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.51	0.20	0.01	0.30
22	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.45	0.52	0.00	0.28
23	0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.00	0.43	0.53	0.06	0.26
24	0.00	0.00	0.00	0.00	0.22	0.00	0.01	0.00	0.42	0.51	0.07	0.28
25	0.00	0.00	0.00	0.00	0.27	0.05	0.00	0.00	0.42	0.34	0.06	0.28
26	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.42	0.45	0.01	0.17
27	0.00	0.00	0.00	0.00	0.19	0.01	0.00	0.00	0.35	0.46	0.01	0.25
28	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.29	0.53	0.01	0.34
29	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.36	0.15	0.01	0.28
30	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.25	0.01	0.01	0.24
31	0.00		0.00	0.00		0.00		0.00		0.01	0.01	
Grand Total	0.00	0.00	0.00	0.00	4.32	1.33	0.01	0.08	4.97	7.51	2.95	8.97

MAMMOTH COMMUNITY WATER DISTRICT

TOTAL PUMPAGE

Well 25

2013 - 2014

MG Totals												
	2013			2014								
Row Labels	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.246	0.000	0.139	0.320
2	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.163	0.000	0.171	0.200
3	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.266	0.119
4	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.280	0.093
5	0.000	0.000	0.000	0.000	0.000	0.021	0.000	0.000	0.000	0.000	0.339	0.078
6	0.000	0.000	0.000	0.000	0.000	0.013	0.000	0.000	0.000	0.000	0.226	0.078
7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.047	0.000	0.265	0.075
8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.214	0.193	0.000	0.218	0.078
9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.222	0.000	0.296	0.070
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.241	0.213	0.361	0.075
11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.238	0.217	0.291	0.050
12	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.182	0.222	0.297	0.212	0.061
13	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.049	0.195	0.448	0.154	0.069
14	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.207	0.249	0.453	0.252	0.070
15	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.215	0.229	0.298	0.326	0.061
16	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.215	0.266	0.382	0.373	0.089
17	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.216	0.258	0.345	0.282	0.193
18	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.290	0.085	0.189	0.358	0.198
19	0.000	0.000	0.000	0.000	0.023	0.000	0.000	0.256	0.008	0.281	0.254	0.201
20	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.001	0.000	0.314	0.355	0.219
21	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.249	0.273	0.194
22	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.167	0.058	0.165	0.000
23	0.000	0.000	0.000	0.000	0.004	0.000	0.010	0.000	0.217	0.083	0.329	0.093
24	0.000	0.000	0.000	0.000	0.000	0.000	0.029	0.000	0.071	0.275	0.282	0.067
25	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.080	0.059	0.310	0.038
26	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.099	0.059	0.000	0.251	0.045
27	0.000	0.000	0.000	0.000	0.003	0.024	0.000	0.208	0.000	0.000	0.269	0.000
28	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.161	0.000	0.000	0.269	0.000
29	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.156	0.178	0.000
30	0.000	0.000	0.000	0.000		0.000	0.000	0.153	0.000	0.458	0.263	0.000
31	0.000		0.000	0.000		0.000		0.246		0.412	0.369	
Grand Total	0.000	0.000	0.000	0.000	0.071	0.077	0.040	2.711	3.456	5.187	8.377	2.832

PRODUCTION WELL
WATER LEVEL DATA
OCTOBER 2013 - SEPTEMBER 2014

Well No. 1			
Date	Static	Date	Pumping
10/16/13	156.73	10/10/14	226.63
11/29/13	155.22		
12/21/13	152.96	12/29/13	236.77
01/31/14	156.95	01/03/14	256.18
02/28/14	155.01	02/05/14	212.61
03/31/14	152.74	03/14/14	192.55
04/28/14	150.37		
05/02/14	150.55	05/28/14	240.44
06/02/14	164.72	06/17/14	269.13
07/10/14	164.29	07/31/14	251.65
08/14/14	179.17	08/03/14	258.88
09/14/14	182.95	09/23/14	259.74
Mean	160.14		240.46
Min	150.37		192.55
Max	182.95		269.13
Historical			
Mean	196.42		249.58
Min	149.75		191.33
Max	268.10		303.16

Well No. 6			
Date	Static	Date	Pumping
10/28/13	115.59	10/08/13	204.22
11/16/13	103.56	11/30/13	177.29
12/25/13	103.20	12/18/13	179.21
01/06/14	102.84	01/20/14	186.72
02/26/14	108.92	02/04/14	183.71
03/31/14	103.46	03/17/14	177.74
04/30/14	98.33	04/22/14	157.61
05/10/14	96.09	05/27/14	183.23
06/06/14	127.39	06/30/14	200.65
07/19/14	139.75	07/20/14	206.70
08/16/14	131.45	08/29/14	211.23
09/20/14	127.18	09/04/14	219.54
Mean	113.15		190.65
Min	96.09		157.61
Max	139.75		219.54
Historical			
Mean	45.78		146.85
Min	0.00		9.05
Max	160.00		286.73

Well No. 17			
Date	Static	Date	Pumping
10/09/13	379.56	10/23/13	387.27
11/04/13	380.09		
No Data			
01/27/14	378.50		
02/11/14	380.89	02/23/14	387.46
03/26/14	380.89	03/04/14	387.75
04/25/14	380.94		
05/06/14	381.02	05/13/14	386.82
06/02/14	381.36	06/24/14	389.27
07/02/14	383.11	07/27/14	391.22
08/13/14	383.14	08/27/14	390.63
09/18/14	383.43	09/17/14	391.71
Mean	381.18		389.02
Min	378.50		386.82
Max	383.43		391.71
Historical			
Mean	376.44		384.12
Min	356.44		369.52
Max	409.90		393.47

Well No. 18			
Date	Static	Date	Pumping
10/30/13	93.69	10/16/13	310.05
11/27/13	91.44	11/06/13	314.03
12/28/13	90.00	12/18/13	317.45
01/30/14	89.16	01/14/14	300.66
02/28/14	86.59	02/19/14	285.56
03/21/14	84.59		
04/23/14	84.03	04/24/14	316.03
05/02/14	85.44	05/14/14	326.00
06/11/14	82.88	06/20/14	326.28
07/24/14	86.88	07/01/14	318.31
08/21/14	99.90	08/06/14	324.20
09/02/14	100.61		
Mean	89.60		313.86
Min	82.88		285.56
Max	100.61		326.28
Historical			
Mean	73.60		230.43
Min	40.00		72.22
Max	171.67		361.28

PRODUCTION WELL
WATER LEVEL DATA
OCTOBER 2013 - SEPTEMBER 2014

Well No. 10			
Date	Static	Date	Pumping
10/31/13	106.85	10/01/13	208.52
11/25/13	101.16	11/04/13	184.70
12/07/13	101.84	12/30/13	198.74
01/12/14	100.48	01/31/14	187.01
02/05/14	108.88	02/24/14	217.58
03/22/14	108.52	03/31/14	200.57
04/30/14	105.43	04/06/14	205.45
05/06/14	102.46	05/31/14	207.95
06/02/14	121.25	06/29/14	226.62
07/19/14	130.88	07/10/14	230.30
08/01/14	135.52	08/18/14	244.10
09/04/14	139.56	09/18/14	246.48
Mean	113.57		213.17
Min	100.48		184.70
Max	139.56		246.48
Historical			
Mean	55.72		133.17
Min	0.00		40.92
Max	164.00		234.25

Well No. 15			
Date	Static	Date	Pumping
10/28/13	220.44	10/01/13	239.67
11/30/13	216.56	11/06/13	231.80
12/28/13	213.70	12/13/13	227.94
01/11/14	213.08	01/20/14	227.94
02/26/14	213.08	02/09/14	228.56
03/31/14	211.70	03/05/14	229.31
04/22/14	209.45	04/30/14	224.94
05/17/14	210.33	05/03/14	225.81
06/02/14	210.08	06/30/14	230.69
07/01/14	217.69	07/30/14	241.26
08/01/14	228.88	08/29/14	246.03
09/02/14	238.04	09/25/14	251.59
Mean	216.92		233.80
Min	209.45		224.94
Max	238.04		251.59
Historical			
Mean	232.36		273.47
Min	168.15		183.42
Max	321.35		364.98

Well No. 20			
Date	Static	Date	Pumping
10/28/13	410.23		
11/05/13	409.26		
No Data			
01/29/14	406.95	Transducer erroneous during pumping	
02/19/14	408.06		
03/30/14	402.33		
04/09/14	399.09		
05/09/14	394.47	05/21/14	417.86
06/03/14	398.69	06/29/14	483.62
07/21/14	418.04	07/28/14	493.91
08/31/14	419.39	08/11/14	492.32
09/01/14	419.39	09/17/14	494.89
Mean	407.81		476.52
Min	394.47		417.86
Max	419.39		494.89
Historical			
Mean	411.51		490.90
Min	376.20		417.80
Max	470.95		553.44

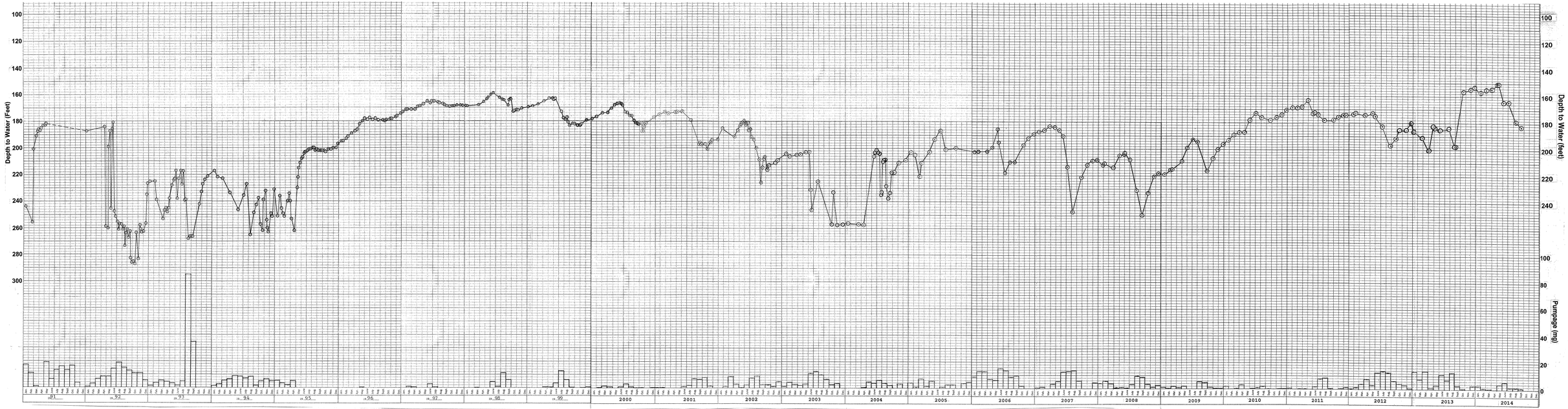
Well No. 16			
Date	Static	Date	Pumping
10/28/13	467.78		
11/04/13	466.01		
No Data			
01/27/14	469.38		
02/14/14	470.85	02/12/14	497.27
03/26/14	469.26	03/27/14	494.71
04/22/14	467.67	04/23/14	501.54
05/26/14	474.90	05/26/14	500.51
06/07/14	474.97	06/22/14	501.86
07/16/14	472.73	07/29/14	505.63
08/31/14	475.10	08/12/14	504.28
09/01/14	474.99	09/02/14	507.54
Mean	471.24		501.67
Min	466.01		494.71
Max	475.10		507.54
Historical			
Mean	468.53		487.99
Min	327.00		471.47
Max	514.60		507.22

PRODUCTION WELL
WATER LEVEL DATA
OCTOBER 2013 - SEPTEMBER 2014

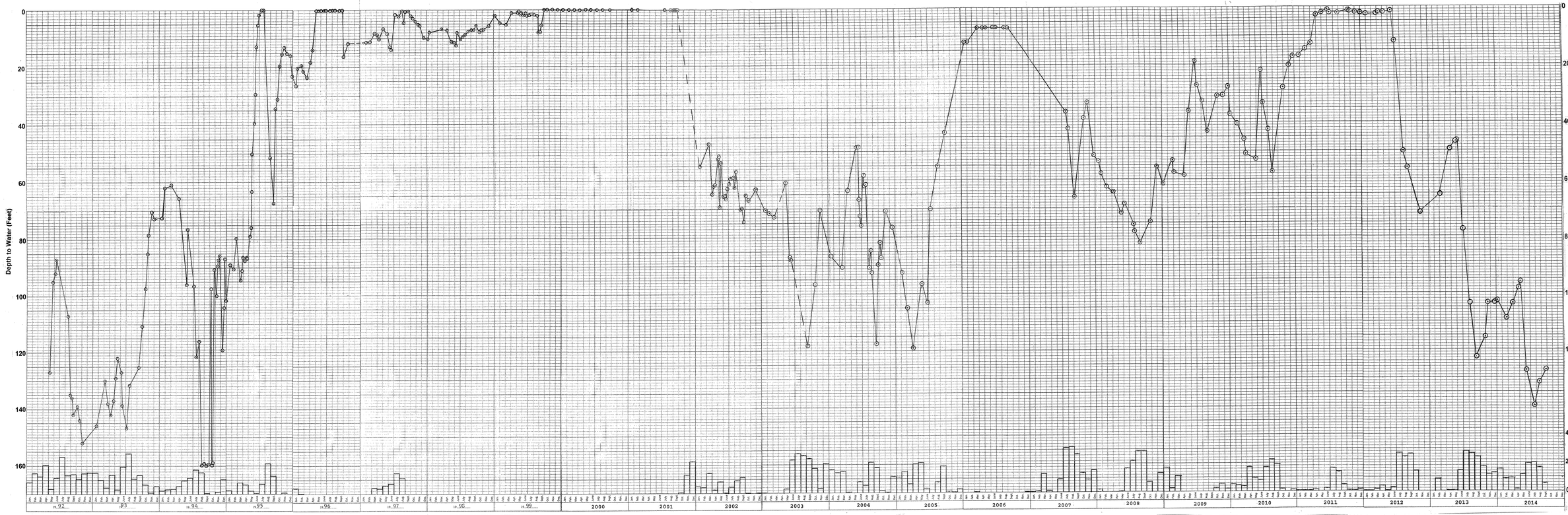
Well No.	25		
Date	Static	Date	Pumping
No Data			
02/28/14	300.24	02/19/14	378.67
03/31/14	298.60	03/27/14	383.89
04/23/14	297.58	04/24/14	388.30
05/12/14	294.81	05/19/14	428.01
06/28/14	304.24	06/17/14	436.69
07/10/14	301.47	07/15/14	439.15
08/02/14	318.49	08/31/14	441.61
09/30/14	312.75	09/01/14	446.84
Mean	303.52		417.90
Min	294.81		378.67
Max	318.49		446.84
Historical			
Mean	314.92		
Min	291.06		
Max	337.05		

APPENDIX B

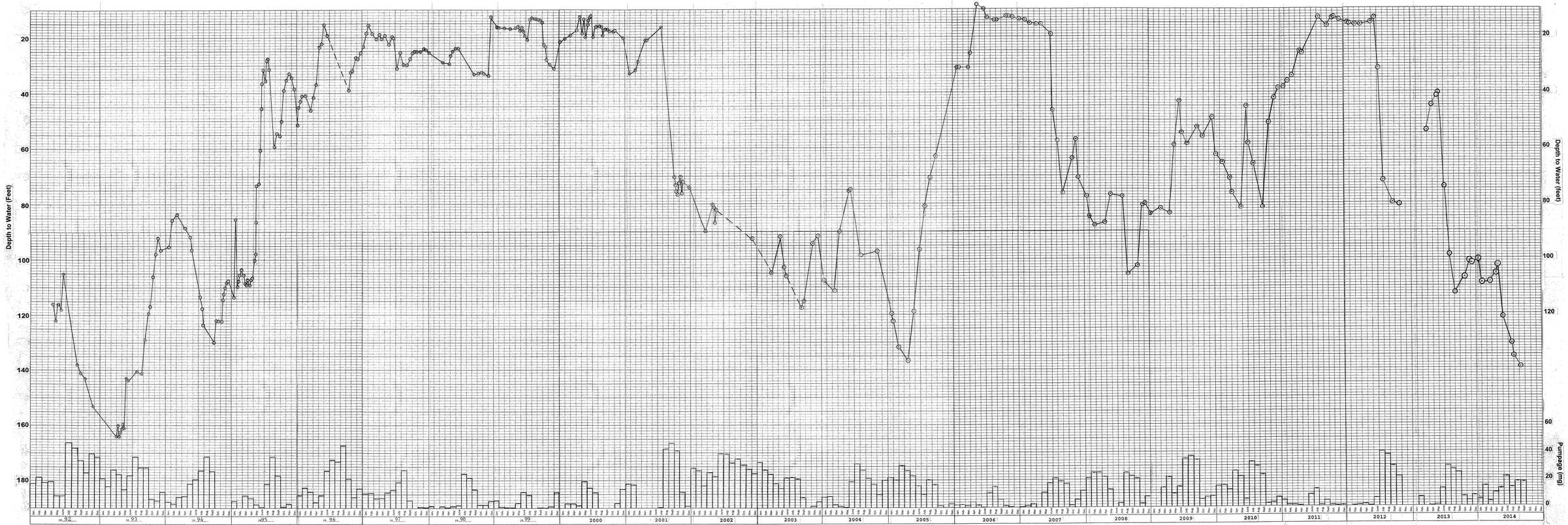
PUMPAGE AND WATER-LEVEL HYDROGRAPHS FOR EARLIER DISTRICT SUPPLY WELLS



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

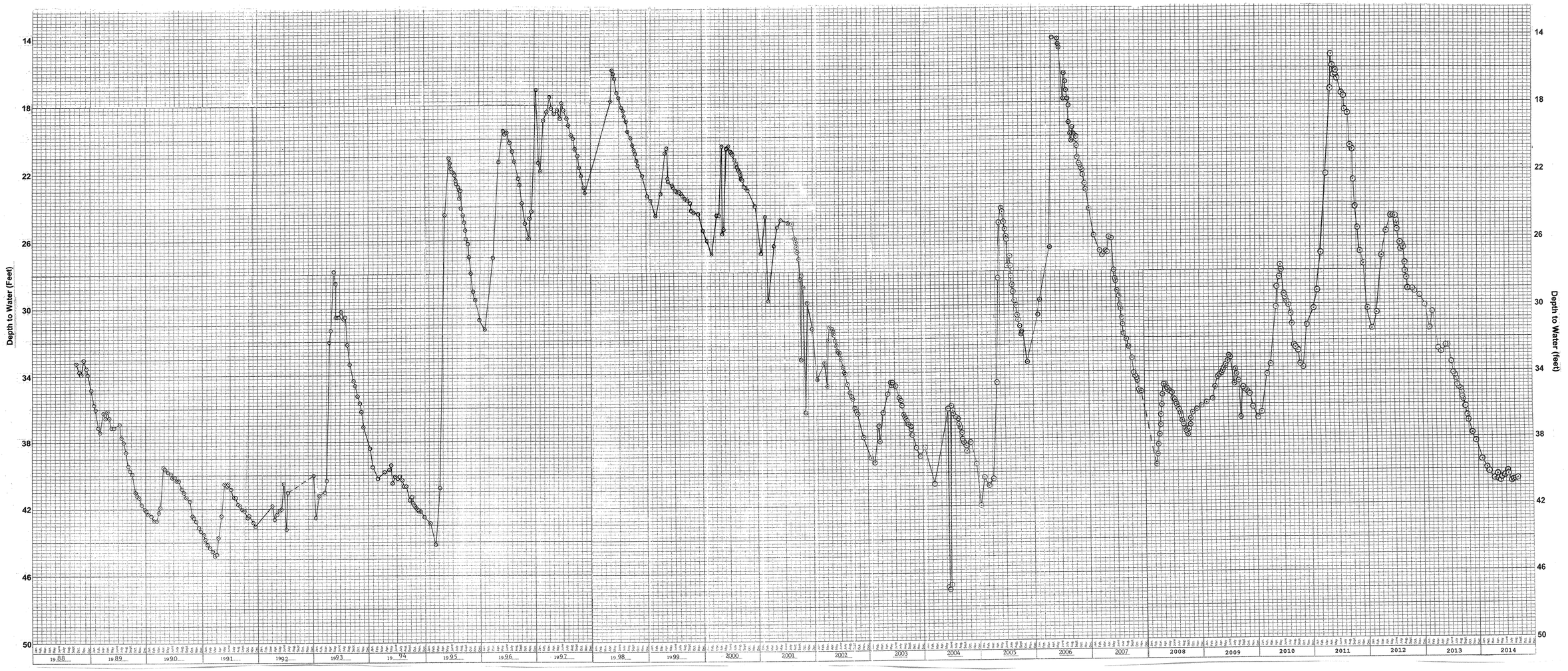
WATER-LEVEL MEASUREMENTS FOR MONITOR WELLS

MAMMOTH COMMUNITY WATER DISTRICT
MONITOR WELL LEVEL DATA
OCT 13 - SEP 14

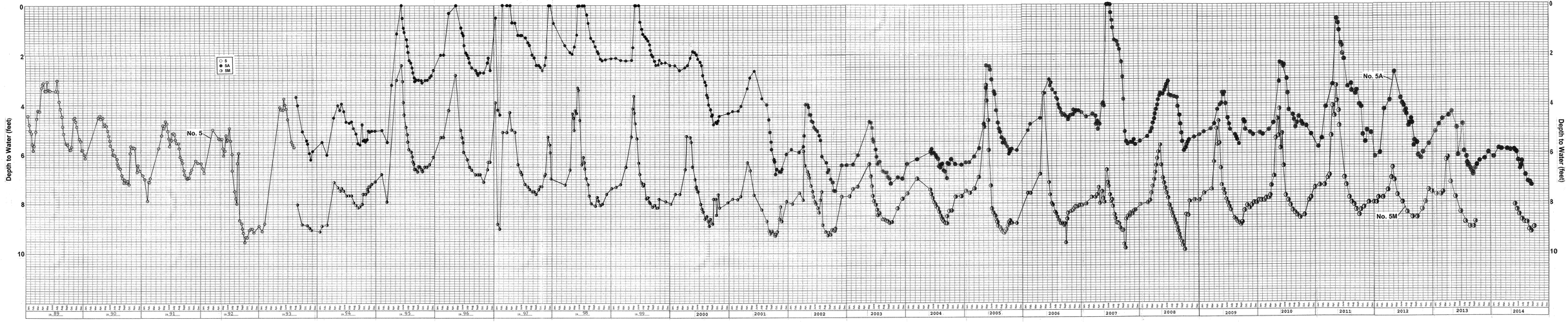
Date	Well 4M	Well 5A	Well 7	Well 10M	Well 11	Well 12M	Well 19	Well 21	Well 22	Well 29	SC-1	SC-2
10/11/2013	36.19	6.51	278.86	29.53	artesian	Not Accessible due to vandalisim	343.09	229.23	85.46	93.79	118.68	152.68
10/24/2013	36.72	6.35	280.33	29.51	artesian		343.17	229.29	85.66	94.07	118.77	152.98
10/31/2013	36.97	6.36	281.19	29.54	artesian		343.33	229.49	85.78	94.36	118.88	153.27
11/26/2013	37.78	6.23	283.41	29.55	artesian		343.39	229.63	Dry	94.94	119.26	153.94
12/19/2013	38.27	6.00	284.73	29.59	artesian		342.98	229.25	Dry	95.60	118.12	153.78
1/27/2014	39.38	6.17	287.30	29.55	artesian		343.46	229.82	Dry	95.90	119.90	154.94
2/25/2014	39.88	5.83	288.67	29.56	artesian		343.48	229.99	Dry	97.75	119.97	155.47
3/11/2014	40.07	5.88	288.21	29.56	artesian		343.51	230.12	Dry	Dry	119.23	155.44
4/16/2014	40.55	5.85	289.45	Dry	artesian		343.44	230.19	Dry	Dry	119.11	155.48
5/5/2014	40.32	5.90	290.14	Dry	artesian		343.69	230.22	Dry	Dry	118.23	155.87
5/20/2014	40.57	5.92	290.56	Dry	artesian		343.74	230.57	Dry	Dry	116.7	156.48
5/29/2014	40.68	5.87	-	29.56	artesian		343.80	230.55	85.24	Dry	115.90	156.46
6/5/2014	40.49	5.96	-	29.56	artesian		343.90	230.60	85.31	Dry	115.41	156.54
6/10/2014	40.36	6.05	291.45	Dry	artesian		343.88	230.74	Dry	Dry	115.68	156.55
6/26/2014	40.43	6.32	292.47	Dry	artesian		343.97	230.79	85.70	Dry	115.7	156.94
7/5/2014	40.15	6.66	-	Dry	artesian		344.05	230.90	85.61	Dry	115.55	157.20
7/9/2014	40.1	6.54	295.48	29.57	2.55		344.11	230.88	85.65	Dry	116.28	157.24
7/17/2014	40.32	6.36	295.43	29.55	2.85		344.00	230.84	85.74	Dry	116.79	157.45
8/9/2014	40.66	6.90	-	Dry	4.35		344.11	231.00	Dry	Dry	118.40	158.15
8/27/2014	40.58	7.18	295.88	Dry	5.03		344.22	231.24	Dry	Dry	-	-
9/3/2014	40.63	7.20	294.54	Dry	5.58		344.19	231.56	Dry	Dry	-	-
9/11/2014	40.55	7.32	-	Dry	6.1		344.25	231.40	Dry	Dry	-	-
Minimum	36.19	5.83	278.86	29.51	2.55		342.98	229.23	85.24	93.79	115.41	152.68
Maximum	40.68	7.32	295.88	29.59	6.10		344.25	231.56	85.78	97.75	119.97	158.15
Average*	30.01	3.49	258.65	24.68	9.42	16.14	339.58	253.51	81.31	81.79		
Minimum*	14.23	0.00	223.92	9.69	0.00	4.25	312.33	224.46	70.79	62.95		
Maximum*	46.95	7.48	295.48	32.48	50.50	27.00	357.25	365.42	86.22	98.56		

APPENDIX D

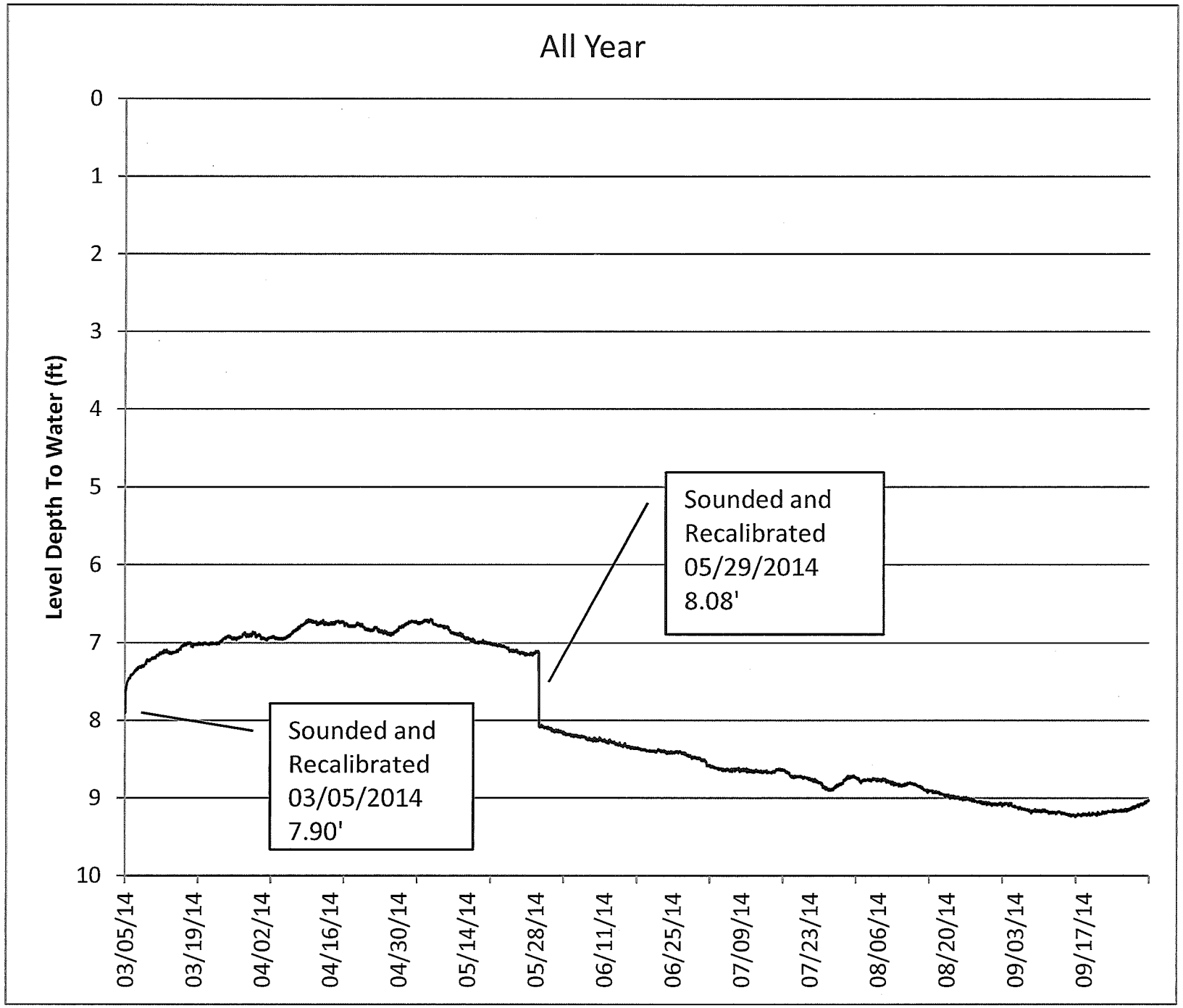
SUPPLEMENTARY WATER-LEVEL HYDROGRAPHS FOR MONITOR WELLS



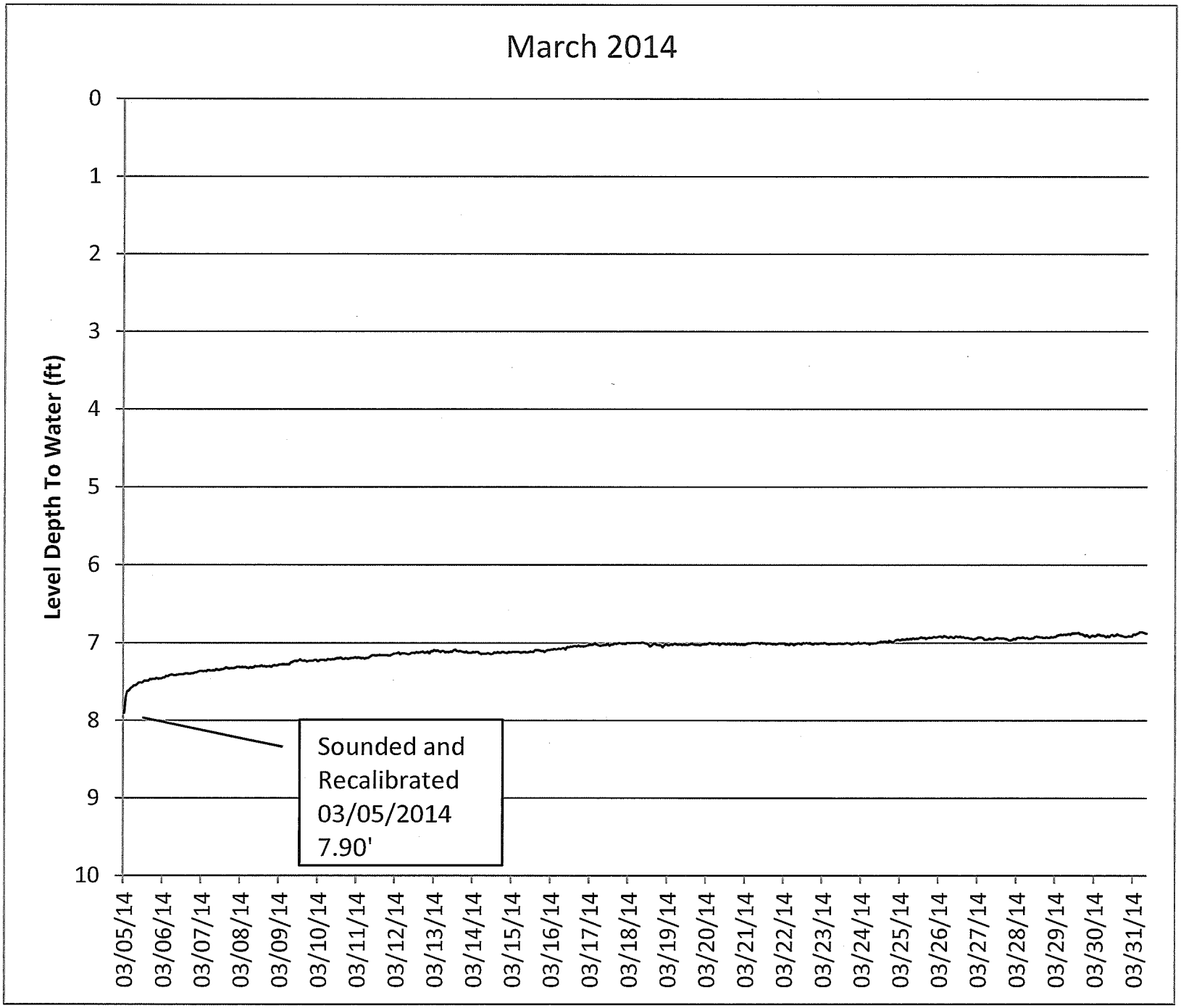
WATER-LEVEL HYDROGRAPH FOR WELL NO. 4M



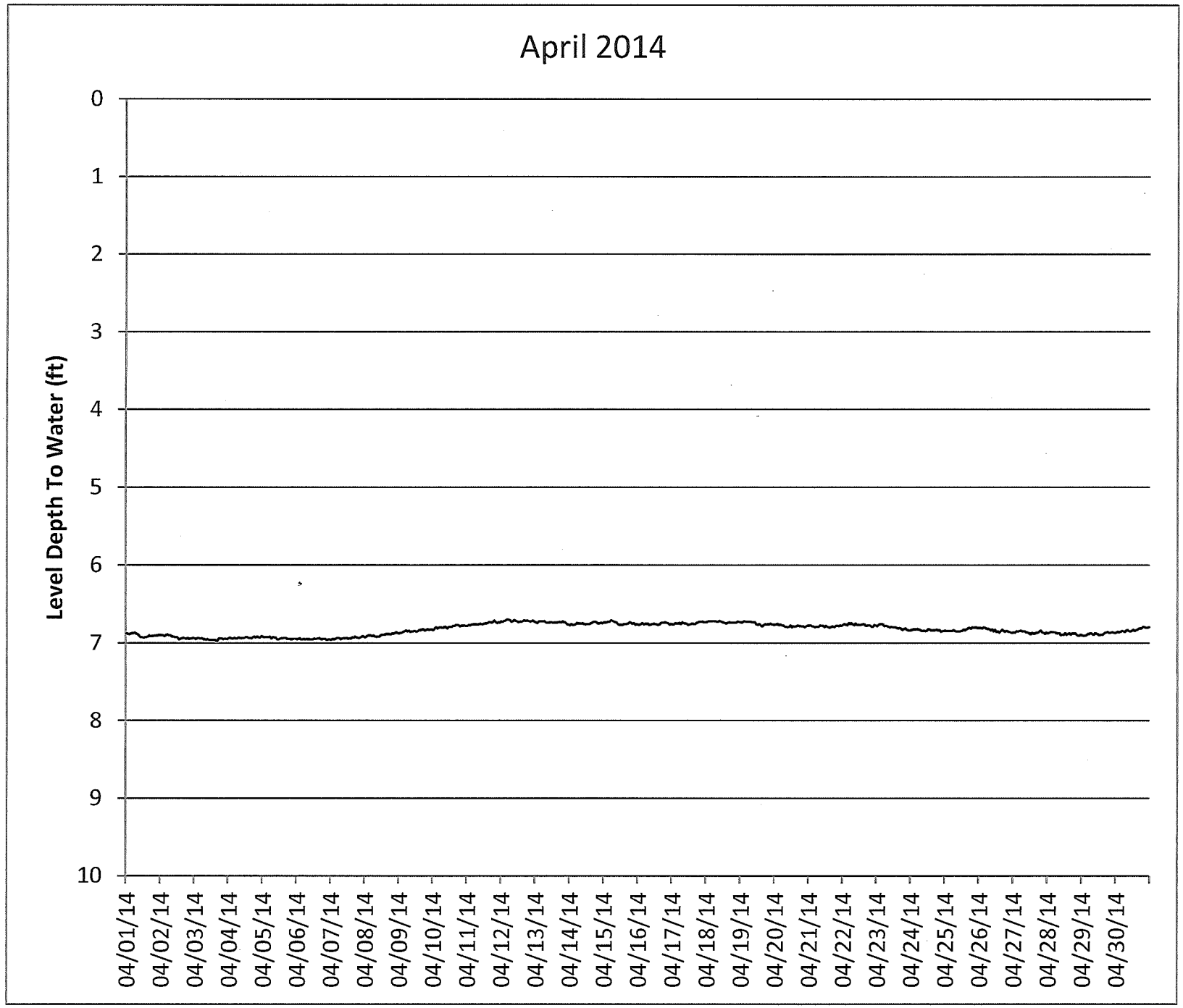
WATER-LEVEL HYDROGRAPH FOR WELL NO. 5, NO. 5A, AND NO. 5M



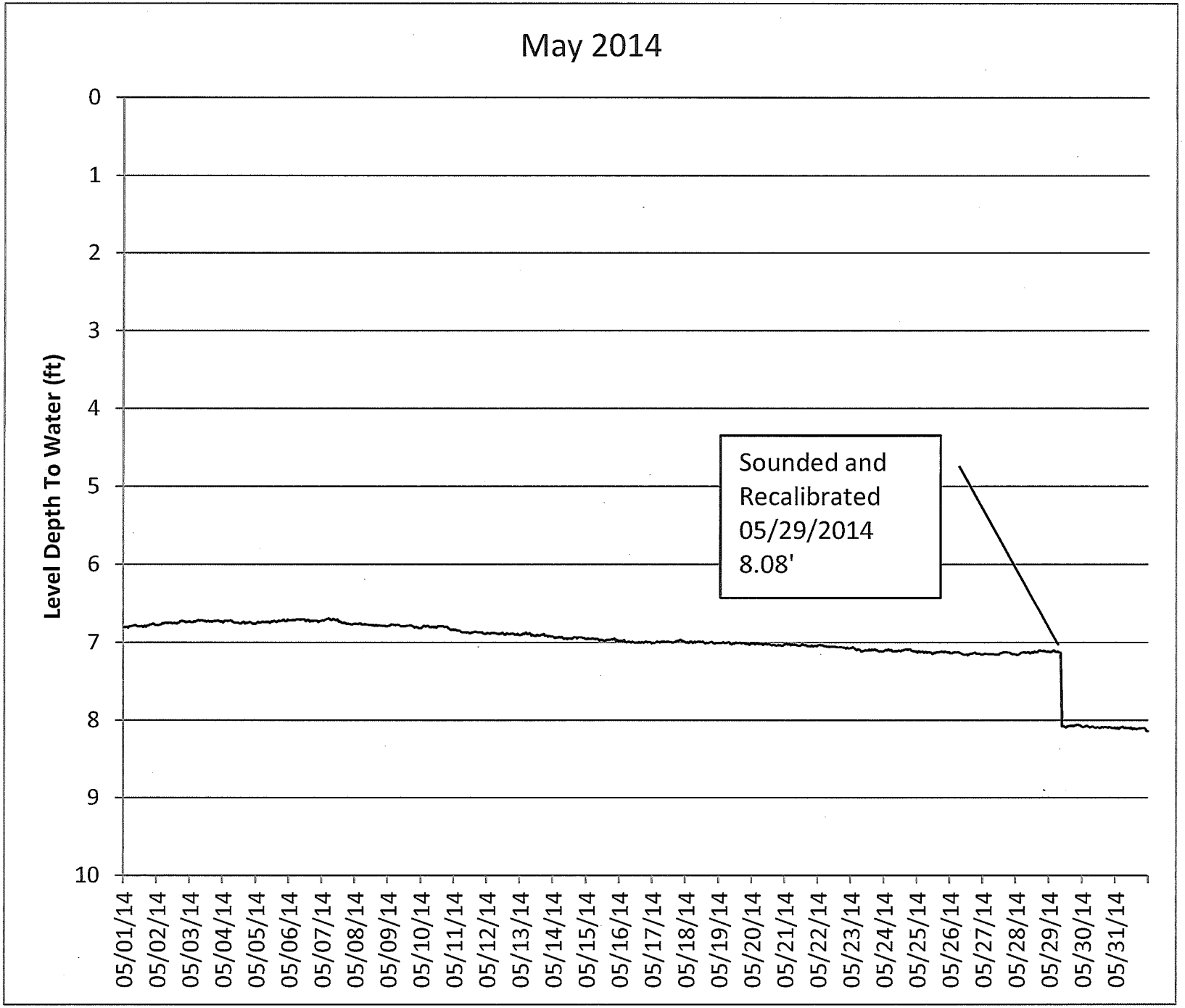
WATER LEVEL HYDROGRAPH FOR MW-5M



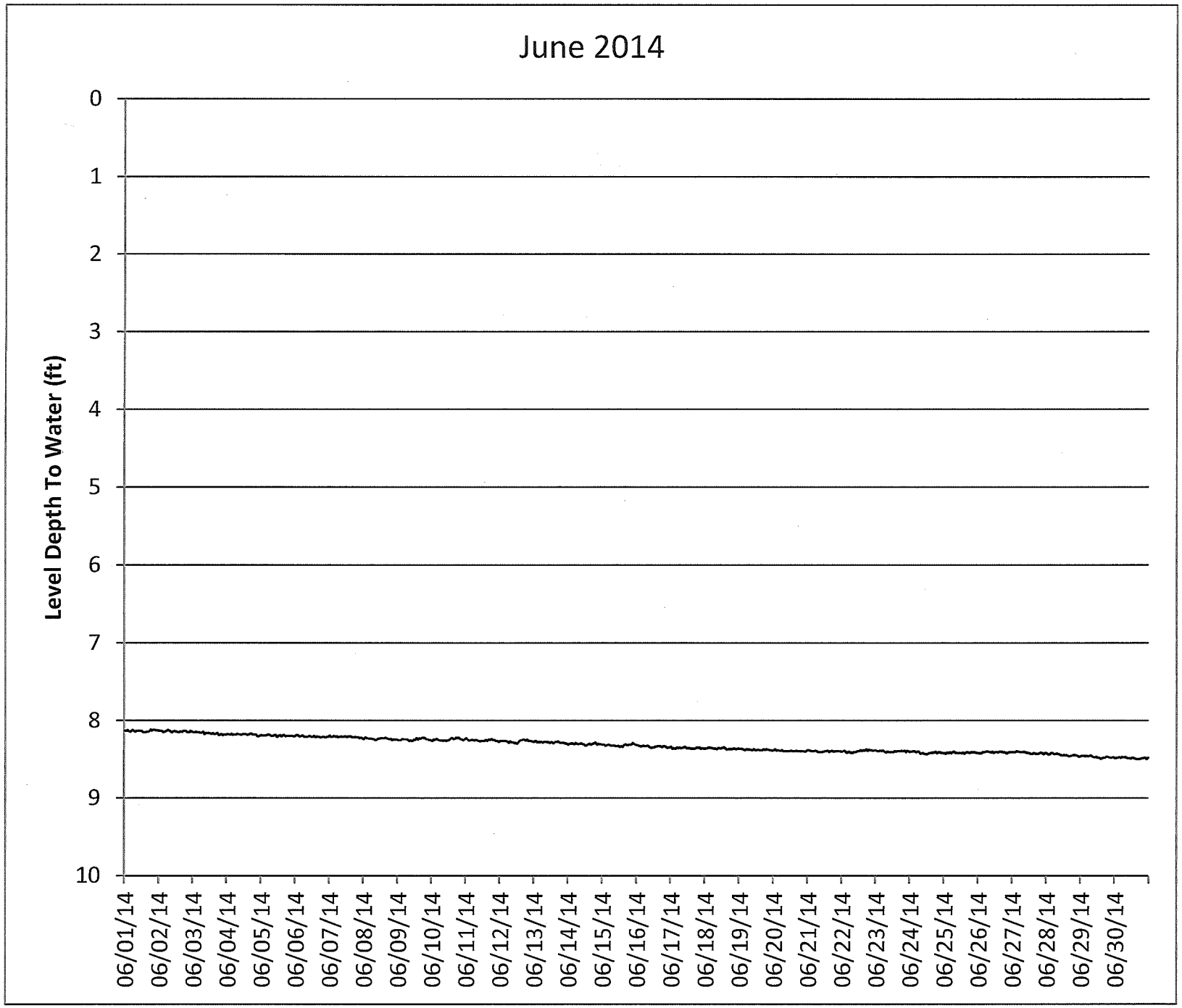
WATER LEVEL HYDROGRAPH FOR MW-5M



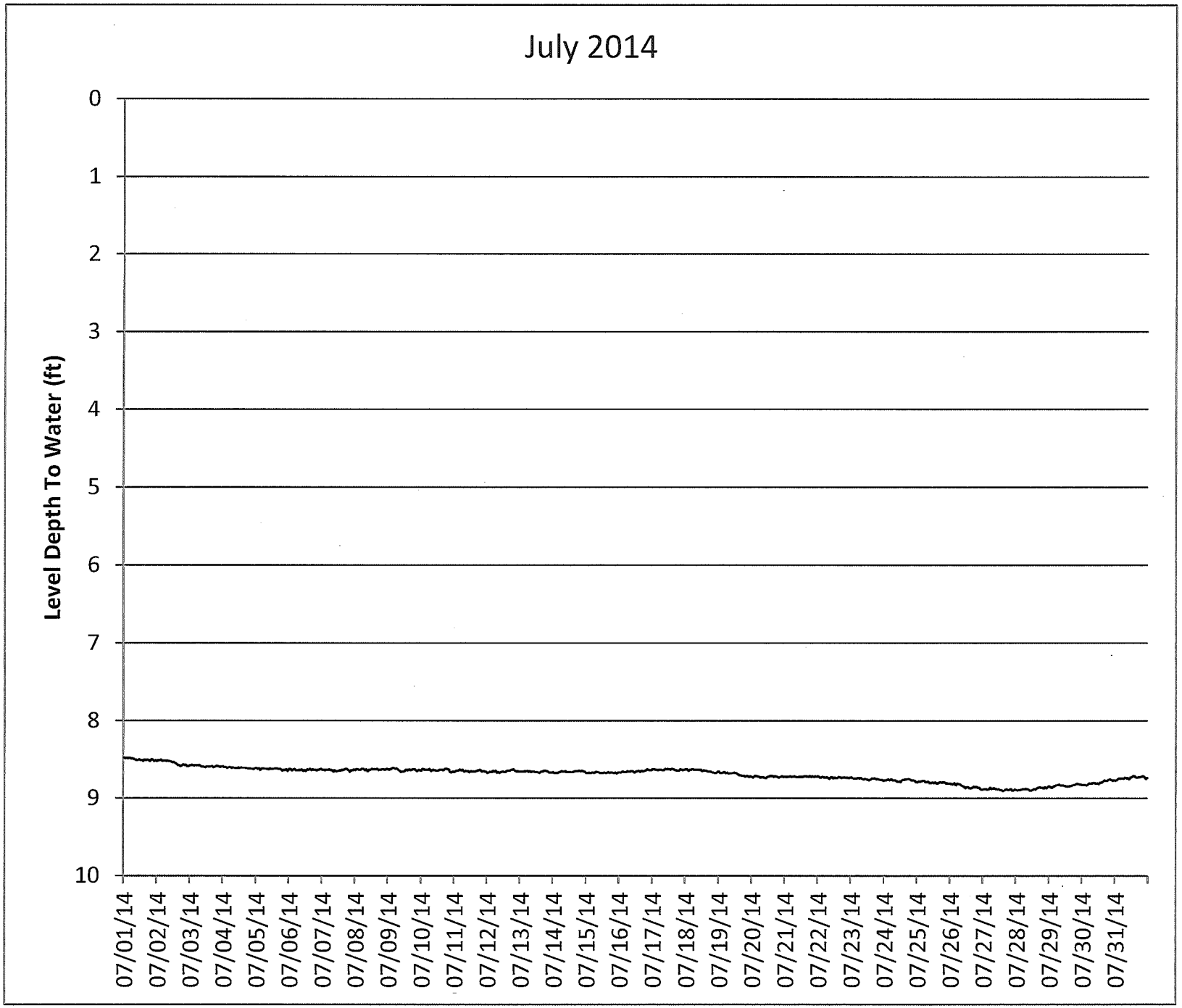
WATER LEVEL HYDROGRAPH FOR MW-5M



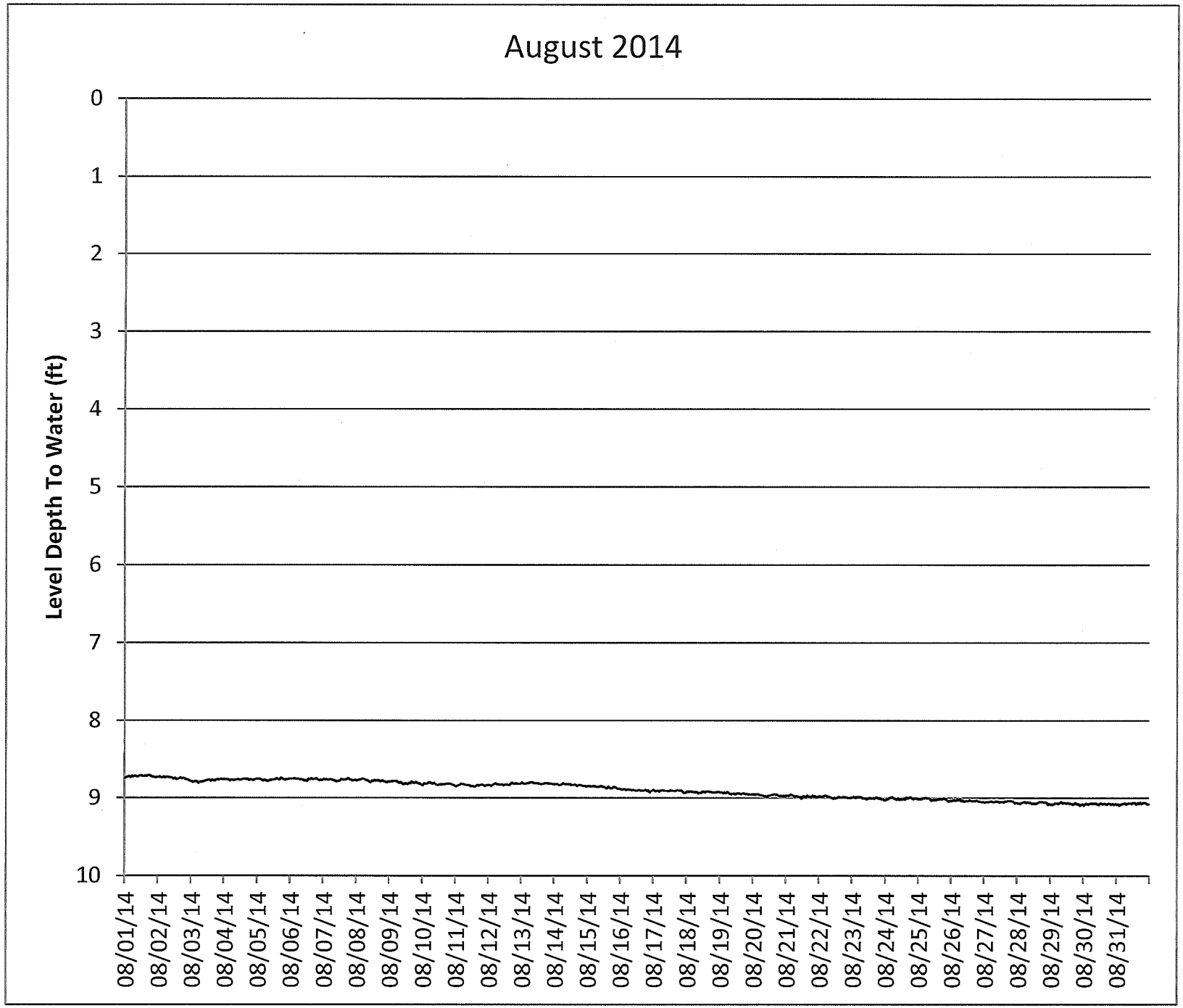
WATER LEVEL HYDROGRAPH FOR MW-5M



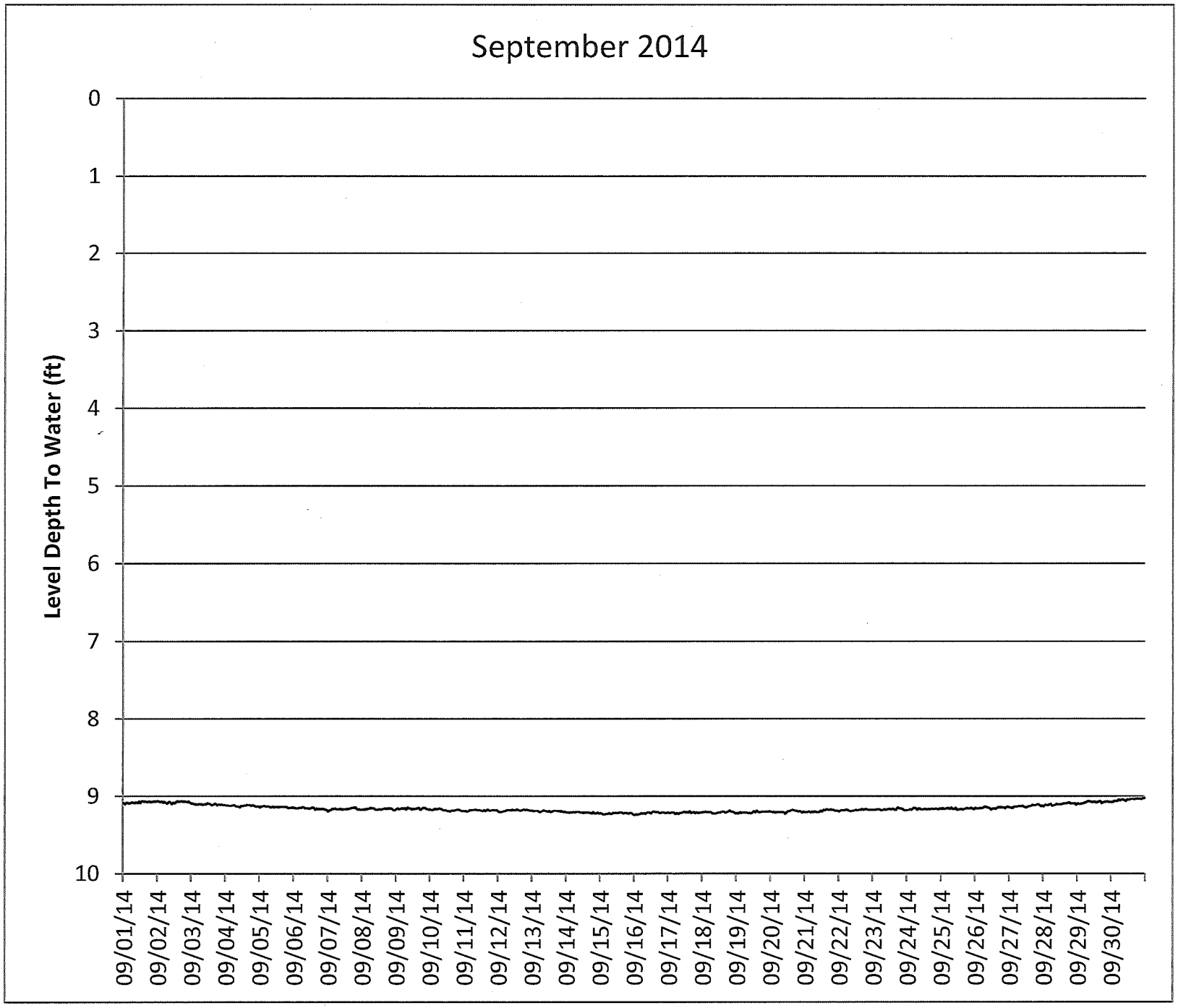
WATER LEVEL HYDROGRAPH FOR MW-5M



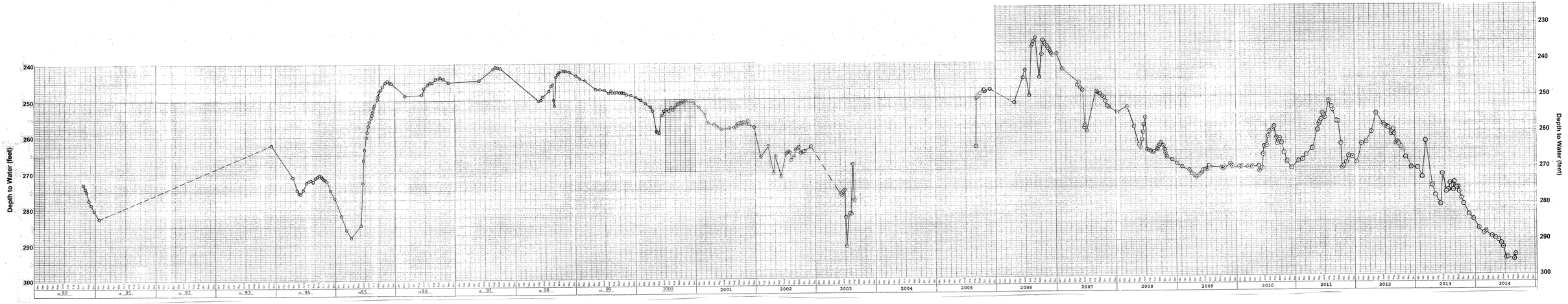
WATER LEVEL HYDROGRAPH FOR MW-5M



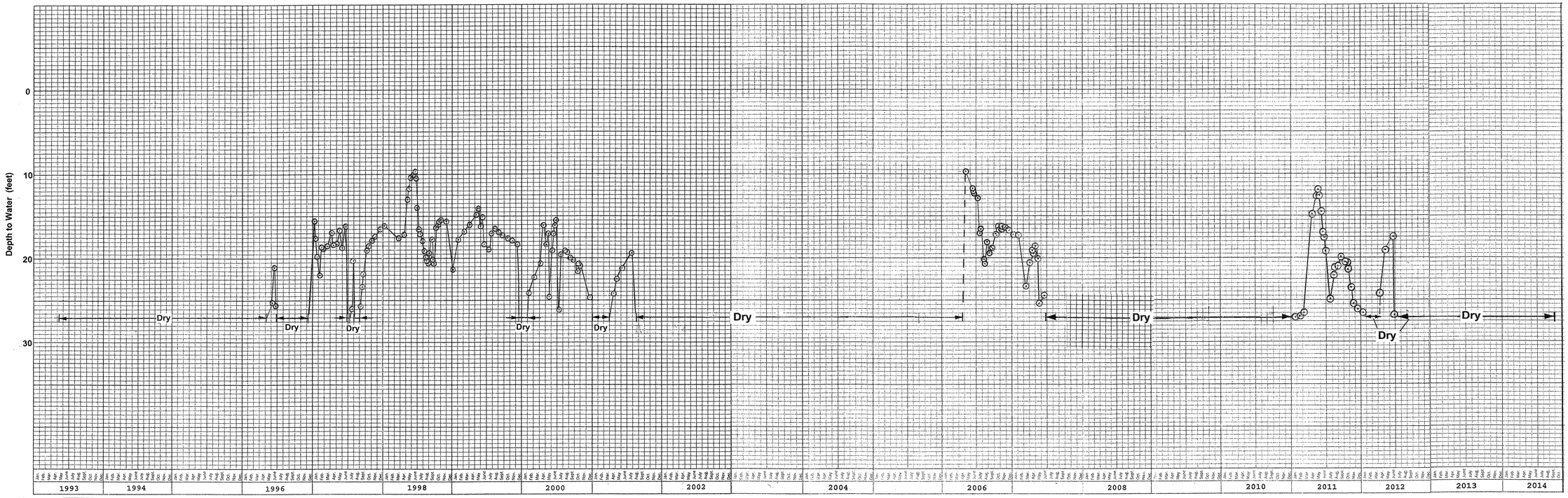
WATER LEVEL HYDROGRAPH FOR MW-5M



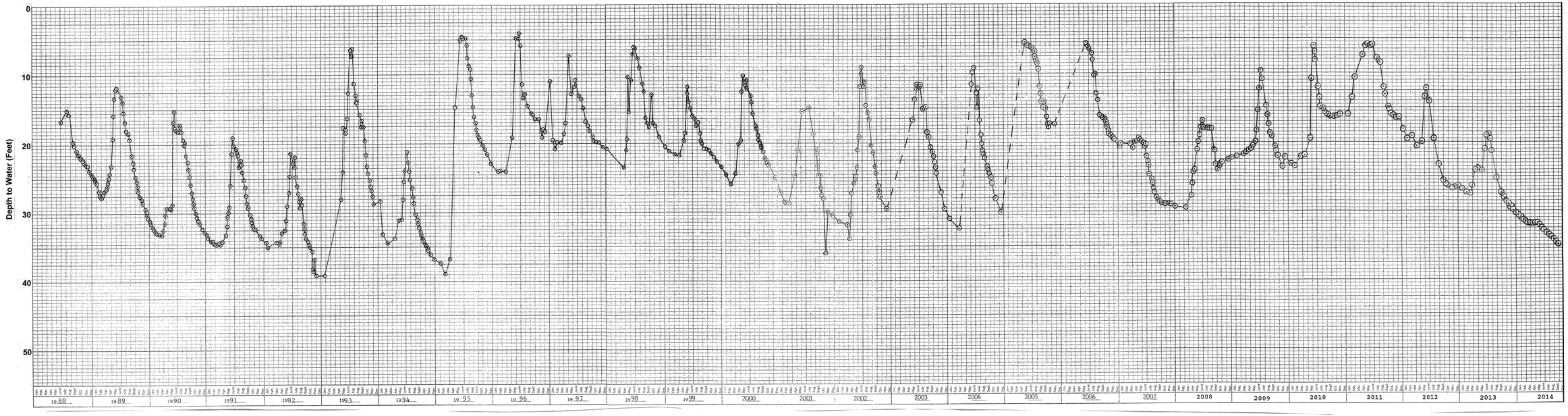
WATER LEVEL HYDROGRAPH FOR MW-5M



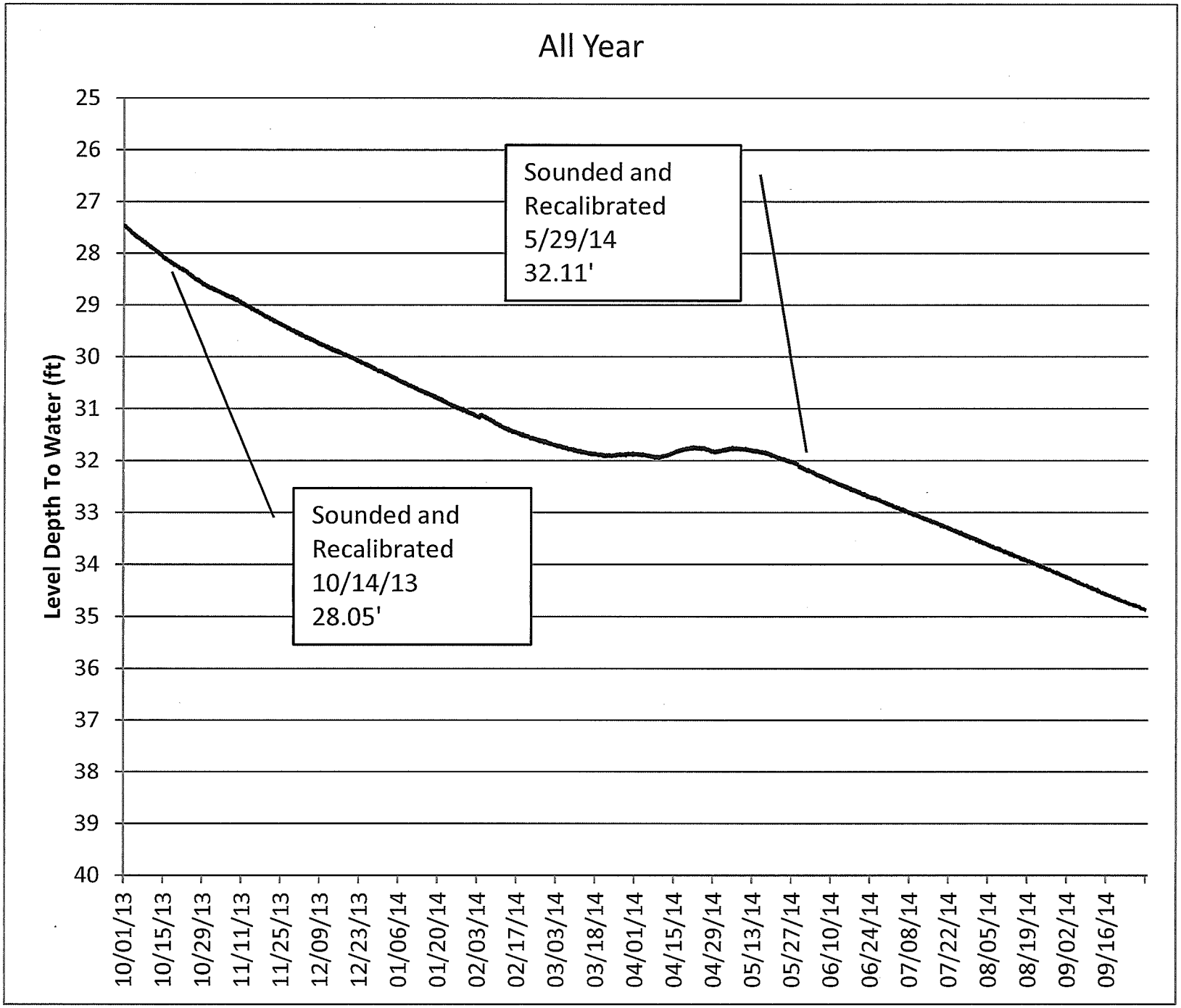
WATER-LEVEL HYDROGRAPH FOR WELL NO. 7



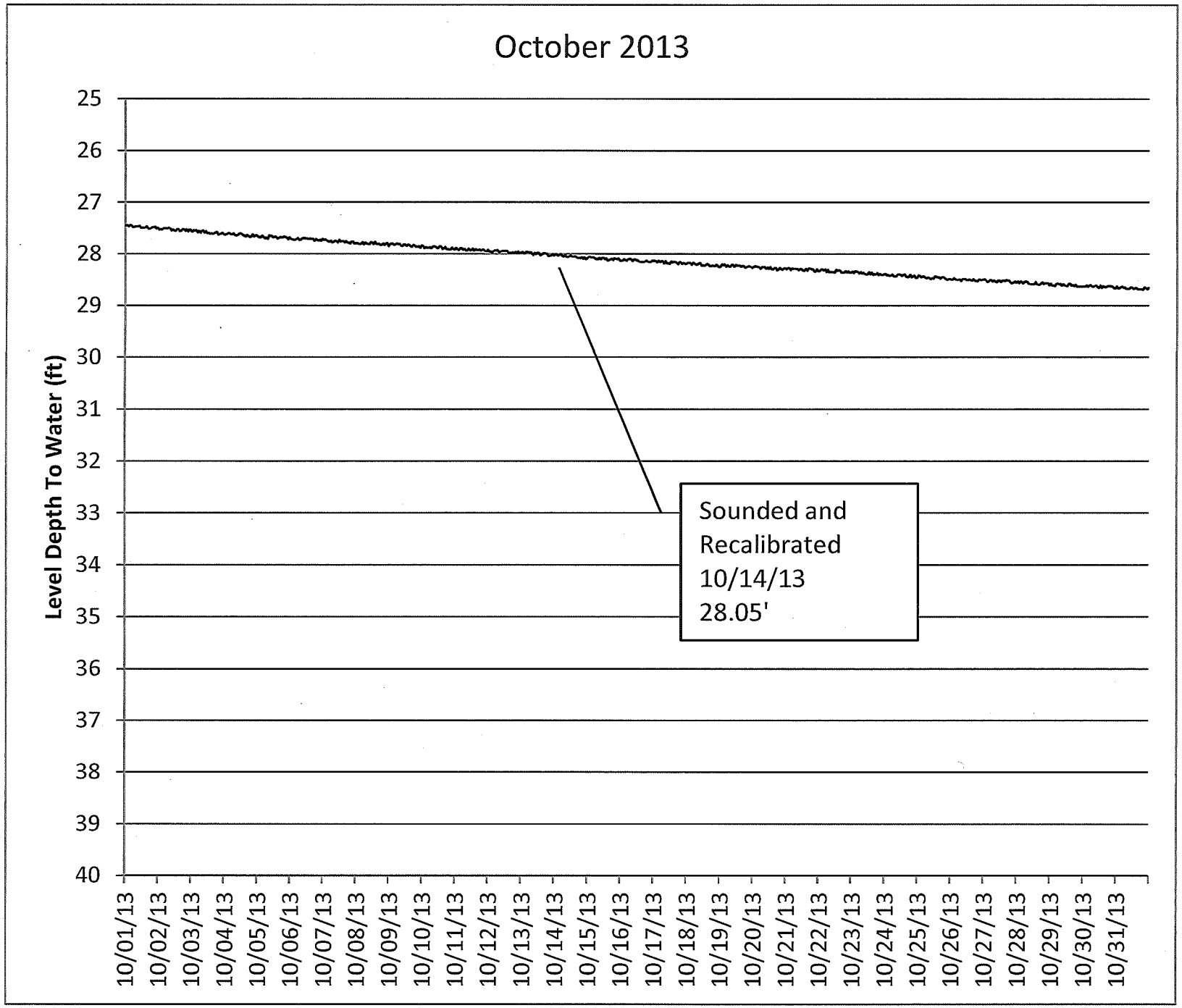
WATER-LEVEL HYDROGRAPH FOR WELL NO. 10M



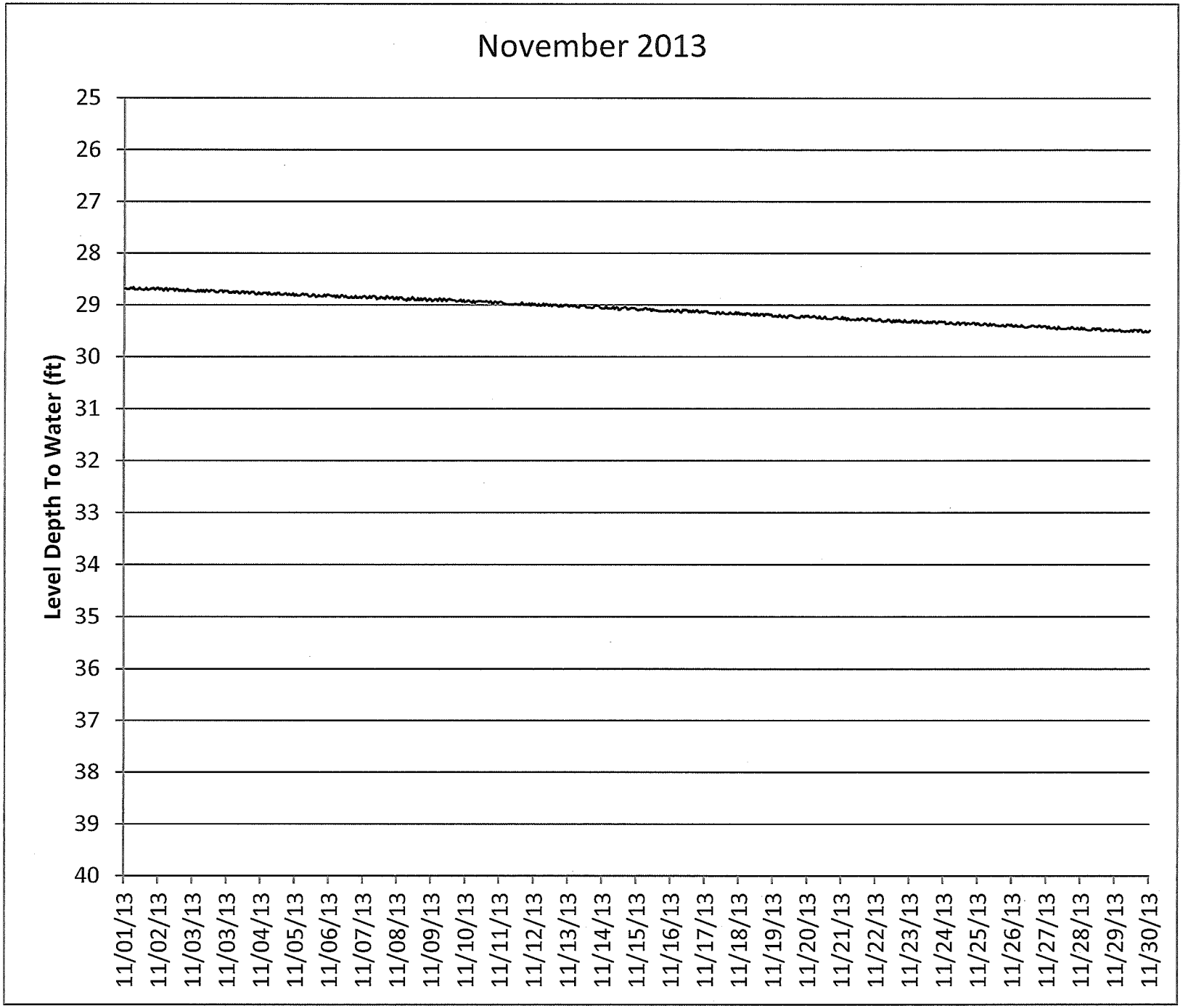
WATER-LEVEL HYDROGRAPH FOR WELL NO. 11M



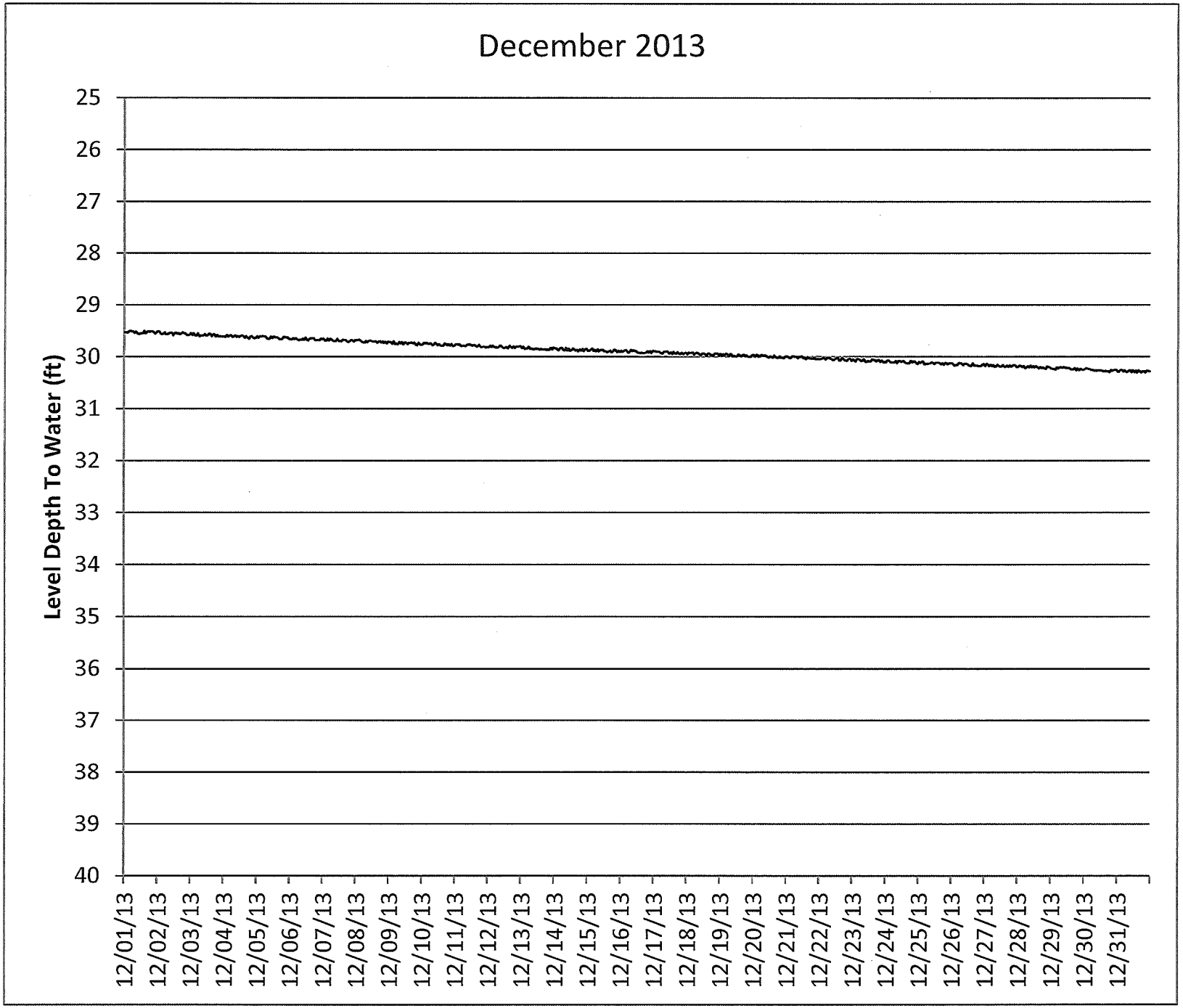
WATER LEVEL HYDROGRAPH FOR MW-11M



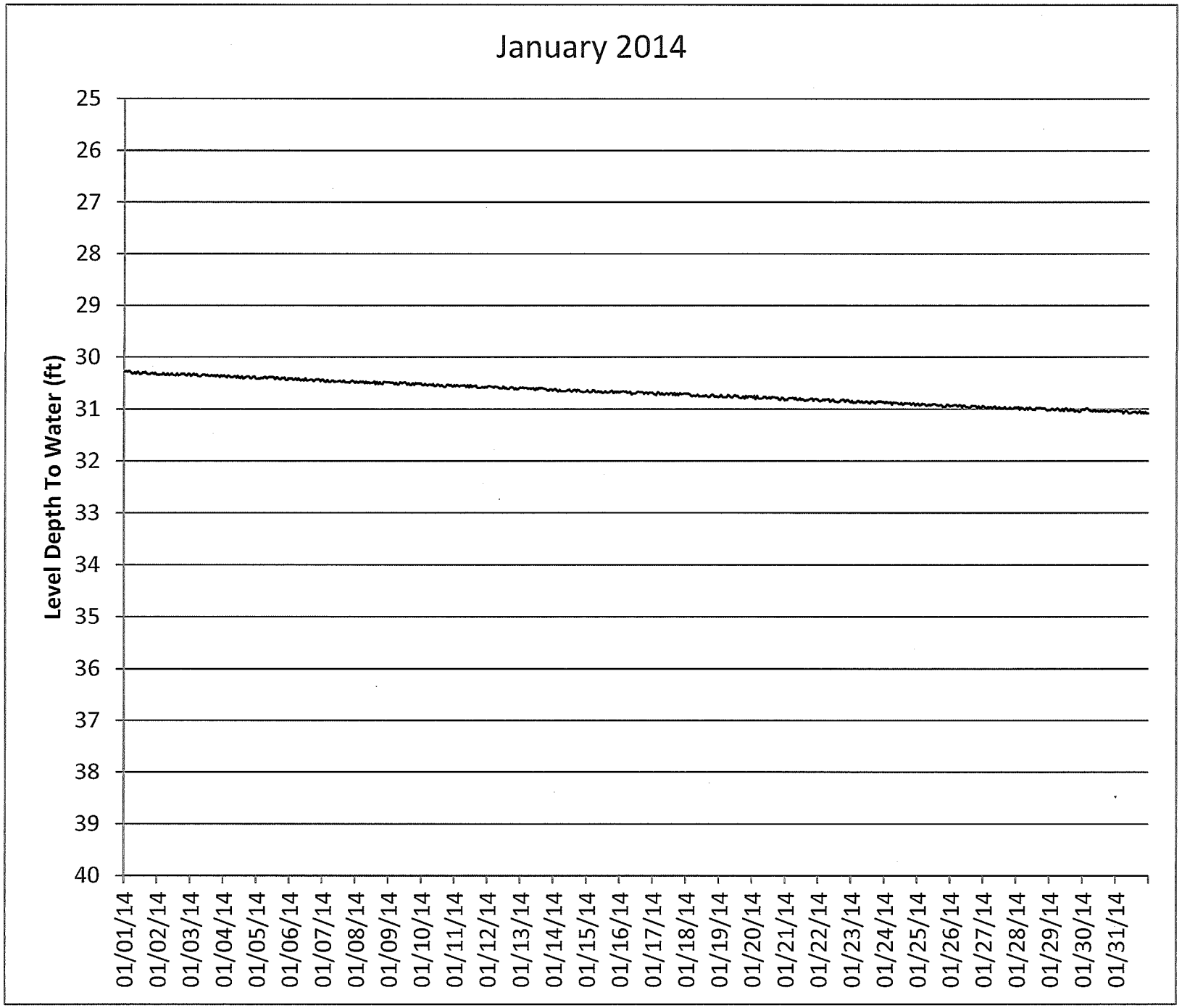
WATER LEVEL HYDROGRAPH FOR MW-11M



WATER LEVEL HYDROGRAPH FOR MW-11M



WATER LEVEL HYDROGRAPH FOR MW-11M



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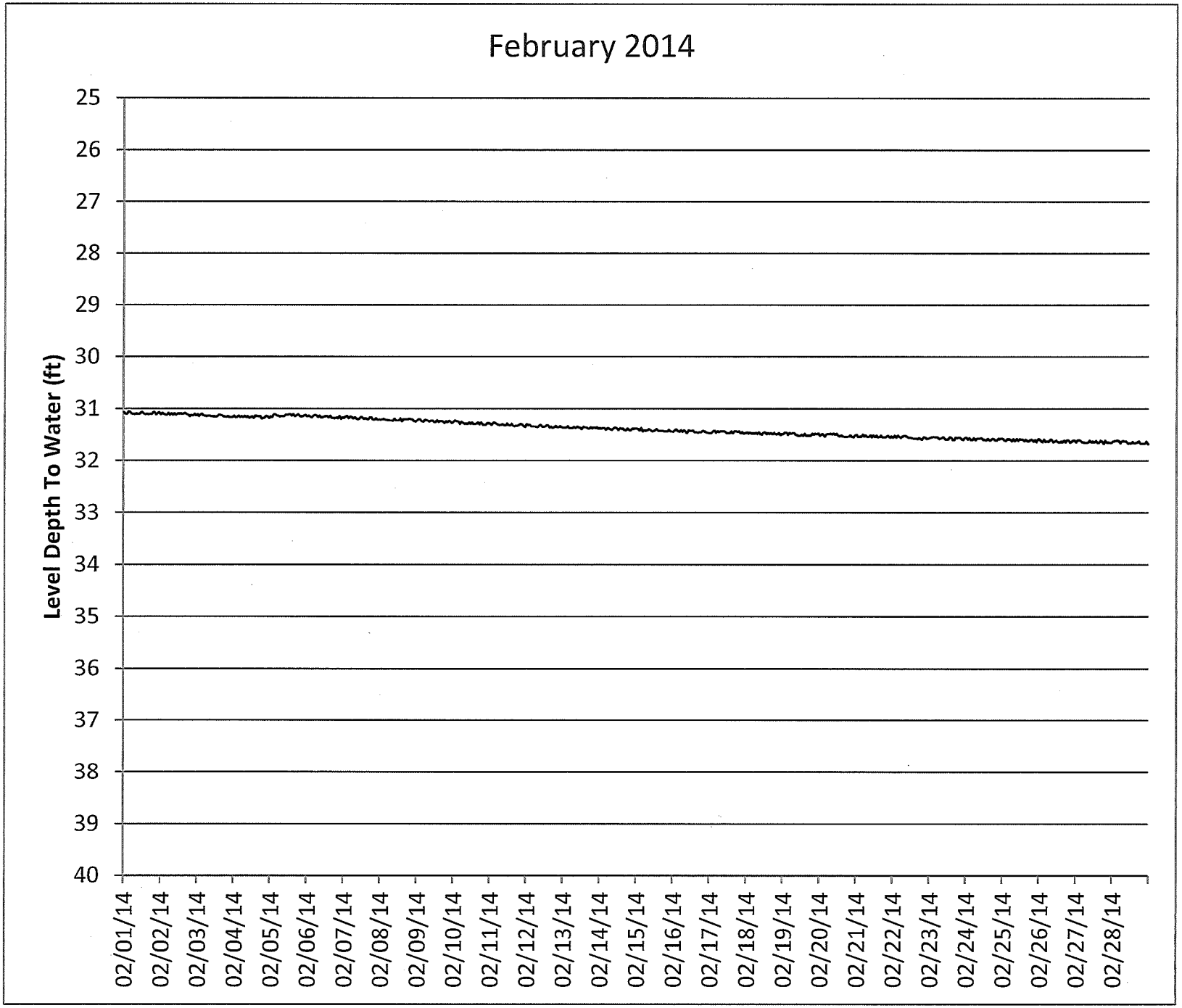
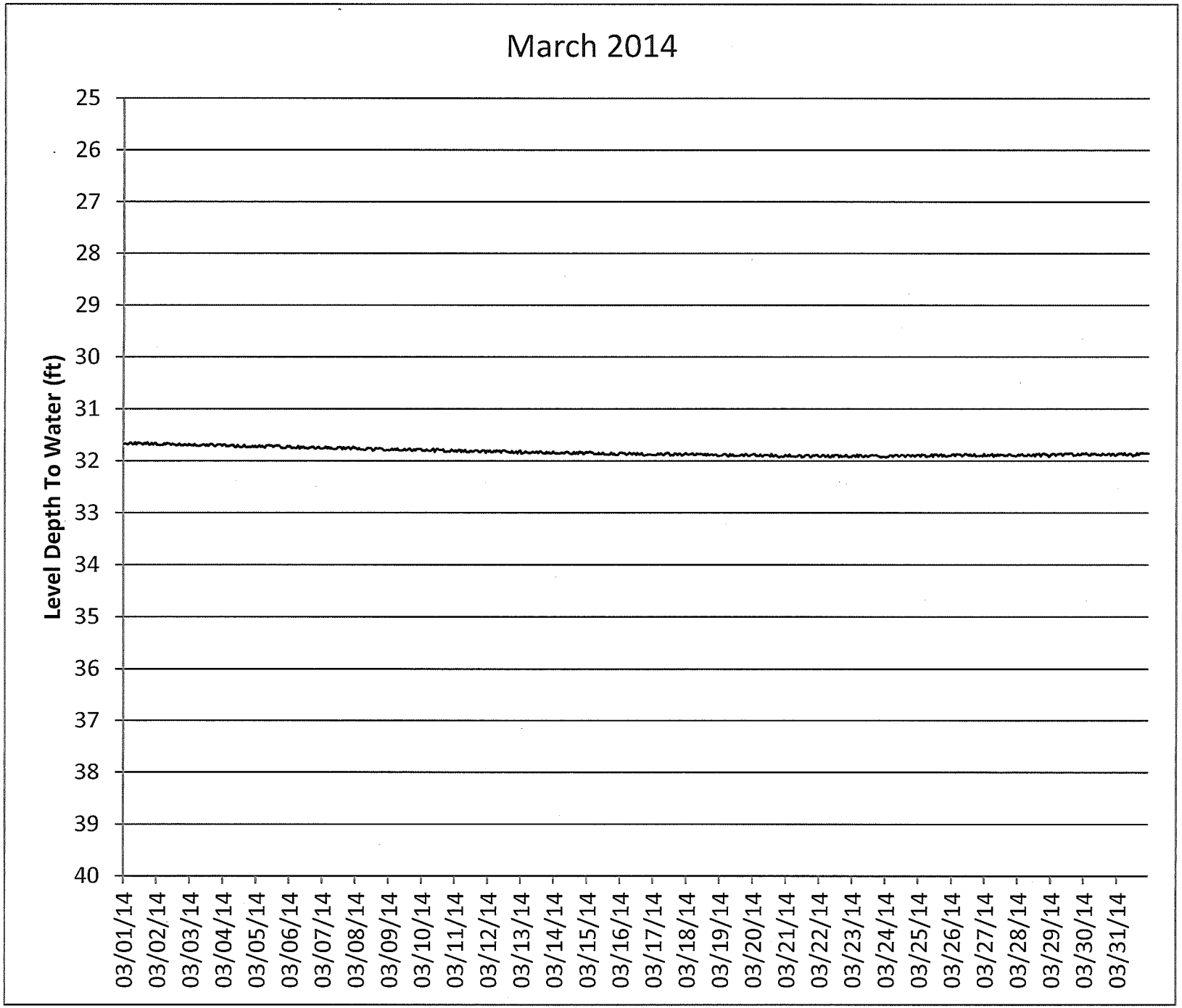


WATER LEVEL HYDROGRAPH FOR MW-11M



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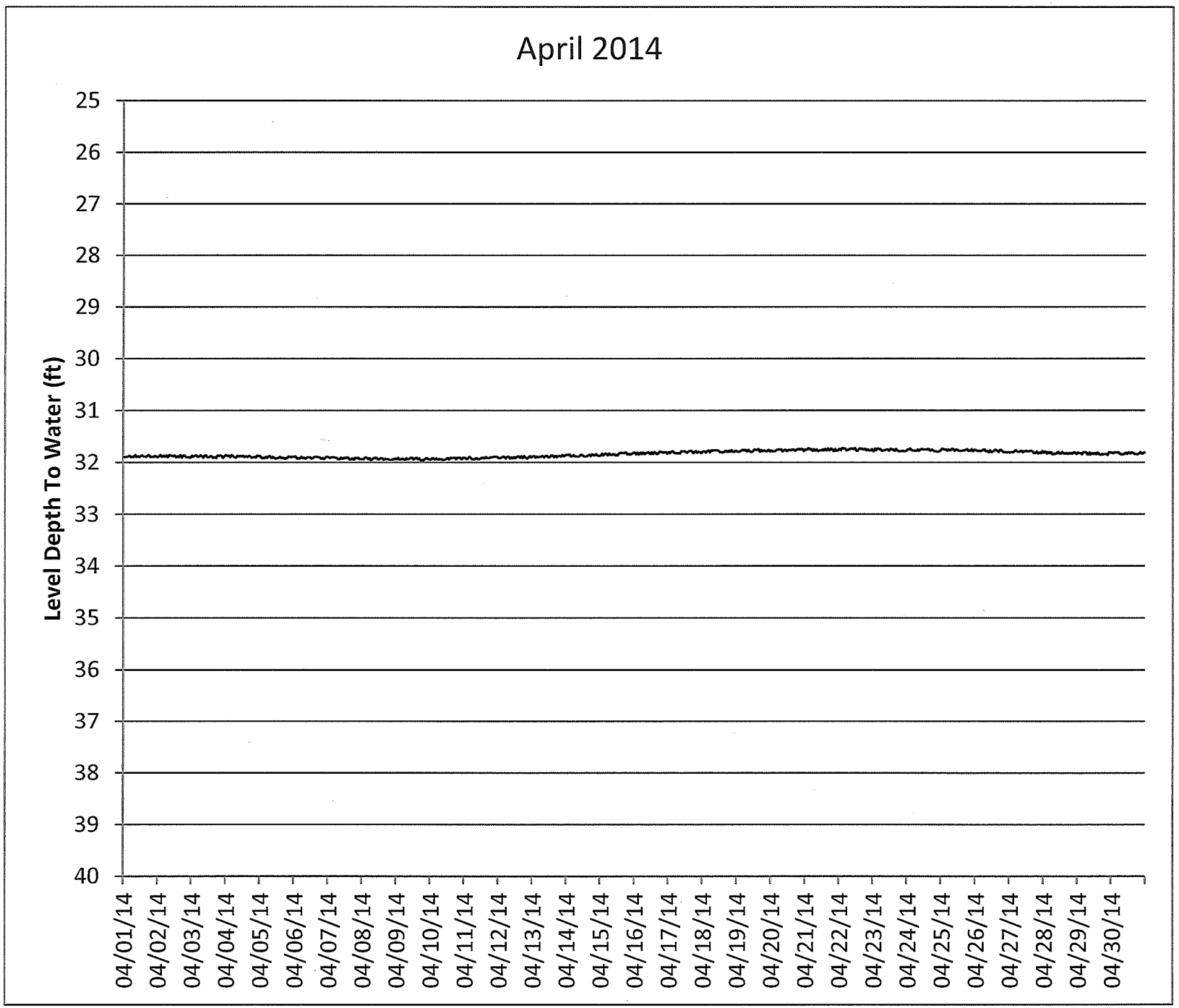

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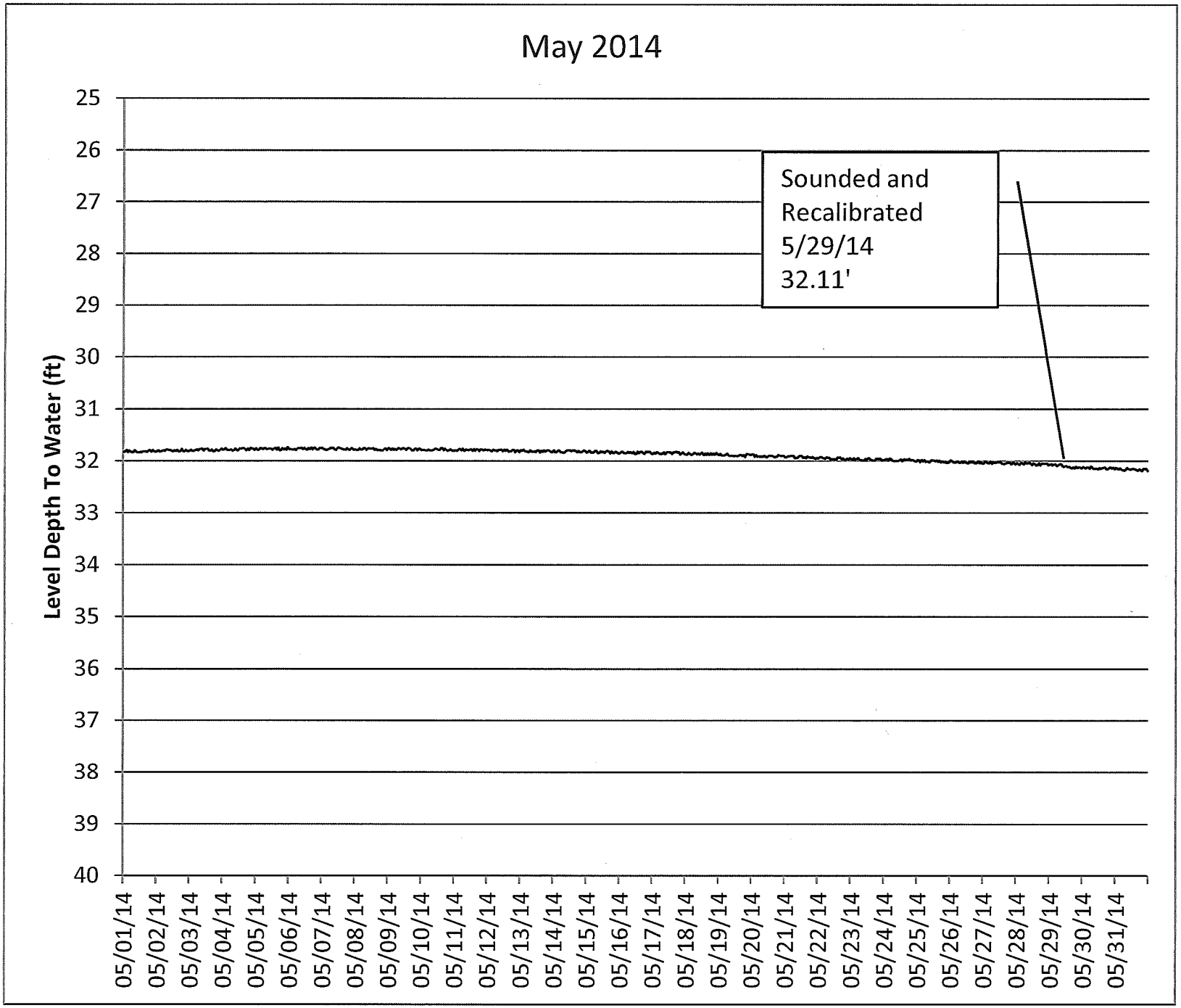

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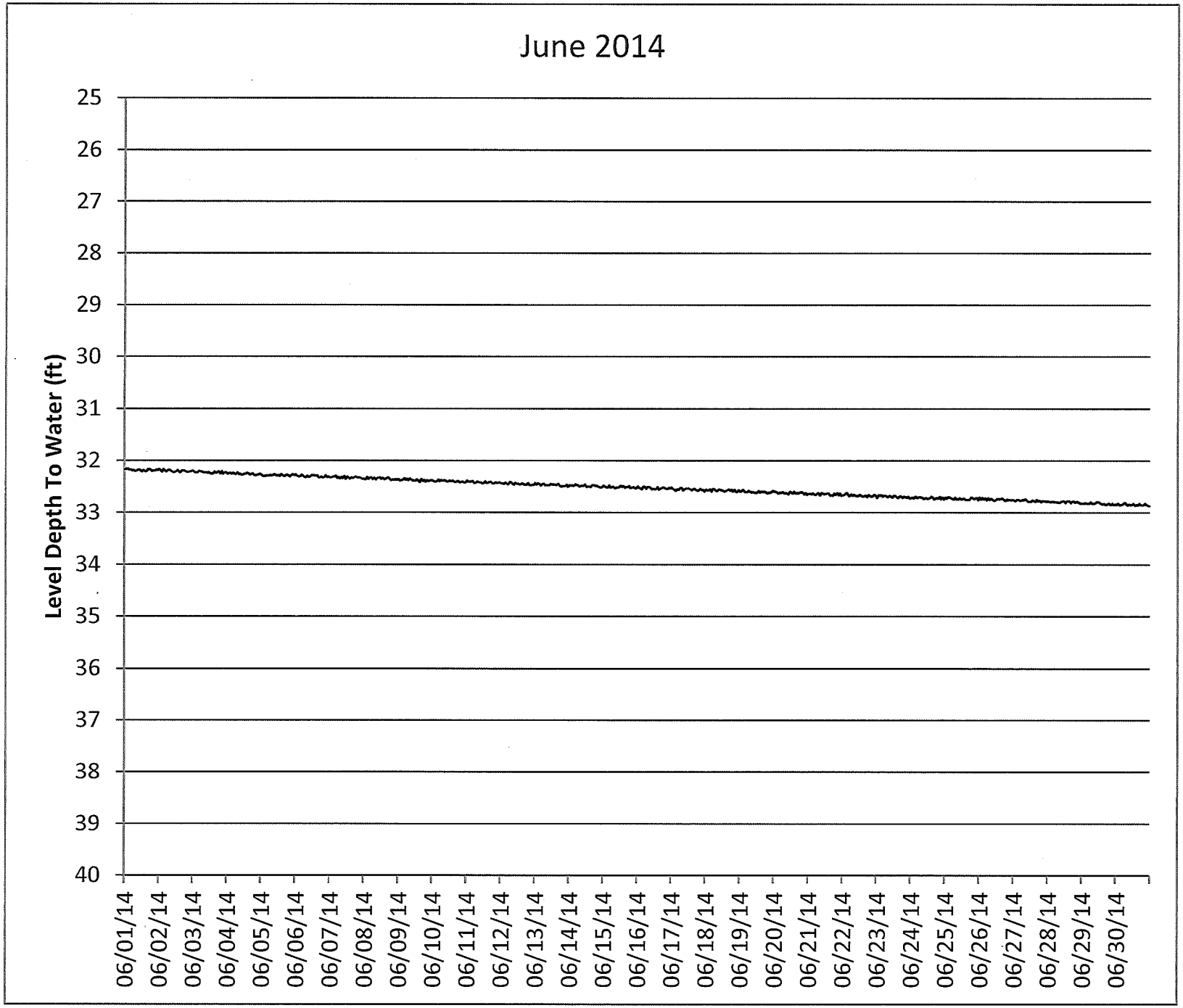

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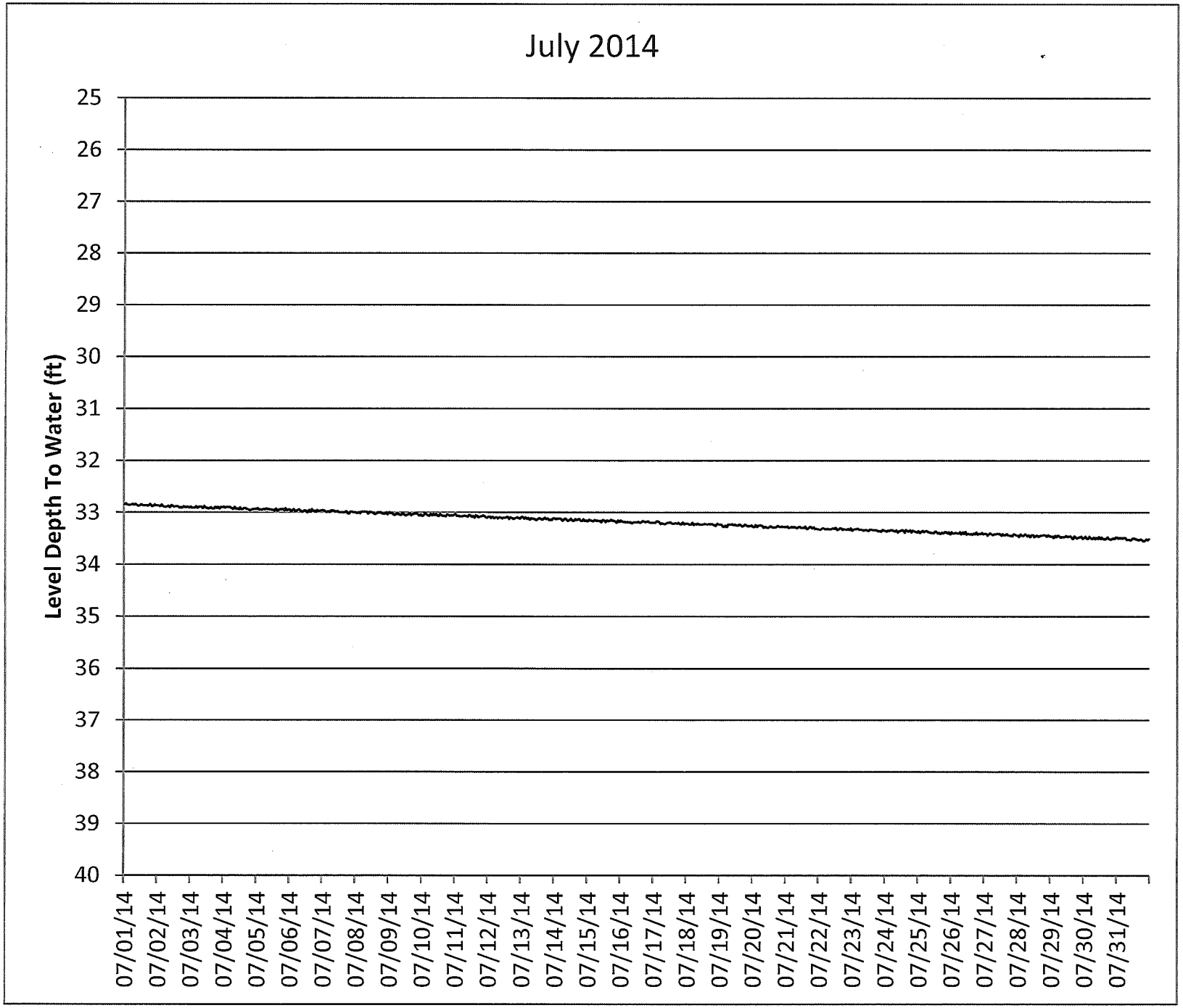
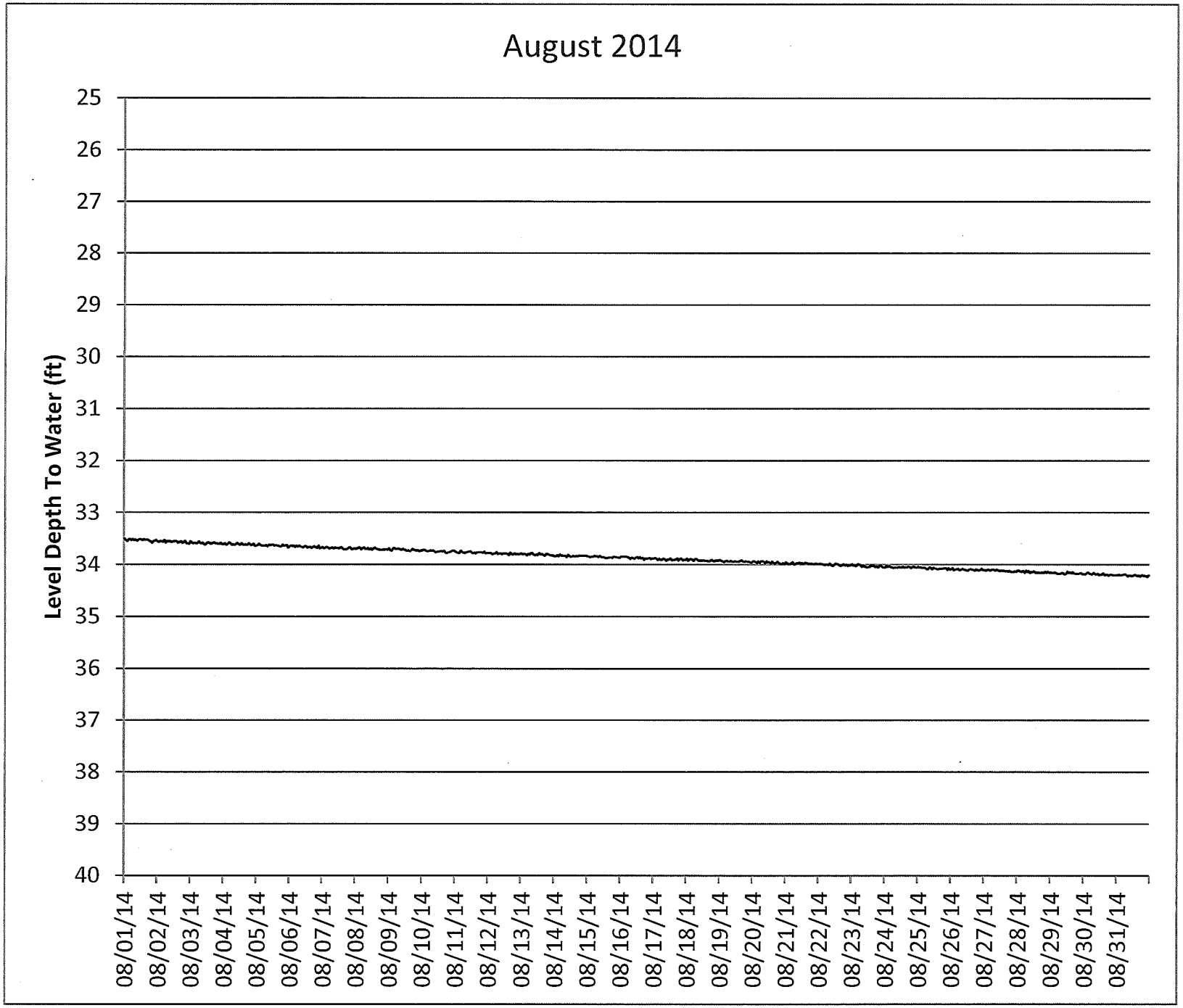


WATER LEVEL HYDROGRAPH FOR MW-11M



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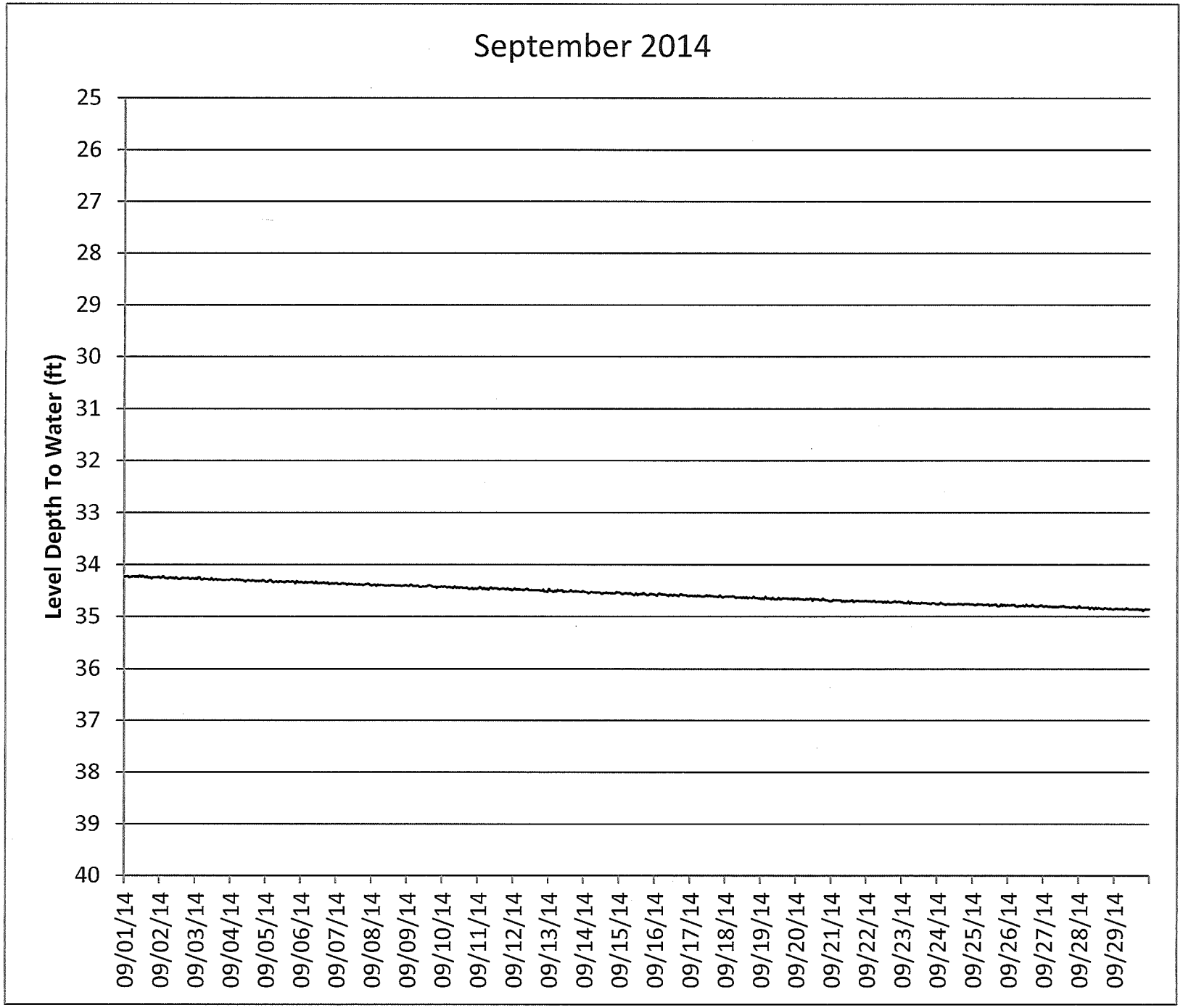

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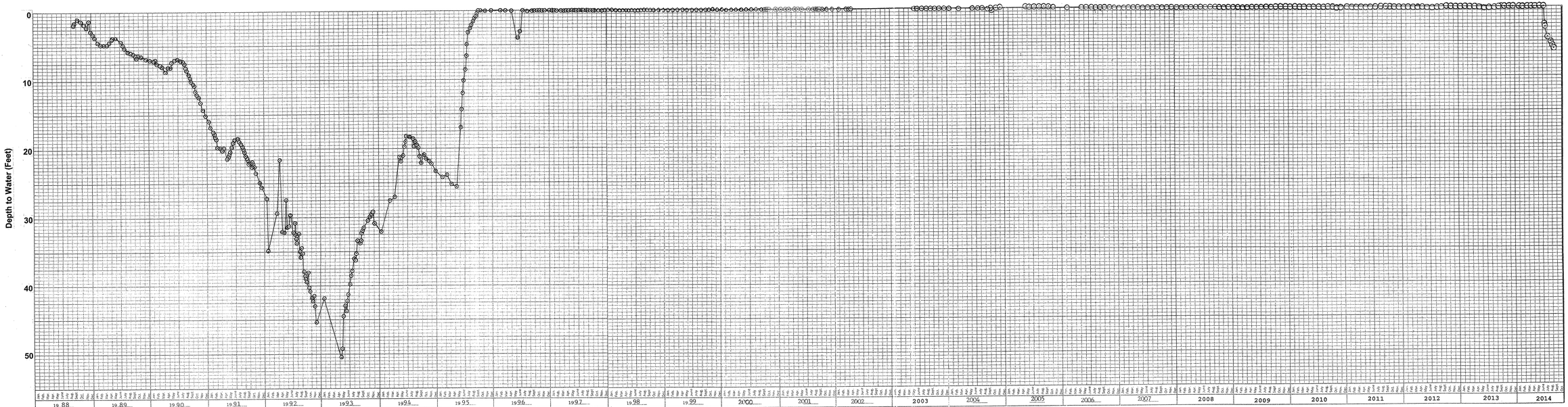
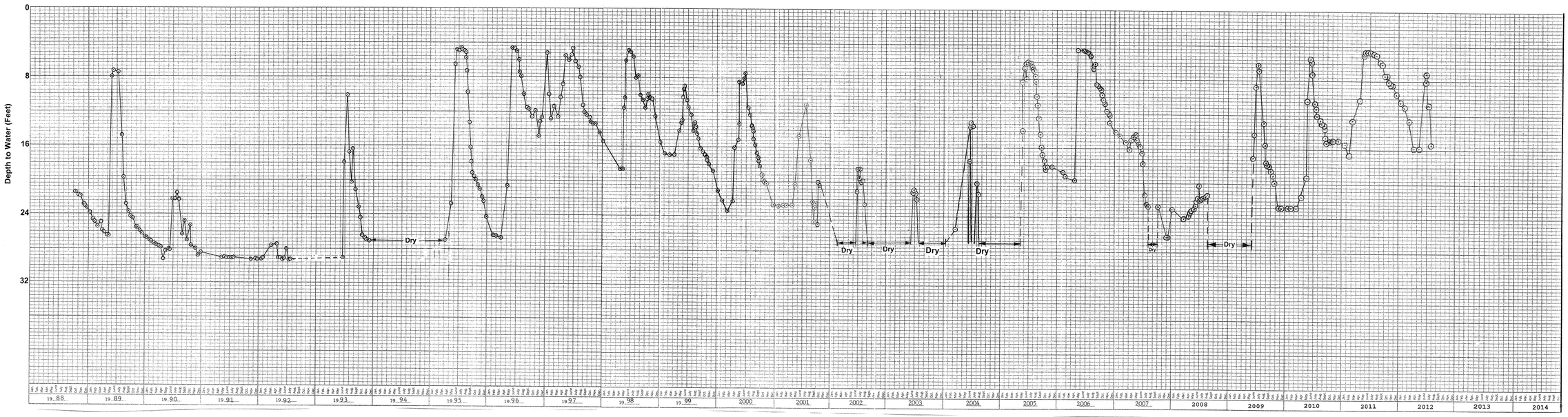
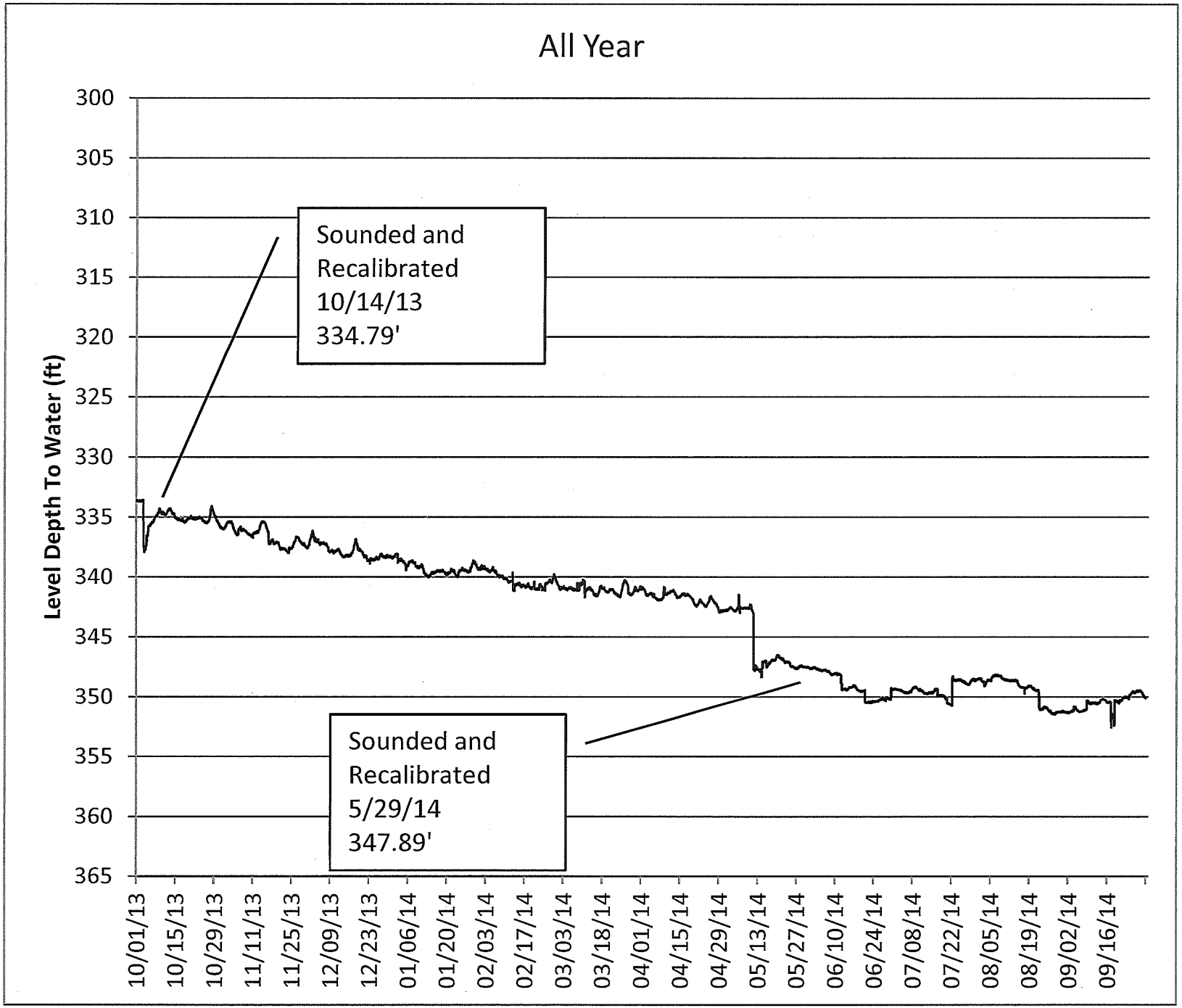


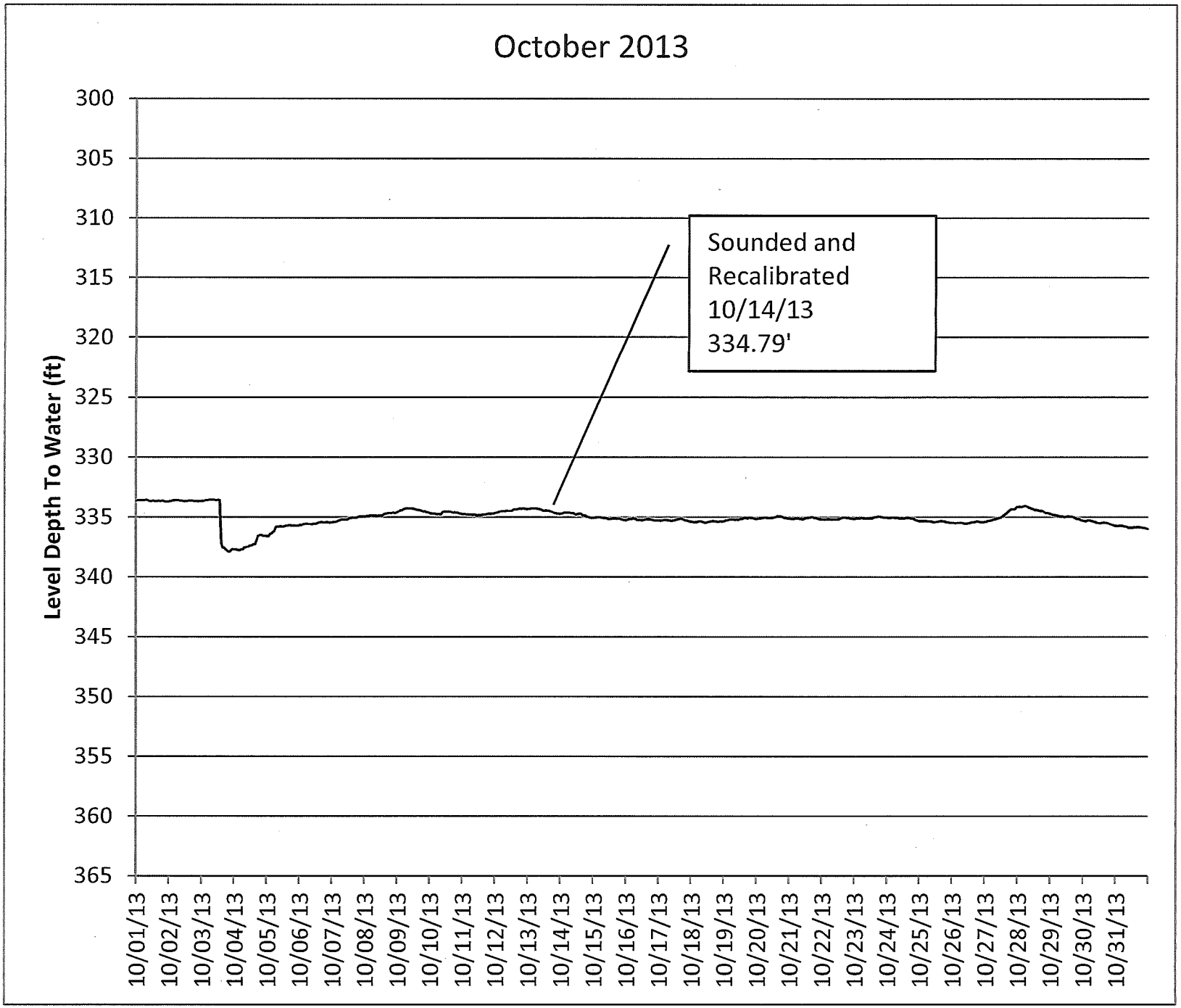
WATER-LEVEL HYDROGRAPH FOR WELL NO. 11



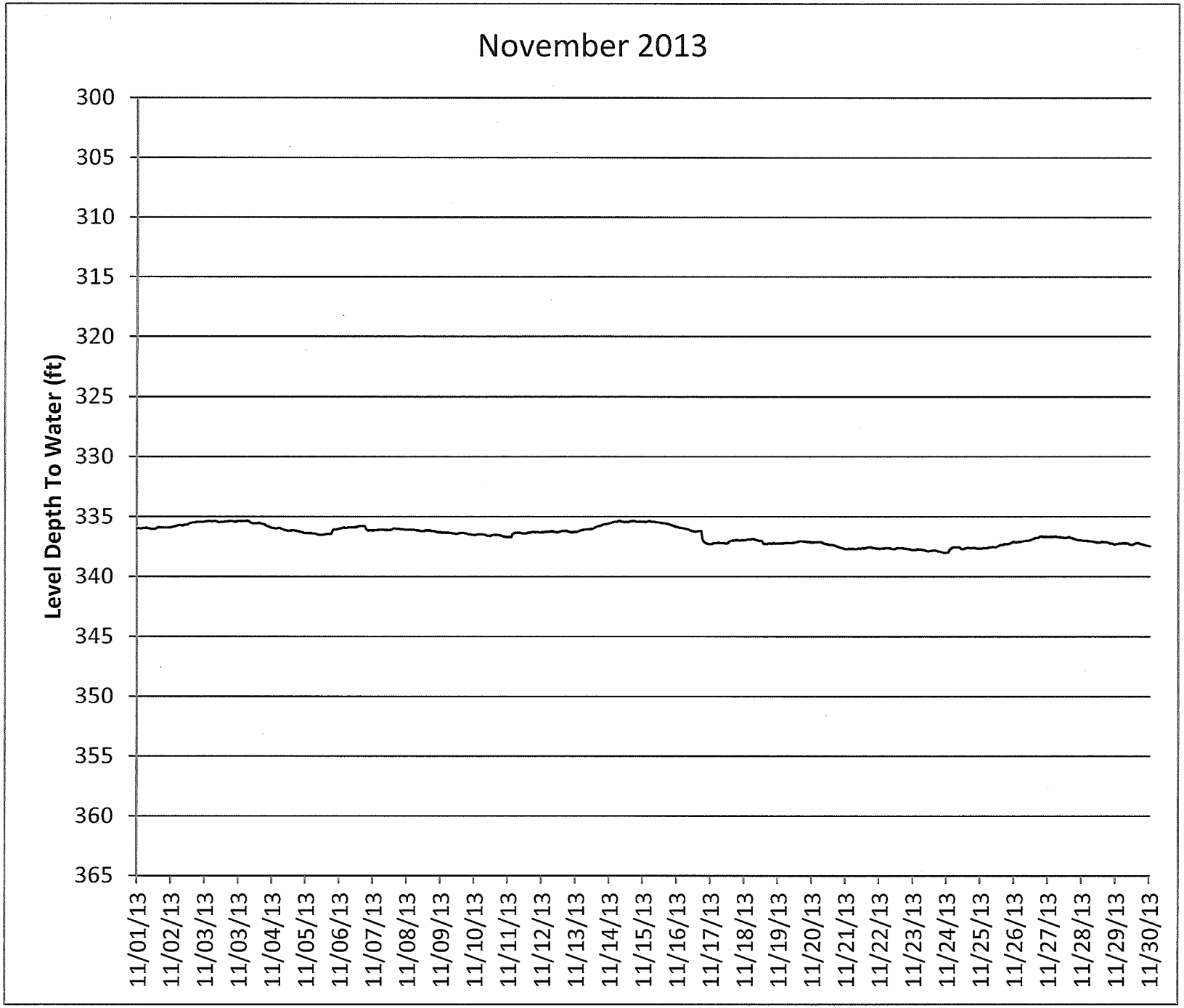
WATER-LEVEL HYDROGRAPH FOR WELL NO. 12M



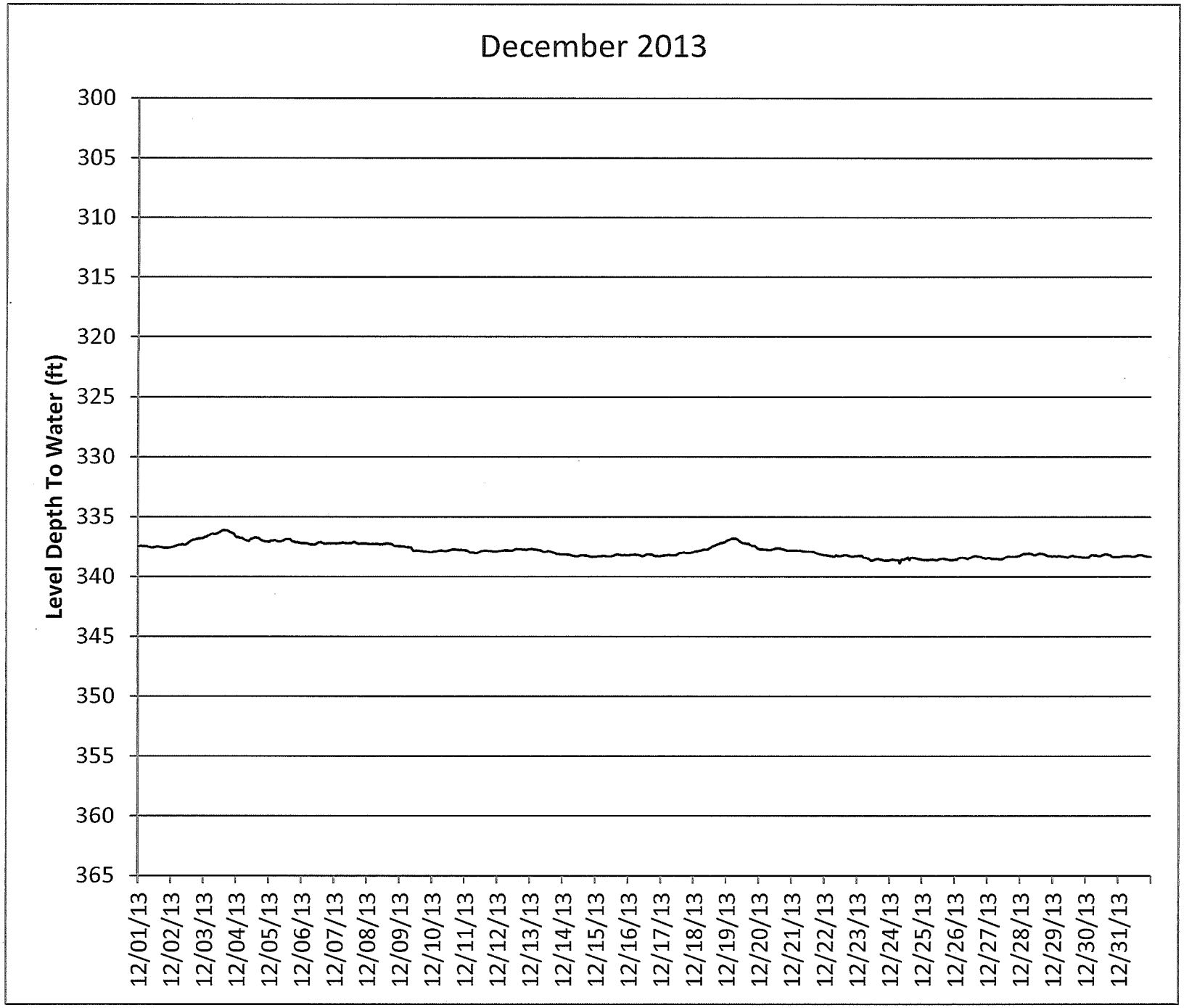
WATER LEVEL HYDROGRAPH FOR MW-14M



WATER LEVEL HYDROGRAPH FOR MW-14M



WATER LEVEL HYDROGRAPH FOR MW-14M



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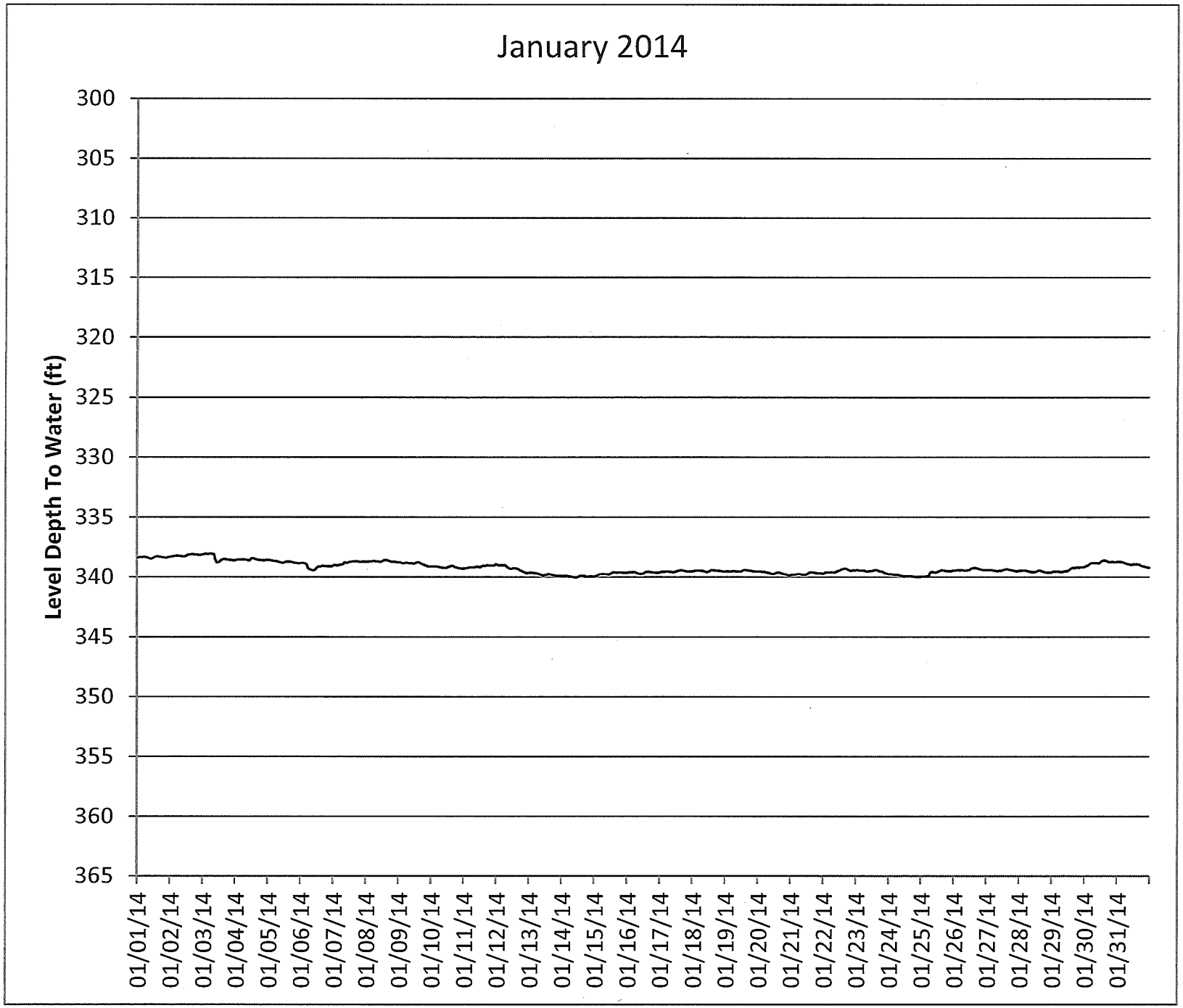

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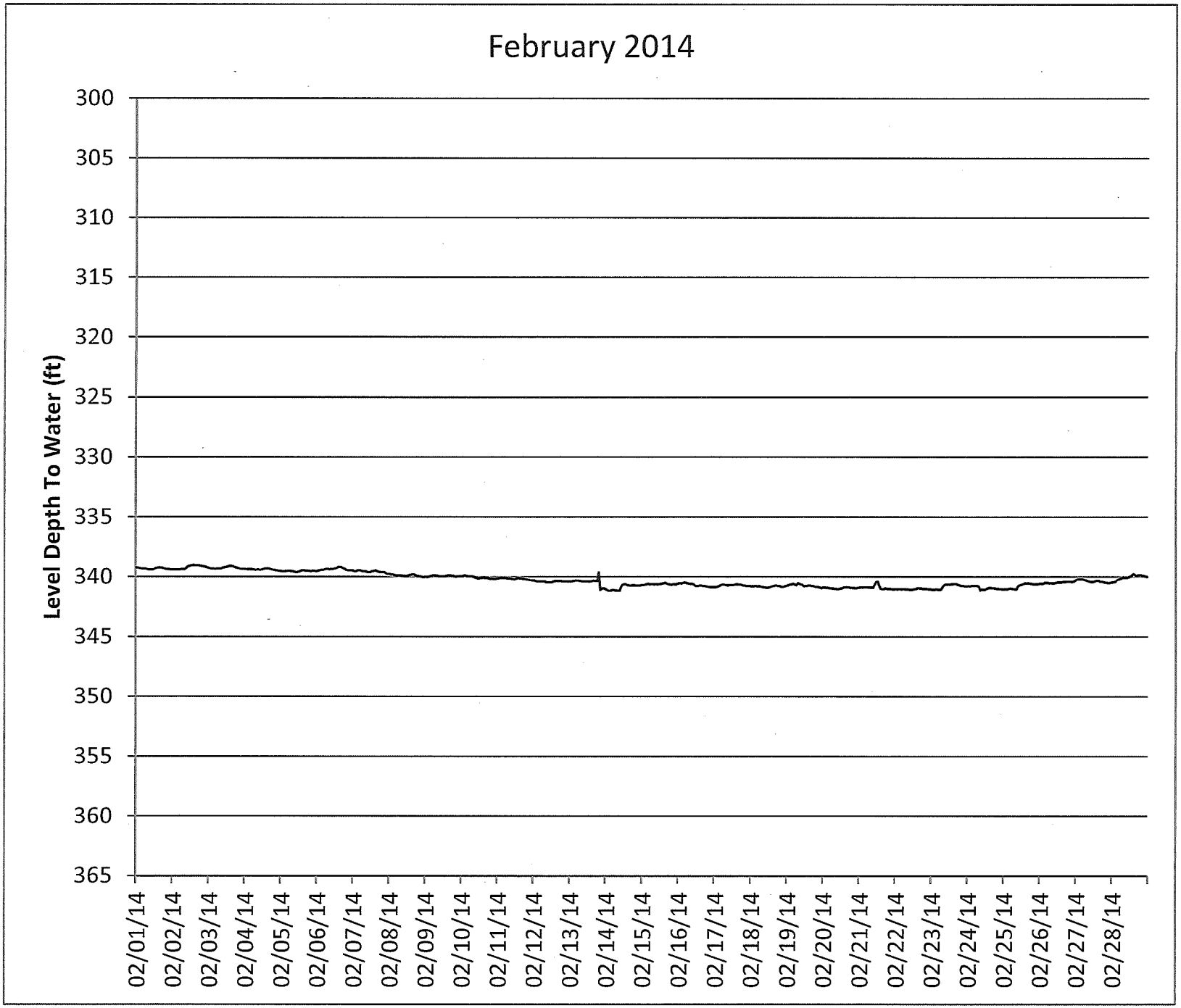

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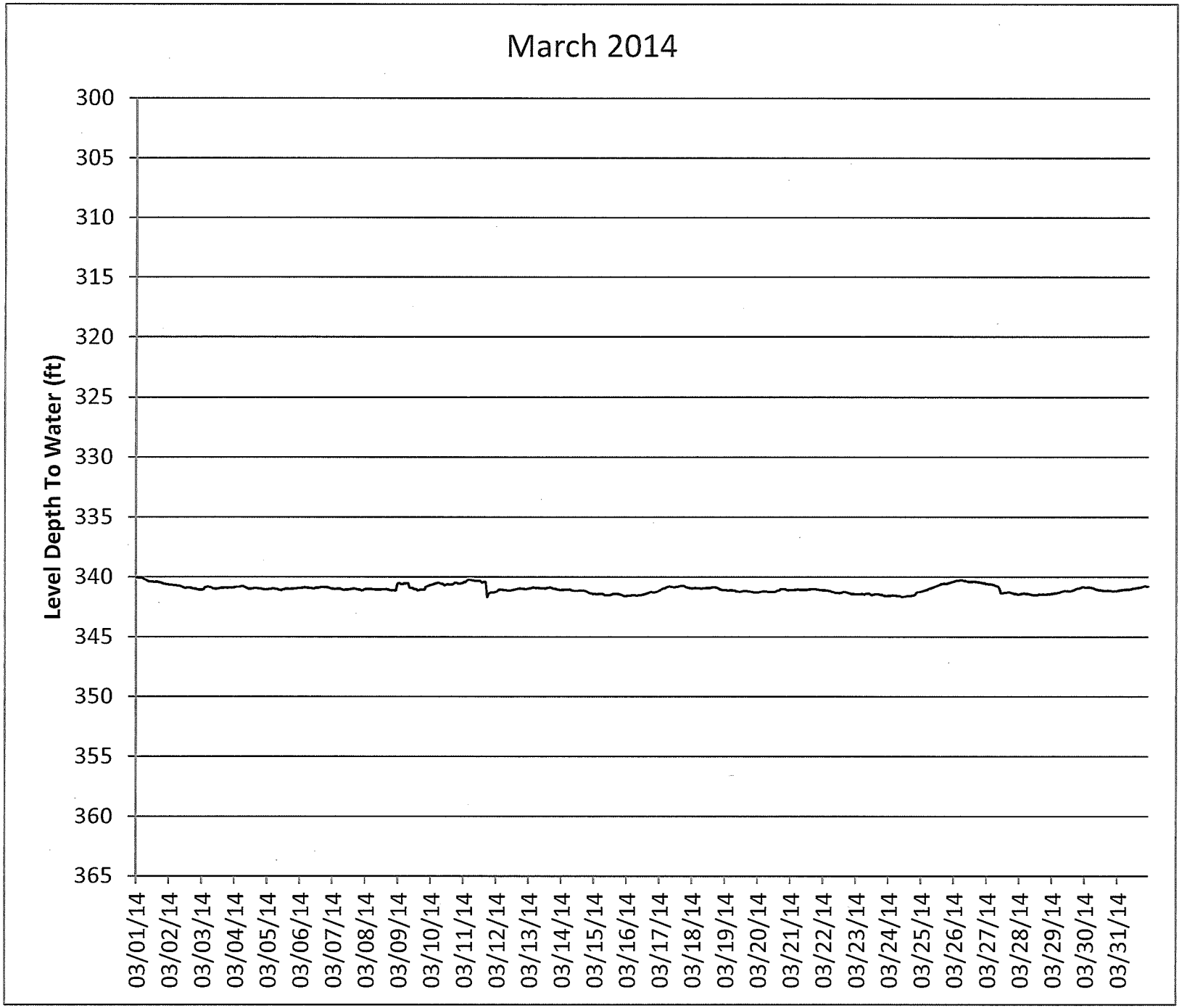

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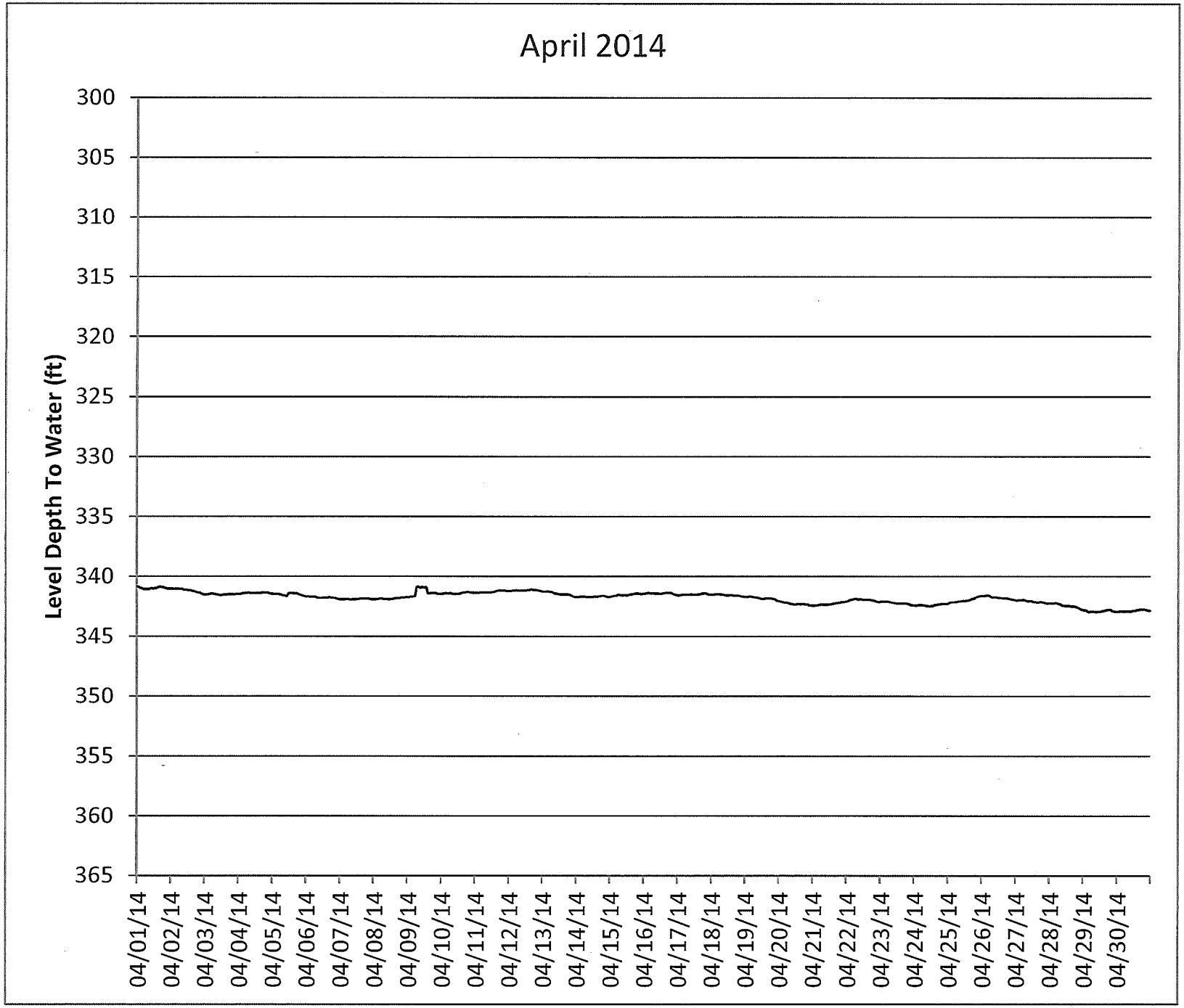

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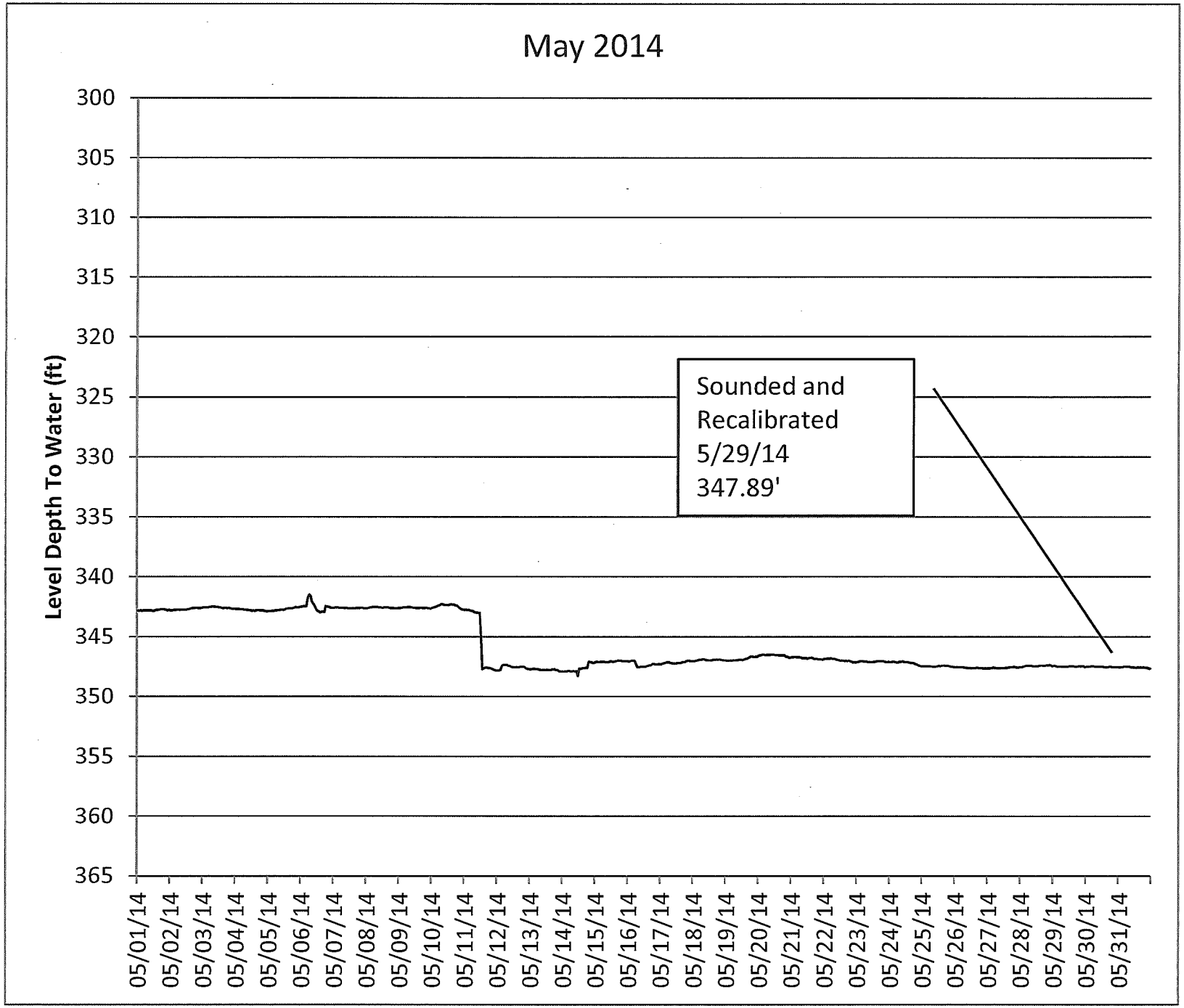

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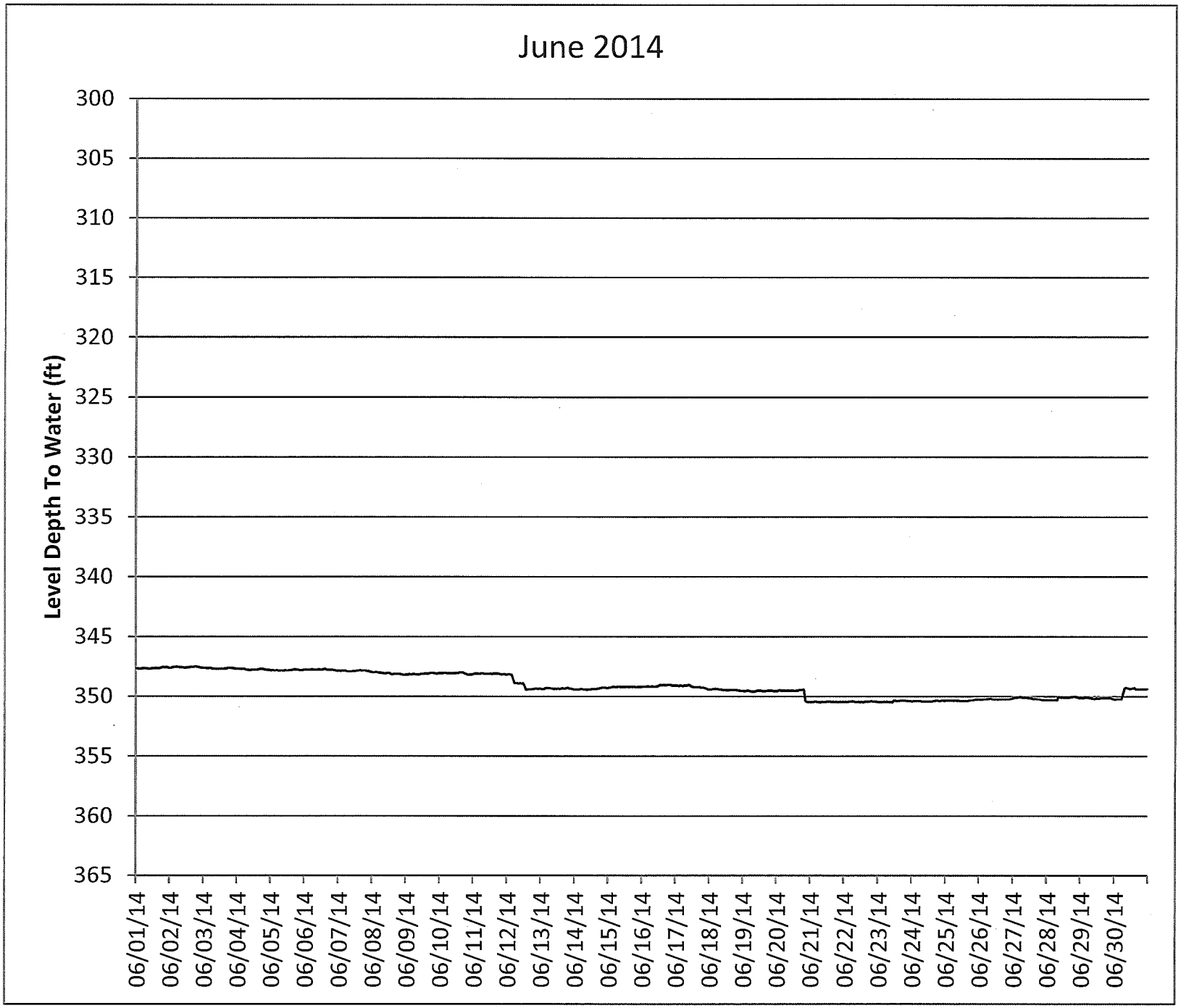

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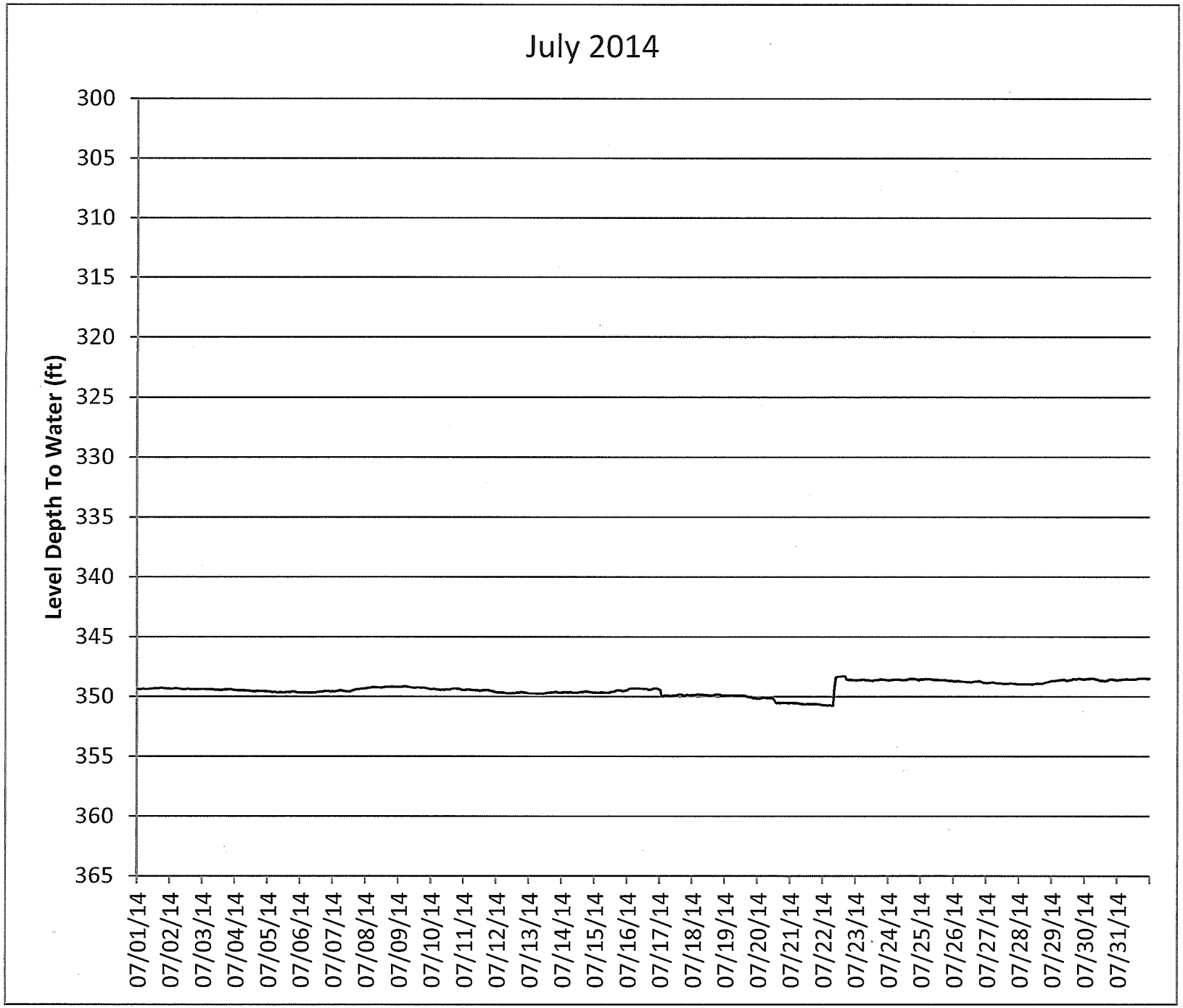

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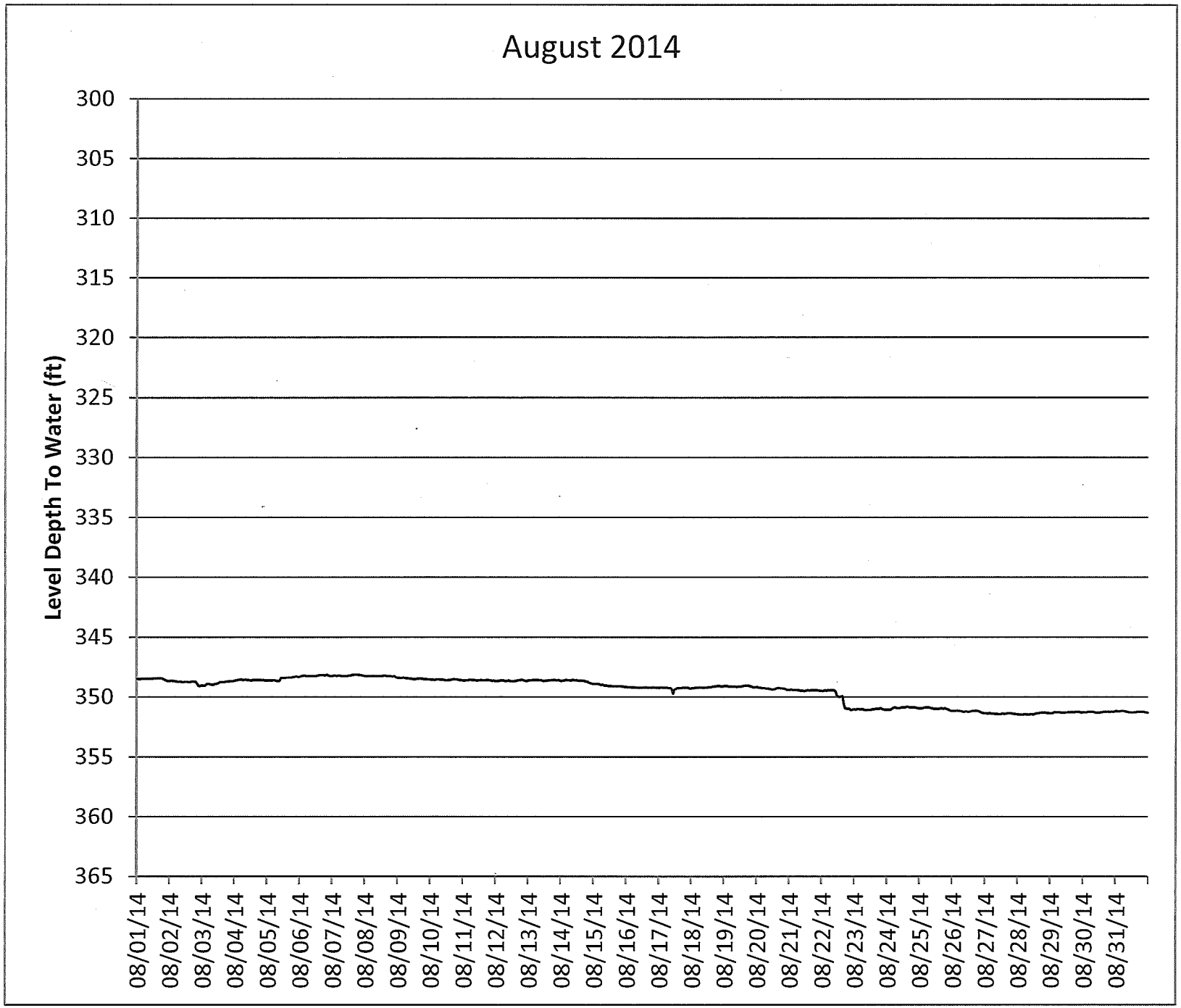

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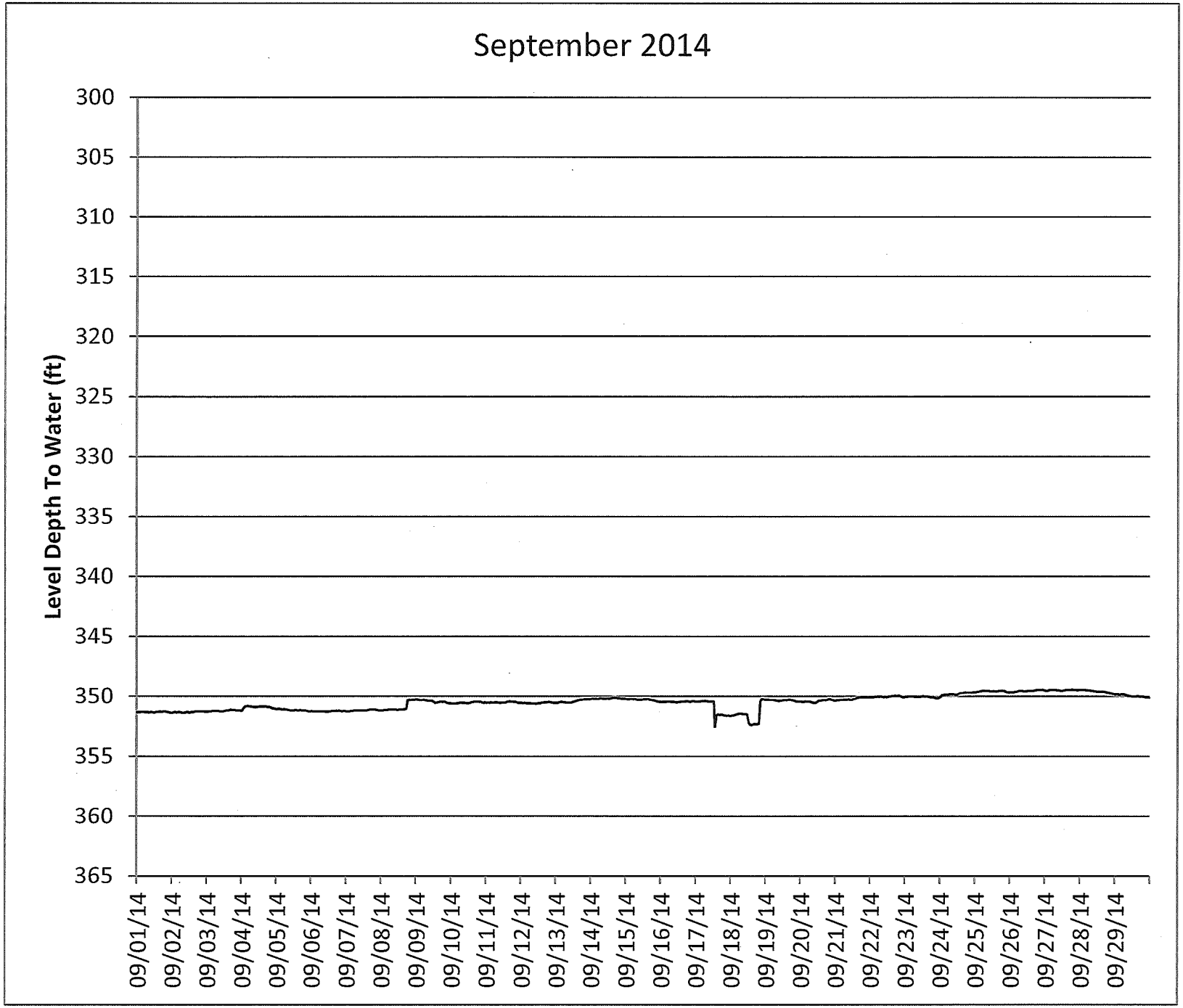

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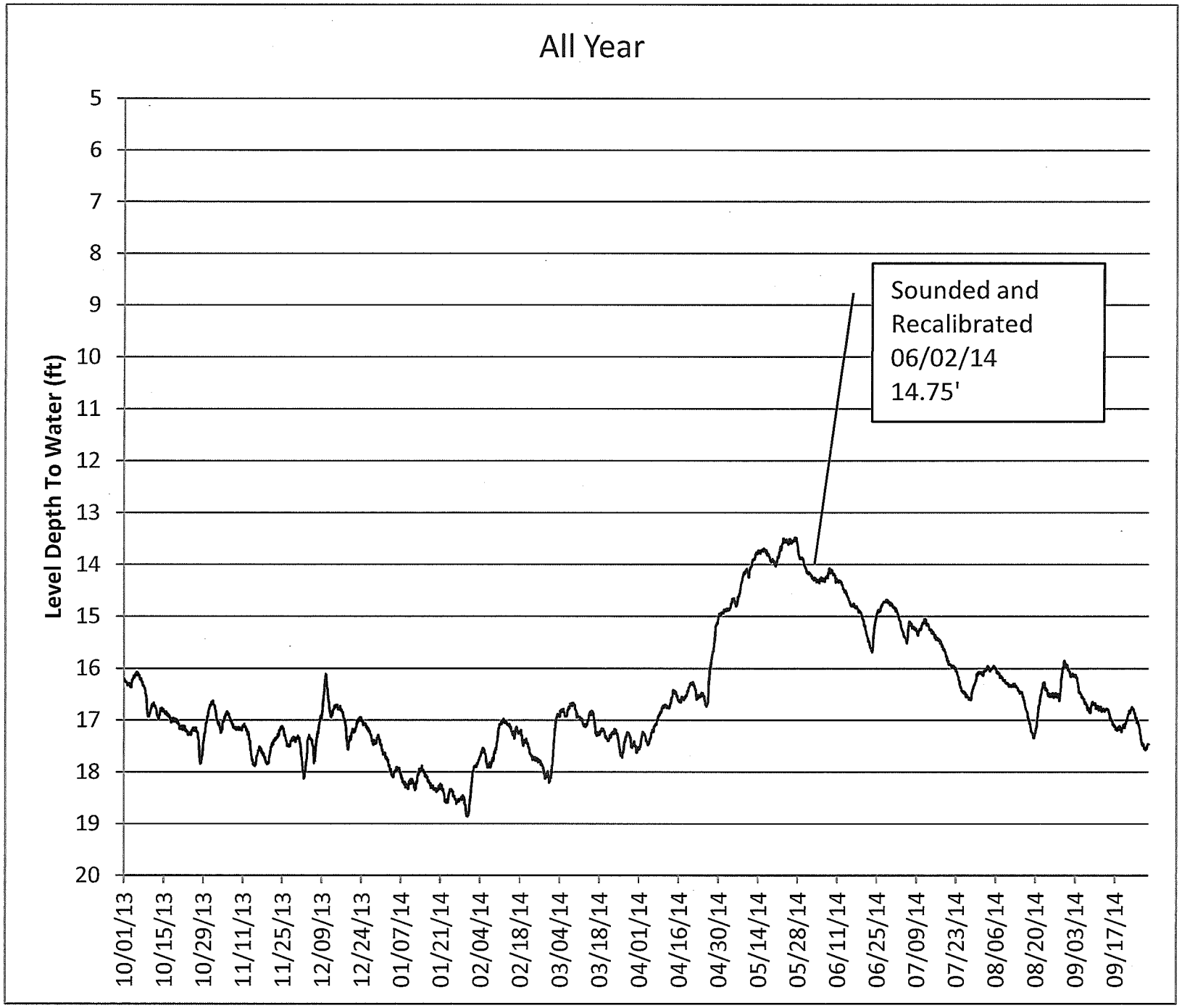
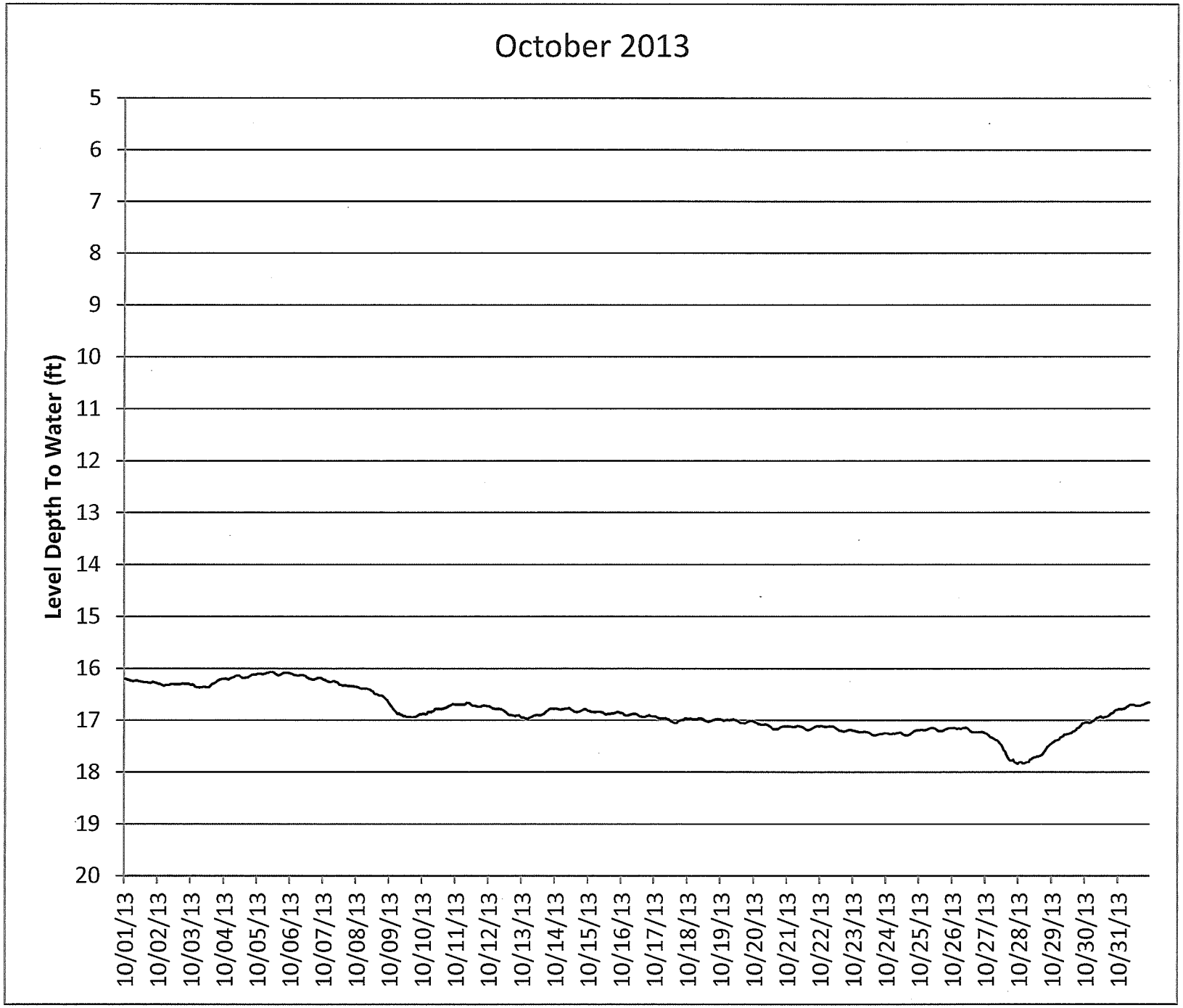
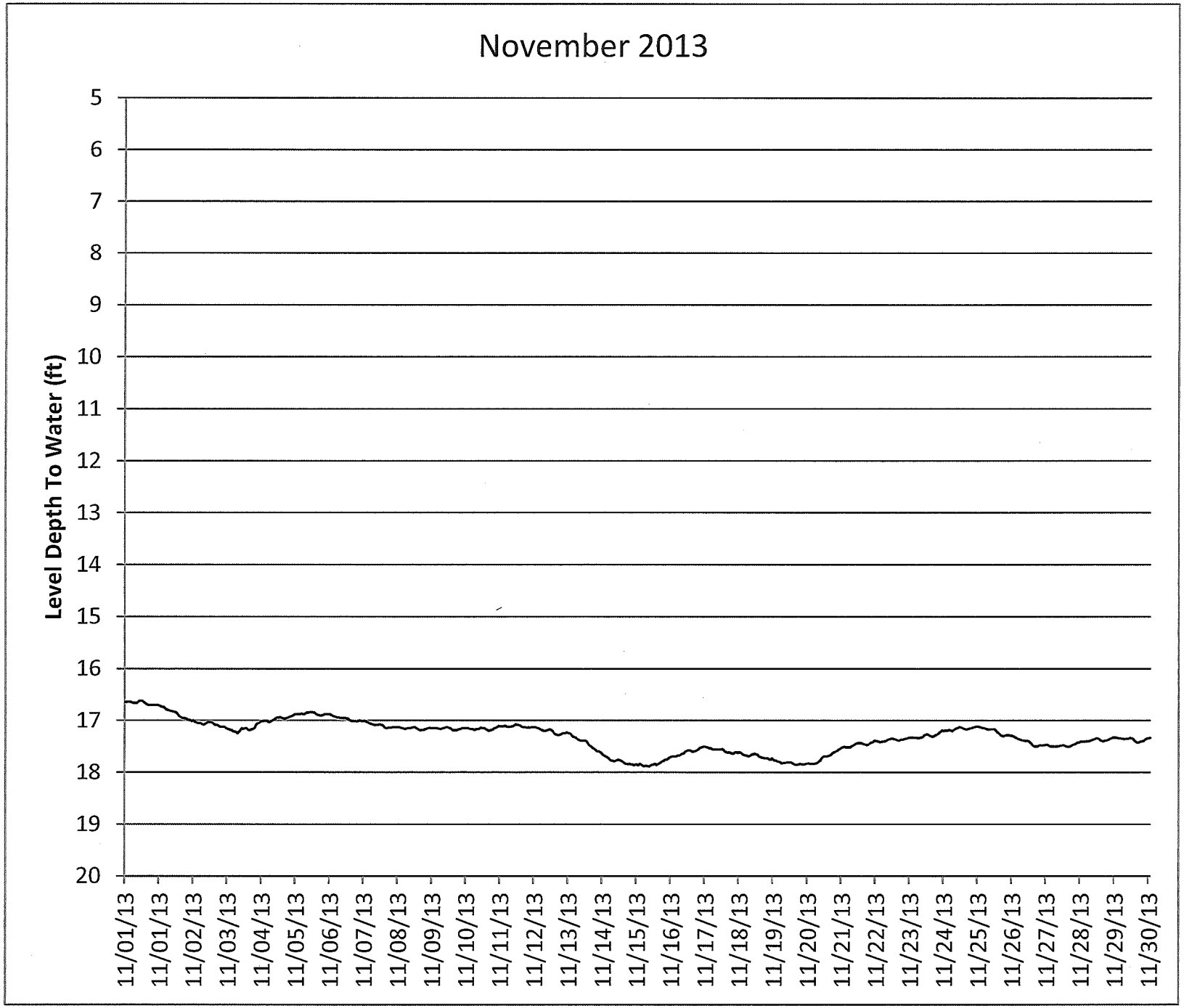


WATER LEVEL HYDROGRAPH FOR MW-23M



WATER LEVEL HYDROGRAPH FOR MW-23M



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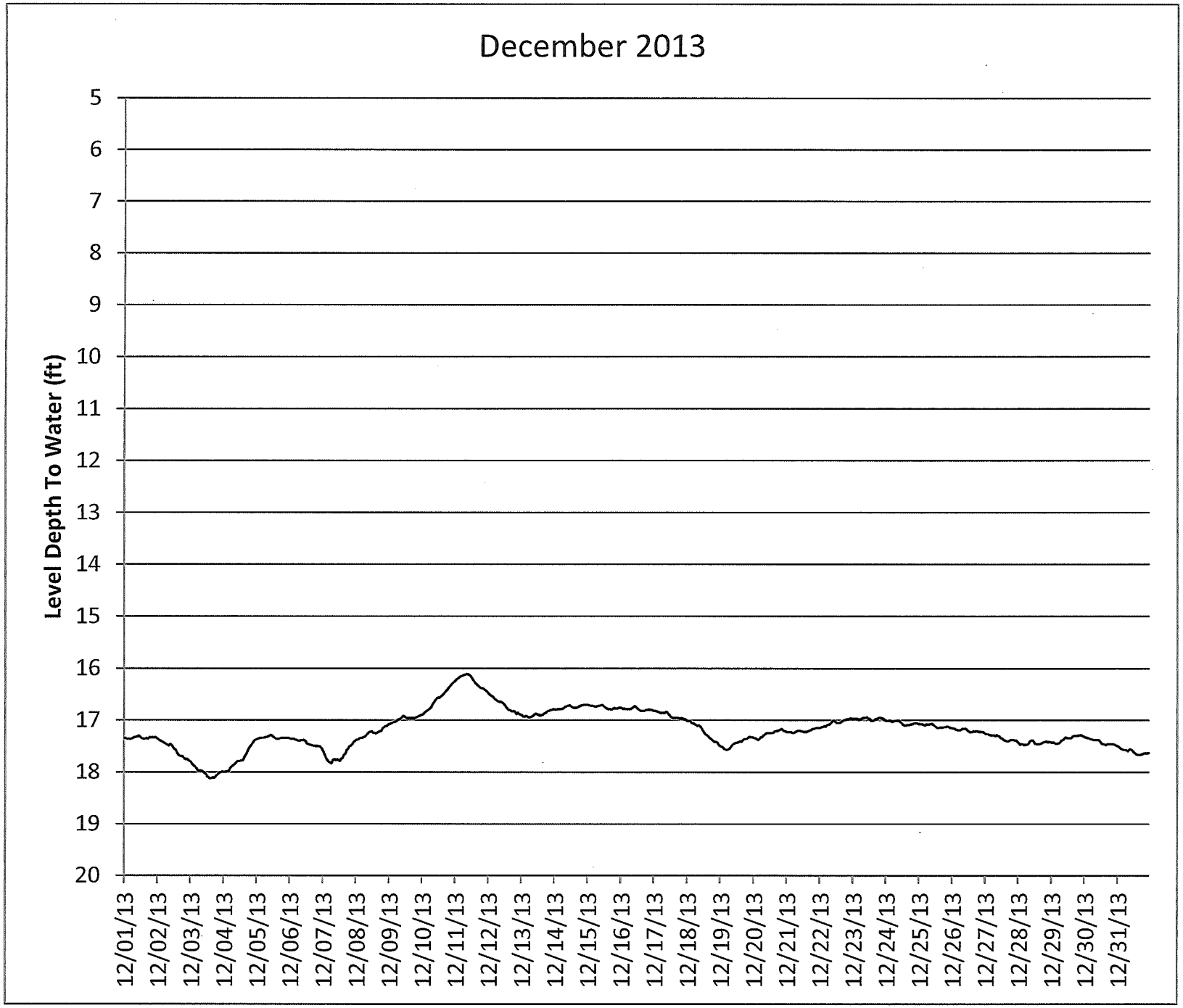
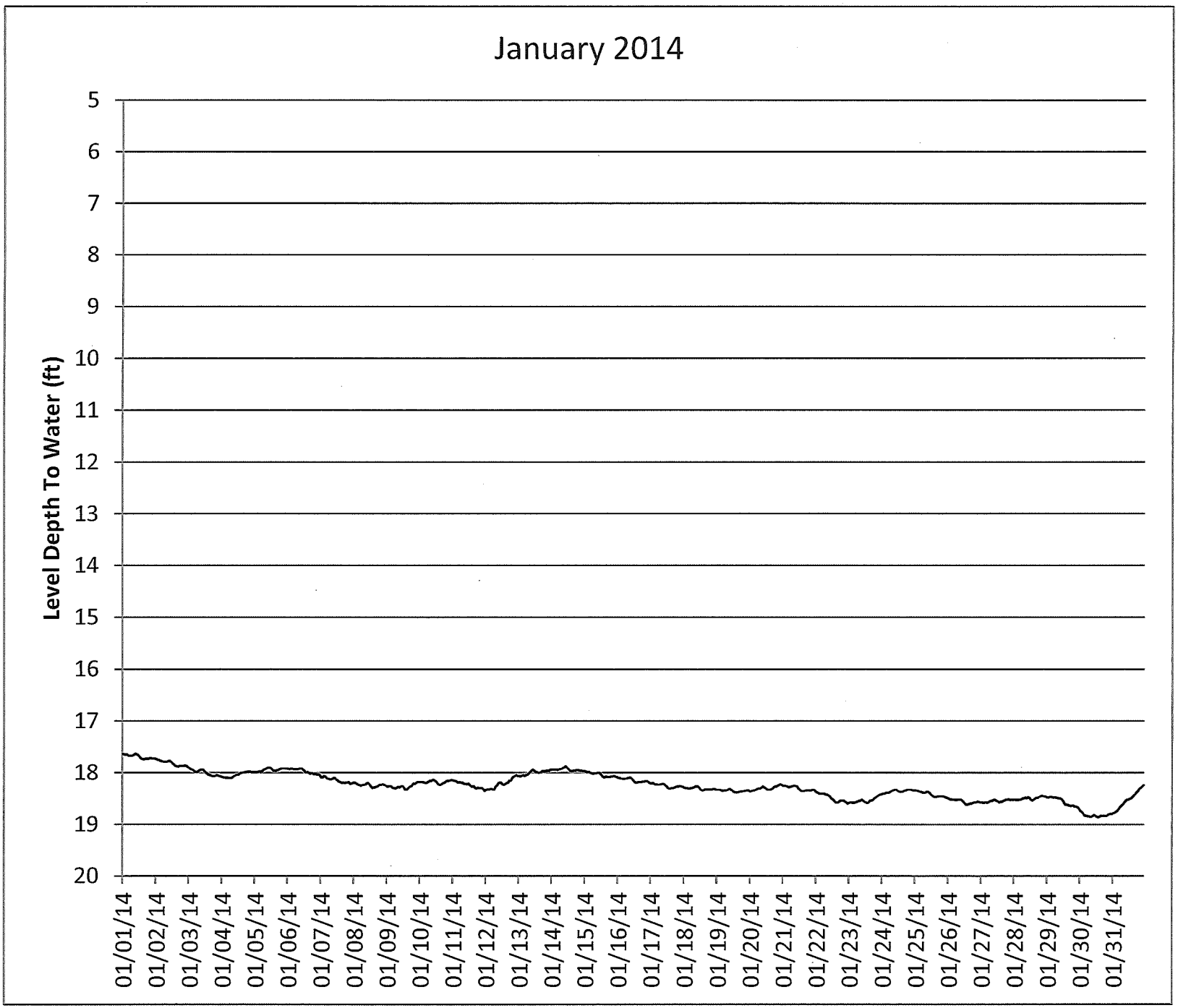
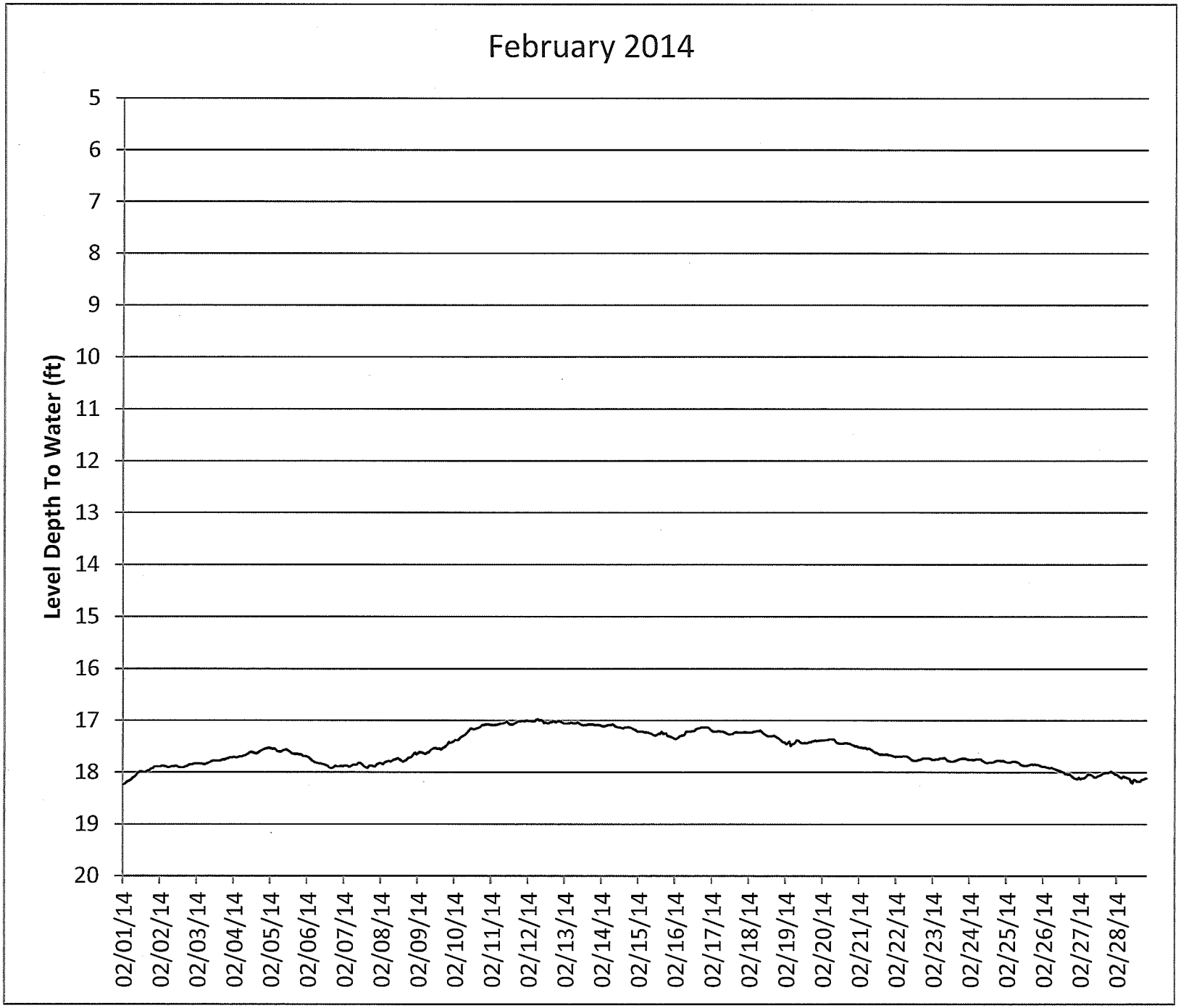


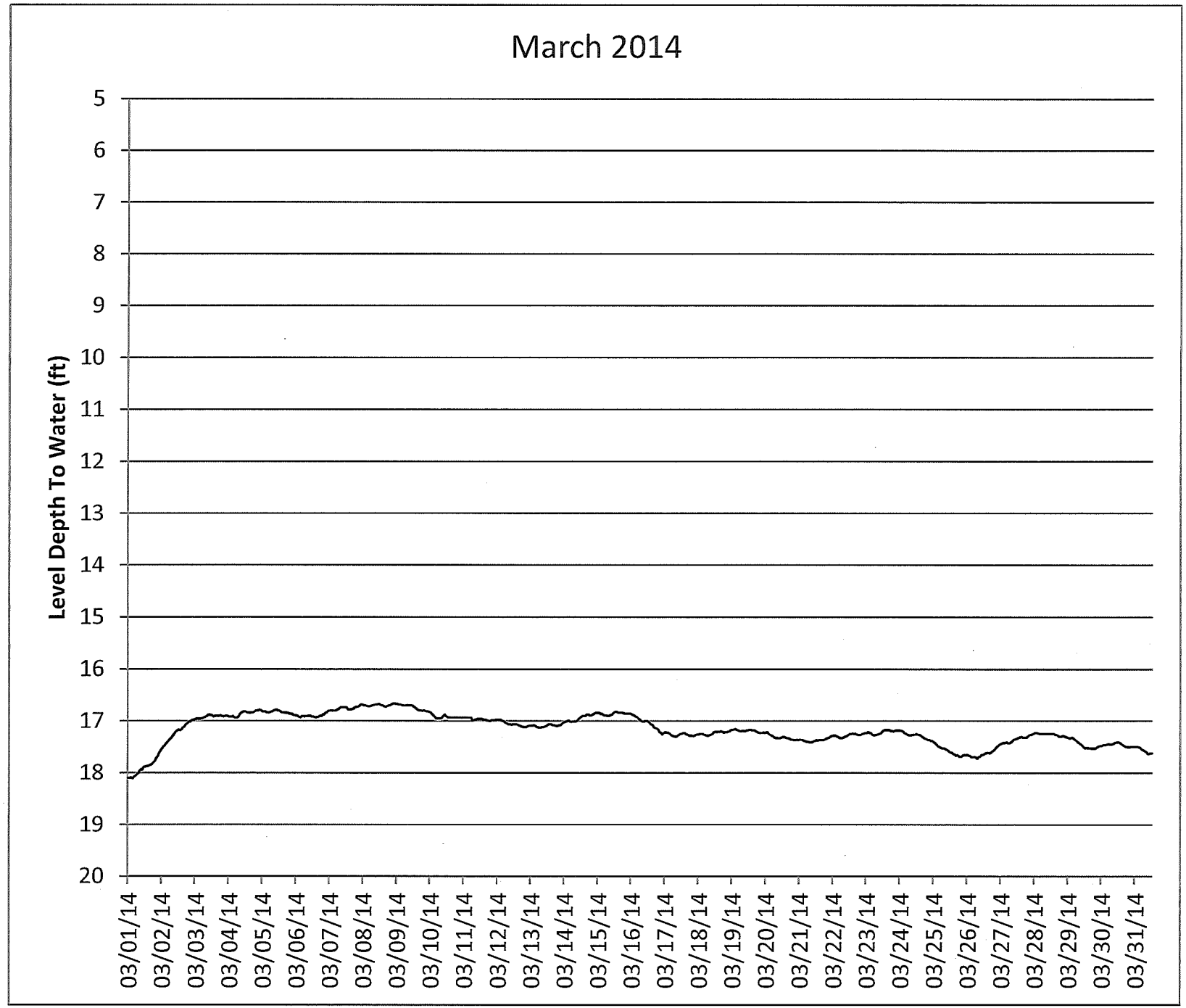
WATER LEVEL HYDROGRAPH FOR MW-23M



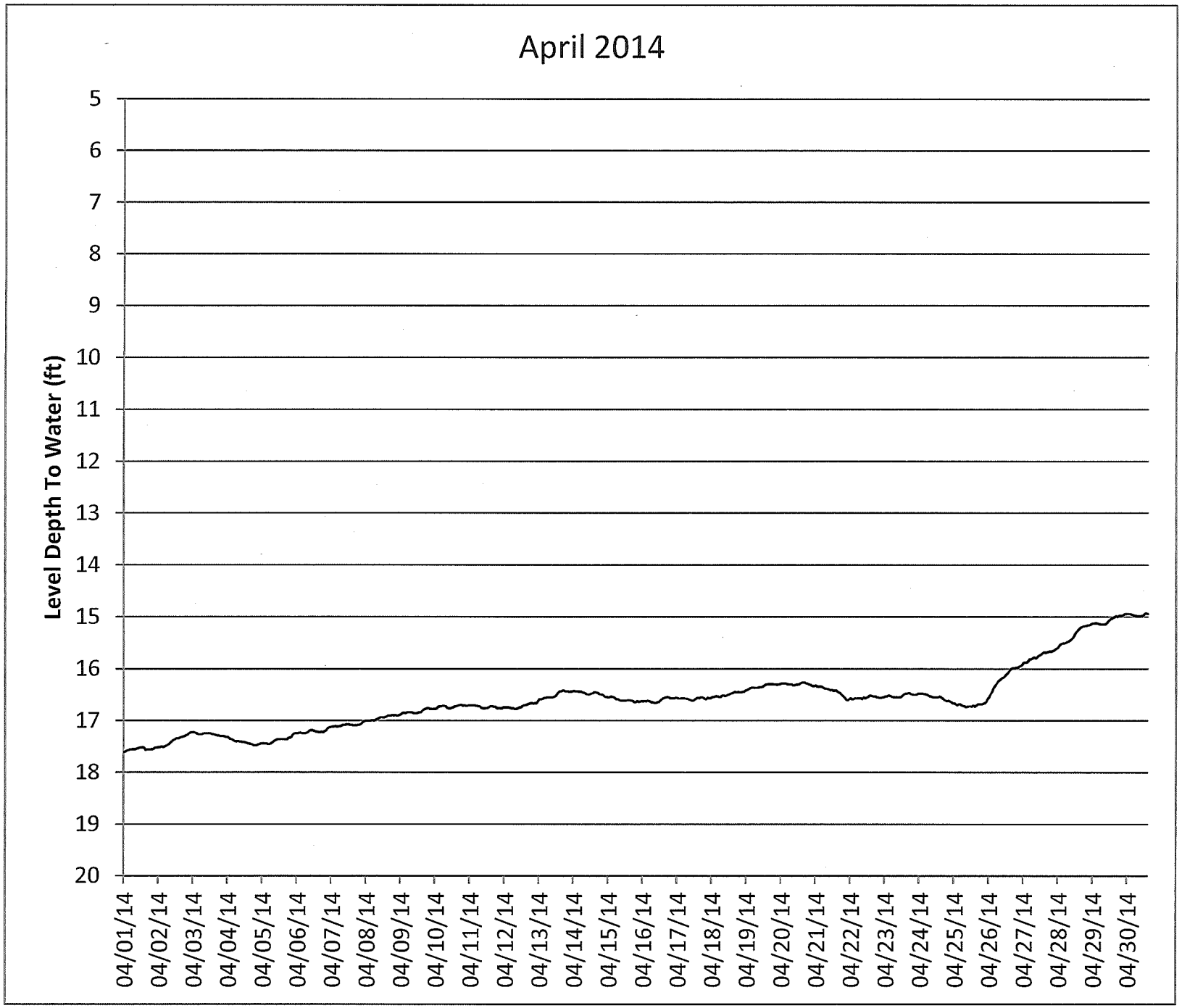
WATER LEVEL HYDROGRAPH FOR MW-23M



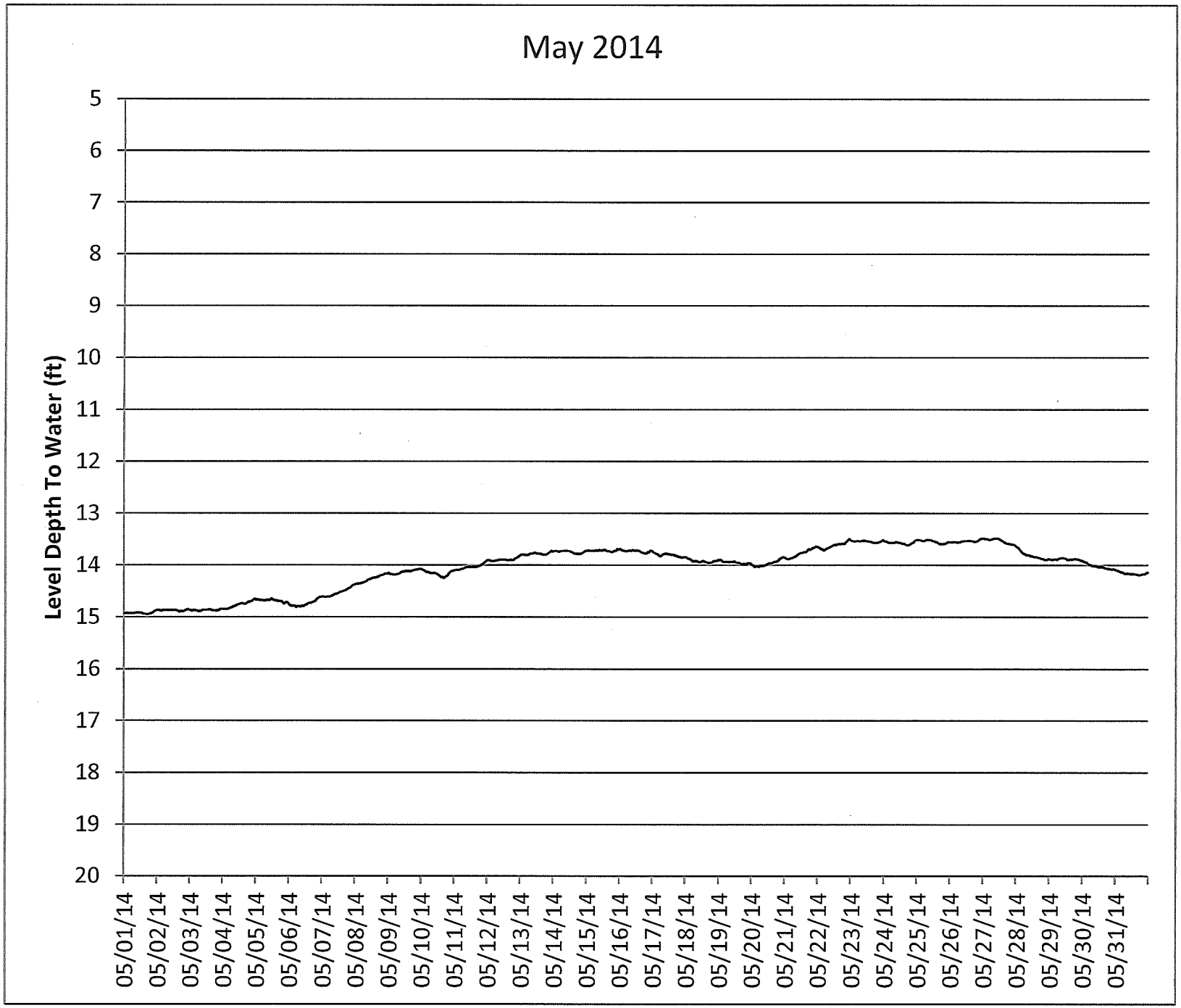
WATER LEVEL HYDROGRAPH FOR MW-23M



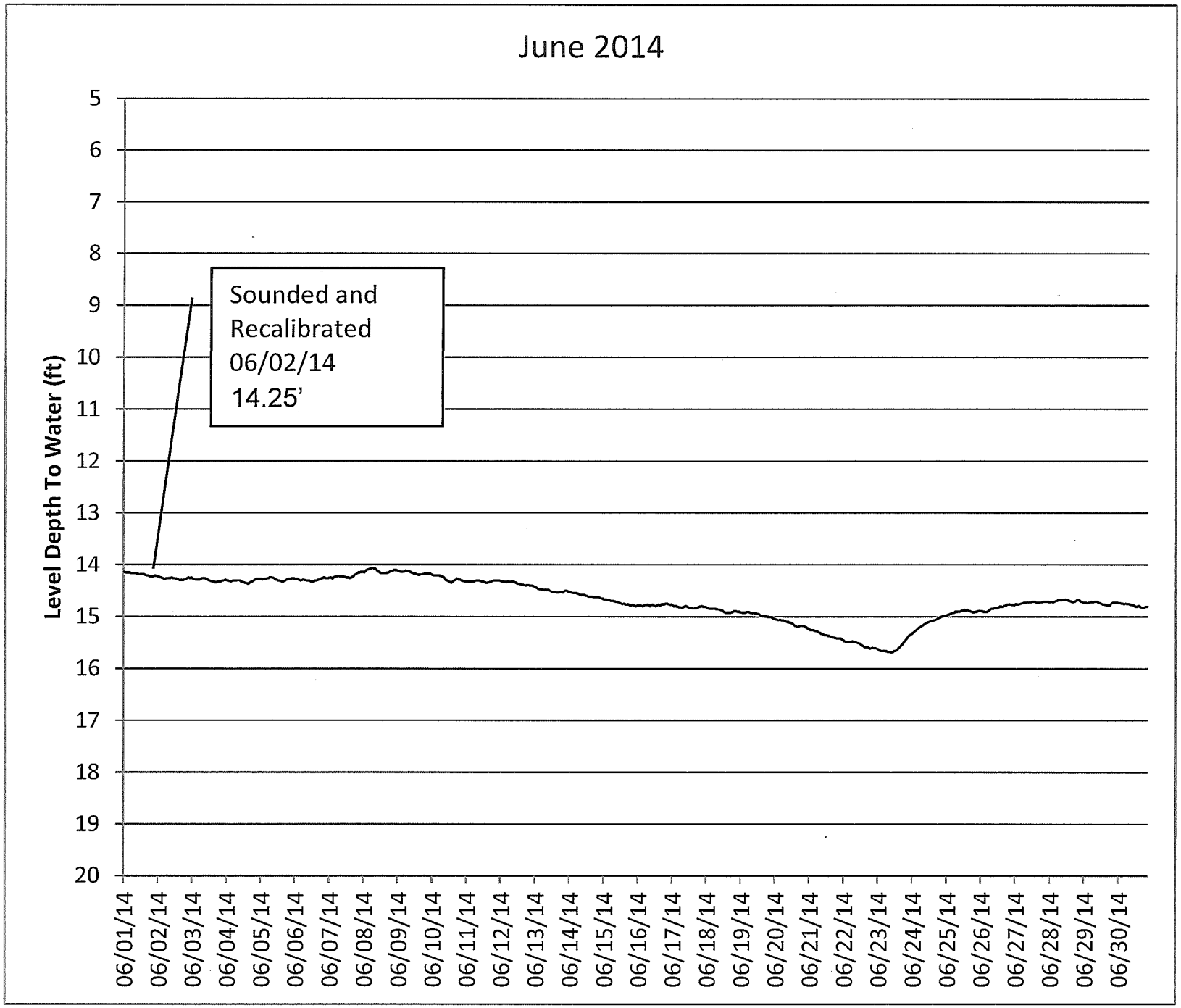
WATER LEVEL HYDROGRAPH FOR MW-23M



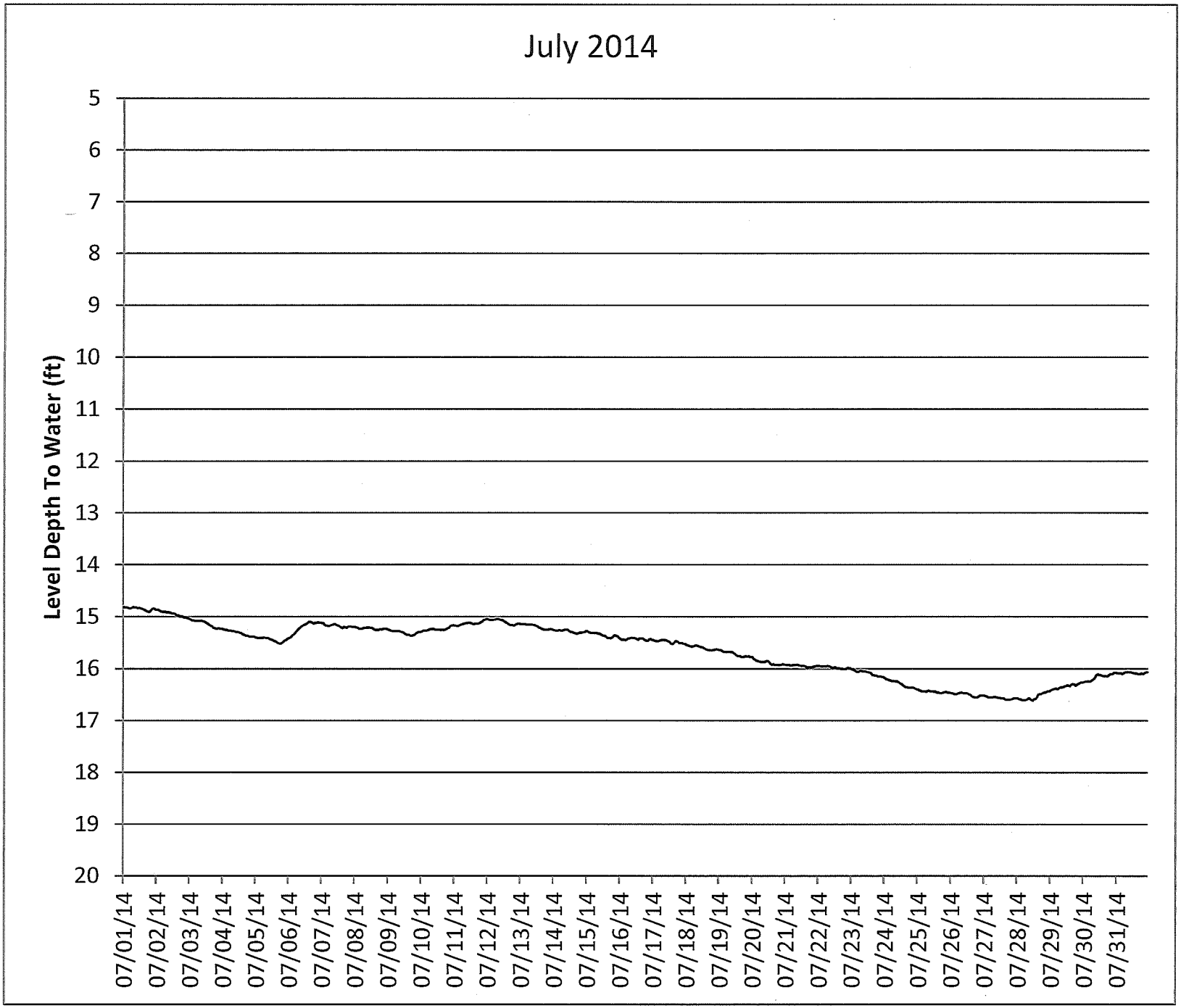
WATER LEVEL HYDROGRAPH FOR MW-23M



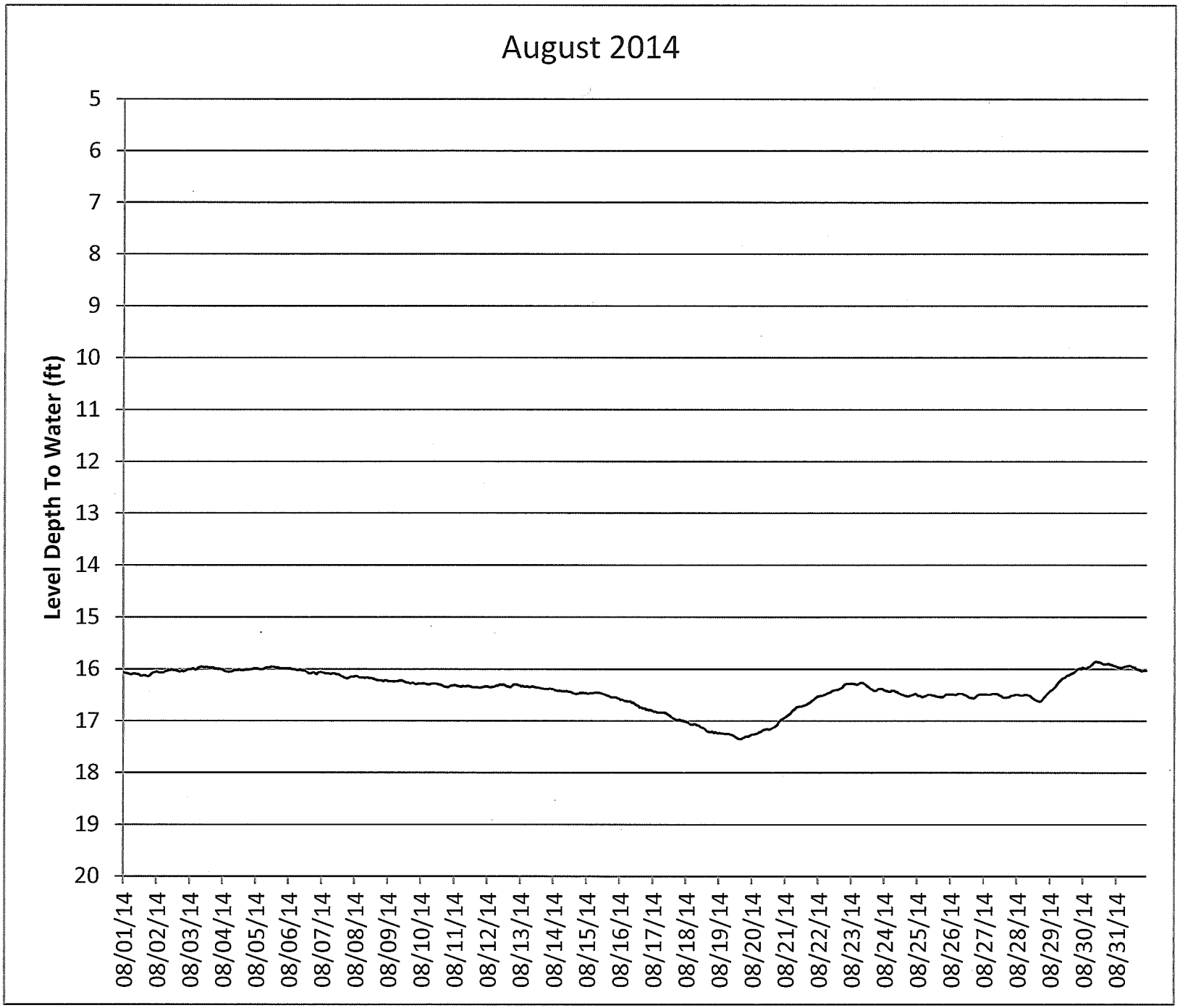
WATER LEVEL HYDROGRAPH FOR MW-23M



WATER LEVEL HYDROGRAPH FOR MW-23M



WATER LEVEL HYDROGRAPH FOR MW-23M



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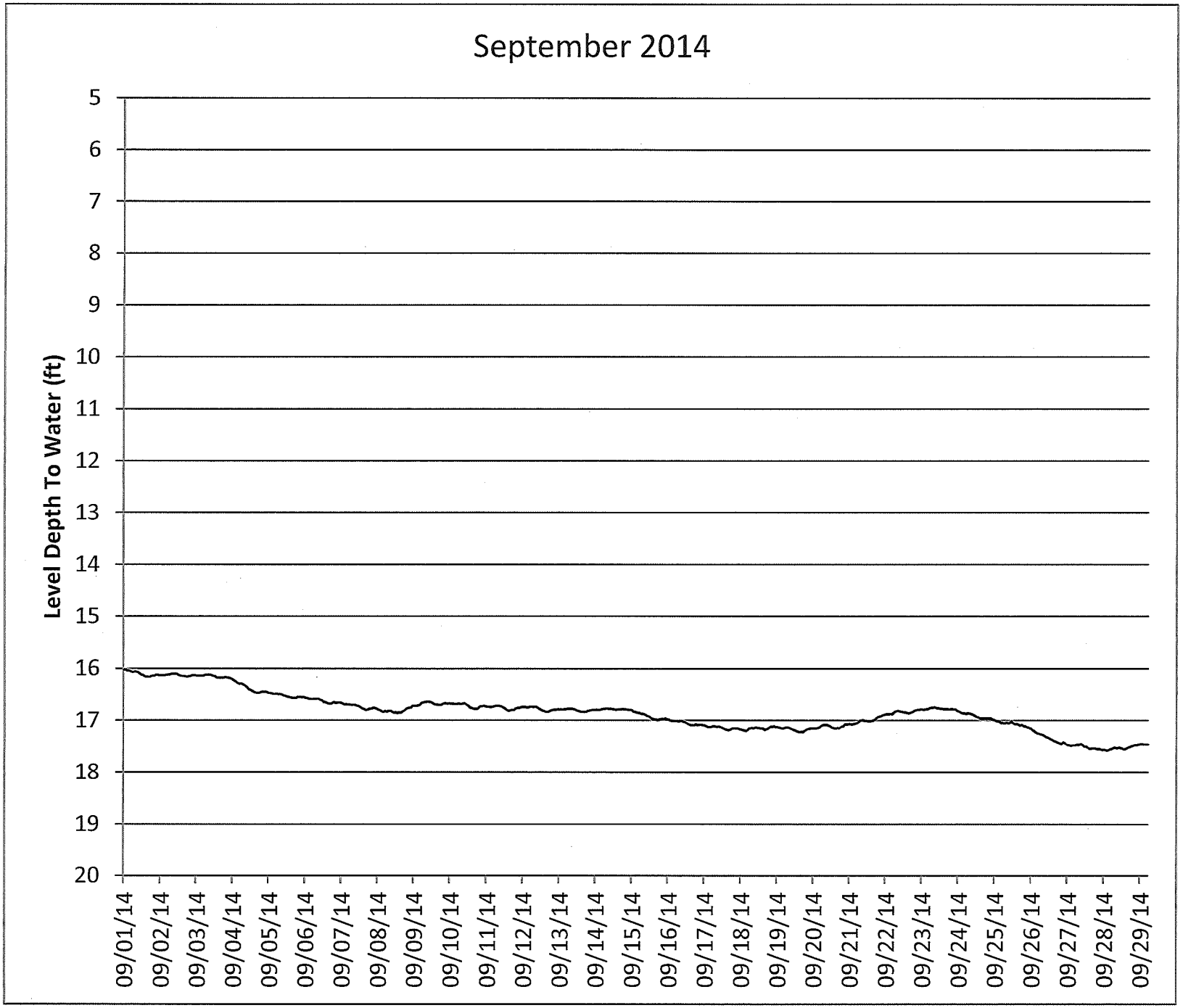
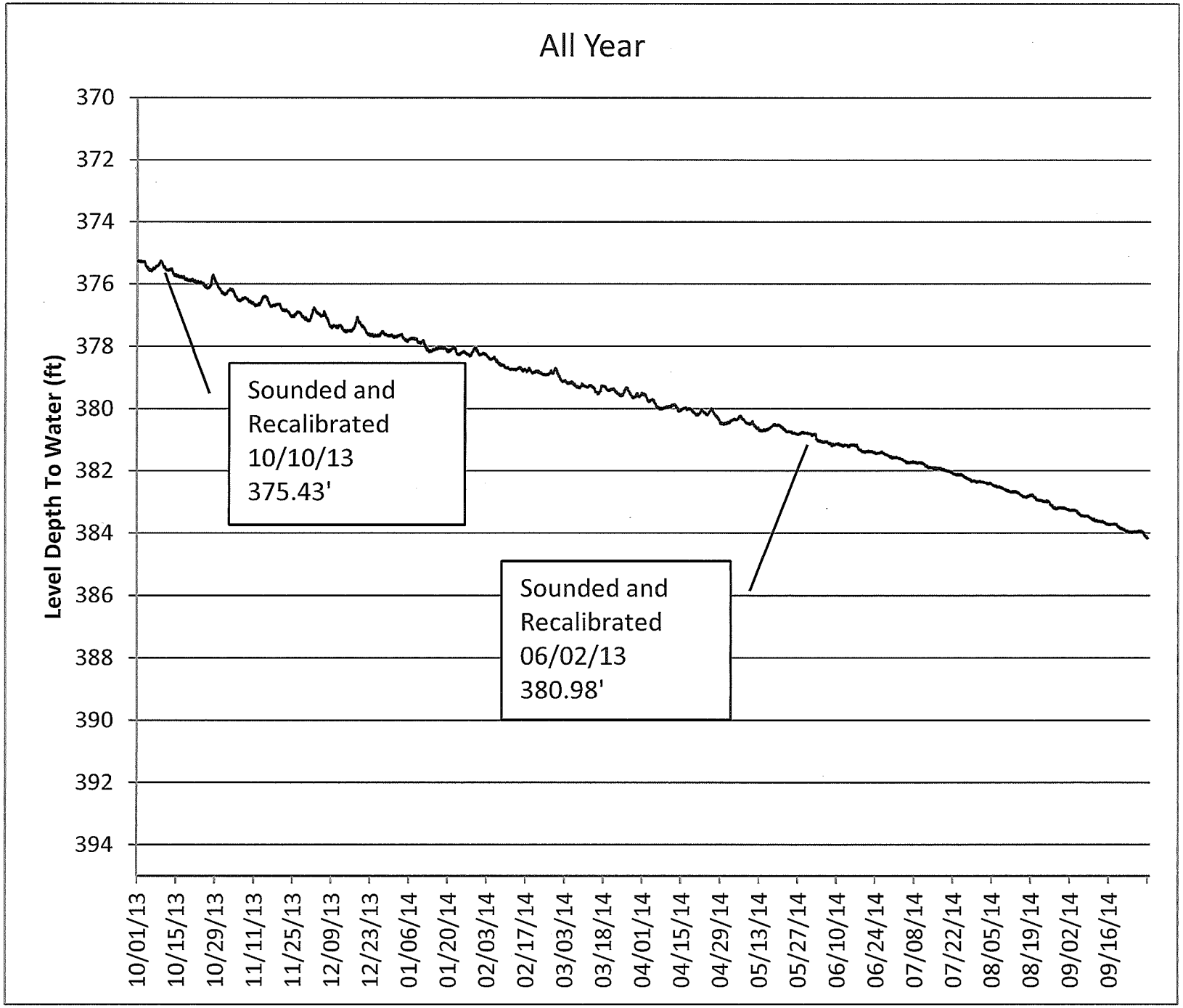
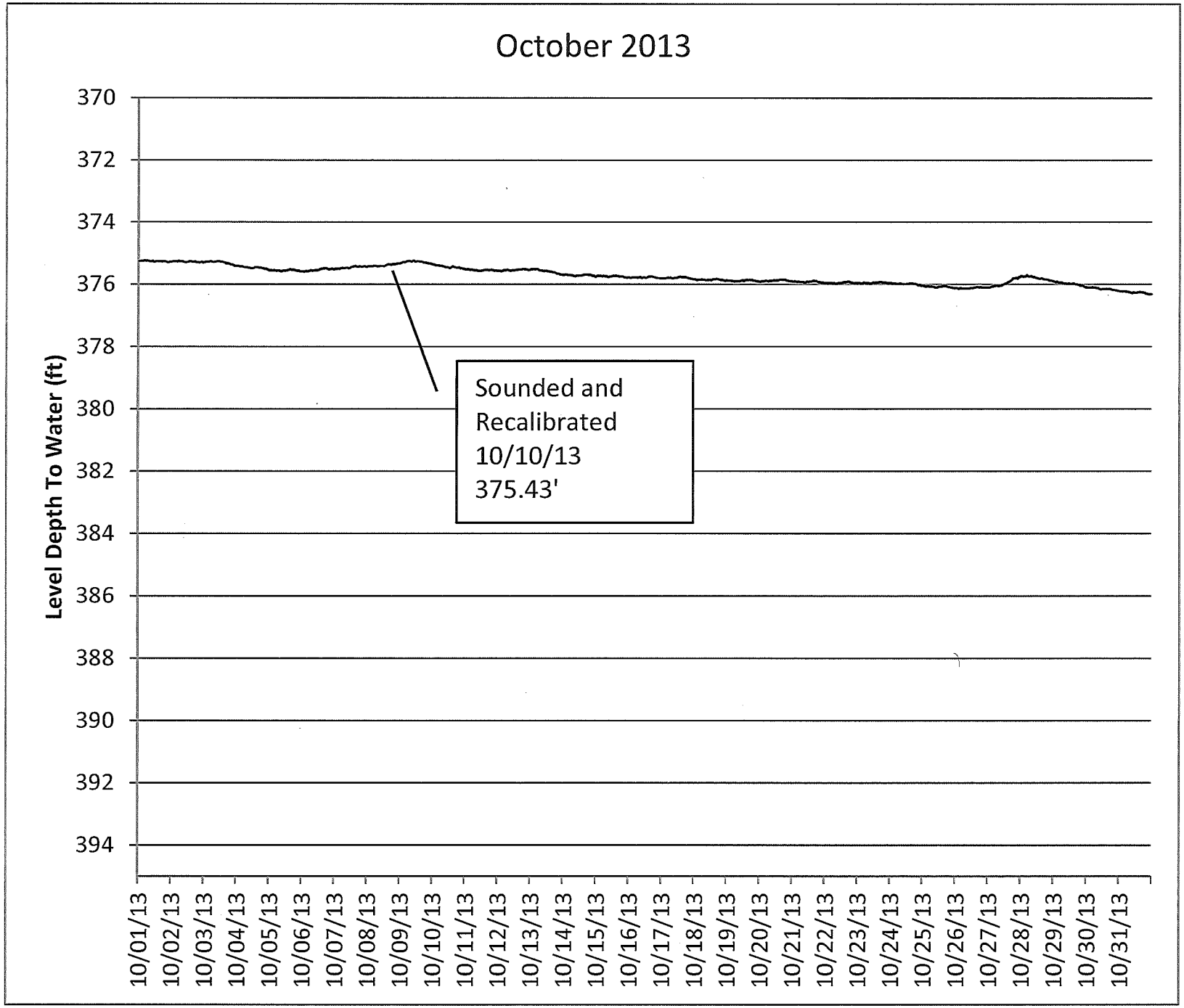


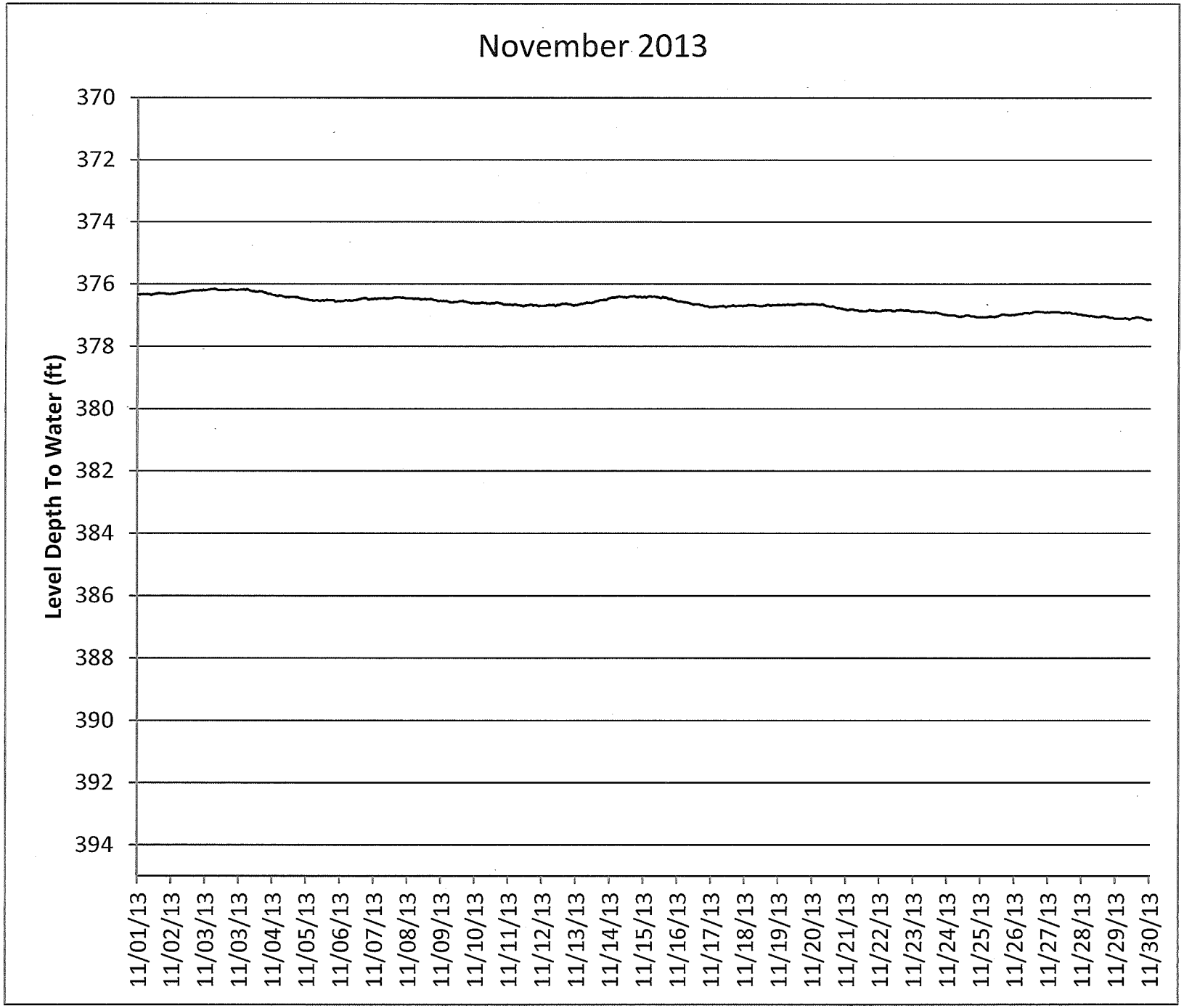
WATER LEVEL HYDROGRAPH FOR MW-23M



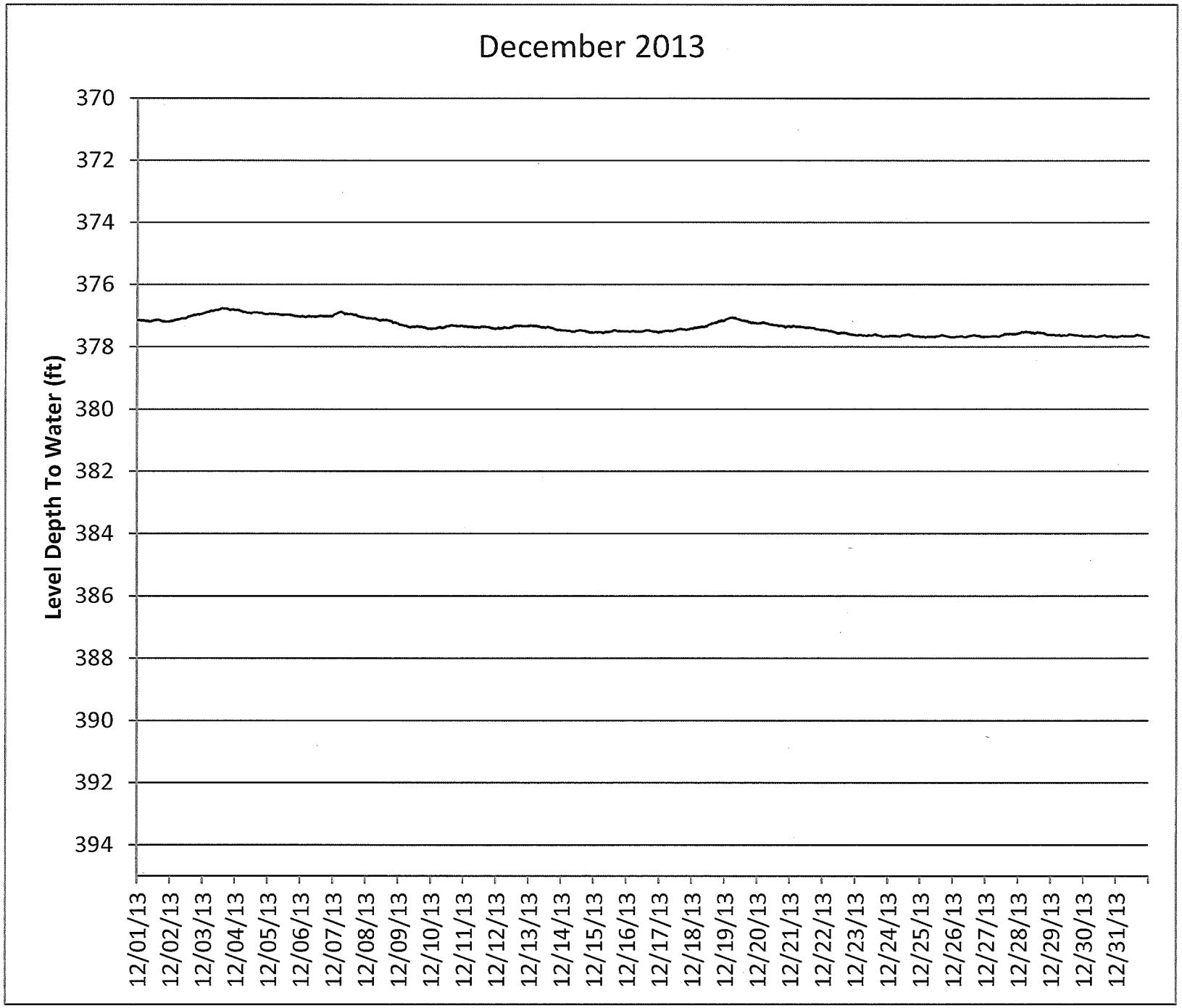
WATER LEVEL HYDROGRAPH FOR MW-24M



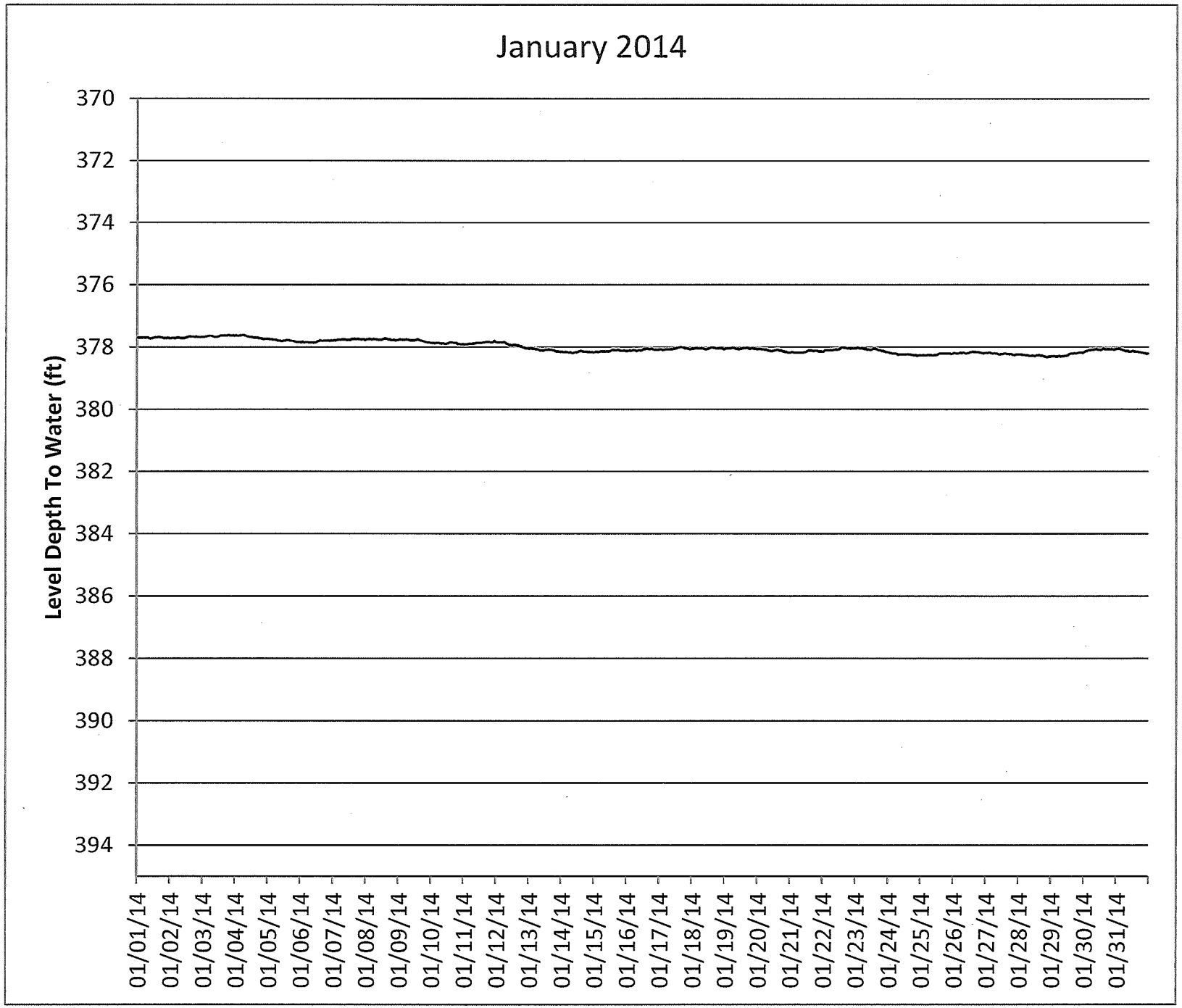
WATER LEVEL HYDROGRAPH FOR MW-24M



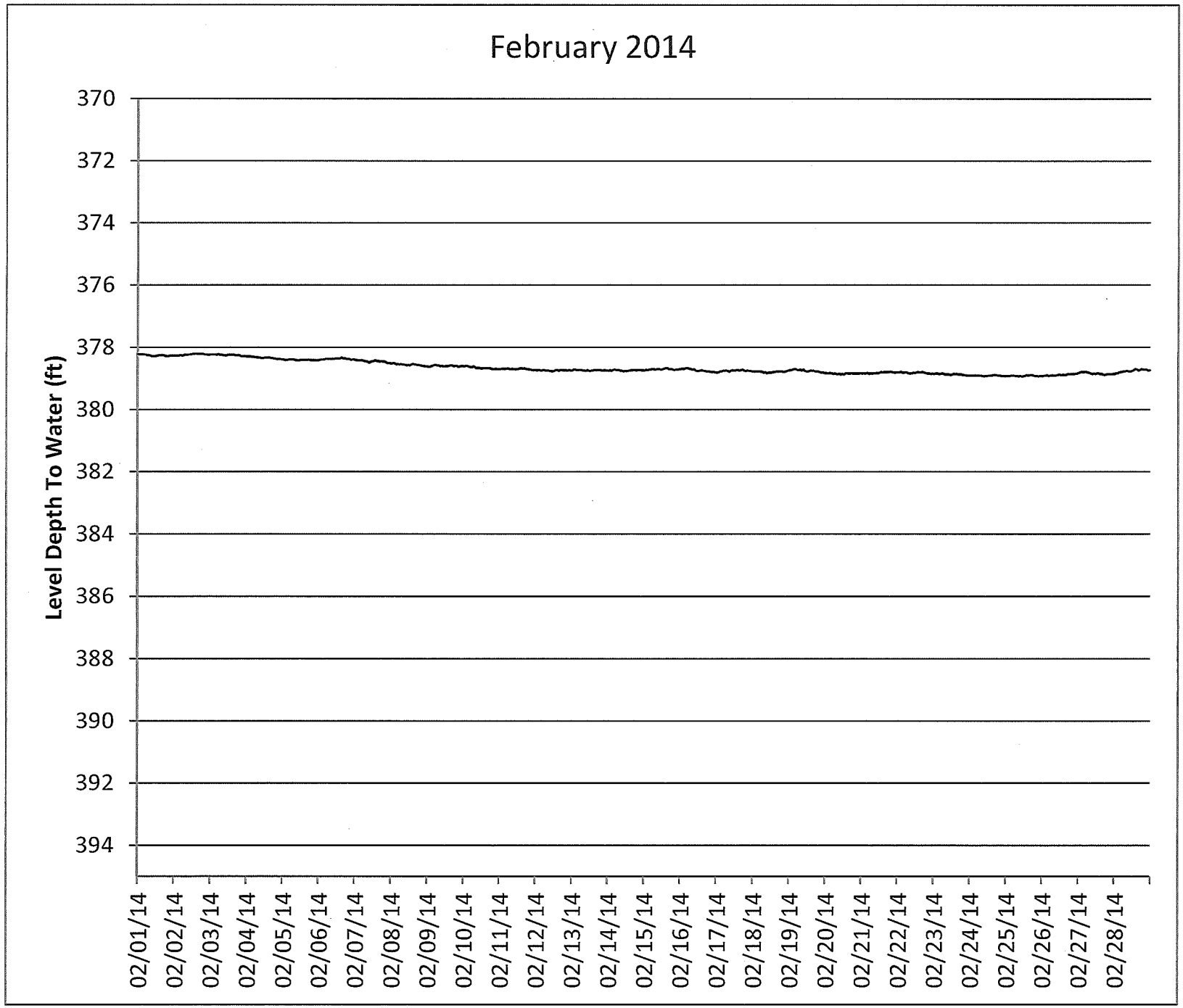
WATER LEVEL HYDROGRAPH FOR MW-24M



WATER LEVEL HYDROGRAPH FOR MW-24M



WATER LEVEL HYDROGRAPH FOR MW-24M



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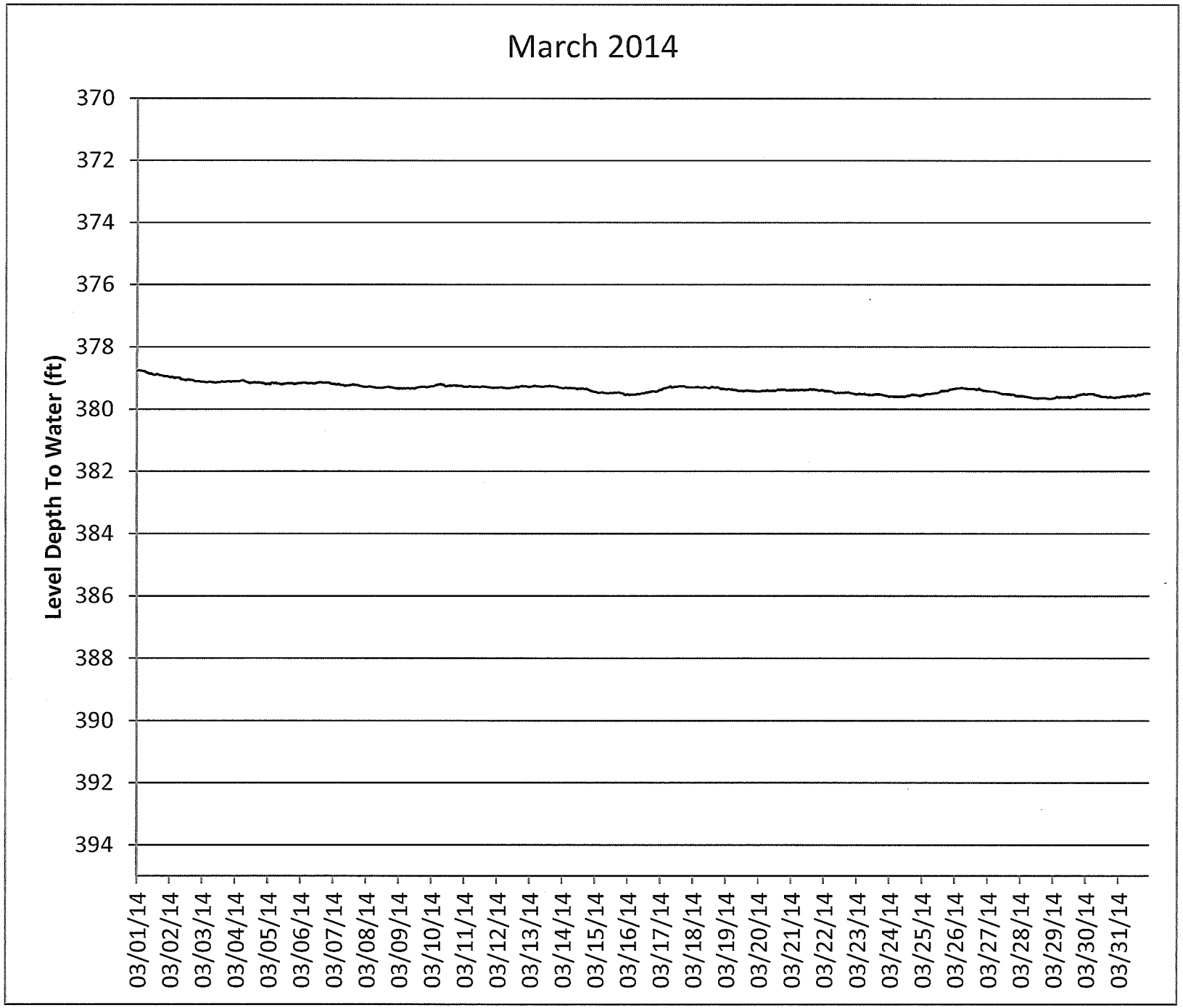
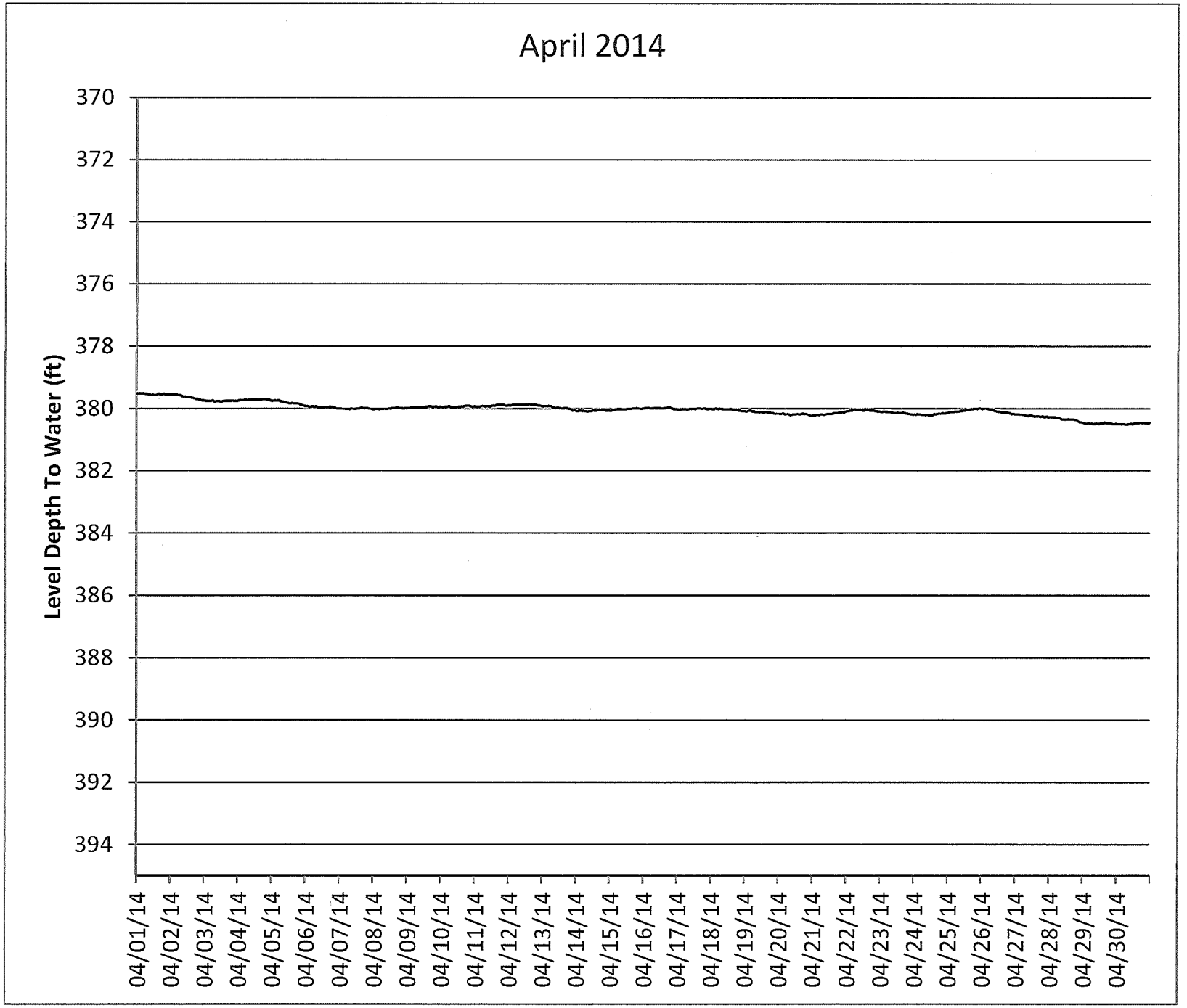
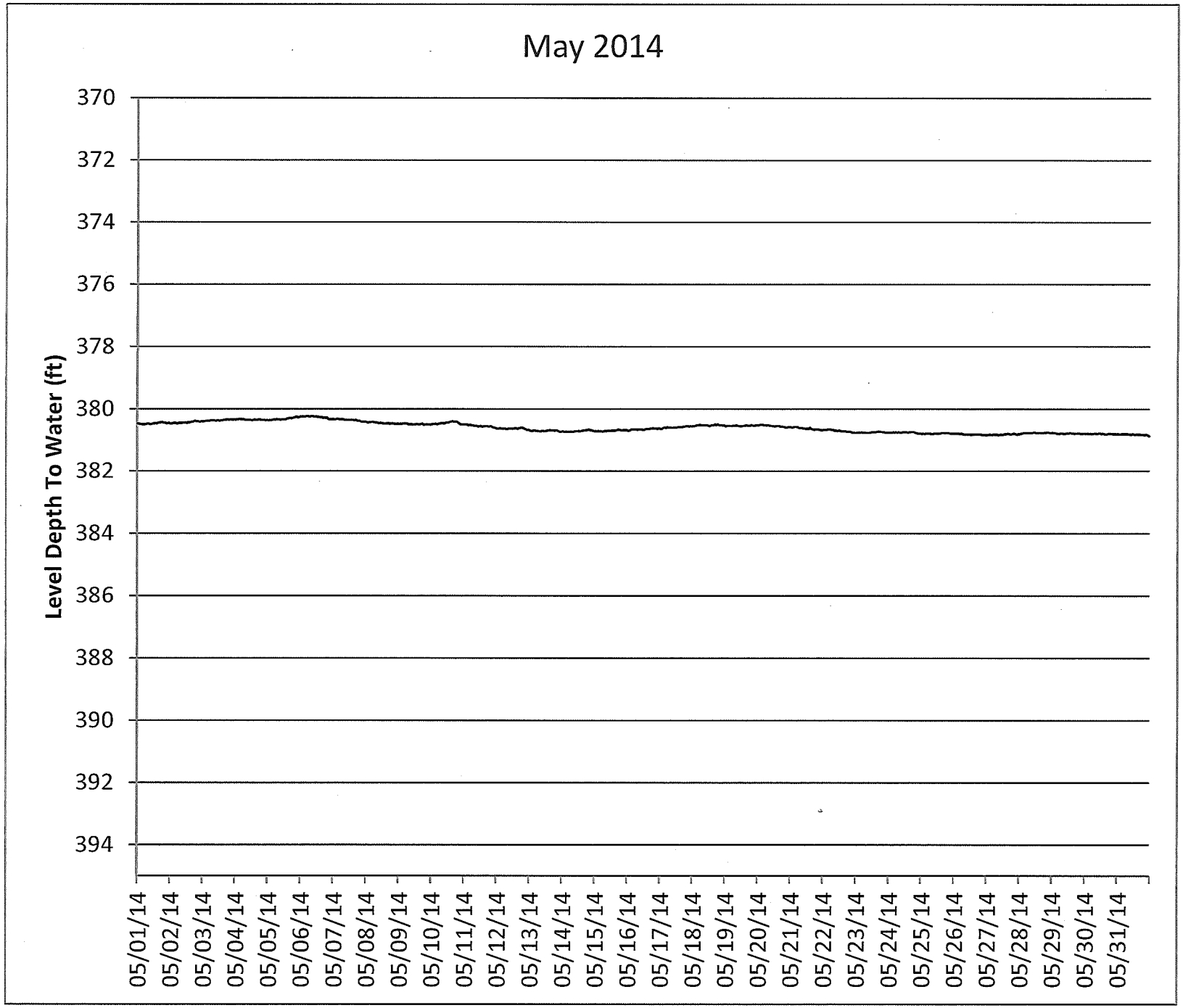


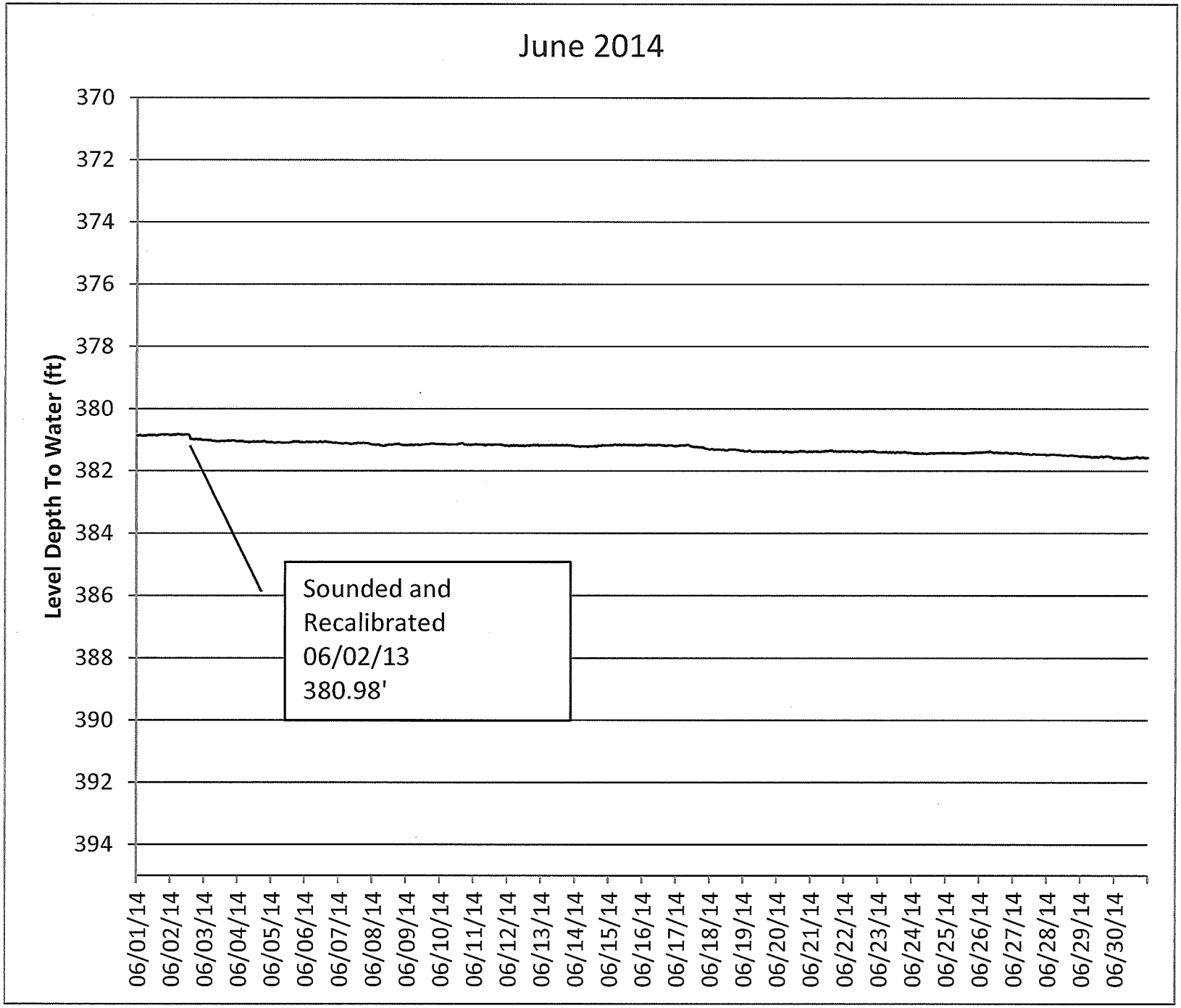
WATER LEVEL HYDROGRAPH FOR MW-24M



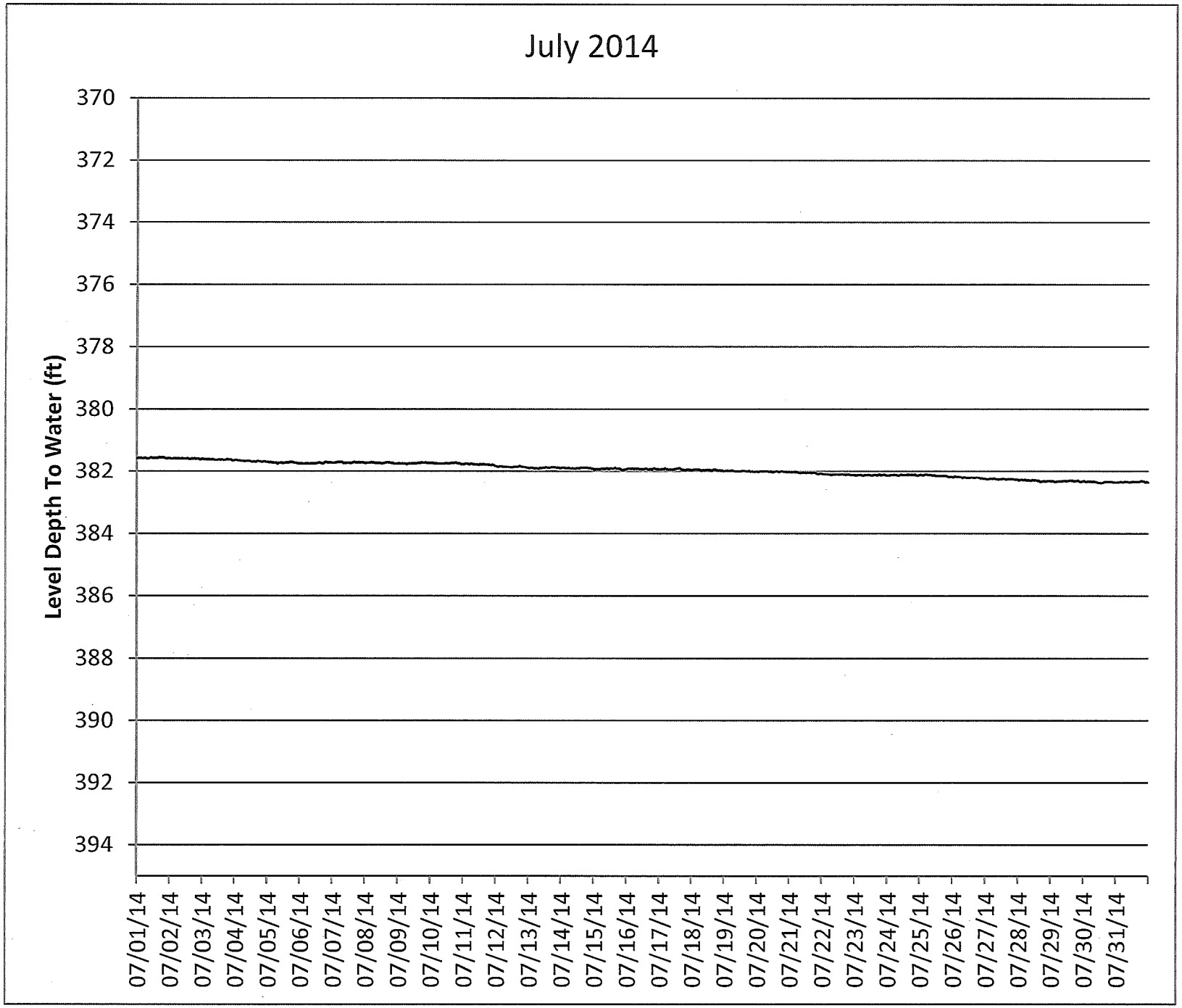
WATER LEVEL HYDROGRAPH FOR MW-24M



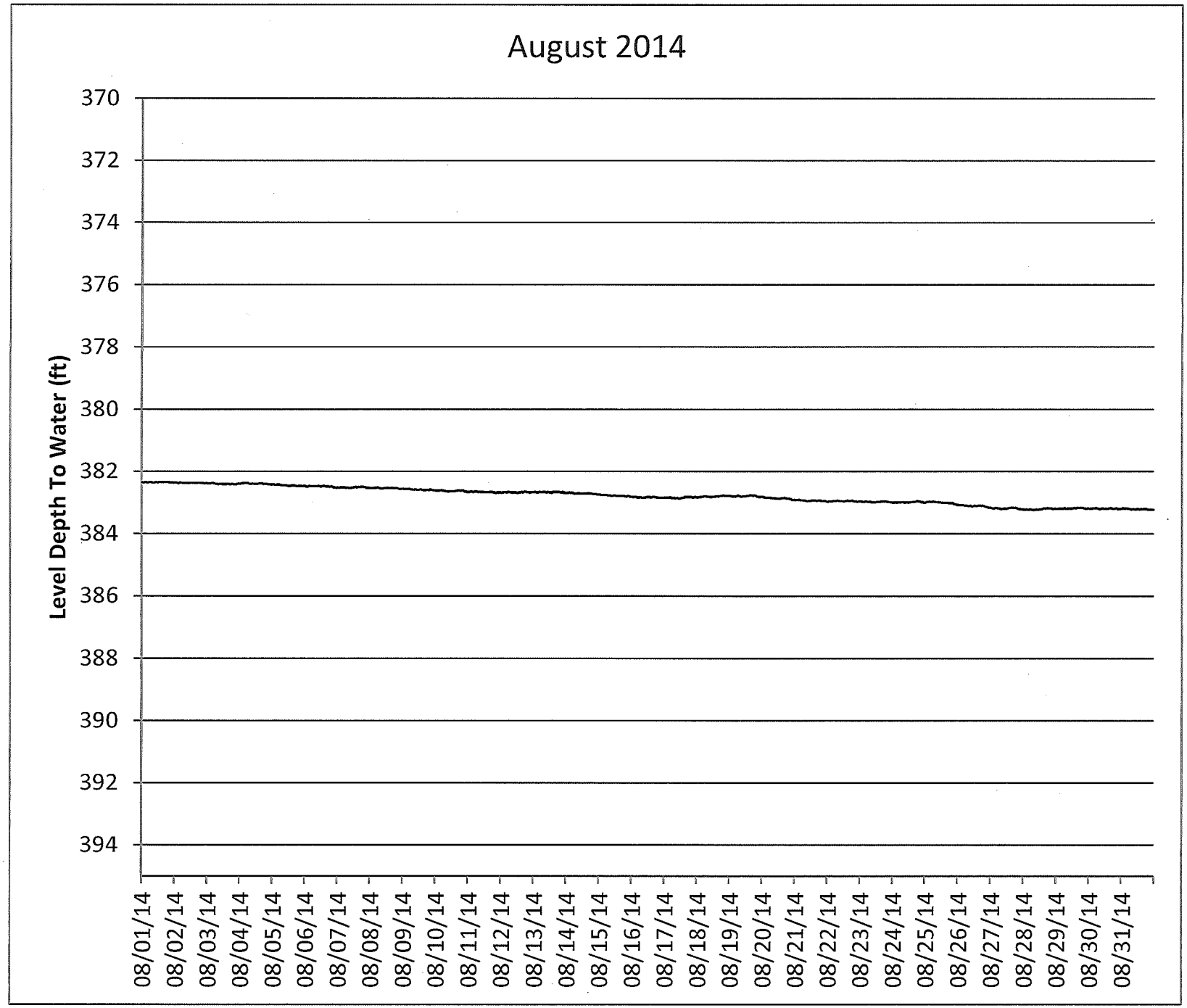
WATER LEVEL HYDROGRAPH FOR MW-24M



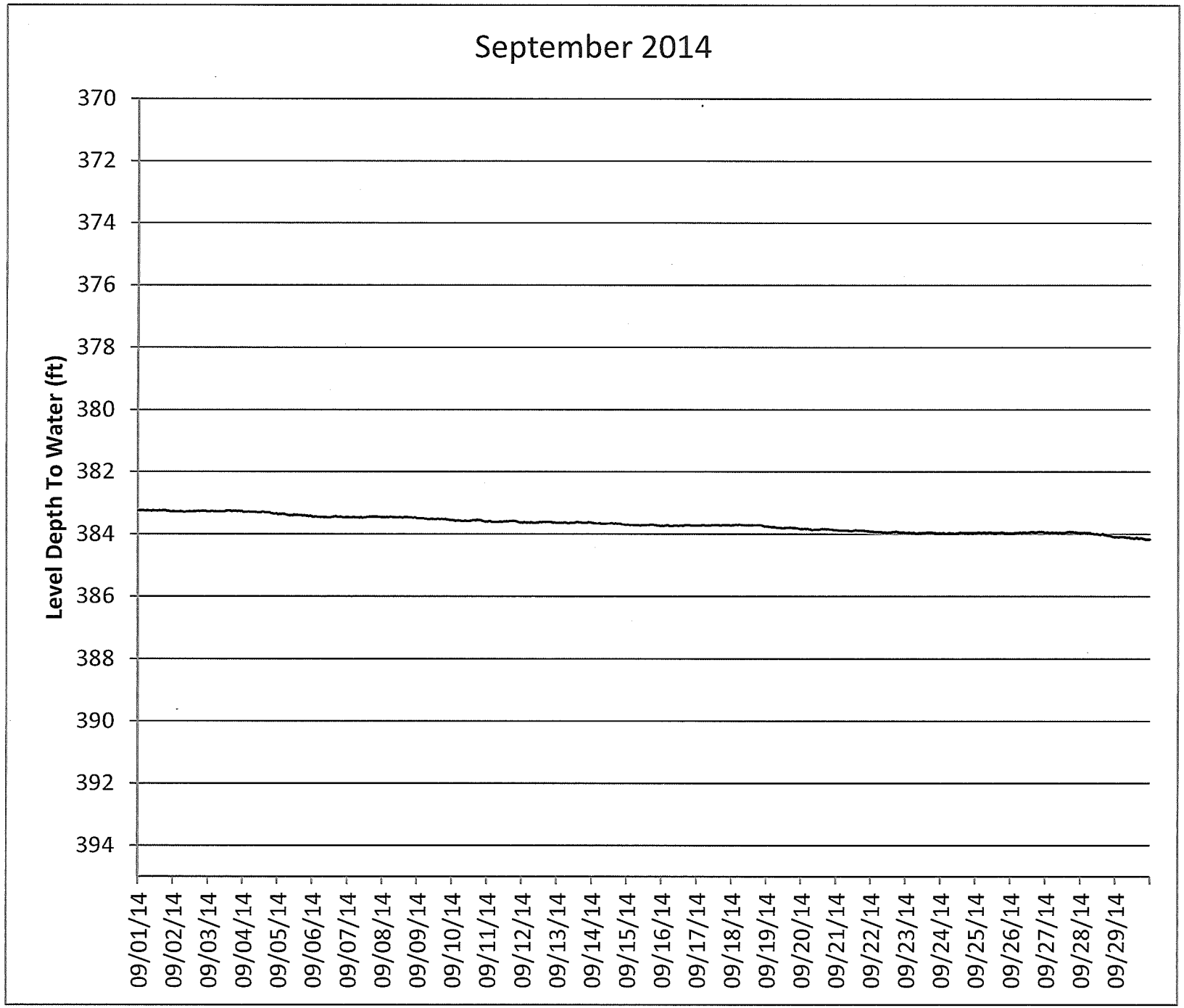
WATER LEVEL HYDROGRAPH FOR MW-24M



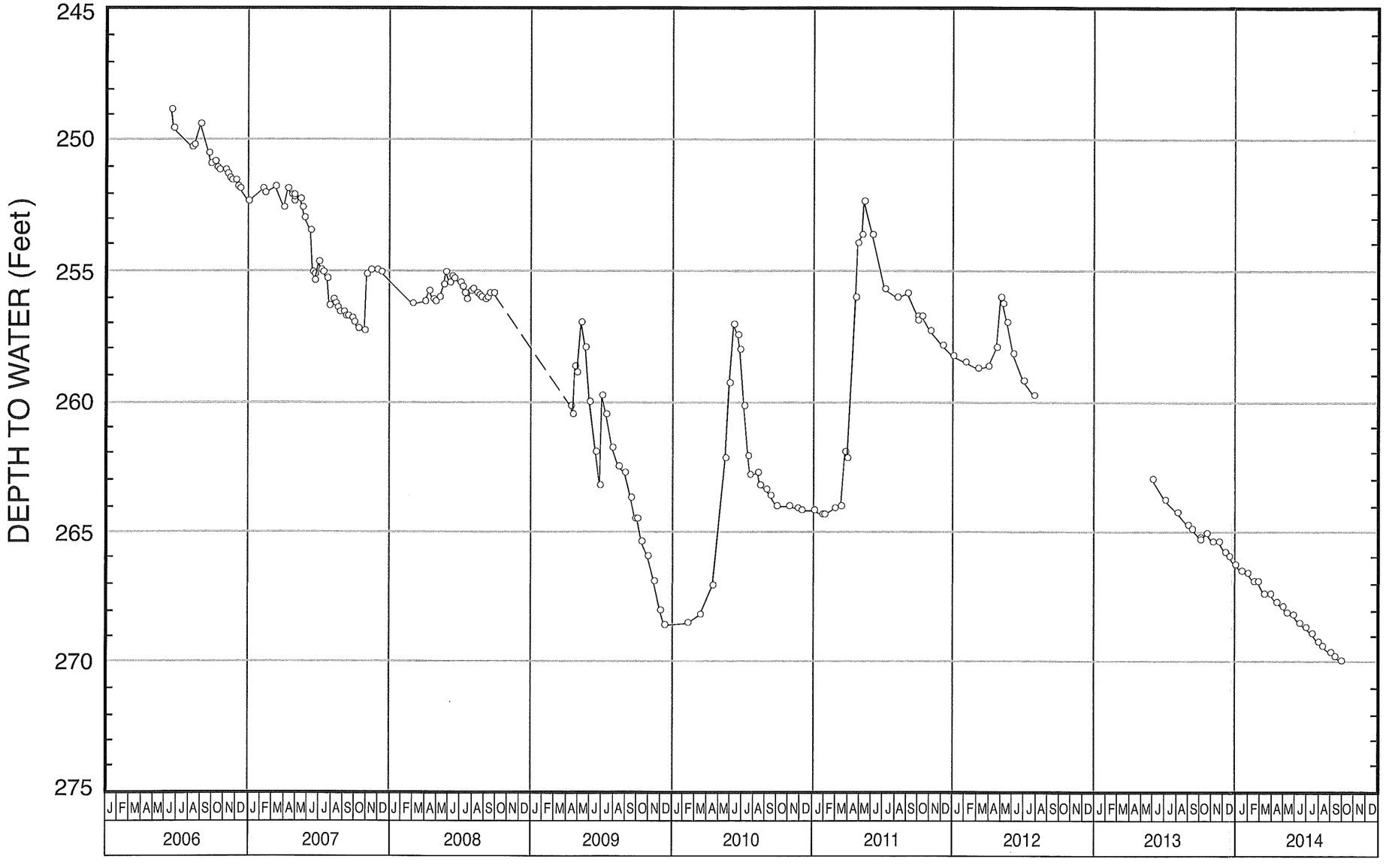
WATER LEVEL HYDROGRAPH FOR MW-24M



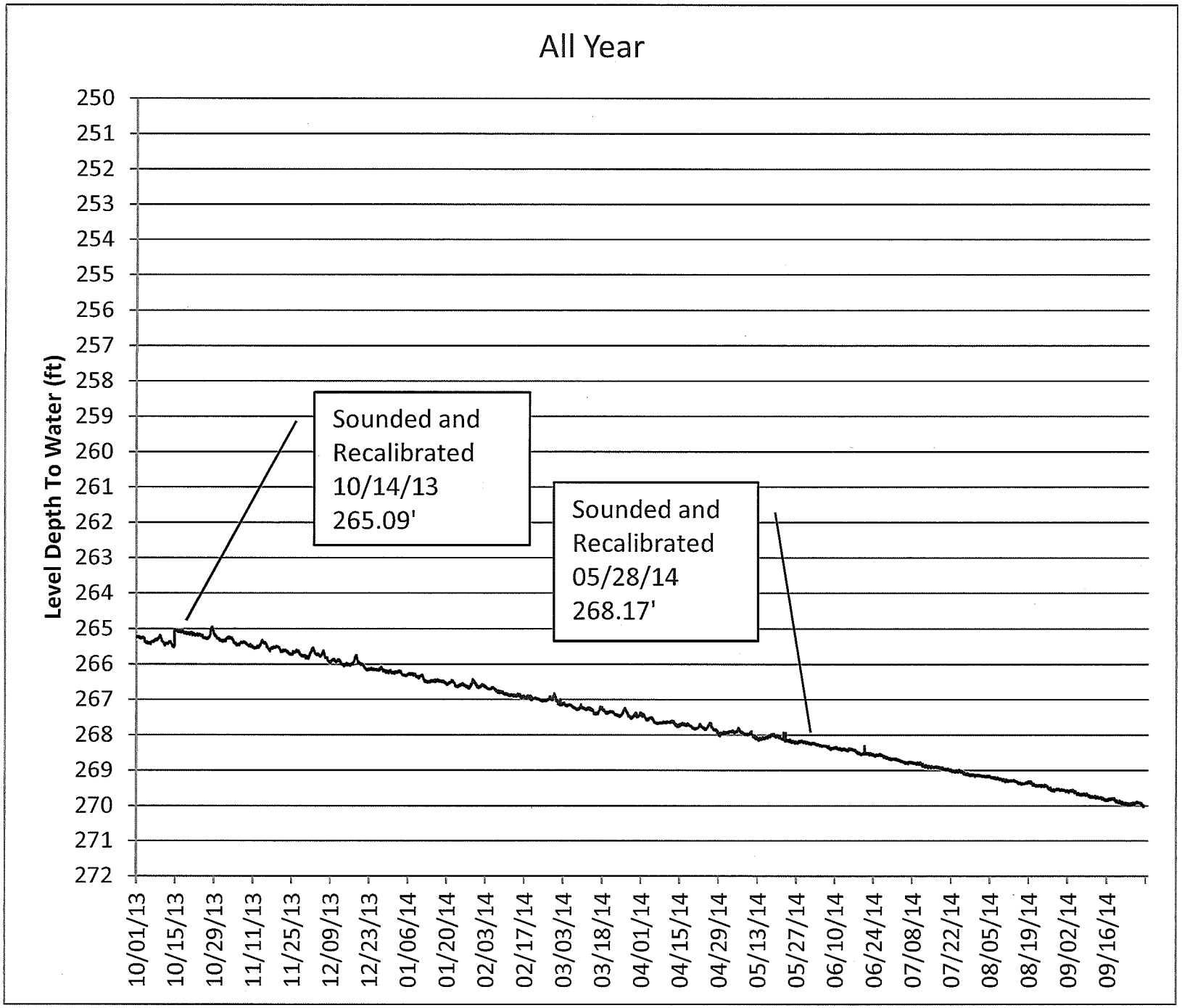
WATER LEVEL HYDROGRAPH FOR MW-24M



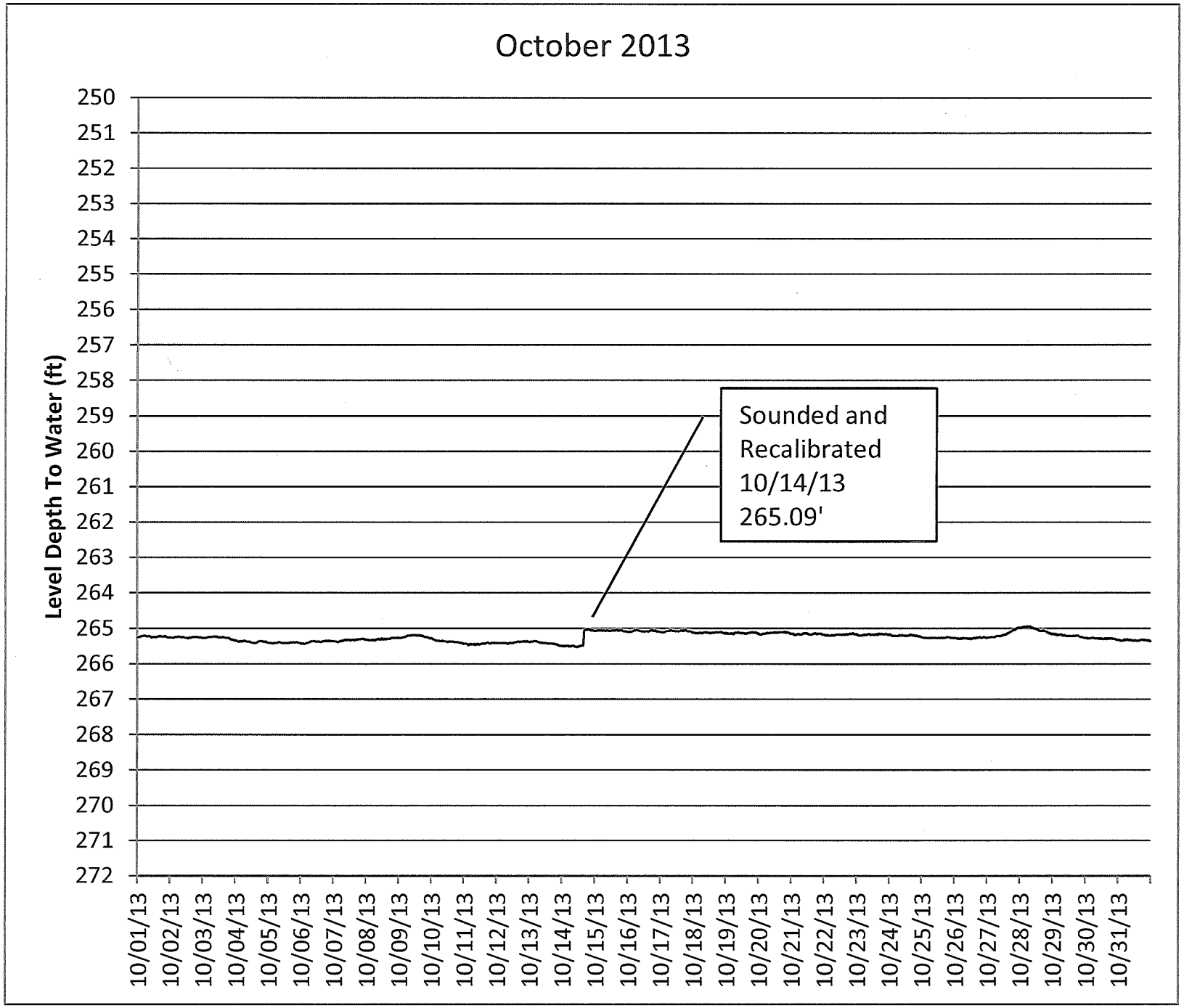
WATER LEVEL HYDROGRAPH FOR MW-24M



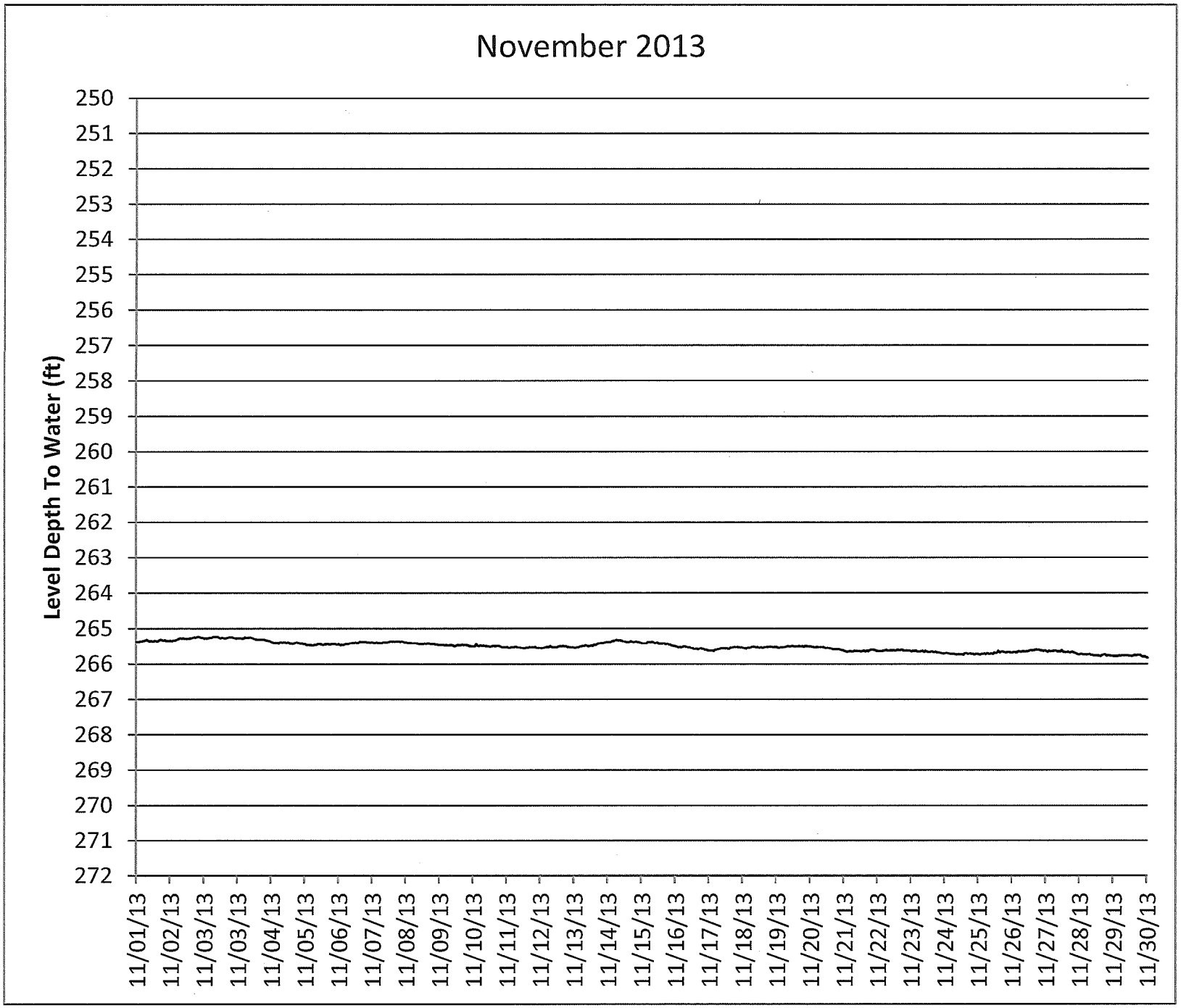
WATER-LEVEL HYDROGRAPH FOR WELL NO. 26



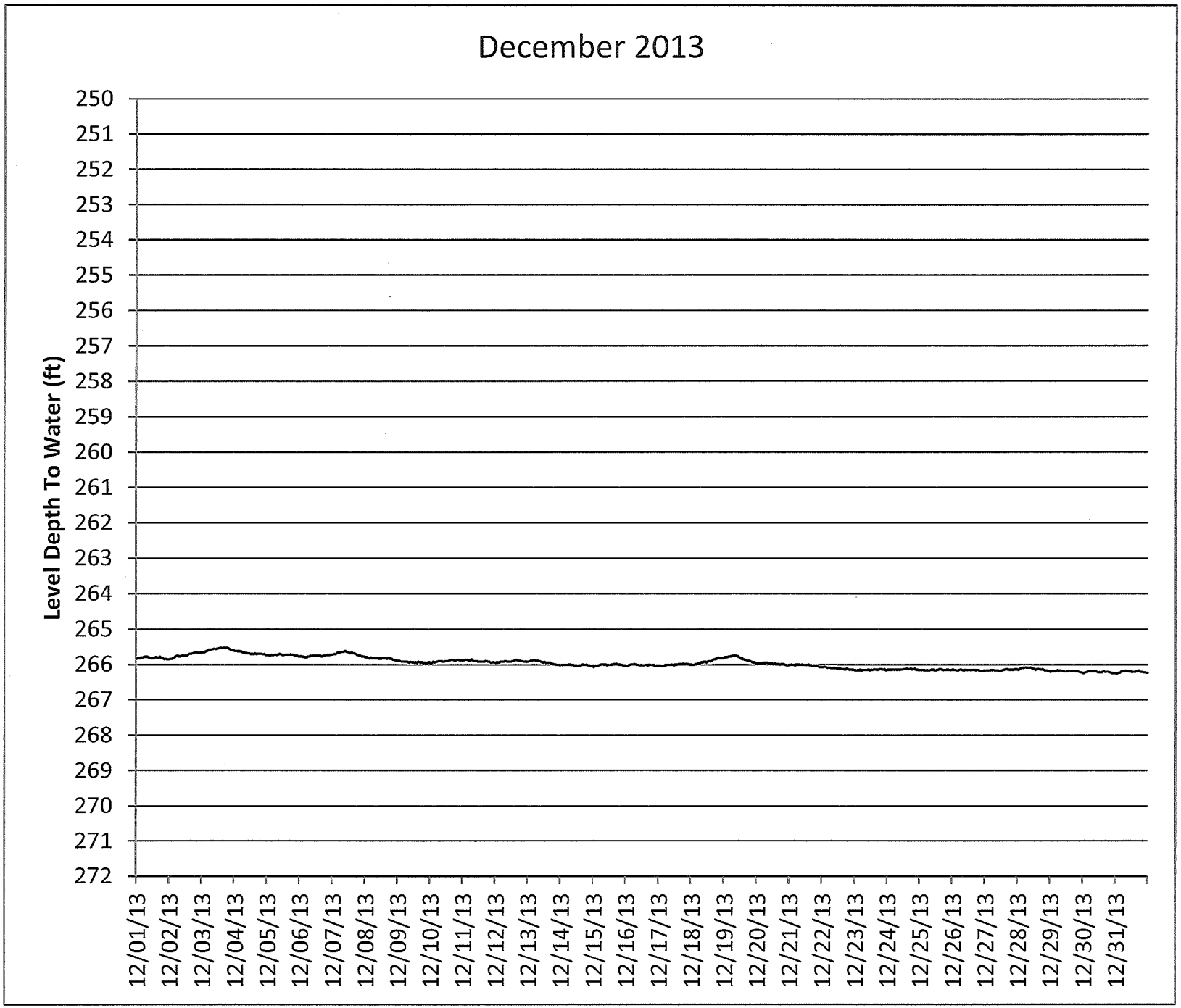
WATER LEVEL HYDROGRAPH FOR MW-26M



WATER LEVEL HYDROGRAPH FOR MW-26M



WATER LEVEL HYDROGRAPH FOR MW-26M



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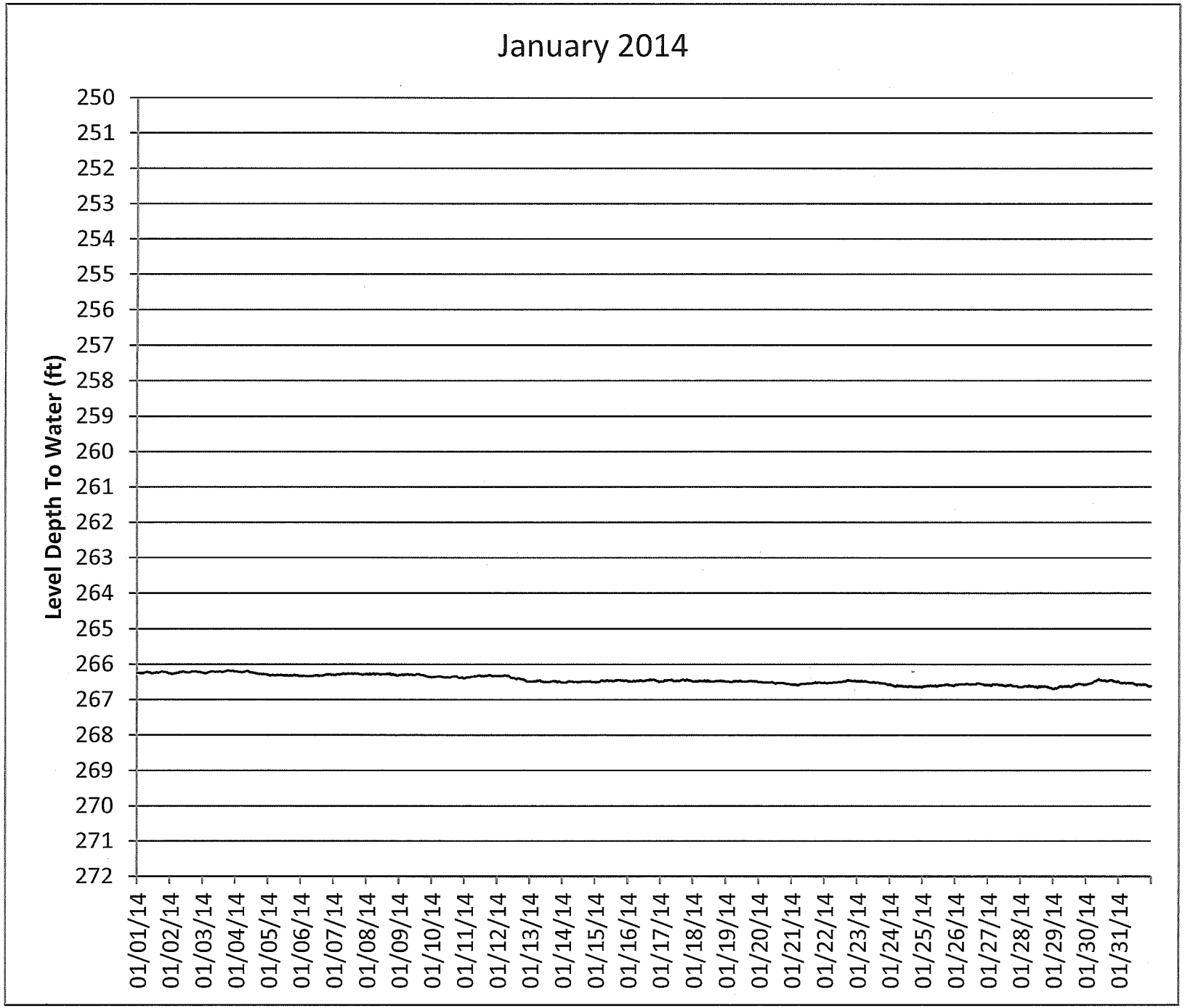

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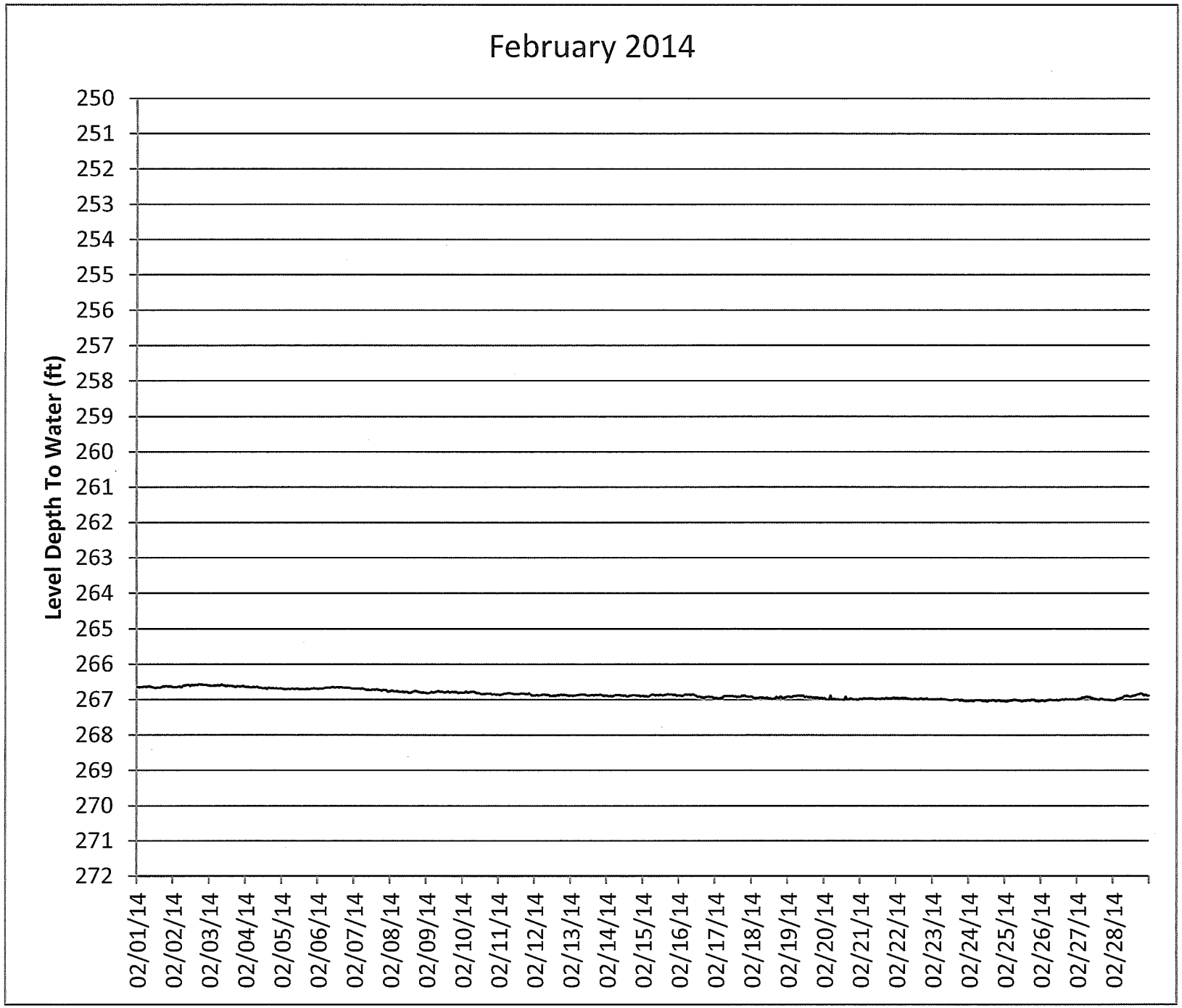

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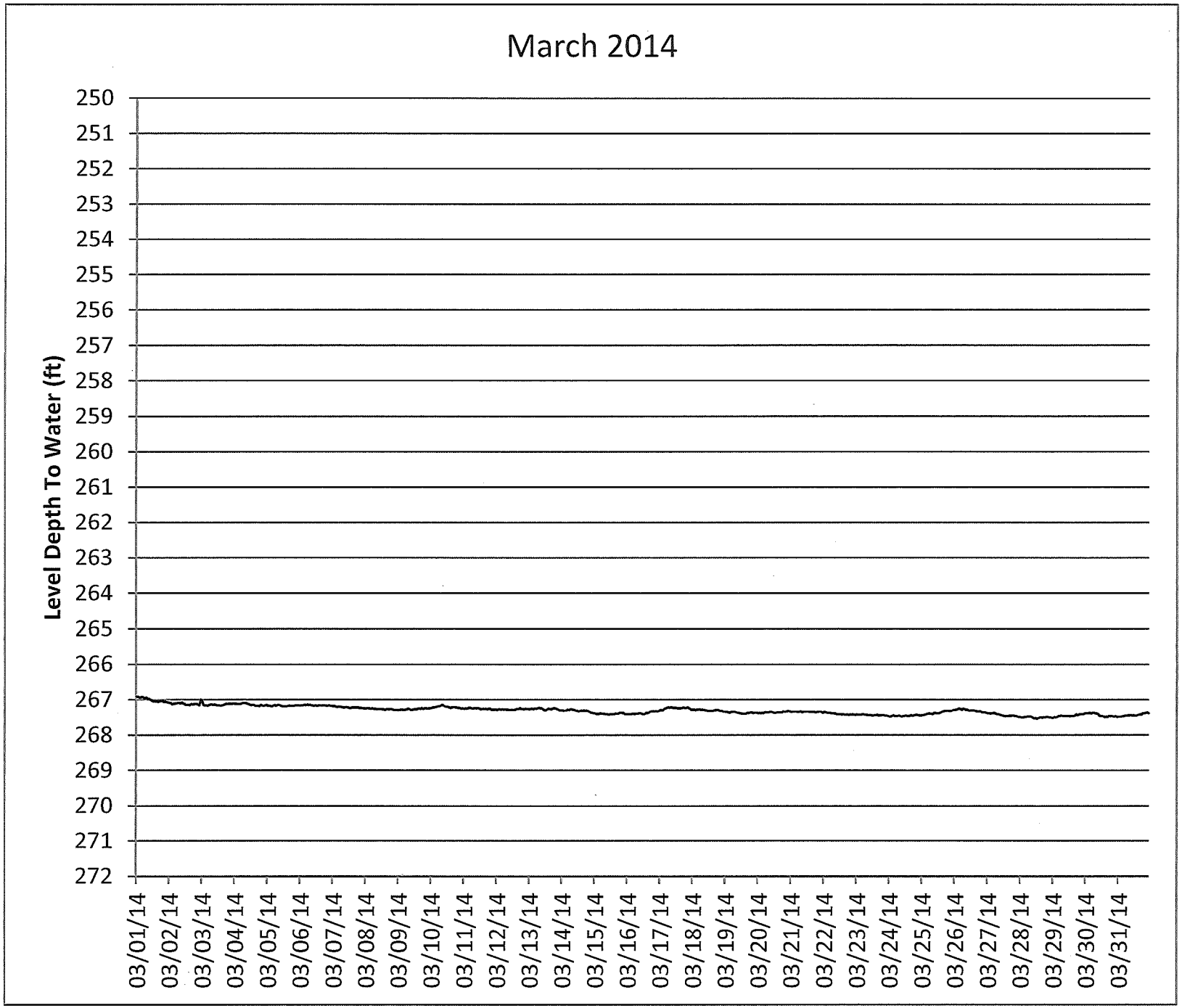

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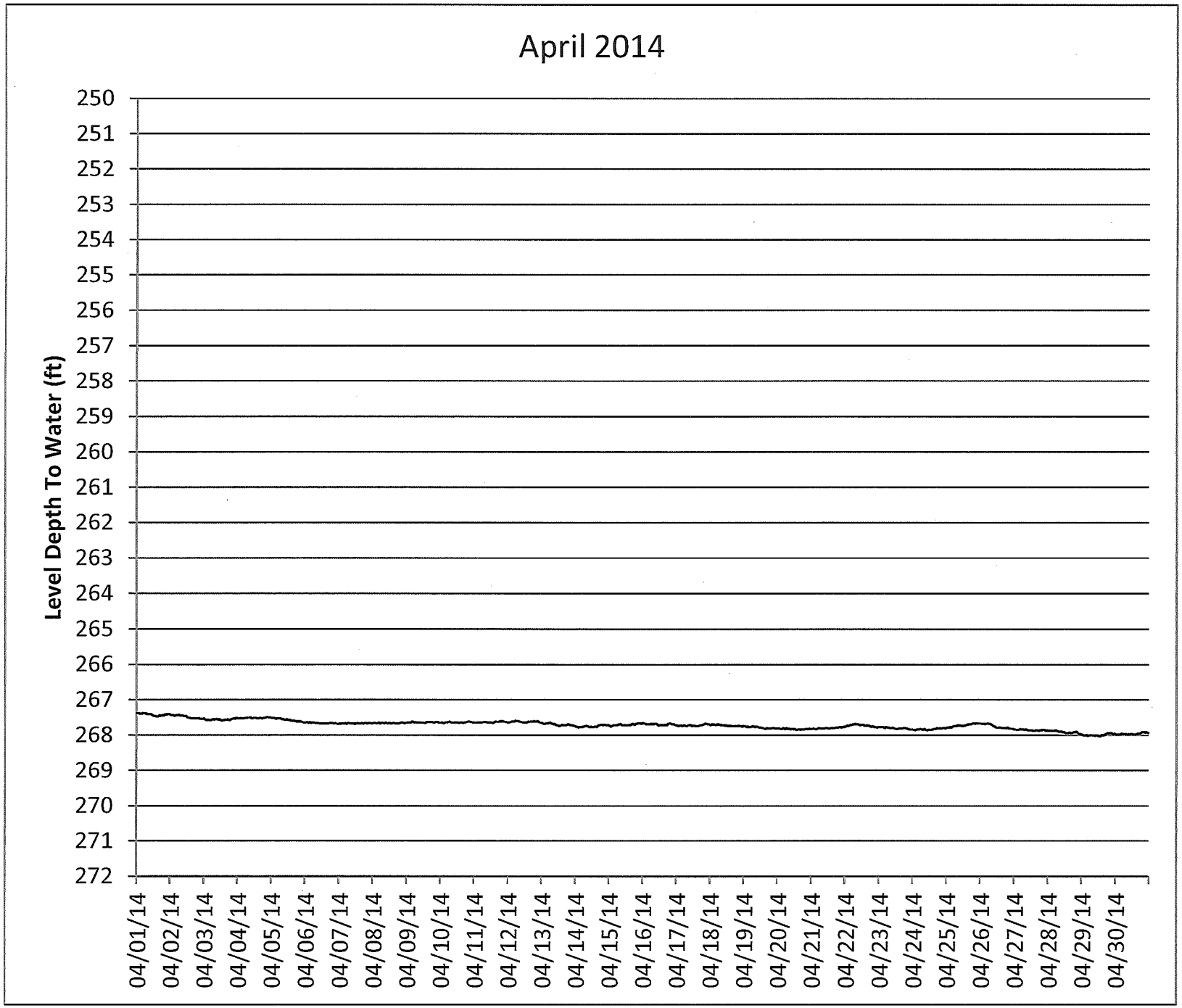

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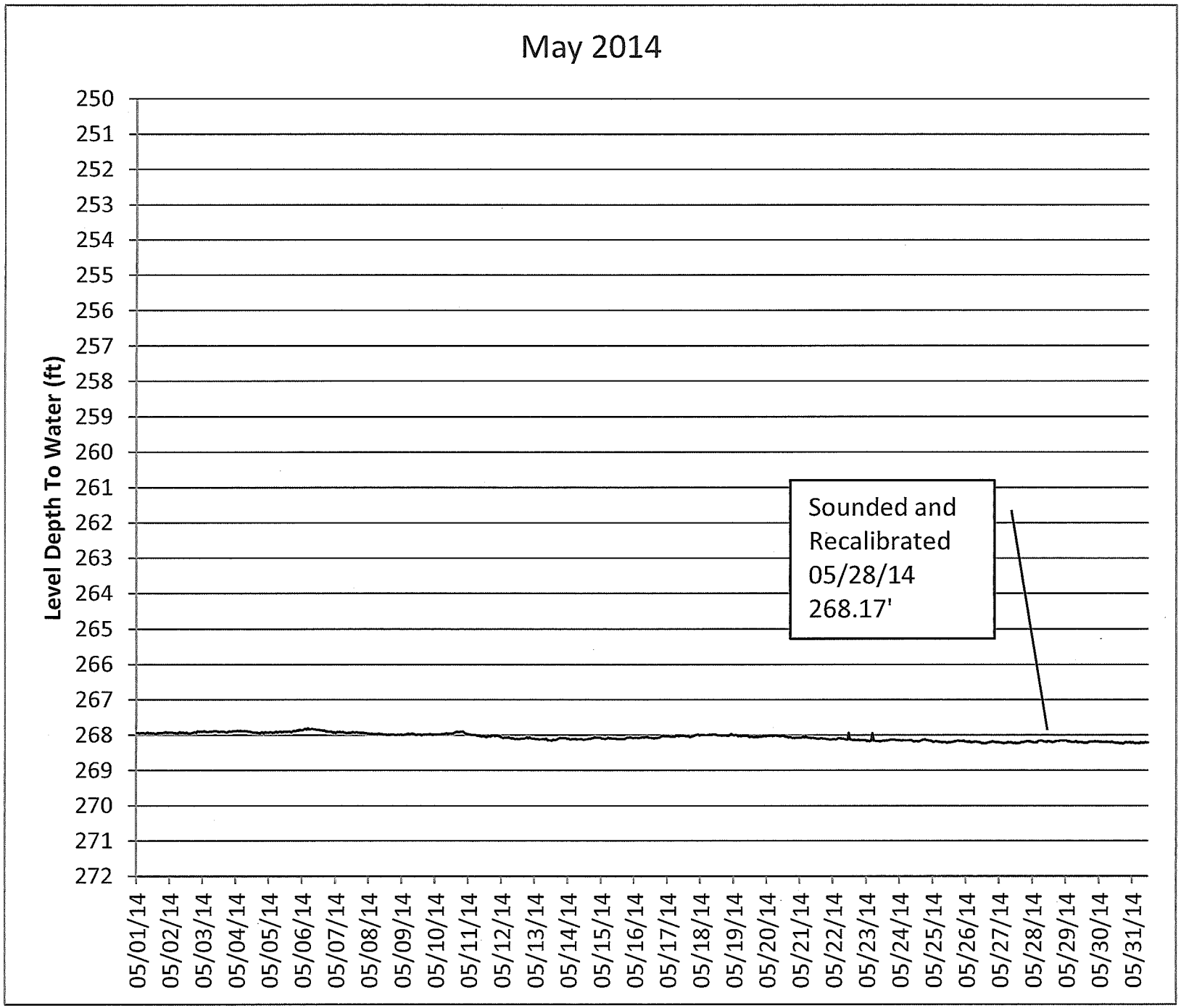

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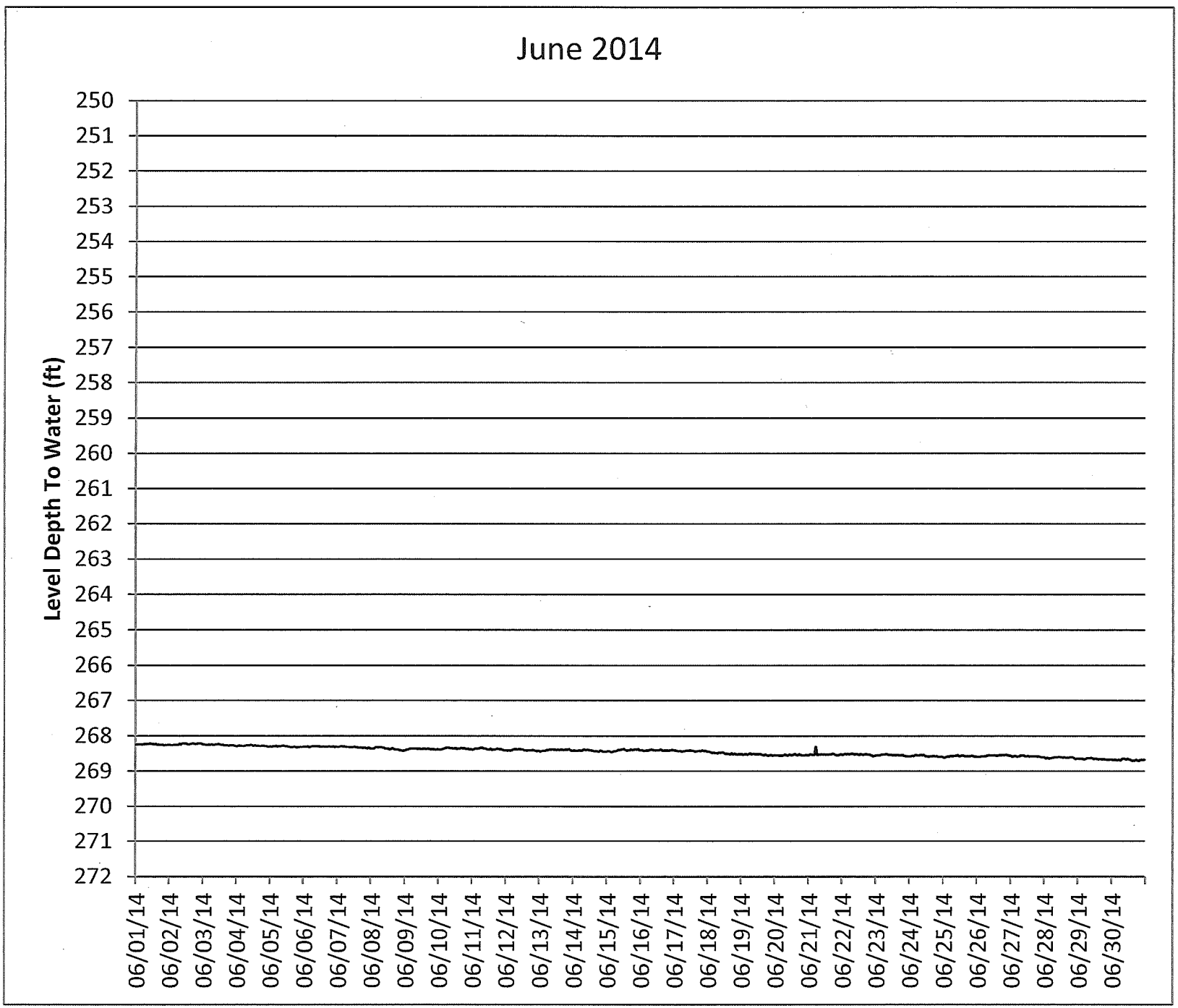

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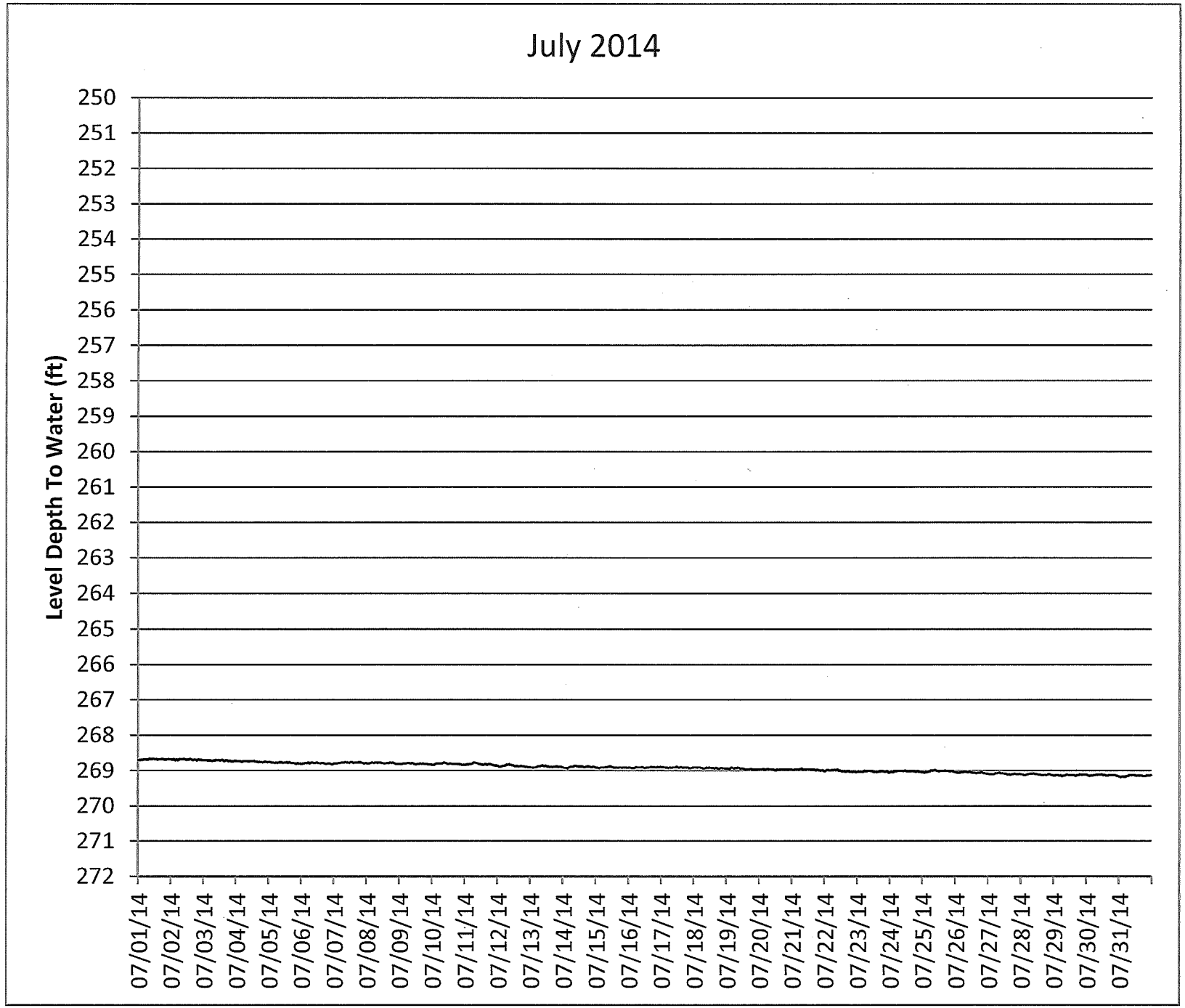

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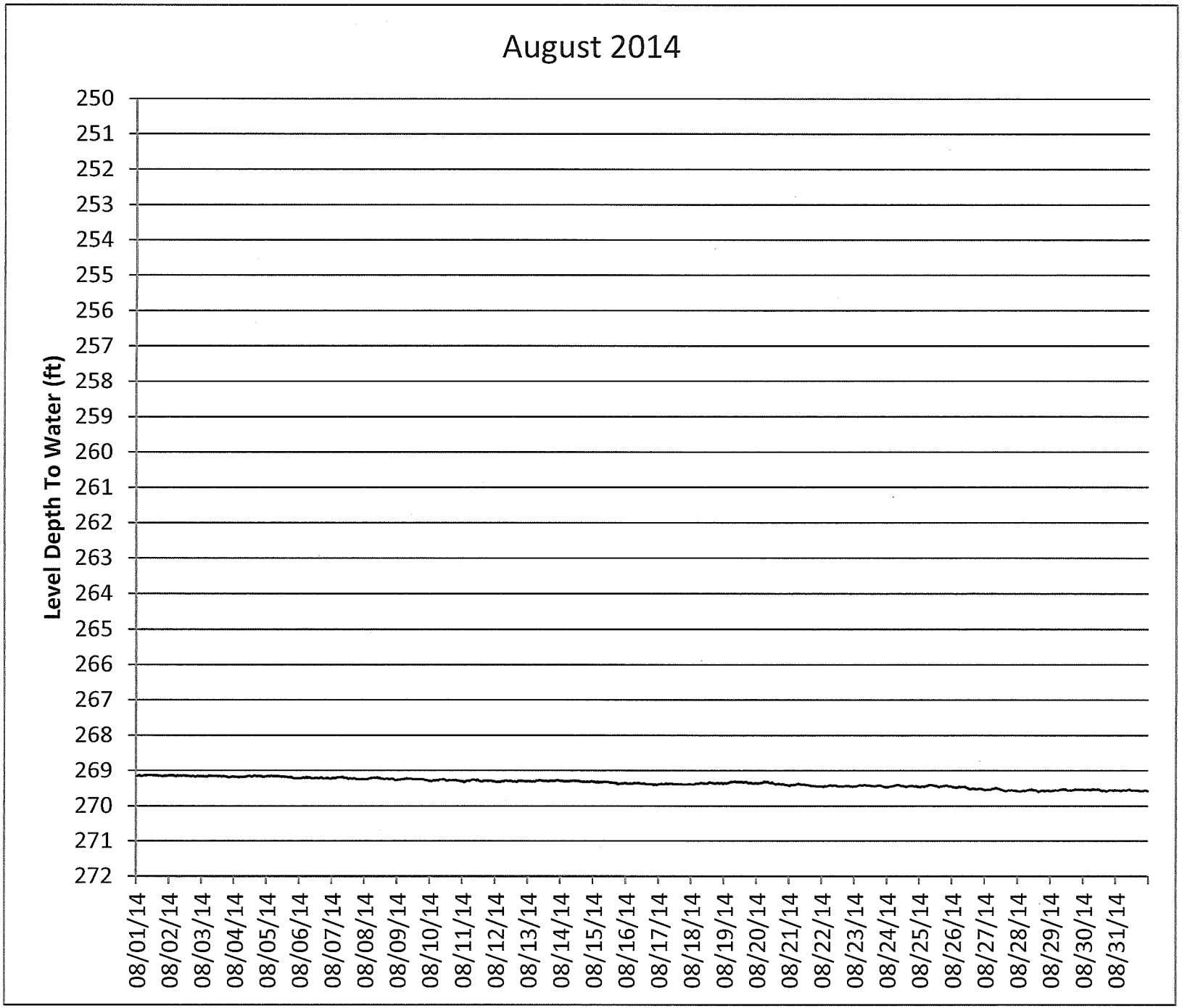

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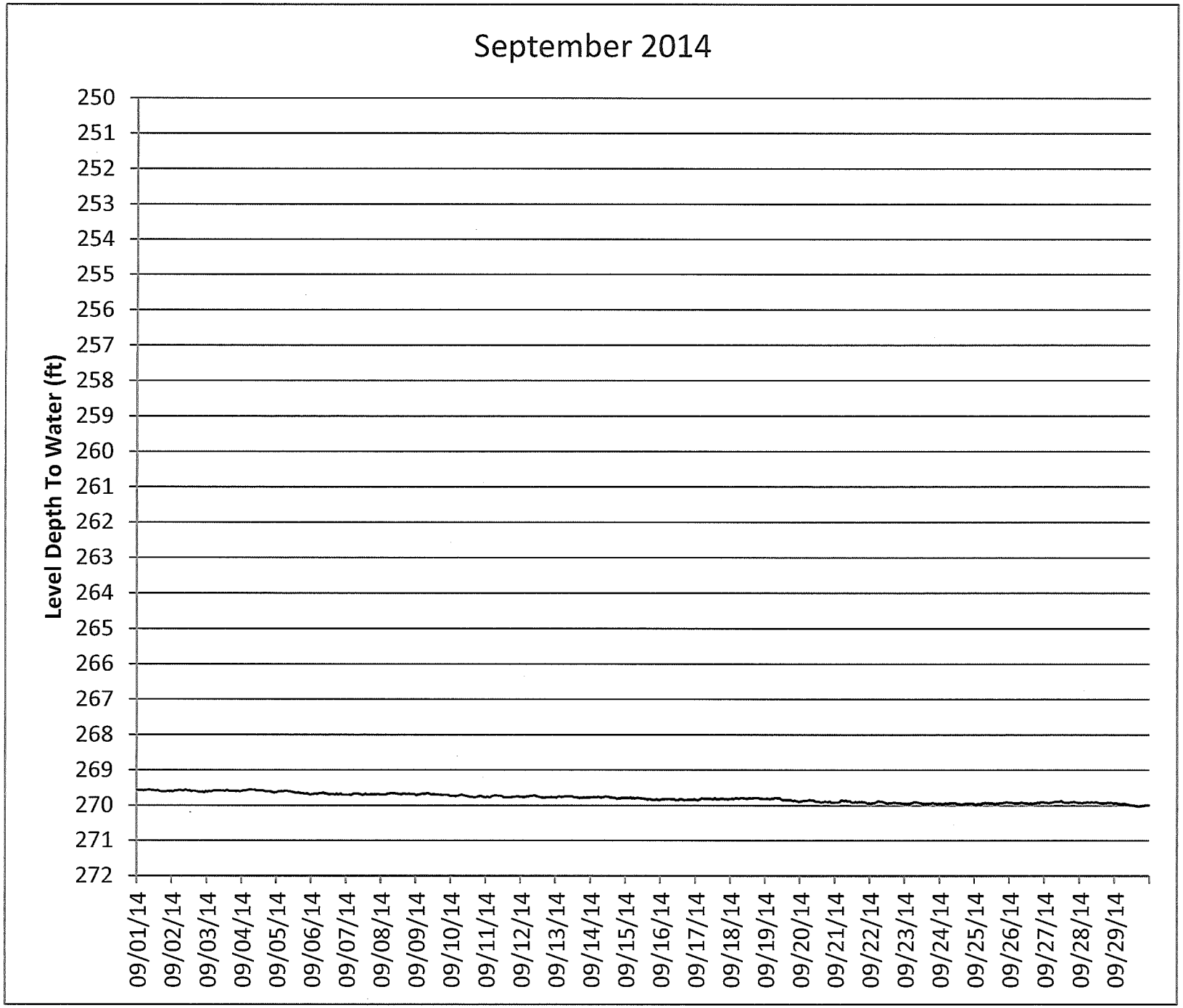
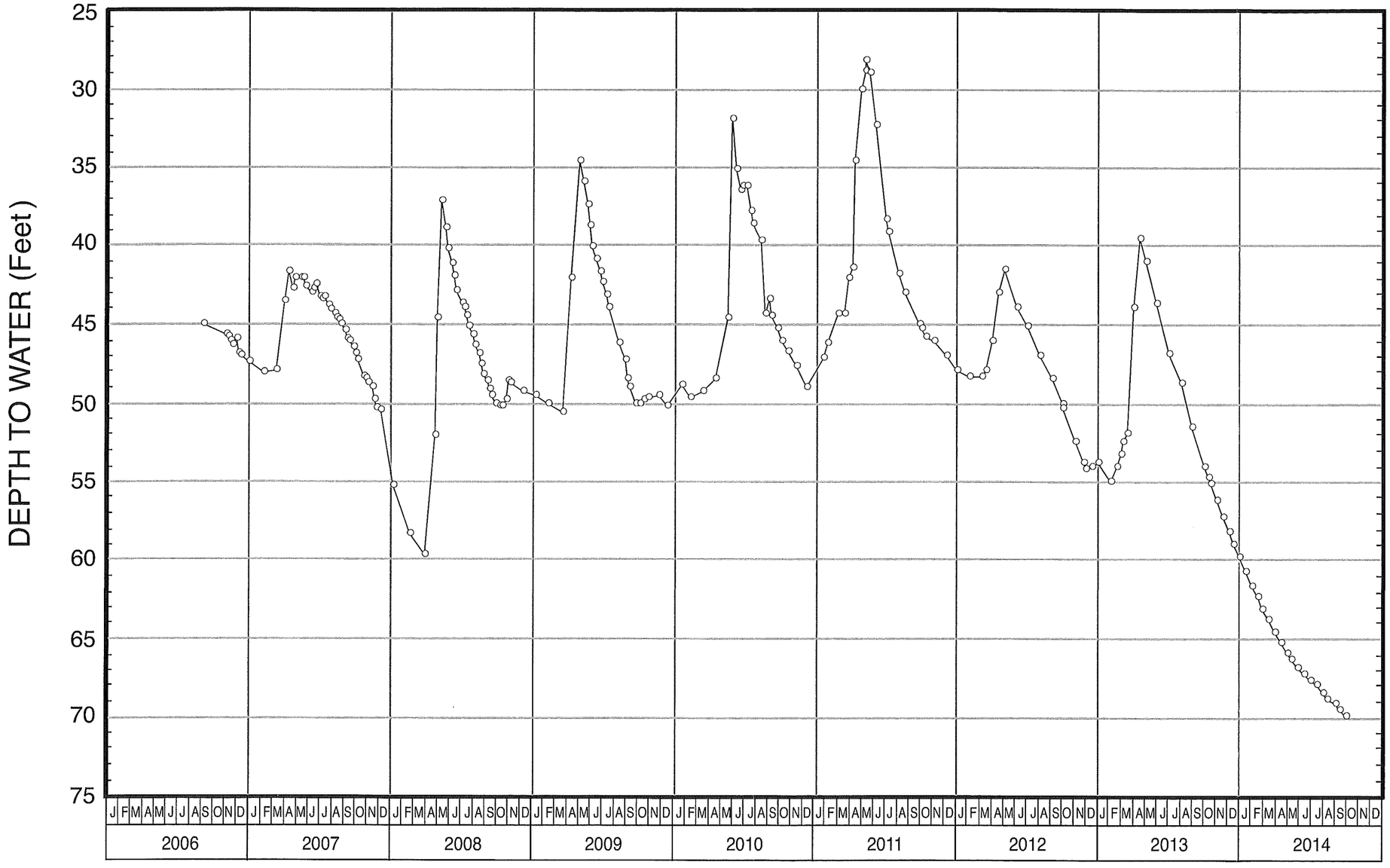
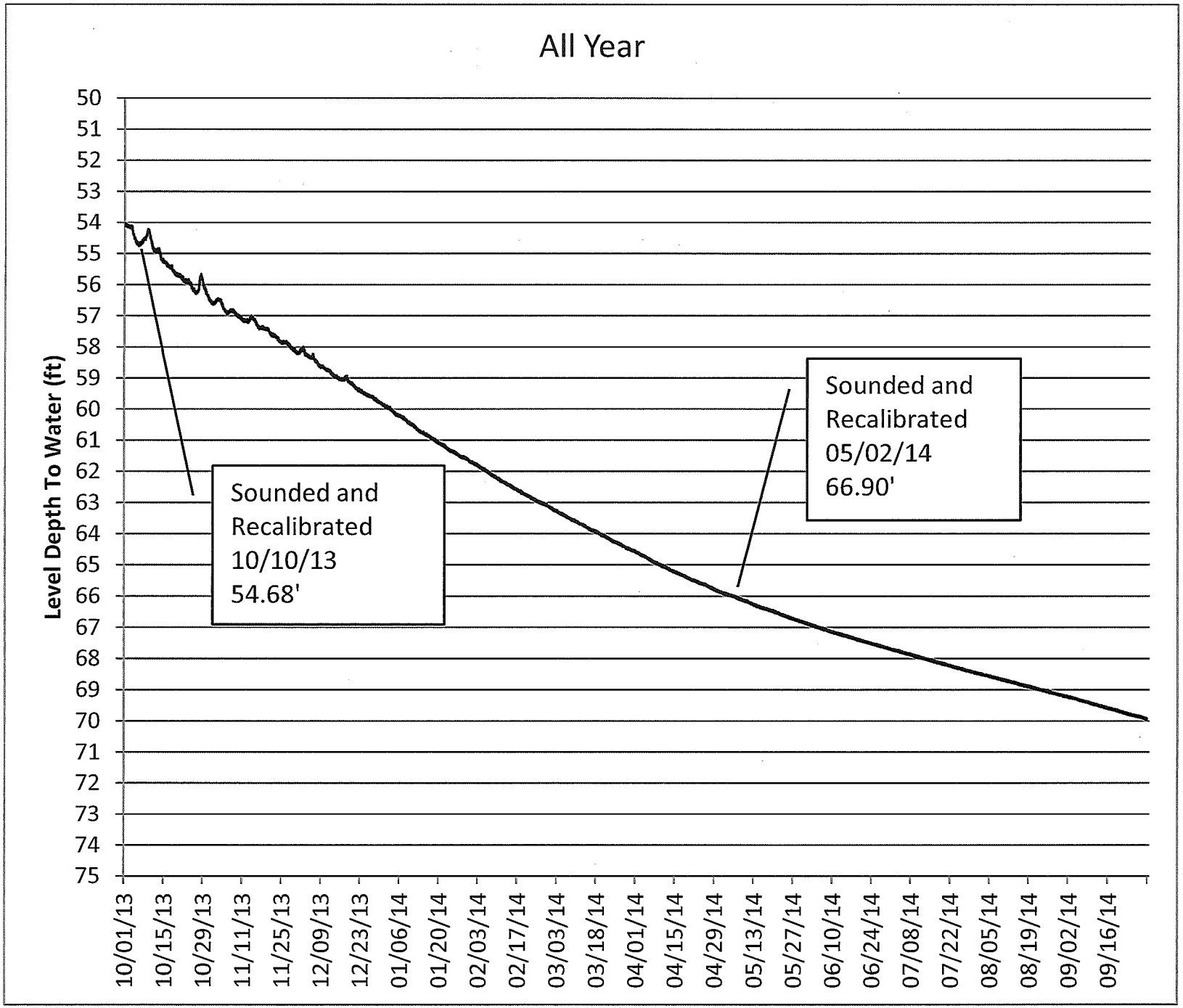


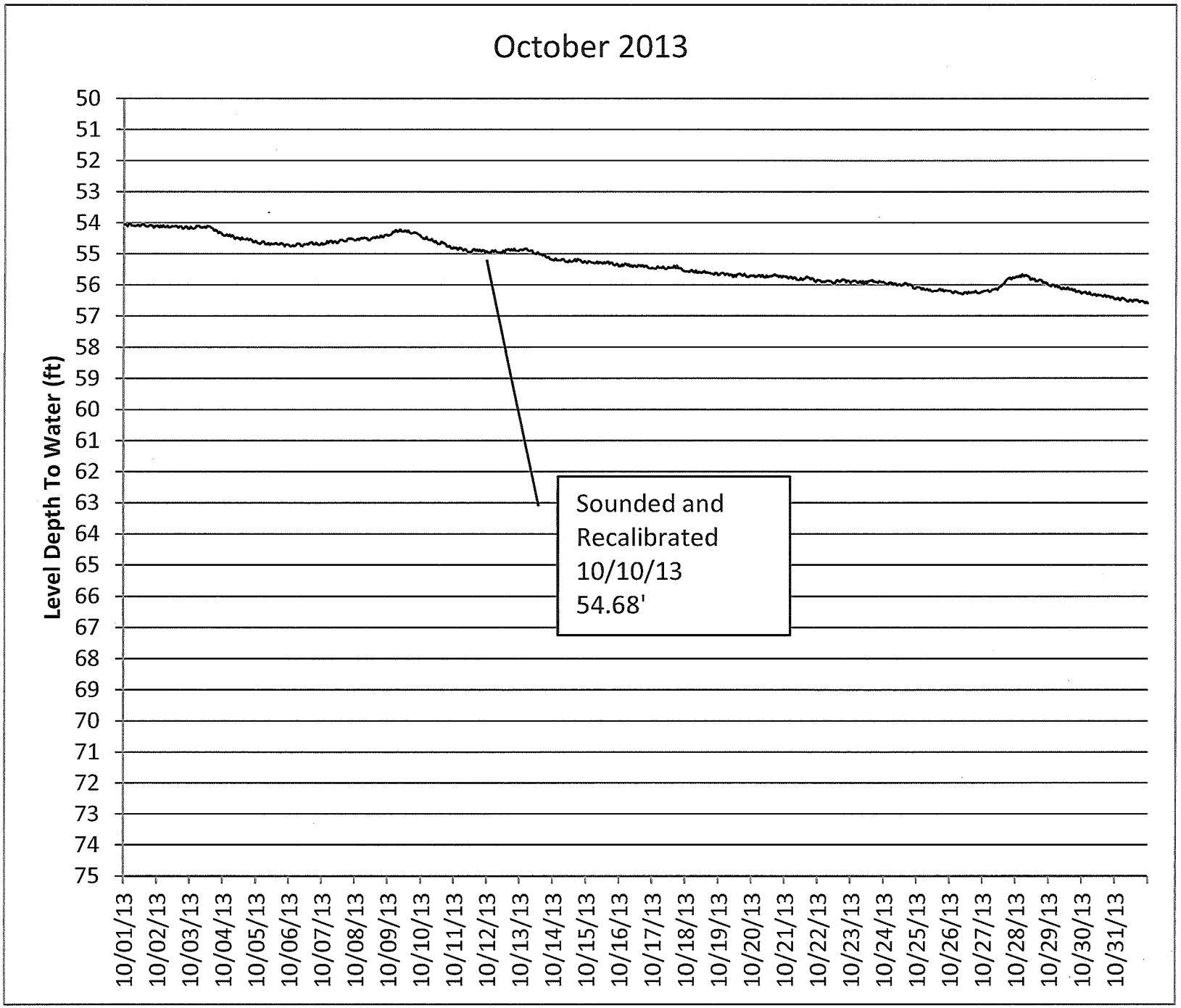
WATER LEVEL HYDROGRAPH FOR MW-26M



WATER-LEVEL HYDROGRAPH FOR WELL NO. 27



WATER LEVEL HYDROGRAPH FOR MW-27M



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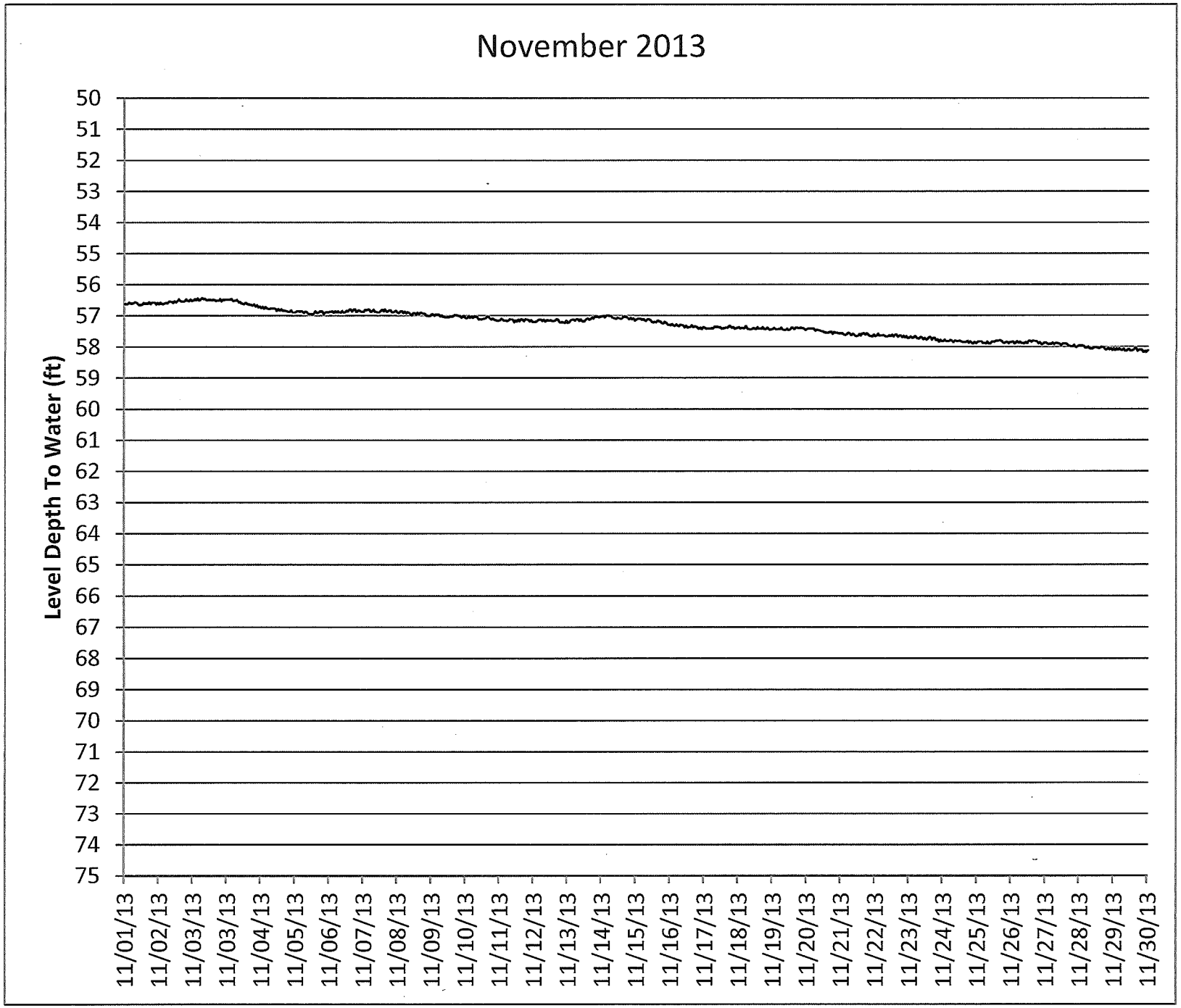
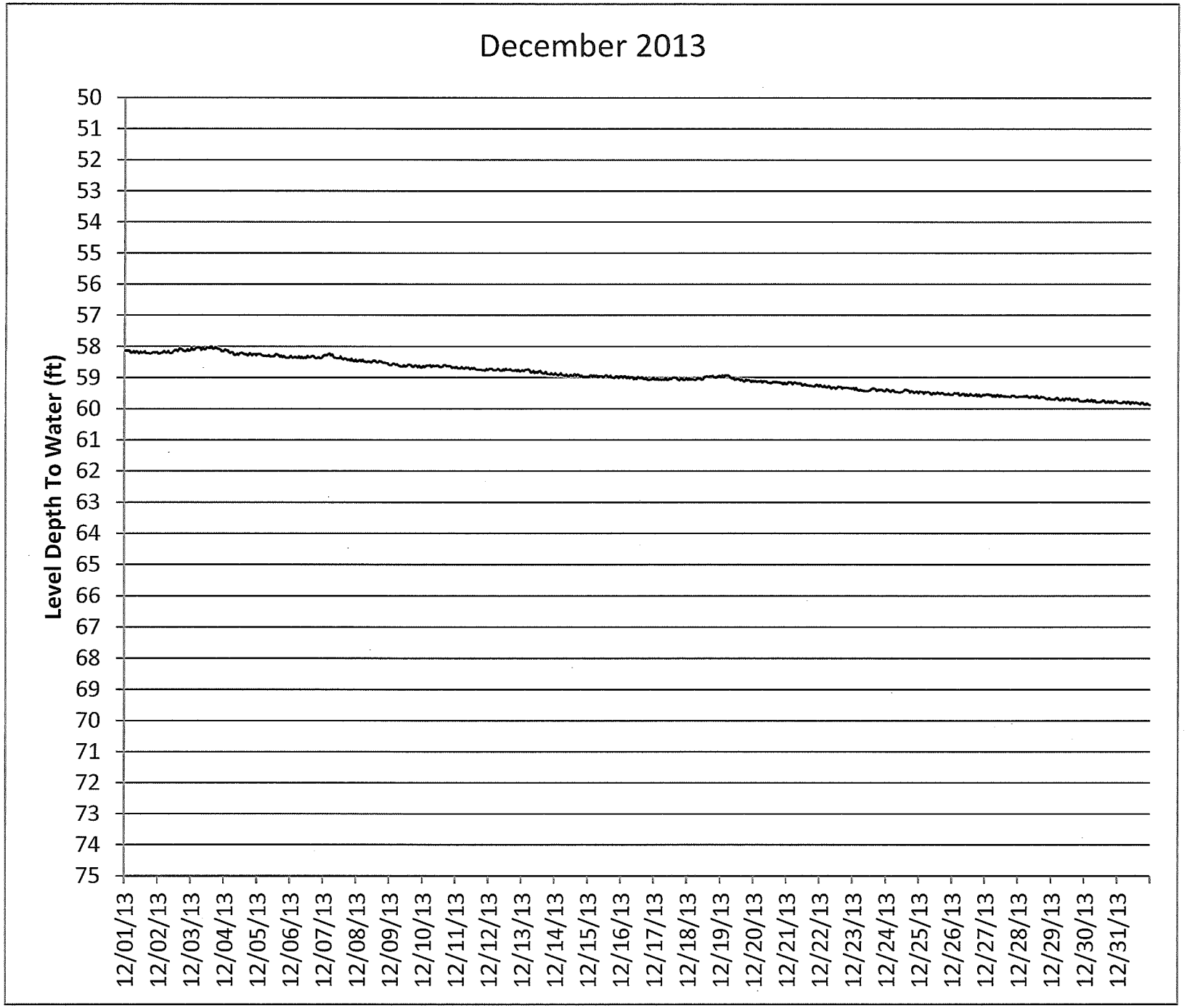
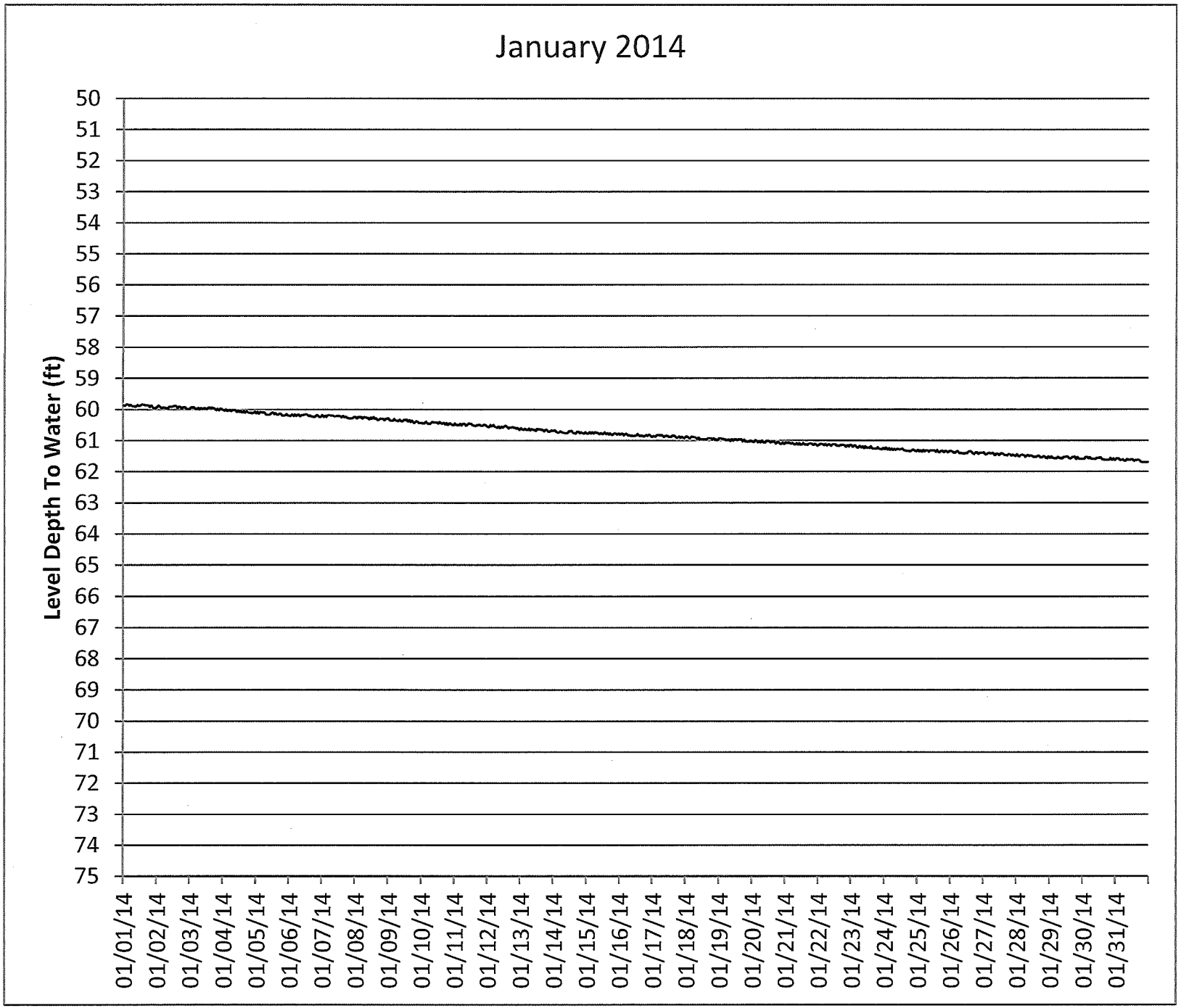


WATER LEVEL HYDROGRAPH FOR MW-27M



WATER LEVEL HYDROGRAPH FOR MW-27M



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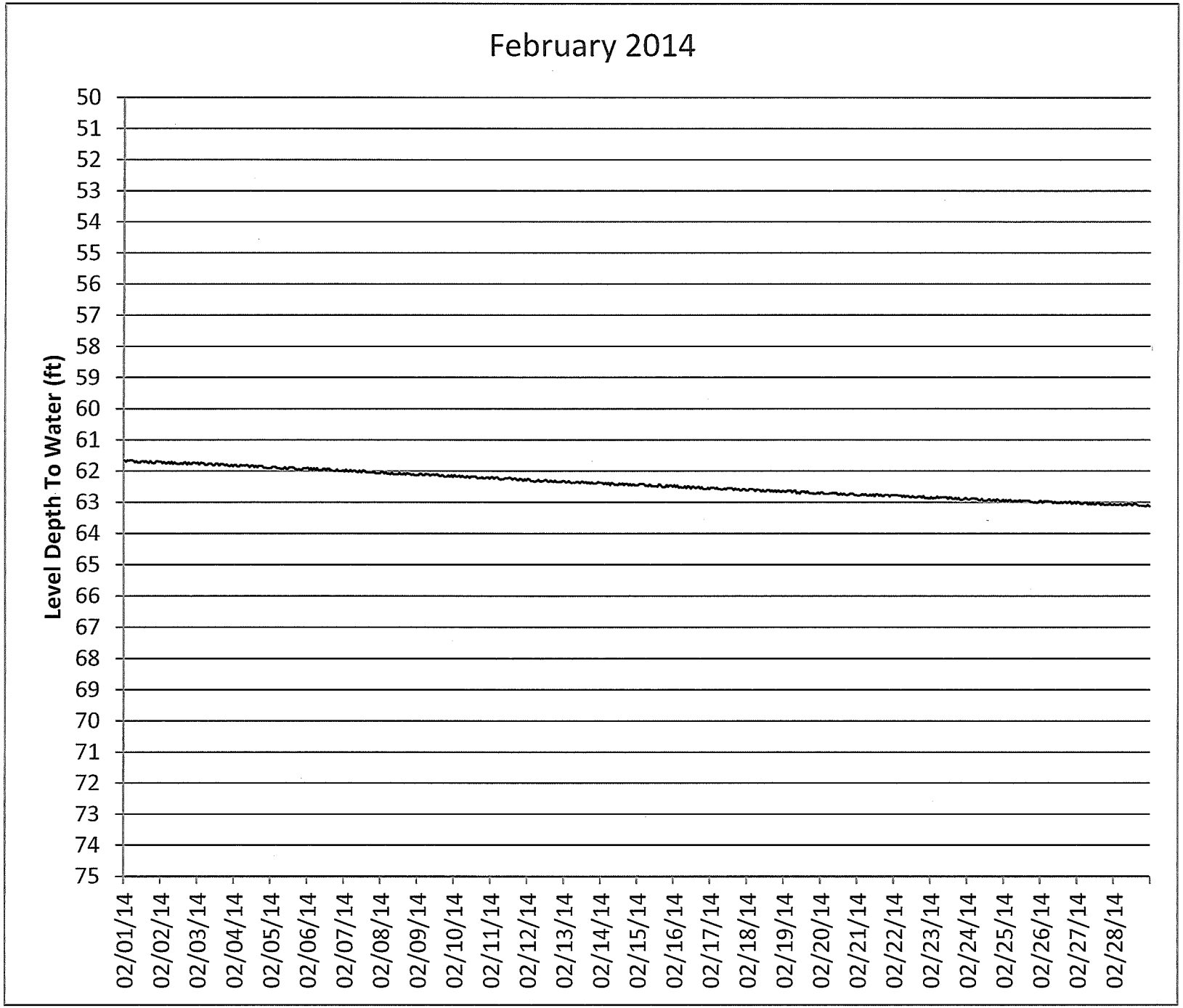
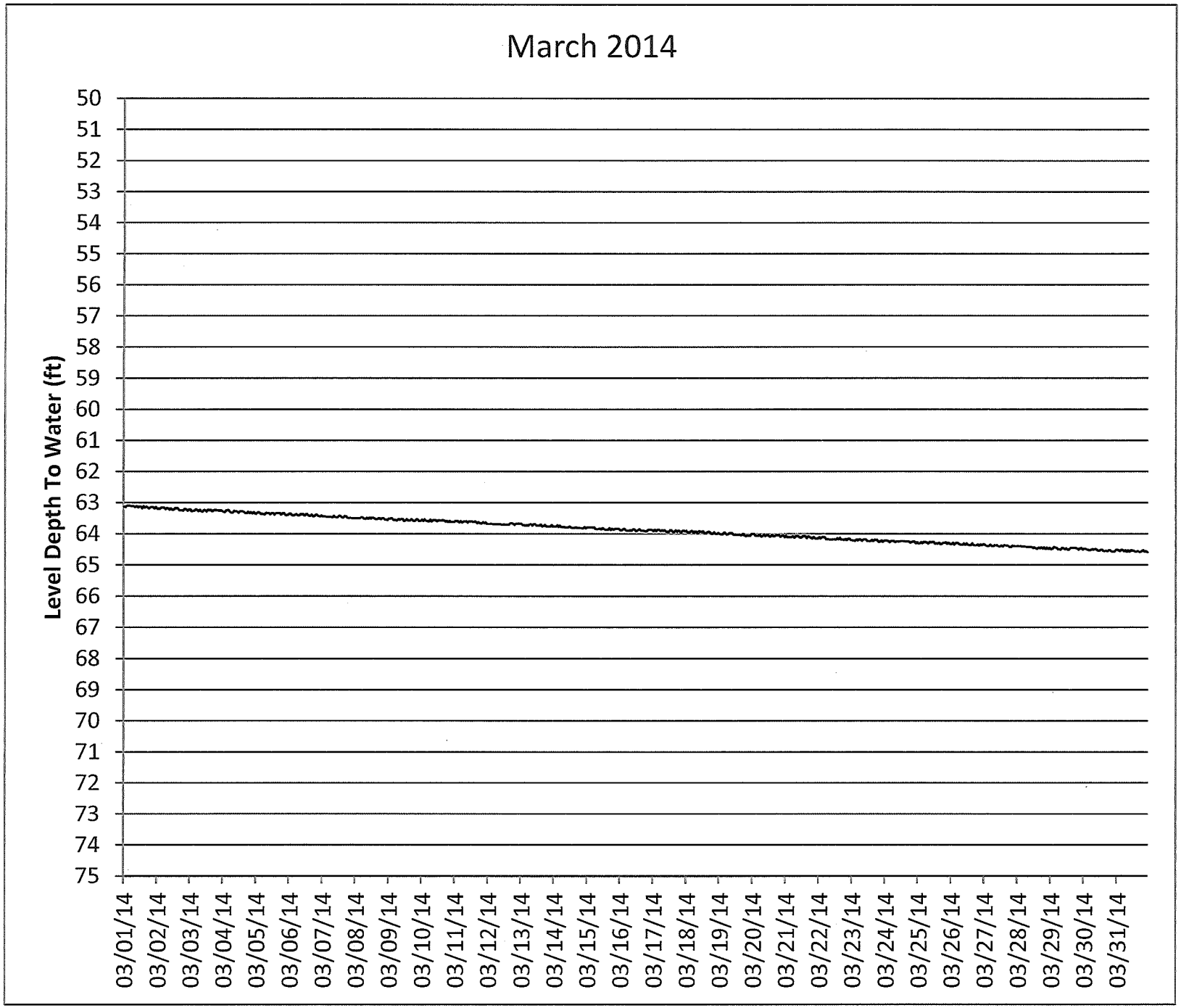


WATER LEVEL HYDROGRAPH FOR MW-27M



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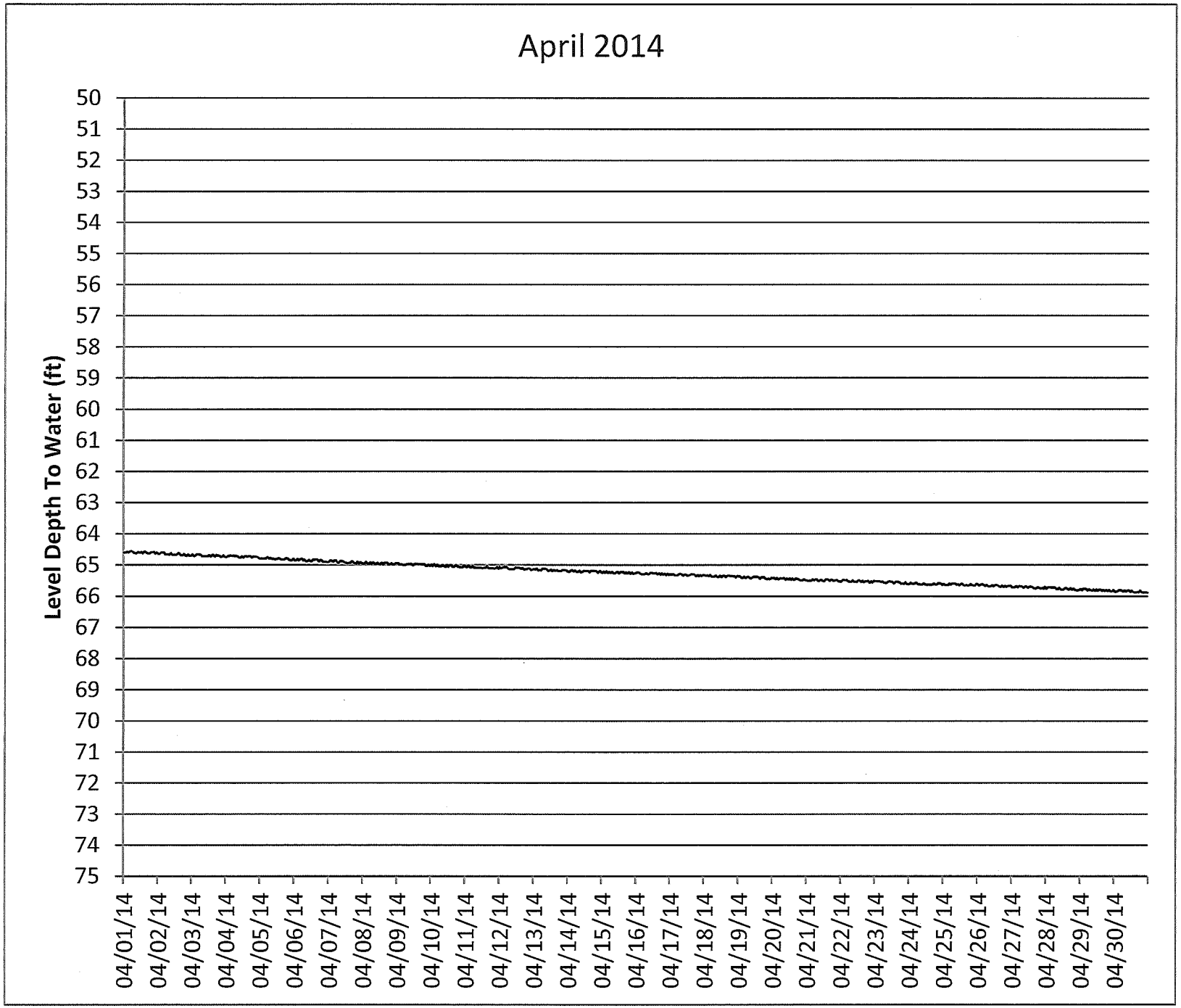

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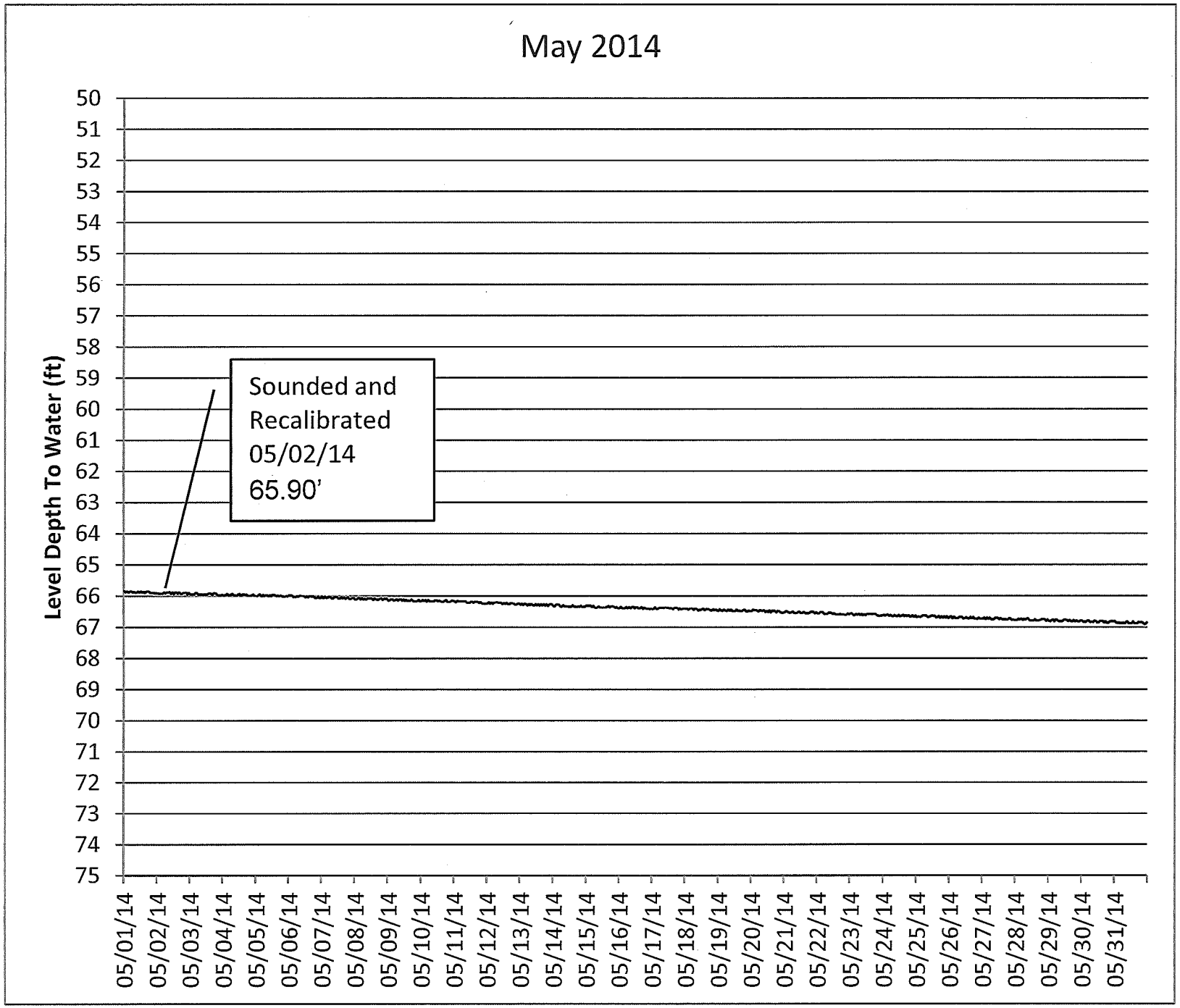

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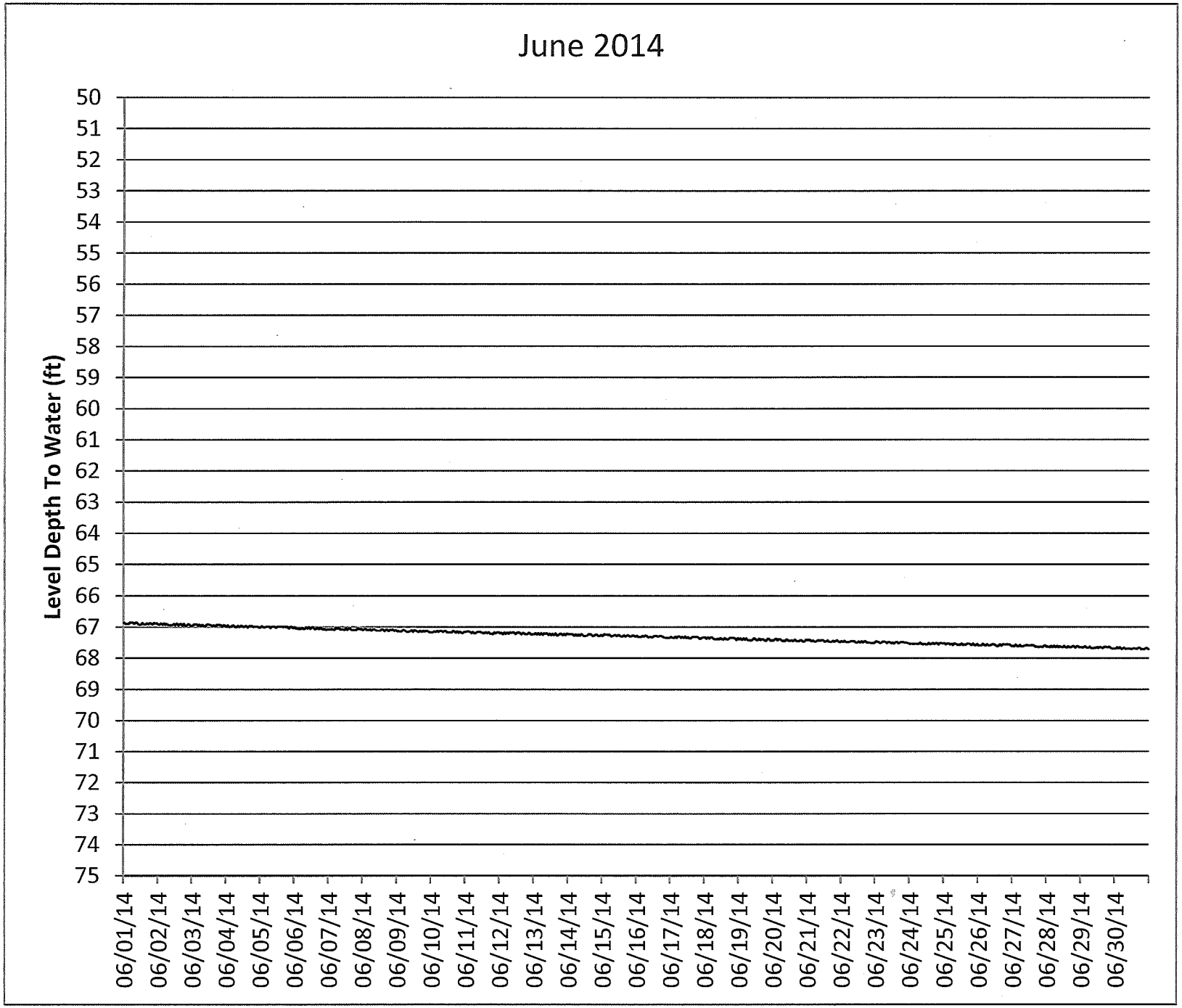
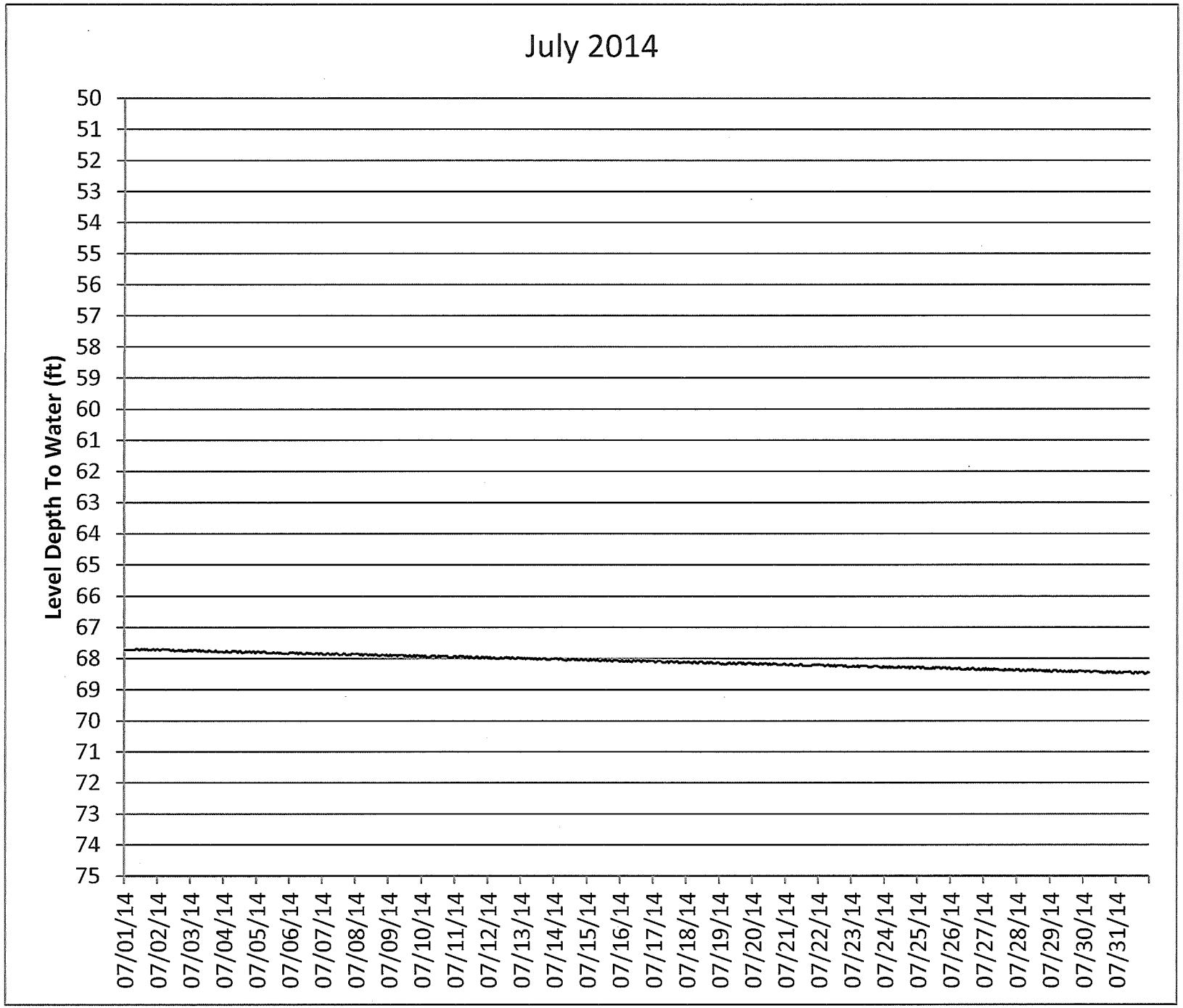


WATER LEVEL HYDROGRAPH FOR MW-27M



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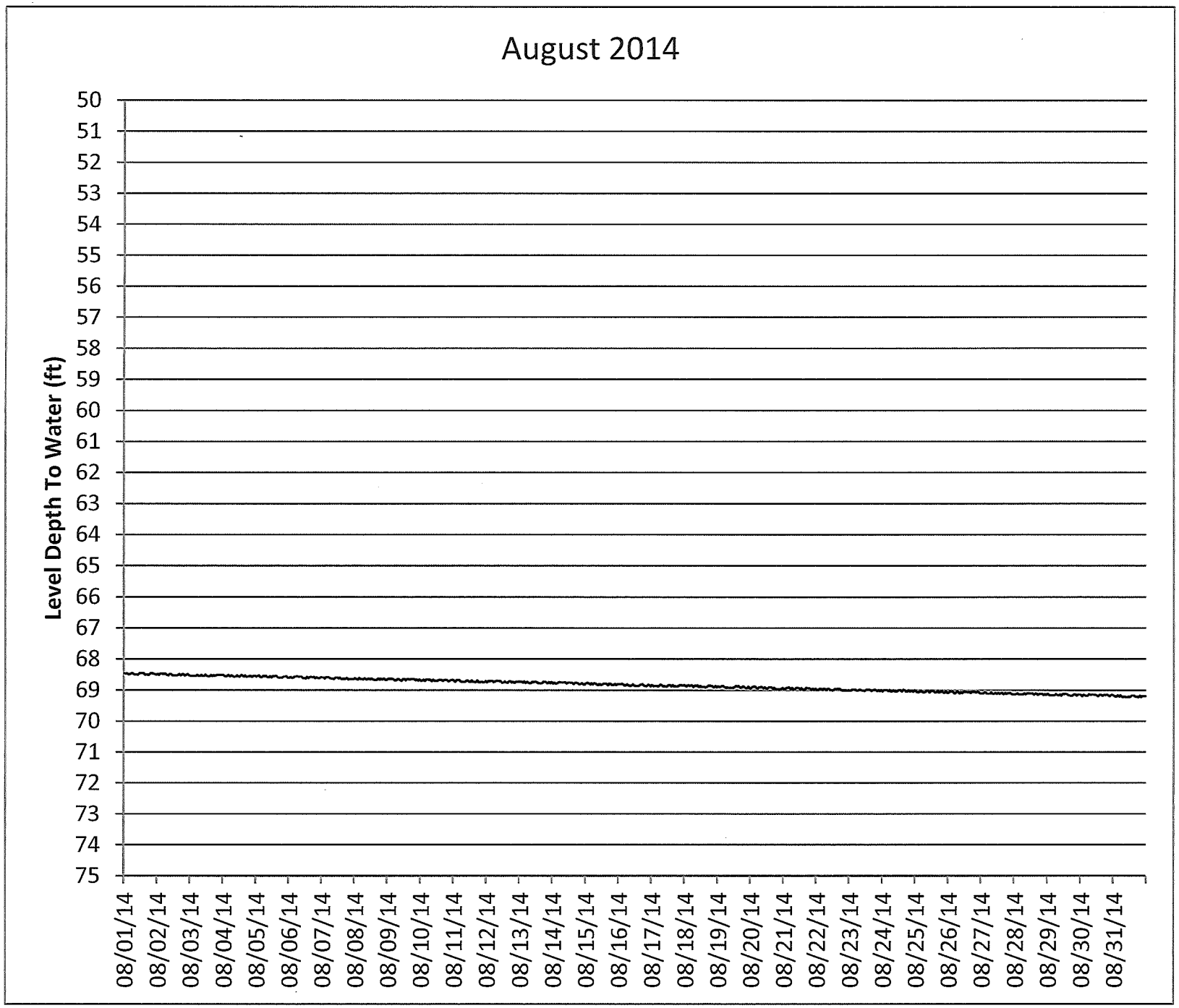

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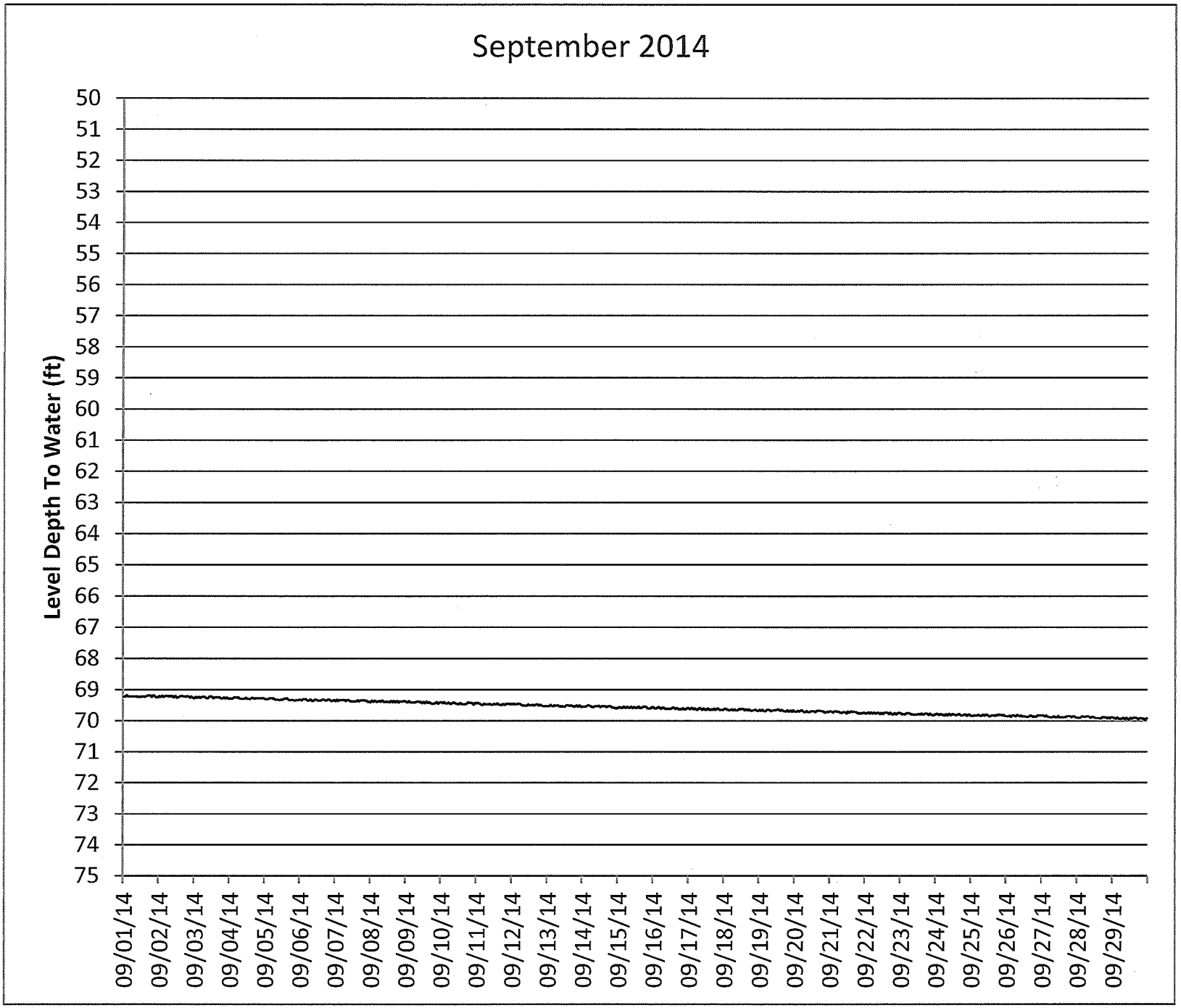

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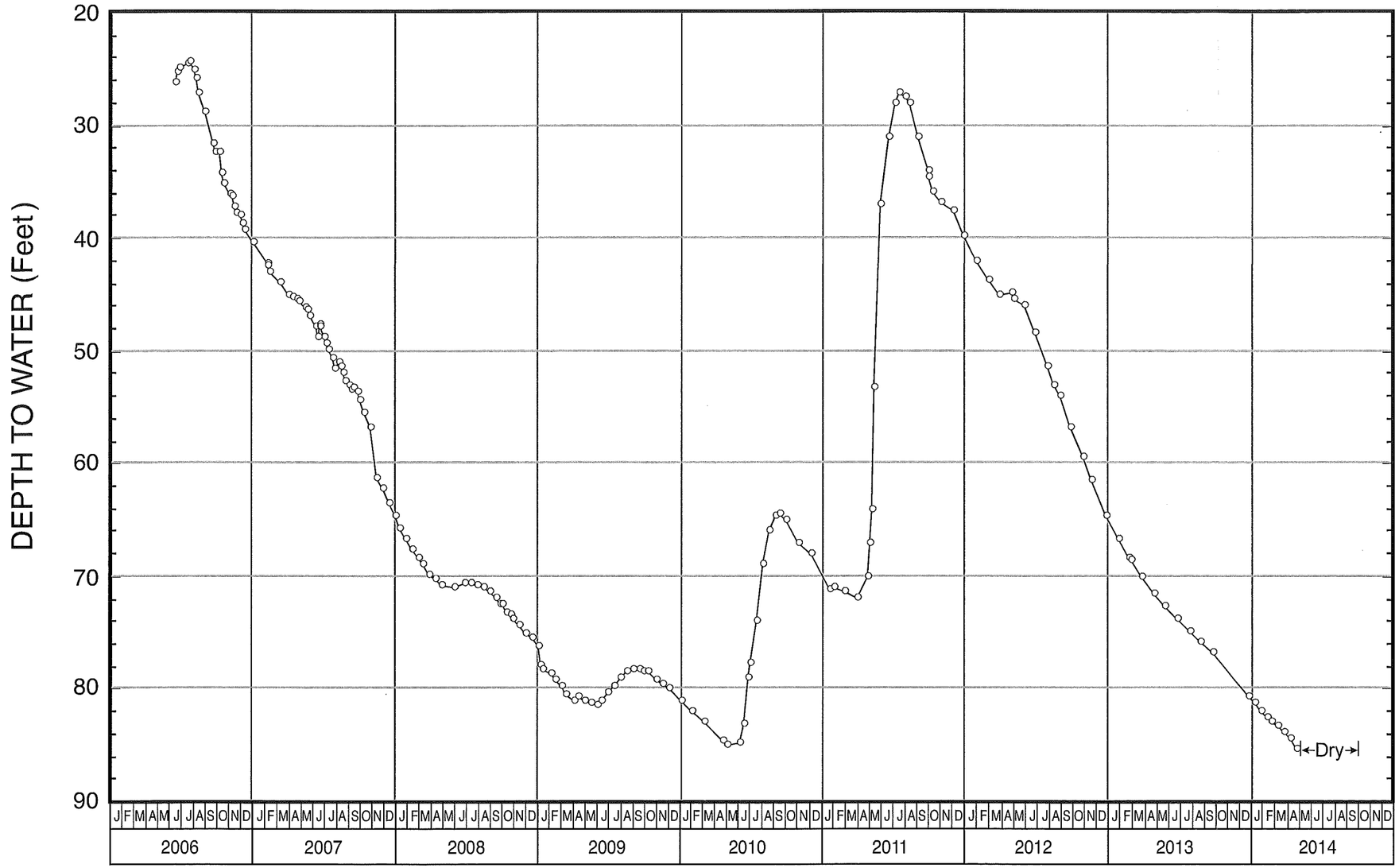
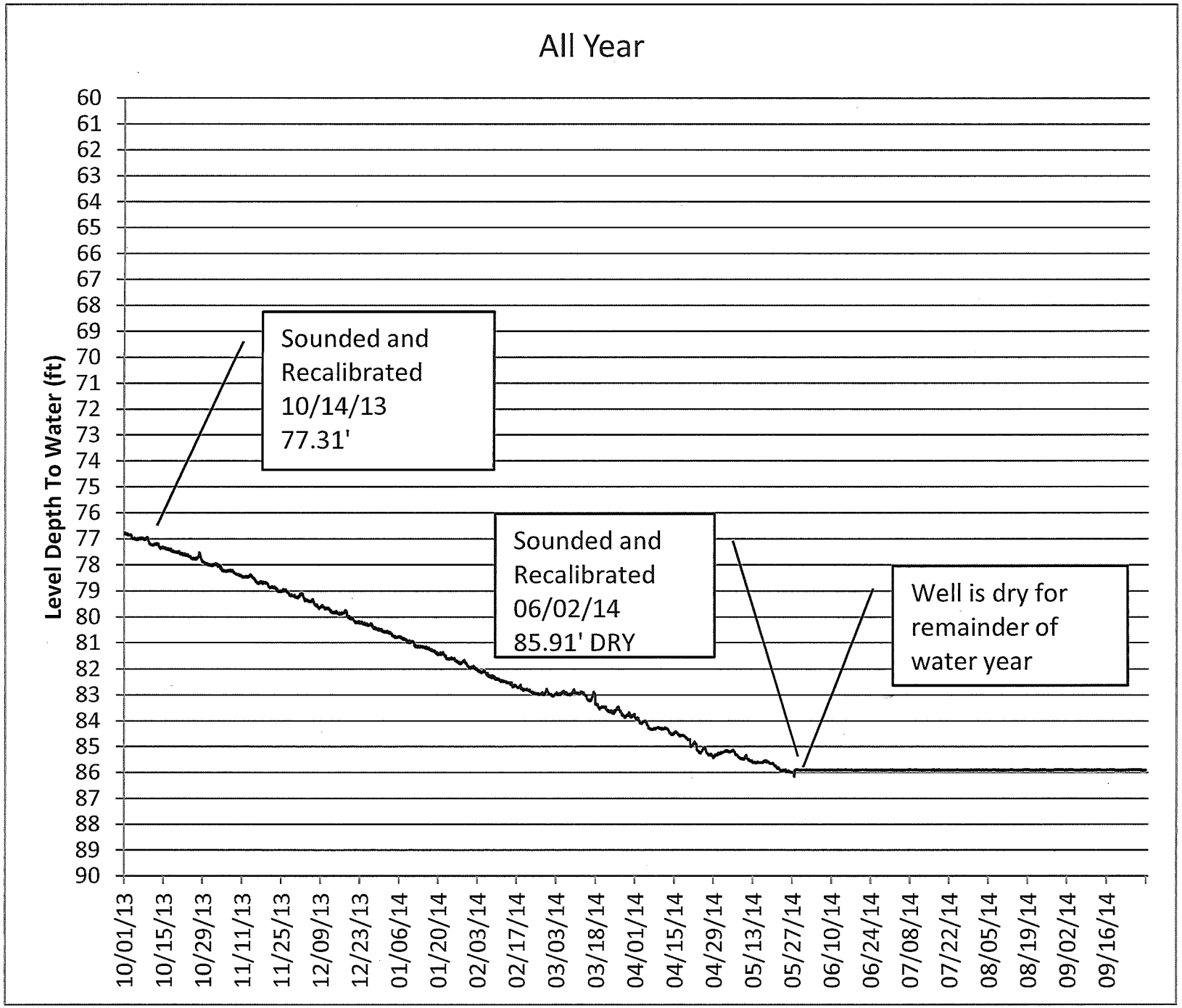
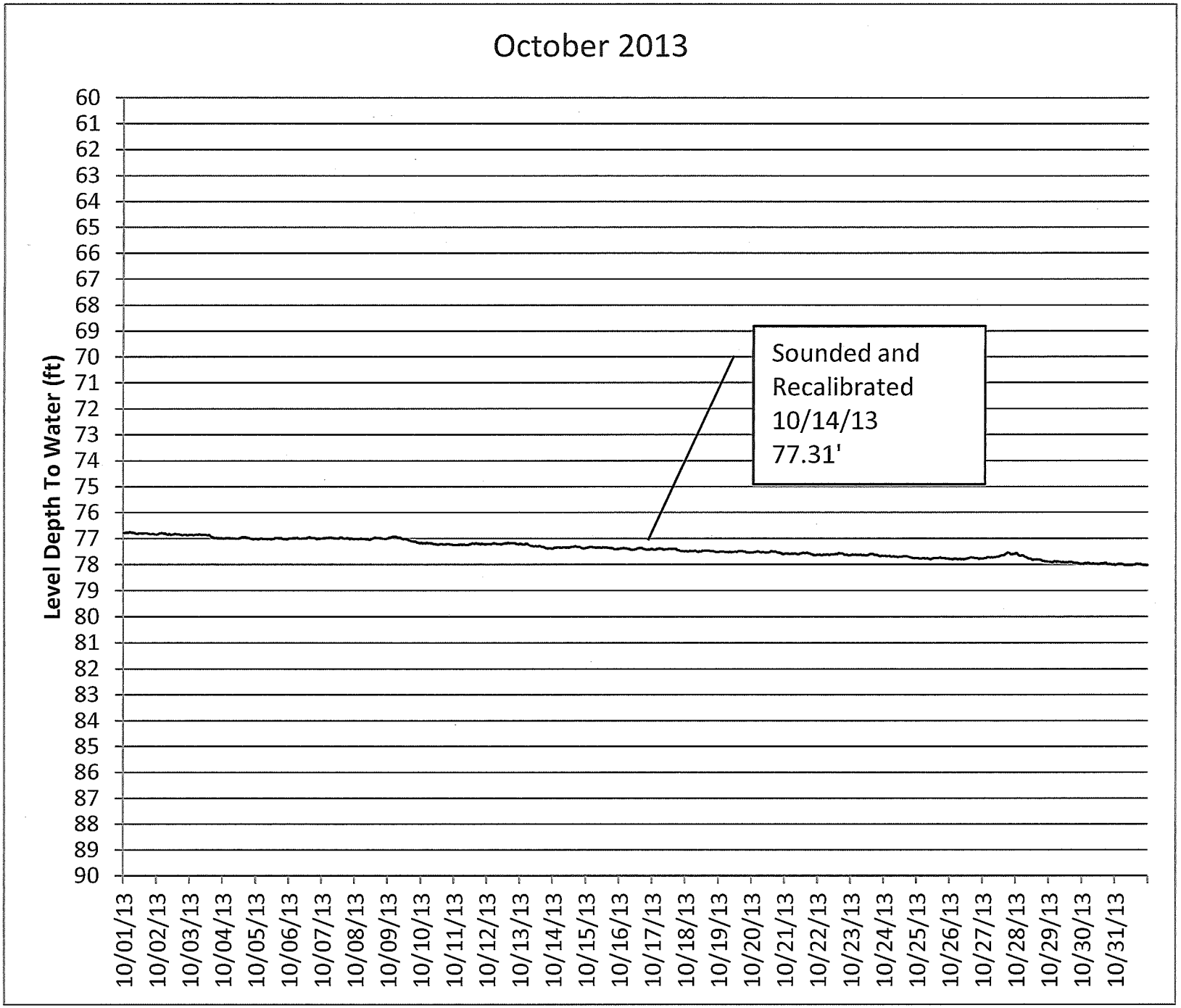


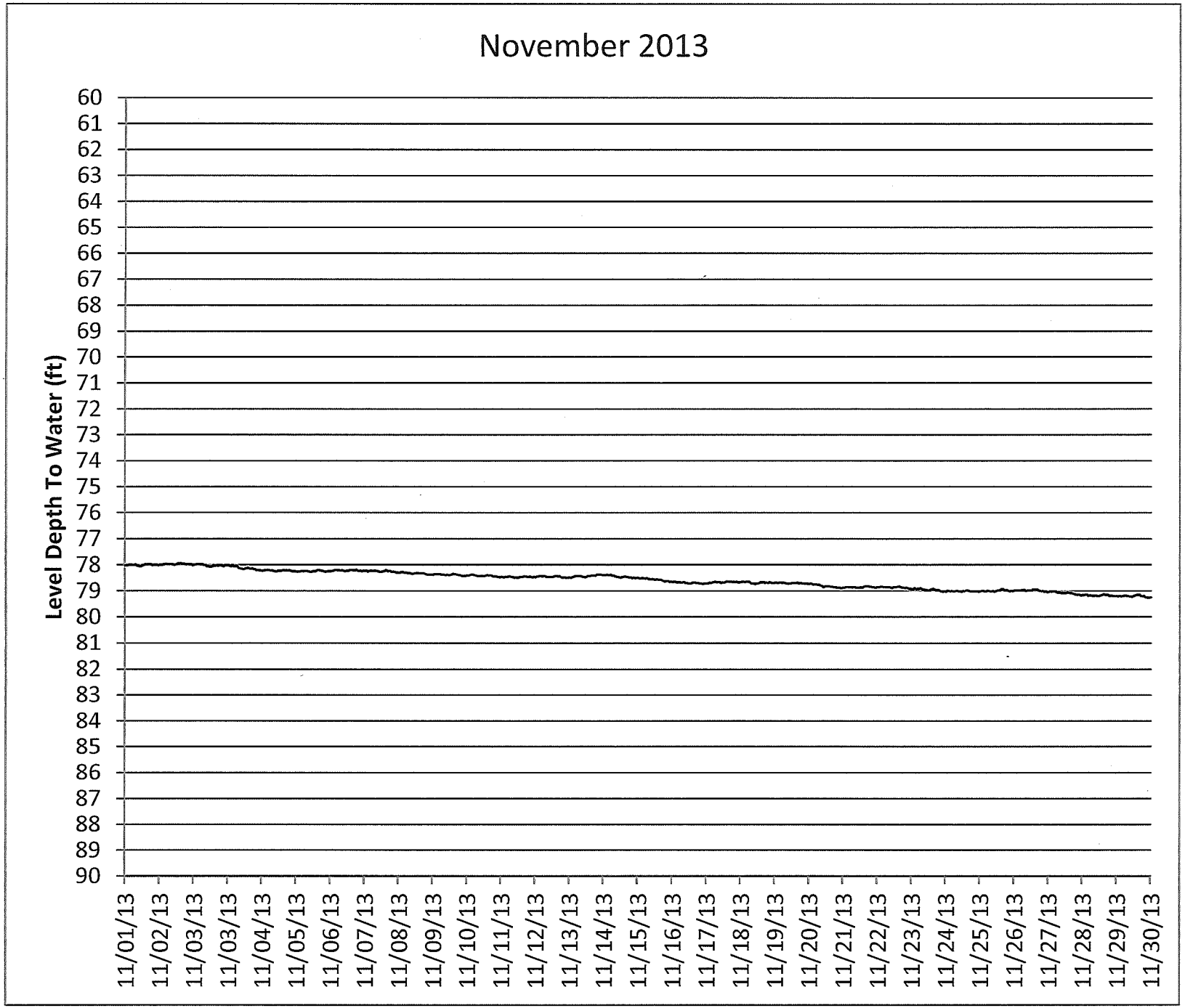
WATER-LEVEL HYDROGRAPH FOR WELL NO. 28



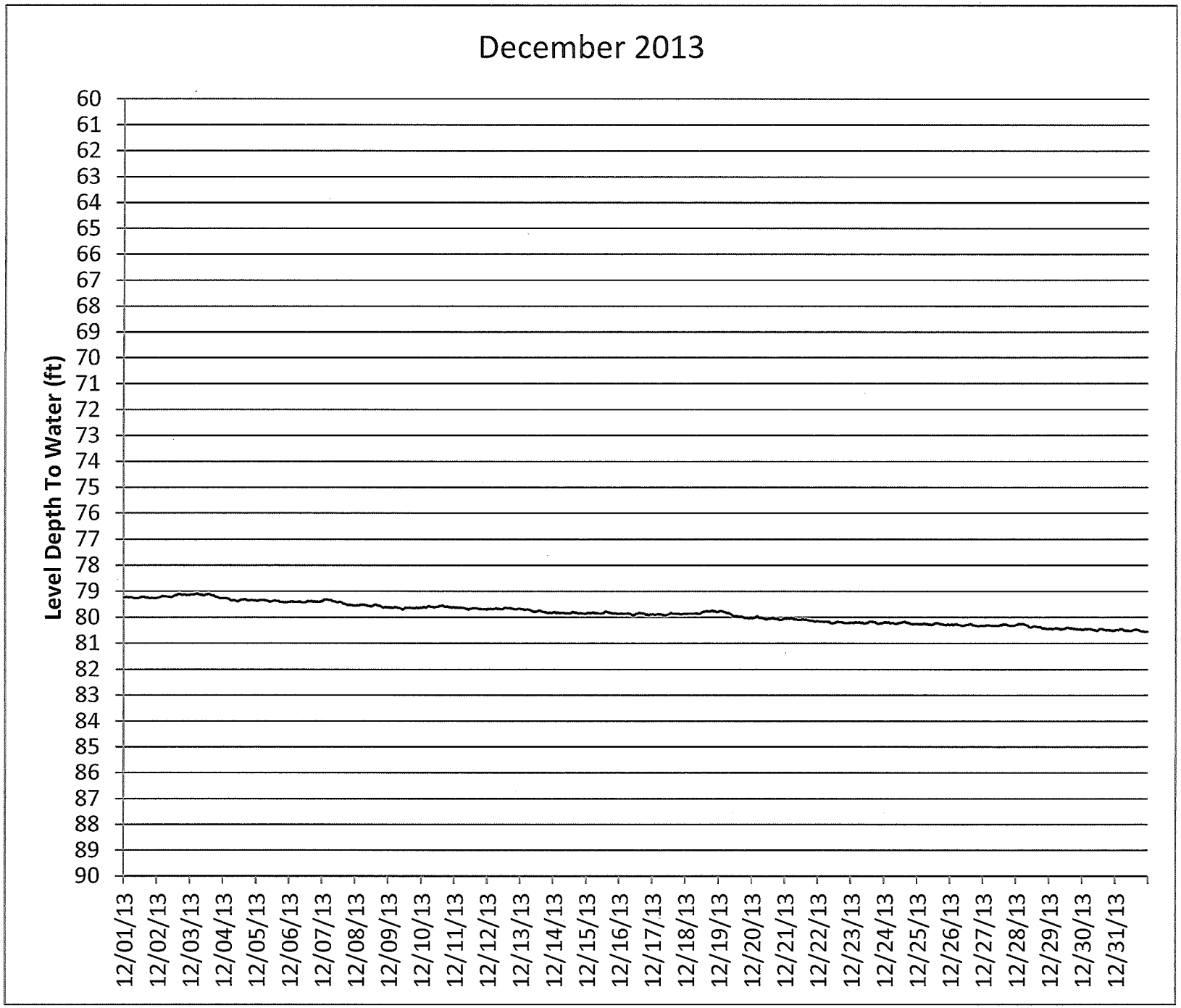
WATER LEVEL HYDROGRAPH FOR MW-28M



WATER LEVEL HYDROGRAPH FOR MW-28M



WATER LEVEL HYDROGRAPH FOR MW-28M



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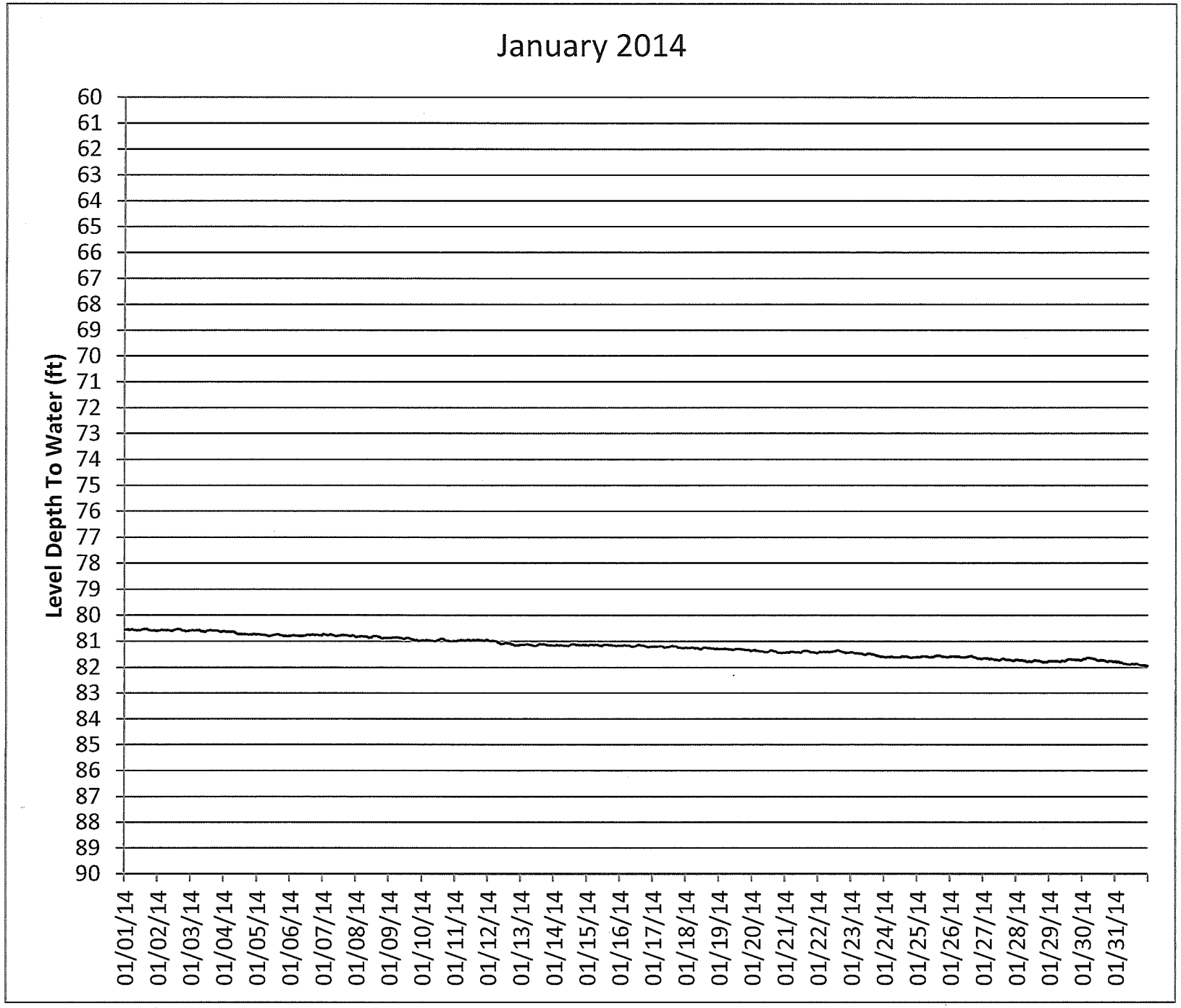

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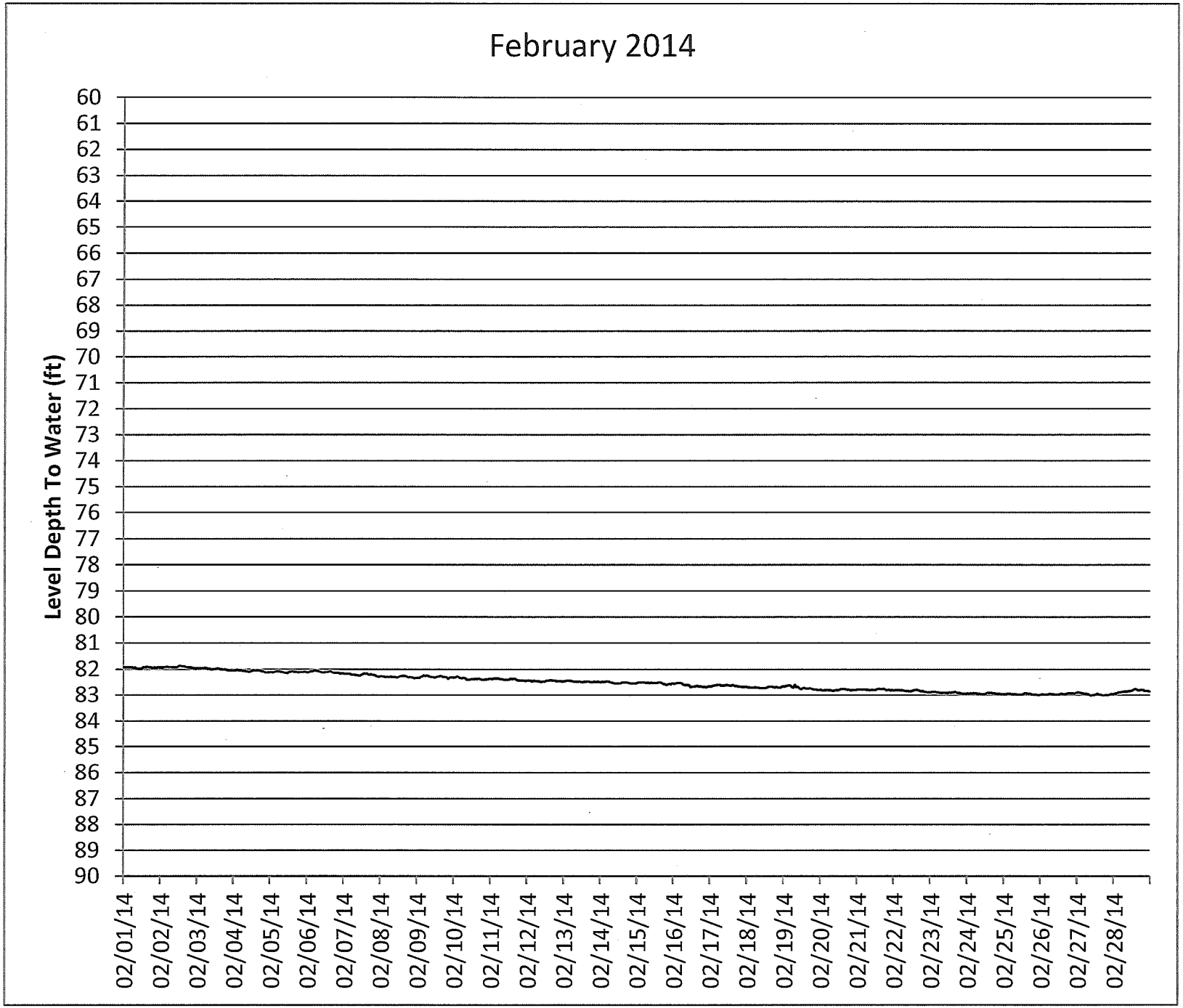
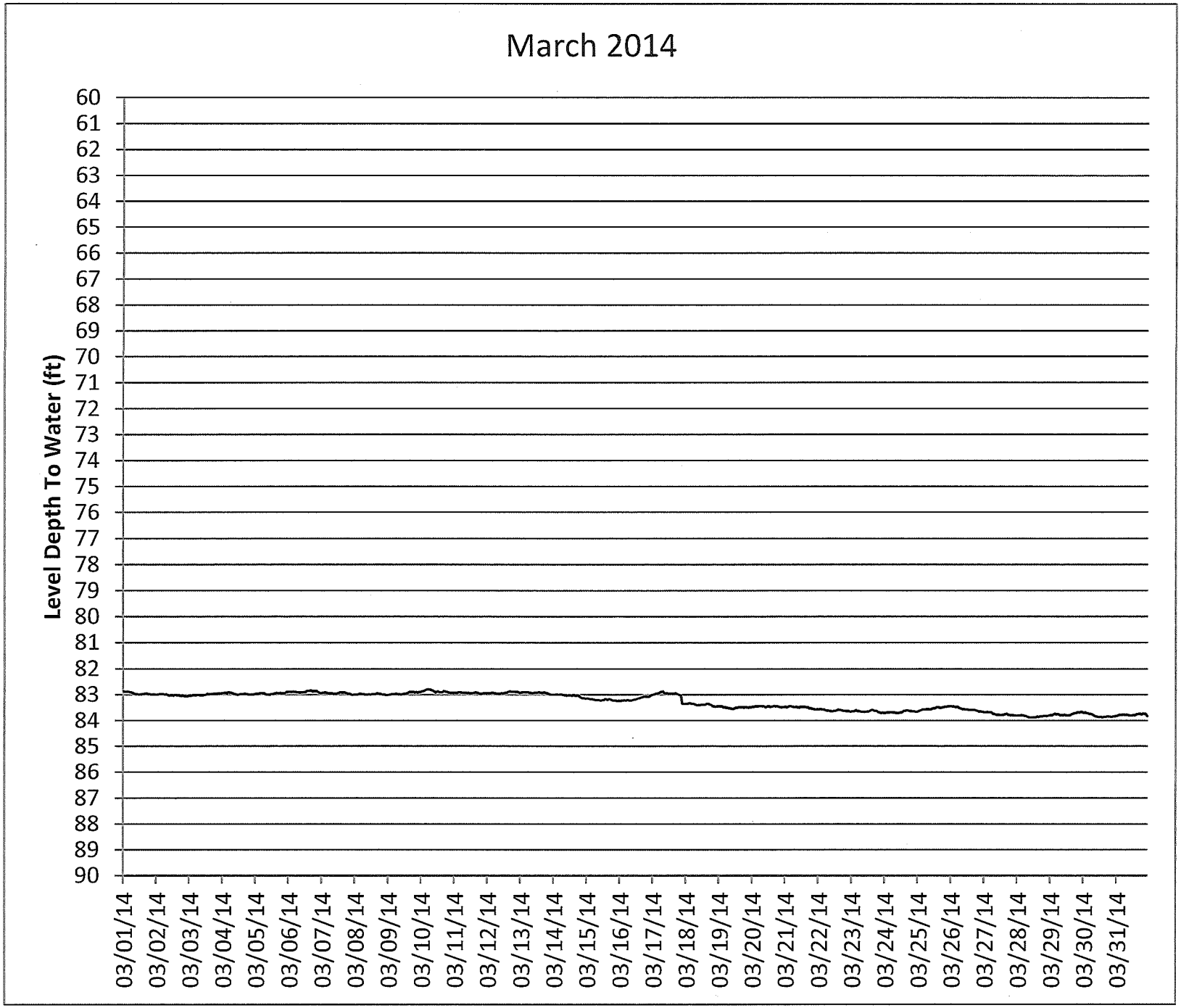
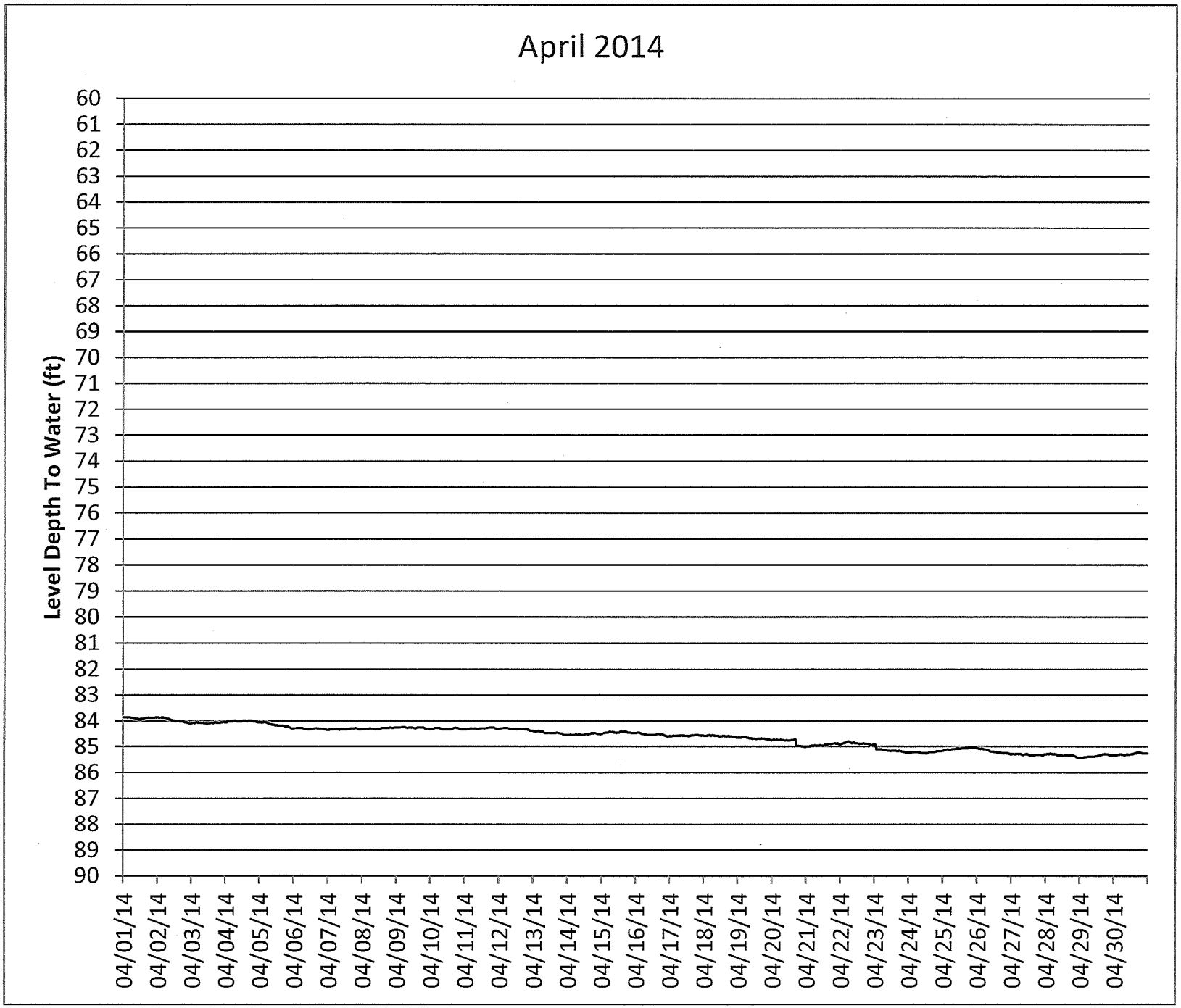


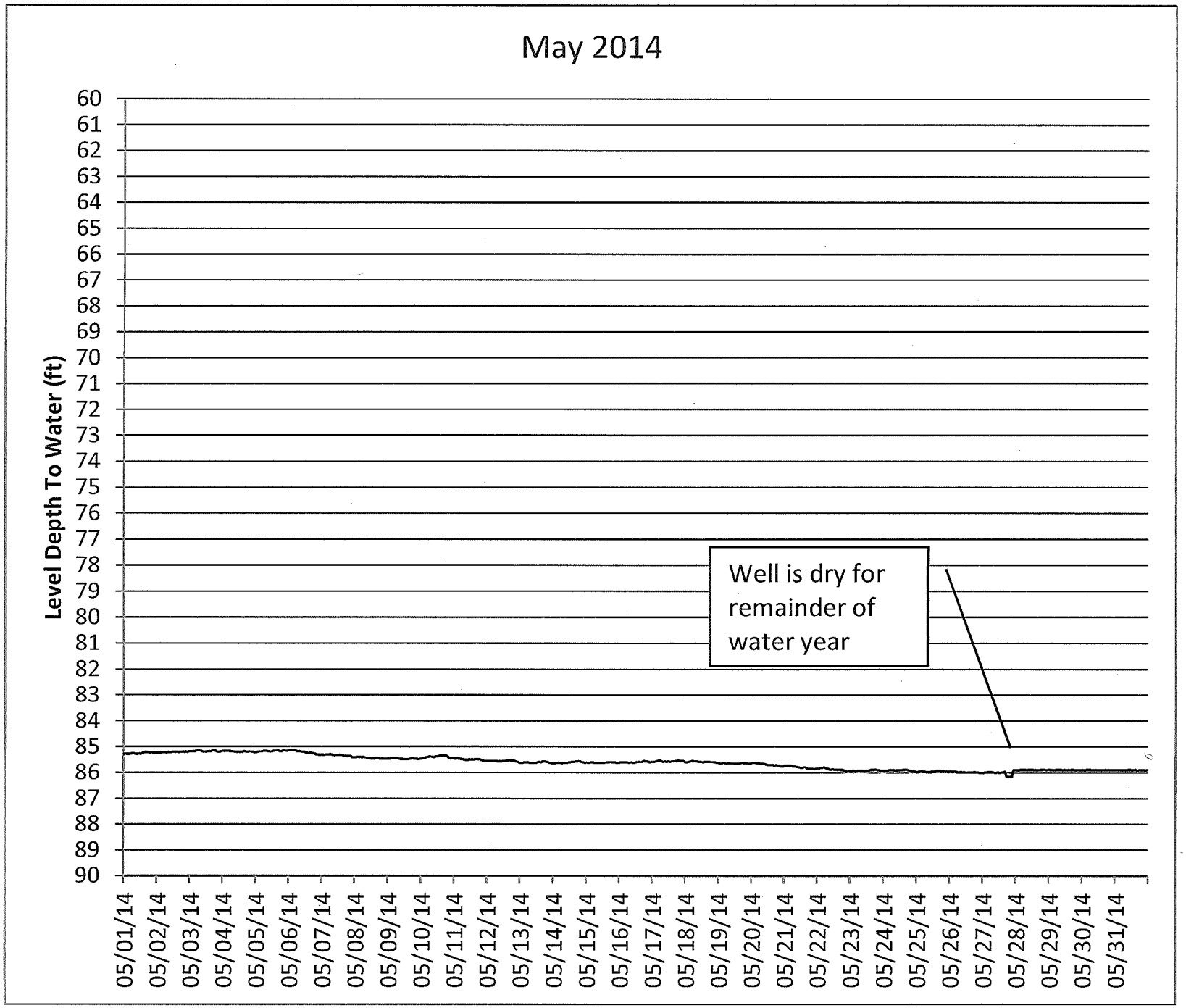
WATER LEVEL HYDROGRAPH FOR MW-28M



WATER LEVEL HYDROGRAPH FOR MW-28M

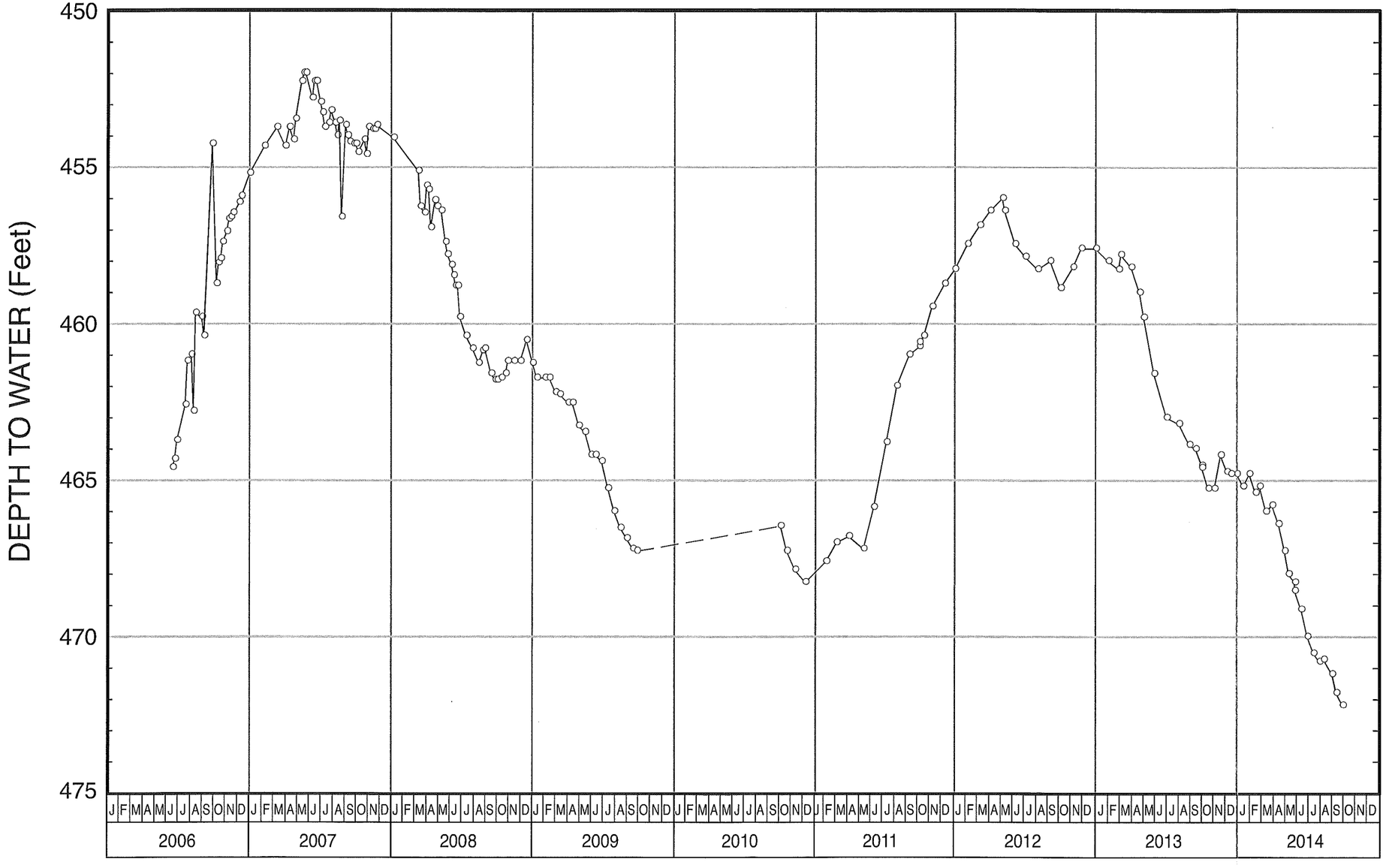


WATER LEVEL HYDROGRAPH FOR MW-28M

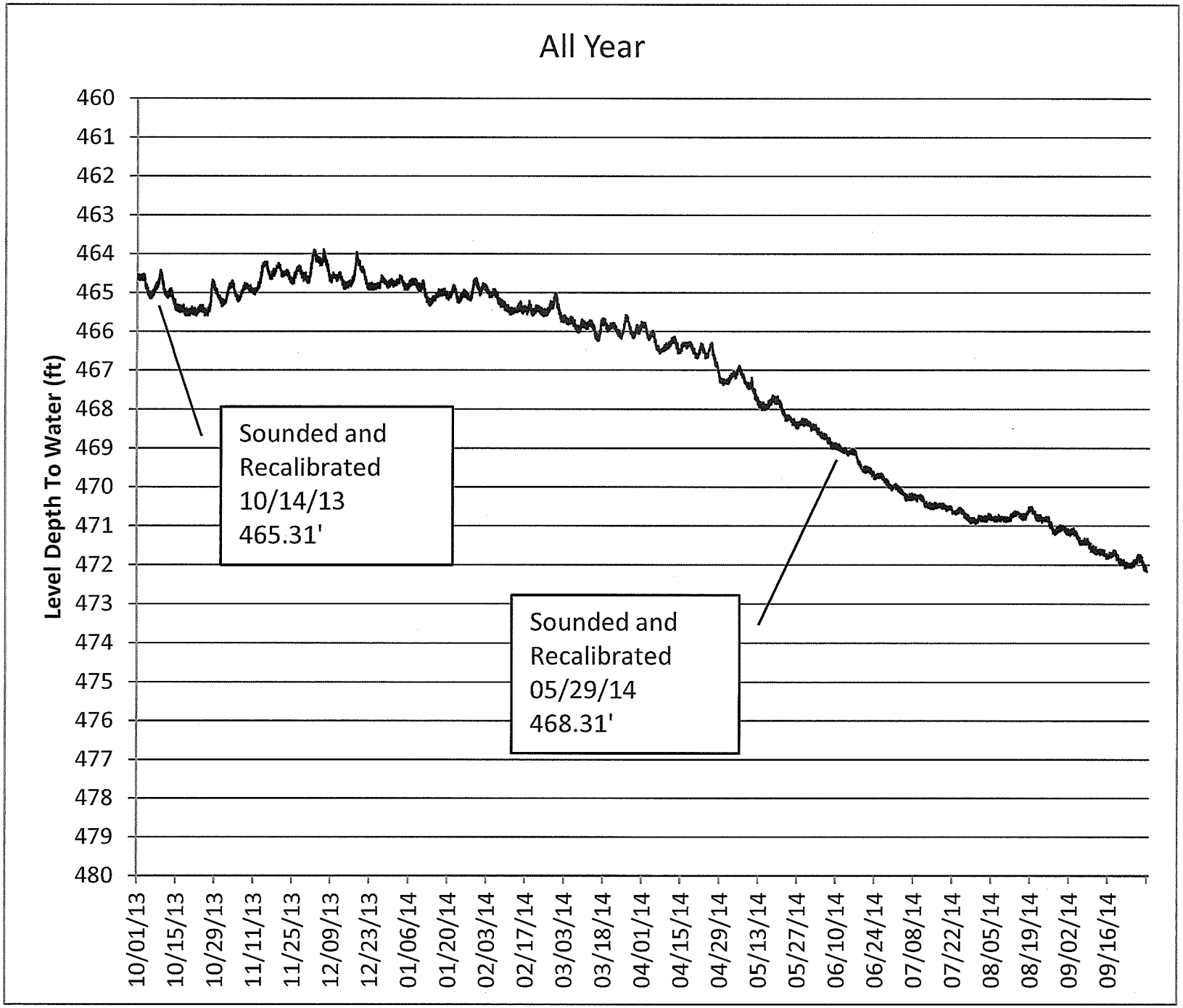


WATER LEVEL HYDROGRAPH FOR MW-28M

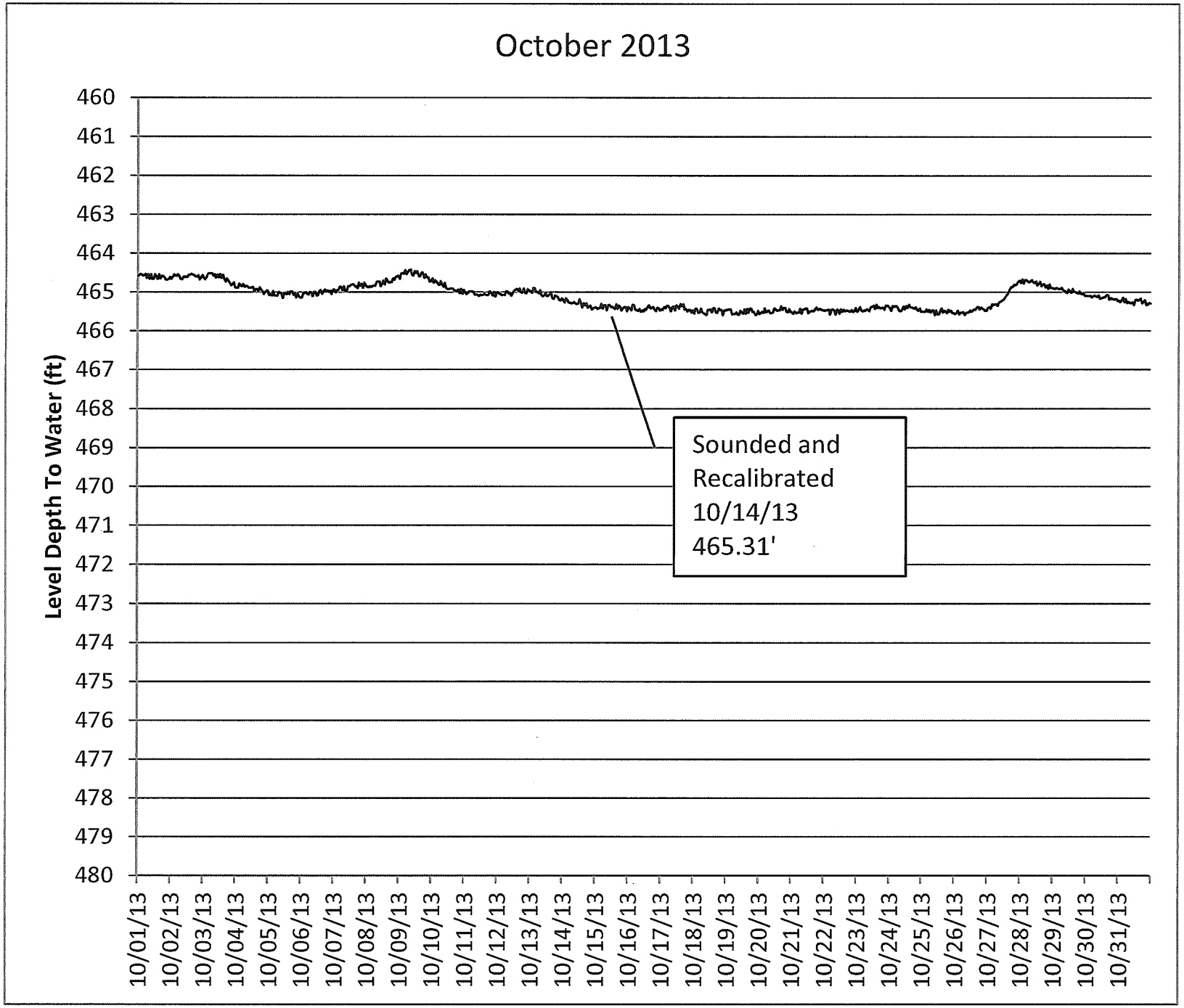
WATER-LEVEL HYDROGRAPH FOR WELL NO. 29



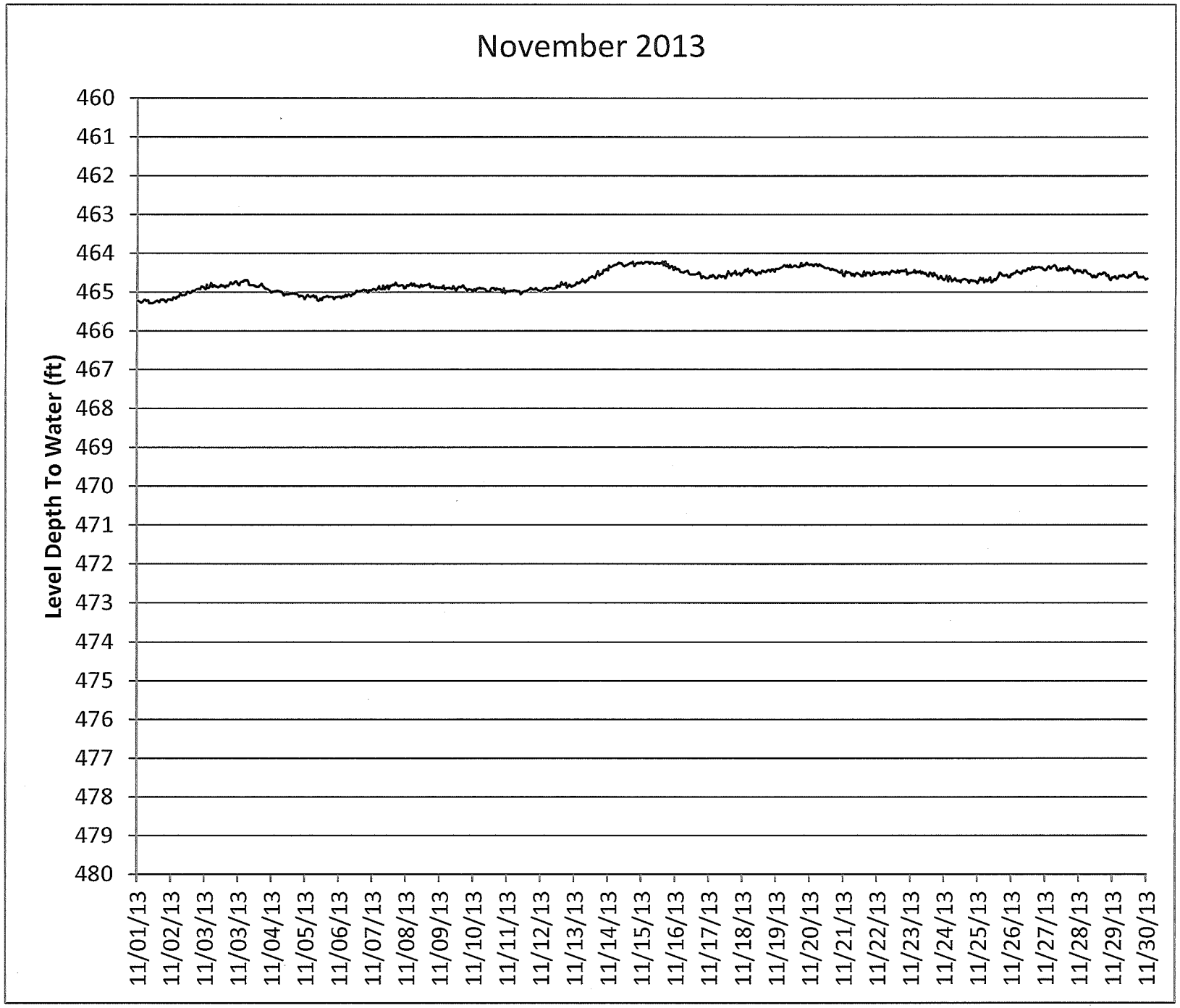
WATER-LEVEL HYDROGRAPH FOR WELL NO. 30



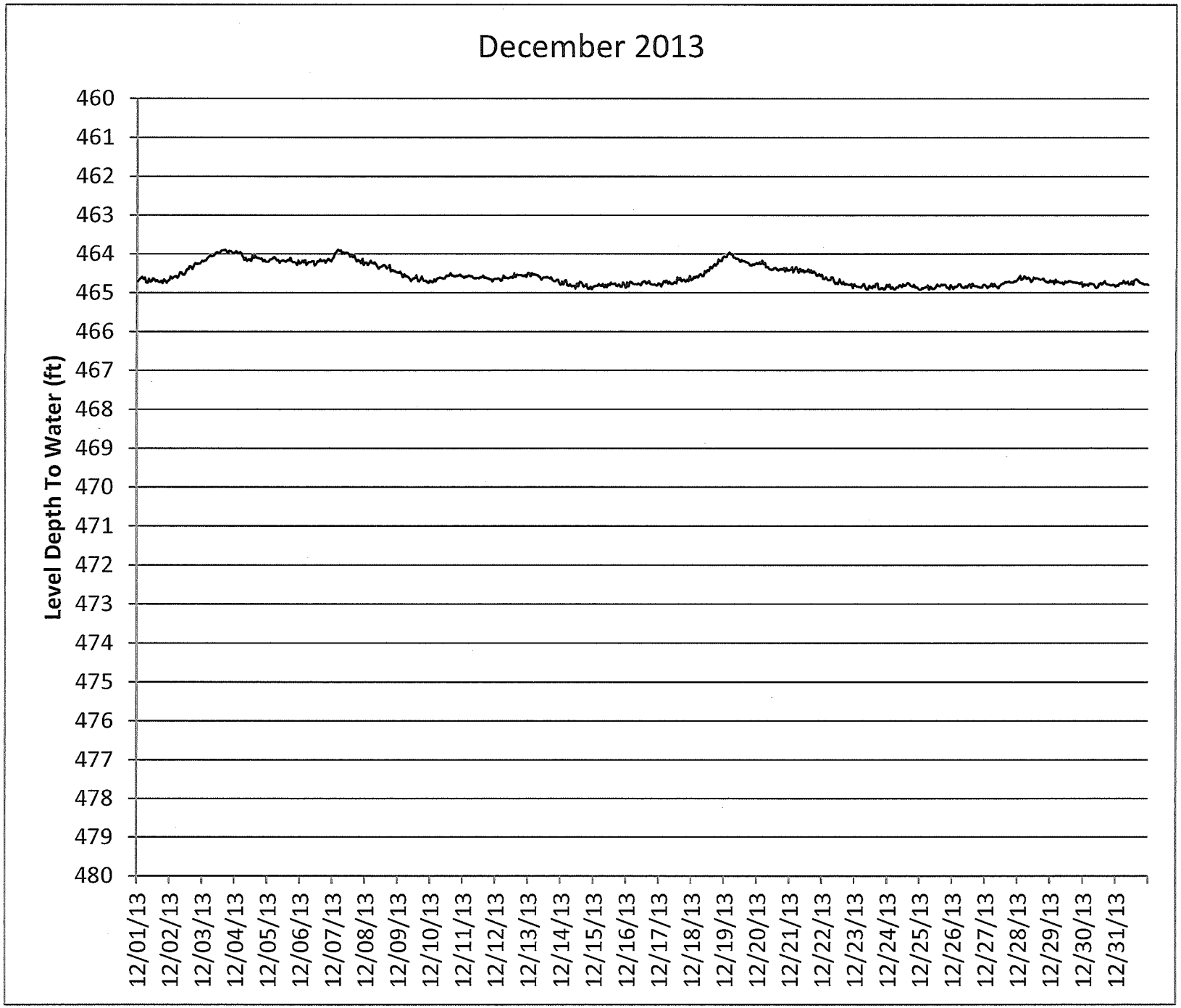
WATER LEVEL HYDROGRAPH FOR MW-30M



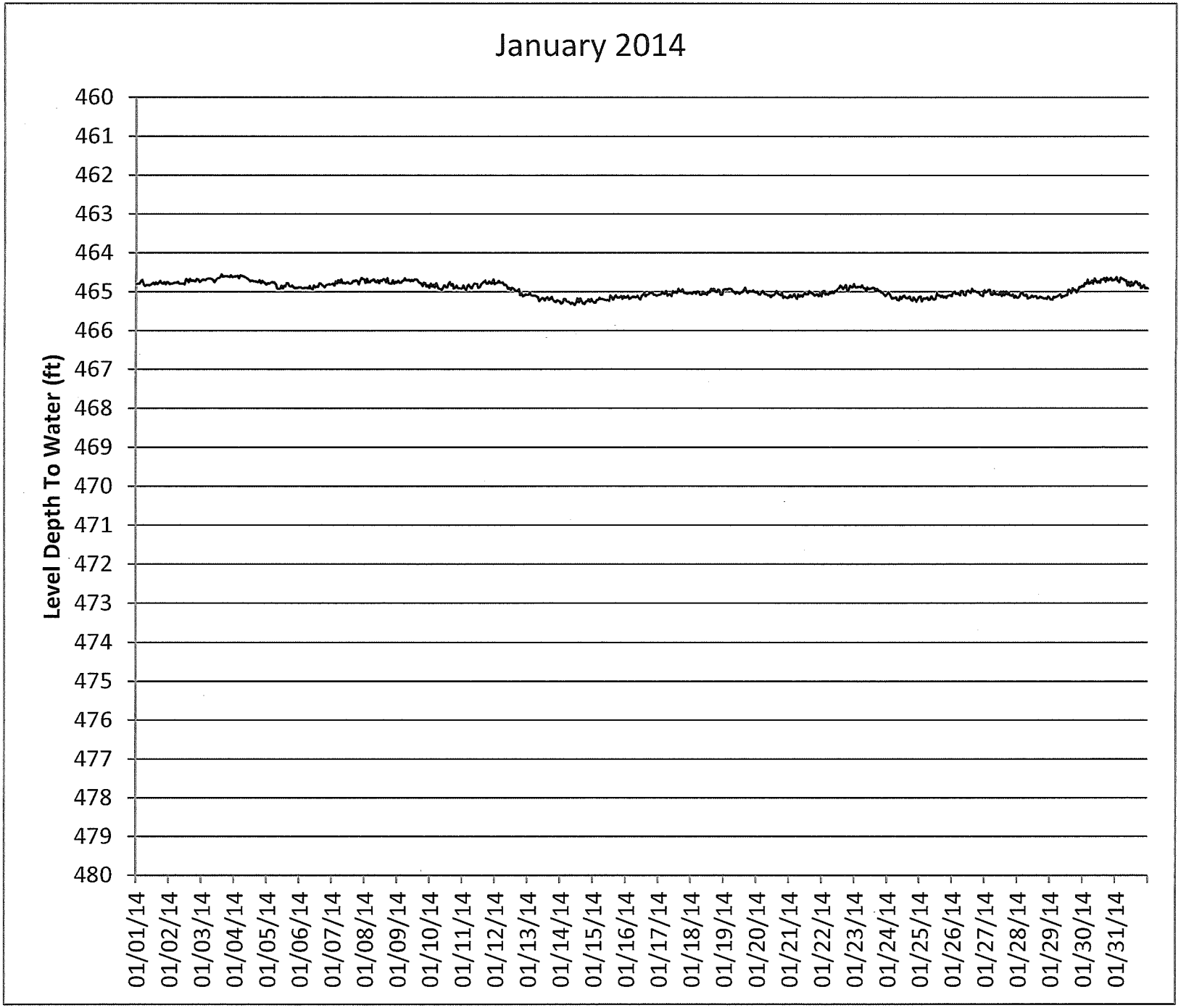
WATER LEVEL HYDROGRAPH FOR MW-30M



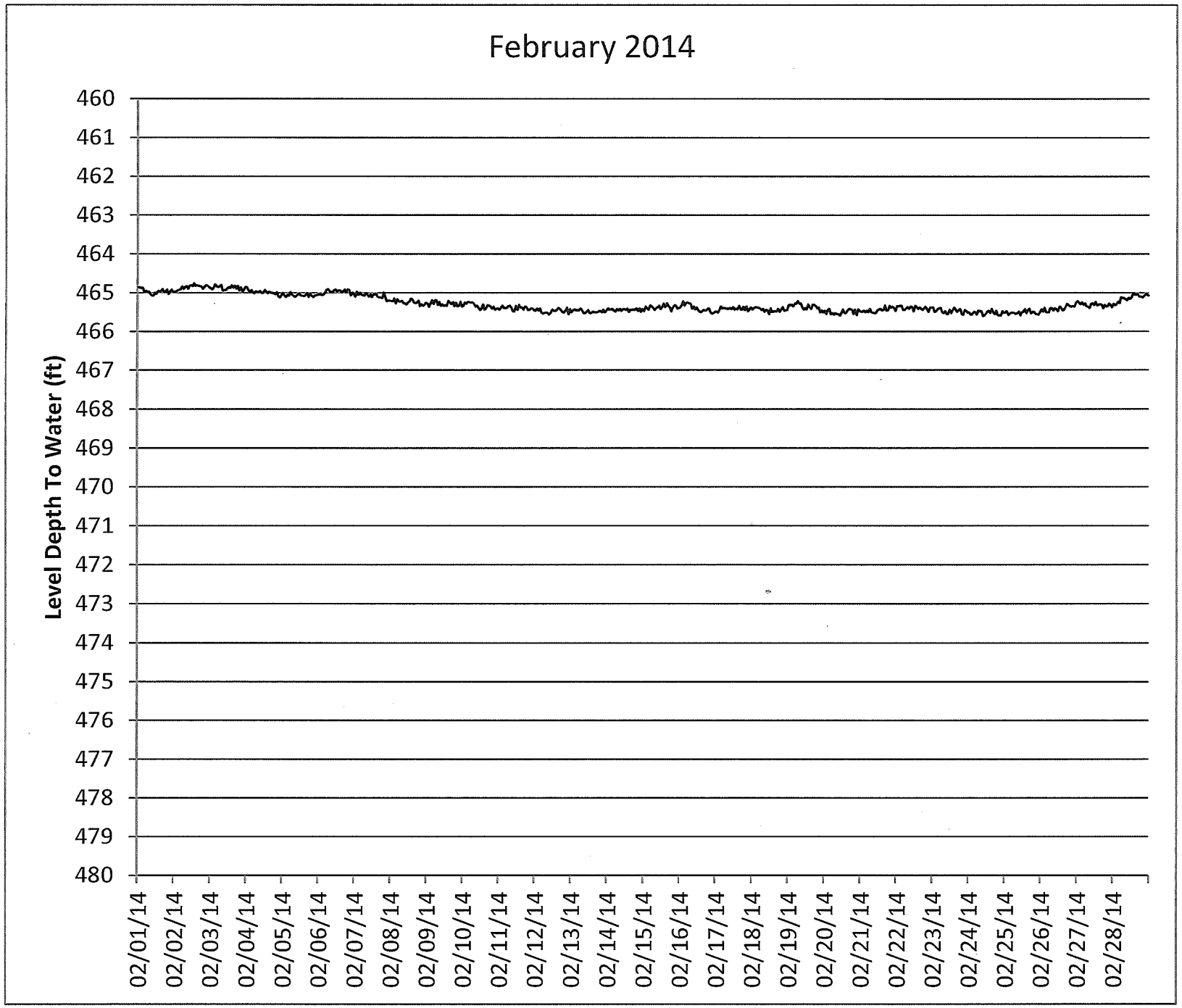
WATER LEVEL HYDROGRAPH FOR MW-30M



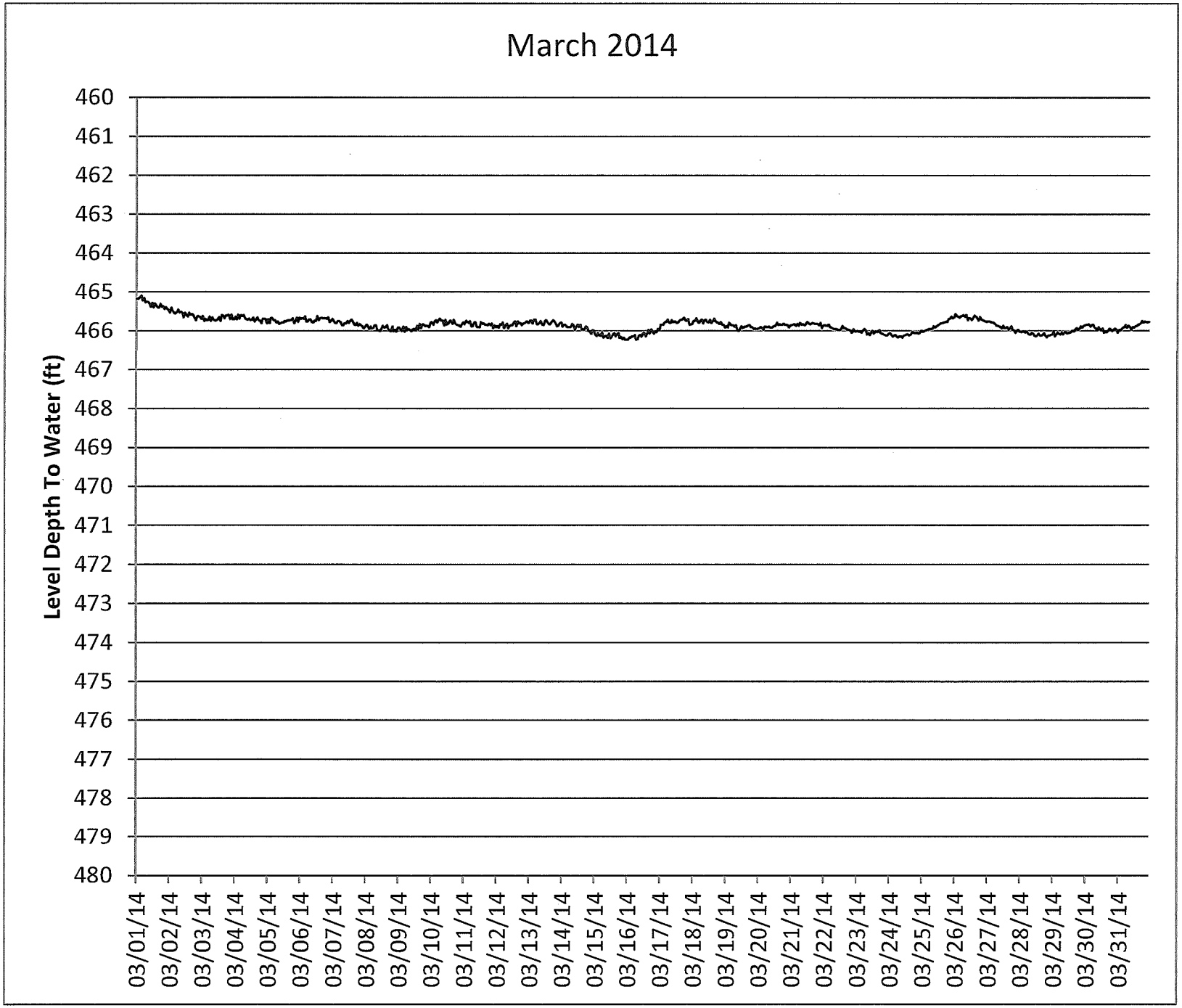
WATER LEVEL HYDROGRAPH FOR MW-30M



WATER LEVEL HYDROGRAPH FOR MW-30M



WATER LEVEL HYDROGRAPH FOR MW-30M



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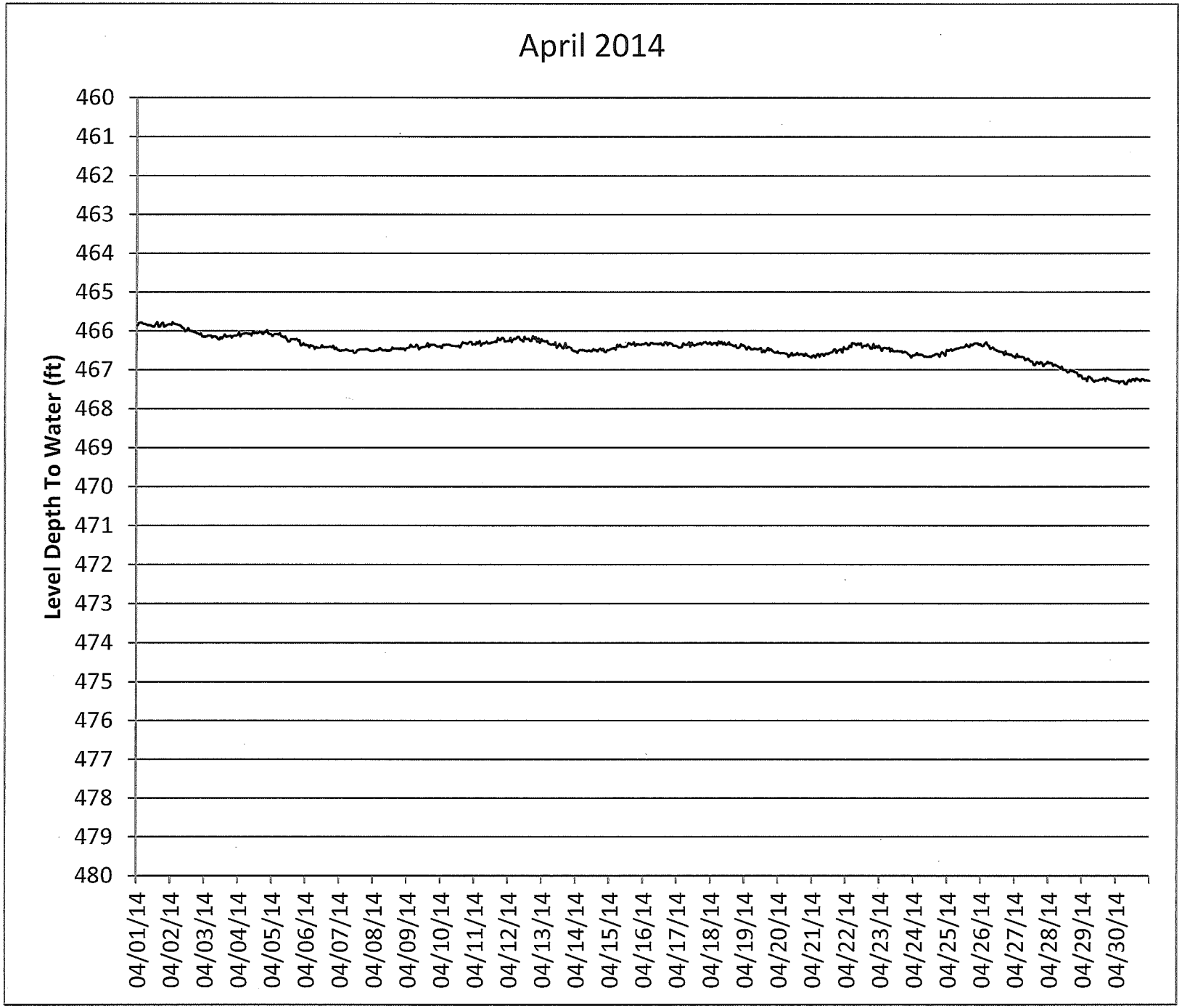
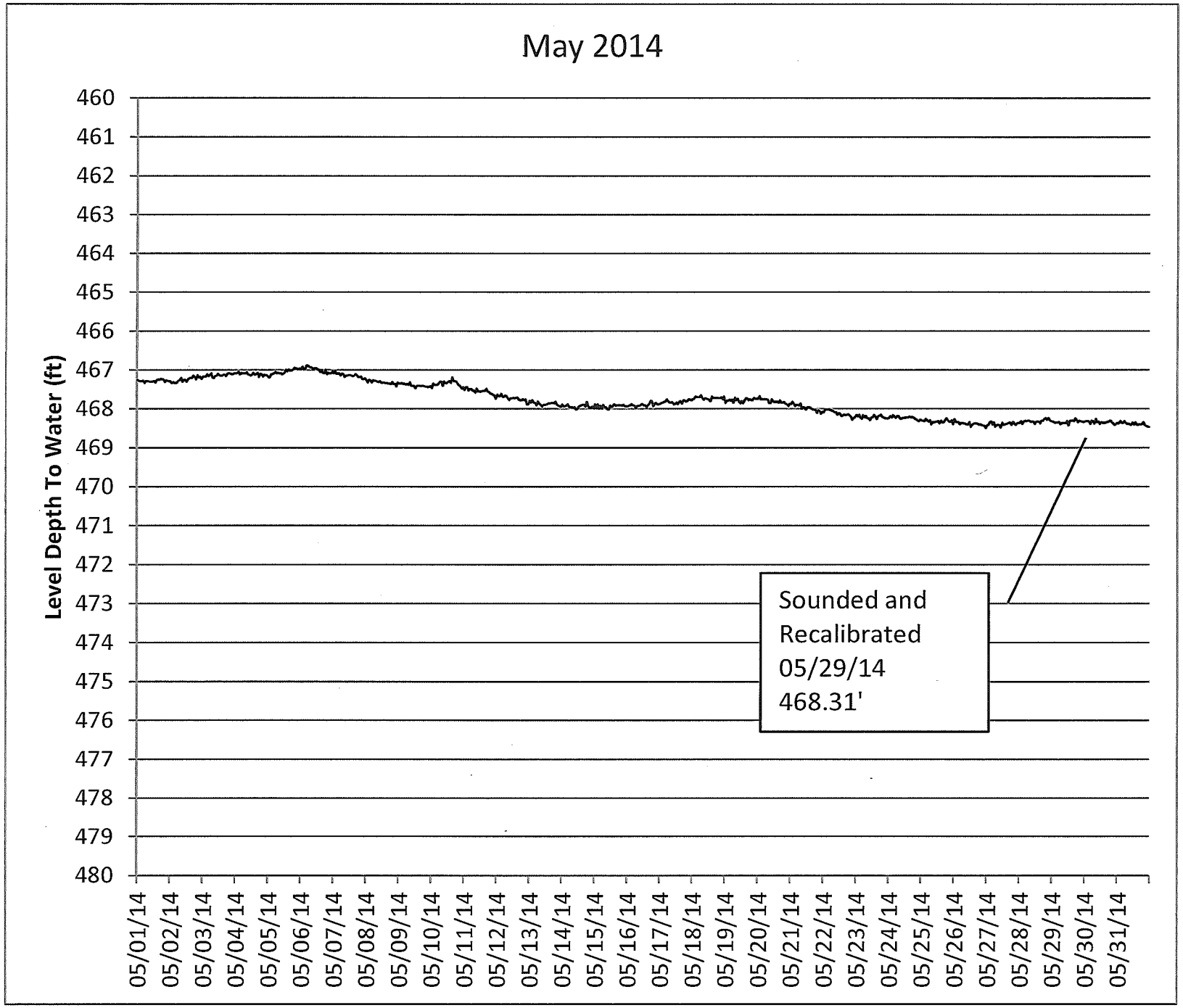
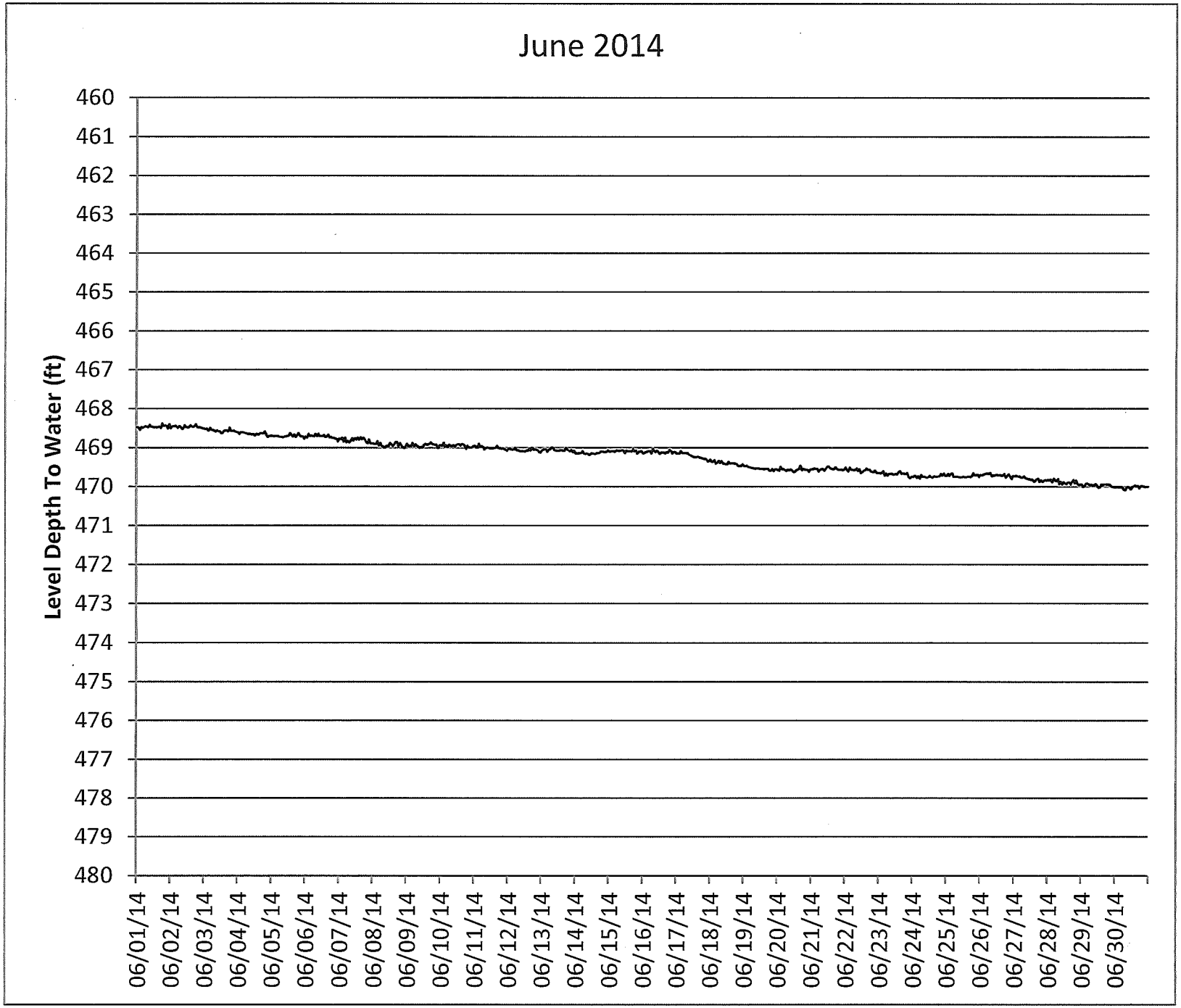


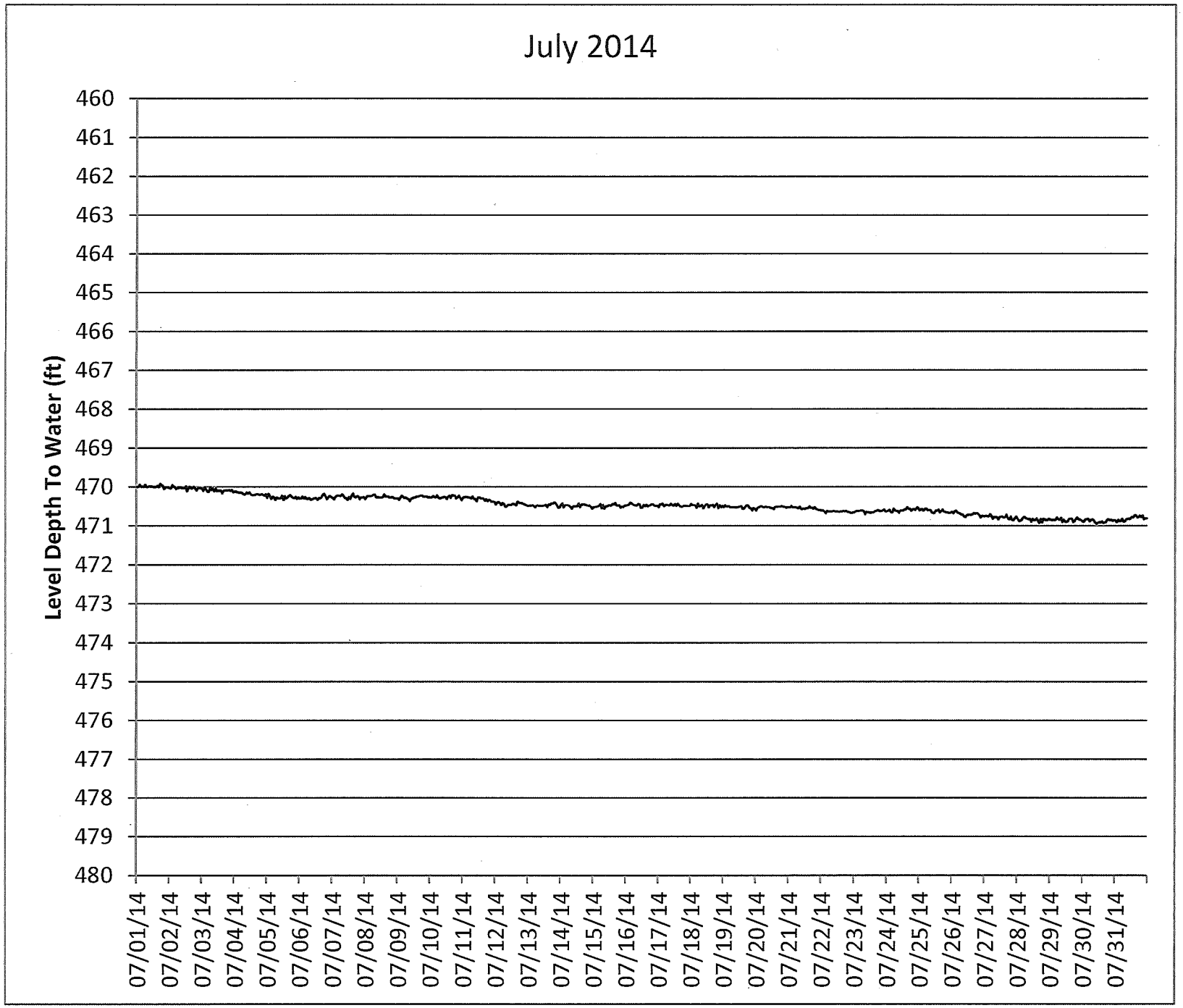
WATER LEVEL HYDROGRAPH FOR MW-30M



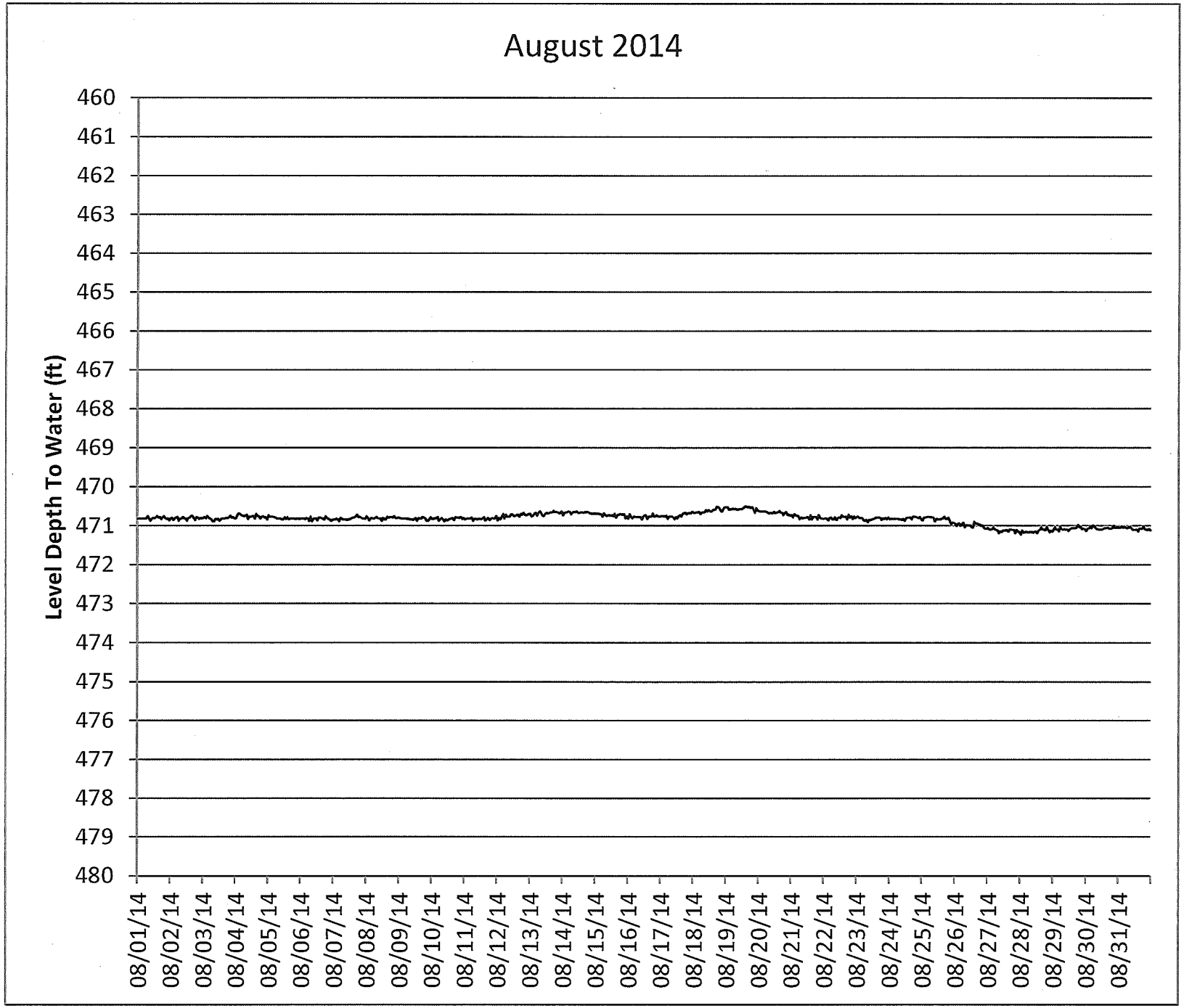
WATER LEVEL HYDROGRAPH FOR MW-30M



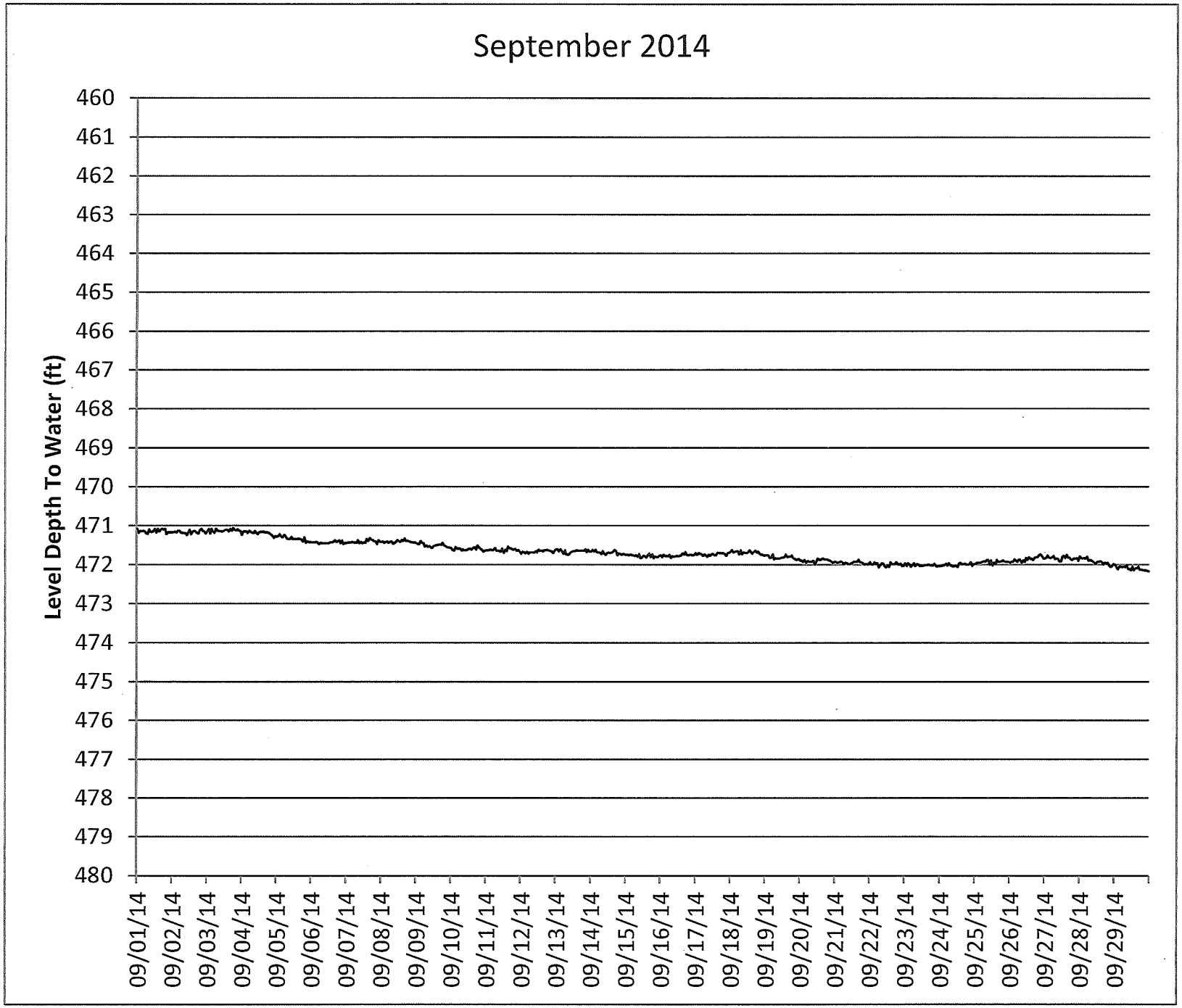
WATER LEVEL HYDROGRAPH FOR MW-30M



WATER LEVEL HYDROGRAPH FOR MW-30M



WATER LEVEL HYDROGRAPH FOR MW-30M



WATER LEVEL HYDROGRAPH FOR MW-30M

APPENDIX E

WATER QUALITY ANALYSES OF WATER FROM DISTRICT WELLS

PRODUCTION WELL WATER QUALITY

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	TDS mg/L	Temp C	pH	Dissolved Oxygen mg/L
1	06/06/96	8:20	240.0	168	8.3	7.40	
1	09/12/97	10:15	190.0	96	9.4	7.20	
1	07/06/98	14:30	210.0	120	8.3	7.40	
1	07/14/99	9:20	208.0	165	8.9	7.60	
1	08/22/00	7:45	210.0	156	9.4	7.20	
1	07/27/01	8:30	220.0	140	9.4	6.50	
1	09/05/02	7:50	232.0	116	8.9	6.60	
1	09/25/03	9:15	277.0	182	5.6	7.10	
1	07/20/04	10:30	210.0	160	7.2	7.50	
1	10/11/05	12:45	207.0	135	9.4	7.05	2.43
1	11/06/06	13:04	207.0	120	10.0	7.22	1.49
1	12/04/06	12:45	202.0	117	9.2	7.03	1.50
1	01/09/07		201.6	117	8.3	6.62	1.60
1	02/06/07	9:25	250.1	145	8.3	6.95	1.66
1	03/07/07	10:45	198.0	115	8.4	6.96	0.97
1	04/16/07	13:04	192.2	111	8.3	6.98	0.64
1	05/01/07	10:45	210.2	122	9.2	7.86	0.69
1	06/07/07	9:40	206.2	120	9.2	7.26	0.62
1	07/10/07	10:05	213.3	124	11.6	6.97	0.86
1	08/07/07	11:12	234.0	136	8.6	7.00	3.18
1	09/11/07	10:19	240.7	140	8.6	6.88	3.56
1	10/02/07	11:00	238.6	138	8.5	7.04	4.00
1	11/19/07	13:52	224.0	146	8.3	7.08	5.26
1	12/11/07	15:25	218.6	142	8.2	6.91	3.94
1	01/09/08	11:19	227.4	148	8.2	6.85	5.03
1	02/05/08	9:48	231.0	150	8.4	6.95	6.43
1	03/13/08	9:51	234.8	153	8.5	6.89	3.74
1	04/01/08	8:41	224.4	146	8.4	6.76	3.26
1	05/09/08	10:42	210.2	137	8.2	6.69	3.88
1	06/18/08	13:02	211.4	137	8.1	6.94	3.56
1	07/30/08	11:10	215.1	140	8.2	6.81	3.25
1	08/19/08	10:54	233.0	151	8.4	6.85	3.23
1	09/11/08	11:07	236.5	154	8.5	7.03	4.36
1	10/21/08	14:06	233.1	152	8.6	6.86	4.51
1	11/13/08	9:39	217.7	142	8.4	6.34	5.59
1	12/02/08	12:18	221.2	144	8.4	6.63	5.25
1	01/12/09	14:18	229.6	149	8.3	6.63	4.18
1	02/24/09	11:13	209.7	136	8.3	6.47	3.50
1	03/25/09	11:48	217.8	142	8.4	6.69	3.29
1	04/21/09	8:23	212.4	138	8.3	6.74	8.10
1	05/27/09	14:41	214.2	139	8.2	6.73	3.26
1	06/24/09	13:39	209.3	136	8.2	6.89	8.39
1	07/09/09	10:46	206.8	134	8.2	6.79	8.58
1	08/12/09	11:35	212.9	138	8.1	6.77	8.28

PRODUCTION WELL WATER QUALITY

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	TDS mg/L	Temp C	pH	Dissolved Oxygen mg/L
1	09/22/09	12:55	215.3	140	8.3	6.90	9.63
1	10/21/09	15:17	205.5	134	8.3	6.83	3.81
1	11/17/09	14:30	204.3	133	8.2	6.94	8.32
1	12/22/09	13:35	205.6	134	8.0	6.84	12.81
1	01/29/10	13:22	200.6	130	8.1	6.80	9.43
1	02/26/10	11:24	201.6	131	8.1	6.79	8.98
1	03/16/10	10:32	198.2	129	8.1	6.67	9.59
1	04/15/10	13:28	207.7	135	8.3	7.05	9.02
1	05/12/10	12:51	216.0	140	8.7	6.89	9.82
1	01/19/11	13:26	193.5	126	7.7	6.76	5.22
1	04/14/11	12:46	190.9	124	7.6	6.81	4.15
1	05/11/11	8:44	192.8	125	7.7	6.82	3.85
1	06/16/11	9:41	197.2	128	7.8	6.82	4.83
1	07/13/11	9:50				7.24	
1	08/16/11	9:00				6.95	
1	09/13/11	11:25				7.14	
1	10/12/11	11:30				7.12	
1	11/09/11	15:36	197.5	128	7.8	6.90	7.13
1	01/11/12	13:10				6.96	
1	12/20/11	13:33	191.5	125	7.7	6.74	4.45
1	02/09/12	11:26	194.0	126	7.8	6.21	4.76
1	03/21/12	10:00				7.03	
1	04/10/12	13:15				6.89	
1	05/17/12	9:50				7.16	
1	06/19/12	10:30				7.16	
1	07/17/12	12:20				7.09	
1	08/08/12	9:40				7.32	
1	09/05/12	9:40				7.12	
1	10/30/12	10:15				7.43	
1	11/14/12	7:35				7.05	
1	12/11/12	11:00				6.89	
1	01/24/13	10:20				4.07	
1	02/14/13	9:15				7.04	
1	03/13/13	8:15				7.23	
1	04/25/13	8:20				7.17	
1	05/09/13	7:55				7.20	
1	06/13/13	6:30				7.04	
1	07/12/13	7:00				7.13	
1	08/28/13	11:05	240	200		7.05	
1	09/12/13	7:05				7.21	
1	10/16/13	9:30				7.10	
1	11/13/13	9:15				7.03	
1	12/17/13	13:20				7.19	
1	01/22/14	12:35				7.01	

PRODUCTION WELL WATER QUALITY

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	TDS mg/L	Temp C	pH	Dissolved Oxygen mg/L
1	02/19/14	10:00				7.21	
1	03/27/14	8:55				7.06	
1	04/24/14	7:15				7.10	
1	05/13/14	10:18				7.21	
1	06/30/14	10:45				7.12	
1	07/16/14	15:45				6.96	
1	08/19/14	14:55				7.24	

PRODUCTION WELL WATER QUALITY

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	TDS mg/L	Temp C	pH	Dissolved Oxygen mg/L
6	06/06/96	9:05	470.0	283	9.4	7.50	
6	09/12/97	9:25	397.0	198	11.7	7.10	
6	07/07/98	8:20	300.0	160	10.6	8.20	
6	07/14/99	8:45	305.0	172	10.0	7.60	
6	07/28/00	8:15	310.0	166	10.0	7.40	
6	07/26/01	10:00	380.0	230	10.6	7.40	
6	09/05/02	14:30	350.0	190	10.6	7.20	
6	09/25/03	11:00	427.0	287	6.7	7.40	
6	07/20/04	9:45	420.0	290	10.0	7.60	
6	10/11/05	14:20	437.0	284	10.6	7.38	3.07
6	11/06/06	11:07	433.0	251	10.0	7.40	1.54
6	12/04/06	11:17	448.0	260	9.8	7.40	1.27
6	01/09/07		429.1	249	9.3	7.26	0.79
6	02/06/07	1:53	434.1	252	9.4	7.22	1.00
6	03/06/07	13:35	207.3	120	9.7	7.35	1.15
6	04/16/07	9:40	406.9	236	9.5	7.30	0.72
6	05/01/07	9:00	396.1	230	10.4	6.81	0.59
6	06/07/07	1:50	420.1	244	10.1	7.49	0.58
6	07/10/07	14:55	423.8	246	11.4	7.04	1.10
6	08/07/07	11:12	392.4	228	9.0	7.24	0.68
6	09/11/07	9:55	417.3	242	8.8	7.29	1.21
6	10/02/07	14:57	410.4	238	8.9	7.38	0.92
6	11/19/07	10:54	406.6	264	8.5	7.36	0.34
6	12/11/07	14:27	407.5	265	8.6	7.20	0.50
6	06/18/08	10:52	410.4	267	8.6	7.21	1.62
6	07/30/08	10:08	400.0	260	9.3	7.05	0.74
6	08/19/08	9:21	397.7	259	9.0	7.01	1.04
6	09/11/08	10:46	402.4	262	8.8	7.34	1.00
6	10/21/08	10:43	387.1	252	8.3	6.89	0.74
6	11/13/08	11:45	433.9	282	8.3	6.65	2.75
6	12/02/08	11:52	445.5	290	8.3	6.67	1.39
6	01/12/09	12:24	421.0	274	8.6	7.05	7.11
6	02/24/09	12:30	415.7	270	8.6	6.69	0.70
6	03/25/09	11:02	412.2	268	8.6	6.69	0.73
6	04/21/09	9:59	536.1	349	8.6	7.08	1.58
6	05/27/09	14:08	452.0	294	8.7	6.90	1.08
6	06/24/09	10:35	426.9	278	8.9	7.15	5.26
6	07/09/09	10:22	430.5	280	8.9	7.05	5.67
6	08/12/09	11:14	413.1	269	9.0	7.05	5.59
6	09/22/09	11:38	460.8	300	9.1	6.97	7.47
6	10/21/09	13:52	422.7	275	8.9	7.14	7.03
6	11/17/09	13:03	422.3	275	8.7	7.16	6.18
6	12/23/09	14:22	424.8	276	8.7	6.96	7.04
6	01/29/10	10:40	420.2	273	8.7	6.93	6.67

PRODUCTION WELL WATER QUALITY

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	TDS mg/L	Temp C	pH	Dissolved Oxygen mg/L
6	02/26/10	12:45	421.6	274	8.6	7.04	7.27
6	03/16/10	12:10	411.0	267	8.6	6.90	7.34
6	04/15/10	9:24	405.9	264	8.6	7.10	7.45
6	05/12/10	15:00	430.1	280	8.4	6.94	7.65
6	10/13/10	9:22	432.3	281	8.5	7.07	0.33
6	01/19/11	10:34	446.1	290	8.7	7.08	1.07
6	02/07/11	12:34	433.7	282	8.2	6.92	6.33
6	04/14/11	8:53	449.8	292	8.9	7.05	1.36
6	05/11/11	9:35	446.0	290	8.8	7.06	0.31
6	06/16/11	8:51	427.8	278	9.4	7.33	0.67
6	07/26/11	10:00				7.39	
6	08/16/11	10:20				7.17	
6	09/13/11	9:40				7.56	
6	10/12/11	13:10				7.47	
6	11/09/11	11:14	411.1	267	8.6	6.95	0.58
6	12/20/11	11:13	419.4	273	8.6	7.34	2.37
6	01/11/12	10:05				7.34	
6	02/09/12	15:42	417.1	271	8.6	6.41	0.76
6	03/21/12	11:20				7.49	
6	04/10/12	11:30				7.27	
6	05/17/12	10:55				7.64	
6	06/28/12	9:35				7.47	
6	07/17/12	10:25				7.45	
6	08/08/12	12:50				7.62	
6	09/05/12	10:20				7.48	
6	11/14/12	11:15				7.4	
6	12/11/12	11:30				7.31	
6	01/24/13	13:55				7.50	
6	02/14/13	12:20				7.14	
6	03/13/13	9:30				7.60	
6	04/25/13	10:20				7.36	
6	05/09/13	10:00				7.50	
6	06/13/13	8:45				7.36	
6	07/11/13	10:20				7.54	
6	08/28/13	13:15				7.32	
6	09/11/13	10:35				7.39	
6	10/16/13	11:45				7.33	
6	11/13/13	10:25				7.27	
6	12/18/13	9:10				7.41	
6	01/22/14	8:40				7.39	
6	02/19/14	11:10				7.40	
6	03/27/14	12:15				7.39	
6	04/24/14	10:20				7.39	
6	05/13/14	13:55				7.34	

PRODUCTION WELL WATER QUALITY

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	TDS mg/L	Temp C	pH	Dissolved Oxygen mg/L
6	06/19/14	11:40				7.13	
6	07/16/14	12:55				7.25	
6	08/20/14	9:20				7.25	

PRODUCTION WELL WATER QUALITY

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	TDS mg/L	Temp C	pH	Dissolved Oxygen mg/L
10	06/06/96	9:20	465.0	315	10.0	7.30	
10	09/12/97	9:14	359.0	179	12.8	7.20	
10	06/30/98	13:25	350.0	240	9.4	7.60	
10	07/14/99	8:30	353.0	231	9.4	7.50	
10	07/28/00	8:30	360.0	228	10.0	7.50	
10	07/26/01	10:15	470.0	300	10.6	6.60	
10	09/05/02	8:10	410.0	225	10.6	7.00	
10	09/25/03						
10	07/20/04	10:04	430.0	280	10.0	7.50	
10	10/11/05	15:20	389.0	253	13.9	7.14	2.51
10	11/06/06	9:00	270.0	157	13.3	7.06	
10	12/04/06	10:37	270.0	157	13.2	7.17	1.60
10	01/09/07		539.0	313	11.7	7.23	1.70
10	02/06/07	1:15	267.9	155	13.9	7.81	1.47
10	03/06/07	14:20	303.9	176	11.9	6.96	1.00
10	04/17/07	9:45	272.4	158	11.6	7.18	0.72
10	05/01/07	9:24	258.8	150	13.5	6.97	0.58
10	06/07/07	1:15	319.2	185	13.2	7.26	0.66
10	07/10/07	14:29	354.1	205	13.6	6.55	0.77
10	08/07/07	13:26	351.2	204	13.0	7.04	2.23
10	09/11/07	9:20	370	215	12.7	7.00	0.99
10	10/02/07	13:54	376.2	218	12.5	7.02	0.69
10	11/19/07	10:05	361.5	235	13.8	7.02	0.99
10	12/11/07	13:53	332.6	216	13.0	7.04	1.07
10	01/10/08	10:59	385.0	250	12.4	6.86	1.01
10	02/05/08	14:11	385.8	251	12.2	6.83	0.68
10	03/14/08	9:48	388.9	253	11.9	6.79	1.83
10	04/01/08	9:13	398.9	259	11.8	6.84	0.91
10	05/09/08	9:51	399.6	260	11.9	6.57	0.68
10	07/30/08	9:36	411.5	268	13.5	6.84	1.43
10	08/19/08	10:32	411.1	267	12.9	6.76	0.94
10	09/11/08	10:21	420.8	274	12.8	6.93	0.96
10	10/21/08	11:04	414.7	270	12.7	6.63	1.10
10	11/13/08	11:17	409.4	266	13.3	6.55	1.82
10	12/02/08	11:22	423.2	275	13.4	6.58	1.48
10	03/25/09	13:14	422.6	275	13.5	6.50	1.19
10	04/21/09	9:33	423.7	275	12.8	6.94	1.33
10	05/27/09	12:29	414.2	269	12.7	6.83	4.64
10	06/24/09	9:49	414.9	270	12.3	6.88	5.33
10	07/09/09	9:33	417.8	272	12.0	6.81	5.30
10	08/12/09	9:42	414.2	269	11.8	6.49	5.41
10	09/22/09	14:21	421.4	274	11.5	6.92	6.25
10	10/21/09	11:36	356.9	232	13.1	6.80	5.75
10	11/17/09	11:44	388.8	253	12.8	6.70	4.76

PRODUCTION WELL WATER QUALITY

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	TDS mg/L	Temp C	pH	Dissolved Oxygen mg/L
10	12/23/09	10:41	414.6	270	12.6	6.81	5.87
10	01/29/10	10:03	416.0	270	12.3	6.80	5.65
10	02/26/10	10:57	407.6	265	12.4	6.80	5.75
10	03/16/10	12:40	407.5	265	12.4	6.89	6.21
10	04/15/10	9:52	401.8	261	12.3	7.01	6.26
10	05/12/10	9:51	411.3	267	12.3	6.78	5.28
10	01/19/11	10:01	393.2	256	12.2	6.77	1.85
10	02/07/11	11:17	389.3	253	12.5	6.87	2.06
10	04/14/11	9:40	378.5	246	12.9	6.93	1.93
10	05/11/11	9:04	336.8	219	12.8	6.88	2.64
10	06/16/11	9:16	314.1	204	12.8	6.80	3.61
10	07/26/11	11:05				7.36	
10	08/18/11	7:55				7.15	
10	09/13/11	10:10				7.29	
10	10/12/11	13:35				7.11	
10	11/09/11	11:55	273.7	178	12.2	6.97	2.71
10	12/20/11	11:30	302.2	197	12.2	7.03	2.98
10	01/11/12	10:45				7.16	
10	02/09/12	16:06	294.9	192	12.6	7.09	2.82
10	03/21/12	10:45				7.16	
10	04/10/12	11:50				7.16	
10	05/17/12	10:35				7.26	
10	06/28/12	9:45				7.22	
10	07/17/12	10:45				7.22	
10	08/08/12	13:10				7.46	
10	09/05/12	10:25				7.42	
10	10/30/12	12:30				7.09	
10	11/14/12	12:55				7.48	
10	12/11/12	12:30				7.02	
10	01/24/13	13:30				7.16	
10	02/14/13	11:55				7.02	
10	03/13/13	10:00				7.23	
10	04/25/13	11:20				7.21	
10	05/09/13	10:25				7.27	
10	06/13/13	9:35				7.08	
10	07/11/13	10:35				7.17	
10	08/28/13	13:30				7.02	
10	09/11/13	10:50				7.08	
10	10/16/13	12:10				7.14	
10	11/13/13	10:05				7.09	
10	12/18/13	9:50				7.14	
10	01/22/14	9:05				7.09	
10	02/19/14	10:35				7.16	
10	03/27/14	12:48				7.17	

PRODUCTION WELL WATER QUALITY

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	TDS mg/L	Temp C	pH	Dissolved Oxygen mg/L
10	04/24/14	10:37				7.14	
10	05/13/14	13:35				7.19	
10	06/19/14	11:30				7.08	
10	07/16/14	13:30				7.11	
10	08/20/14	9:08				7.15	

PRODUCTION WELL WATER QUALITY

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	TDS mg/L	Temp C	pH	Dissolved Oxygen mg/L
15	06/06/96	9:45	240.0	152	12.8	7.40	
15	09/12/97	9:19	288.0	144	12.8	7.20	
15	06/30/98	13:45	360.0	210	11.7	7.50	
15	07/14/99	9:05	355.0	190	12.8	7.60	
15	08/22/00	8:10	350.0	187	12.2	7.30	
15	07/02/01	10:40	330.0	220	12.8	7.40	
15	09/05/02	8:20	290.0	185	11.7	7.20	
15	09/25/03	10:00	415.0	279	10.0	7.20	
15	07/20/04	9:15	300.0	200	10.0	7.60	
15	10/11/05	13:20	234.0	152	18.3	7.34	2.51
15	11/06/06	10:04	270.0	157	10.6	7.42	1.17
15	12/04/06	9:30	223.0	129	8.9	7.39	1.20
15	01/09/07		222.4	129	9.4	7.38	1.42
15	02/06/07	9:57	216.8	126	8.3	7.71	0.94
15	03/06/07	10:30	214.7	125	9.2	7.17	1.07
15	04/17/07	8:38	219.7	127	8.7	7.31	0.55
15	05/01/07	10:15	219.6	127	9.6	7.69	0.72
15	06/07/07	9:20	300.6	174	11.8	7.69	0.74
15	07/10/07	10:55	331.1	192	13.5	7.22	1.10
15	08/07/07	13:43	338.6	196	12.7	7.20	2.04
15	09/11/07	8:40	364.2	211	13.0	7.25	1.46
15	10/02/07	14:24	365.2	212	12.9	7.29	2.66
15	11/19/07	10:28	327.8	213	11.7	7.35	1.01
15	12/11/07	14:57	330.2	215	11.7	7.33	1.03
15	01/09/08	15:30	336.4	219	12.0	7.13	0.96
15	02/05/08	11:16	343.2	223	12.2	7.26	1.11
15	03/14/08	10:03	356.9	232	12.6	7.18	0.82
15	04/01/08	9:32	364.8	237	12.8	7.33	1.04
15	05/09/08	9:35	332.0	216	12.0	6.77	0.99
15	06/18/08	9:30	351.6	229	12.7	7.10	0.86
15	07/30/08	8:56	354.7	231	12.7	6.99	0.97
15	08/19/08	9:54	357.2	232	13.0	7.07	2.01
15	09/11/08	10:03	378.1	246	13.4	7.09	0.98
15	10/21/08	10:09	356.9	232	13.0	6.83	1.26
15	11/13/08	10:42	244.8	159	9.2	6.67	1.34
15	12/02/08	10:45	238.8	155	8.8	6.80	1.37
15	01/12/09	11:50	347.0	226	12.1	6.94	5.98
15	02/24/09	10:35	310.5	202	11.3	6.79	0.95
15	03/25/09	11:31	345.8	225	12.3	6.96	1.22
15	04/21/09	8:49	308.2	200	11.2	7.26	5.15
15	05/27/09	12:43	237.7	155	8.8	7.14	5.89
15	06/24/09	10:00	237.9	155	8.8	7.14	5.68
15	07/09/09	9:11	266.3	173	9.9	7.08	5.46
15	08/12/09	10:35	298.3	194	11.1	7.16	5.20

PRODUCTION WELL WATER QUALITY

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	TDS mg/L	Temp C	pH	Dissolved Oxygen mg/L
15	09/22/09	13:33	363.5	236	12.7	7.30	6.53
15	10/21/09	10:57	245.0	159	9.2	6.94	6.91
15	11/17/09	13:35	234.1	152	8.6	7.14	6.52
15	12/22/09	11:00	236.5	154	8.6	6.89	7.06
15	01/29/10	9:32	243.6	158	8.7	7.05	6.45
15	02/26/10	10:30	245.7	160	8.8	7.19	8.24
15	03/16/10	10:11	244.6	159	8.9	6.90	8.01
15	04/15/10	10:27	242.9	158	8.9	7.24	7.23
15	05/12/10	10:53	250.3	163	9.0	7.91	6.71
15	01/19/11	10:58	259.6	169	9.2	7.41	0.92
15	02/07/11	13:11	260.8	170	9.3	7.45	0.90
15	04/14/11	10:18	260.4	169	9.4	7.32	1.41
15	05/11/11	10:01	258.3	168	9.3	7.36	0.90
15	06/16/11	10:06	260.5	169	9.6	7.44	1.08
15	07/26/11	10:10				7.48	
15	08/16/11	10:10				7.44	
15	09/13/11	10:35				7.58	
15	10/12/11	12:45				7.73	
15	11/09/11	10:40	246.8	160	9.3	7.42	1.68
15	12/20/11	10:21	247.3	161	9.1	6.82	1.11
15	01/11/12	12:45				7.46	
15	02/09/12	12:14	254.2	165	9.2	7.36	0.88
15	03/21/12	10:15				7.76	
15	04/10/12	11:15				7.63	
15	07/17/12	11:10				7.75	
15	08/08/12	10:35				7.64	
15	09/05/12	9:50				7.58	
15	10/30/12	11:30				7.26	
15	11/14/12	10:40				7.72	
15	12/11/12	12:55				7.22	
15	01/24/13	13:00				7.42	
15	06/13/13	9:00				7.38	
15	07/11/13	11:05				7.38	
15	08/28/13	11:55	320	230		7.28	
15	09/11/13	9:40				7.28	
15	10/16/13	11:20				7.37	
15	11/13/13	11:30				7.28	
15	12/18/13	9:00				7.35	
15	01/22/14	9:20				7.36	
15	02/19/14	10:40				7.43	
15	03/27/14	11:15				7.41	
15	04/24/14	10:04				7.42	
15	05/13/14	13:15				7.44	
15	06/19/14	11:10				7.34	

PRODUCTION WELL WATER QUALITY

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	TDS mg/L	Temp C	pH	Dissolved Oxygen mg/L
15	07/16/14	13:15				7.34	
15	08/20/14	9:42				7.45	

PRODUCTION WELL WATER QUALITY

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	TDS mg/L	Temp C	pH	Dissolved Oxygen mg/L
16	07/11/96	9:00	660.0	432	21.1	7.50	
16	09/11/97	10:11	632.0	317	22.8	7.10	
16	07/06/98	14:35	710.0	500	21.1	7.10	
16	08/20/99	10:30	690.0	480	21.1	7.20	
16	08/22/00	8:25	695.0	485	23.3	7.30	
16	07/02/01	9:30	710.0	490	21.1	6.90	
16	09/09/02	8:00	705.0	480	21.1	6.70	
16	09/25/03						
16	08/03/04		550.0	360	21.7	7.20	
16	10/11/05	11:00	518.0	337	18.9	6.58	
16	11/06/06						
16	12/04/06	2:03	549.0	318	18.1	6.59	1.04
16	02/06/07	10:55	569.0	330	19.4	6.53	0.97
16	03/07/07	9:00	553.0	321	18.5	6.55	0.81
16	04/16/07	13:26	560.0	325	18.9	6.39	0.70
16	07/10/07	9:45	658.0	382	25.2	6.71	0.77
16	08/09/07	10:33	689.0	400	25.6	6.65	1.25
16	09/11/07	10:31	707.5	410	26.1	6.70	0.28
16	10/02/07	10:18	711.3	413	26.2	6.69	0.22
16	01/09/08	12:35	525.3	341	19.0	6.41	0.46
16	02/05/08	9:28	520.6	338	18.8	6.43	0.47
16	03/13/08	8:54	536.1	349	19.2	6.36	0.40
16	04/01/08	10:14	532.4	346	18.9	6.38	0.23
16	05/09/08	12:21	524.3	341	18.9	6.32	0.26
16	06/18/08	13:16	566.5	368	20.3	6.36	0.53
16	07/30/08	10:54	531.1	345	18.9	6.23	0.35
16	08/19/08	11:05	670.4	436	24.4	6.36	0.42
16	09/11/08	13:18	709.5	461	26.0	6.42	0.28
16	10/21/08	14:32	508.4	331	18.8	6.10	0.44
16	11/13/08	10:02	536.2	349	19.2	6.01	0.55
16	12/02/08	13:58	530.2	345	19.1	6.17	0.45
16	01/12/09	14:43	541.9	352	19.5	6.29	0.73
16	02/24/09	14:26	529.2	344	18.8	6.06	0.50
16	03/25/09	14:51	528.6	344	19.0	5.73	0.68
16	04/21/09	10:24	523.4	340	18.8	6.38	0.67
16	05/28/09	13:23	528.2	343	18.8	6.32	1.05
16	06/24/09	13:06	534.9	348	18.9	6.30	2.86
16	07/09/09	11:10	538.2	350	18.9	6.32	2.72
16	08/12/09	12:46	527.3	343	18.9	6.29	3.08
16	09/22/09	12:41	662.7	431	24.1	6.49	2.85
16	10/21/09	15:03	523.5	340	18.8	6.18	0.84
16	04/15/10	13:06	528.1	343	18.9	6.35	3.54
16	05/12/10	14:25	528.2	343	18.8	6.34	3.83
16	01/19/11	13:15	530.7	345	18.8	6.42	1.02

PRODUCTION WELL WATER QUALITY

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	TDS mg/L	Temp C	pH	Dissolved Oxygen mg/L
16	04/14/11	14:16	560.9	365	19.5	6.40	0.72
16	05/11/11	13:31	538.3	350	18.9	6.36	0.32
16	06/16/11	11:09	543.3	353	18.8	6.33	0.94
16	07/27/11	9:35				6.61	
16	08/16/11	11:40				6.44	
16	09/13/11	11:15				6.63	
16	10/12/11	11:00				6.64	
16	11/09/11	15:08	553.4	360	18.9	6.42	1.65
16	12/20/11	13:19	553.5	360	18.7	6.41	0.88
16	01/11/12	13:30				6.48	
16	02/09/12	14:52	562.6	366	18.8	6.35	0.96
16	03/21/12	13:40				6.61	
16	04/10/12	13:45				6.63	
16	05/17/12	9:30				6.74	
16	07/17/12	12:35				6.64	
16	08/08/12	9:50				6.92	
16	09/05/12	14:20				6.77	
16	11/14/12	8:35				7.5	
16	12/11/12	10:35				6.64	
16	01/24/13	11:00				6.55	
16	02/14/13	10:00				6.64	
16	03/13/13	11:25				6.55	
16	04/25/13	12:25				6.62	
16	05/09/13	8:25				6.55	
16	06/13/13	10:30				6.44	
16	07/12/13	9:50				6.65	
16	09/12/13	9:55	560	390		6.52	
16	12/17/13	14:10				6.68	
16	01/22/14	10:45				6.58	
16	02/19/14	9:30				6.58	
16	03/27/14	8:10				6.52	
16	04/24/14	7:05				6.60	
16	05/13/14	10:05				6.66	
16	06/19/14	10:38				6.57	
16	07/16/14	15:20				6.70	
16	08/20/14	10:20				6.55	

PRODUCTION WELL WATER QUALITY

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	TDS mg/L	Temp C	pH	Dissolved Oxygen mg/L
17	07/11/96	8:45	360.0	265	18.3	7.30	
17	07/06/98	9:15	350.0	280	15.6	7.10	
17	08/20/99	10:10	350.0	280	16.1	7.20	
17	08/22/00	8:40	355.0	276	17.2	7.20	
17	07/02/01	9:10	410.0	310	15.6	6.70	
17	09/03/02	8:30	400.0	290	16.1	6.60	
17	09/25/03	8:55	420.0	282	16.7	6.50	
17	08/03/04		410.0	270	15.6	7.50	
17	10/11/05	12:20	484.0	315	23.9	6.78	2.01
17	11/06/06	12:30		274	23.3	7.06	0.91
17	12/04/06	2:35	478.0	277	22.8	7.05	1.91
17	01/09/07		463.1	269	22.2	6.99	0.89
17	02/06/07	8:15	453.9	263	22.8	6.81	0.67
17	03/07/07	9:30	448.6	260	23.3	6.76	0.83
17	04/16/07	14:40	414.2	240	21.6	6.64	0.77
17	05/01/07	11:05	384.4	223	21.1	6.71	0.67
17	06/07/07	10:40	444.3	258	22.9	7.29	0.61
17	07/10/07	15:10	448.7	260	23.7	6.87	0.55
17	08/09/07	9:55	496.5	288	25.6	6.74	1.66
17	09/11/07	11:02	390.0	226	21.9	6.88	0.32
17	10/02/07	11:27	510.5	337	25.8	6.58	2.09
17	11/19/07	14:13	498	324	25.0	6.80	2.05
17	12/11/07	15:48	490.9	319	24.7	6.81	3.34
17	01/09/08	13:07	474.0	308	24.5	6.71	1.91
17	02/05/08	13:11	468.4	304	24.2	6.77	2.08
17	03/13/08	9:20	460.4	299	24.0	6.68	2.12
17	03/13/08	9:20	460.4	299	24.0	6.68	2.12
17	04/01/08	10:42	461.8	300	23.6	6.65	2.01
17	05/09/08	12:41	458.6	298	23.5	6.68	1.80
17	06/18/08	13:40	488.4	318	25.0	6.66	1.70
17	07/30/08	12:43	466.1	303	24.5	6.56	1.27
17	08/19/08	13:03	509.7	331	26.3	6.55	1.39
17	09/11/08	11:23	524.8	341	26.9	6.64	1.50
17	10/21/08	15:08	497.8	324	26.0	6.52	2.06
17	11/13/08	13:44	503.0	327	26.1	6.52	1.93
17	12/02/08	15:09	487.8	317	25.6	6.55	1.85
17	01/12/09	15:15	465.8	303	24.9	6.55	1.93
17	02/24/09	14:56	459.6	299	24.4	6.52	2.37
17	03/25/09	14:26	458.0	298	24.2	6.38	1.93
17	04/21/09	10:44	449.4	292	24.1	6.76	1.66
17	05/28/09	11:22	460.3	299	23.7	6.71	2.69
17	06/24/09	13:55	450.0	293	23.4	6.71	2.54
17	07/09/09	11:50	470.5	306	24.8	6.70	1.46
17	08/12/09	13:18	443.6	288	23.7	6.67	2.33

PRODUCTION WELL WATER QUALITY

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	TDS mg/L	Temp C	pH	Dissolved Oxygen mg/L
17	09/22/09	13:17	504.2	328	26.3	6.70	2.95
17	10/21/09	14:41	511.4	332	26.5	6.70	1.59
17	11/17/09	13:58	495.6	322	25.9	6.71	2.90
17	12/23/09	15:09	472.4	307	25.1	6.73	4.25
17	01/29/10	12:54	461.3	300	24.5	6.74	3.29
17	02/26/10	13:16	461.0	300	24.3	6.74	3.49
17	03/16/10	13:22	450.3	293	24.0	6.82	4.97
17	04/15/10	12:37	426.6	277	23.7	6.78	3.72
17	05/12/10	13:04	441.7	287	18.8	6.74	5.01
17	01/19/11	13:56	409.6	266	22.3	6.80	3.27
17	02/07/11	13:58	409.8	266	22.2	6.82	4.73
17	04/14/11	13:48	400.5	260	21.5	6.81	6.18
17	05/11/11	13:59	386.1	251	21.4	6.73	2.34
17	06/16/11	12:50	401.7	261	21.4	6.75	2.44
17	07/27/11	9:50				6.99	
17	08/16/11	11:10				6.91	
17	09/13/11	12:45				7.31	
17	10/12/11	10:50				7.04	
17	11/09/11	14:53	377.2	245	20.2	6.84	2.60
17	12/20/11	14:10	370.7	241	19.8	6.79	2.65
17	01/11/12	14:00				7.00	
17	02/09/12	14:21	346.6	225	19.3	6.77	3.68
17	03/21/12	14:10				7.01	
17	04/10/12	14:00				7.00	
17	05/17/12	9:15				7.06	
17	06/19/12	10:50				7.01	
17	07/17/12	13:00				7.12	
17	08/08/12	10:10				7.08	
17	09/05/12	14:40				6.95	
17	10/30/12	10:40				7.2	
17	11/14/12	8:15				7.1	
17	12/11/12	10:40				6.9	
17	01/24/13	11:25				6.94	
17	02/14/13	10:15				6.81	
17	03/13/13	11:45				7.00	
17	04/25/13	12:40				6.95	
17	05/09/13	8:55				6.95	
17	06/13/13	7:40				6.92	
17	07/12/13	9:10				6.96	
17	08/28/13	11:25	480	380		6.78	
17	09/12/13	8:55				6.99	
17	10/16/13	9:00				6.91	
17	12/17/13	15:35				7.13	
17	01/22/14	13:45				6.92	

PRODUCTION WELL WATER QUALITY

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	TDS mg/L	Temp C	pH	Dissolved Oxygen mg/L
17	02/19/14	10:15				6.94	
17	03/27/14	9:20				7.02	
17	04/24/14	7:55				7.00	
17	05/13/14	10:40				6.92	
17	06/19/14	10:28				6.88	
17	07/16/14	14:30				6.98	
17	08/20/14	9:42				6.89	

PRODUCTION WELL WATER QUALITY

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	TDS mg/L	Temp C	pH	Dissolved Oxygen mg/L
18	07/11/96	8:15	540.0	332	8.3	7.10	
18	09/12/97	13:40	500.0	251	20.0	7.10	
18	07/06/98	14:15	490.0	350	21.1	6.90	
18	08/20/99	11:30	510.0	355	19.4	7.10	
18	08/22/00	8:20	505.0	346	20.0	7.10	
18	07/02/01	10:15	530.0	370	19.4	6.40	
18	09/05/02	8:45	535.0	310	18.3	6.80	
18	09/25/03	10:40	637.0	434	15.6	6.70	
18	08/03/04		560.0	370	16.7	7.30	
18	10/11/05	13:20	559.0	363	18.9	6.58	2.09
18	11/06/06	10:40	543.0	315	18.3	6.91	1.71
18	12/04/06	10:04	539.0	313	18.7	6.68	0.69
18	01/09/07		539.0	313	18.1	6.63	1.42
18	02/06/07	10:35	541.0	314	18.3	6.73	1.47
18	03/06/07	12:33	456.5	265	18.3	6.61	0.51
18	04/17/07	9:00	537.0	311	18.2	6.59	0.61
18	05/01/07	9:50	535.0	310	18.8	6.54	0.53
18	06/07/07	12:50	542.0	314	18.8	6.97	0.74
18	07/10/07	13:50	545.0	316	17.5	6.52	0.72
18	08/09/07	9:26	509.2	295	18.5	6.62	1.81
18	09/11/07	8:59	551.5	320	16.7	6.57	0.55
18	10/02/07	13:13	534	303	18.3	6.55	0.16
18	11/19/07	9:47	498.3	324	17.7	6.60	0.77
18	12/11/07	13:22	504.0	328	17.6	6.58	0.91
18	01/09/08	15:11	510.9	332	17.7	6.44	0.36
18	02/05/08	15:29	516.6	336	18.1	6.48	0.77
18	04/01/08	9:54	504.3	328	17.7	6.47	0.27
18	05/09/08	10:09	464.4	302	17.4	6.36	0.39
18	06/18/08	10:15	479.3	312	17.6	6.31	0.47
18	07/30/08	9:16	565.7	368	16.4	6.31	2.07
18	10/21/08	10:25	563.7	366	19.3	6.26	4.50
18	11/13/08	11:03	554.3	360	19.1	6.20	4.47
18	12/02/08	11:05	549.9	357	19.1	6.27	6.45
18	01/12/09	11:34	580.0	377	16.6	6.29	6.96
18	02/24/09	12:02	526.8	342	18.7	6.28	5.10
18	03/25/09	10:36	550.9	358	17.0	6.15	4.60
18	04/21/09	9:10	568.3	369	19.5	6.46	5.96
18	05/27/09	13:07	500.1	325	19.2	6.43	5.54
18	06/24/09	11:03	520.2	338	18.8	6.49	7.23
18	07/09/09	9:58	530.5	345	19.2	6.52	7.41
18	08/12/09	10:53	545.8	355	19.1	6.50	9.19
18	09/22/09	14:03	547.4	356	19.1	6.50	7.24
18	10/21/09	11:18	552.7	359	19.0	6.45	6.88
18	12/22/09	11:20	548.4	357	19.0	6.49	8.41

PRODUCTION WELL WATER QUALITY

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	TDS mg/L	Temp C	pH	Dissolved Oxygen mg/L
18	01/19/11	11:23	557.0	362	19.3	6.62	6.48
18	02/07/11	12:58	563.4	366	18.9	6.63	6.20
18	04/14/11	10:32	567.2	369	18.9	6.56	10.00
18	05/11/11	10:11	553.2	360	19.0	6.49	10.58
18	06/16/11	10:56	294.0	191	13.6	6.43	1.84
18	07/26/11	11:30				6.71	
18	08/18/11	8:45				6.85	
18	09/13/11	10:45				7.08	
18	10/12/11	10:00				6.88	
18	11/09/11	14:38	300.1	195	13.8	6.52	3.50
18	12/20/11	10:44	557.0	362	18.9	6.46	9.90
18	01/11/12	11:20				7.04	
18	02/09/12	12:37	569.3	370	19.0	6.61	7.47
18	03/21/12	12:45				6.83	
18	04/10/12	11:00				6.83	
18	05/17/12	10:00				6.79	
18	07/17/12	9:55				6.90	
18	08/08/12	11:00				6.93	
18	10/30/12	12:00				6.9	
18	11/14/12	12:30				6.86	
18	12/11/12	12:45				6.76	
18	01/24/13	14:20				6.70	
18	02/14/13	11:35				7.00	
18	03/13/13	10:45				6.90	
18	04/25/13	8:45				6.90	
18	05/09/13	10:55				6.79	
18	06/13/13	8:15				7.06	
18	07/11/13	9:35				6.74	
18	08/28/13	12:10	580	400		6.73	
18	09/11/13	9:55				6.81	
18	10/16/13	11:05				9.81	
18	11/13/13	11:05				6.70	
18	12/18/13	9:35				6.78	
18	01/22/14	9:50				6.81	
18	02/19/14	10:50				7.29	
18	03/27/14	11:30				6.80	
18	04/24/14	9:56				6.71	
18	05/13/14	13:05				6.68	
18	06/19/14	11:16				6.78	
18	07/16/14	13:57				6.76	

PRODUCTION WELL WATER QUALITY

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	TDS mg/L	Temp C	pH	Dissolved Oxygen mg/L
20	07/11/96	9:20	217.0	164	15.0	7.10	
20	09/11/97	9:57	336.0	168	16.1	6.90	
20	08/20/99	11:00	310.0	210	15.6	7.10	
20	08/22/00	9:00	305.0	190	16.1	7.10	
20	07/27/01	8:45	340.0	250	15.6	6.80	
20	09/05/02	9:30	400.0	195	17.2	6.60	
20	09/25/03	9:05	387.0	259	13.3	6.70	
20	08/03/04		290.0	200	15.6	7.20	
20	10/11/05	11:15	293.0	190	16.1	6.53	4.96
20	12/04/06	1:35	200.0	151	13.3	6.75	2.61
20	01/09/07		253.1	147	13.0	6.73	2.96
20	02/06/07	8:51	250.1	145	12.8	6.71	2.32
20	03/07/07	10:10	262.0	152	12.7	6.65	1.30
20	04/16/07	13:44	270.1	157	14.1	7.27	1.12
20	05/01/07	12:45	283.3	164	16.0	6.54	0.85
20	06/07/07	10:20	269.4	156	13.7	7.25	0.83
20	07/10/07	10:20	373.3	217	18.5	6.61	0.78
20	08/09/07	10:50	388.4	225	18.3	6.50	5.58
20	09/11/07	10:47	406.3	236	18.9	6.59	6.55
20	10/02/07	10:33	410.4	237	19.1	6.58	5.35
20	07/30/08	11:28	270.7	176	12.8	6.37	6.94
20	08/19/08	11:32	338.6	220	15.5	6.22	5.82
20	09/11/08	13:07	392.5	255	18.2	6.36	4.73
20	10/21/08	14:48	344.0	224	15.0	6.14	8.25
20	11/13/08	10:17	339.7	221	15.2	5.93	6.59
20	12/02/08	14:18	330.7	215	14.8	6.05	6.39
20	01/12/09	15:36	310.8	202	14.3	6.23	8.78
20	02/24/09	15:24	296.2	193	13.8	6.17	7.00
20	03/25/09	13:55	288.0	187	13.8	6.03	7.90
20	04/21/09	11:03	304.2	198	13.9	6.50	5.00
20	05/28/09	13:08	290.0	189	13.8	6.46	8.49
20	06/24/09	13:20	313.8	204	13.9	6.39	8.80
20	07/09/09	11:25	320.7	209	14.6	6.36	11.94
20	08/12/09	13:03	294.1	191	14.1	6.41	12.29
20	09/22/09	12:29	384.3	250	17.8	6.35	6.72
20	05/12/10	15:23	286.1	186	13.4	6.53	6.39
20	01/19/11	14:11	281.6	183	13.3	6.49	1.78
20	02/07/11	13:44	282.5	184	13.4	6.58	1.64
20	02/07/11	14:18	192.0	125	7.7	6.86	4.99
20	04/14/11	13:16	296.1	193	13.5	6.51	1.58
20	05/11/11	12:58	288.0	187	7.5	6.41	1.91
20	06/16/11	10:56	294.0	191	13.6	6.43	1.84
20	07/26/11	9:25				6.48	
20	08/16/11	9:20				6.46	

PRODUCTION WELL WATER QUALITY

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	TDS mg/L	Temp C	pH	Dissolved Oxygen mg/L
20	09/13/11	11:45				6.70	
20	10/12/11	10:35				6.73	
20	11/09/11	14:38	300.1	195	13.8	6.52	3.50
20	12/20/11	13:53	291.0	189	13.5	6.55	2.06
20	01/11/12	13:25				6.95	
20	02/09/12	15:04	294.5	191	13.5	6.41	1.82
20	03/21/12	13:55				6.73	
20	04/10/12	14:10				6.66	
20	05/17/12	9:40				6.68	
20	06/19/12	10:40				6.53	
20	07/17/12	12:45				6.77	
20	08/08/12	10:00				6.67	
20	09/05/12	14:25				6.67	
20	11/14/12	8:45				6.69	
20	12/11/12	10:10				6.71	
20	01/24/13	11:35				6.53	
20	02/14/13	9:35				6.54	
20	03/13/13	12:00				6.80	
20	04/25/13	12:05				6.57	
20	05/09/13	8:40				6.57	
20	06/13/13	10:40				6.64	
20	07/12/13	9:35				6.60	
20	09/12/13	10:10				6.56	
20	10/16/13	10:25				6.49	
20	12/17/13	15:00				6.64	
20	01/22/14	13:20				6.61	
20	02/19/14	10:05				6.59	
20	03/27/14	9:32				6.58	
20	04/24/14	7:38				6.66	
20	05/13/14	10:50				6.65	
20	06/19/14	10:51				6.58	
20	07/16/14	15:05				6.62	
20	08/20/14	10:00				6.54	

PRODUCTION WELL WATER QUALITY

Production Well Site	Sample Date	Sample Time	Specific Conductance umho/cm	TDS mg/L	Temp C	pH	Dissolved Oxygen mg/L
25	12/17/13	13:45					7.23
25	01/22/14	11:45					7.15
25	02/19/14	9:35					7.23
25	03/27/14	8:55					7.15
25	04/24/14	7:30					7.22
25	05/13/14	10:30					7.23
25	06/19/14	10:36					7.26
25	07/16/14	14:20					7.43
25	08/20/14	9:50					7.33

APPENDIX F

MAMMOTH CREEK STREAMFLOW

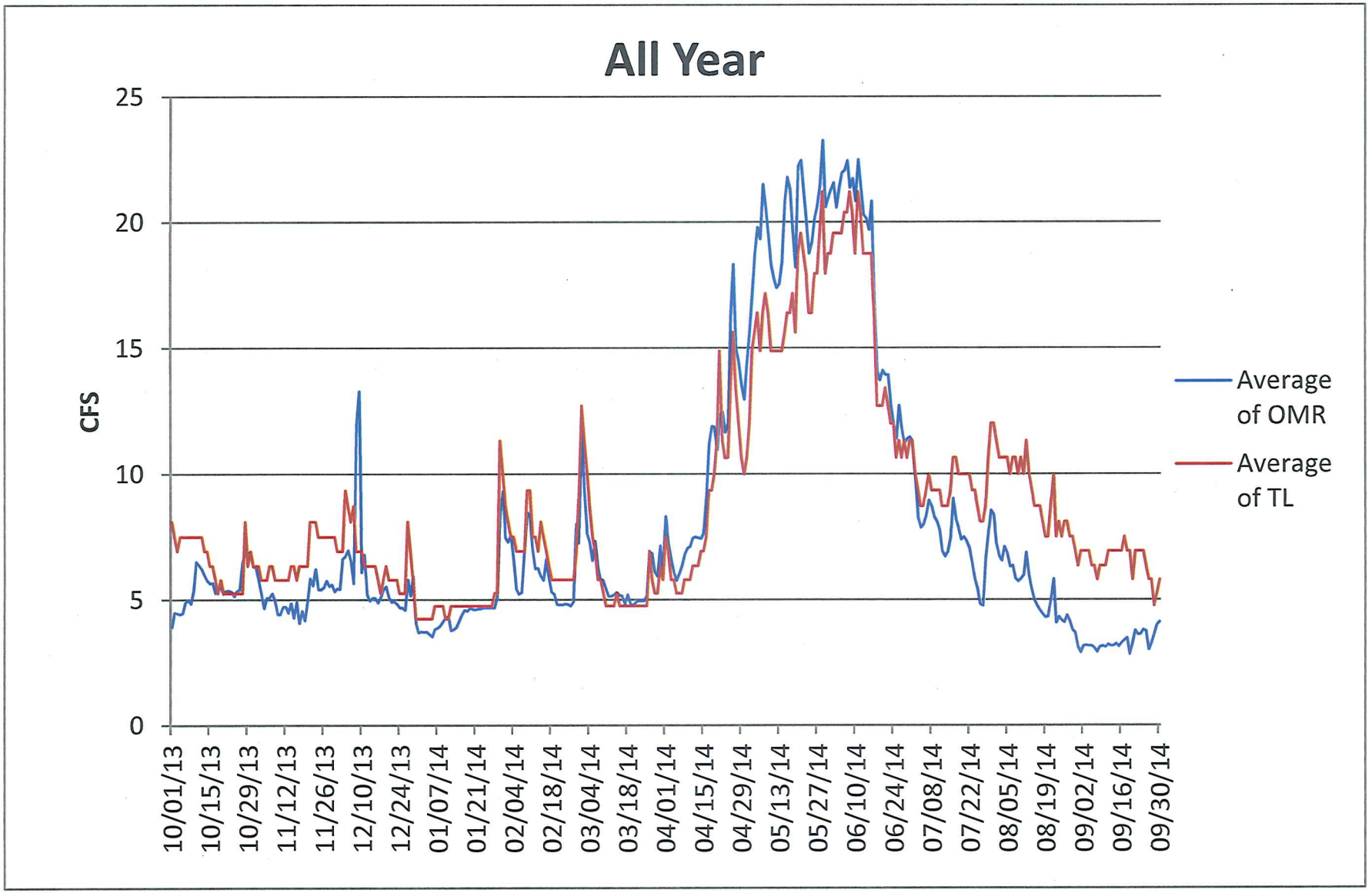
Mammoth Creek at Old Mammoth Road

Daily discharge in cubic feet per second													
	2013			2014									
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1	3.90	6.30	5.45	3.72	7.47	11.73	8.30	14.36	21.26	11.27	7.21	2.88	
2	4.49	5.79	5.42	3.70	7.28	9.32	7.20	15.59	21.54	9.82	6.73	3.15	
3	4.46	5.27	6.62	3.71	7.56	7.65	6.62	17.12	20.56	8.25	6.54	3.17	
4	4.42	4.66	6.72	3.62	6.58	7.29	6.10	18.70	21.31	7.85	7.09	3.15	
5	4.47	5.08	6.95	3.52	5.42	6.56	5.76	19.78	21.94	7.98	6.83	3.15	
6	4.89	5.08	6.56	3.82	5.22	7.31	6.03	19.31	22.04	8.33	6.31	3.06	
7	5.00	5.25	5.65	3.87	5.29	6.28	6.35	21.49	22.43	8.94	6.35	2.90	
8	4.84	4.95	11.95	3.96	6.92	5.79	6.78	20.61	21.35	8.70	5.85	3.10	
9	5.39	4.42	13.28	4.13	8.47	5.77	7.02	19.51	21.72	8.28	5.72	3.14	
10	6.51	4.42	6.09	4.27	8.34	5.44	7.10	18.28	20.81	8.08	5.82	3.09	
11	6.38	4.71	6.78	4.32	6.99	5.13	7.45	17.75	22.47	7.77	5.98	3.20	
12	6.23	4.72	5.20	3.77	6.24	5.13	7.49	17.38	21.40	6.92	6.85	3.15	
13	5.97	4.48	4.95	3.81	6.26	5.20	7.46	17.53	20.28	6.70	5.92	3.15	
14	5.77	4.86	5.07	3.90	5.94	5.28	7.42	18.40	20.13	6.88	5.37	3.23	
15	5.65	4.28	5.07	4.17	5.77	5.18	7.64	20.80	19.68	7.41	4.97	3.12	
16	5.67	4.91	4.87	4.42	6.59	5.14	9.16	21.77	20.82	9.01	4.74	3.27	
17	5.27	4.06	5.10	4.58	5.87	4.82	11.20	21.30	16.67	8.18	4.57	3.37	
18	5.48	4.55	5.41	4.54	5.31	5.20	11.88	19.65	14.06	7.83	4.42	3.46	
19	5.52	4.17	5.52	4.67	5.22	4.84	11.84	18.19	13.71	7.37	4.29	2.81	
20	5.23	4.95	5.09	4.61	4.81	4.74	10.94	22.24	14.10	7.49	4.32	3.27	
21	5.35	5.85	4.90	4.60	4.79	4.89	12.35	22.45	13.92	7.31	4.97	3.77	
22	5.36	5.56	4.93	4.63	4.79	4.95	12.44	21.21	13.92	7.04	5.81	3.60	
23	5.33	6.22	4.83	4.64	4.83	4.95	11.65	20.04	12.77	6.44	4.07	3.62	
24	5.13	5.41	4.68	4.67	4.81	4.95	11.99	18.74	12.00	5.81	4.31	3.80	
25	5.34	5.41	4.67	4.68	4.74	5.12	16.21	19.18	11.39	5.44	4.17	3.74	
26	5.41	5.49	4.58	4.68	4.91	6.88	18.31	20.15	12.71	4.80	4.09	2.99	
27	6.44	5.75	5.79	4.67	8.01	6.83	14.95	20.60	11.80	4.75	4.38	3.25	
28	6.86	5.53	5.15	4.68	7.24	6.12	14.44	21.43	11.20	6.58	4.14	3.60	
29	6.86	5.60	5.93	5.08		5.92	13.52	23.24	11.40	7.61	3.78	3.99	
30	6.88	5.33	4.08	8.34		7.13	12.95	20.58	11.46	8.54	3.67	4.11	
31	6.33		3.68	9.30		5.91		20.92		8.36	3.09		
Average	5.51	5.10	5.84	4.55	6.13	6.05	9.95	19.62	17.36	7.60	5.24	3.31	
Maximum	6.88	6.30	13.28	9.30	8.47	11.73	18.31	23.24	22.47	11.27	7.21	4.11	
Minimum	3.90	4.06	3.68	3.52	4.74	4.74	5.76	14.36	11.20	4.75	3.09	2.81	

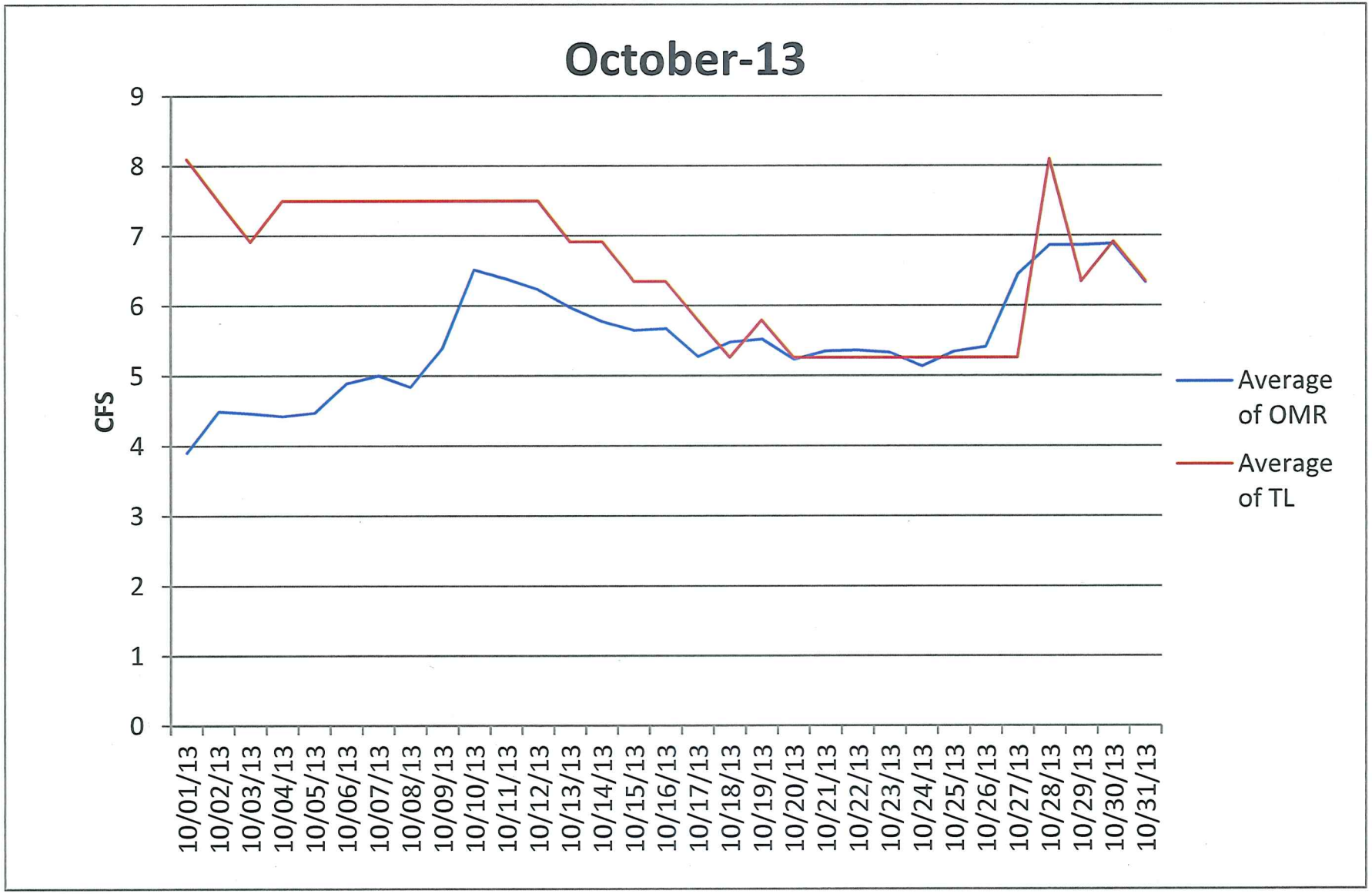
Twin Lakes Outflow

Daily discharge in cubic feet per second												
	2013			2014								
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	8.09	6.34	6.91	4.24	8.70	12.69	7.49	10.63	18.73	11.31	11.31	6.91
2	7.49	6.34	6.91	4.24	8.09	11.31	6.91	11.99	19.54	9.98	10.63	6.91
3	6.91	5.79	6.91	4.24	7.49	9.98	5.79	14.86	19.54	9.33	10.63	6.91
4	7.49	5.79	9.33	4.24	7.49	8.70	5.79	15.61	19.54	8.70	10.63	6.91
5	7.49	5.79	8.70	4.24	6.91	7.49	5.25	16.37	19.54	8.70	10.63	6.34
6	7.49	6.34	8.09	4.74	6.91	6.91	5.25	14.86	20.36	9.33	9.98	6.34
7	7.49	6.34	8.70	4.74	6.91	5.79	5.25	16.37	20.36	9.98	10.63	5.79
8	7.49	5.79	6.91	4.74	6.91	5.79	5.79	17.15	21.19	9.33	10.63	6.34
9	7.49	5.79	6.91	4.74	9.33	5.25	5.79	16.37	20.36	9.33	9.98	6.34
10	7.49	5.79	6.91	4.24	9.33	4.74	5.79	14.86	18.73	9.33	10.63	6.34
11	7.49	5.79	6.34	4.24	7.49	4.74	6.34	14.86	21.19	9.33	9.98	6.91
12	7.49	5.79	6.34	4.74	7.49	4.74	6.34	14.86	20.36	8.70	11.31	6.91
13	6.91	5.79	6.34	4.74	6.91	4.74	6.34	14.86	18.73	8.70	9.98	6.91
14	6.91	6.34	6.34	4.74	8.09	5.25	6.91	14.86	18.73	8.70	9.33	6.91
15	6.34	6.34	6.34	4.74	7.49	4.74	6.91	15.61	18.73	9.33	8.70	6.91
16	6.34	5.79	5.79	4.74	6.91	4.74	7.49	16.37	18.73	10.63	8.70	6.91
17	5.79	6.34	5.25	4.74	6.34	4.74	9.33	16.37	16.37	10.63	8.70	7.49
18	5.25	6.34	5.79	4.74	5.79	4.74	9.33	17.15	12.69	9.98	8.09	6.91
19	5.79	6.34	6.34	4.74	5.79	4.74	9.98	15.61	12.69	9.98	7.49	6.91
20	5.25	6.34	5.79	4.74	5.79	4.74	11.31	18.73	12.69	9.98	7.49	5.79
21	5.25	8.09	5.79	4.74	5.79	4.74	14.86	19.54	13.40	9.98	8.70	6.91
22	5.25	8.09	5.79	4.74	5.79	4.74	11.31	18.73	12.69	9.98	9.98	6.91
23	5.25	8.09	5.79	4.74	5.79	4.74	10.63	17.93	11.99	9.33	7.49	6.91
24	5.25	7.49	5.25	4.74	5.79	4.74	10.63	16.37	11.99	9.33	8.09	6.91
25	5.25	7.49	5.25	4.74	5.79	4.74	13.40	16.37	10.63	8.70	7.49	6.34
26	5.25	7.49	5.25	4.74	5.79	6.91	15.61	17.93	11.31	8.09	8.09	5.79
27	5.25	7.49	8.09	4.74	6.91	5.79	13.40	17.93	10.63	8.09	8.09	5.79
28	8.09	7.49	6.91	5.25	9.33	5.25	11.99	19.54	11.31	8.70	7.49	4.74
29	6.34	7.49	5.79	5.25		5.25	10.63	21.19	10.63	10.63	7.49	5.25
30	6.91	7.49	4.24	11.31		6.34	9.98	17.93	11.31	11.99	6.91	5.79
31	6.34		4.24	9.98		5.79		18.73		11.99	6.34	
Average	6.55	6.60	6.43	5.04	7.04	5.99	8.73	16.47	16.16	9.62	9.09	6.50
Maximum	8.09	8.09	9.33	11.31	9.33	12.69	15.61	21.19	21.19	11.99	11.31	7.49
Minimum	5.25	5.79	4.24	4.24	5.79	4.74	5.25	10.63	10.63	8.09	6.34	4.74

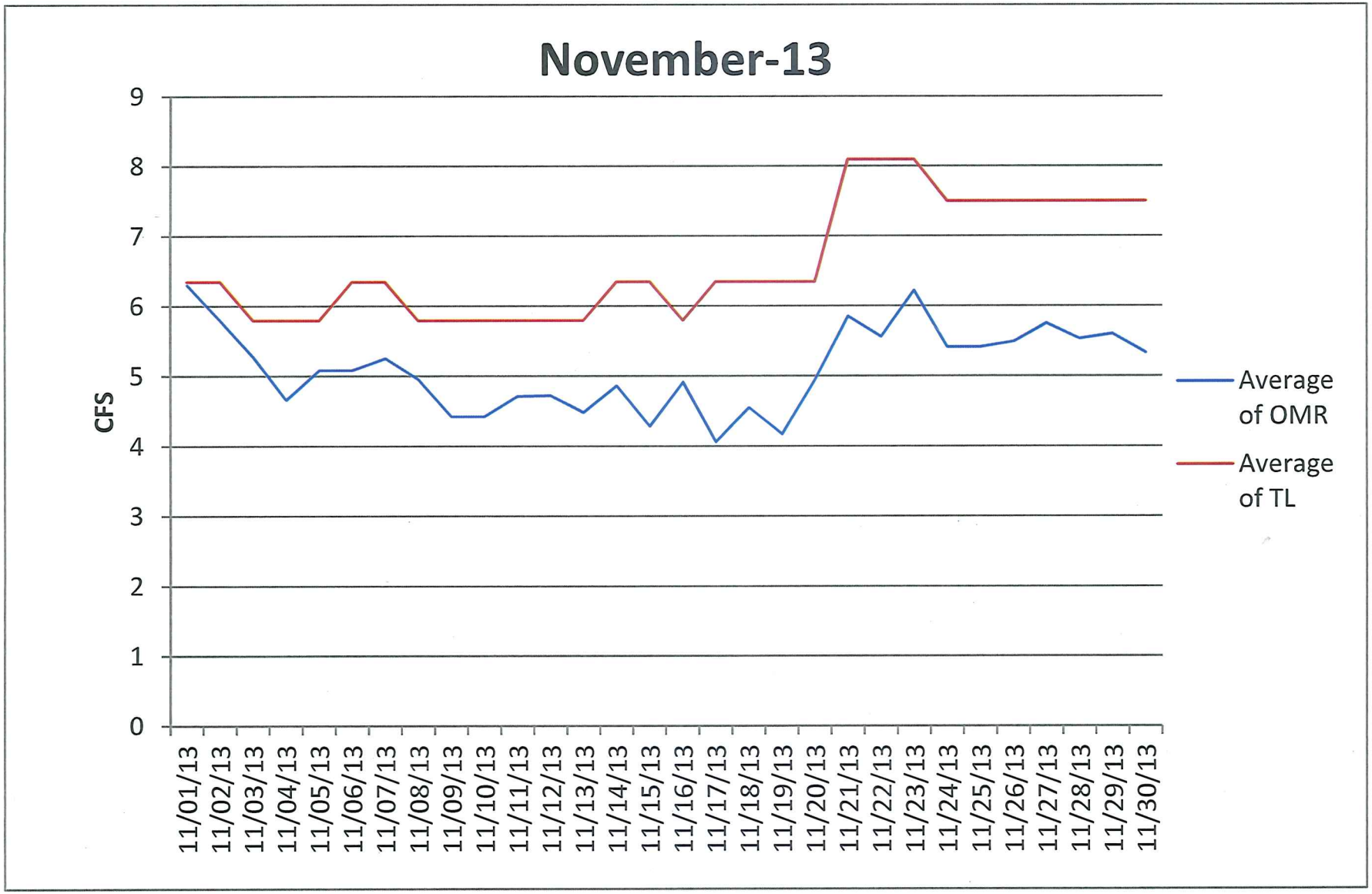
MAMMOTH COMMUNITY WATER DISTRICT
MAMMOTH CREEK
TWIN LAKES/OLD MAMMOTH



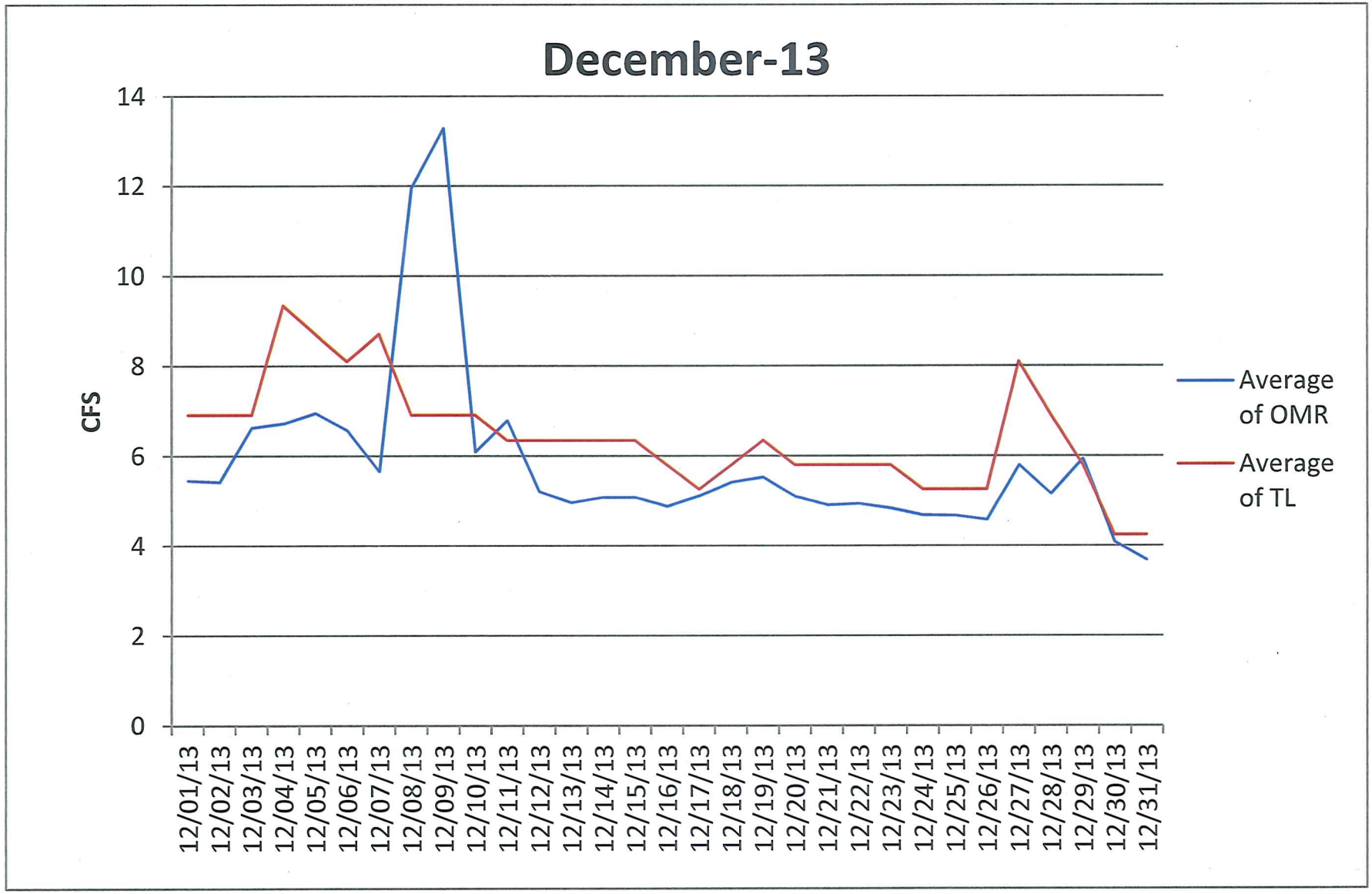
MAMMOTH COMMUNITY WATER DISTRICT
MAMMOTH CREEK
TWIN LAKES/OLD MAMMOTH



MAMMOTH COMMUNITY WATER DISTRICT
MAMMOTH CREEK
TWIN LAKES/OLD MAMMOTH



MAMMOTH COMMUNITY WATER DISTRICT
MAMMOTH CREEK
TWIN LAKES/OLD MAMMOTH



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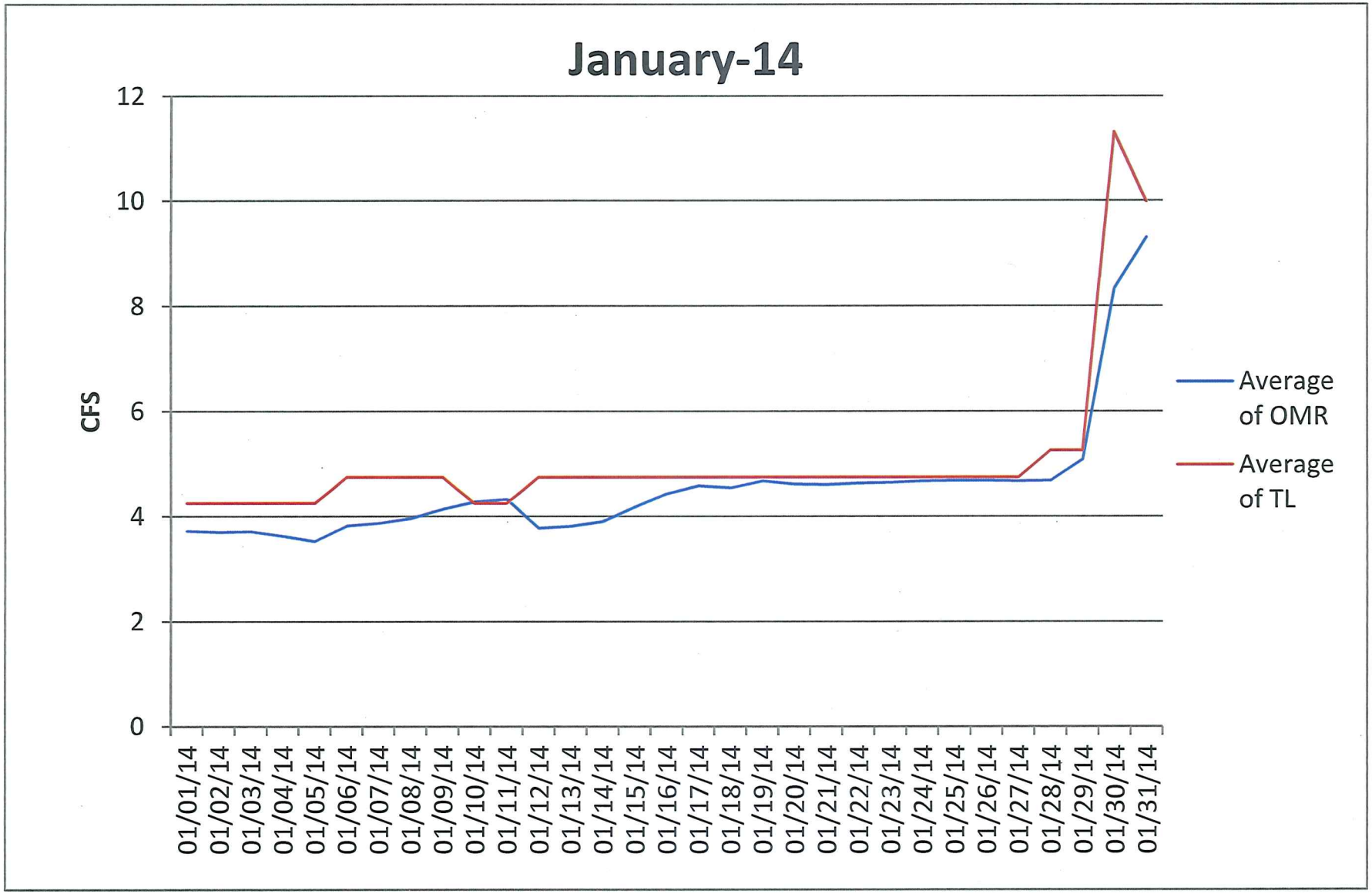
TWIN LAKES/OLD MAMMOTH



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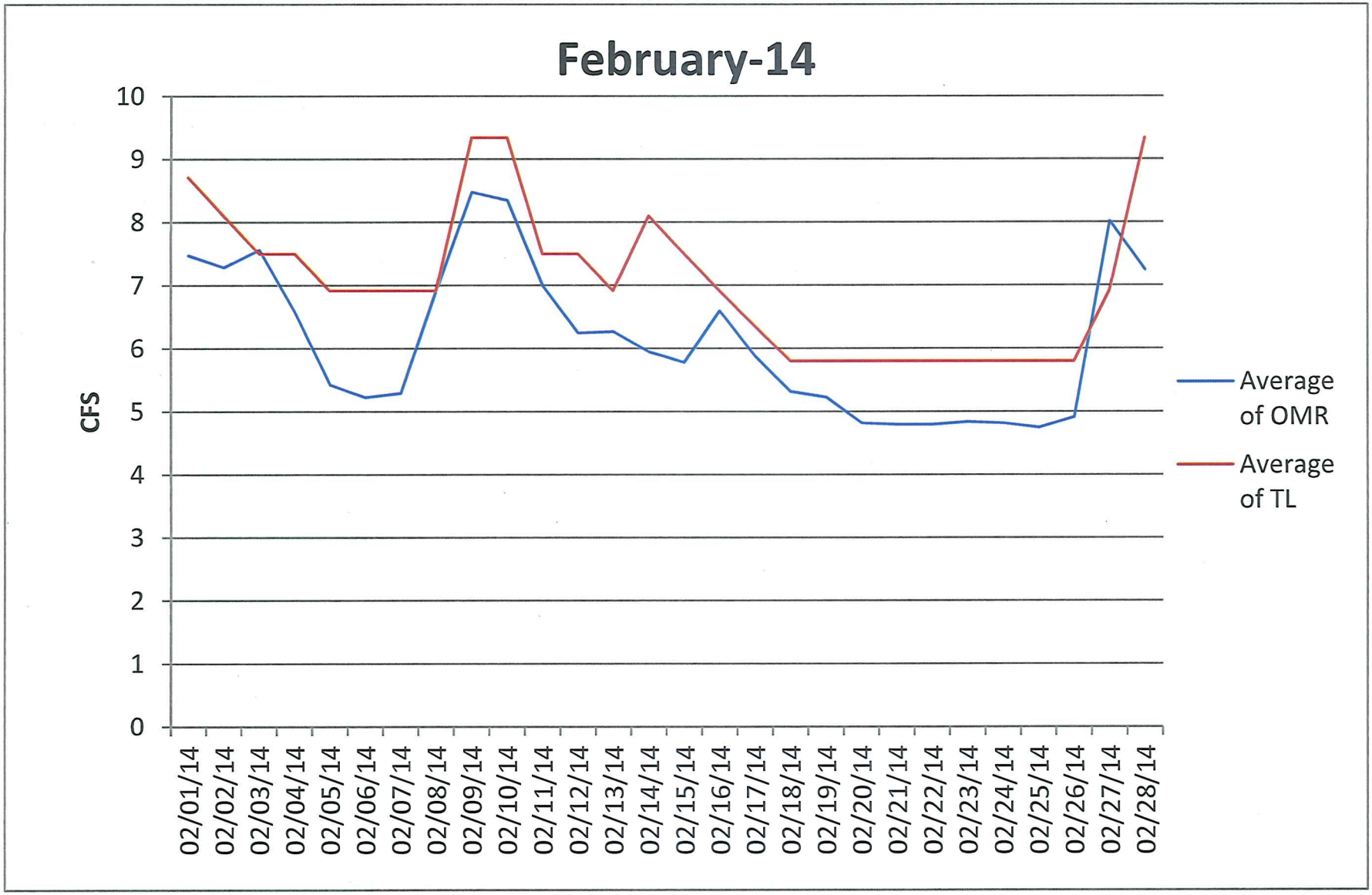
MAMMOTH CREEK
TWIN LAKES/OLD MAMMOTH



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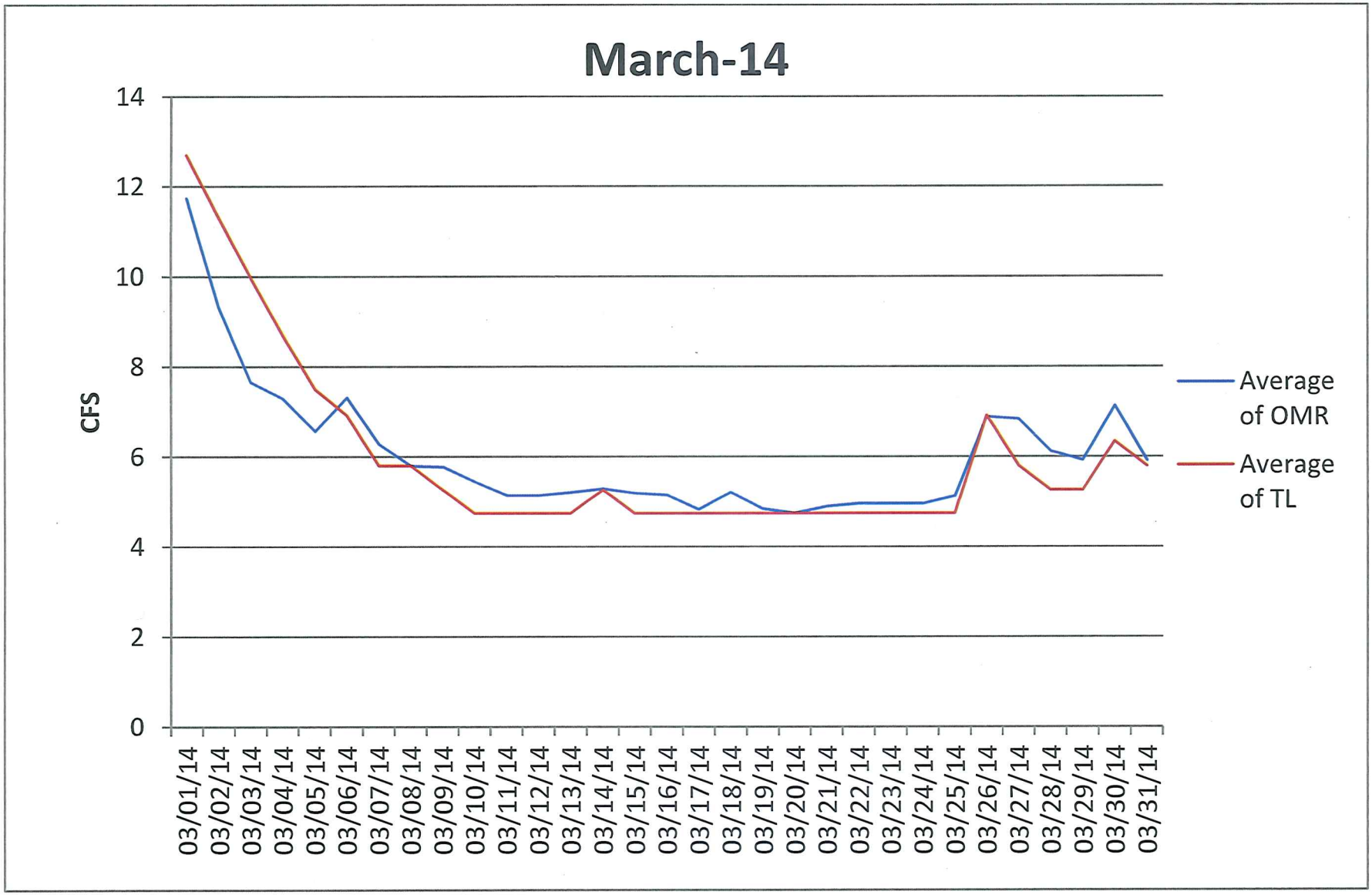
MAMMOTH CREEK
TWIN LAKES/OLD MAMMOTH



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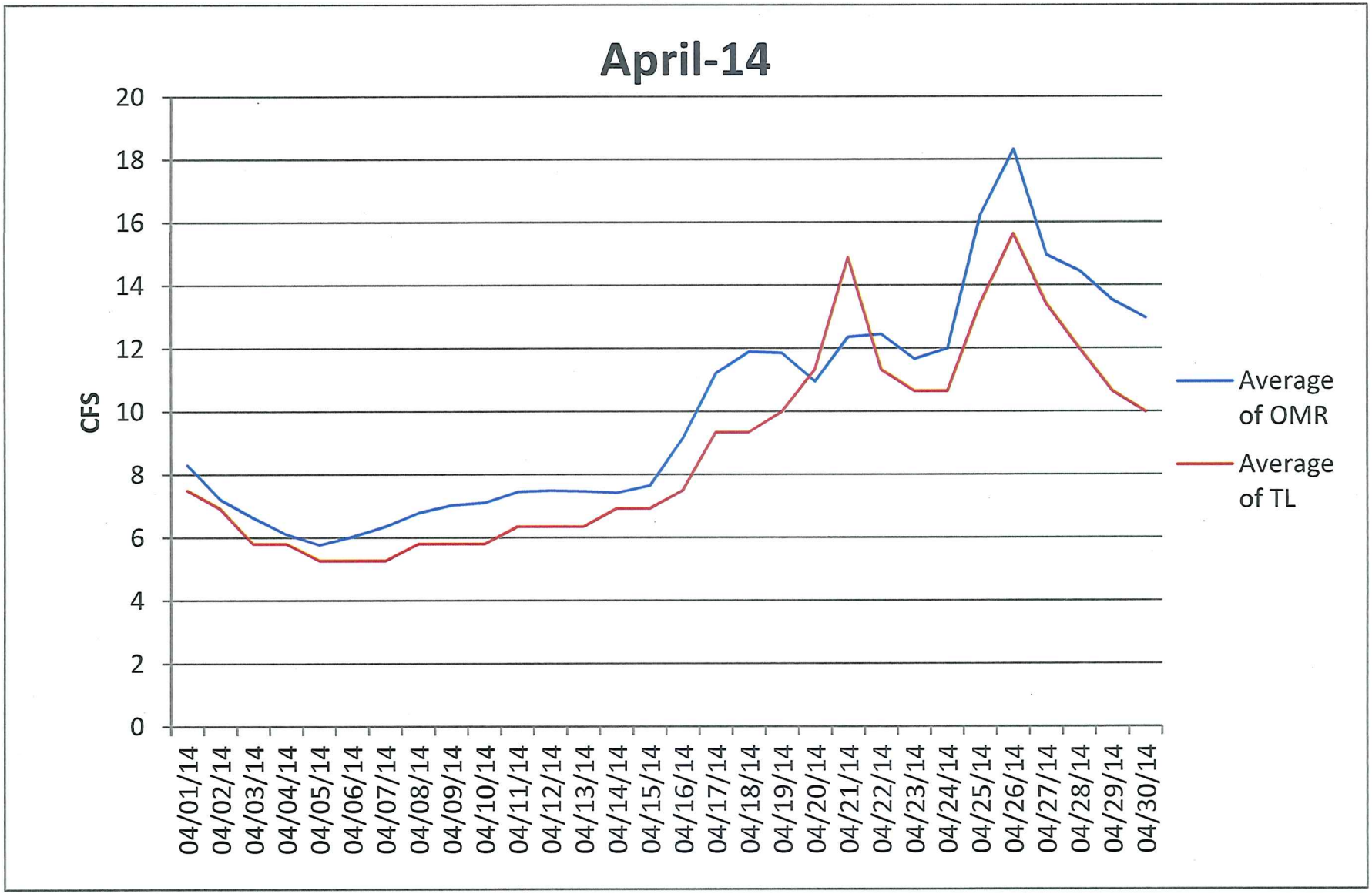
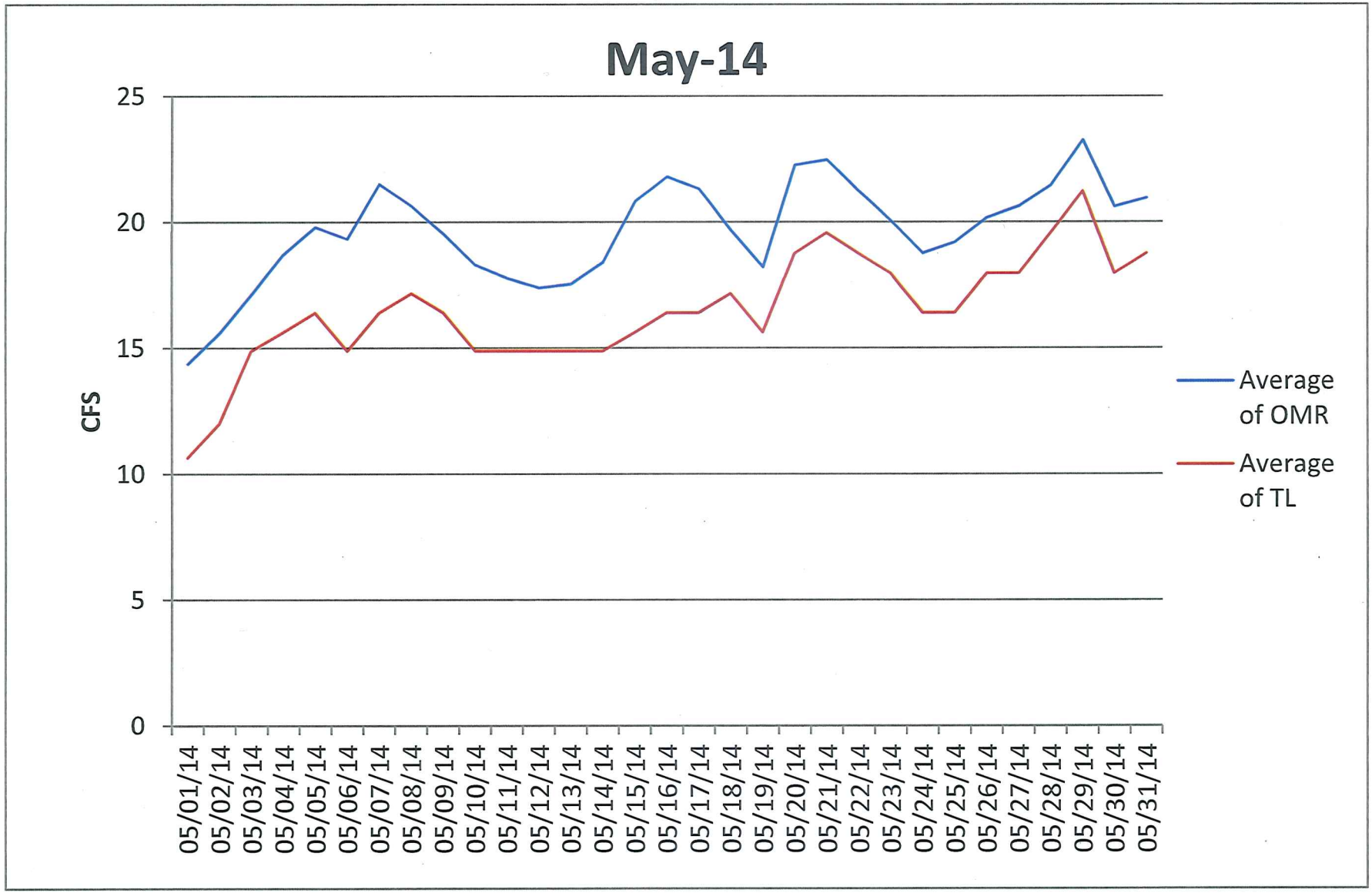
MAMMOTH CREEK
TWIN LAKES/OLD MAMMOTH



MAMMOTH COMMUNITY WATER DISTRICT
MAMMOTH CREEK
TWIN LAKES/OLD MAMMOTH



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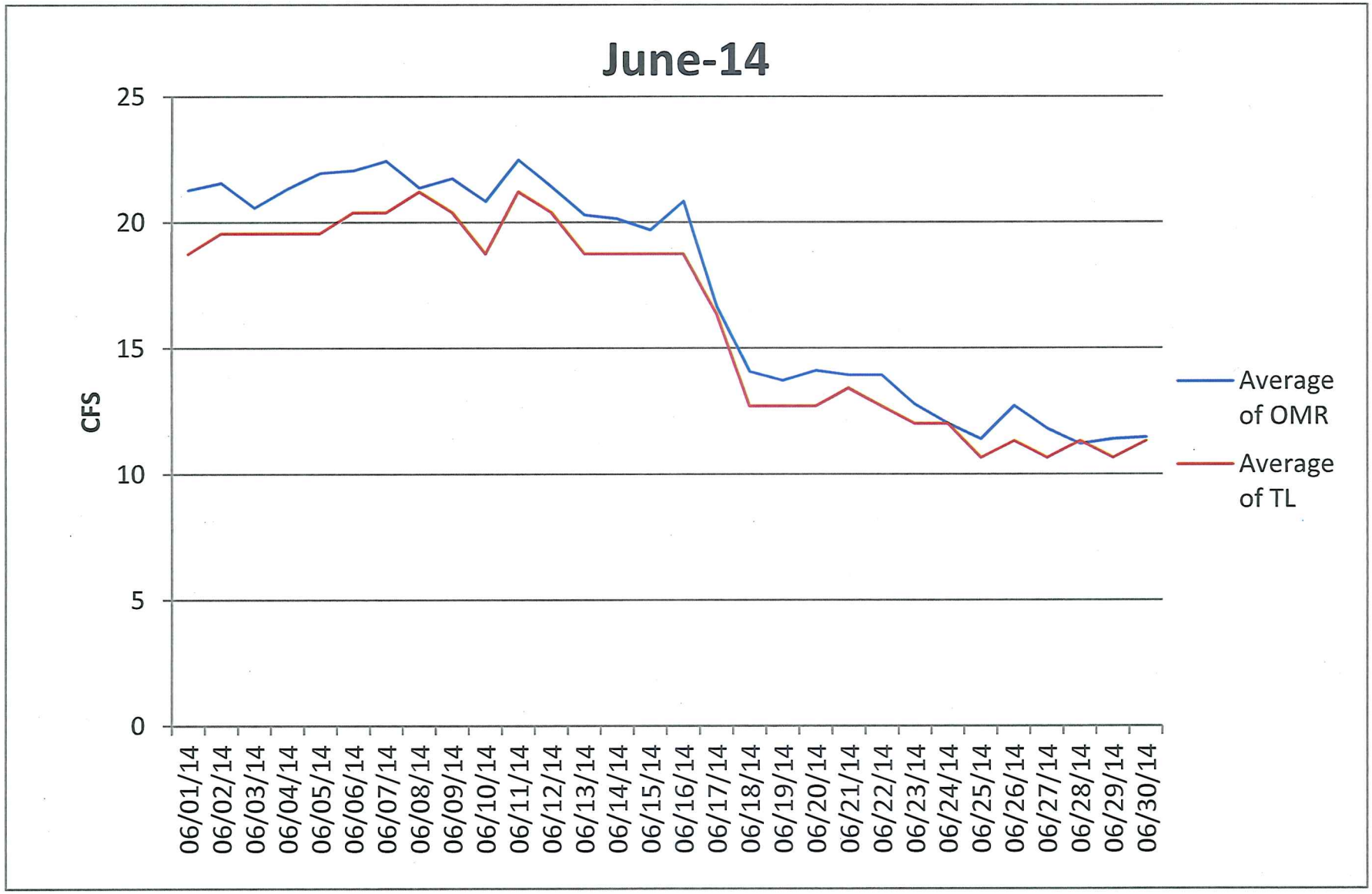
MAMMOTH CREEK
TWIN LAKES/OLD MAMMOTH



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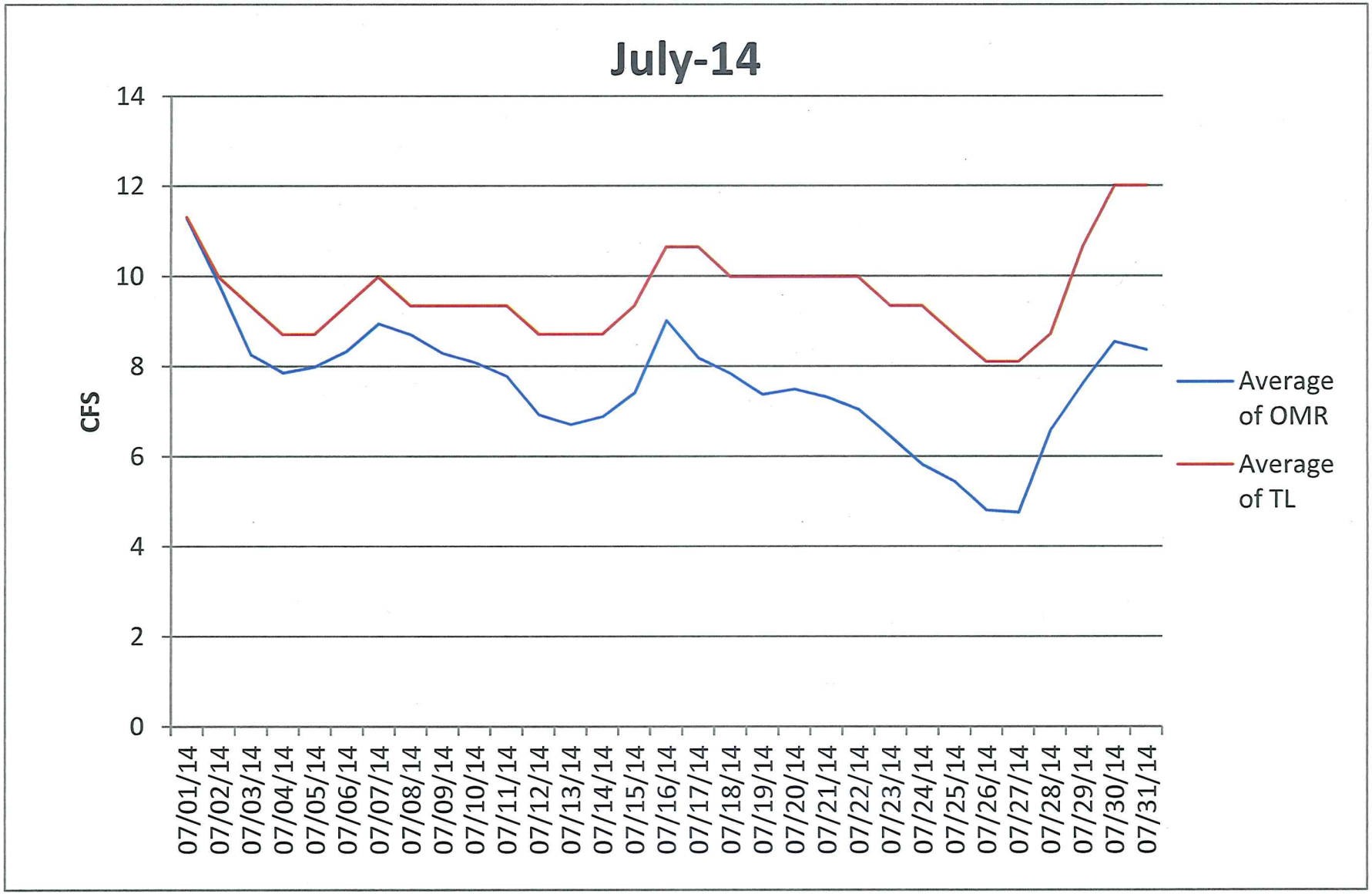
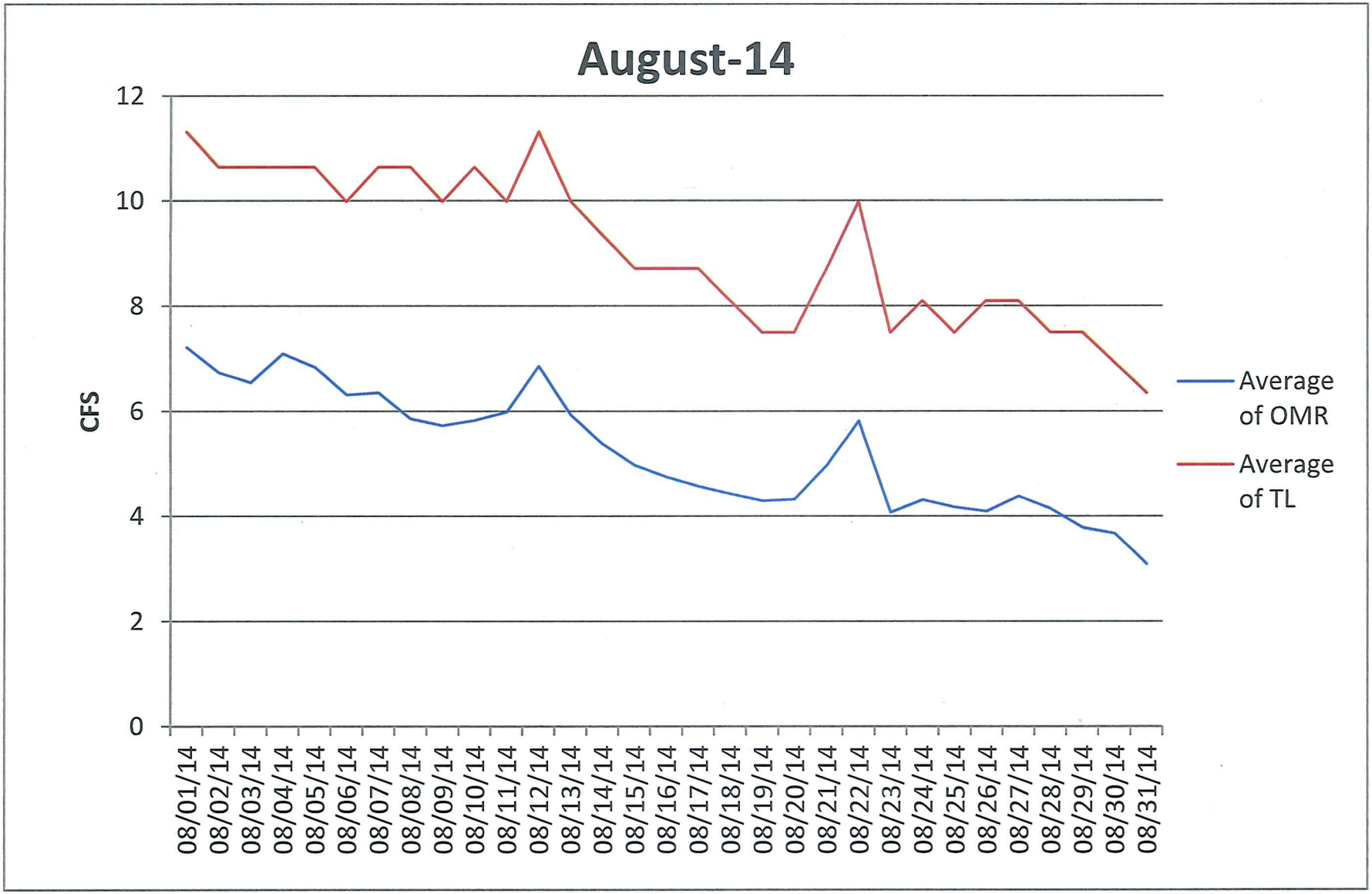
MAMMOTH CREEK
TWIN LAKES/OLD MAMMOTH



MAMMOTH COMMUNITY WATER DISTRICT
MAMMOTH CREEK
TWIN LAKES/OLD MAMMOTH



MAMMOTH COMMUNITY WATER DISTRICT
MAMMOTH CREEK
TWIN LAKES/OLD MAMMOTH