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Groundwater Level Monitoring in La Cienega, Santa Fe County, New Mexico: 2016 Summary of Findings

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AQUIFER MAPPING PROGRAM

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CONTENTS

I. Introduction 1

II. Methods 2

III. Results 5

Long term (10 year) observations 5
Seasonal trends 6
Continuous data records 7
Discussion of other regional datasets 12

IV. Conclusions 14

V. Future work 15

References 14

Figures

1. La Cienega schematic model 1
2. Location of wells monitored for this project 2
3. Map of groundwater level changes comparing measurements taken in 2004–2007 to those taken in April 2016 at the same wells 5
4. Groundwater level changes between April and October and during 2016 6
5. Hydrograph of well LC-026 7
6. Hydrograph of well LC-025 7
7. Hydrograph of well EB-373 8
8. Hydrograph of well EB-306 9
9. Hydrograph of well EB-220 9
10. Hydrograph of pumping well EB-691 10
11. Hydrograph of well EB-305 11
12. Hydrograph of well EB-339 11
13. Map showing location of U.S. Geological Survey piezometer well sets 12
14. Jail Well Shallow piezometer 12
15. Jail Well middle piezometer 13
16. NMOSE County shallow piezometer 13
17. NMOSE Fairgrounds shallow piezometer 13

Tables

1. Inventory of wells monitored for this network, including location information and well construction 3
2. Manual water level measurements collected for this project 4
3. Point locations with continuous data recorders and date of installation 4
4. Water levels from period between 2004–2007, compared with water levels collected from these same wells in 2016 4
5. Water levels from period between April-October 2016 5

Appendix

1. Water measurement hydrographs from manually measured wells in network .... 24 pages

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I. INTRODUCTION

As a follow up to hydrogeologic research performed by the New Mexico Bureau of Geology and Mineral Resources in recent years (summarized in Johnson, et al., 2016), a groundwater monitoring network was implemented around La Cienega, Santa Fe County, New Mexico. The primary aquifer in La Cienega is within the Ancha Formation, overlying the Tesuque Formation. The Ancha Formation aquifer exists as buried valleys of coarse sediments that are highly transmissive (Figure 1).

Previous hydrogeologic research by Johnson, et al. (2016) indicates that the groundwater in this region is highly susceptible to regional influences such as pumping, drought, and land use changes. The groundwater levels in the primary aquifer around La Cienega have been steadily dropping since the 1970s. Smaller oscillations of higher winter groundwater levels and lower summer groundwater levels are superimposed on the overall downward trend.

Groundwater level monitoring provides an essential tool in groundwater management. The data are used in development of more accurate groundwater models, and can help with protection of groundwater resources. Measurements of changing groundwater levels also directly reflect changes in groundwater storage.

This report is a brief summary of the 2015 and 2016 continued groundwater level monitoring in La Cienega, as an effort to monitor the potential changes and impacts to this region.

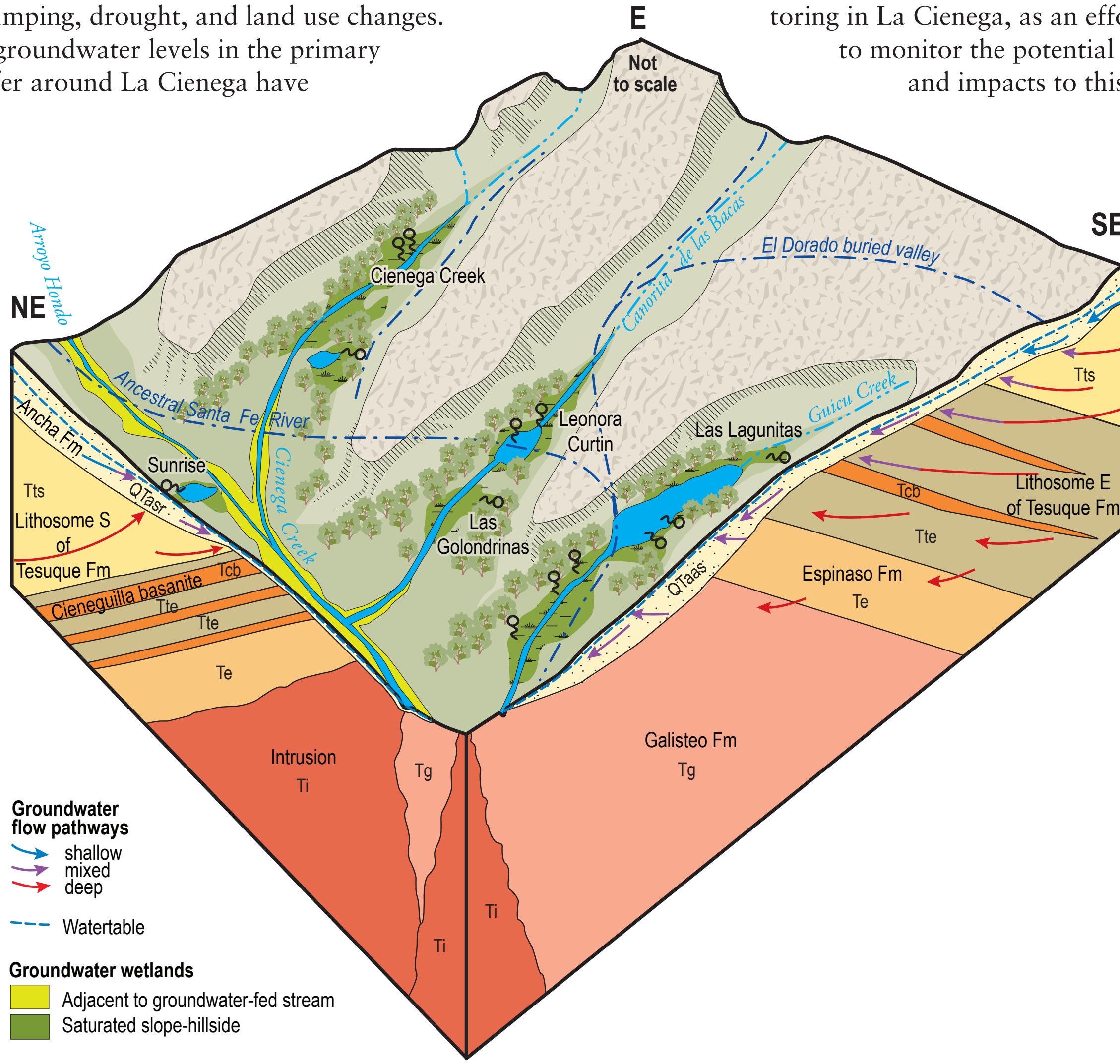


Figure 1. La Cienega schematic model from Johnson et al. (2016). This block diagram depicts the groundwater system that feeds the wetlands in and around La Cienga, New Mexico. The Ancha Formation, the primary aquifer for the area, and is shown as the beige unit overlying tilted layers of Tesuque Formation, among other geologic layers. The Tesuque Formation and Ancha Formation together provide groundwater to wells in the region and to the wetlands, as indicated by arrows for groundwater flow directions.

II. METHODS

Measurements in the monitoring network have been taken twice a year, in April and October, in 2015 and 2016. The measurement frequency is intended to reflect the local seasonal highs (April) and lows (October). In 2016, the NMBGMR re-measured 22 wells in the bi-annual monitoring network. In 2015, 13 of these wells were measured for comparison with previous measurements approximately 10 years prior (Table 1, Figure 2).

For the purpose of this monitoring project, groundwater level measurements are made using existing domestic wells, or open/unused wells (without pumps). For domestic wells, water level measurements were made after the well had been off for at least 1 hour. Water levels were measured following U.S. Geological Survey protocols for a steel tape measurement device with repeat measurements to within 0.02 ft. Open wells were measured using an electronic sounder probe, also with repeated measurements within 0.02 ft. All measurements reported are in units of feet, below ground surface. Data from manual measurements in 2015-2016 are provided with this report in Table 2. Hydrographs showing the water level measurements over time are found in the Appendix 1.

Pressure transducers monitoring continuous changes in groundwater levels have been deployed in several wells since approximately 2011 (Table 3). Additional sites were instrumented in 2014 and 2015 (EB-305, -339, -691). These instruments are VanEssen (Diver) brand, and provide pressure readings which are converted to water level measurements collected every 12 hours. These are lengthy data records, and are available upon request. Images produced from these records are discussed under the Results section of this report.

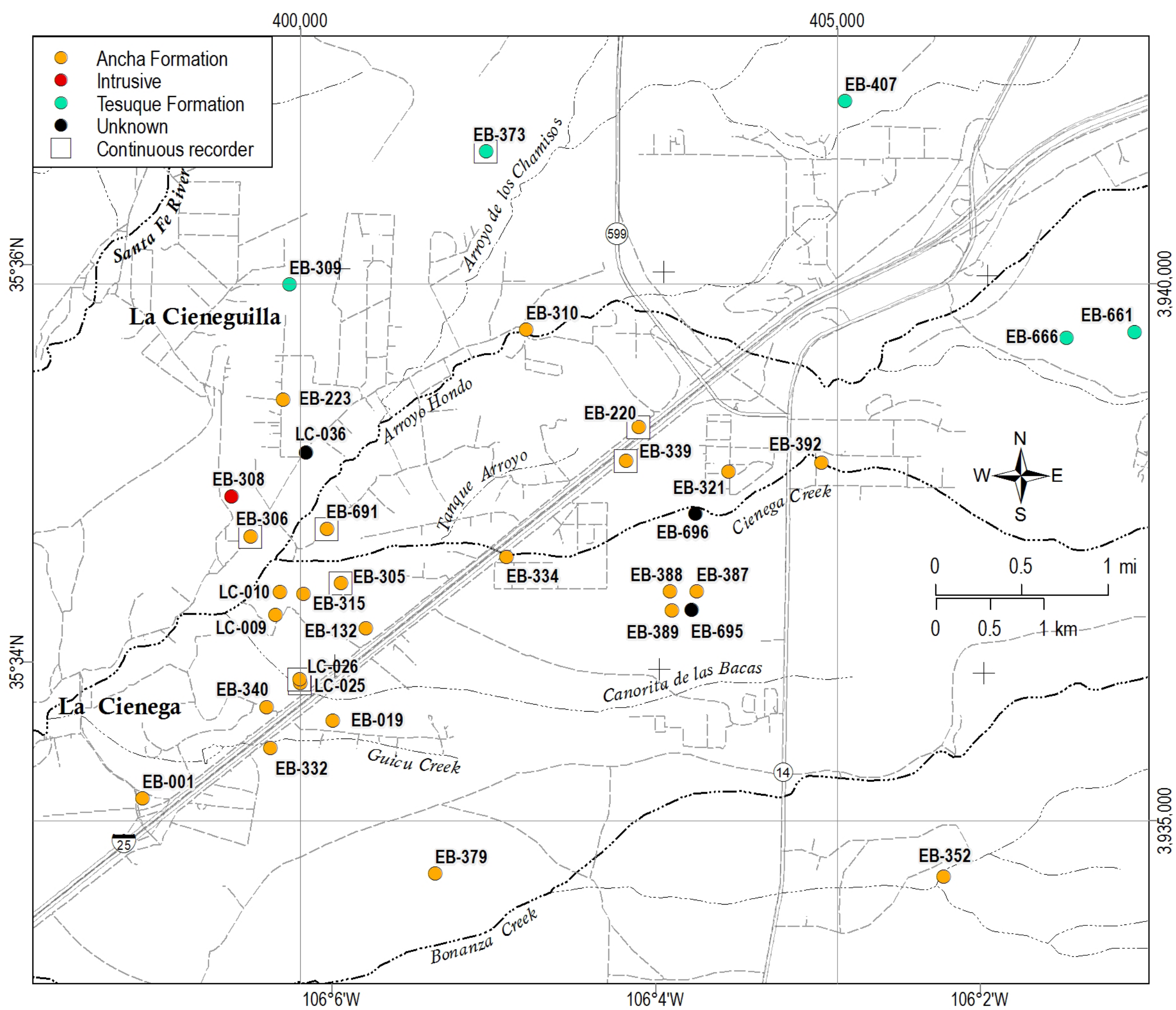


Figure 2. Location of wells monitored for this project. Well points are color coded with the primary aquifer producing water. Most wells in this study are providing groundwater from the Ancha Formation, with a few on the margins of the study that produce water from the Tesuque Formation. In this region, groundwater is generally flowing toward the southwest.

Table 1. Inventory of wells monitored for this network, including location information and well construction. MP = Measuring point ("-" = below ground).

A. Extended network for April 2015

Site ID	Elevation (ft)	UTM easting NAD83	UTM northing NAD83	Well depth (ft)	MP height (ft)	Screen top (ft)	Screen bottom (ft)
EB-001	6065	398529	3935208	221	0.50	47	221
EB-308	6149	399358	3938016	103	2.60	73	103
EB-309	6230	399896	3939990	300	1.00	120	280
EB-310	6180	402100	3939571	307	2.20	47	267
EB-321	6263	403986	3938251	180	0.50	140	180
EB-352	6299	405988	3934482	152	1.29		
EB-379	6206	401253	3934512	227	0.67	137	227
EB-392	6274	404853	3938331	220	1.73	160	200
EB-407	6364	405069	3941697	247	0.50		
EB-661	6483	407765	3939546	620	2.75	580	620
EB-666	6418	407135	3939493	450	2.77	430	450

B. Bi-annual April / October monitoring network 2015-2016

Site ID	Elevation (ft)	UTM easting NAD83	UTM northing NAD83	Well depth (ft)	MP height (ft)	Screen top (ft)	Screen bottom (ft)	Measurement status
EB-019	6143	400304	3935932	80	1.00	50	80	April/October
EB-132	6179	400609	3936794	135	-6.20	60	90	April/October
EB-220	6259	403153	3938661	161	0.60	125	161	Continous
EB-223	6165	399840	3938918	100	0.00	40	95	April/October
EB-305	6127	400377	3937211	75	2.00	20	75	Continous
EB-306	6091	399537	3937647	43	1.80			Continous
EB-315	6114	400028	3937110		-6.00			No access
EB-332	6096	399720	3935678	160	0.45	80	140	April/October
EB-334	6144	401921	3937456	140	1.50	60	120	April/October
EB-339	6259	403035	3938347	200	2.00	160	200	Lost continuous instrument
EB-340	6126	399686	3936057	155	0.80			April/October
EB-373	6273	401729	3941231	300	0.60			Continous
EB-387	6242	403690	3937134	115	1.24			April/October
EB-388	6224	403442	3937136	91	1.43			April/October
EB-389	6241	403458	3936959	121	1.98			April/October
EB-691	6117	400249	3937717	180	1.75			Continous
EB-695	6250	403641	3936964	125	1.89			April/October
EB-696	6226	403679	3937857	117	2.51			April/October
LC-009	6082	399771	3936914	180	0.50			April/October
LC-010	6102	399811	3937131	180	0.90	160	180	April/October
LC-025	6084	400000	3936280	18	-0.35			Continous
LC-026	6085	399995	3936316	8	-0.50			Continous
LC-036	6112	400055	3938426		-6.10			April/October

Table 2. Manual water level measurements collected for this project. Records of water level measurements prior to 2016 are available upon request, and or are also available in Johnson et al. (2016). Depth to water is ft below land surface.

Site ID	2015		2016	
	Date measured	Depth to water	Date measured	Depth to water
EB-001	4/14/15	48.03	--	--
EB-019	4/14/15	44.46	4/5/16	44.36
EB-132	4/14/15	68.3	4/6/16	68.47
EB-220	--	--	4/5/16	132.84
EB-223	4/14/15	45.42	4/5/16	45.28
EB-305	4/13/15	22.78	4/5/16	22.69
EB-306	--	--	4/5/16	18.78
EB-308	4/16/15	52.22	--	--
EB-309	4/16/15	104.76	--	--
EB-310	4/16/15	37.49	--	--
EB-315	4/14/15	20.47	--	--
EB-321	4/13/15	132.17	--	--
EB-332	4/14/15	8.83	4/5/16	8.63
EB-334	4/13/15	39.65	4/5/16	39.57
EB-339	4/14/15	137.72	4/5/16	137.66
EB-340	4/14/15	52.41	4/5/16	52.24
EB-352	4/13/15	141.58	--	--
EB-373	--	--	4/5/16	116.26
EB-379	4/13/15	103.15		
EB-387	4/13/15	98.95	4/5/16	98.69
EB-388	4/13/15	88.99	4/5/16	88.82
EB-389	4/13/15	108.39	4/5/16	108.17
EB-392	4/13/15	125.26	--	--
EB-407	4/14/15	214.98	--	--
EB-661	4/13/15	292.07	--	--
EB-666	4/13/15	237.62	--	--
EB-691	--	--	4/5/16	23.27
EB-695	4/13/15	110.54	4/5/16	110.28
EB-696	4/13/15	91.55	4/5/16	91.48
LC-009	4/14/15	15.79	4/6/16	15.74
LC-010	4/14/15	16.1	4/6/16	15.85
LC-025	--	--	4/5/16	7.9
LC-026	--	--	4/5/16	6.85
LC-036	4/14/15	11.24	4/6/16	10.94

Site ID	2015		2016	
	Date measured	Depth to water	Date measured	Depth to water
EB-019	10/5/15	45.16	10/5/16	45.28
EB-132	10/5/15	68.88	10/5/16	69.03
EB-220	10/5/15	133.02	10/5/16	133.07
EB-223	10/5/15	45.95	10/6/16	45.95
EB-305	10/5/15	23.51	10/5/16	23.6
EB-306	10/5/15	19.53	10/6/16	19.51
EB-315	10/5/15	21.38	--	--
EB-332	10/5/15	9.5	10/5/16	9.65
EB-334	10/5/15	40.02	10/5/16	40.11
EB-336	10/9/15	209	--	--
EB-337	10/9/15	201.23	--	--
EB-338	10/9/15	187.01	--	--
EB-339	10/5/15	137.81	--	--
EB-339	10/5/16	137.87	--	--
EB-340	10/5/15	53.22	10/5/16	53.3
EB-373	10/5/15	116.45	10/5/16	116.26
EB-387	10/5/15	98.87	10/5/16	98.94
EB-388	10/5/15	89.02	10/5/16	89.05
EB-389	10/5/15	108.35	10/5/16	108.39
EB-691	10/5/15	24.14	10/5/16	24.33
EB-695	10/5/15	110.46	10/5/16	110.49
EB-696	10/5/15	91.64	10/5/16	91.68
LC-009	10/5/15	17.77	10/6/16	18.26
LC-010	10/5/15	16.56	10/6/16	16.87
LC-025	10/5/15	12.18	10/5/16	12.56
LC-026	10/5/15	7.42	10/5/16	7.47
LC-036	10/5/15	11.66	10/6/16	11.45

Table 3. Point locations with continuous data recorders, and date of installation. See Figure 2 for locations.

Site ID	Date installed	Notes
EB-220	10/4/11	Running
EB-305	6/4/15	Lost from well
EB-306	10/6/11	Running
EB-339	6/1/15	Running
EB-373	10/2/15	Running
EB-691	5/27/14	Running
LC-025	10/4/11	Running
LC-026	10/4/11	Running

III. RESULTS

Long Term (10 year) Observations

In order to detect long term changes, we selected wells with water level measurements between 2004–2007. We compared water levels from similar seasons (where possible) in 2004–2007 to the most recent measurements available, in either 2015 or 2016. Of the twenty-four wells with measurements in both time periods, twelve had declines in water levels, while the other twelve had small increases in groundwater level (Table 4). The map in Figure 3 shows the locations of wells and their amount of water level change using symbol size/color. One well (EB-373) in the north region of the study area, at the airport, has a 10+ foot rise in water level.

Table 4. Water levels from period between 2004-2007, compared with water levels collected from these same wells in 2015 or 2016.

Site ID	First date measured	First DTW (ft bgs)	Second date measured	Second DTW (ft bgs)	Change in depth (ft)
EB-001	01/09/2004	48.41	04/14/2015	48.03	0.38
EB-019	03/23/2004	43.34	04/05/2016	44.36	-1.02
EB-132	02/10/2004	67.56	04/06/2016	68.47	-0.91
EB-220	04/16/2004	131.49	04/05/2016	132.84	-1.35
EB-223	02/11/2004	46.31	04/05/2016	45.28	1.03
EB-306	02/10/2004	21.2	04/05/2016	18.78	2.42
EB-308	02/11/2004	52.54	04/16/2015	52.22	0.32
EB-309	02/11/2004	106.5	04/16/2015	104.76	1.74
EB-310	02/11/2004	38.07	04/16/2015	37.49	0.58
EB-315	02/10/2004	19.91	04/14/2015	20.47	-0.56
EB-321	02/20/2004	132.89	04/13/2015	132.17	0.72
EB-332	02/27/2004	7.95	04/05/2016	8.63	-0.68
EB-334	02/27/2004	38.42	04/05/2016	39.57	-1.15
EB-340	04/29/2004	51.53	04/05/2016	52.24	-0.71
EB-352	07/14/2004	138.1	04/13/2015	141.58	-3.48
EB-373	06/18/2004	127.1	04/05/2016	116.26	10.84
EB-379	06/24/2004	101.77	04/13/2015	103.15	-1.38
EB-387	04/12/2007	99.71	04/05/2016	98.69	1.02
EB-388	04/12/2007	90.38	04/05/2016	88.82	1.56
EB-389	04/12/2007	109.92	04/05/2016	108.17	1.75
EB-392	07/15/2004	125.21	04/13/2015	125.26	-0.05
EB-407	03/23/2004	217.6	04/14/2015	214.98	2.62
EB-661	08/24/2006	291.45	04/13/2015	292.07	-0.62
EB-666	08/24/2006	231.53	04/13/2015	237.62	-6.09

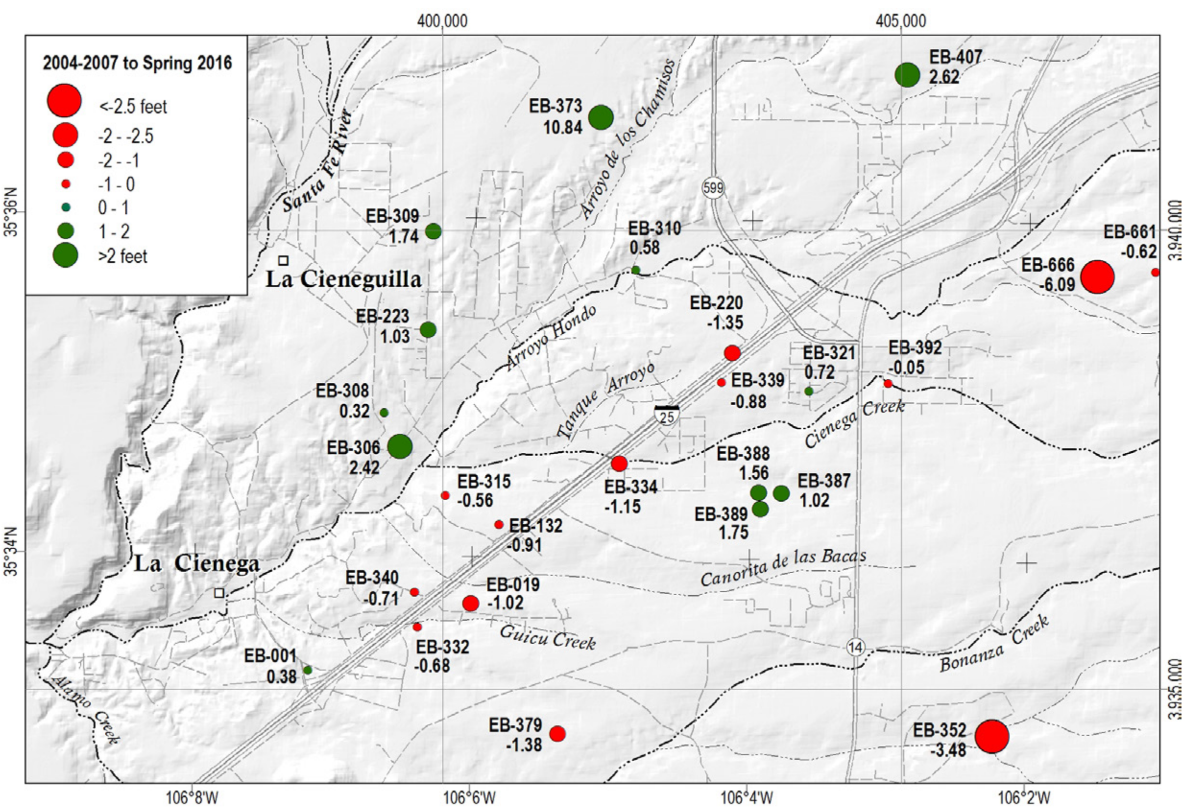


Figure 3. Map of groundwater level changes (in feet) comparing measurements taken in 2004-2007 to those taken in April 2016 at the same wells.

Seasonal Trends

Previous work in this region has highlighted seasonal groundwater level fluctuations, which are influenced by the effects of evapotranspiration. In the summer months, evapotranspiration is the effect of plants transpiring water, in addition to the evaporation of shallow groundwater or surface water into the atmosphere. This decreases groundwater levels in La Cienega during summer months. Groundwater level changes measured between April and October, during both 2015 and 2016, indicate a decrease in water level from April to October, which reflects evapotranspiration during summer months (Figure 4). In this region, April typically has a higher groundwater surface due to less groundwater use during winter months, whereas October represents the lower groundwater surface at the end of summer.

Table 5. Manual water levels from period between April-October 2016. ft bgs = feet below ground surface

Site ID	Spring date measured	Depth to water (ft bgs)	Fall date measured	Depth to water (ft bgs)	Change in depth (ft)
EB-019	4/5/16	44.36	10/5/16	45.28	-0.92
EB-132	4/6/16	68.47	10/5/16	69.03	-0.56
EB-220	4/5/16	132.84	10/5/16	133.07	-0.23
EB-223	4/5/16	45.28	10/6/16	45.95	-0.67
EB-305	4/5/16	22.69	10/5/16	23.6	-0.91
EB-306	4/5/16	18.78	10/6/16	19.51	-0.73
EB-332	4/5/16	8.63	10/5/16	9.65	-1.02
EB-334	4/5/16	39.57	10/5/16	40.11	-0.54
EB-340	4/5/16	52.24	10/5/16	53.3	-1.06
EB-373	4/5/16	116.26	10/5/16	116.26	0
EB-387	4/5/16	98.69	10/5/16	98.94	-0.25
EB-388	4/5/16	88.82	10/5/16	89.05	-0.23
EB-389	4/5/16	108.17	10/5/16	108.39	-0.22
EB-691	4/5/16	23.27	10/5/16	24.33	-1.06
EB-695	4/5/16	110.28	10/5/16	110.49	-0.21
EB-696	4/5/16	91.48	10/5/16	91.68	-0.20
LC-009	4/6/16	15.74	10/6/16	18.26	-2.52
LC-010	4/6/16	15.85	10/6/16	16.87	-1.02
LC-025	4/5/16	7.9	10/5/16	12.56	-4.66
LC-026	4/5/16	6.85	10/5/16	7.47	-0.62
LC-036	4/6/16	10.94	10/6/16	11.45	-0.51

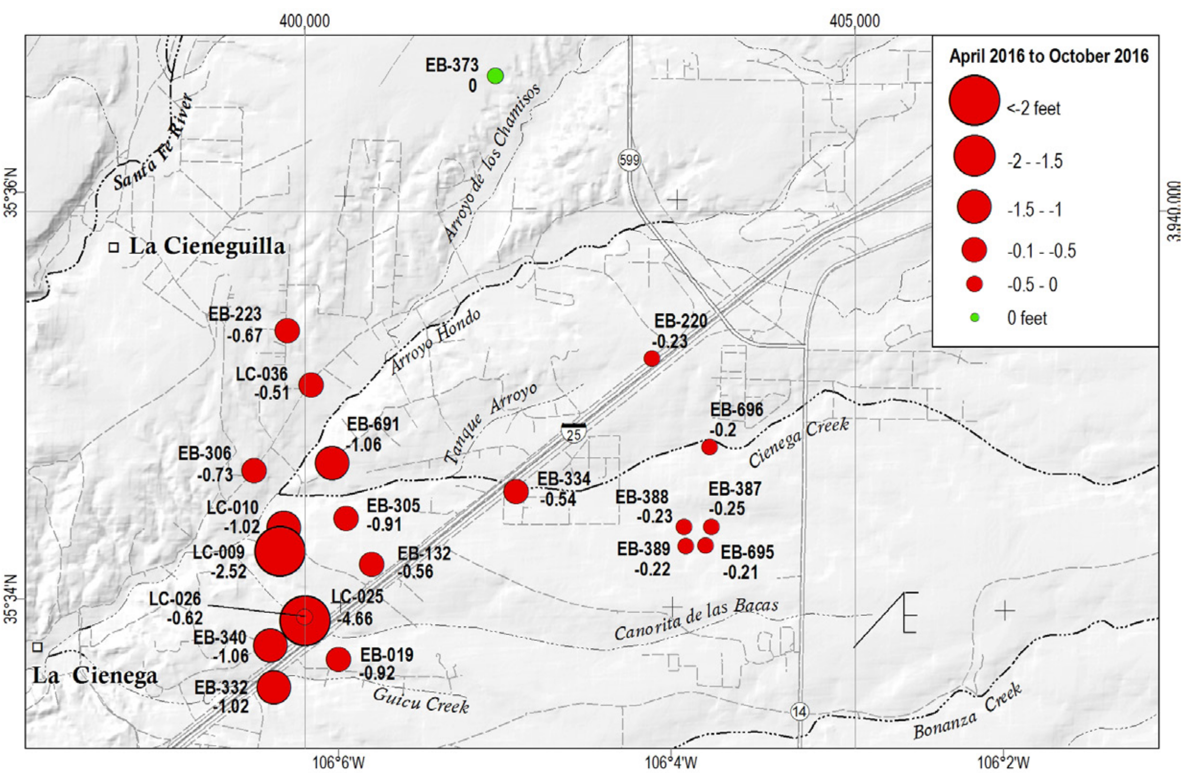


Figure 4. Groundwater level changes between seasonal high (April) and low (October) during 2016. This pattern of seasonal water level changes was also observed in previous work by Johnson et al. (2016) and is related to the shallow groundwater use by vegetation and evaporation (evapotranspiration).

Continuous Data Records

As noted in Table 3, there are eight locations with continuous data recorders monitoring groundwater level changes every 12 hours. These records are displayed in Figures 5–12. Locations of these wells are shown on Figure 1.

LC-026 is a shallow, 8 ft deep monitoring well, completed in the Ancha Formation (Figure 5). This well responds quickly to seasonal fluctuations in the shallow water table due to evapotranspiration by plants. The shift from summer to winter water levels is obvious, however, quite small, on the order of 0.5 feet. LC-025 is similar to LC-026 as a shallow monitoring well completed in the Ancha Formation, however it is approximately 18 ft deep (Figure 6). LC-025 also responds quickly to seasonal fluctuations in the shallow water table because of evapotranspiration. The winter months are apparent where the water levels return to approximately 8 ft below land surface. Once the growing period begins in late spring/early summer, the groundwater level drops as much as 4 feet, largely due to evapotranspiration changes. Interestingly, it was this slightly deeper well (LC-025) that saw a dramatic change in water level as result of a storm in September of 2013, while the LC-026 was largely unaffected.

EB-373 is 300 ft deep, located near the Santa Fe airport, and was completed in the Tesuque Formation (Figure 7). This is the only well with a consistent upward trend in the groundwater level. Wells in the area of the Santa Fe Airport were shut down in the mid-1990s, as the airport was connected to City of Santa Fe water supply. Previous water level measurements in this well from 2011 indicate that the water level was approximately 118 ft below land surface, suggesting that there is an overall rise in the groundwater level at this location. Preliminary interpretation of this trend in the water level is that it is rising as the region recovers from pumping in prior decades.

EB-306 is a 43 ft deep well that was completed in the Ancha Formation (Figure 8). This well has seasonal fluctuations in the shallow water table suspected to be related to evapotranspiration, but smaller changes relative to shallower wells like LC-025 (Figure 6). The winter months are apparent where the water levels return to approximately 19.2 ft below land surface. Once the growing period begins in late spring/early summer, the groundwater levels drop approximately 1 ft.

EB-220 is a well completed in the Ancha Formation, with a total depth of 161 ft (Figure 9). This well has a long record of decline since the

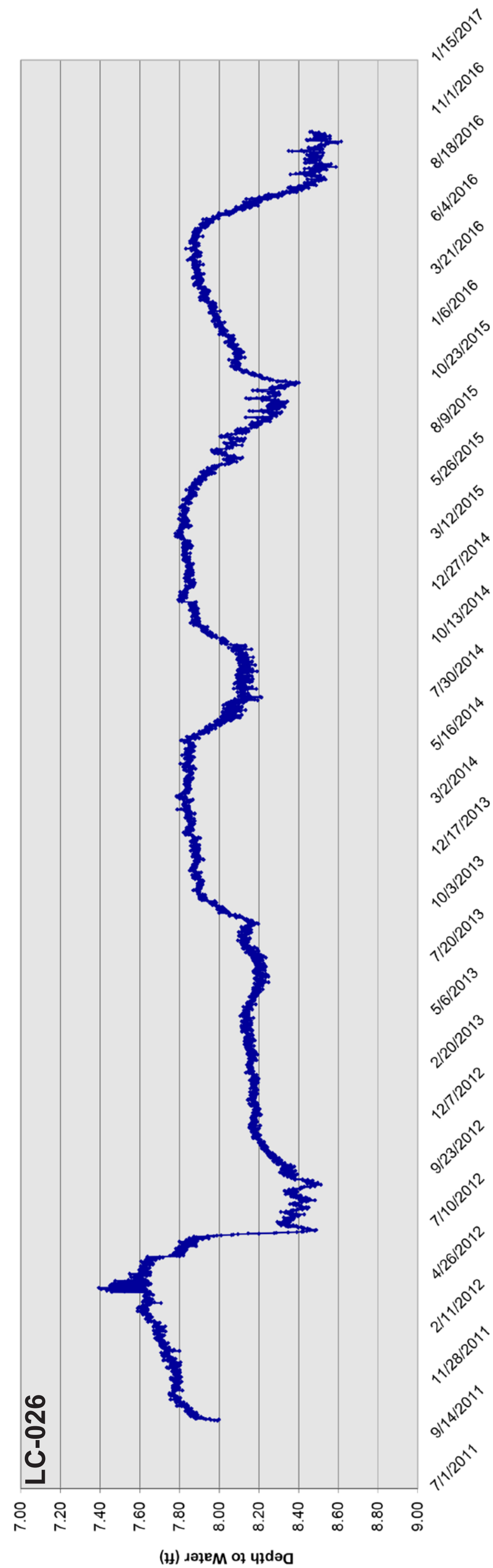


Figure 5. LC-026 is a shallow, 8 ft deep monitoring well, completed in the Ancha Formation.

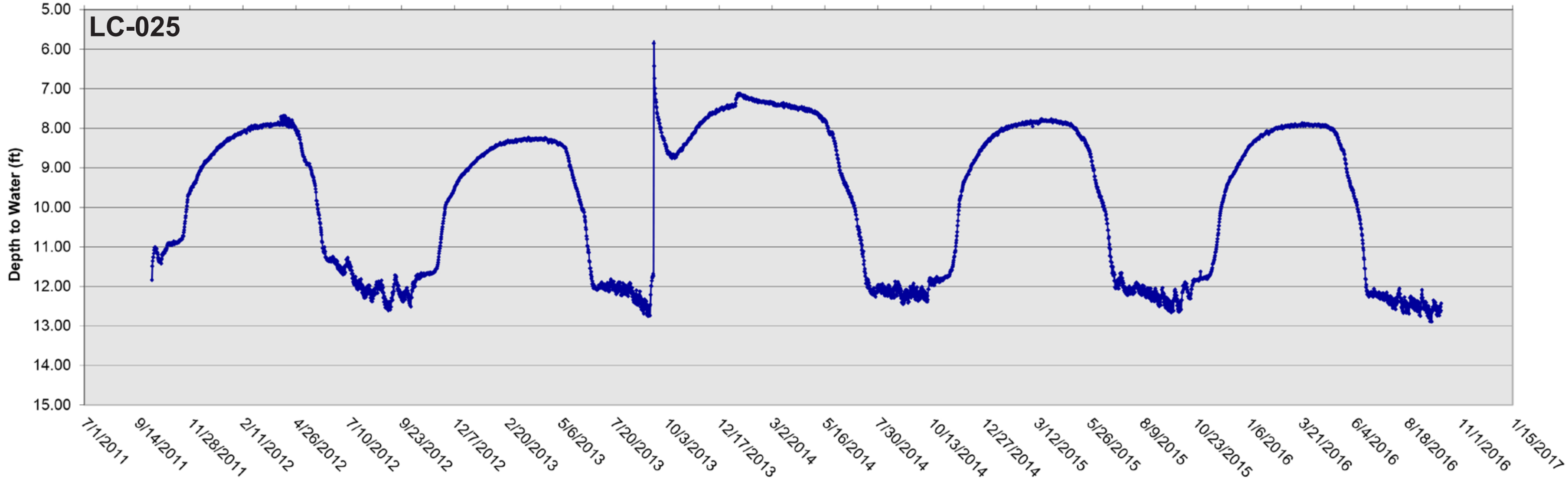


Figure 6. LC-025 is similar to LC-026 as a shallow monitoring well completed in the Ancha Formation, however it is approximately 18 ft deep.

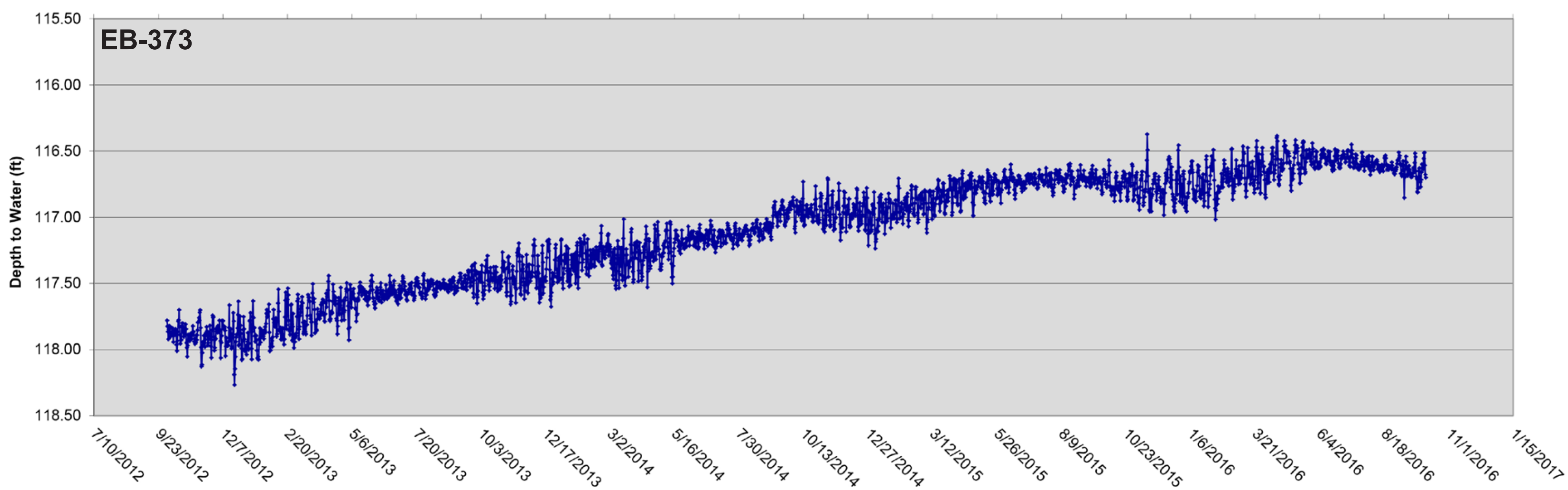


Figure 7. EB-373 is 300 ft deep, located near the Santa Fe airport, and completed in the Tesuque Formation.

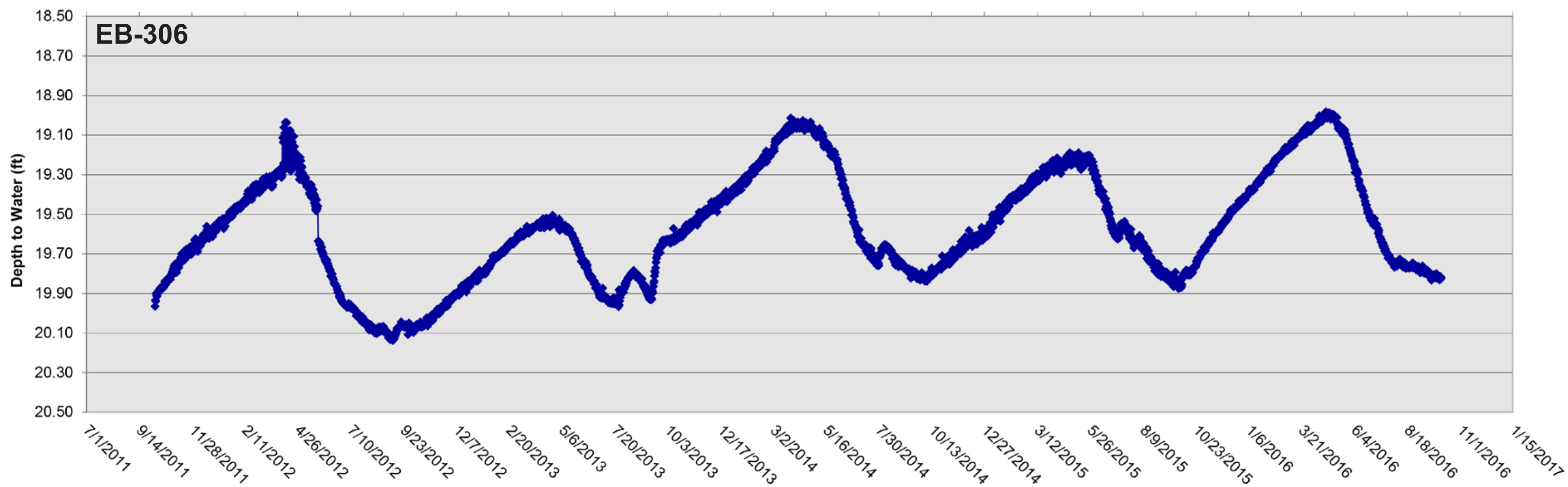


Figure 8. EB-306 is a 43 ft deep well completed in the Ancha Formation.

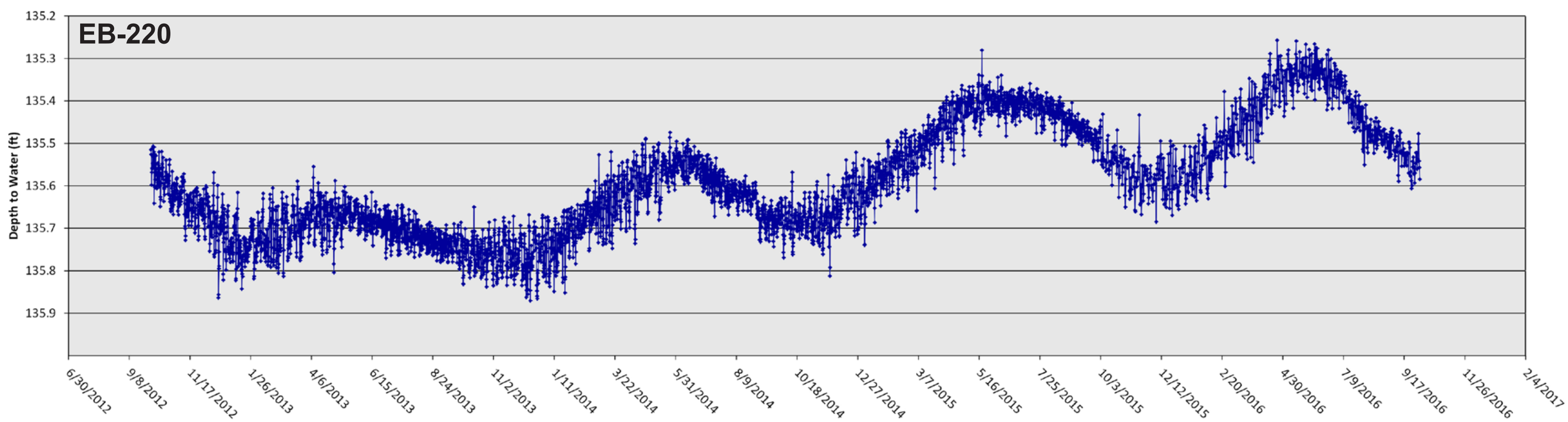


Figure 9. EB-220 is a well completed in the Ancha Formation, with a total depth of 161 ft.

1970s, which is discussed in more detail in Johnson et al. (2016). This well has had a muted water level response to seasonal changes since this data recorder was installed. Typically rising and falling approximately 0.25 ft. Recently the water level in the well appears to slowly be rising. The peak winter water level has been consistently 0.1 ft higher each year over the span of the record.

EB-691 is a pumping well completed in the Ancha Formation (Figure 10). Records of water levels measured when the well was pumping are shown by the long grey bars, with water levels reaching 36 ft below land surface. The overall trend in the static water level of this well, indicated by the blue line of points, shows that this well has a seasonal fluctuation of approximately 1 ft. Static water levels are close to 23 ft below land surface in the winter months, and approximately 24 feet below land surface during summer months.

EB-305 is a 75 ft deep well completed in the Ancha Formation, with a continuous monitoring record that started in 2015 as part of this project (Figure 11). The overall trend of water level change in this well reflects the seasonal decline common in other shallow Ancha Formation wells in the region; rising and falling 1 ft between summer and winter seasons. A previous water level measurement from this well in 2004 was 22.1 ft below land surface. This well has seasonal fluctuations, but there has been a long term decline in the overall water level at this well since it was measured in 2004.

EB-339 is a 200 ft deep well completed in the Ancha Formation (Figure 12). This well had a continuous data recorder installed in June 2015. Until recently the water level in the well had remained almost entirely unchanged, until the end of 2015 when water levels have very slowly increased by 0.8 ft. Previous water level measurements in this well in 1985 indicate that the water level was approximately 130 ft below land surface. So there was a decline of at least 7 ft since 1985, but the water level appears to be rising since then. Unfortunately, this continuous device has disappeared from the well, so moving forward, only manual measurements will be collected.

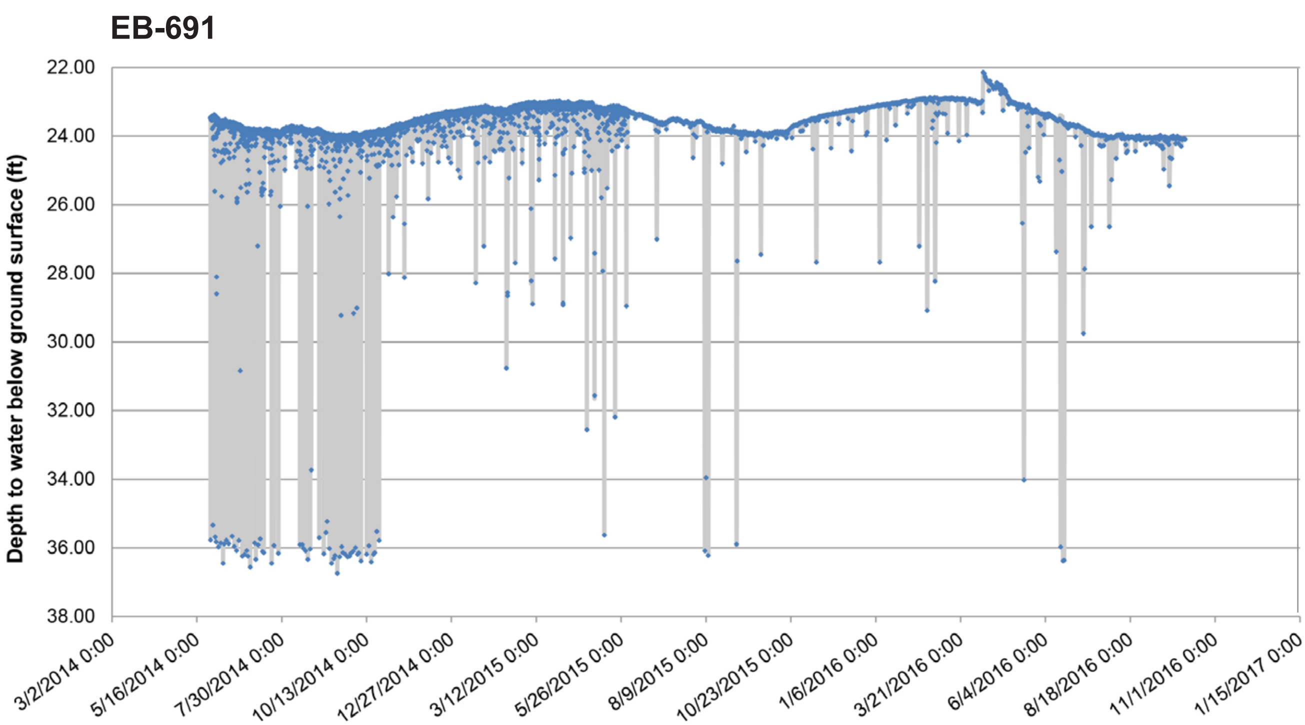


Figure 10. EB-691 is a pumping well completed in the Ancha Formation. Records of water levels measured when the well was pumping is shown by the long grey bars, with water levels reaching 36 ft below land surface. The overall trend in the static water level of this well, indicated by the blue line of points, shows that this well reflects a seasonal fluctuation of approximately 1 ft.

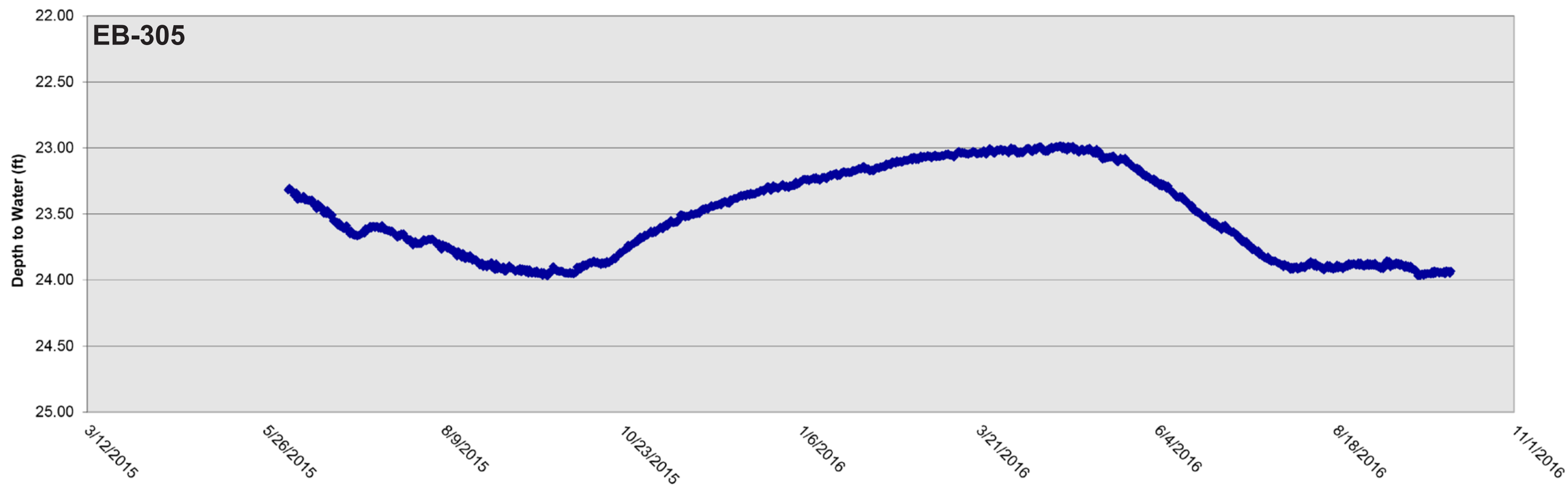


Figure 11. EB-305 is a 75 ft deep well completed in the Ancha Formation. Installed in June 2015.

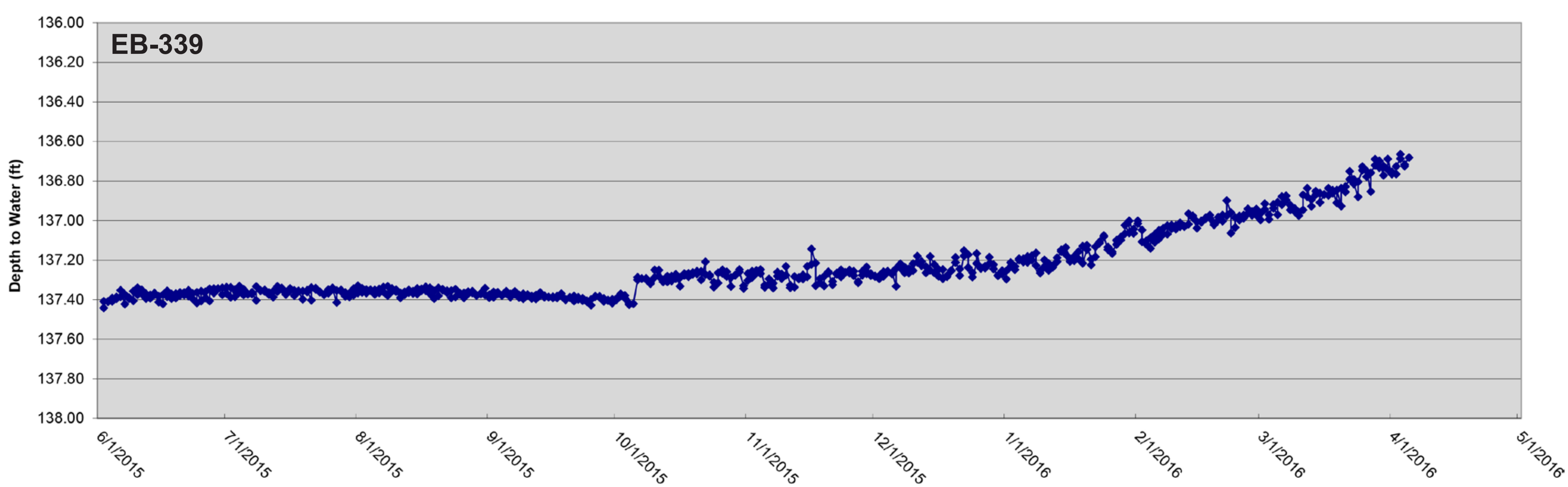


Figure 12. EB-339 is a well completed in the Ancha Formation, with a total depth of 200 ft. This is the last record on this well as the mounting device has disappeared from the well.

Discussion of other regional datasets

Within the hydrologically up-gradient proximity to La Cienega, the U.S. Geological Survey maintains continuous data recorders in several piezometer well sets. The shallowest of these wells can be compared to the sites monitored in La Cienega. The results in the figures below show that regional groundwater levels in the Tesuque Formation aquifer are largely declining, with small seasonal rises superimposed on the overall downward trend (Figures 13-17).

The "Jail Well Shallow piezometer" is 340 ft deep, completed in the bottom of the Ancha Formation and Tesuque Formation aquifers. This well has seen a groundwater decline from 2006 to 2014, with declines of approximately 1.5 feet over that time (Figure 14). For the past three years water levels have remained stagnant. The "Jail Well middle piezometer" is 640 ft deep, and was completed in the Tesuque Formation aquifer. The Jail middle piezometer also has consistent groundwater declines since 2006, approximately 3 feet over that time (Figure 15).

The "NMOSE County shallow piezometer" is 600 ft deep and was completed in the Tesuque Formation aquifer (Figure 16). It has a consistent groundwater decline since 2006, with declines of approximately 2 feet over that time.

The "NMOSE Fairgrounds shallow piezometer" is 540 ft deep, completed in the Tesuque Formation aquifer (Figure 17). This well shows consistent groundwater decline since 2006, with declines of approximately 3 feet over that time.

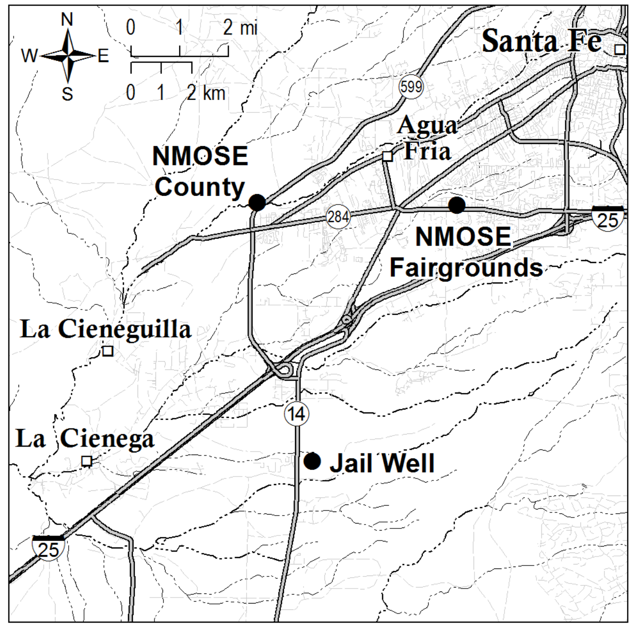


Figure 13. Map showing location of U.S. Geological Survey piezometer well sets. Wells discussed here include Jail Well, NMOSE County, and NMOSE Fairgrounds.

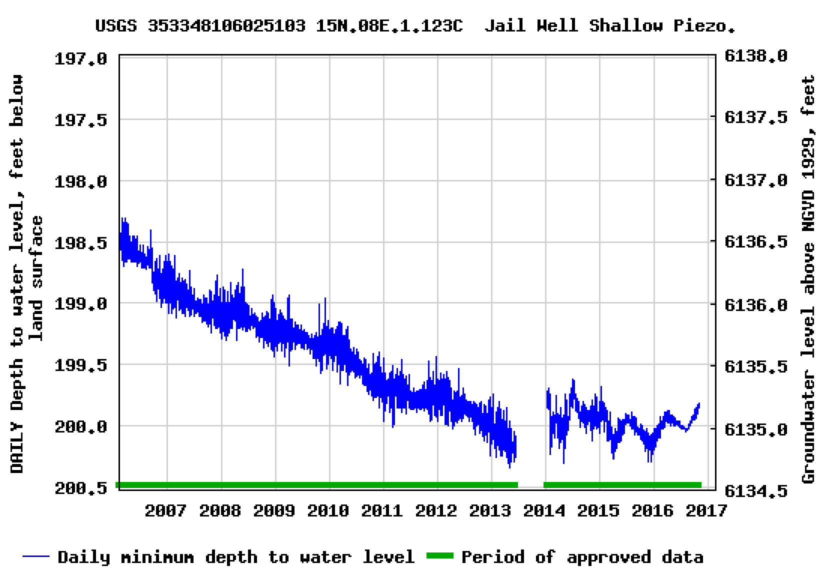


Figure 14. Jail Well Shallow piezometer. This well is 340 ft deep, completed in the bottom of the Ancha Formation and Tesuque Formation aquifers.

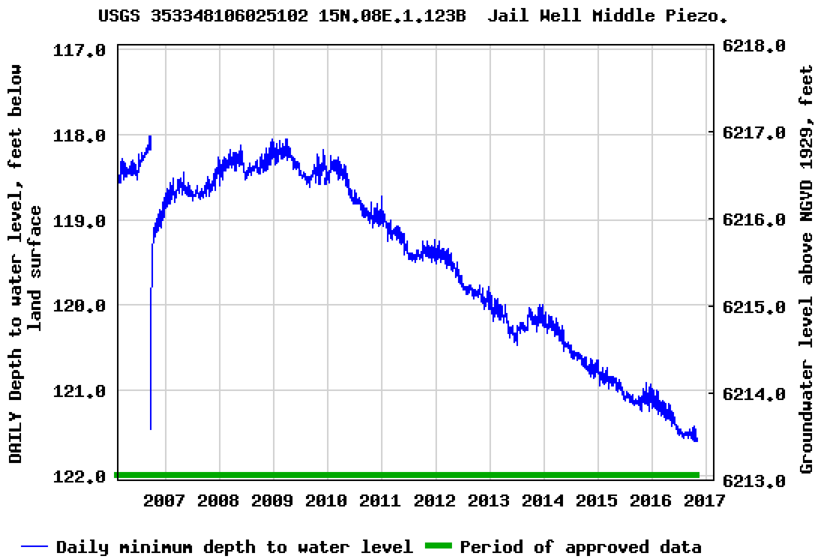


Figure 15. Jail Well middle piezometer. This well is 640 ft deep, completed in the Tesuque Formation aquifer.

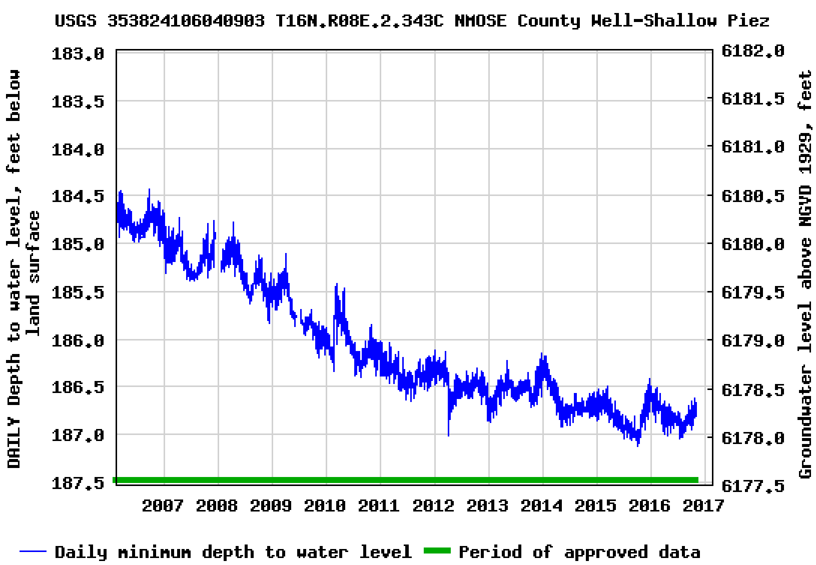


Figure 16. NMOSE County shallow piezometer. This well is 600 ft deep, completed in the Tesuque Formation aquifer.

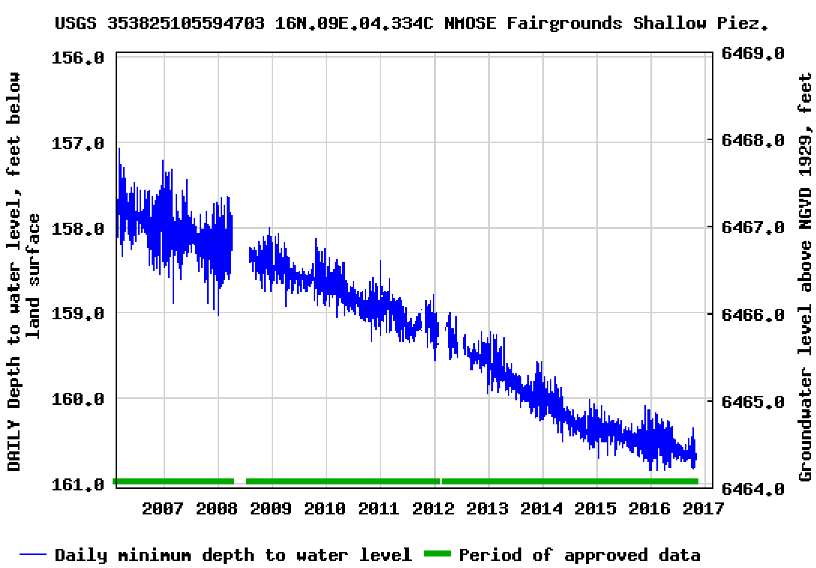


Figure 17. NMOSE Fairgrounds shallow piezometer. This well is 540 ft deep, completed in the Tesuque Formation aquifer.

IV. CONCLUSIONS

Results of this monitoring project in La Cienega highlight the importance of continued monitoring of groundwater levels in the region. The complexity of the groundwater system in and around La Cienega is indicated by the variety of results. As previous work (Johnson et al., 2016) and deeper groundwater monitoring sites in the Tesuque and Ancha aquifers (i.e. USGS piezometers) have shown, there has been an overall trend of declining groundwater levels around La Cienega. Many of these declining trends have been ongoing since the 1970s. Superimposed on this trend, we also observe shallow groundwater fluctuations on a daily and seasonal time scale. Interestingly, several of the shallow wells measured in this project approximately 10 years apart (2004–2007 to 2016) had small rises in groundwater levels. We also see small rises in the Tesuque Formation aquifer at the Santa Fe Airport well. This contradicts the NMOSE County Shallow Piezometer, which is 600 ft deep (300 ft deeper than EB-373 at the airport), also completed in the Tesuque Formation. At the NMOSE County Shallow Piezometer, the water level has dropped approximately 2.5 ft since 2007. Conservation measures to reduce the amount of groundwater discharge and pumping from the Ancha and Tesuque Formation aquifers is a potential method to reduce the observed rates of decline.

V. FUTURE WORK

This report completes the year 2 deliverable. Measurements are expected to continue through an additional year, with a deliverable summary of findings complete by April 2018.

This project only focuses on groundwater level monitoring data. Future work should include data compilation of regional changes to land or water use. Review of this information may help inform our interpretations of groundwater level changes in the wells being monitored, especially the rising water levels. It is important to measure future water levels at comparable or during the same seasons. Water levels in this region can fluctuate greatly on a seasonal timescale.

References

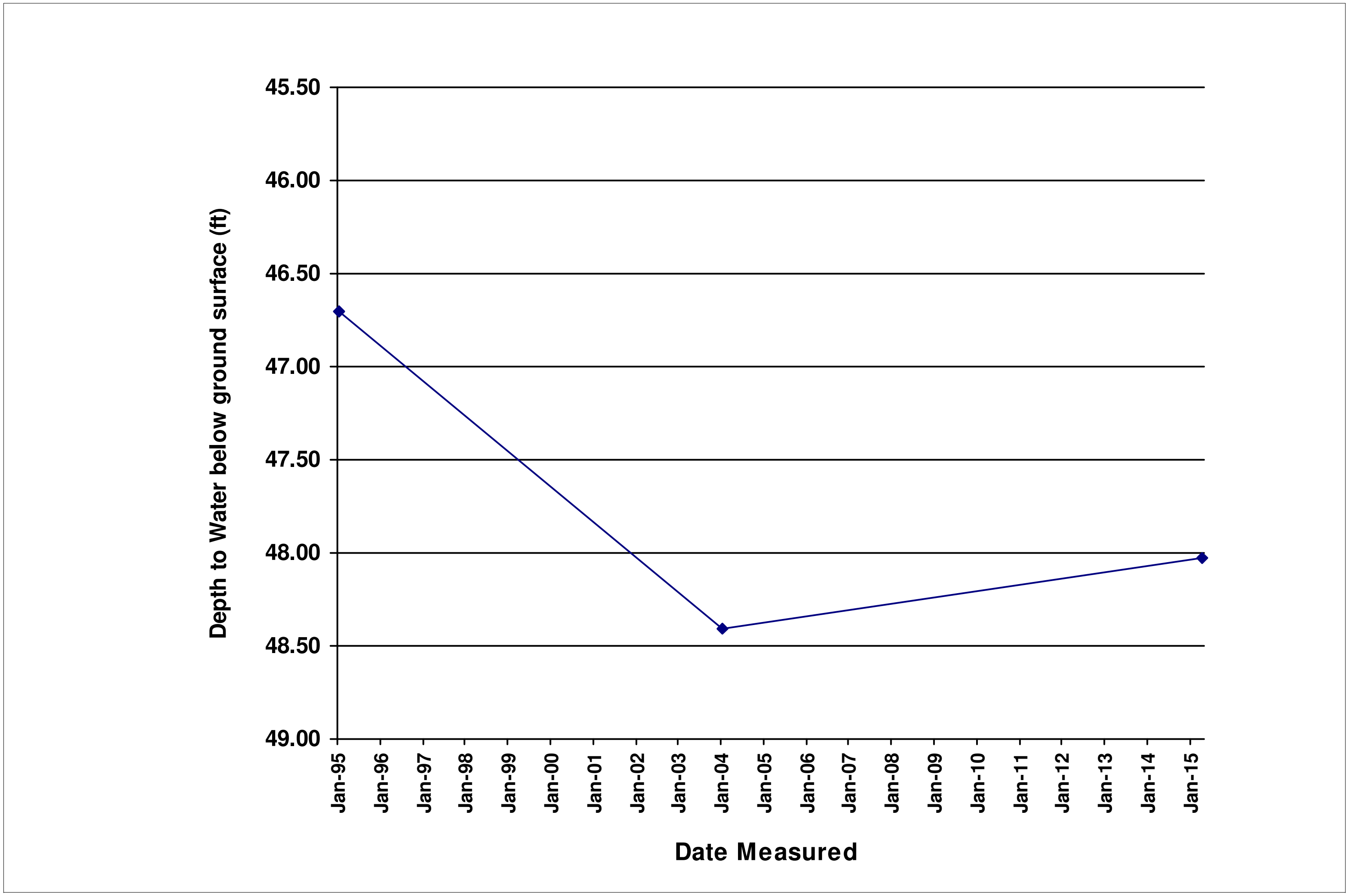
Johnson P.S.; Koning, D.J.; Timmons, S.S.; Felix, B., 2016, Geology and hydrology of groundwater-fed springs and wetlands at La Cienega, Santa Fe County, New Mexico, New Mexico Bureau of Geology Mineral Resources, Bulletin, v. 161, pp. 1-92.

APPENDIX I

Water measurement hydrographs from manually measured wells in network

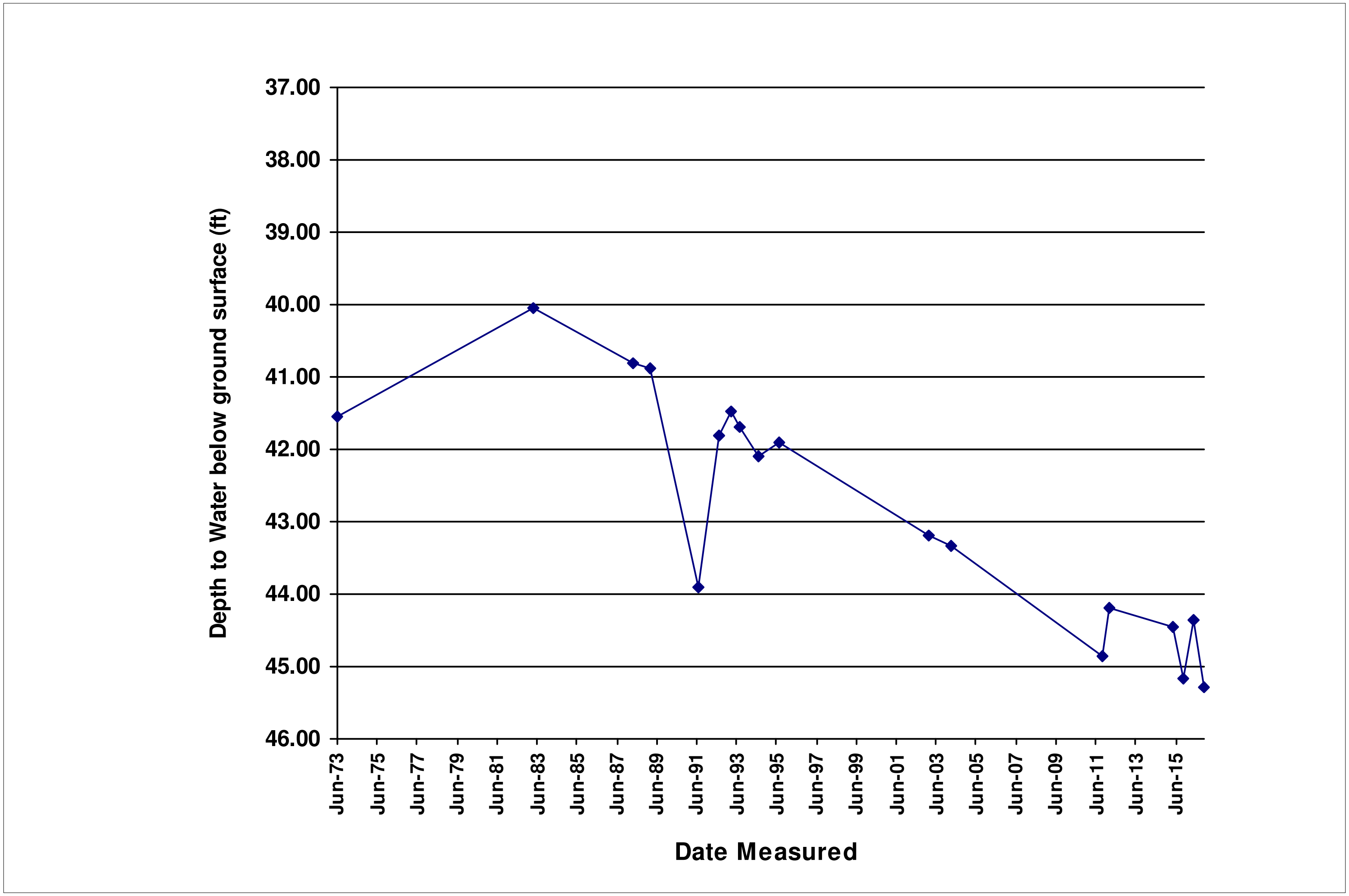
Water level Hydrograph

Point ID: EB-001



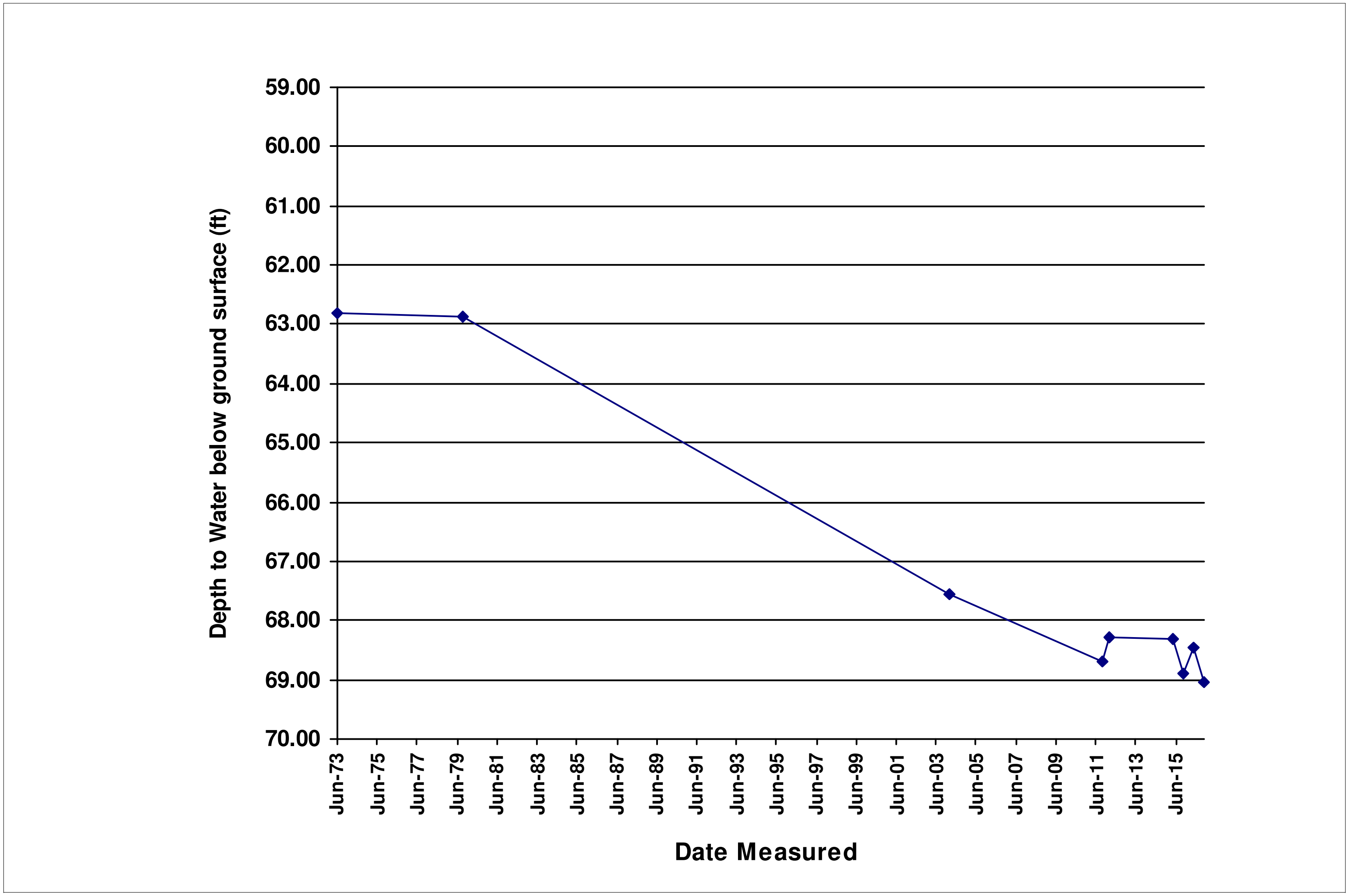
Water level Hydrograph

Point ID: EB-019



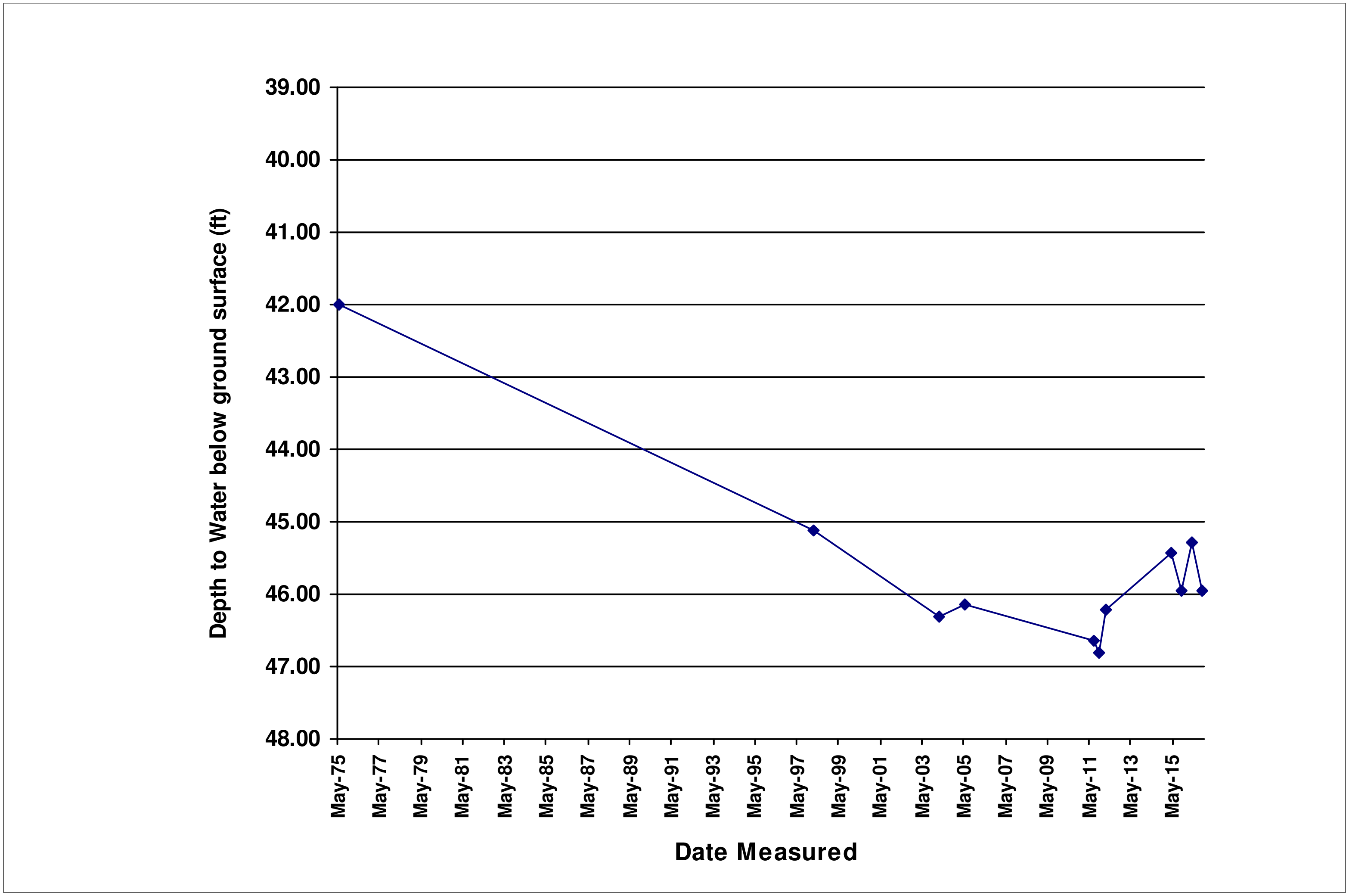
Water level Hydrograph

Point ID: EB-132



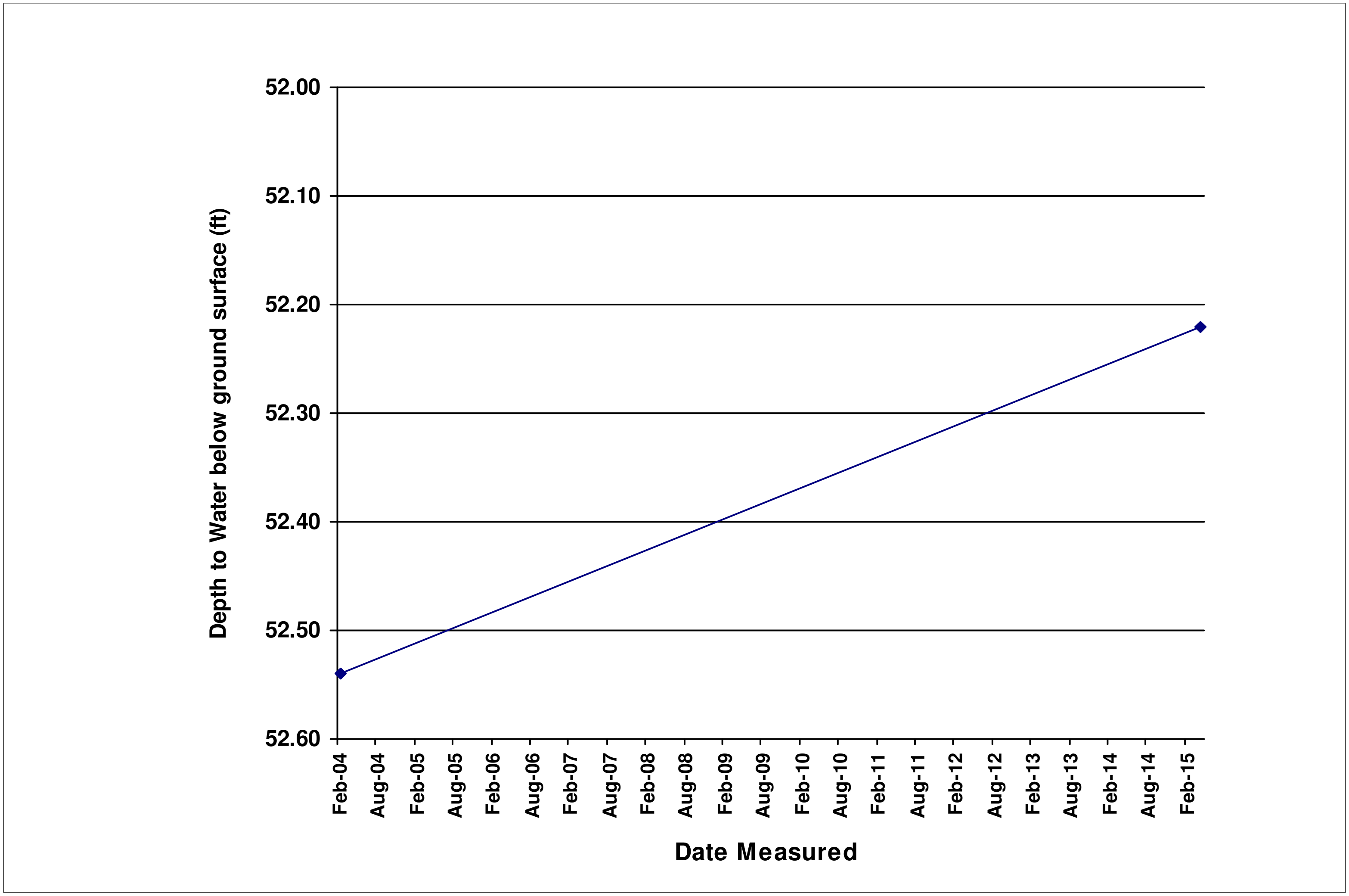
Water level Hydrograph

Point ID: EB-223



Water level Hydrograph

Point ID: **EB-308**



Water level Hydrograph

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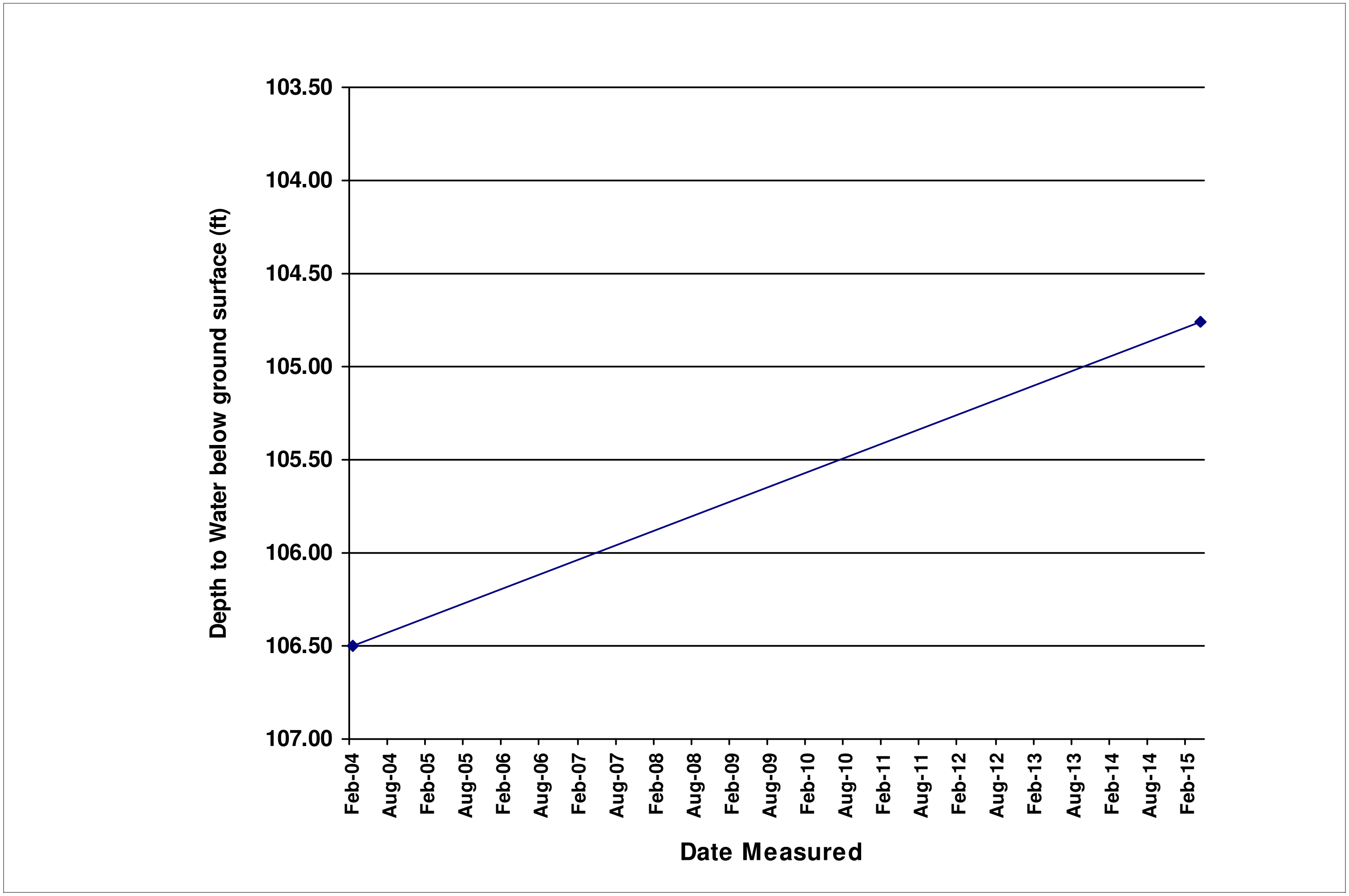
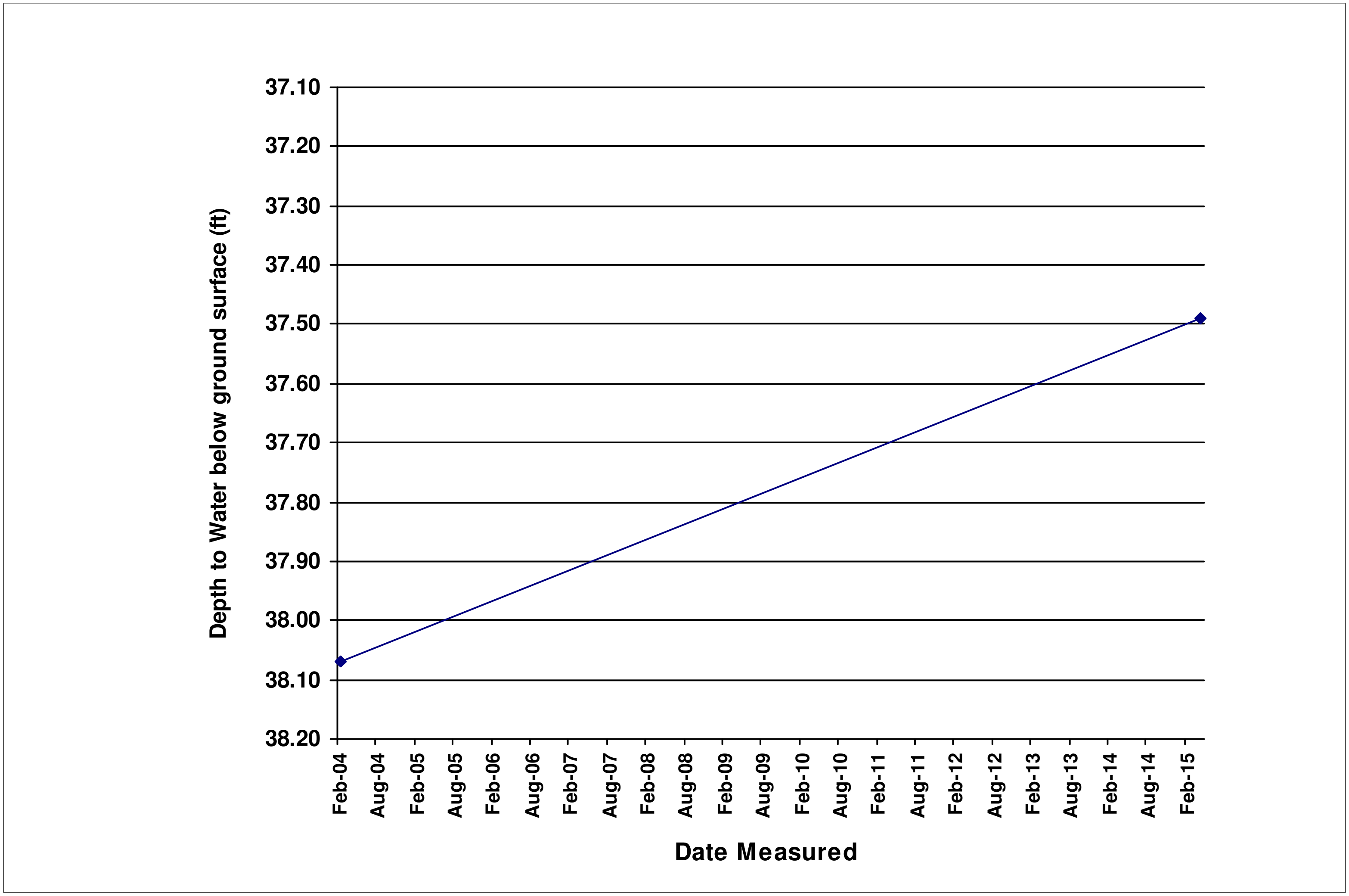


Water level Hydrograph

Point ID: **EB-310**



Water level Hydrograph

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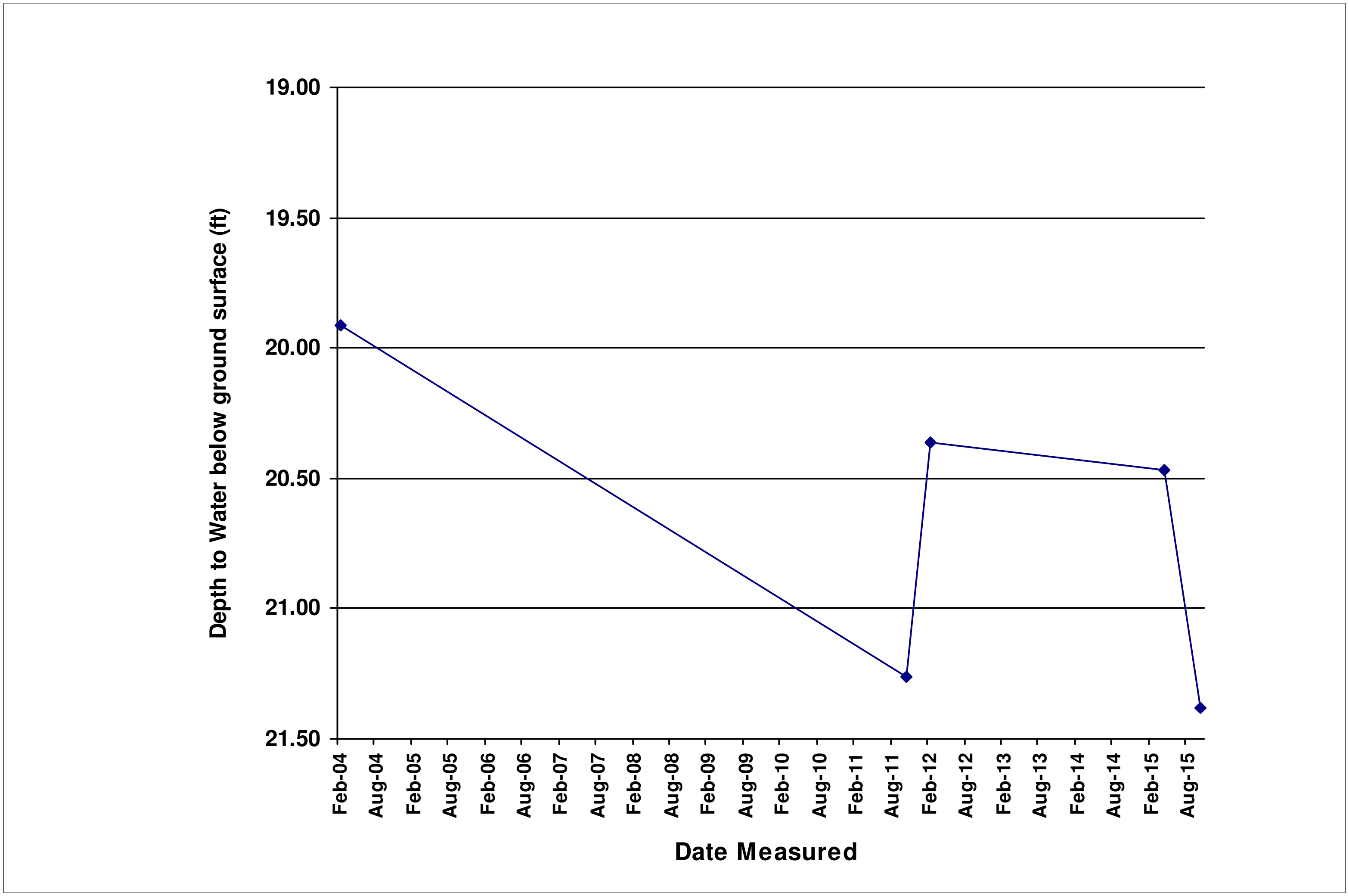
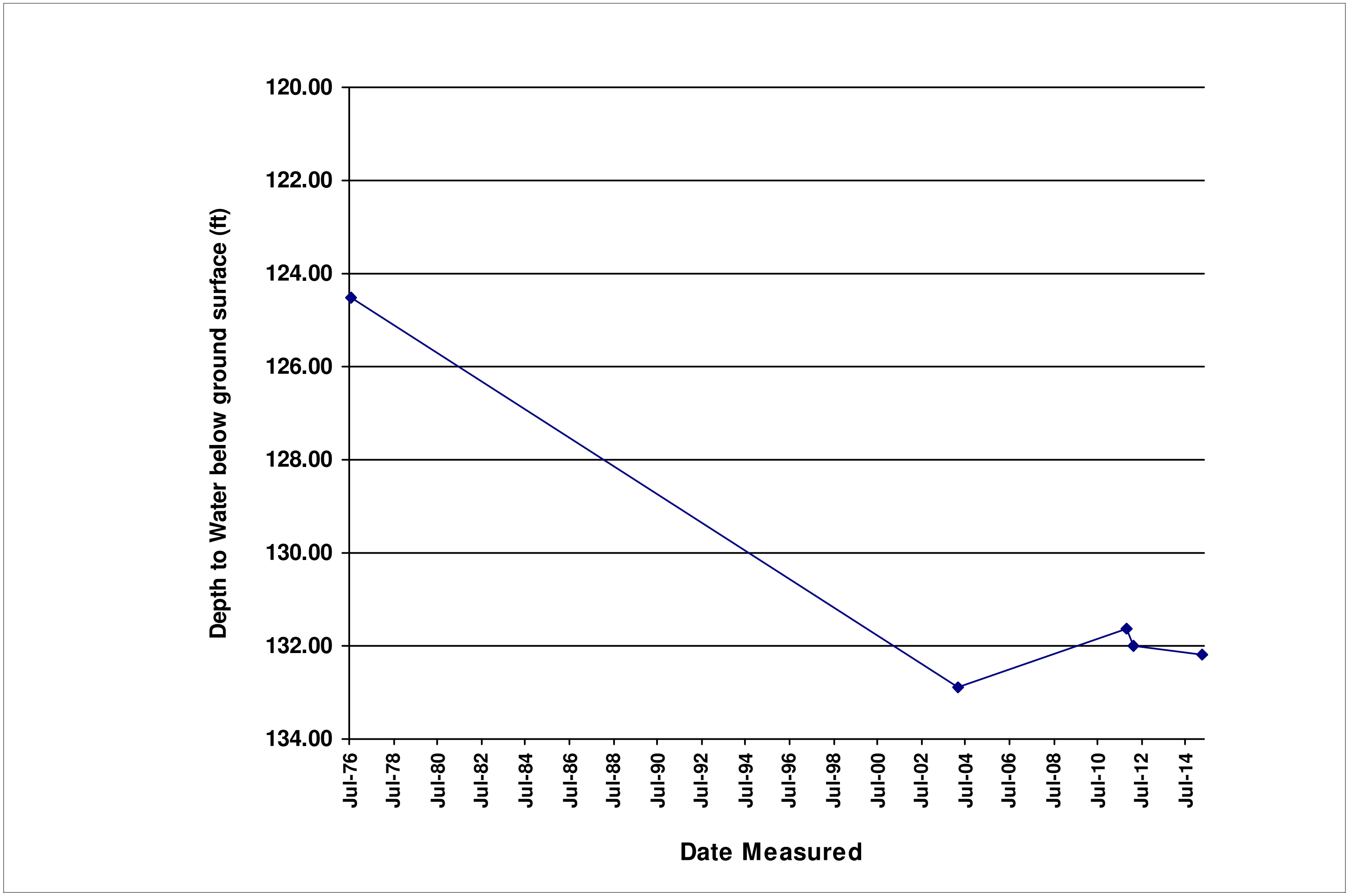


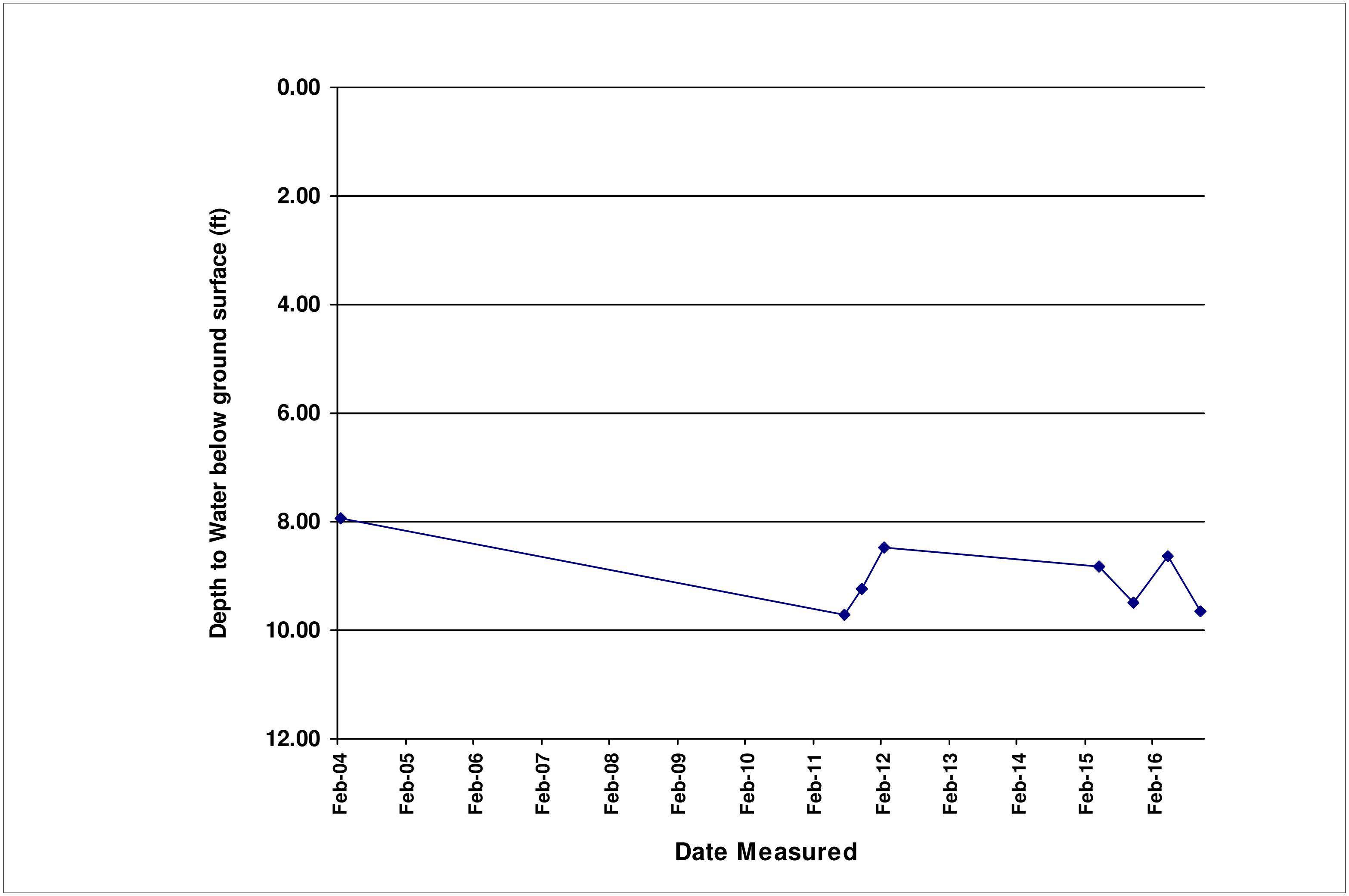
Water level Hydrograph

Point ID: **EB-321**



Water level Hydrograph

Point ID: **EB-332**



Water level Hydrograph

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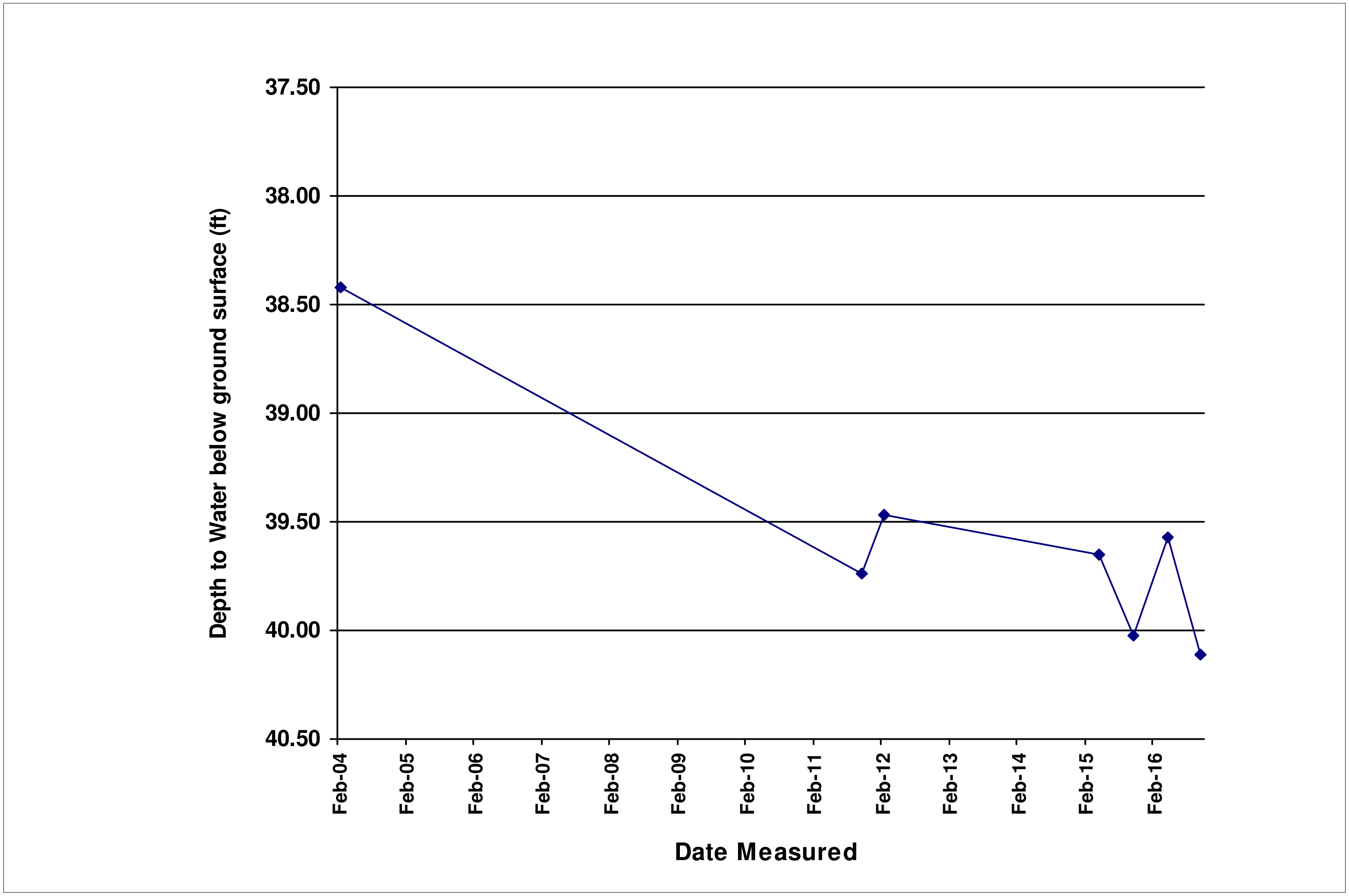
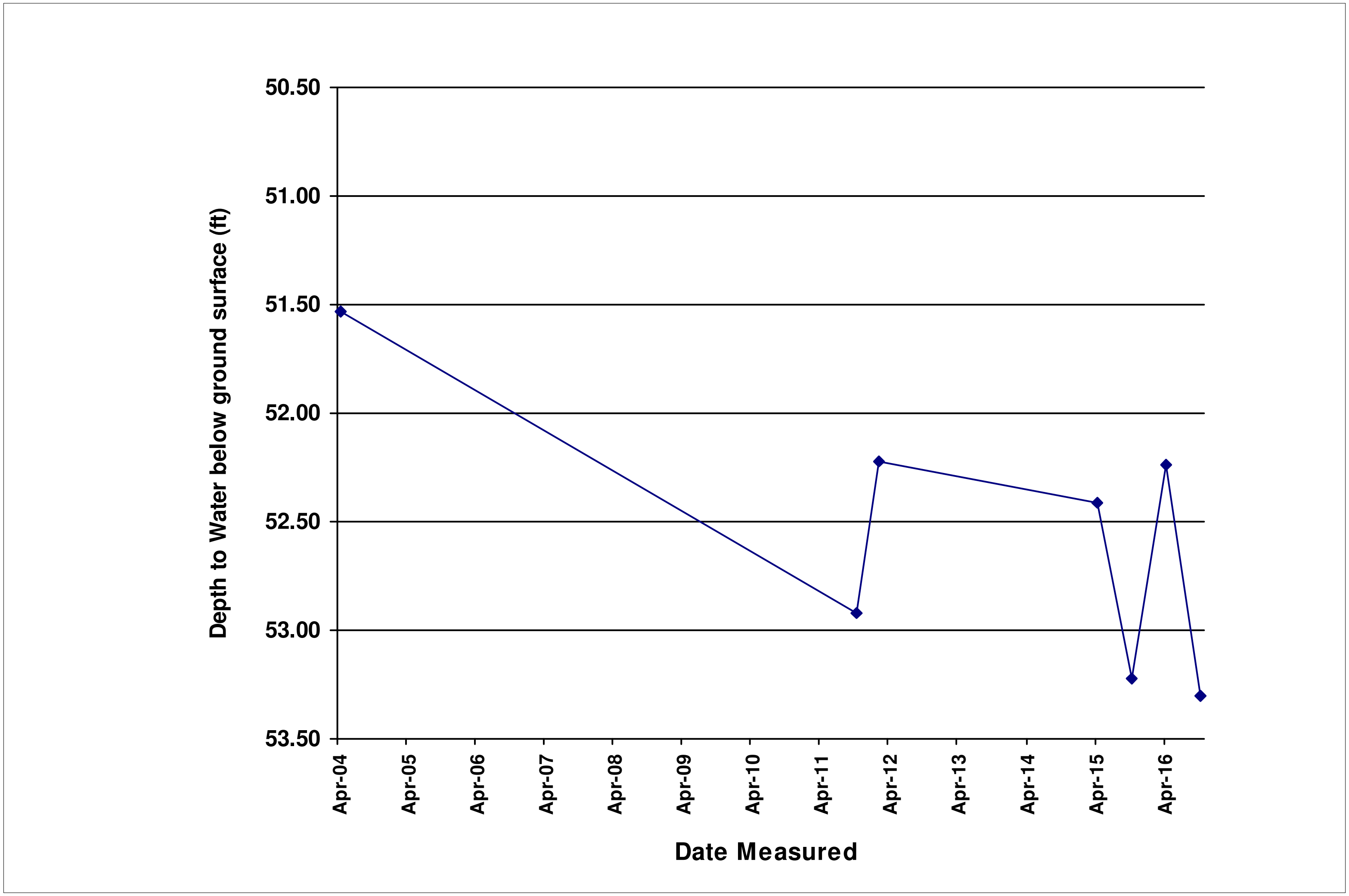


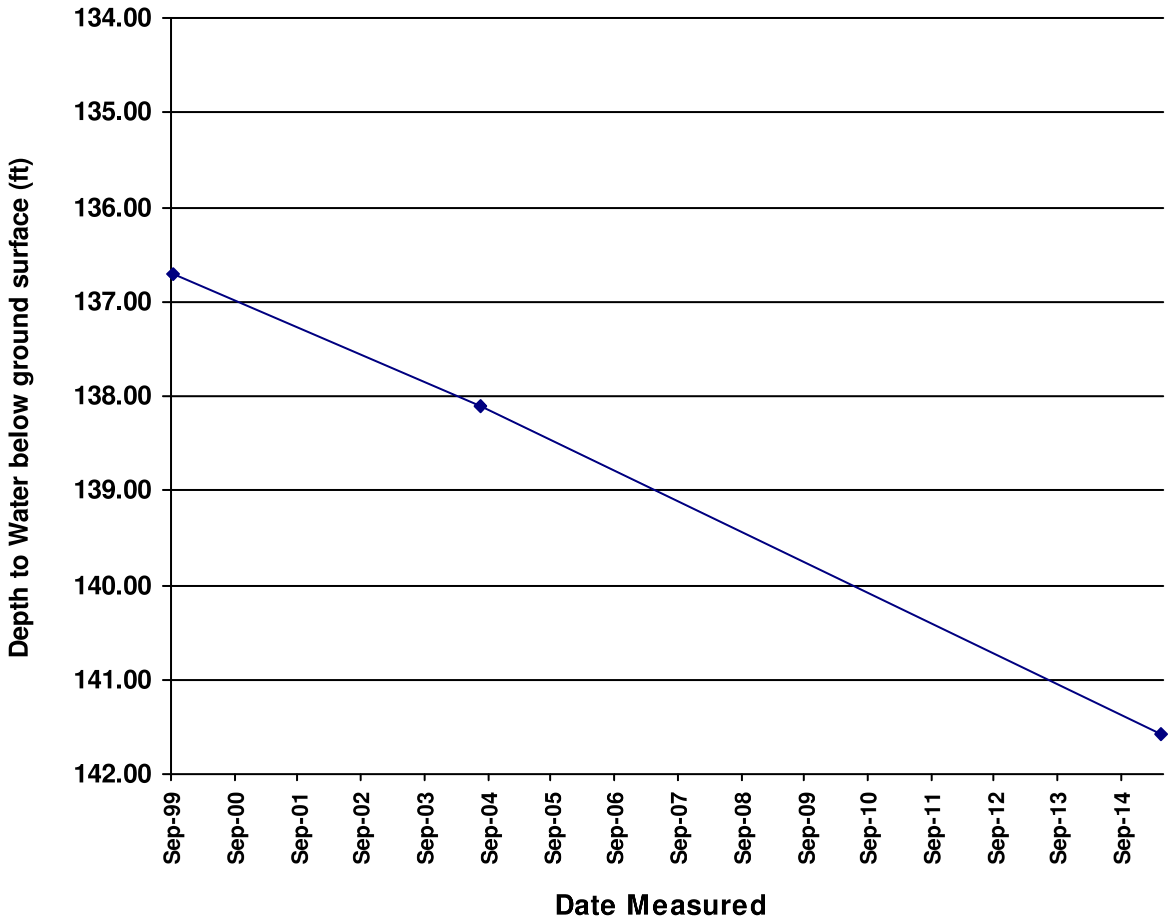
Water level Hydrograph

Point ID: **EB-340**



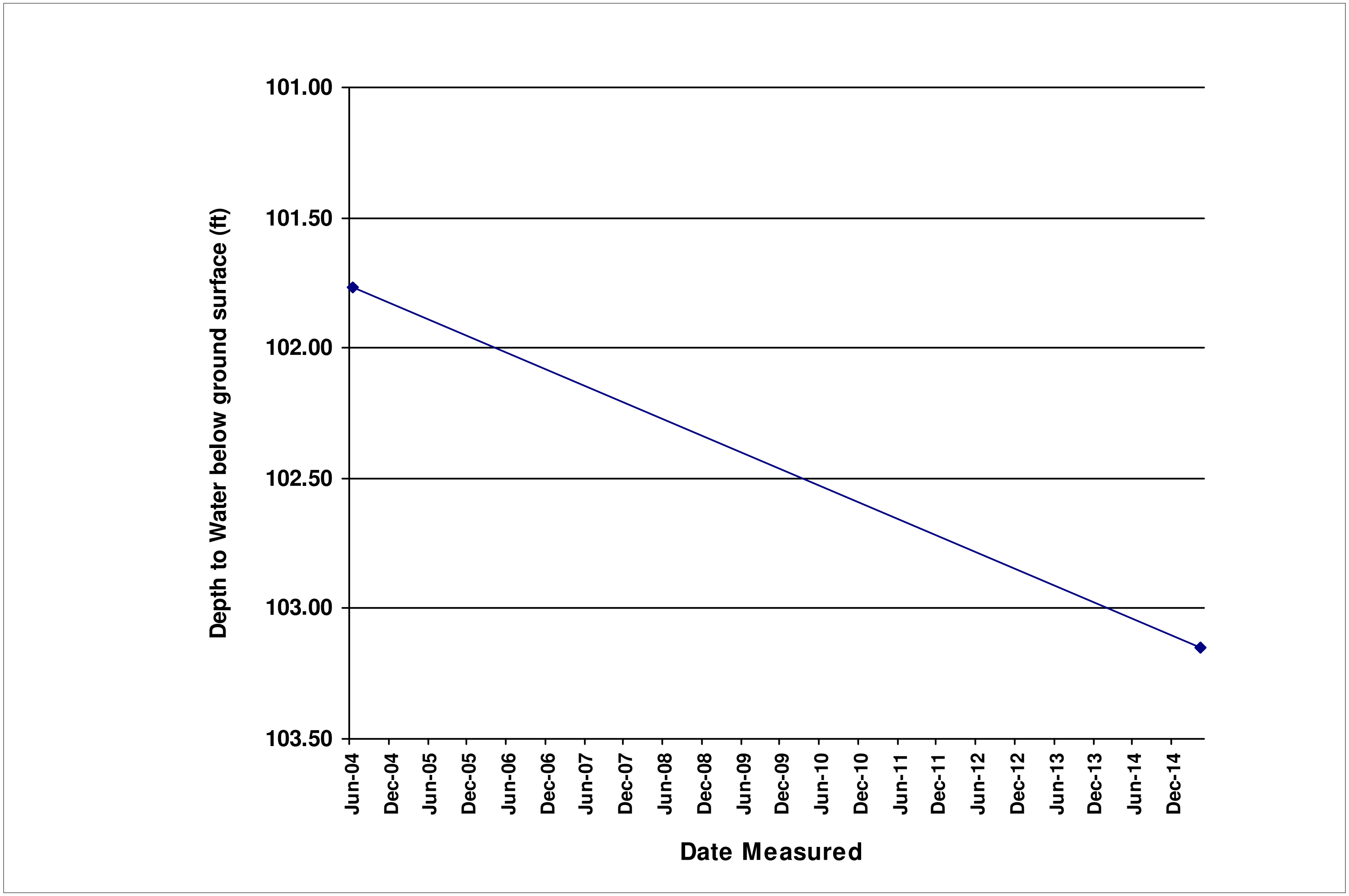
Water level Hydrograph

Point ID: **EB-352**



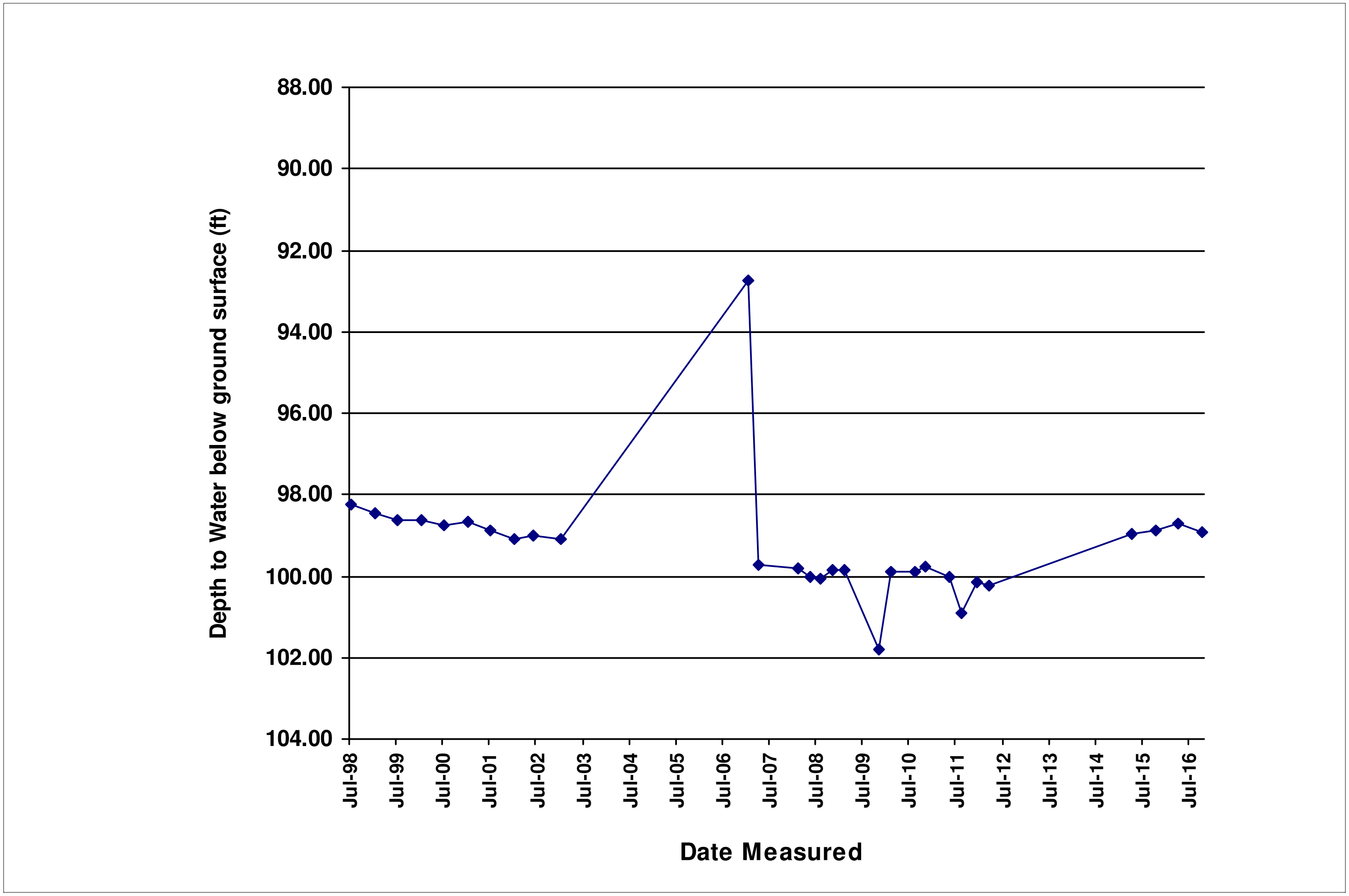
Water level Hydrograph

Point ID: EB-379



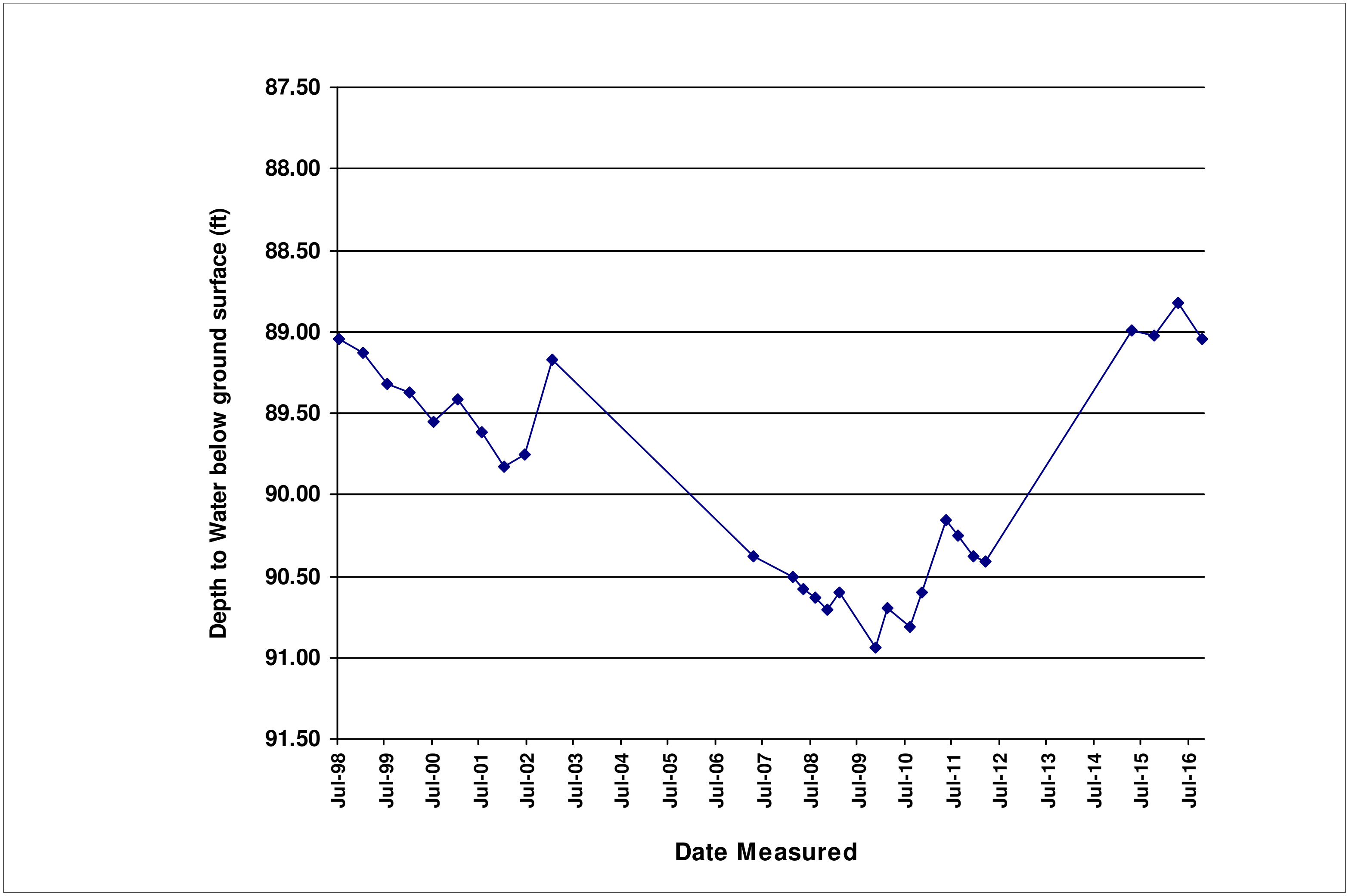
Water level Hydrograph

Point ID: **EB-387**



Water level Hydrograph

Point ID: EB-388



Water level Hydrograph

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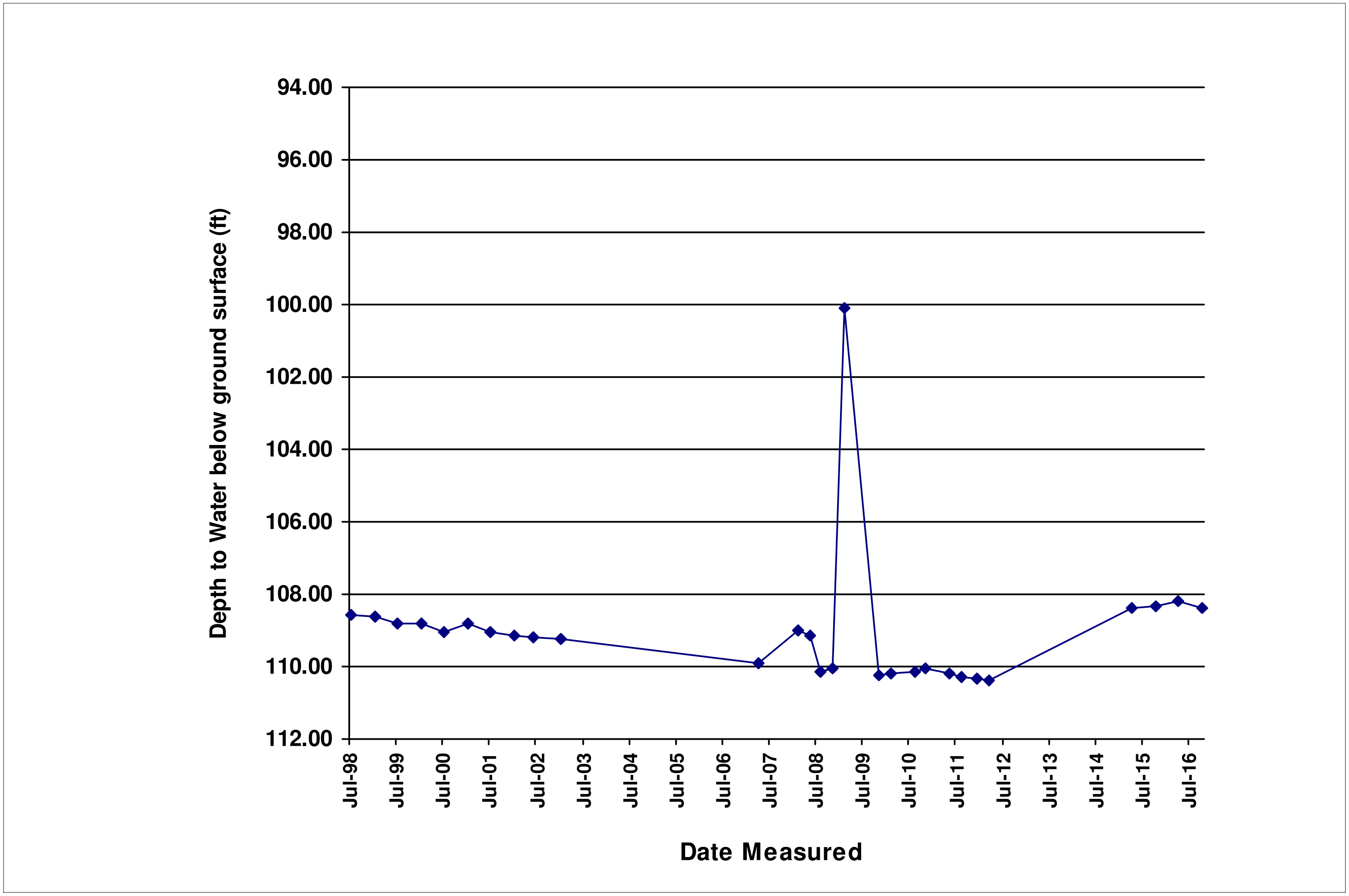
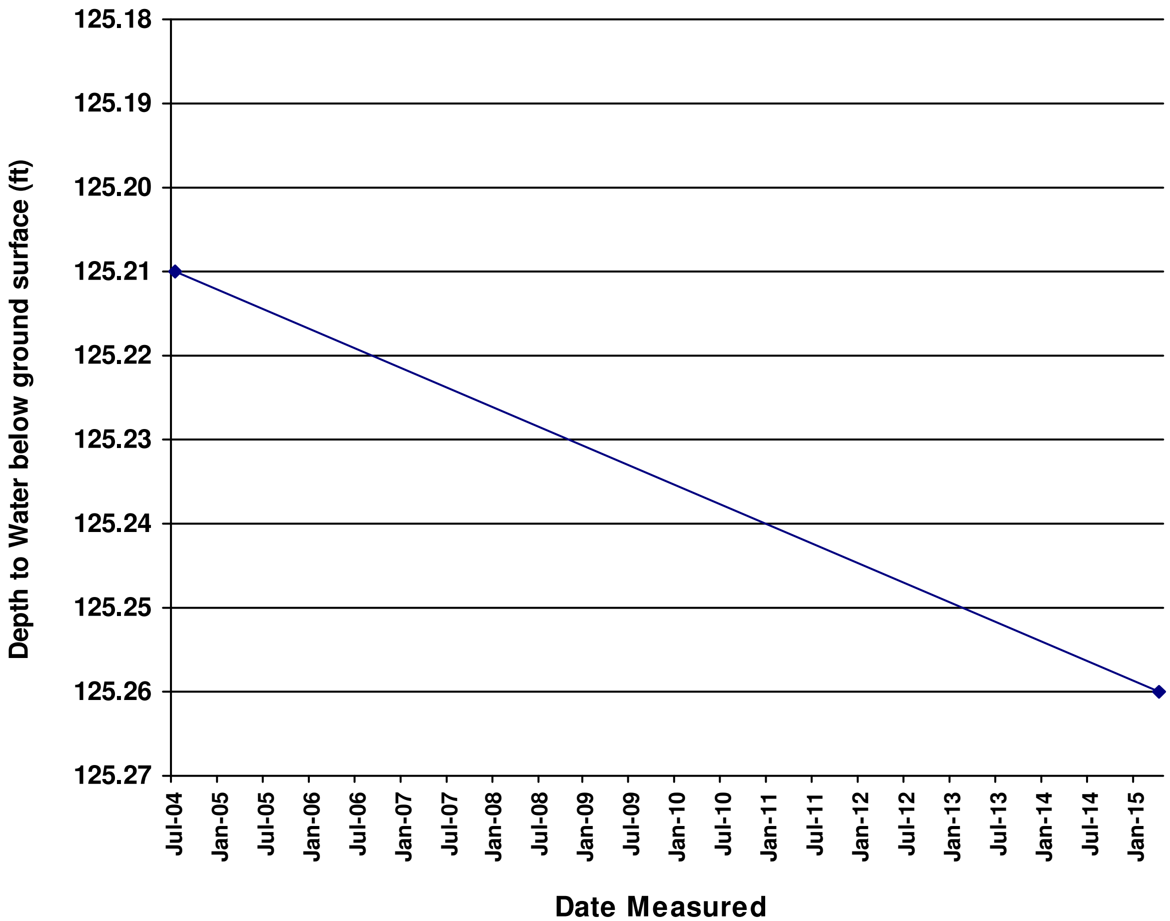


Water level Hydrograph

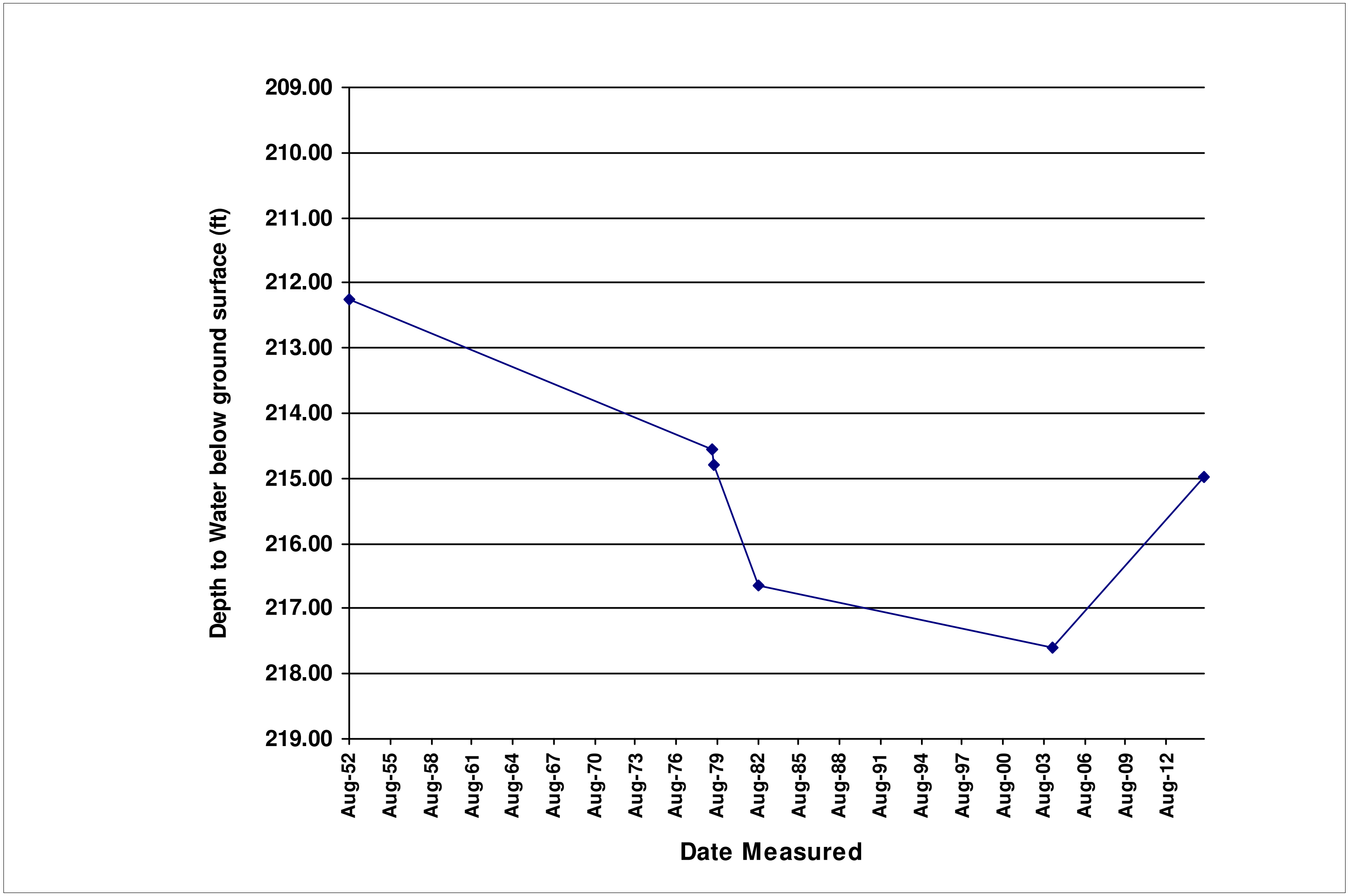
Point ID: EB-392



Water level Hydrograph

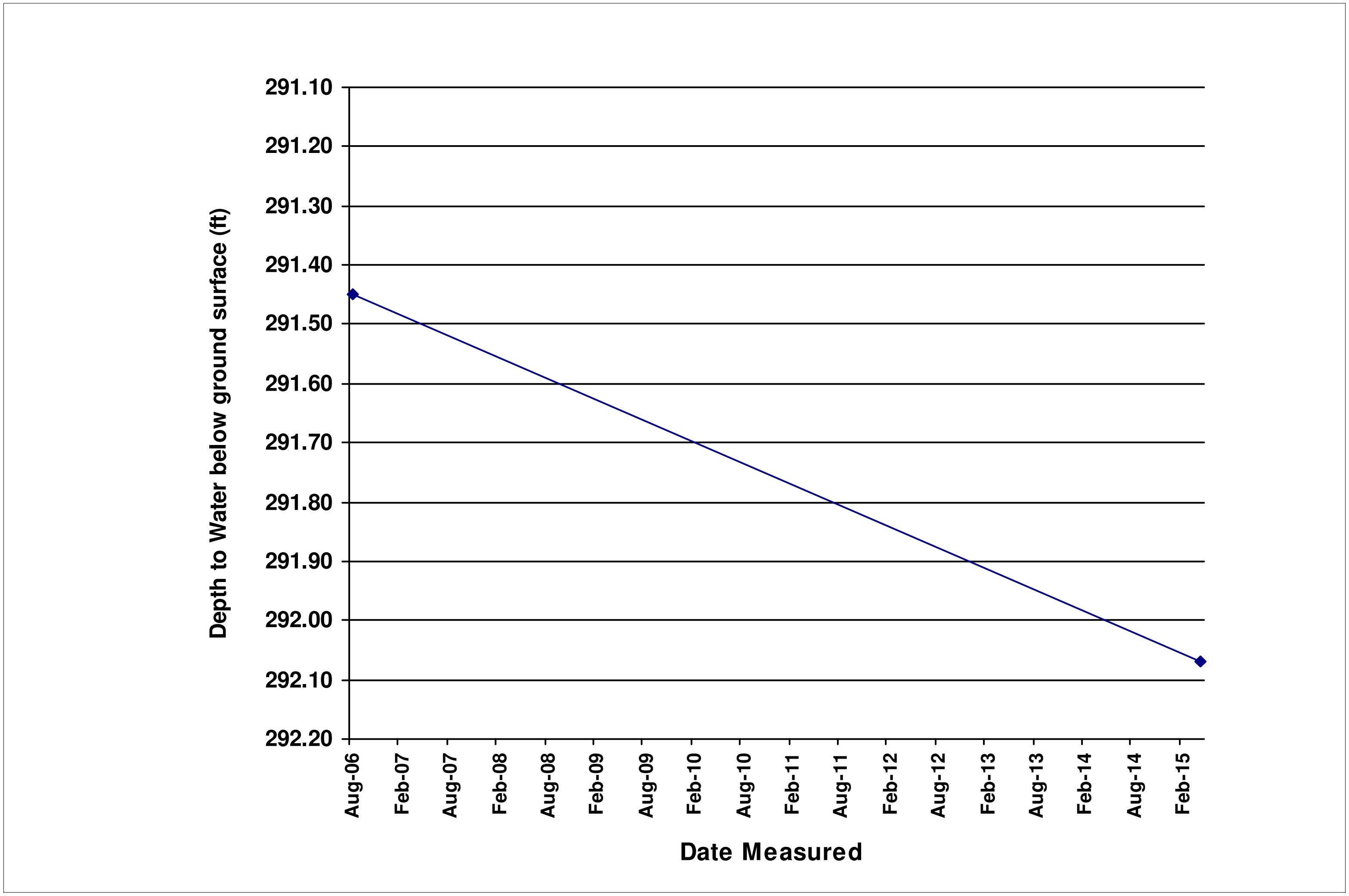
Point ID: EB-407

Site Name:



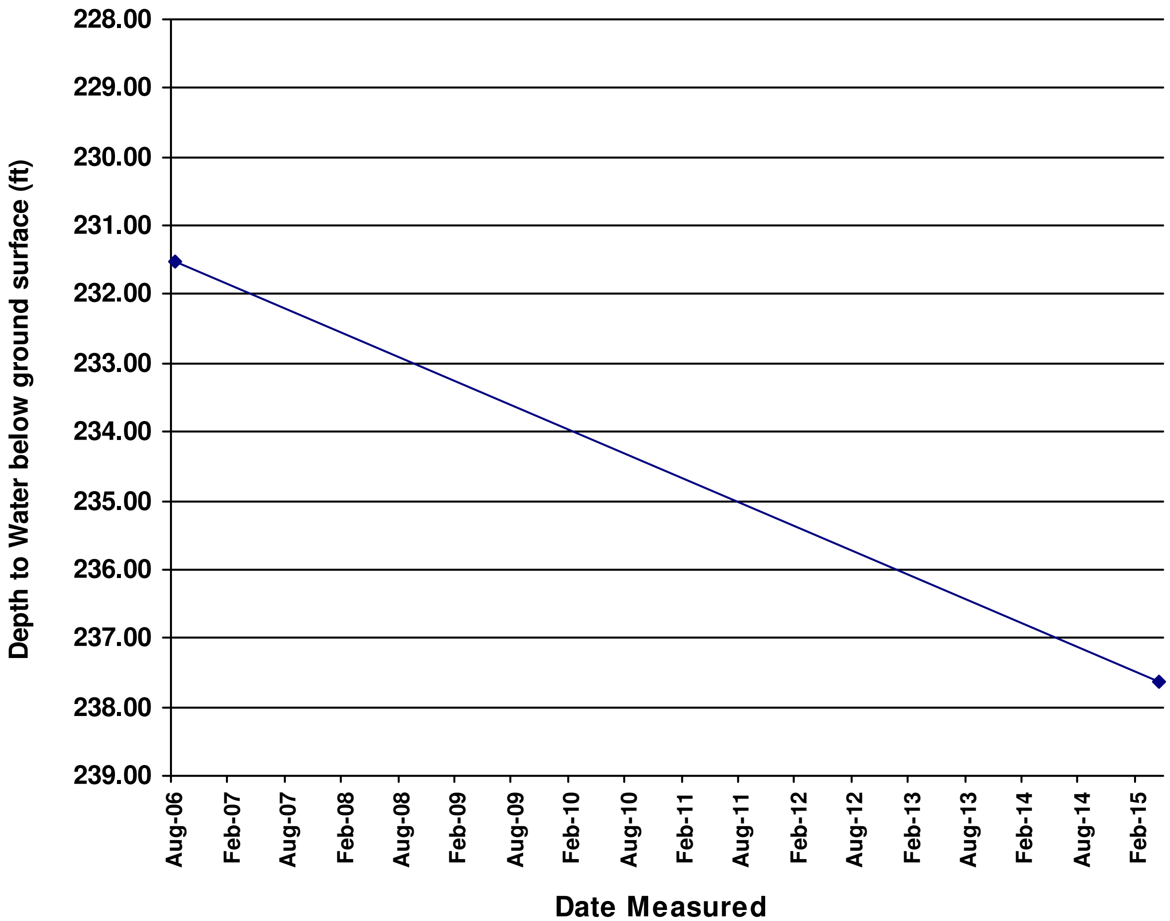
Water level Hydrograph

Point ID: **EB-661**



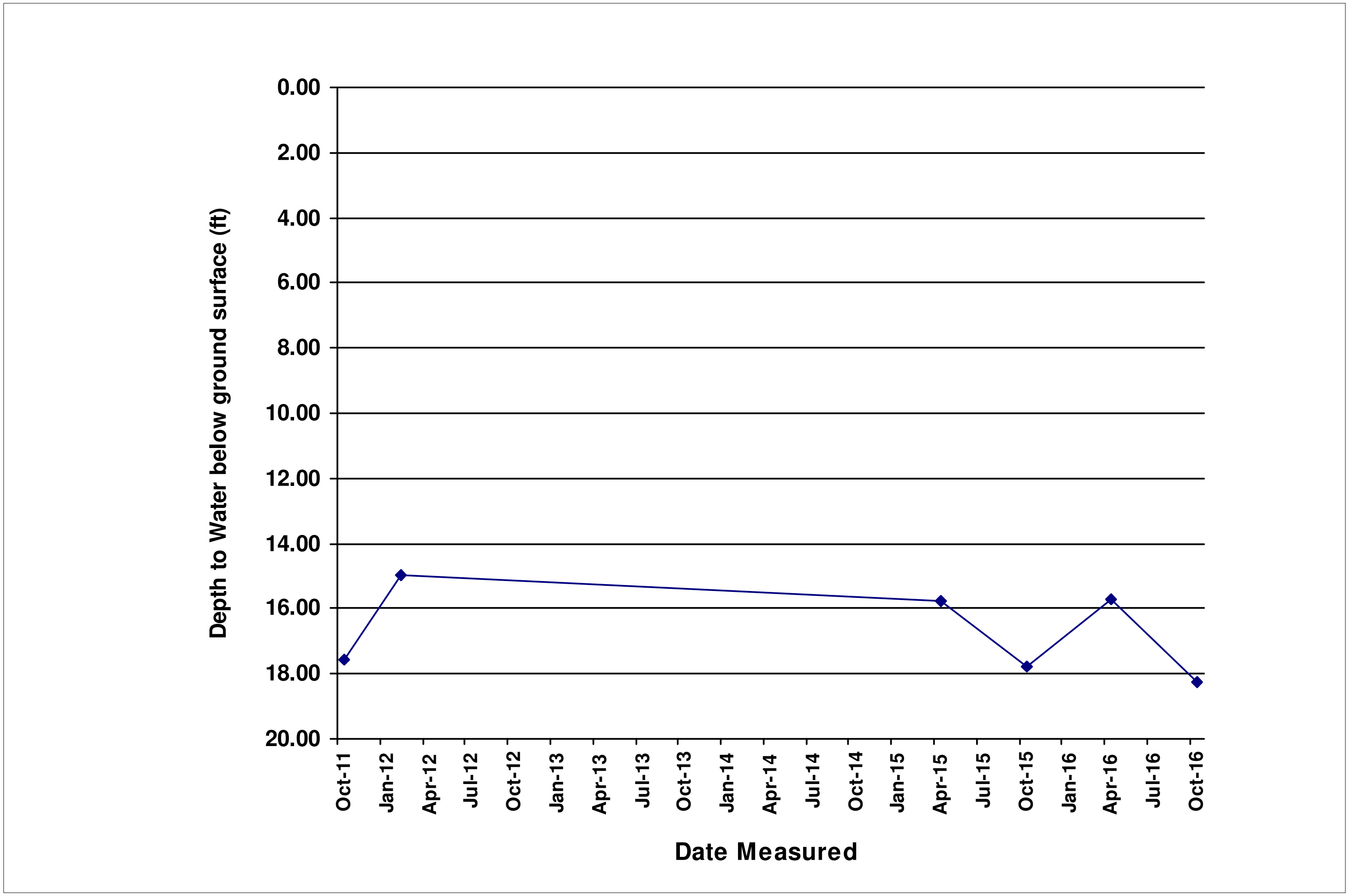
Water level Hydrograph

Point ID: EB-666



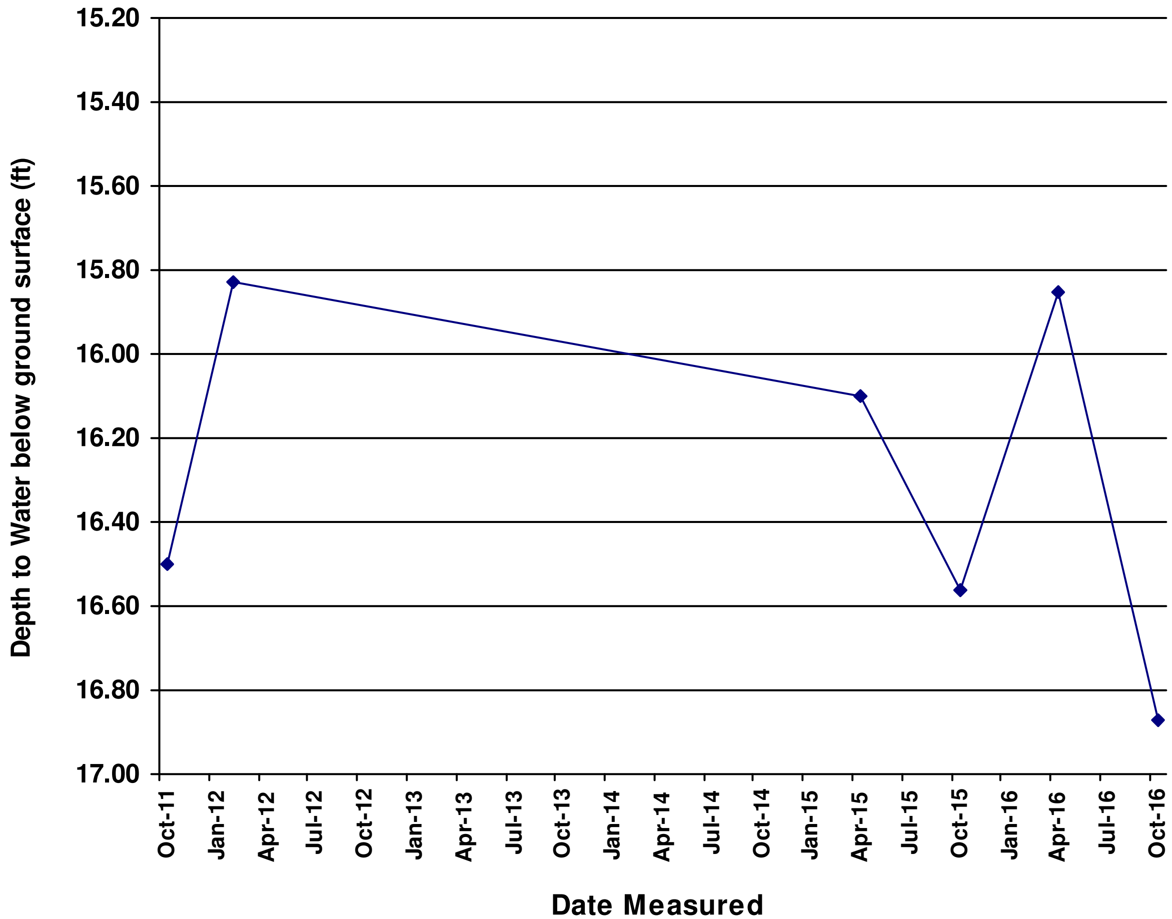
Water level Hydrograph

Point ID: **LC-009**



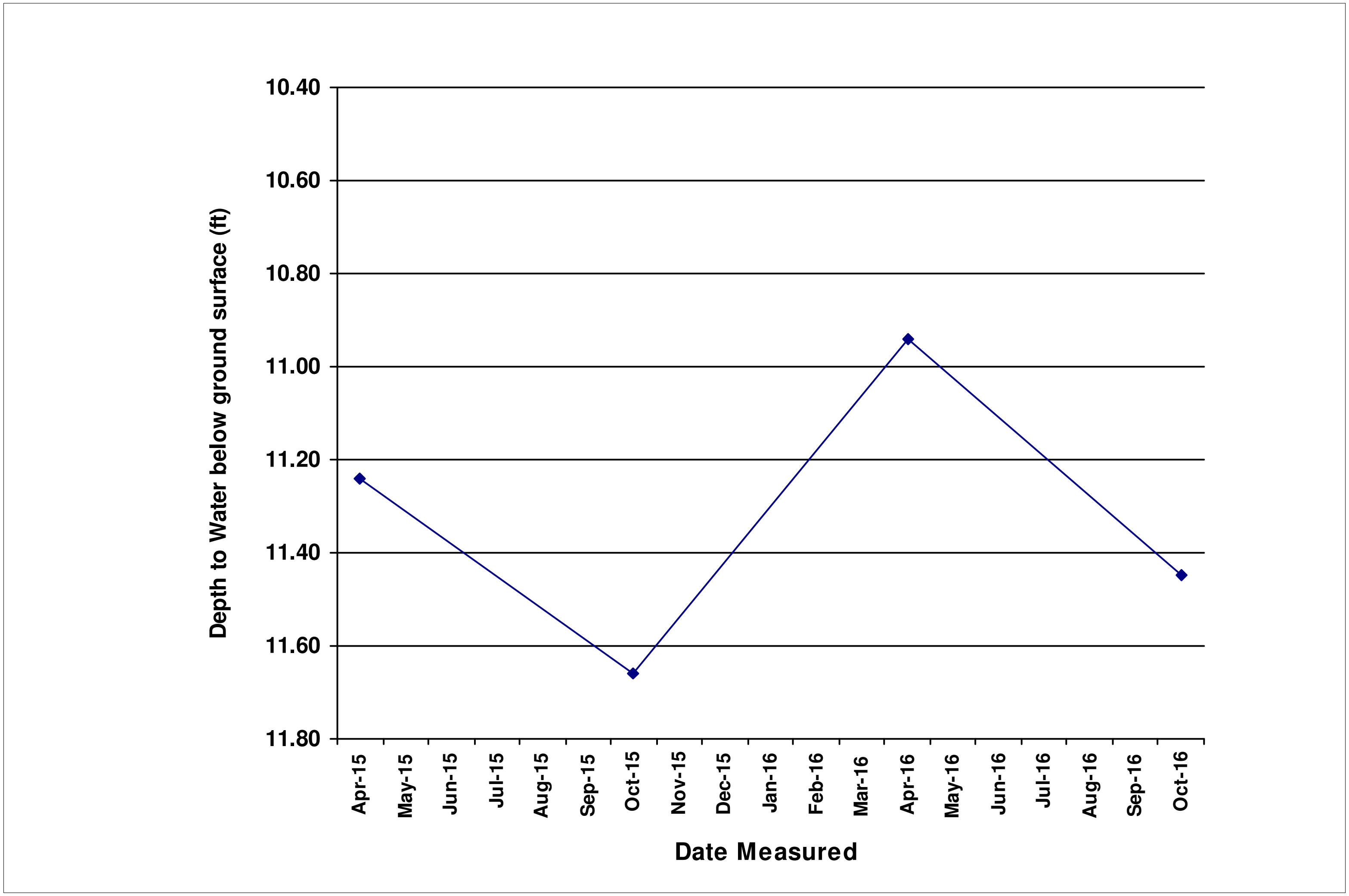
Water level Hydrograph

Point ID: LC-010



Water level Hydrograph

Point ID: **LC-036**



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