Doc No. WRD-ED-0028

SOUTHERN NEVADA WATER AUTHORITY

Water Resources Division

2014 Spring Valley Hydrologic Monitoring, Management, and Mitigation Plan Status and Data Report

March 2015

Prepared by
Southern Nevada Water Authority
Water Resources Division
P.O. Box 99956
Las Vegas, Nevada 89193-9956

Submitted to the
Nevada State Engineer and the
Spring Valley Stipulation
Executive Committee

Suggested citation:
Southern Nevada Water Authority, 2015, 2014 Spring Valley hydrologic monitoring, management, and mitigation plan status and data report: Southern Nevada Water Authority, Las Vegas, Nevada, Doc. No. WRD-ED-0028, 180 p.

CONTENTS

CONTENTS (CONTINUED)

FIGURES

This Page Left Intentionally Blank

TABLES

TABLES (CONTINUED)

TABLES (CONTINUED)

This Page Left Intentionally Blank

ACRONYMS

BLM	Bureau of Land Management
BWG	Biological Work Group
CPB	Corporation of the Presiding Bishop of the Church of Jesus Christ of Latter-Day Saints
DOI	U.S. Department of the Interior
EC	Executive Committee
HA	hydrographic area
NDWR	Nevada Division of Water Resources
NSE	Nevada State Engineer
NWIS	National Water Information System
SNPLMA	Southern Nevada Public Lands Management Act
SNWA	Southern Nevada Water Authority
SVMM	Spring Valley Monitoring and Mitigation
TRP	Technical Review Panel
USGS	U.S. Geological Survey
UTM	Universal Transverse Mercator
WY	water year

ABBREVIATIONS

°C	degrees Celsius
afy	acre-feet per year
amsl	above mean sea level
bgs	below ground surface
cfs	cubic feet per second
ft	foot
gpm	gallons per minute
in.	inch
m	meter
mi	mile
mi^2	square mile

This Page Left Intentionally Blank

1.0 INTRODUCTION

This report was prepared by the Southern Nevada Water Authority (SNWA) in satisfaction of monitoring and reporting requirements set forth in the *Hydrologic Monitoring and Mitigation Plan for Spring Valley (Hydrographic Area 184)* (SV3M Plan) (SNWA, 2011a). The location of Spring Valley is presented in Figure 1-1. This is the eighth annual status and data report in a series of reports associated with the Spring Valley hydrologic monitoring, management and mitigation program. The reports document historic hydrologic conditions and plan status since 2007 (SNWA, 2008, 2009b, 2010, 2011b, 2012, 2013, and 2014a).

This report provides the Nevada State Engineer (NSE) hydrologic data collected in 2014 and the current status of each element of the SV3M plan. The report also satisfies the hydrologic data reporting requirements of SNWA and the U.S. Department of the Interior (DOI) Stipulation for Withdrawal of Protests (Stipulation). The SV3M Plan contains all the hydrologic monitoring elements of the Stipulation as well as monitoring required by the NSE that relate to existing non-federal water-rights.

1.1 Background

On September 8, 2006, prior to the NSE hearing for applications 54003 through 54020, the Stipulation was established between SNWA and DOI on behalf of the Bureau of Indian Affairs, the Bureau of Land Management (BLM), the National Park Service, and the U.S. Fish and Wildlife Service (USFWS) (Stipulation, 2006). Exhibits A and B of the Stipulation require the development of biologic and hydrologic monitoring plans. As part of the Stipulation, an Executive Committee (EC) was established to oversee the implementation of the agreement. The Technical Review Panel (TRP), composed of technical expert representatives of parties to the Stipulation, was established to develop and oversee implementation of the Stipulation related portions of the hydrologic monitoring, management and mitigation plan. A Biological Working Group (BWG) was also established to oversee the development and implementation of the biological monitoring plan.

On April 16, 2007, SNWA was granted groundwater rights in Spring Valley hydrographic area (HA) 184 for municipal and domestic purposes under permits 54003 through 54015, inclusive, as well as 54019 and 54020. Ruling 5726 required the development of biologic and hydrologic monitoring plans. The hydrologic SV3M plan associated with this ruling was approved by the NSE on February 9, 2009.

Since the issuance of Ruling 5726, an opinion by the Nevada Supreme Court (NSC) concluded that the NSE must re-notice SNWA's original groundwater applications and reopen the protest period (Great Basin Water Network, et. al. v. NSE, et. al., June 17, 2010) (NSC, 2010). A second hearing was held by the NSE in regard to the water-right applications in September through November, 2011.

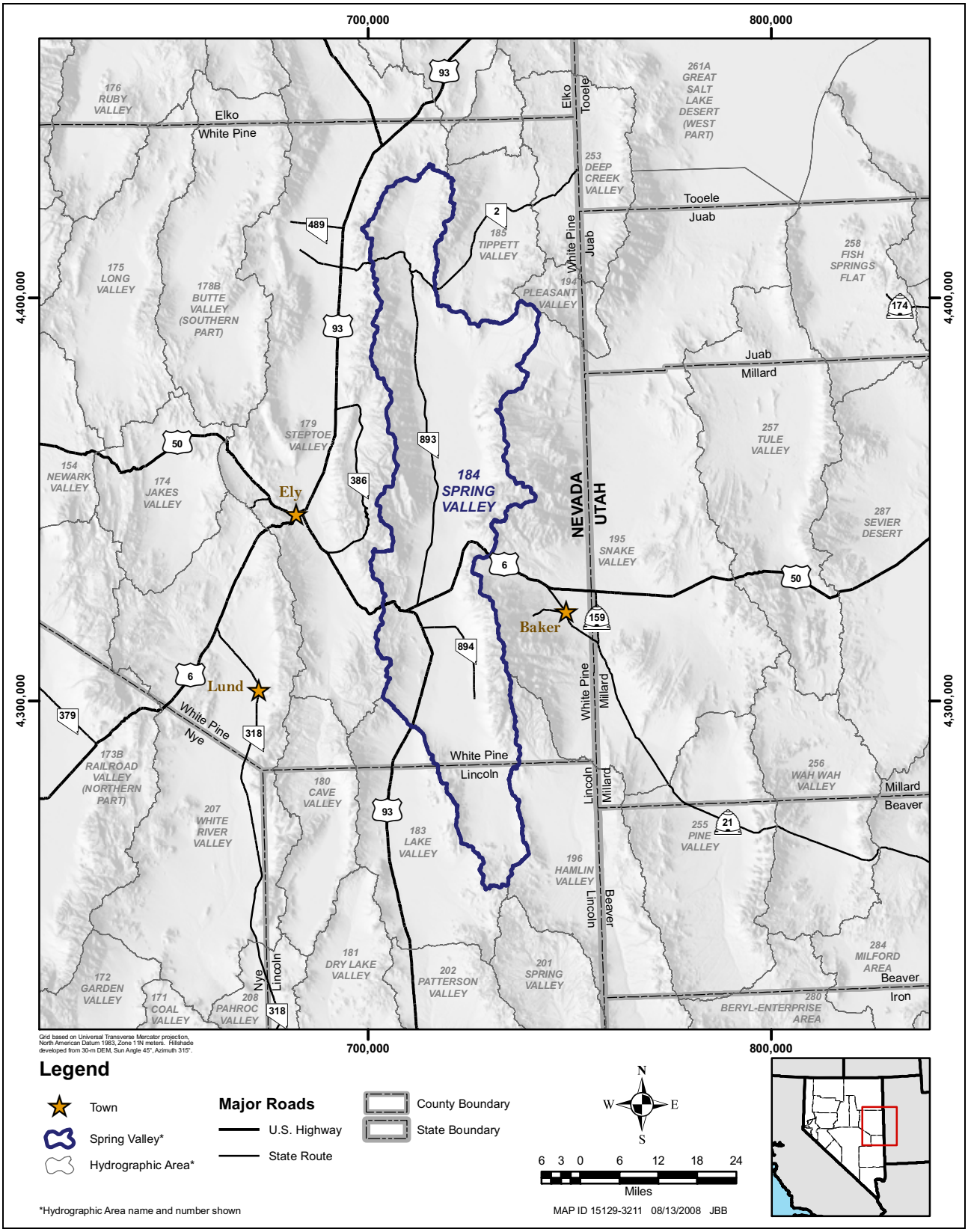


Figure 1-1
Spring Valley Hydrographic Area 184

On March 22, 2012, the NSE issued Ruling 6164 granting SNWA Spring Valley Application Numbers 54003 through 54015, and 54019 and 54020. Ruling 6164 also approved the SNWA Hydrologic Monitoring and Mitigation Plan for Spring Valley and required annual data reports be submitted to the NSE.

On September 15, 2011, a Stipulation for Withdrawal of Protests was established between SNWA and the United States Forest Service (USFS) (Stipulation, 2011). The SNWA/USFS Stipulation requires hydrologic monitoring and water-chemistry sampling of two additional spring locations in Spring Valley, with biological monitoring at one of the sites. SNWA and USFS have selected the monitoring sites and are proceeding with the access-permit application.

1.2 Major Activities Performed in 2014

Major activities associated with the SV3M Plan performed in 2014 were as follows:

- Continued the implementation of the SV3M Plan including data collection efforts and maintenance of the monitoring network.
- Performed a synoptic discharge study of Big Springs / Lake Creek during irrigation and non-irrigation seasons.
- Evaluated and revised the existing monitor-well network.
- Maintained the SNWA data-exchange web site accessible by the NSE, EC, TRP, and BWG. The web site contains project reports, monitoring network attributes, and hydrologic data.
- Provided technical assistance to the BWG regarding implementation of the biological monitoring plan.

1.3 Report Scope

Section 2.0 presents the status and data collected for each major element of the SV3M Plan. Section 3.0 discusses the planned activities for 2015, and Section 4.0 provides a list of references. Appendix A through Appendix E present tables and graphs of the various data discussed in the report. Appendix F presents memorandums memorializing TRP, BWG, and NSE consensus recommendations to revise the SV3M Plan, including:

1. May 2010 memorandum in which the parties agreed to modify the water-chemistry sampling program.
2. October 2014 memorandum in which the parties agreed to modify the “Existing Well Network”.
3. February 2015 memorandum in which the parties agreed to specific biological-monitoring recommendations.

This Page Left Intentionally Blank

2.0 SV3M PLAN STATUS AND DATA

The current status of each major element of the SV3M Plan is presented in this section. Hydrologic data collected in calender year (CY) 2014 associated with monitoring groundwater conditions, spring and stream discharge, precipitation, and water-chemistry are presented. No aquifer testing was performed on program wells during CY 2014.

2.1 Monitoring-Well Network

The SV3M Plan identifies the specific number and distribution of monitor wells to meet program objectives. Existing wells and future new well locations were selected through consensus of the TRP and/or NSE and incorporated into the monitoring network.

The monitor well network, including existing and future new wells, is presented in Figure 2-1, which also reflects all revisions to the SV3M Plan to date. Each well-identification number on the figure includes a Q or C designation for quarterly or continuous measurement frequency.

The plan elements which have been implemented are summarized below:

- The selection of 25 existing wells was originally completed in 2007. The data from the wells were evaluated in 2014 by the TRP in consultation with the NSE. This resulted in several revisions to the network. The frequency of monitoring at the these wells consists of 15 locations monitored continuously (one-hour intervals) and 10 monitored quarterly. The revisions to the network and descriptions of the wells are presented in Section 2.1.2.2.

- Installation of two monitor wells southeast of Shoshone Ponds (SPR7024M and SPR7024M2) in 2011. The monitoring frequency of the two wells is continuous. These wells are described in Section 2.1.2.3.

- Installation of four new monitor wells associated with Cleveland Ranch (SPR7029M, SPR7029M2, SPR7030M, and SPR7030M2) in 2011. SPR7029M has replaced the old Cleve Creek Well (391224114293601) as part of the existing well network in 2014. The monitoring frequency is quarterly. These wells are described in Section 2.1.2.4.

- Monitoring of all SNWA exploratory wells in the program area at least quarterly, as described in Section 2.1.2.1.

- Installation of shallow piezometers near 12 springs in Spring Valley between 2008 and 2010. Continuous monitoring is performed at 11 locations. The piezometers are discussed in Section 2.3.

This Page Intentionally Left Blank

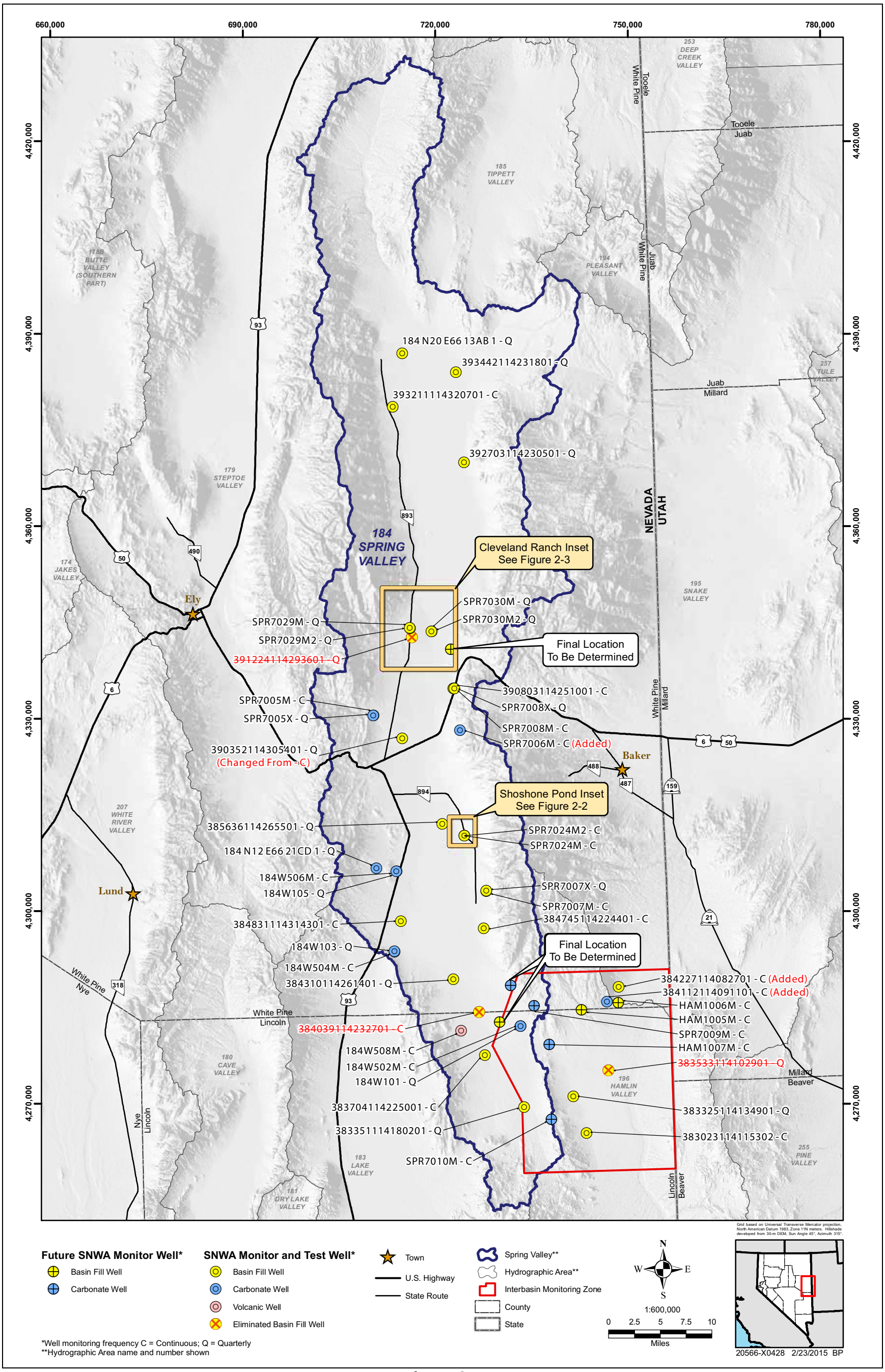


Figure 2-1
Spring Valley Monitor-Well Network with 2014 Consensus Modifications

Additional elements of the well network planned for future implementation are presented below:

- Installation of five additional monitor wells in the Interbasin Monitoring Zone (Zone) to evaluate groundwater conditions between Spring, Hamlin, and Snake Valleys. The locations have been identified by the TRP and right-of way access has been granted by BLM. These wells are described in Section 2.1.3.1.

- Installation of two near-Zone monitor wells between the two closest production sites and the Zone, as described in Section 2.1.3.2. Well locations and completion specifications will be selected by consensus of the TRP and NSE after the production well configuration is determined by SNWA.

- Installation of one carbonate or basin-fill monitor well located one mile north of the northern most production well on the east side of Spring Valley. The well location will be selected after the production well configuration is determined by SNWA.

- Continuous groundwater level monitoring of all future project monitor and production wells.

A table of program monitor wells including well-construction attribute information, location coordinates, ground-surface elevation, completion hydrogeologic unit, and monitoring frequency is presented in Table 2-1. A professional-grade survey of location coordinates and ground-surface and top-of-casing measuring-point elevations was performed for each well in the network.

2.1.1 Well Network Hydrologic Data

Periodic water-level data collected in CY 2014 for each monitor well are presented in Appendix A. Period of record water-level data are also presented on hydrographs for the wells which are not continuously monitored. Appendix B presents the CY 2014 daily mean values derived from continuous data collection at wells where continuous groundwater-level data collection is required. Hydrographs present both periodic and continuous data for CY 2014 and period of record data. Some of the early period of record data collected prior to establishment of the SNWA monitoring program at certain well locations are approximate or are omitted because of the uncertainty associated with collection methods and procedures, or the reference point used for the measurement at the time of collection.

2.1.2 Established Well Network

The established well network consists of monitoring of test and observation wells, the Existing Monitoring Wells network (as specified in the SV3M Plan), two monitor wells near Shoshone Ponds, and wells associated with monitoring at the Cleveland Ranch. Details regarding the current well network are provided in the following sections.

Table 2-1
SV3M Well Network (arranged from north to south)
(Page 1 of 2)

SNWA Site Number	NDWR Station Local Number[b]	Location		Surface[c] Elevation (ft amsl)	Completion Date	Drill Depth (ft bgs)	Well Depth (ft bgs)	Well Casing Diameter (in.)	Screened Interval (ft bgs)	Open Interval	Aquifer	Monitoring Frequency
		UTM[a] Northing (m)	UTM[a] Easting (m)									
184 N20 E66 13AB 1	184 N20 E66 13BADA1	4,386,884.19	714,871.84	5,774.93	6/26/1966	907	296	16	135 to 296	---	Basin Fill	Quarterly
393442114231801	184 N20 E67 26ABBD1	4,383,955.15	723,240.35	5,708.77	Unknown	130	130	6	---	50 to 130	Basin Fill	Quarterly
Robison Crooked	184 N19 E66 11B 1	4,378,627.03	713,381.69	5,698.43	4/22/1960	---	400	---	---	50 to 400	Basin Fill	Continuous
392703114230501	184 N18 E67 01CCAA1	4,369,956.56	724,523.82	5,587.78	1934-36?	45	42	38	---	---	Basin Fill	Quarterly
SPR7029M2	184 N16 E66 25DBCA1	4,344,123.42	716,052.20	5,876.66	4/18/2011	437	422.6	12	382.14 to 422.1	360 to 430	Basin Fill	Quarterly
SPR7029M	184 N16 E66 25DBCD1	4,344,090.03	716,054.99	5,876.83	4/29/2011	275	260.34	4	219.75 to 260.04	213 to 261.75	Basin Fill	Quarterly
SPR7030M	184 N16 E67 32ABAB1	4,343,631.40	719,460.97	5,617.15	2/19/2011	98	96.67	4	53.67 to 96.37	53.67 to 98	Basin Fill	Quarterly
SPR7030M2	184 N16 E67 32ABAB2	4,343,620.29	719,454.00	5,617.79	2/11/2011	240	236.42	4	194.17 to 236.12	173.8 to 237	Basin Fill	Quarterly
390803114251001	184 N15 E67 26CA 1	4,334,740.47	722,963.02	5,727.21	Unknown	---	200	2	---	50 to 200	Basin Fill	Continuous
SPR7008X	---	4,334,727.66	722,847.72	5,702.99	11/27/2007	970	960	20	240 to 940	102 to 970	Basin-Fill	Quarterly
SPR7008M	184 N15 E67 26CDAB1	4,334,702.61	722,865.27	5,704.86	7/25/2007	960	946	8	226 to 926	54 to 960	Basin Fill	Continuous
SPR7005X	---	4,330,506.86	710,356.78	6,397.56	4/11/2008	1,395	1,350	20	669 to 1,330	511 to 1,395	Carbonate	Quarterly
SPR7005M	184 N14 E66 09ABCA1	4,330,471.51	710,372.44	6,395.68	7/10/2007	1,412	1,404	8	663 to 1,383	439 to 1,412	Carbonate	Continuous
SPR7006M	---	4,328,163.49	723,872.61	6,525.18	9/20/2007	1,720	1,701	8	980 to 1,680	167 to 1,720	Carbonate	Continuous
390352114305401	184 N14 E66 24BDDD1	4,326,894.19	714,873.84	5,846.04	1980	---	160	2	---	50 to 160	Basin Fill	Quarterly
385636114265501	184 N13 E67 33DDA 1	4,313,590.54	721,086.82	5,769.73	Unknown	---	---	36	---	---	Basin Fill	Quarterly
SPR7024M2	184 N12 E67 01CCCD2	4,311,765.99	724,560.80	5,863.08	3/27/2011	720	699.38	4	661.13 to 669.08	650.08 to 720	Basin Fill	Continuous
SPR7024M	184 N12 E67 01CCCD1	4,311,753.95	724,554.55	5,861.10	3/30/2011	260	249.76	4	209.3 to 249.46	200.5 to 260	Basin Fill	Continuous
184 N12 E66 21CD 1	184 N12 E66 21DCCB1	4,306,700.53	710,871.15	6,370.31	9/13/1966	631	631	6	3 to 631	3 to 631	Carbonate	Quarterly
184W506M	184 N12 E66 26BADC1	4,306,214.21	713,939.81	6,014.04	10/19/2006	1,160	1,140	8	430 to 1,120	80 to 1,160	Carbonate	Continuous
184W105	---	4,306,176.07	713,991.23	6,007.30	11/7/2006	1,160	1,135	20	418 to 1,114	60 to 1,160	Carbonate	Quarterly
SPR7007X	---	4,303,152.00	727,946.17	6,017.53	1/24/2008	1,040	1,020	20	299 to 1,000	155 to 1,040	Basin-Fill	Quarterly
SPR7007M	184 N11 E68 05BCBC1	4,303,146.59	727,976.03	6,017.73	8/17/2007	1,040	1,020	8	300 to 1,000	101 to 1,040	Basin Fill	Continuous
384831114314301	184 N11 E66 23AB 1	4,298,411.13	714,633.01	5,842.94	Unknown	102	102	2	---	50 to 102	Basin Fill	Continuous

Table 2-1
SV3M Well Network (arranged from north to south)
(Page 2 of 2)

SNWA Site Number	NDWR Station Local Number[b]	Location		Surface[c] Elevation (ft amsl)	Completion Date	Drill Depth (ft bgs)	Well Depth (ft bgs)	Well Casing Diameter (in.)	Screened Interval (ft bgs)	Open Interval	Aquifer	Monitoring Frequency
		UTM[a] Northing (m)	UTM[a] Easting (m)									
384745114224401	184 N11 E68 19DCDC1	4,297,304.22	727,554.19	5,900.18	Unknown	200	200	2	---	50 to 200	Basin Fill	Continuous
184W504M	184 N11 E66 35CCCC1	4,293,712.49	713,647.12	5,900.11	11/17/2006	1,040	1,020	8	309 to 999	61 to 1,040	Carbonate	Continuous
184W103	---	4,293,693.03	713,697.74	5,899.06	12/6/2006	1,046	1,017	20	296 to 996	60 to 1,046	Carbonate	Quarterly
384310114261401	184 N10 E67 22AA 1	4,289,331.34	722,826.33	5,853.54	Unknown	---	100	2	---	50 to 100	Basin Fill	Quarterly
384227114082701[d]	195 N10 E70 28CBCB1	4,288,208.30	748,609.36	5,815.18	9/27/2009	460	460	8	300 to 460	140 to 460	Basin Fill	Continuous
384112114091101[d]	196 N09HE70 32BBA 1	4,285,847.90	747,616.56	6,019.53	7/7/2010	700	700	8	500 to 700	450 to 700	Carbonate	Continuous
184W502M	184 N09 E68 11BDBD1	4,282,116.35	733,294.42	6,189.72	1/25/2007	1,828	1,799	8	495 to 1,779	58 to 1,828	Carbonate	Continuous
184W101	---	4,282,062.02	733,297.65	6,190.90	2/24/2007	1,760	1,749	20	796 to 1,728	135 to 1,760	Carbonate	Quarterly
184W508M	184 N09 E67 11DBCD1	4,281,308.68	724,070.89	6,056.19	12/15/2006	1,180	1,160	8	376 to 1,140	241 to 1,180	Volcanic	Continuous
383704114225001	184 N09 E68 30AAAB1	4,277,594.57	727,759.99	6,002.52	8/7/1980	700	679	11	559 to 679	50 to 700	Basin Fill	Continuous
383325114134901	196 N08 E69 15B 1	4,271,103.41	741,539.28	5,729.98	Unknown	---	110	6	---	50 to 110	Basin Fill	Quarterly
383351114180201	184 N08 E68 14A 1	4,269,504.76	733,845.43	6,184.22	Unknown	---	495	6	50 to 495	50 to 495	Basin Fill	Quarterly
383023114115302	196 N08 E69 35DC 2	4,265,403.02	743,597.36	5,837.67	8/7/1980	520	435	2	320 to 420	35 to 520	Basin Fill	Continuous
HAM1005M	196 N10 E69 02 BBA 1	4,284,588[d]	742,819[d]	6,397[d]	Future	---	---	---	---	---	Basin Fill	Continuous
HAM1006M	196 N95 E70 32 AAD 1	4,285,699[d]	748,554[d]	5,797[d]	Future	---	---	---	---	---	Basin Fill	Continuous
SPR7009M	184 N10 E68 36 ACC 1	4,285,242[d]	735,445[d]	6,494[d]	Future	---	---	---	---	---	Carbonate	Continuous
HAM1007M	196 N09 E69 20 BCB 1	4,279,203[d]	737,774[d]	6,025[d]	Future	---	---	---	---	---	Carbonate	Continuous
SPR7010M	184 N08 E69 29 CBB 1	4,267,545[d]	738,113[d]	6,458[d]	Future	---	---	---	---	---	Carbonate	Continuous
Near Zone Well 1	---	---[e]	---[e]	---[e]	Future	---	---	---	---	---	Carbonate	Continuous
Near Zone Well 2	---	---[e]	---[e]	---[e]	Future	---	---	---	---	---	Basin Fill	Continuous
Northeast Well	---	---[e]	---[e]	---[e]	Future	---	---	---	---	--	---[e]	Continuous

[a]Universal Transverse Mercator, North American Datum, 1983, Zone 11.
[b]Station Local Numbers provided by the Nevada Department of Water Resources.
[c]Elevations are North American Vertical Datum of 1988 (NAVD88).
[d]Coordinates and Elevation are approximate and will be updated upon a professional survey of the well location.
[e]To be determined.

2.1.2.1 Exploratory- and Production-Well Monitoring

The SV3M Plan states that SNWA shall record discharge and groundwater levels in all completed SNWA production and monitor wells on a continuous basis and quarterly measurements of groundwater levels in all SNWA exploratory wells. SNWA does not currently have any production wells associated with this project.

Six test and eight associated observation wells were installed by SNWA in Spring Valley between 2006 and 2008 (SNWA, 2009a). The eight observation wells were instrumented with continuous monitoring equipment and incorporated into the monitoring network. Water levels in the six 24 in. diameter test wells are measured quarterly.

2.1.2.2 Existing-Monitoring Wells Network

The SV3M Plan states that SNWA shall monitor groundwater levels quarterly in 10 representative existing monitor wells and continuously in 15 representative existing monitor wells in Spring and Hamlin valleys at locations agreed upon by the TRP and NSE.

In 2007, the TRP, in consultation with the NSE, selected 25 wells to include in the Existing-Monitoring Wells network. Wells were selected based upon integrity of construction, location, and completion information. Wells included in the network are completed in carbonate-rock, volcanic, and basin-fill aquifers. Well ownership and site access are discussed in SNWA, (2012).

In 2014, the TRP, in consultation with the NSE, revised the network. The revisions include:

- Inclusion of three continuously-monitored wells (SPR7006M, 384227114082701 and 384112114091101)
- Inclusion of one quarterly-monitored well (SPR7029M)
- Exclusion of one continuously-monitored well (384039014232701)
- Exclusion of two quarterly-monitored wells (391224114293601 and 383533114102901)
- Reduction in monitoring frequency of one well from continuous to quarterly (390352114305401)

These revisions to the network and the underlying rationale are described in detail in the consensus memo presented in Appendix F.

2.1.2.3 Two Monitor Wells near Shoshone Ponds

The SV3M Plan states that SNWA shall construct and equip two monitor wells between Shoshone Ponds and the nearest production well. These wells, SPR7024M and SPR7024M2, were selected with

consensus of the TRP and NSE and are located southeast of Shoshone Pond outside the Area of Critical Environmental Concern. The well locations are presented in Figure 2-2. The wells were constructed in March, 2011 and are completed in the basin-fill to depths of 260 and 720 ft bgs, respectively.

2.1.2.4 Cleveland Ranch Hydrologic Monitoring

Monitoring locations in the vicinity of Cleveland Ranch consist of two spring and five groundwater sites. These include a flume and shallow piezometer at the North Cleveland Ranch Spring, a flume and two monitor wells near the South Cleveland Ranch Spring and two monitor wells west of Cleveland Ranch. Well SPR7029M is the replacement well of Old Cleve well and is part of the Existing-Monitoring Wells network as described in Section 2.1.2.2. The gage and well locations were selected by consensus with the NSE and The Corporation of the Presiding Bishop of the Church of Jesus Christ of Latter-Day Saints (CPB). Monitoring locations are presented in Figure 2-3. The two spring discharge monitoring sites are discussed in Section 2.3.

Two monitor wells, SPR7030M and SPR7030M2, located near the South Cleveland Ranch Spring were completed in February 2011 in separate lithologic units at depths of 98 and 240 ft bgs, respectively. Both wells encountered flowing artesian conditions. Two additional clustered shallow and deep monitor wells, SPR7029M and SPR7029M2, were completed in April, 2011 in the basin fill at depths of 275 and 437 ft bgs, respectively. The objective of the clustered wells is to quantify and monitor changes of the vertical hydraulic gradient and provide groundwater elevations to compare with discharge measured at the south spring.

2.1.2.5 Additional Hydrologic Monitoring in Utah

Additional hydrologic monitoring in Snake Valley is being performed by the Utah Geological Survey (UGS). This monitoring is not part of the SV3M Plan requirements; but data collected as part of the UGS program can be used to supplement the data collected under the SV3M Plan. Information on the UGS monitoring network including well locations, construction attributes and data is available at:

http://geology.utah.gov/esp/snake_valley_project/overview.htm

2.1.3 Future Monitor Wells

The SV3M Plan requires the installation of new monitor wells at specific locations. New monitor well locations and specifications have yet to be determined and will be developed by consensus with the NSE and TRP. This section presents a description and the current status of the new wells.

2.1.3.1 Interbasin Monitoring Zone Network

The Stipulation established the Zone and requires data collection to characterize the hydraulic gradient between Spring Valley to Snake Valley via Hamlin Valley. In the fall of 2007, the TRP selected six wells to comprise the monitor well network in the Zone. The wells include carbonate monitor well 184W502M, which was installed in 2006, and five additional future well locations. The

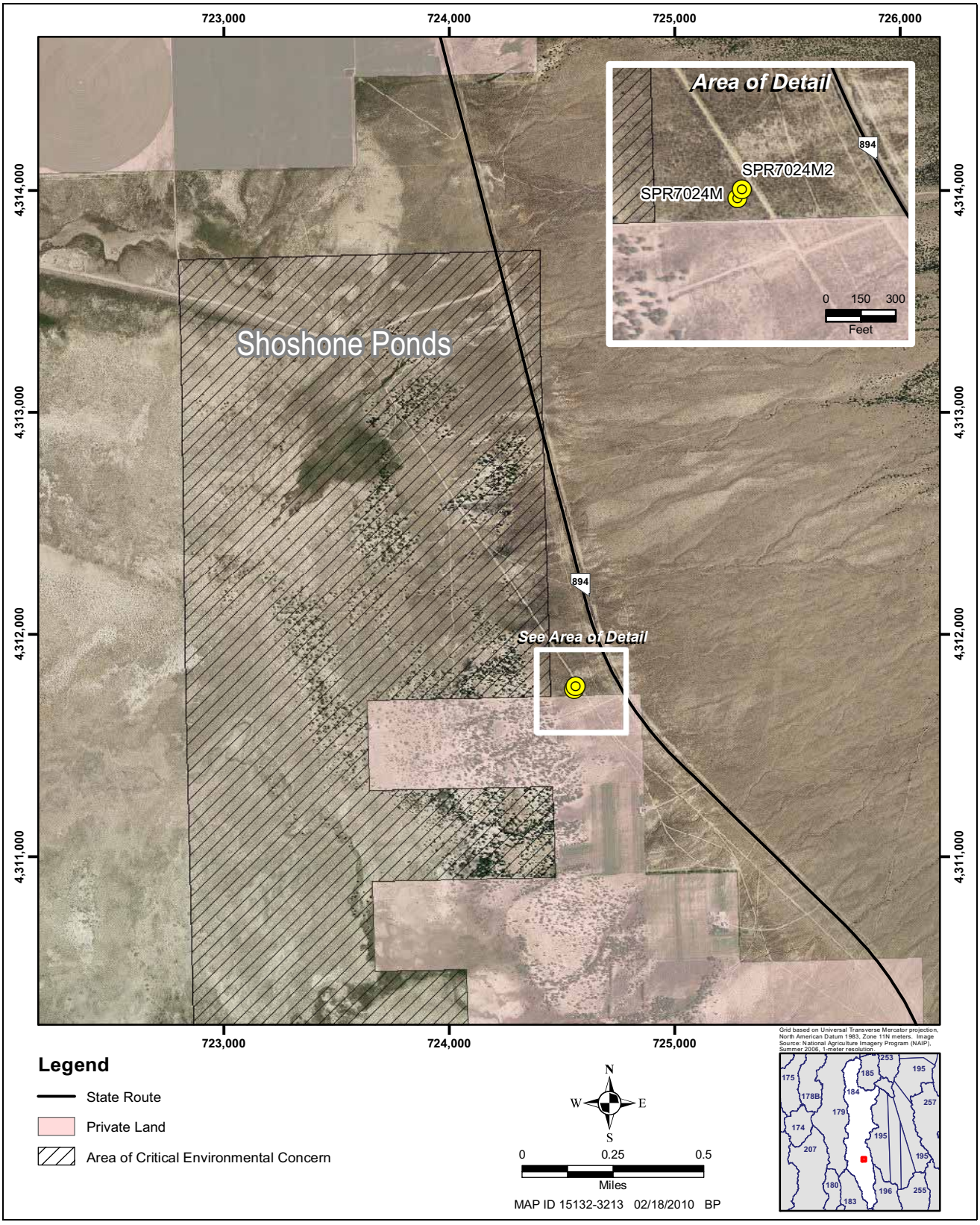


Figure 2-2
Location of Monitor Wells near Shoshone Ponds

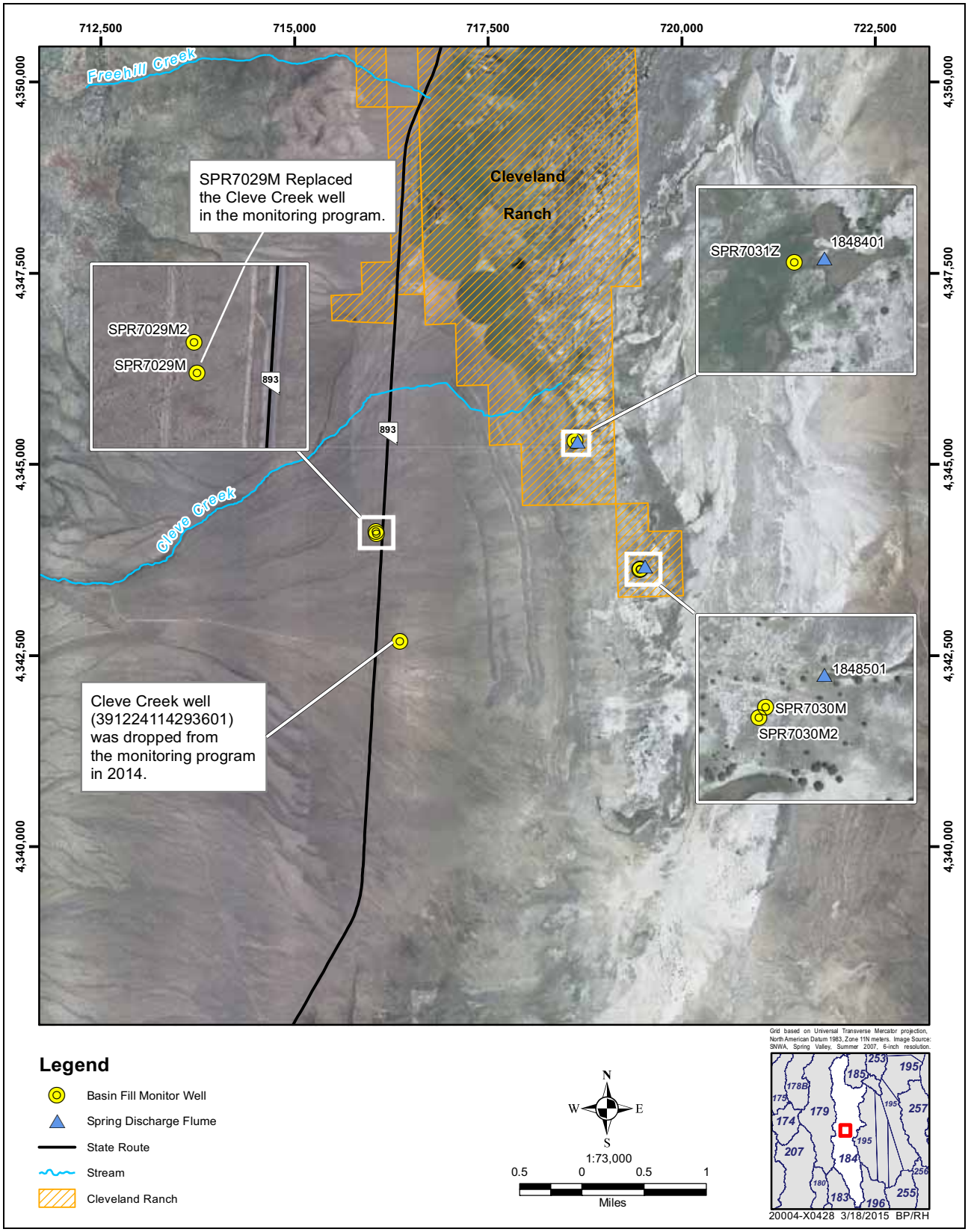


Figure 2-3
Monitoring Locations Associated with Cleveland Ranch

future locations will include three carbonate rock and two basin-fill wells. The locations of these future well sites and Zone boundaries are presented in Figure 2-1. In addition to these future wells, there are five other existing basin-fill wells located within the Zone which are part of the program and monitored at least quarterly.

Right-of-way applications for the future SNWA well sites in the Zone were submitted in 2007 and were approved by BLM in late 2009. Construction of the five new wells is currently delayed until the project is approved and permitted for construction. Wells will be installed to meet baseline monitoring requirements as required by the Stipulation and SV3M Plan. No target date for well construction has been set as of the date of this report. After construction, a short-term aquifer test will be performed, and water-chemistry samples will be collected at each of the new sites. Each well will then be equipped with a datalogger and pressure transducer to collect continuous water-level data. A professional survey of location coordinates, ground-surface elevation, and top-of-casing measuring-point elevations will also be performed.

2.1.3.2 Two Monitor Wells between the Zone and Closest Production Well

The SV3M Plan states that SNWA shall construct and equip two monitor wells in conjunction with the construction of two SNWA production wells in Spring Valley that are closest to the Zone boundary, unless alternative sites are recommended by the TRP and approved by the EC and NSE.

Well locations and hydrogeologic units in which the monitor wells will be completed will be determined after the location of the production wells closest to the Zone are identified. After installation, the monitor wells will be equipped with dataloggers and pressure transducers to collect continuous water-level data.

2.2 Aquifer Testing

The SV3M Plan requires that two constant-rate tests be performed in Spring Valley, at the closest production well completed in basin-fill and carbonate-rock aquifers nearest to the Zone. To date, six 72- to 120-hour constant-rate tests have been performed on SNWA test wells in Spring Valley. Test summaries and results have been reported in previous annual reports, with greater detail provided in the hydrologic analysis reports associated with each well test. A summary of parameters and results for the tests are provided in the 2011 annual monitoring report (SNWA, 2012).

2.3 Spring Monitoring Network

The spring monitoring network includes springs located in Spring Valley on the valley floor, range-front, and mountain-block areas. Spring monitoring locations are presented on Figure 2-4. The springs are monitored by performing periodic or continuous discharge measurements, measuring spring-pool level staff plates, and/or measuring water levels in spring piezometers.

The SV3M Plan states that SNWA shall install, equip, and maintain a piezometer near 12 spring locations. In 2007, the TRP, in conjunction with the BWG and NSE, reviewed and conducted a field visit to potential spring monitoring locations. At that time, the group agreed to add an additional

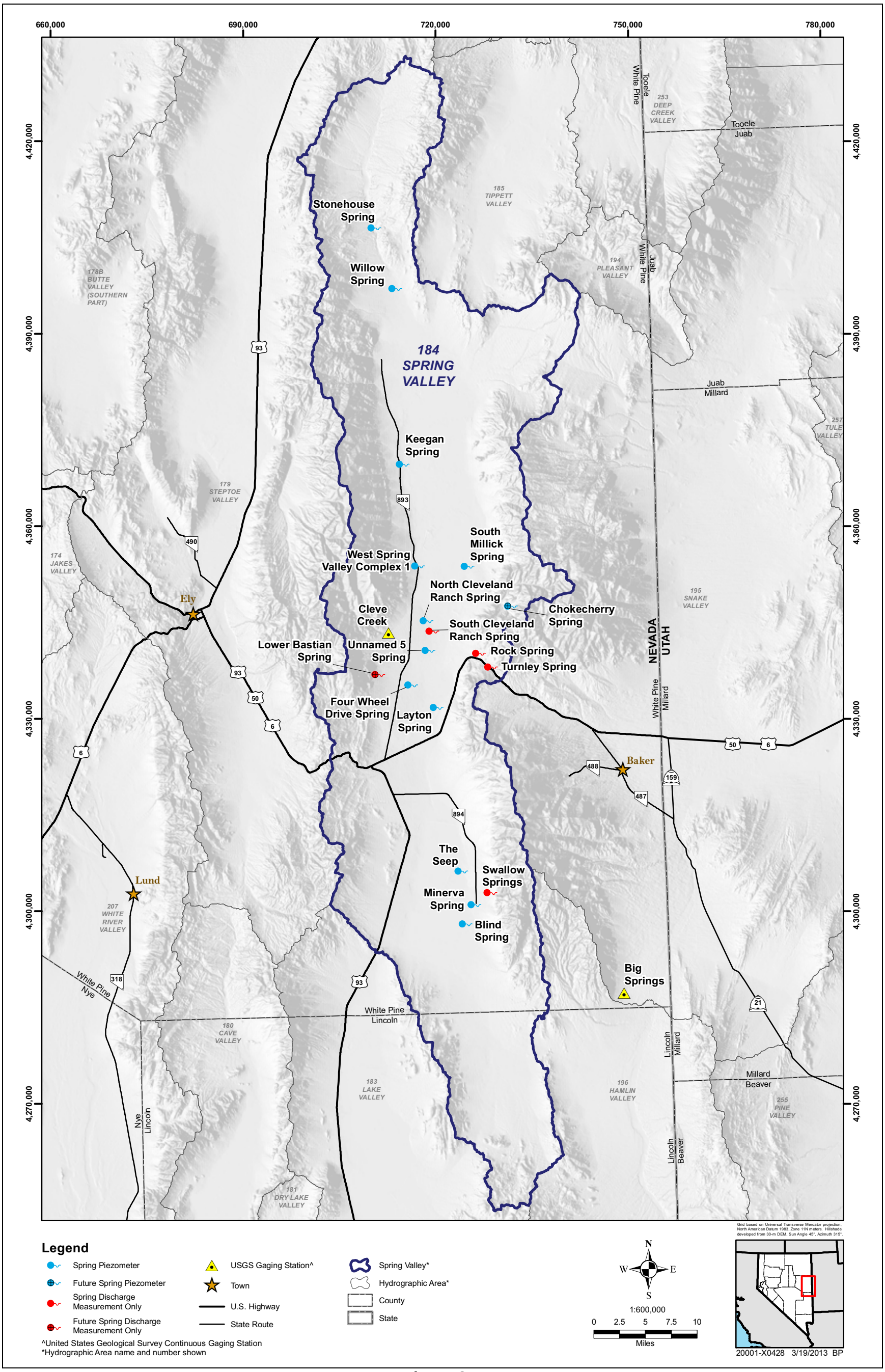


Figure 2-4
Spring and Stream Hydrologic Monitoring Locations

spring to the network for a total of 13 spring locations. Later, the NSE required Turnley Spring and two springs located on Cleveland Ranch to be added to the network for discharge monitoring.

Currently, a total of 16 representative springs located in Spring Valley comprise the spring monitoring network. Of the 16 springs, 11 sites have continuous monitoring of water levels at associated piezometers. Four locations are monitored for discharge only and one location, the North Cleveland Ranch Spring, is monitored quarterly for discharge and piezometer groundwater level. Spring discharge monitoring locations are listed in Table 2-2. Location and construction data for the 12 piezometers are presented in Table 2-3.

Ten piezometers utilized in the spring network were installed in 2010 and equipped in 2011 with integrated datalogger and pressure transducer instrumentation to collect continuous water-level data. One piezometer (SPR7007Z) located on SNWA property at Minerva Spring was installed in 2008. A professional survey of coordinate locations and elevations of ground-surface and top-of-casing measuring-points was performed for each piezometer. Continuous groundwater level data from the piezometers are presented in Appendix C.

Table 2-2
Spring Discharge Monitoring Locations

Site Number	Spring Name	Location		Physiographic Setting
		UTM Northing (m)	UTM Easting (m)	
1848401	Cleveland Ranch Spring North	4,345,301	718,654	Basin Fill/Valley Floor
1848501	Cleveland Ranch Spring South	4,343,666	719,523	Basin Fill/Valley Floor
1845501	Willow Spring[a]	4,397,069	713,756	Basin Fill/Valley Floor
1845702	South Millick Spring[a]	4,353,754	725,031	Basin Fill/Valley Floor
1845901	Layton Spring[a]	4,331,794	720,204	Basin Fill/Valley Floor
1846201	Swallow Springs[a]	4,302,920	728,597	Basin Fill/Range Front
1847101	Keegan Spring	4,369,664	715,050	Basin Fill/Fan Margin
1847301	Rock Spring	4,340,191	726,753	Carbonate/Mountain Block
1848001	Turnley Spring[a]	4,338,050	728,695	Carbonate/Mountain Block

All coordinates are Universal Transverse Mercator, North American Datum, 1983, Zone 11.
[a]Coordinates are approximate.

On the Cleveland Ranch, a shallow piezometer (SPR7031Z) and a flume were installed in March 2011 in the immediate vicinity of two small springs located in the southwest part of Section 20, T16, R67E. The purpose of these monitoring sites is to measure shallow groundwater levels and discharge associated with these springs. A flume to measure the discharge of the South Cleveland Ranch Spring was installed in 2010. Discharge data from South and North Cleveland Ranch Springs are presented in Appendix C.

Table 2-3
Spring Piezometer Location and Completion Information

Site Number	Associated Spring	Location[a]		Surface[b] Elevation (ft amsl)	Completion Date	Drill Depth (ft bgs)	Well Depth (ft bgs)	Well Diameter (in.)	Open Interval (ft bgs)	Screened Interval (ft bgs)	Aquifer
		UTM Northing (m)	UTM Easting (m)								
SPR7007Z	Minerva Spring	4,301,057.50	726,134.41	5,828.66	1/18/2008	35	31	4	12 to 31.3	16 to 31	Basin Fill
SPR7011Z	Blind Spring	4,297,998.80	724,727.36	5,769.71	5/6/2010	31.3	31.3	2	13 to 31.3	16.1 to 31.1	Basin Fill
SPR7012Z	4WD Spring	4,335,263.36	716,235.95	5,756.22	5/8/2010	25	25	2	4 to 25	9.8 to 24.8	Basin Fill
SPR7014Z	The Seep	4,306,272.49	724,093.39	5,778.54	5/7/2010	31	30.7	2	6 to 30.7	15.5 to 30.5	Basin Fill
SPR7015Z	West Spring Valley Complex	4,353,816.21	717,284.37	5,602.90	5/8/2010	40	38.2	2	8 to 38.2	23 to 38	Basin Fill
SPR7016Z	Unnamed Spring 5	4,340,637.10	718,885.72	5,645.67	5/4/2010	35	32	2	15 to 32.0	16.8 to 31.8	Basin Fill
SPR7018Z	S. Millick Spring	4,353,623.95	725,156.47	5,587.16	5/4/2010	31	25.2	2	8 to 25.2	10 to 25	Basin Fill
SPR7019Z	Layton Spring	4,331,753.27	720,064.21	5,686.63	5/7/2010	35.3	35.3	2	9 to 35.3	20.1 to 35.1	Basin Fill
SPR7020Z	Stonehouse Spring	4,406,416.78	710,617.88	6,264.62	5/5/2010	9.3	9.3	2	2 to 9.3	4.1 to 9.1	Basin Fill
SPR7021Z	Keegan Spring	4,369,693.31	714,898.91	5,613.12	5/8/2010	20.7	20.7	2	4 to 20.7	5.5 to 20.5	Basin Fill
SPR7022Z	Willow Spring	4,397,090.42	713,752.68	5,987.54	5/5/2010	35	33.5	2	7 to 33.5	18.3 to 33.3	Basin Fill
SPR7031Z	North Cleveland Ranch Spring	4,345,295.85	718,622.45	5,637.32	3/3/2011	11.5	10.3	2	4 to 10.3	5 to 10	Basin Fill

[a]All coordinates are Universal Transverse Mercator, North American Datum, 1983, Zone 11.
[b]Elevations are North American Vertical Datum of 1988 (NAVD88).

Turnley, Rock, and Swallow springs are monitored for discharge only due to hydrogeologic conditions at the sites. Rock and Swallow spring discharges are monitored continuously. The water year (WY) 2014 mean-daily discharge values for Rock and Swallow spring monitoring stations are presented in Appendix C along with the associated hydrographs.

Discharge measurements are also being performed at four other spring locations where measuring of flow is physically possible. These springs are Layton, South Millick, Keegan, and Willow. Hydrologic and field water-quality data collected at Swallow, Layton, South Millick, Keegan, Willow, Rock, and Turnley springs are presented in Appendix C.

In October 2014 a cooperative field reconnaissance was performed by the TRP and BWG to evaluate hydrologic monitoring alternatives to support BWG biological monitoring and interim studies. A consensus recommendation memo was prepared by the BWG and TRP in consultation with NSE. The consensus memo and description of hydrologic monitoring at selected biological monitoring sites is presented in Appendix F.

2.4 Stream Discharge Measurements

This section presents the current status and data associated with the stream monitoring program at Cleve Creek, Big Springs, and the Big Springs Creek - Lake Creek Complex.

2.4.1 Discharge Sites at Cleve Creek and Big Springs Creek

The SV3M Plan states that a discharge monitoring site shall be operated and maintained on Cleve and Big Springs creeks. The gaging stations are identified as Cleve Creek near Ely, Nevada, in Spring Valley, SNWA Station Number 1841611 (USGS Station Number 10243700) and the north and south channels of Big Springs Creek near Baker, Nevada in Snake Valley, SNWA Station Number 1951901 (USGS Station numbers 102432241 and 10243224). The station locations are presented in Figure 2-4 and Table 2-4.

Table 2-4
Cleve Creek and Big Springs Monitoring Locations

SNWA Station Number	Station Name	Basin Number	Stream Number	Location[a]		Watershed (mi^2)
				UTM Northing (m)	UTM Easting (m)	
1841611	Cleve Creek near Ely	184	18416	4,343,423	712,669	32
1951901	Big Springs at Gaging Station	195	19519	4,287,293	749,422	N/A

[a]All coordinates are Universal Transverse Mercator, North American Datum, 1983, Zone 11.
N/A = Not applicable

Data collected in WY 2014 from these locations are presented in Appendix D. The 2014 miscellaneous discharge-measurement data are listed in tables for each creek Hydrographs of the discharge measurements and the mean daily-discharge data are provided for the entire period of

record. Discharge data are also available through the National Water Information System (NWIS) (USGS, 2015).

2.4.1.1 Cleve Creek

Cleve Creek is located on the eastern slope of the Schell Creek Range. Stream flow is measured by the Cleve Creek near the Ely, Nevada, gaging station. The drainage area encompasses approximately 32 mi^2, making it the largest drainage area in Spring Valley. The USGS has maintained the gaging station intermittently since 1914. The complete period of record of Cleve Creek is June 1914 to December 1916; October 1959 to September 1967; October 1976 to September 1981; December 1982 to September 1987; and March 1990 through the present year (2014). A crest-stage partial record exists for the station from October 1967 to September 1976 (USGS, 2015).

The WY 2014 mean annual discharge was not available from USGS at time of report publication. When finalized, the USGS data will be available through the NWIS database. The mean annual discharge over the period of record through WY 2013 was 10.4 cfs, and the minimum and maximum mean annual discharges were 5.15 cfs in WY 1960 and 22.2 cfs in WY 1984 (USGS, 2015).

2.4.1.2 Big Springs Creek

Big Springs Creek is located at the base of the eastern slope of the southern Snake Range, approximately 17 mi south of Garrison, Utah. Miscellaneous discharge measurements have been collected since 1972. In early 2005, the USGS, in cooperation with SNWA and NDWR, installed gaging stations at Big Springs. The USGS records are published as Station Number 10243224 Big Springs Creek South Channel near Baker, Nevada, and Station Number 102432241 Big Springs Creek North Channel near Baker, Nevada. The USGS has maintained these stations since 2005 (USGS, 2015).

The WY 2014 mean annual discharge for Big Springs South Channel was 5.2 cfs, approximately 90 percent of the period of record mean annual discharge of 5.76 cfs. The following statistics were calculated from the period of record WY 2005 through 2014: period of record mean annual discharge 5.76 cfs; minimum annual discharge 5.20 during WY 2014; and maximum annual discharge of 6.33 cfs recorded in WY 2008 (USGS, 2015).

The WY 2014 mean annual discharge for Big Springs North Channel was 3.41 cfs, approximately 91 percent of the period of record mean annual discharge of 3.74 cfs. USGS reports the following statistics for the period of record WY 2006 through 2014: mean annual discharge 3.74 cfs; minimum annual discharge 3.41 cfs during WY 2014; and maximum annual discharge of 4.00 cfs reported in WY 2006 (USGS, 2015).

2.4.2 Synoptic-Discharge Study of Big Springs and Lake Creeks

The SV3M Plan states that SNWA shall collect, or fund the collection of two sets of synoptic-discharge measurements for the Big Springs Creek surface-water system from the spring orifice to Preuss Lake: one set of measurements each to be collected during irrigation and

non-irrigation seasons at least 1 year prior to groundwater withdrawals by SNWA. Measurements are to be repeated every 5 years after SNWA groundwater production begins. The UGS currently operates gages on the creek near Stateline and Clay springs. The study area and current USGS and UGS gaging stations are presented in Figure 2-5.

A synoptic discharge study work plan was approved by the TRP, EC and NSE and issued in February 2014 (SNWA, 2014b). The non-irrigation and irrigation season measurements were performed on March 5 and September 17, 2014, respectively. A data report including the study plan, methodology and results is currently being prepared and will be issued shortly.

The SV3M Plan states that SNWA shall work with the TRP to collect data to investigate the relationship between discharge at Big Springs and hydraulic head in the basin-fill and regional carbonate-rock aquifers. This task will be accomplished using hydrologic and water-chemistry data collected from Big Springs, existing and future SNWA monitor wells, and results from USGS and UGS studies of the area.

2.5 Precipitation-Station Network

The precipitation information presented in the annual report was expanded in 2012 to include data from other recently installed precipitation stations. Thirty-five established precipitation stations located on the valley floors and margins of 9 hydrographic basins in eastern Nevada and western Utah provide precipitation data for the region. Data for these stations were compiled from the Western Regional Climate Center (WRCC, 2015), the National Resource Conservation Service (NRCS) (USDA, 2015), the Nevada Division of Water Resources (NDWR, 2015), the USGS (2015), and the Nevada Climate-Ecohydrological Assessment Network (NevCAN) project (WRCC,2015). The precipitation stations are listed in Table 2-5 and presented on Figure 2-6.

Reported monthly data collected in CY 2014 from the stations are presented in Appendix E. Reported CY 2014 precipitation data and period of record statistics for data collected by the USGS and the NDWR at high-altitude stations are also presented in Appendix E.

2.6 Water-Chemistry-Sampling Program

The Stipulation requires that three rounds of water-chemistry sampling at 40 locations be completed within 5 years of the effective data of the agreement, or September 8, 2006. As described in the 2013 SV3M Plan Status and Data Report (SNWA, 2014a), the sampling program has been modified and will continue once the five new Zone monitor wells have been installed. For reference, a copy of the May 2010 TRP consensus agreement developed in consultation with NSE and approved by the EC is provided in Appendix F.

2.7 Reporting

A data-exchange web site accessible by the NSE, EC, TRP, and BWG members was created in April 2008. The data-exchange web site is used to distribute SV3M Plan monitoring data to the TRP within

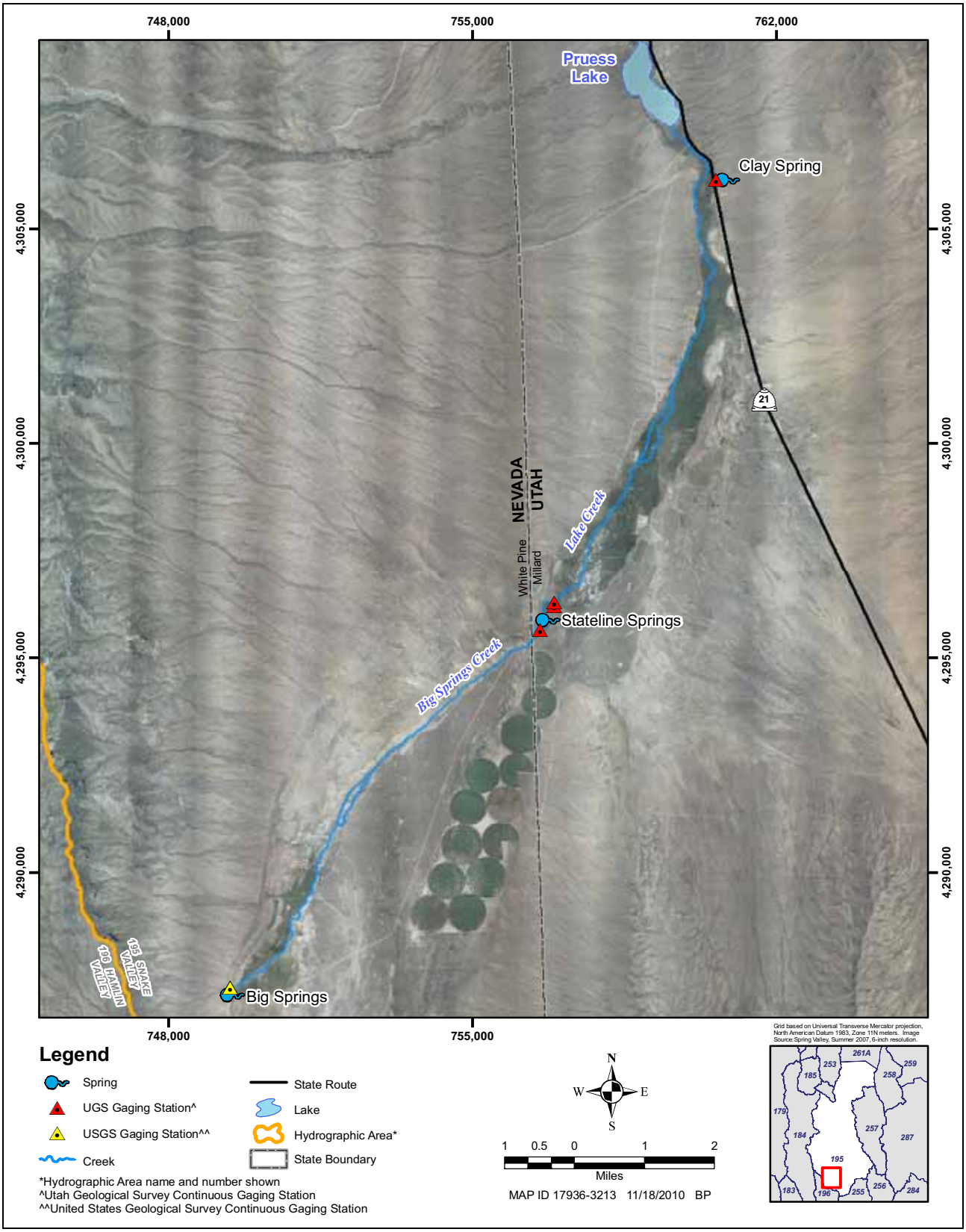


Figure 2-5
Big Springs Synoptic-Discharge Study Area, Snake Valley

Table 2-5
High-Altitude and Regional Precipitation Monitoring Station Locations
(Page 1 of 2)

Source	Station Number	Station Name	Location[a]		Elevation[b] (ft amsl)	Physiography	State	Collection Method	Collection Equipment[c]	Owner
			UTM Northing (m)	UTM Easting (m)						
NDWR	RP1790101	Schellborne	4,408,811	701,240	7,580	Schell Creek Range	NV	Physical	BG	NDWR
NDWR	RP1790102	Connors	4,323,531	703,651	7,740	Schell Creek Range	NV	Physical	BG	NDWR
NDWR	RP1830101	Mount Wilson	4,254,245	731,613	7,370	Wilson Creek Range	NV	Physical	BG	NDWR
WRCC	RP1790201	Lages	4,437,512	703,405	5,960	Steptoe Valley	NV	Continuous	WRG	Unknown
WRCC	RP1790202	McGill	4,365,043	691,693	6,270	Duck Creek Range Alluvial Fan	NV	Continuous	Unknown	Unknown
WRCC	RP1790203	Ely WBO	4,351,755	685,692	6,262	Steptoe Valley	NV	Continuous	Unknown	Unknown
WRCC	RP1940201	Cedar Pass	4,404,623	742,797	7,185	Deep Creek Range	NV	Continuous	TB	BLM
WRCC	RP1950201	Callao	4,421,802	781,034	4,342	Snake Valley	UT	Continuous	Unknown	Unknown
WRCC	RP1950202	Partoun	4,391,420	767,275	4,780	Snake Valley	UT	Continuous	Unknown	Unknown
WRCC	RP1950203	Eskdale	4,333,158	763,441	4,980	Snake Valley	UT	Continuous	Unknown	Unknown
WRCC	RP1950204	Mather	4,322,845	736,146	9,268	Snake Range	NV	Continuous	TB	NPS
WRCC	RP1950205	Great Basin NP	4,321,069	740,678	6,850	Snake Range	NV	Continuous	WRG	Unknown
WRCC	RP1950206	Baker Flat	4,320,676	740,955	6,840	Snake Range	NV	Continuous	TB	NPS
WRCC	RP2530201	Clifton Flat	4,444,924	766,286	6,384	Deep Creek Range	UT	Continuous	TB	BLM
WRCC	RP2530202	Ibapah	4,436,297	756,954	5,279	Deep Creek Valley	UT	Continuous	Unknown	Unknown
WRCC	RP2570201	Tule Valley-RAWS	4,361,854	811,546	5,200	Middle Range Alluvial Fan	UT	Continuous	TB	BLM
WRCC	RP2580201	Fish Springs Refuge	4,416,211	808,238	4,357	Fish Springs Range Alluvial Fan	UT	Continuous	Unknown	Unknown
NRCS	RP1790301	Bird Creek	4,371,201	702,158	10,510	Schell Creek Range	NV	Continuous	PXD	NRCS
NRCS	RP1790302	Berry Creek	4,354,627	705,457	9,100	Schell Creek Range	NV	Continuous	PXD	NRCS
NRCS	RP1840301	Kalamazoo	4,380,489	703,349	7,965	Schell Creek Range	NV	Continuous	PXD	NRCS
NRCS	RP1840302	Cave Mountain	4,337,978	705,904	7,900	Schell Creek Range	NV	Continuous	PXD	NRCS
NRCS	RP1840303	Wheeler Peak	4,322,052	732,318	10,147	Snake Range	NV	Continuous	PXD	NRCS
NRCS	RP2530301	Goshute	4,430,959	756,137	5,470	Deep Creek Valley	UT	Continuous	TB	NRCS
NRCS	RP2550301	Hals Canyon	4,276,291	783,074	5,250	Pine Valley	UT	Continuous	TB	NRCS
NRCS	RP2570301	Tule Valley-SCAN	4,349,385	805,536	4,583	Tule Valley	UT	Continuous	TB	NRCS
USGS	RP1840401	Mount Washington	4,309,377	732,764	10,440	Snake Range	NV	Physical	BG	USGS
USGS	RP1840402	Cave Mountain	4,337,545	706,107	10,650	Schell Creek Range	NV	Physical	BG	USGS

Table 2-5
High-Altitude and Regional Precipitation Monitoring Station Locations
(Page 2 of 2)

Source	Station Number	Station Name	Location[a]		Elevation[b] (ft amsl)	Physiography	State	Collection Method	Collection Equipment[c]	Owner
			UTM Northing (m)	UTM Easting (m)						
USGS	RP1950401	Unnamed Peak Northwest of Mount Moriah	4,355,938	737,691	9,300	Snake Range	NV	Physical	BG	USGS
NevCAN	RP1840501	Subalpine (west)	4,309,801	733,354	11,005	Snake Range	NV	Continuous	WRG	DRI/UNLV/UNR
NevCAN	RP1840502	Montane (west)	4,307,955	731,455	9,250	Snake Range	NV	Continuous	WRG	DRI/UNLV/UNR
NevCAN	RP1840503	Pinyon-Juniper (west)	4,308,155	729,833	5,000	Snake Range	NV	Continuous	WRG	DRI/UNLV/UNR
NevCAN	RP1840504	Sagebrush (west)	4,311,711	724,716	5,880	Spring Valley	NV	Continuous	WRG	DRI/UNLV/UNR
NevCAN	RP1950501	Subalpine (east)	4,321,331	732,965	10,108	Snake Range	NV	Continuous	WRG	DRI/UNLV/UNR
NevCAN	RP1950502	Sagebrush (east)	4,322,852	744,451	6,035	Snake Valley	NV	Continuous	WRG	DRI/UNLV/UNR
NevCAN	RP1950503	Salt Desert (east)	4,325,056	754,589	5,000	Snake Valley	NV	Continuous	WRG	DRI/UNLV/UNR

[a]All coordinates are Universal Transverse Mercator, North American Datum, 1983, Zone 11.
[b]Elevations are North American Vertical Datum of 1988 (NAVD88).
[c]Collection Equipment: BG = Bulk storage gage; TB = Tipping Bucket; WRG = Weighing Rain Gage; PXD = Pressure Transducer

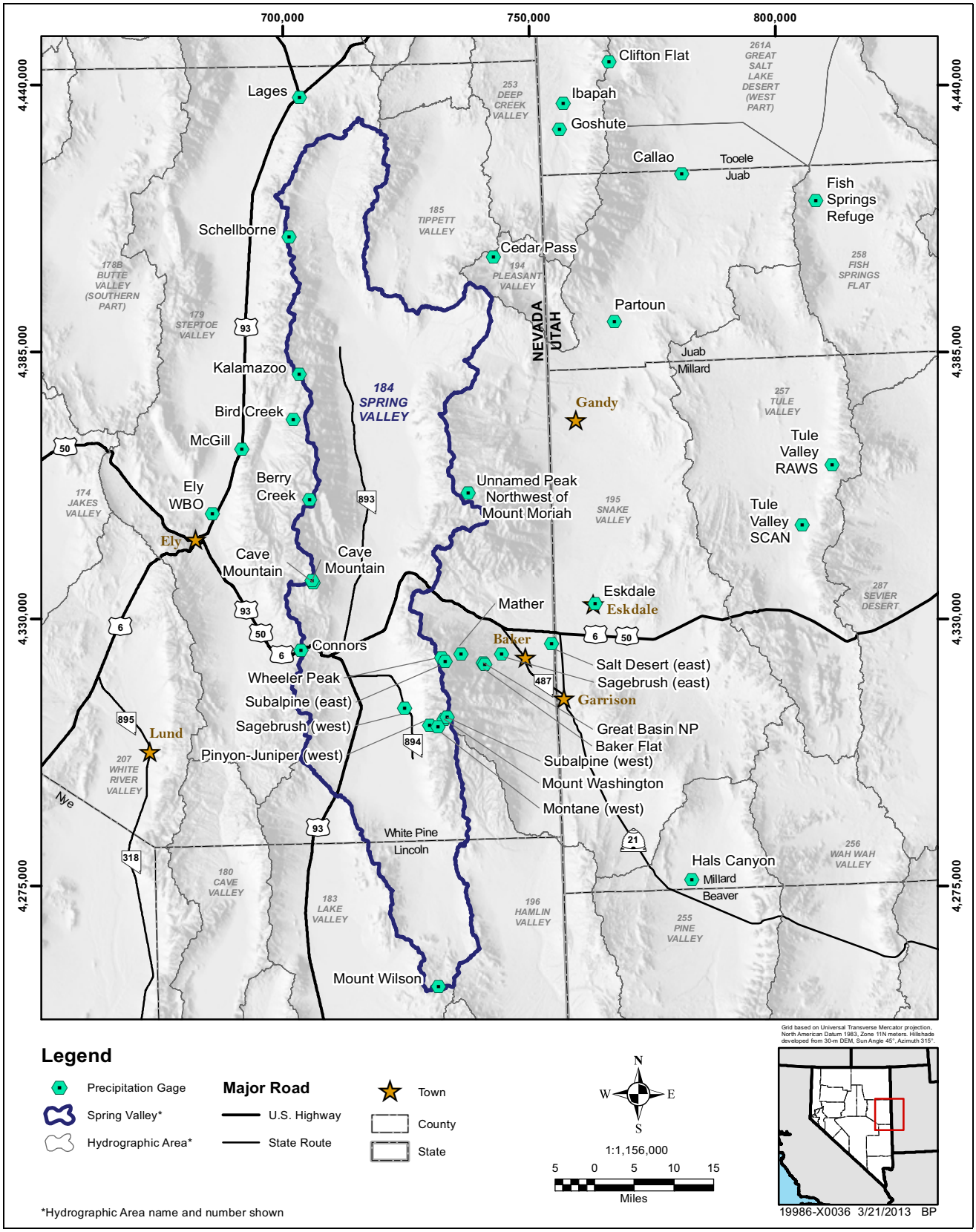


Figure 2-6
Precipitation Station Locations

90 days of collection. Data will also be submitted directly to the NSE on a quarterly basis in electronic format.

2.8 Proposed Schedule of Groundwater Withdrawals

No groundwater production is scheduled for the next 2 years.

3.0 ANTICIPATED 2015 SNWA SV3M PLAN ACTIVITIES

SNWA will continue to work with NSE and TRP participants to implement the SV3M Plan. Anticipated SV3M Plan activities in 2015 are summarized below.

- Continue to collect required quarterly and continuous water-level measurements at specified locations throughout 2015. Data will be reported quarterly to the other TRP members through the SNWA data-exchange web site. Data will be submitted to NSE in an approved electronic format and included in the annual data report to be submitted in March 2016.

- Provide technical assistance to the BWG, as requested.

This Page Left Intentionally Blank

4.0 REFERENCES

Mace, J.T., 2011a, Well Completion and Geologic Data Analysis Report for Monitor Wells SPR7024M and SPR7024M2 in Spring Valley: Southern Nevada Water Authority, Las Vegas, Nevada, Doc. No. RDS-ED-0025, 31 p.

Mace, J.T., 2011b, Well Completion and Geologic Data Analysis Report for Monitor Wells SPR7029M and SPR7029M2 in Spring Valley: Southern Nevada Water Authority, Las Vegas, Nevada, Doc. No. RDS-ED-0027, 31 p.

Mace, J.T., 2011c, Well Completion and Geologic Data Analysis Report for Monitor Wells SPR7030M and SPR7030M2 in Spring Valley: Southern Nevada Water Authority, Las Vegas, Nevada, Doc. No. RDS-ED-0026, 31 p.

Meinzer, O.E., 1911, Ground water in Juab, Millard, and Iron counties Utah: U.S. Geological Survey Water-Supply Paper 277, 162 p.

NDWR, see Nevada Division of Water Resources.

Nevada Division of Water Resources, 2015, Precipitation Data [Internet], [accessed March 2015], available from http://water.nv.gov.

Nevada State Engineer (The Office of the State Engineer of the State of Nevada), 2007, The ruling (#5726) in the matter of applications 54003 through 54021, inclusive, filed to appropriate the underground waters of the Spring Valley hydrographic basin (184), White Pine County, Nevada.

NSC, see Nevada Supreme Court.

NSE, see Nevada State Engineer.

Nevada Supreme Court, 2010, Great Basin Water Network v. State Engineer, 126 Nev., Ad. Op. No. 20, June 17, 2010.

Prieur, J.P., and Ashinhurst, C.S., 2011, Well development and aquifer testing results Test Well SPR7029M2, Spring Valley, NV-Preliminary Data Memo: Southern Nevada Water Authority, Las Vegas, Nevada, 31 p.

SNWA, see Southern Nevada Water Authority.

Southern Nevada Water Authority, 2006, Water resources assessment for Spring Valley—Presentation to the Office of the Nevada State Engineer: Southern Nevada Water Authority, Las Vegas, Nevada, 167 p.

Southern Nevada Water Authority, 2008, Spring Valley stipulation agreement hydrologic monitoring plan status and data report: Southern Nevada Water Authority, Las Vegas, Nevada, Doc. No. WRD-ED-0001, 76 p.

Southern Nevada Water Authority, 2009a, Spring Valley hydrologic monitoring and mitigation plan (Hydrographic Area 184): Southern Nevada Water Authority, Las Vegas, Nevada, Doc. No. WRD-ED-0003, 49 p.

Southern Nevada Water Authority, 2009b, 2008 Spring Valley hydrologic monitoring and mitigation plan status and data report: Southern Nevada Water Authority, Las Vegas, Nevada, Doc. No. WRD-ED-0004, 109 p.

Southern Nevada Water Authority, 2010, 2009 Spring Valley hydrologic monitoring and mitigation plan status and data report: Southern Nevada Water Authority, Las Vegas, Nevada, Doc. No. WRD-ED-0007, 120 p.

Southern Nevada Water Authority, 2011a, Hydrologic monitoring and mitigation plan for Spring Valley (Hydrographic Area 184): Southern Nevada Water Authority, Las Vegas, Nevada, Doc. No. WRD-ED-0012, 54 p.

Southern Nevada Water Authority, 2011b, 2010 Spring Valley hydrologic monitoring and mitigation plan status and data report: Southern Nevada Water Authority, Las Vegas, Nevada, Doc. No. WRD-ED-0010, 126 p.

Southern Nevada Water Authority, 2012, 2011 Spring Valley hydrologic monitoring, management, and mitigation plan status and data report: Southern Nevada Water Authority, Las Vegas, Nevada, Doc. No. WRD-ED-0014, 165 p.

Southern Nevada Water Authority, 2013, 2012 Spring Valley hydrologic monitoring, management, and mitigation plan status and data report: Southern Nevada Water Authority, Las Vegas, Nevada, Doc. No. WRD-ED-0017, 163 p.

Southern Nevada Water Authority, 2014a, 2013 Spring Valley hydrologic monitoring, management, and mitigation plan status and data report: Southern Nevada Water Authority, Las Vegas, Nevada, Doc. No. WRD-ED-0025, 161 p.

Southern Nevada Water Authority, 2014b, Synoptic Discharge Study Work Plan Big Springs/Lake Creek Snake Valley, NV/UT: Southern Nevada Water Authority, Las Vegas, Nevada, Doc. No. WRD-ED-0023, 80 p.

Stipulation for Withdrawal of Protests: U.S. Bureau of Indian Affairs, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, National Park Service, Southern Nevada Water Authority. (Sept. 8, 2006).

USDA, see U.S. Department of Agriculture.

U.S Department of Agriculture, 2015, Natural Resources Center Service (NRCS) National Water & Climate Center (WCC) [Internet], [accessed February 2015], available from http://www.wcc.nrcs.usda.gov.

USGS, see U.S. Geological Survey.

U.S. Geological Survey, 2015, National Water Information System (NWIS-Web) [Internet], accessed February 2015, available from waterdata.usgs.gov/nwis/.

Walker, R., 1972, Investigation of Big Springs: Letter report from the Office of Sevier River Commissioner to Big Springs Irrigation Company, 9 p.

Western Regional Climate Center (WRCC), 2015, Historical Climate Data [Internet], [accessed February 2015], available from http://www.wrcc.dri.edu.

WRCC, see Western Regional Climate Center.

This Page Left Intentionally Blank

Appendix A

SV3M Plan
Periodic Water-Level Data

Table A-1
SV3M Plan Periodic Water-Level Measurement Data
(Page 1 of 7)

Site Number	Station Local Number[a]	Well Depth (ft bgs)	Surface Elevation (ft amsl)	Water Level			
				Date	Depth to Water (ft bgs)	Well Status[b]	Measurement Method[c]
184W101	184 N09 E68 11BDCA1	1,749	6,190.90	1/8/2014	485.03	S	T
				2/12/2014	485.47	S	T
				4/15/2014	485.67	S	T
				5/13/2014	485.99	S	T
				7/9/2014	486.17	S	T
				9/29/2014	486.42	S	T
184W103	184 N11 E66 35CCCC2	1,017	5,899.06	1/8/2014	98.52	S	T
				2/11/2014	98.53	S	T
				4/9/2014	98.45	S	T
				5/13/2014	98.46	S	T
				7/9/2014	98.45	S	T
				10/6/2014	98.63	S	T
184W105	184 N12 E66 26BDAA1	1,135	6,007.30	1/8/2014	209.27	S	T
				2/11/2014	209.27	S	T
				4/9/2014	209.22	S	T
				5/14/2014	209.35	S	T
				7/9/2014	209.32	S	T
				10/6/2014	209.47	S	T
SPR7006M[d]	184 N14 E67 14DDAC1	1,700	6,525.18	1/7/2014	772.24	S	T
				2/11/2014	772.44	S	T
				4/9/2014	772.53	S	T
				5/14/2014	772.51	S	T
				7/8/2014	772.66	S	T
				10/6/2014	772.91	S	T
SPR7008X	184 N15 E67 26CADC1	960	5,702.99	1/7/2014	13.19	S	T
				2/11/2014	13.28	S	T
				4/9/2014	12.96	S	T
				5/14/2014	13.07	S	T
				7/8/2014	13.18	S	T
				10/6/2014	12.8	S	T
SPR7005X	184 N14 E66 09ABCA2	1,350	6,397.56	1/7/2014	494.34	S	T
				2/10/2014	494.66	S	T
				4/9/2014	494.92	S	T
				5/14/2014	495.12	S	T
				7/9/2014	495.34	S	T
				10/7/2014	495.91	S	T

Table A-1
SV3M Plan Periodic Water-Level Measurement Data
(Page 2 of 7)

Site Number	Station Local Number[a]	Well Depth (ft bgs)	Surface Elevation (ft amsl)	Water Level			
				Date	Depth to Water (ft bgs)	Well Status[b]	Measurement Method[c]
SPR7007X	184 N11 E68 05BCBC2	1,020	6,017.53	1/8/2014	158.87	S	T
				2/12/2014	159.49	S	T
				4/15/2014	160.06	S	T
				5/14/2014	159.92	S	T
				7/9/2014	156.25	S	T
				9/30/2014	157.4	S	T
SPR7029M	184 N16 E66 25DBCD1	260	5,876.83	1/7/2014	217.22	S	T
				2/10/2014	217.03	S	T
				4/9/2014	216.78	S	T
				5/14/2014	216.91	S	T
				7/8/2014	217.74	S	T
				10/7/2014	219.07	S	T
SPR7029M2	184 N16 E66 25DBCA1	423	5,876.65	1/7/2014	216.9	S	T
				2/10/2014	216.74	S	T
				4/9/2014	216.48	S	T
				5/14/2014	216.58	S	T
				7/8/2014	217.48	S	T
				10/7/2014	218.74	S	T
SPR7030M	184 N16 E67 32ABAB1	98	5,617.15	1/7/2014	-28.45	S	G
				4/9/2014	-28.92	S	G
				5/14/2014	-28.79	S	G
				7/8/2014	-28.39	S	G
				10/7/2014	-27.42	S	G
SPR7030M2	184 N16 E67 32ABAB2	236	5,617.79	1/7/2014	-36.98	S	G
				4/9/2014	-37.64	S	G
				5/14/2014	-37.64	S	G
				7/8/2014	-36.9	S	G
				10/7/2014	-35.95	S	G
383704114225001[d]	184 N09 E68 30AAAB1	679	6,002.52	1/8/2014	224.83	S	T
				2/12/2014	224.46	S	T
				4/15/2014	224.63	S	T
				5/13/2014	224.86	S	T
				7/9/2014	224.68	S	T
				9/29/2014	224.82	S	T

Table A-1
SV3M Plan Periodic Water-Level Measurement Data
(Page 3 of 7)

Site Number	Station Local Number[a]	Well Depth (ft bgs)	Surface Elevation (ft amsl)	Water Level			
				Date	Depth to Water (ft bgs)	Well Status[b]	Measurement Method[c]
384039114232701[d]	184 N10 E68 31CD 1	150	5,896.49	1/9/2014	118.19	S	T
				2/11/2014	118.2	S	T
				4/15/2014	118.15	S	T
				5/14/2014	118.16	S	T
				7/9/2014	118.14	S	T
				9/9/2014	118.18	S	T
				9/16/2014	118.19	S	T
384831114314301[d]	184 N11 E66 23AB 1	102	5,842.94	1/8/2014	47.44	S	T
				2/11/2014	47.48	S	T
				4/9/2014	47.42	S	T
				5/14/2014	47.47	S	T
				7/9/2014	47.5	S	T
				10/6/2014	47.62	S	T
384745114224401[d]	184 N11 E68 19DCDC1	200	5,900.18	1/8/2014	99.67	S	T
				2/12/2014	99.78	S	T
				4/15/2014	99.93	S	T
				5/14/2014	100.01	S	T
				7/9/2014	100.13	S	T
				9/29/2014	100.39	S	T
390352114305401[d]	184 N14 E66 24BDDD1	160	5,846.04	1/7/2014	38.65	S	T
				2/10/2014	38.62	S	T
				4/9/2014	38.55	S	T
				5/14/2014	38.51	S	T
				7/9/2014	38.53	S	T
				9/8/2014	38.59	S	T
				10/7/2014	38.57	S	T
390803114251001[d]	184 N15 E67 26CA 1	200	5,727.21	1/7/2014	39.85	S	T
				2/11/2014	39.94	S	T
				4/9/2014	39.96	S	T
				5/14/2014	40.01	S	T
				7/8/2014	40.04	S	T
				10/6/2014	40.21	S	T
Robison Crooked Well[d]	184 N19 E66 11B 1	400	5,698.43	1/7/2014	41.1	S	T
				4/9/2014	42.91	S	T
				5/14/2014	43.25	S	T
				7/8/2014	43.69	S	T
				10/7/2014	44.13	S	T

Table A-1
SV3M Plan Periodic Water-Level Measurement Data
(Page 4 of 7)

Site Number	Station Local Number[a]	Well Depth (ft bgs)	Surface Elevation (ft amsl)	Water Level			
				Date	Depth to Water (ft bgs)	Well Status[b]	Measurement Method[c]
383023114115302[d]	196 N08 E69 35DC 2	435	5,837.67	1/8/2014	175.96	S	T
				2/11/2014	176.48	S	T
				4/15/2014	176.21	S	T
				5/13/2014	176.63	S	T
				7/9/2014	176.68	S	T
				10/8/2014	176.96	S	T
184W502M[d]	184 N09 E68 11BDBD1	1,799	6,189.72	1/8/2014	484.11	S	T
				2/12/2014	484.59	S	T
				4/15/2014	484.77	S	T
				5/13/2014	485.09	S	T
				7/9/2014	485.18	S	T
				9/29/2014	485.44	S	T
184W504M[d]	184 N11 E66 35CCCC1	1,020	5,900.11	1/8/2014	100.4	S	T
				2/11/2014	100.48	S	T
				4/9/2014	100.43	S	T
				5/13/2014	100.51	S	T
				7/9/2014	100.52	S	T
				10/6/2014	100.71	S	T
184W506M[d]	184 N12 E66 26BADC1	1,140	6,014.04	1/8/2014	215.93	S	T
				2/11/2014	215.96	S	T
				4/9/2014	215.91	S	T
				5/14/2014	216.00	S	T
				7/9/2014	215.95	S	T
				10/6/2014	216.16	S	T
184W508M[d]	184 N09 E67 11DBCD1	1,160	6,056.19	1/8/2014	276.50	S	T
				2/12/2014	276.67	S	T
				4/15/2014	276.45	S	T
				5/13/2014	276.80	S	T
				7/9/2014	276.52	S	T
				9/29/2014	276.67	S	T
SPR7007M[d]	184 N11 E68 05BCBC1	1,020	6,017.73	1/8/2014	159.12	S	T
				2/11/2014	159.62	S	T
				4/15/2014	160.28	S	T
				5/14/2014	160.13	S	T
				7/9/2014	156.41	S	T
				9/30/2014	157.61	S	T

Table A-1
SV3M Plan Periodic Water-Level Measurement Data
(Page 5 of 7)

Site Number	Station Local Number[a]	Well Depth (ft bgs)	Surface Elevation (ft amsl)	Water Level			
				Date	Depth to Water (ft bgs)	Well Status[b]	Measurement Method[c]
SPR7005M[d]	184 N14 E66 09ABCA1	1,404	6,395.68	1/7/2014	492.44	S	T
				2/10/2014	492.81	S	T
				4/9/2014	493.05	S	T
				5/14/2014	493.23	S	T
				7/9/2014	493.37	S	T
				10/7/2014	494.05	S	T
SPR7008M[d]	184 N15 E67 26CDAB1	946	5,704.86	1/7/2014	14.09	S	T
				2/11/2014	14.24	S	T
				4/9/2014	14.17	S	T
				5/14/2014	14.31	S	T
				7/8/2014	14.41	S	T
				10/6/2014	13.99	S	T
383351114180201	184 N08 E68 14A 1	495	6,184.22	2/11/2014	406.58	S	T
				5/13/2014	406.44	S	T
				7/9/2014	406.25	S	T
				9/29/2014	406.38	S	T
384310114261401	184 N10 E67 22AA 1	100	5,853.54	2/11/2014	65.60	S	T
				5/14/2014	65.65	S	T
				7/9/2014	65.65	S	T
				9/29/2014	65.83	S	T
184 N12 E66 21CD 1	184 N12 E66 21DCCB1	631	6,370.31	2/11/2014	570.01	S	T
				5/14/2014	570.46	S	T
				7/9/2014	570.25	S	T
				10/6/2014	570.45	S	T
385636114265501	184 N13 E67 33DDA 1	---	5,769.73	2/12/2014	9.01	S	T
				5/14/2014	8.53	S	T
				7/8/2014	9.36	S	T
				10/6/2014	9.79	S	T
391224114293601[e]	184 N16 E66 36DBAD1	---	5,870.25	2/10/2014	208.80	P	T
				5/14/2014	208.51	S	T
392703114230501	184 N18 E67 01CCAA1	42	5,587.78	2/11/2014	34.12	S	T
				5/14/2014	34.15	P	T
				7/8/2014	33.83	S	T
				10/7/2014	34.91	S	T
184 N20 E66 13AB 1	184 N20 E66 13BADA1	296	5,774.93	5/14/2014	129.33	S	T
				7/8/2014	129.10	S	T
				10/7/2014	129.75	S	T

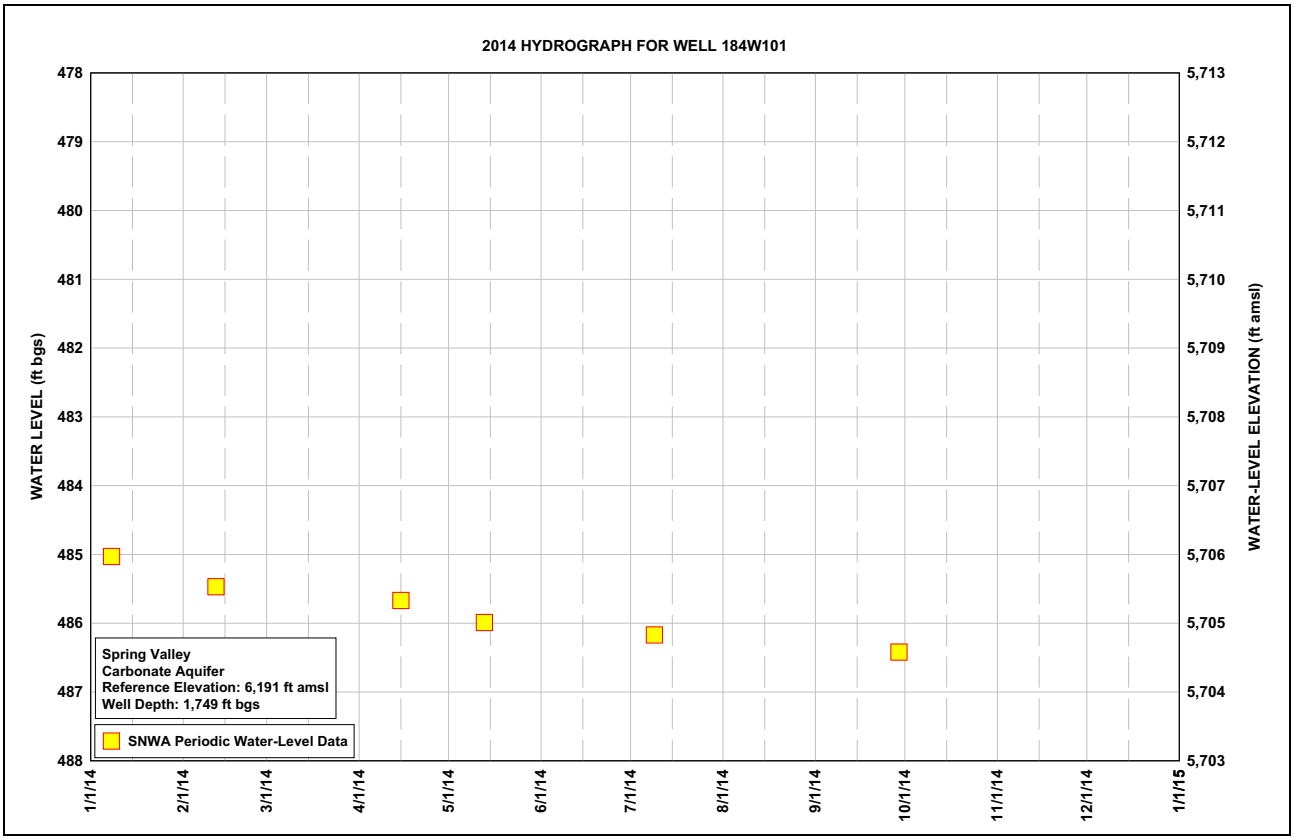
Table A-1
SV3M Plan Periodic Water-Level Measurement Data
(Page 6 of 7)

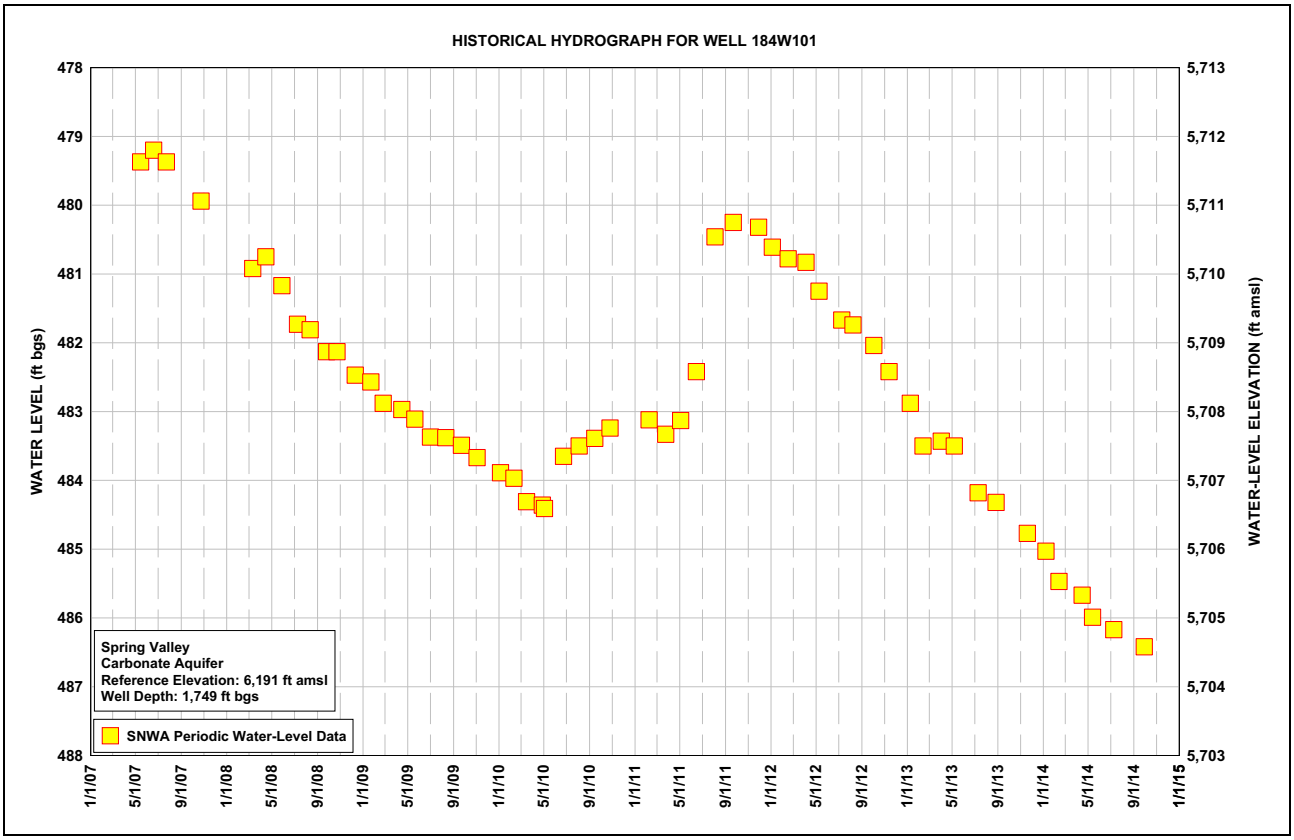
Site Number	Station Local Number[a]	Well Depth (ft bgs)	Surface Elevation (ft amsl)	Water Level			
				Date	Depth to Water (ft bgs)	Well Status[b]	Measurement Method[c]
393442114231801	184 N20 E67 26ABBD1	130	5,708.77	5/14/2014	118.46	S	T
				7/8/2014	118.52	S	T
				10/7/2014	118.50	S	T
383325114134901	196 N08 E69 15B 1	110	5,729.98	2/11/2014	71.40	S	T
				3/4/2014	71.45	S	T
				3/6/2014	71.47	S	T
				5/13/2014	71.67	S	T
				7/9/2014	72.17	S	T
				10/8/2014	72.29	S	T
383533114102901	196 N08 E70 06B 1	164	5,676.76	2/11/2014	89.67	S	T
				3/4/2014	89.65	S	T
				3/6/2014	89.63	S	T
				5/13/2014	89.68	S	T
SPR7024M[d]	184 N12 E67 01CCCD1	250	5,861.10	1/8/2014	22.63	S	T
				2/11/2014	22.51	S	T
				4/16/2014	22.62	S	T
				5/14/2014	23.10	S	T
				7/8/2014	24.04	S	T
				9/30/2014	25.55	S	T
SPR7024M2[d]	184 N12 E67 01CCCD2	699	5,863.08	1/8/2014	16.63	S	T
				2/11/2014	16.31	S	T
				4/16/2014	16.48	S	T
				5/14/2014	17.81	S	T
				7/8/2014	19.55	S	T
				9/30/2014	21.75	S	T
384112114091101[d]	196 N09HE70 32BBA 1	700	6019.53	2/11/2014	357.89	S	T
				3/4/2014	357.97	S	T
				3/6/2014	357.56	S	T
				5/13/2014	358.21	S	T
				6/9/2014	358.04	S	T
				6/17/2014	358.14	S	T
				7/9/2014	358.18	S	T
				9/8/2014	359.16	S	T
				9/16/2014	358.52	S	T
				9/18/2014	358.57	S	T
				10/8/2014	359.34	S	T

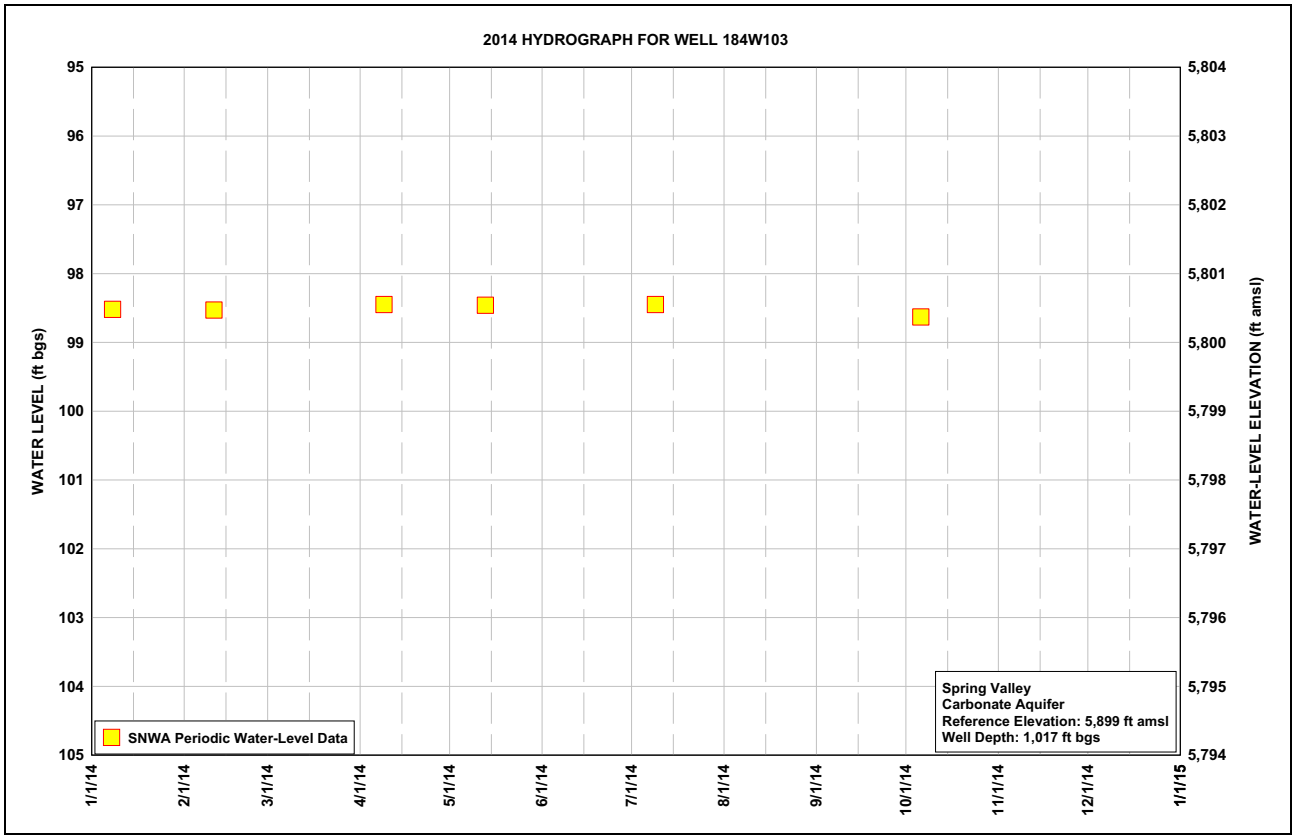
Table A-1
SV3M Plan Periodic Water-Level Measurement Data
(Page 7 of 7)

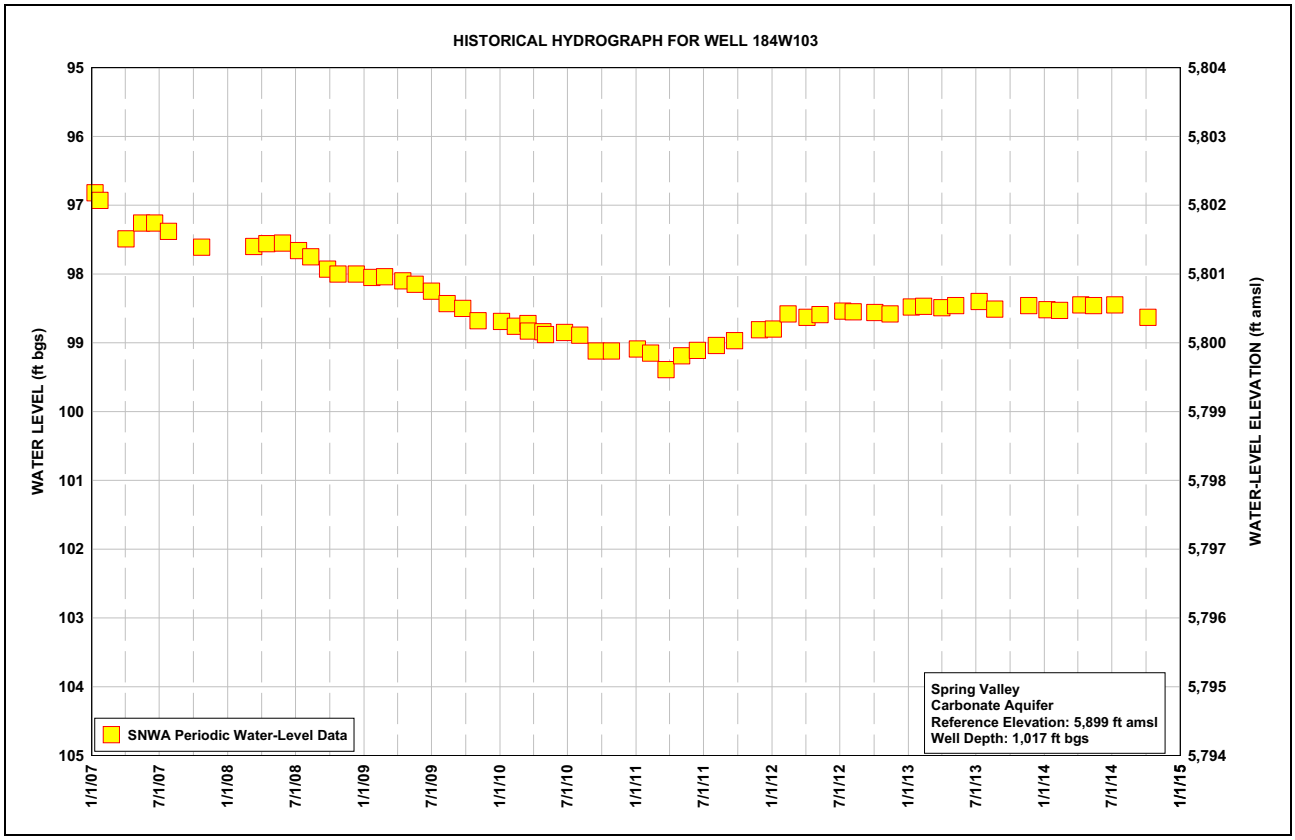
Site Number	Station Local Number[a]	Well Depth (ft bgs)	Surface Elevation (ft amsl)	Water Level			
				Date	Depth to Water (ft bgs)	Well Status[b]	Measurement Method[c]
384227114082701[d]	195 N10 E70 28CBCB1	460	5815.18	3/4/2014	228.19	S	T
				3/6/2014	227.63	S	T
				6/9/2014	228.09	S	T
				7/9/2014	228.17	S	T
				9/16/2014	228.33	S	T
				9/18/2014	228.34	S	T
				10/8/2014	228.40	S	T

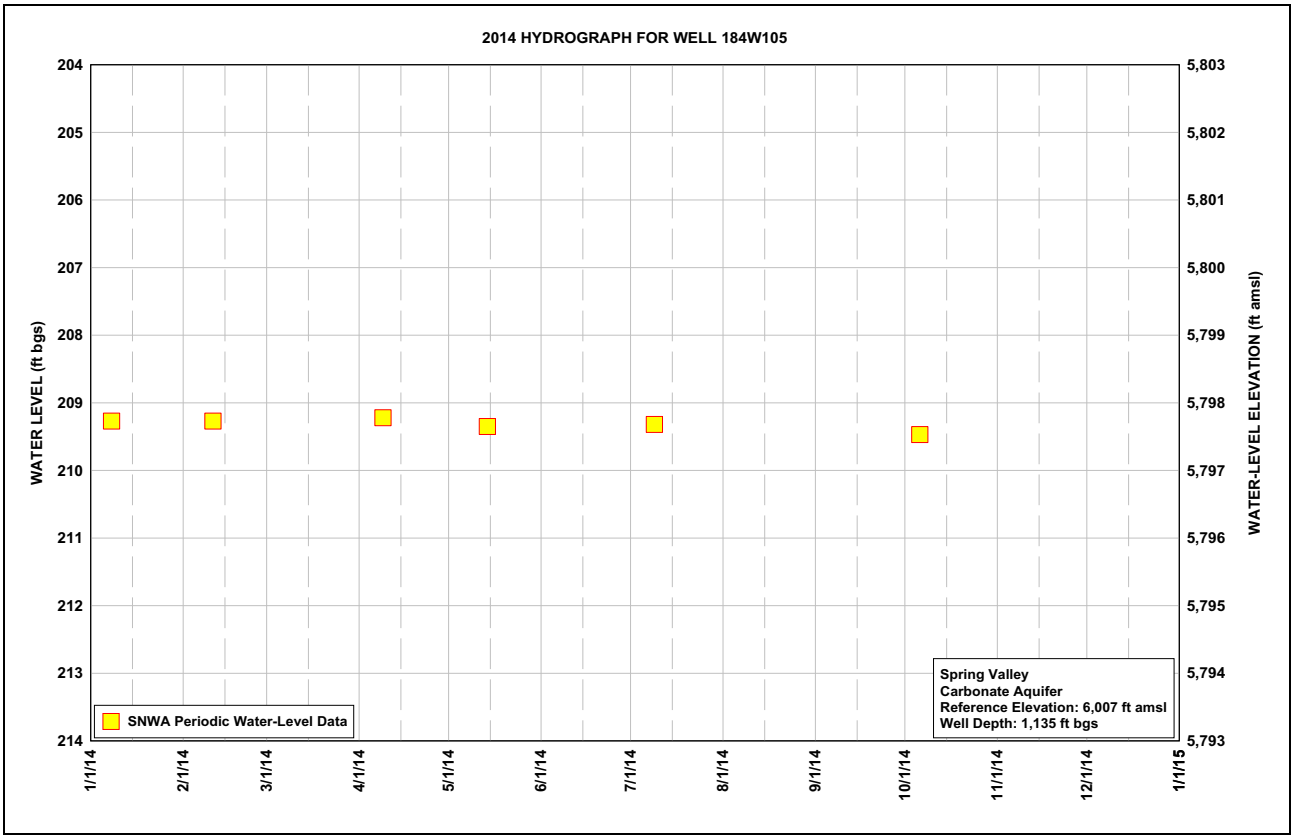
[a]Station Local Numbers provided by the Nevada Department of Water Resources.
[b]S = Static conditions, P = Pumping or recently pumping conditions, D = Dry
[c]T = Electric tape measurement, S = Steel tape measurement, G = Pressure gage
[d]Current and historical hydrographs with periodic and continuous data are presented in Appendix B.
[e]The Cleve Creek well has been replaced by SPR7029M2.
Note: SNWA tape calibration program started in August 2008.

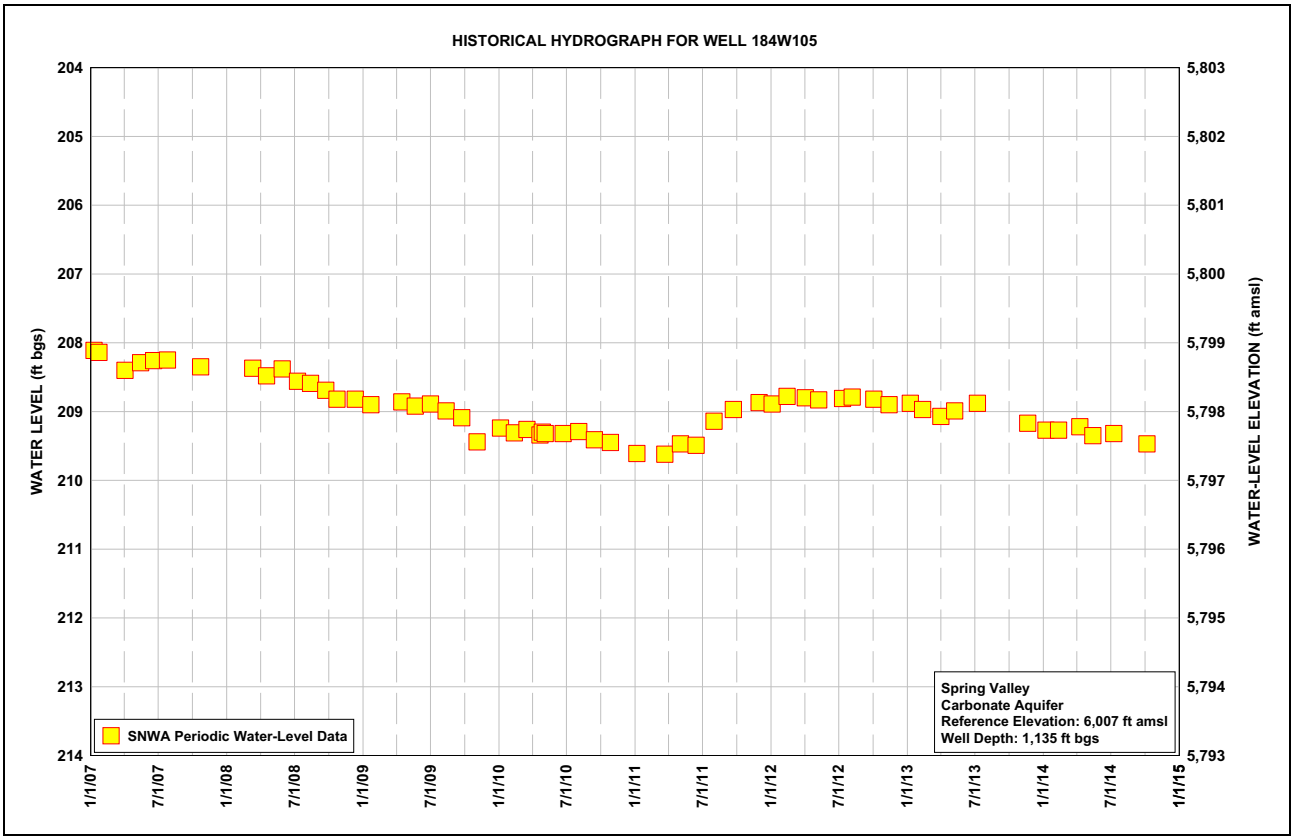

2014 HYDROGRAPH FOR WELL 184W101
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
478
479
480
481
482
483
484
485
486
487
488
5,713
5,712
5,711
5,710
5,709
5,708
5,707
5,706
5,705
5,704
5,703
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
Spring Valley
Carbonate Aquifer
Reference Elevation: 6,191 ft amsl
Well Depth: 1,749 ft bgs
SNWA Periodic Water-Level Data

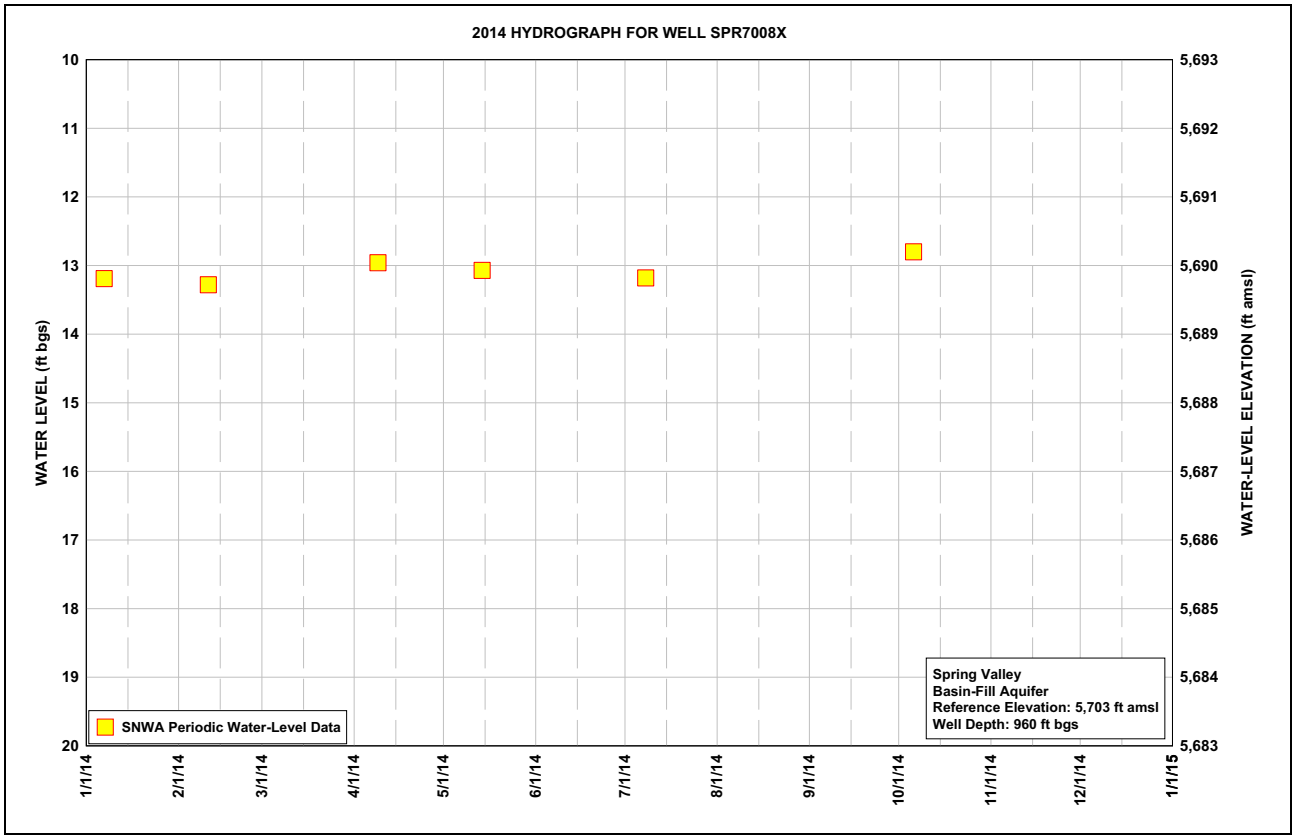

HISTORICAL HYDROGRAPH FOR WELL 184W101
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
478
479
480
481
482
483
484
485
486
487
488
5,713
5,712
5,711
5,710
5,709
5,708
5,707
5,706
5,705
5,704
5,703
1/1/07
5/1/07
9/1/07
1/1/08
5/1/08
9/1/08
1/1/09
5/1/09
9/1/09
1/1/10
5/1/10
9/1/10
1/1/11
5/1/11
9/1/11
1/1/12
5/1/12
9/1/12
1/1/13
5/1/13
9/1/13
1/1/14
5/1/14
9/1/14
1/1/15
Spring Valley
Carbonate Aquifer
Reference Elevation: 6,191 ft amsl
Well Depth: 1,749 ft bgs
SNWA Periodic Water-Level Data

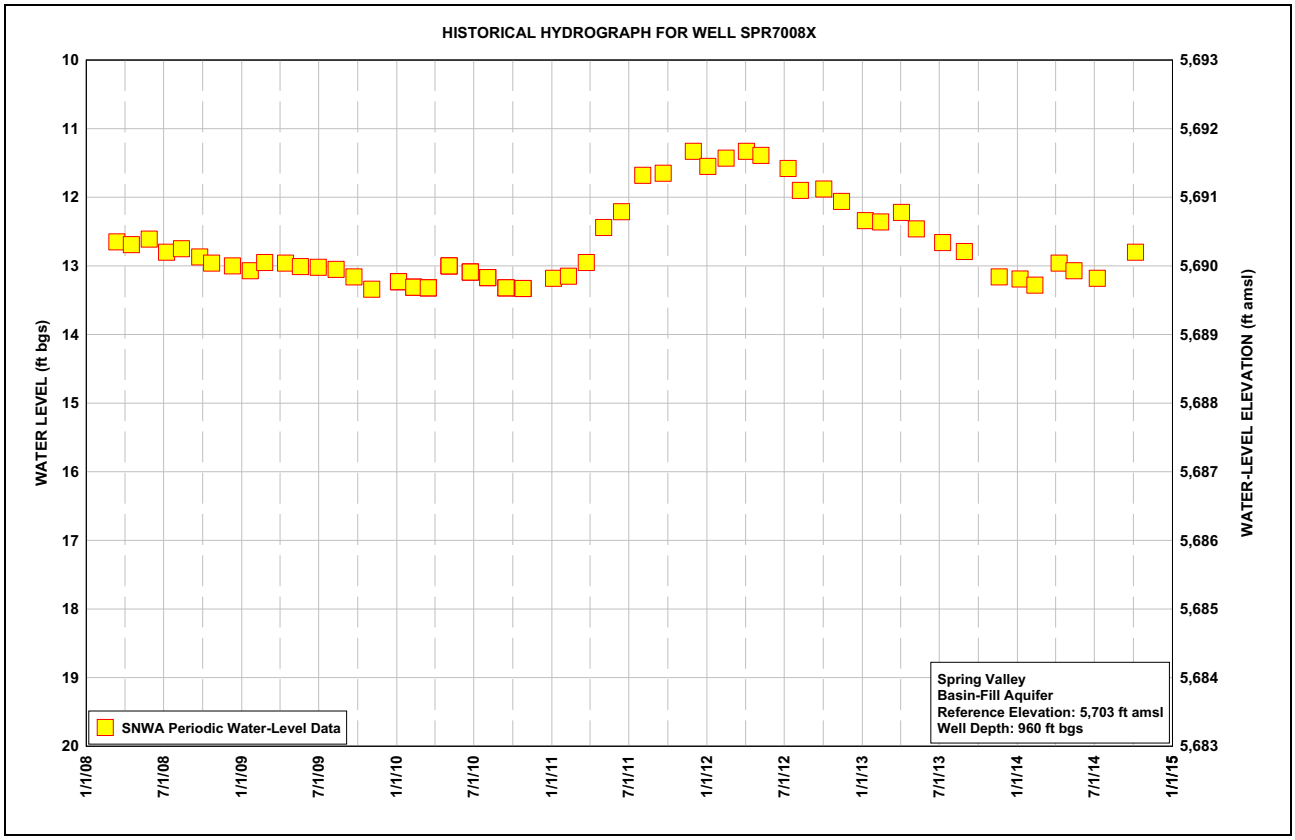

2014 HYDROGRAPH FOR WELL 184W103
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
95
96
97
98
99
100
101
102
103
104
105
5,804
5,803
5,802
5,801
5,800
5,799
5,798
5,797
5,796
5,795
5,794
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Periodic Water-Level Data
Spring Valley
Carbonate Aquifer
Reference Elevation: 5,899 ft amsl
Well Depth: 1,017 ft bgs

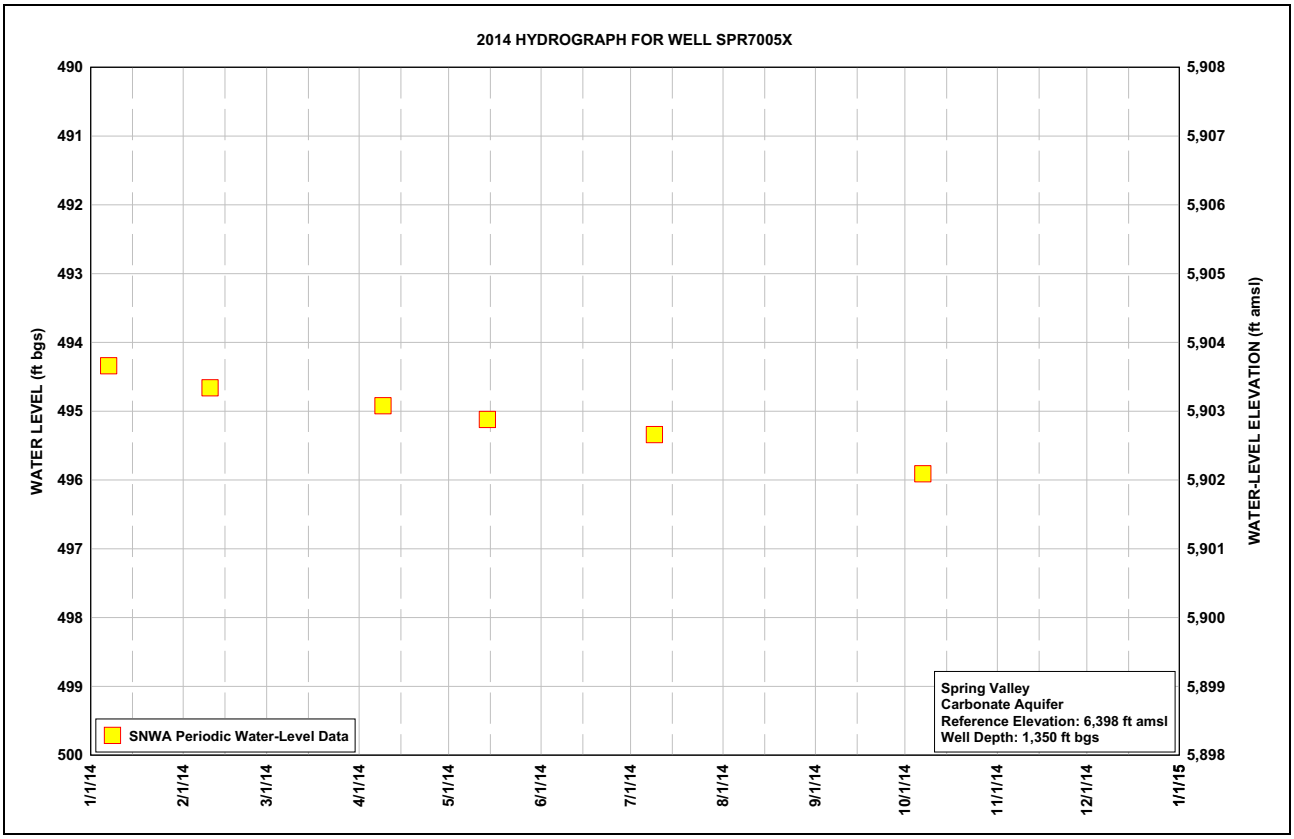

HISTORICAL HYDROGRAPH FOR WELL 184W103
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
95
96
97
98
99
100
101
102
103
104
105
5,804
5,803
5,802
5,801
5,800
5,799
5,798
5,797
5,796
5,795
5,794
1/1/07
7/1/07
1/1/08
7/1/08
1/1/09
7/1/09
1/1/10
7/1/10
1/1/11
7/1/11
1/1/12
7/1/12
1/1/13
7/1/13
1/1/14
7/1/14
1/1/15
SNWA Periodic Water-Level Data
Spring Valley
Carbonate Aquifer
Reference Elevation: 5,899 ft amsl
Well Depth: 1,017 ft bgs

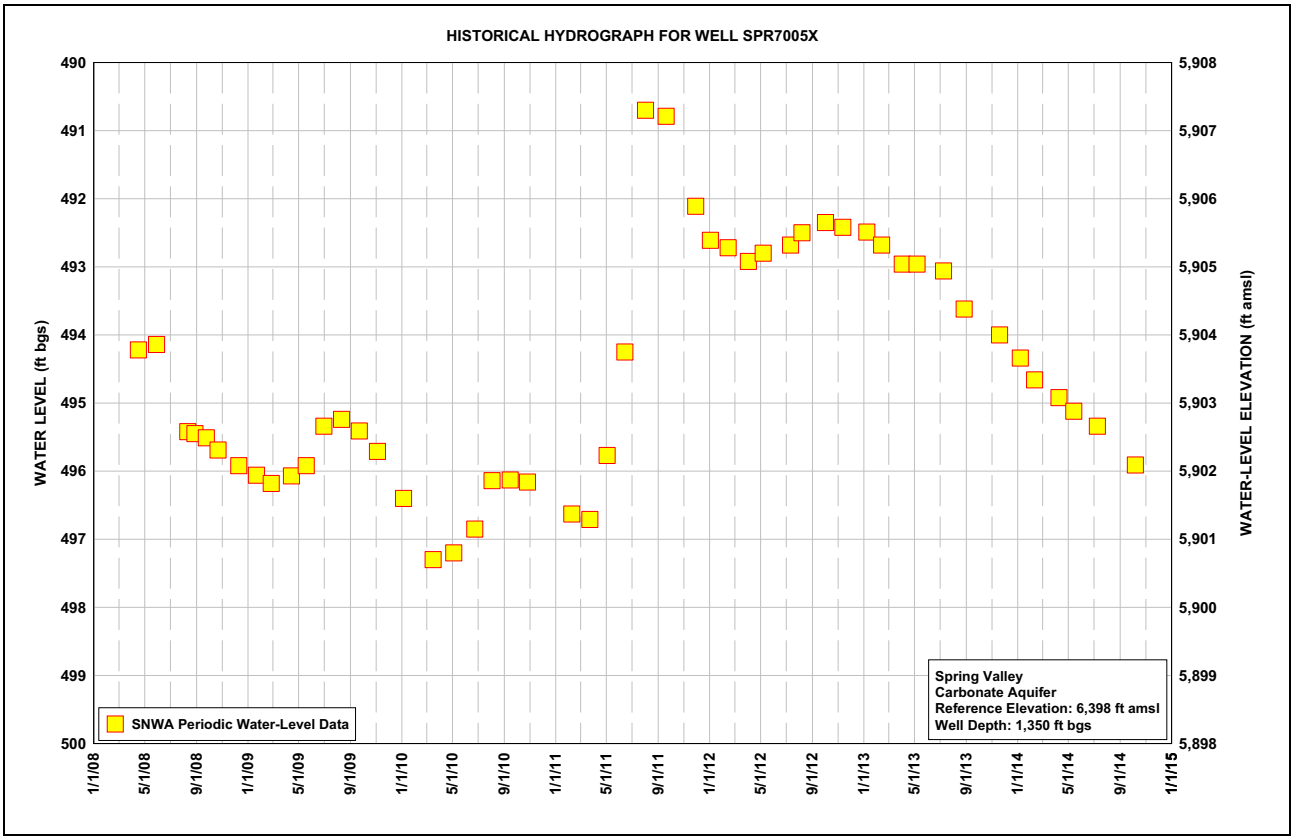

2014 HYDROGRAPH FOR WELL 184W105
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
204
205
206
207
208
209
210
211
212
213
214
5,803
5,802
5,801
5,800
5,799
5,798
5,797
5,796
5,795
5,794
5,793
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Periodic Water-Level Data
Spring Valley
Carbonate Aquifer
Reference Elevation: 6,007 ft amsl
Well Depth: 1,135 ft bgs

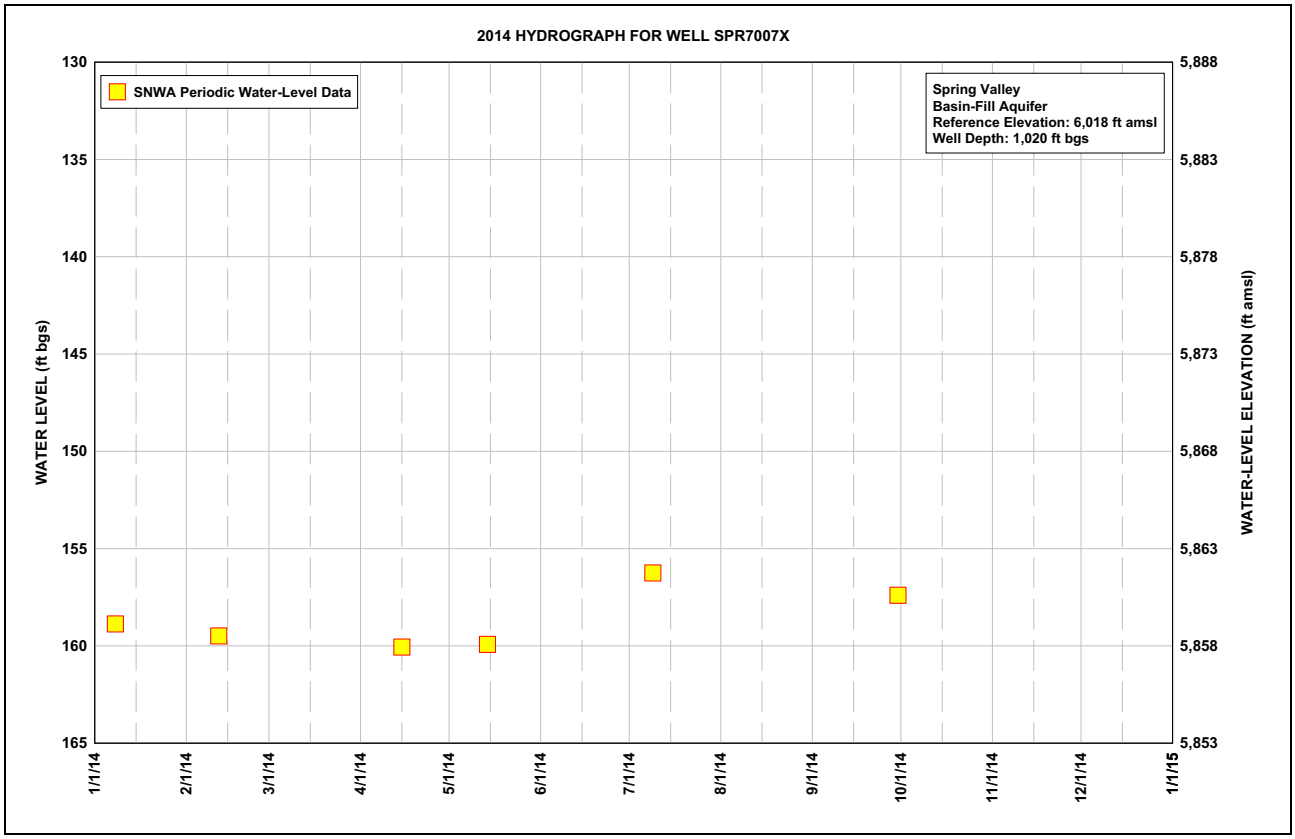

HISTORICAL HYDROGRAPH FOR WELL 184W105
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
204
205
206
207
208
209
210
211
212
213
214
5,803
5,802
5,801
5,800
5,799
5,798
5,797
5,796
5,795
5,794
5,793
1/1/07
7/1/07
1/1/08
7/1/08
1/1/09
7/1/09
1/1/10
7/1/10
1/1/11
7/1/11
1/1/12
7/1/12
1/1/13
7/1/13
1/1/14
7/1/14
1/1/15
SNWA Periodic Water-Level Data
Spring Valley
Carbonate Aquifer
Reference Elevation: 6,007 ft amsl
Well Depth: 1,135 ft bgs

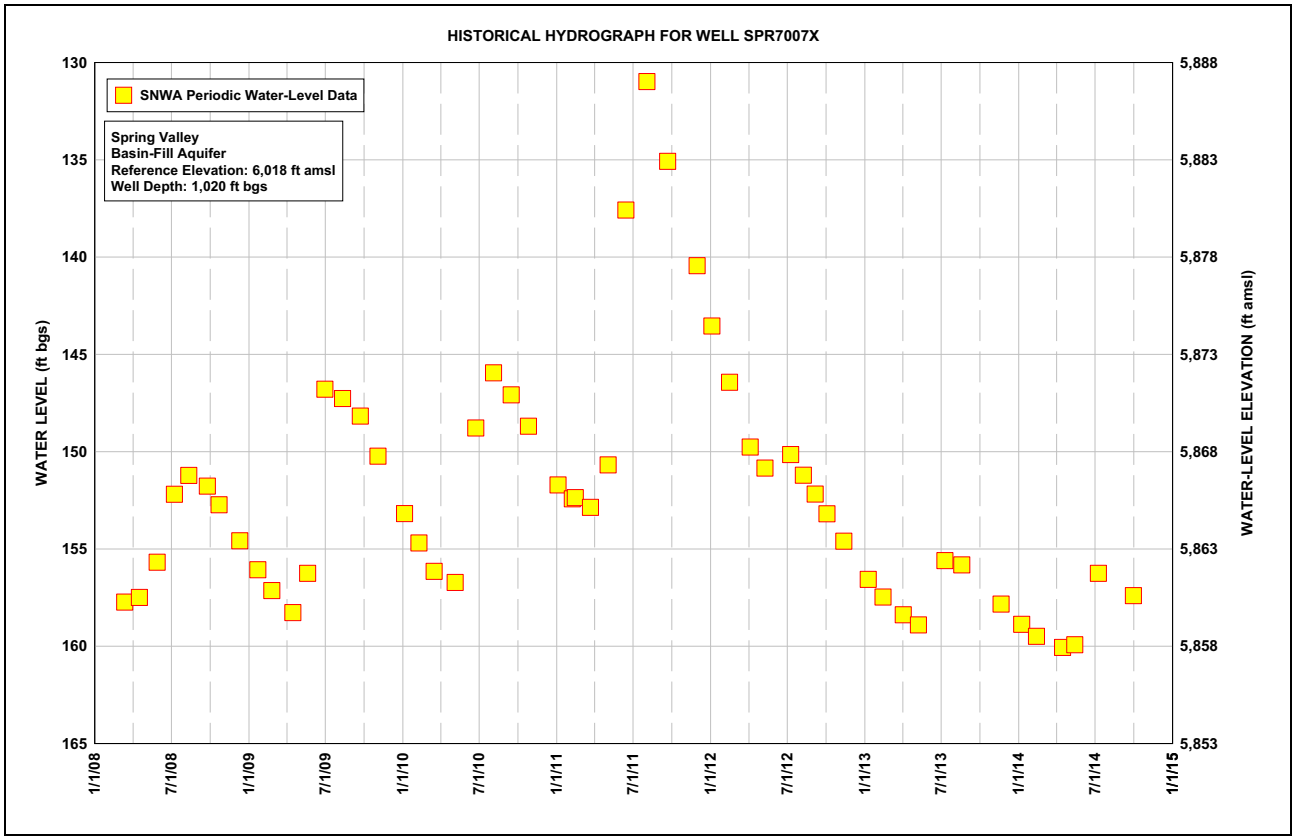

2014 HYDROGRAPH FOR WELL SPR7008X
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
10
11
12
13
14
15
16
17
18
19
20
5,693
5,692
5,691
5,690
5,689
5,688
5,687
5,686
5,685
5,684
5,683
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,703 ft amsl
Well Depth: 960 ft bgs

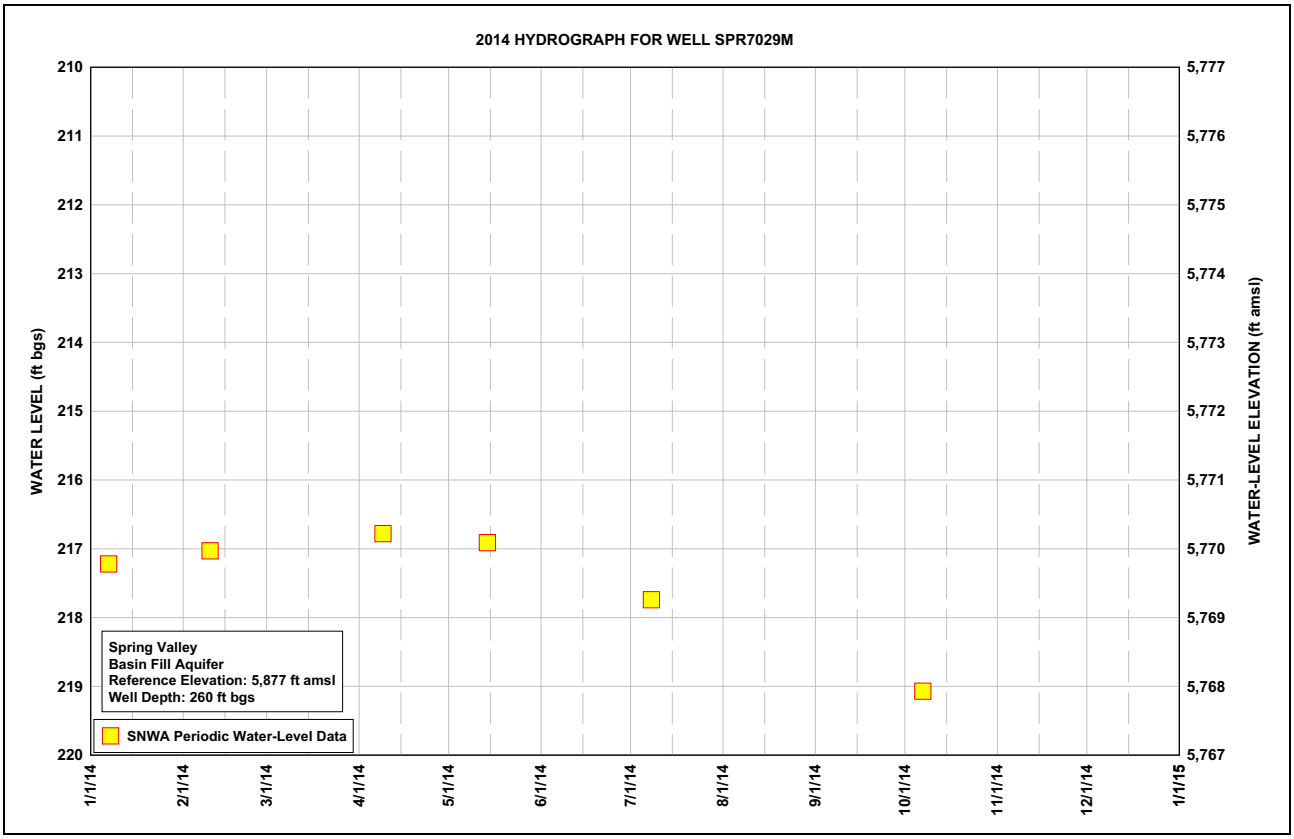

HISTORICAL HYDROGRAPH FOR WELL SPR7008X
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
10
11
12
13
14
15
16
17
18
19
20
5,693
5,692
5,691
5,690
5,689
5,688
5,687
5,686
5,685
5,684
5,683
1/1/08
7/1/08
1/1/09
7/1/09
1/1/10
7/1/10
1/1/11
7/1/11
1/1/12
7/1/12
1/1/13
7/1/13
1/1/14
7/1/14
1/1/15
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,703 ft amsl
Well Depth: 960 ft bgs

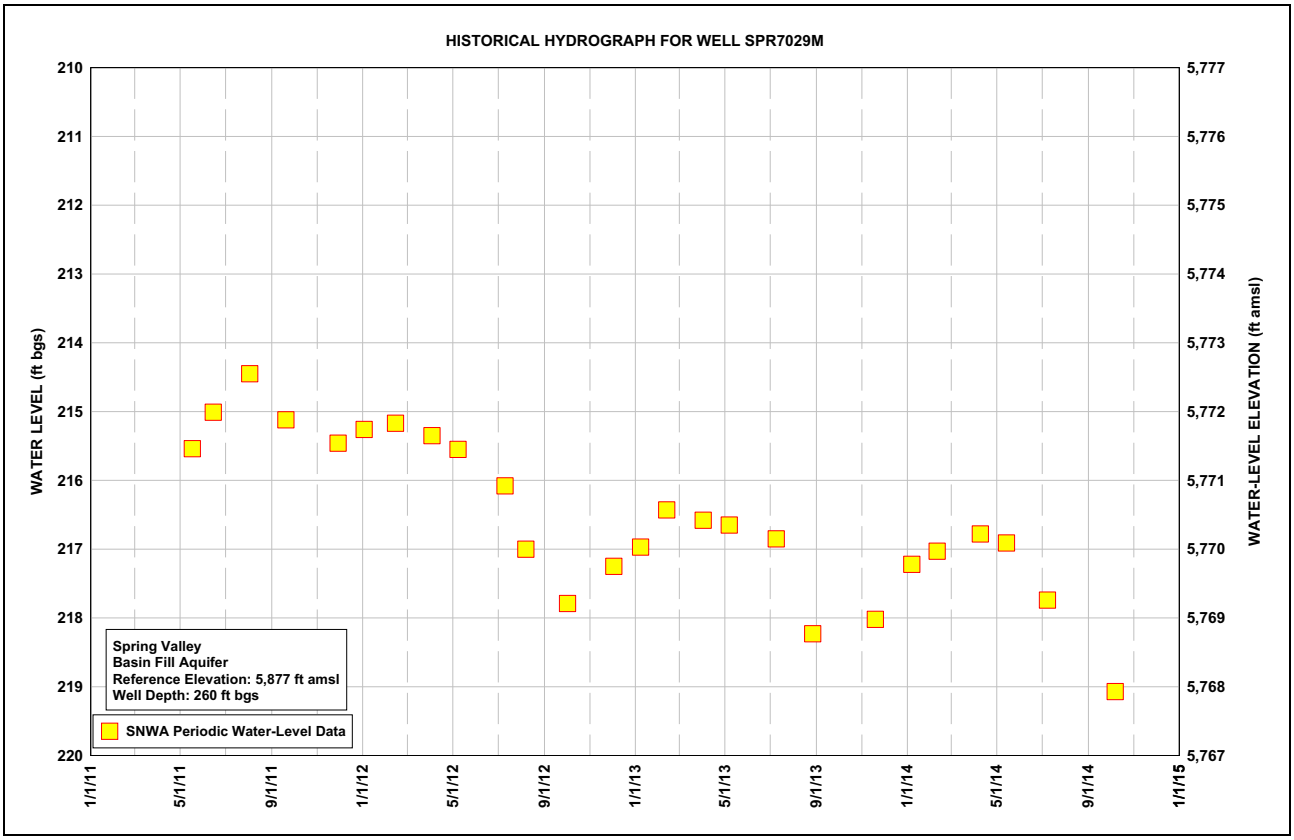

2014 HYDROGRAPH FOR WELL SPR7005X
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
490
491
492
493
494
495
496
497
498
499
500
5,908
5,907
5,906
5,905
5,904
5,903
5,902
5,901
5,900
5,899
5,898
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Periodic Water-Level Data
Spring Valley
Carbonate Aquifer
Reference Elevation: 6,398 ft amsl
Well Depth: 1,350 ft bgs

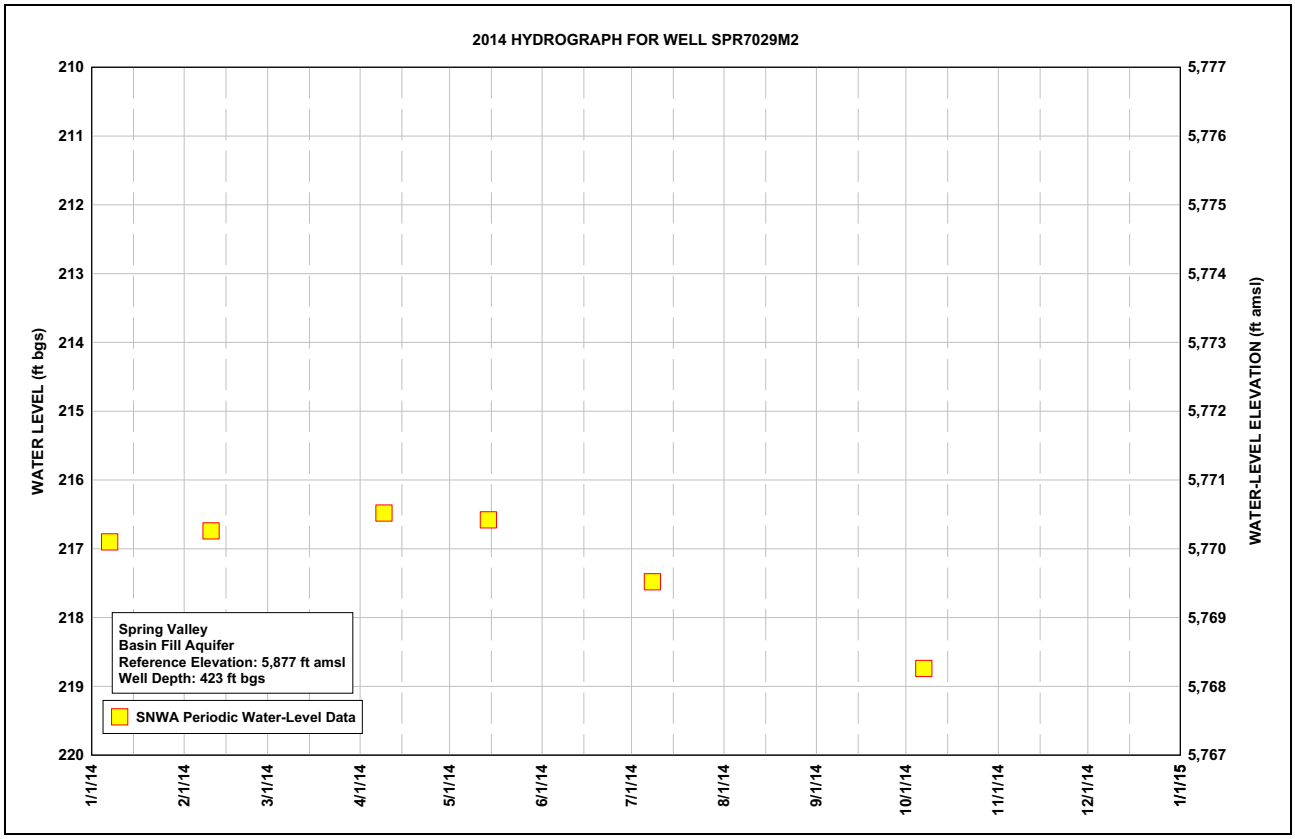

HISTORICAL HYDROGRAPH FOR WELL SPR7005X
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
490
491
492
493
494
495
496
497
498
499
500
5,908
5,907
5,906
5,905
5,904
5,903
5,902
5,901
5,900
5,899
5,898
1/1/08
5/1/08
9/1/08
1/1/09
5/1/09
9/1/09
1/1/10
5/1/10
9/1/10
1/1/11
5/1/11
9/1/11
1/1/12
5/1/12
9/1/12
1/1/13
5/1/13
9/1/13
1/1/14
5/1/14
9/1/14
1/1/15
SNWA Periodic Water-Level Data
Spring Valley
Carbonate Aquifer
Reference Elevation: 6,398 ft amsl
Well Depth: 1,350 ft bgs

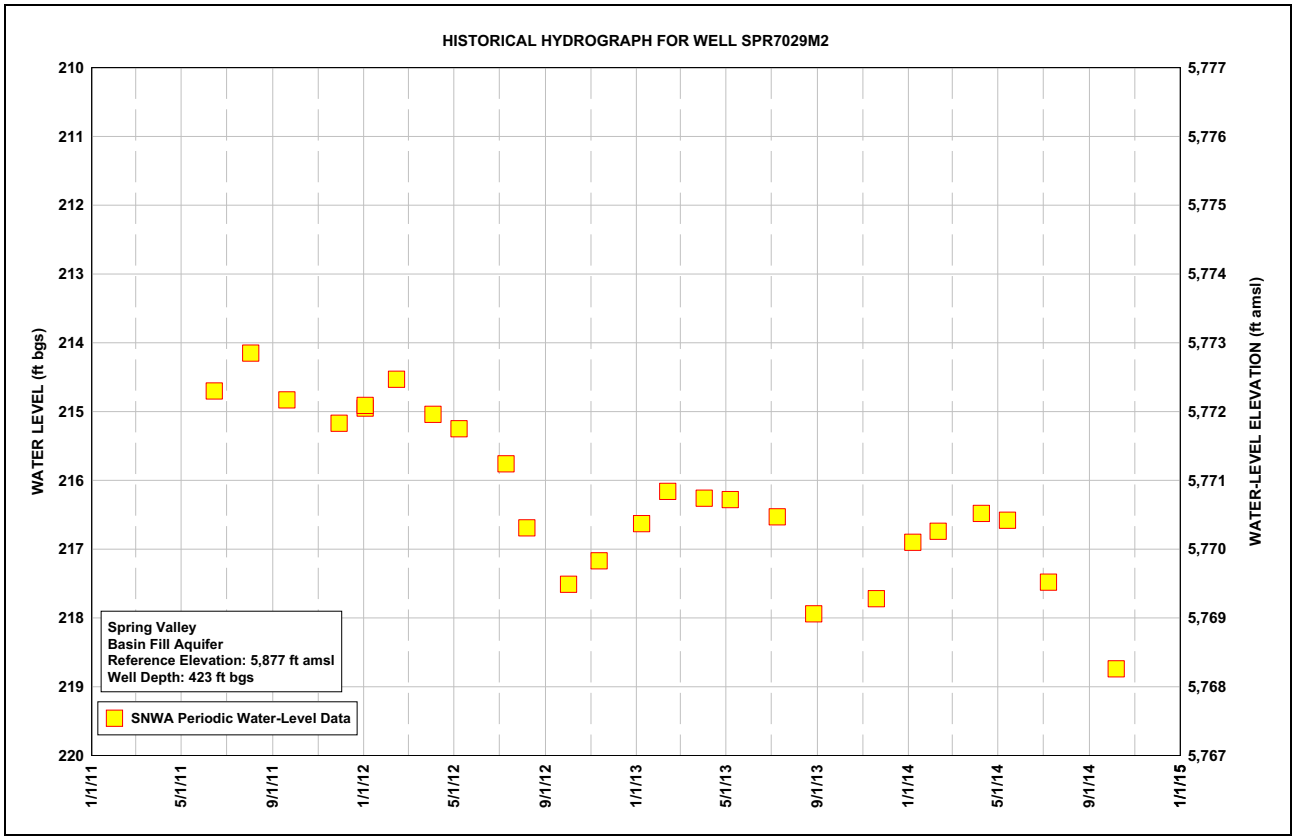

2014 HYDROGRAPH FOR WELL SPR7007X
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 6,018 ft amsl
Well Depth: 1,020 ft bgs
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
130
135
140
145
150
155
160
165
5,888
5,883
5,878
5,873
5,868
5,863
5,858
5,853
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15

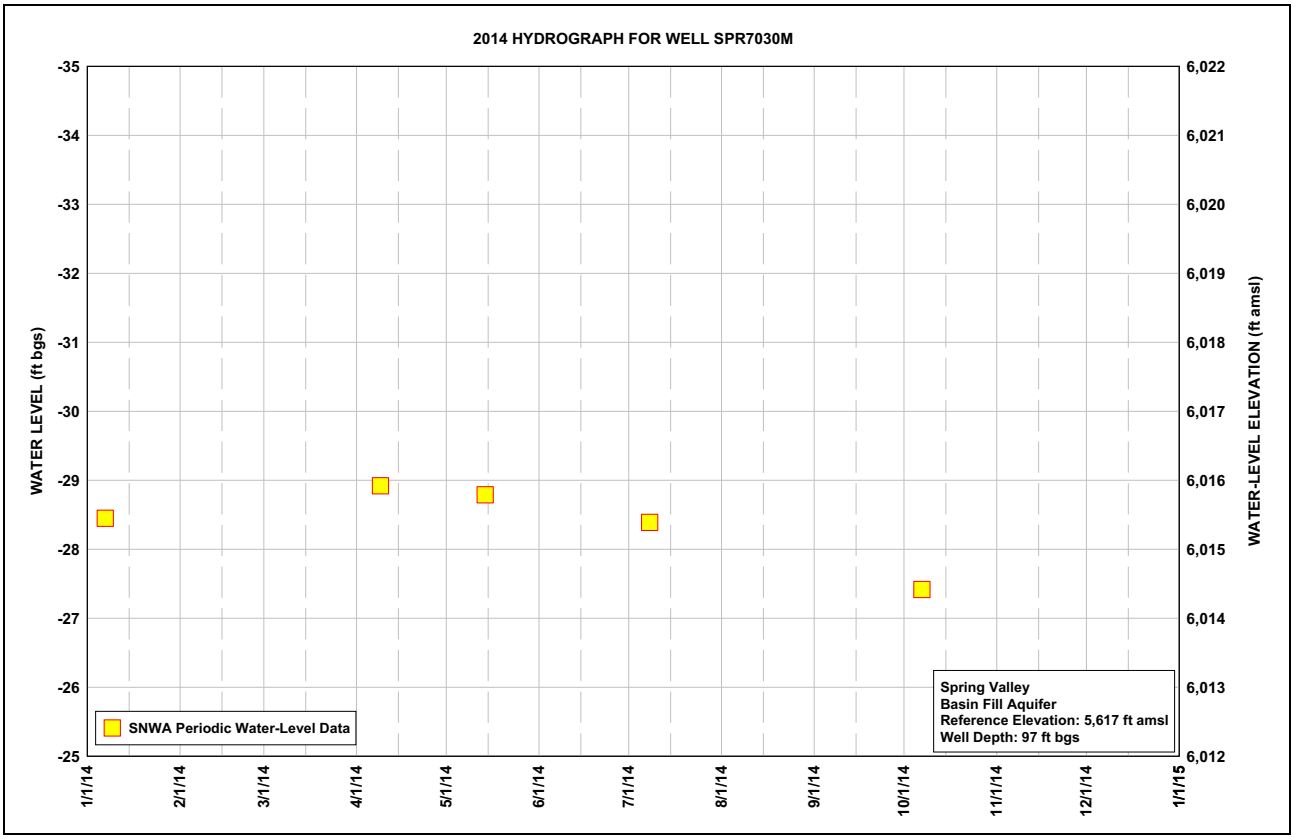

HISTORICAL HYDROGRAPH FOR WELL SPR7007X
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 6,018 ft amsl
Well Depth: 1,020 ft bgs
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
130
135
140
145
150
155
160
165
5,888
5,883
5,878
5,873
5,868
5,863
5,858
5,853
1/1/08
7/1/08
1/1/09
7/1/09
1/1/10
7/1/10
1/1/11
7/1/11
1/1/12
7/1/12
1/1/13
7/1/13
1/1/14
7/1/14
1/1/15

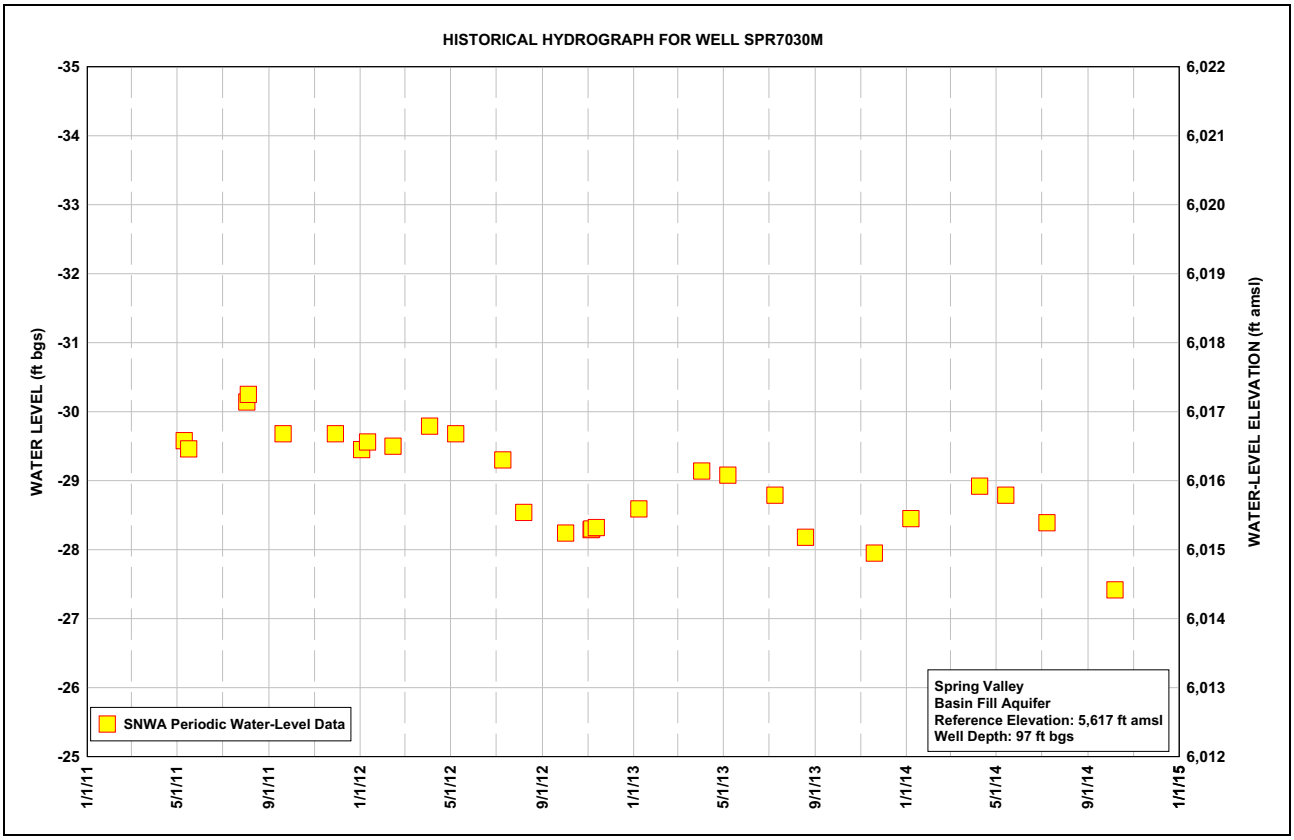

2014 HYDROGRAPH FOR WELL SPR7029M
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
210
211
212
213
214
215
216
217
218
219
220
5,777
5,776
5,775
5,774
5,773
5,772
5,771
5,770
5,769
5,768
5,767
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,877 ft amsl
Well Depth: 260 ft bgs
SNWA Periodic Water-Level Data

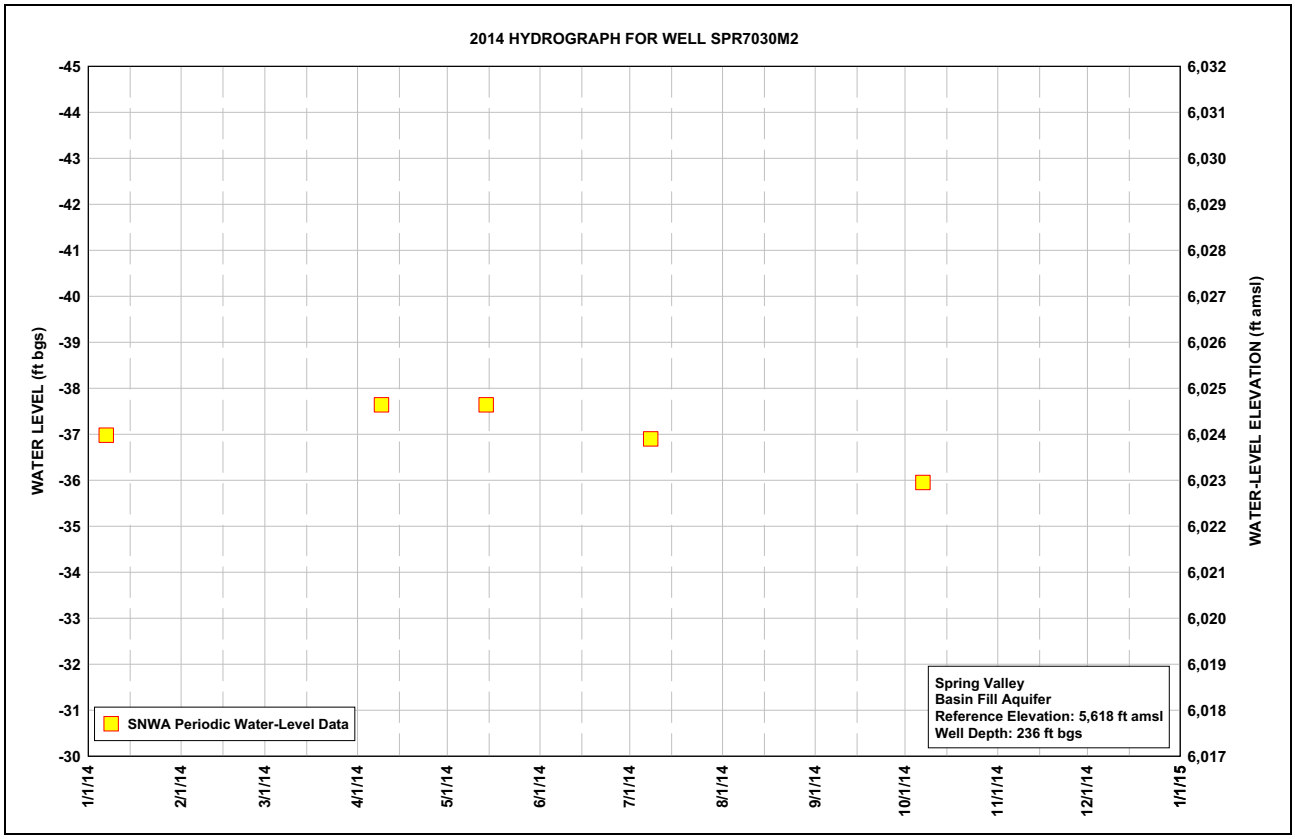

HISTORICAL HYDROGRAPH FOR WELL SPR7029M
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
210
211
212
213
214
215
216
217
218
219
220
5,777
5,776
5,775
5,774
5,773
5,772
5,771
5,770
5,769
5,768
5,767
1/1/11
5/1/11
9/1/11
1/1/12
5/1/12
9/1/12
1/1/13
5/1/13
9/1/13
1/1/14
5/1/14
9/1/14
1/1/15
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,877 ft amsl
Well Depth: 260 ft bgs
SNWA Periodic Water-Level Data

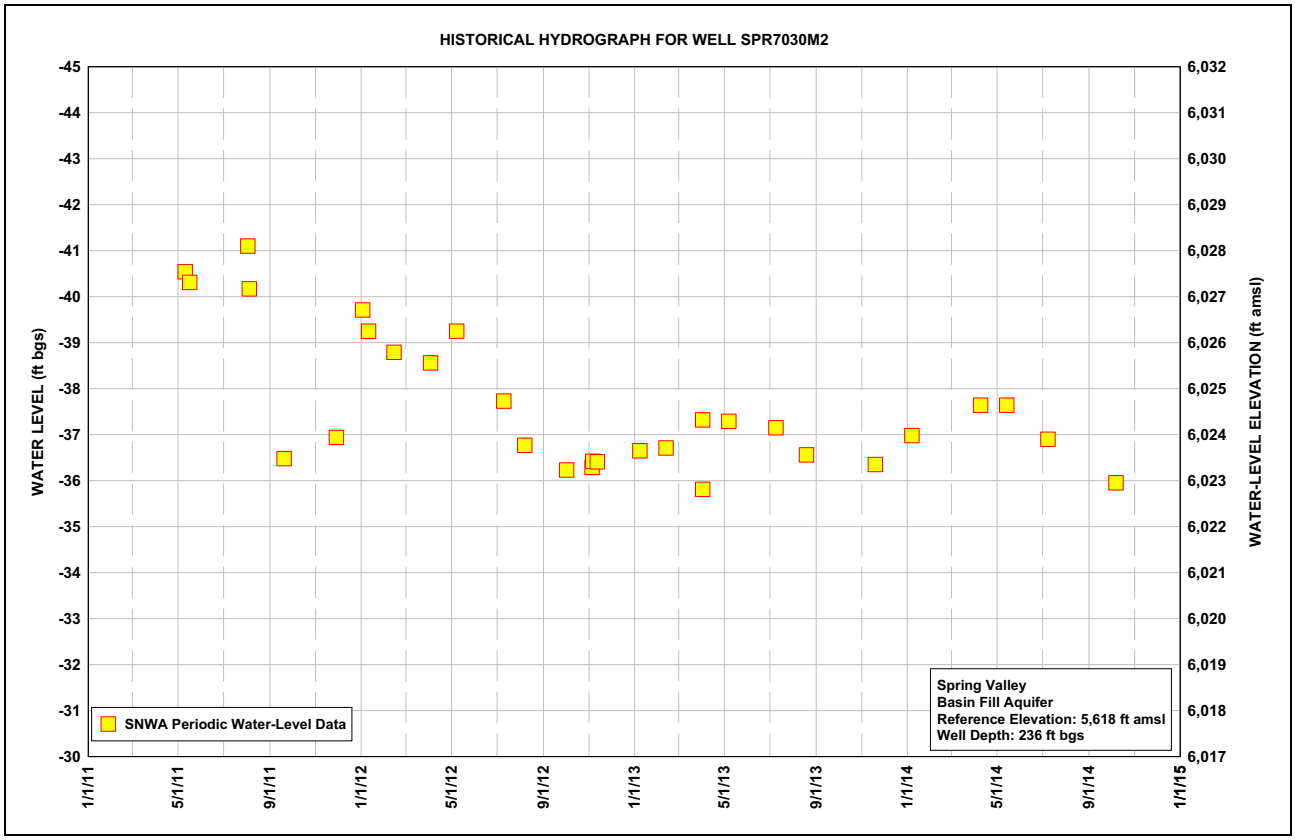

2014 HYDROGRAPH FOR WELL SPR7029M2
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
210
211
212
213
214
215
216
217
218
219
220
5,777
5,776
5,775
5,774
5,773
5,772
5,771
5,770
5,769
5,768
5,767
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,877 ft amsl
Well Depth: 423 ft bgs
SNWA Periodic Water-Level Data

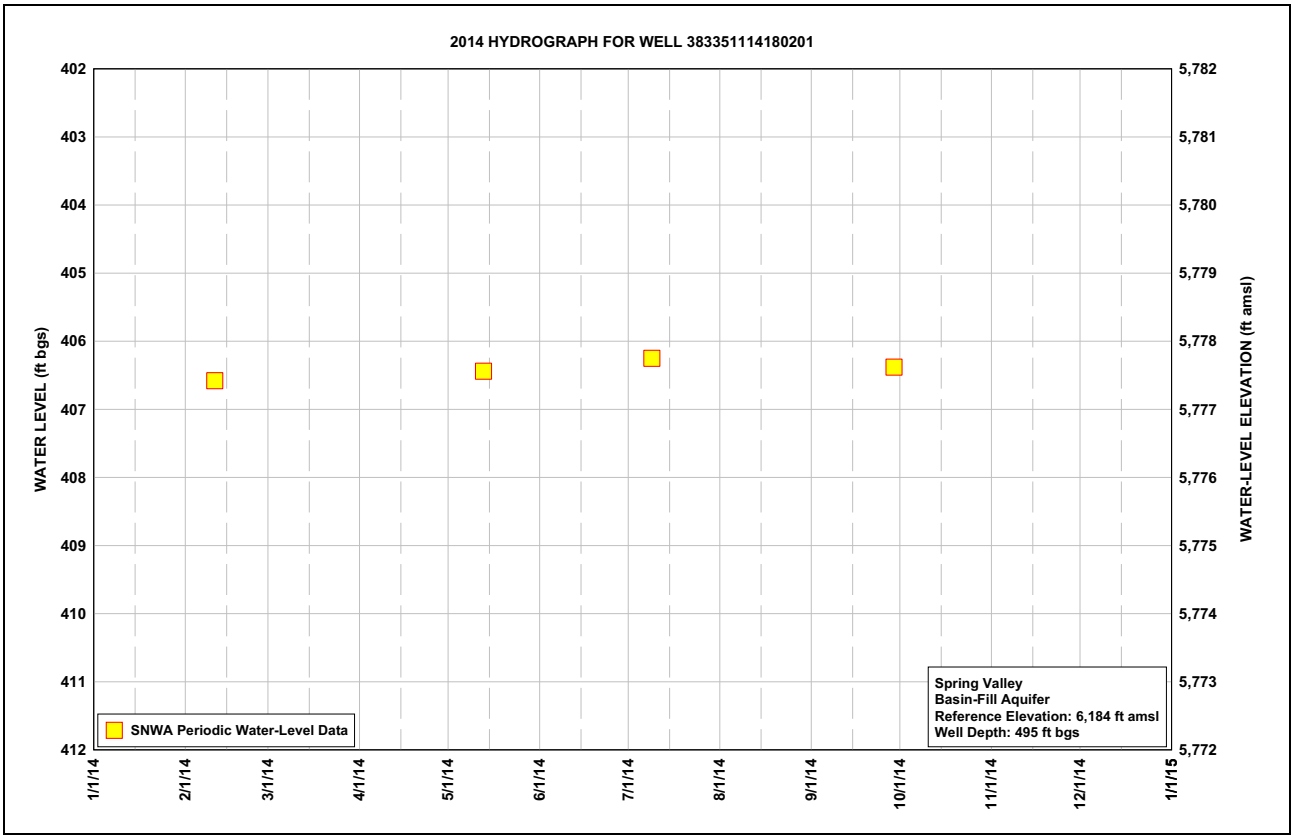

HISTORICAL HYDROGRAPH FOR WELL SPR7029M2
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
210
211
212
213
214
215
216
217
218
219
220
5,777
5,776
5,775
5,774
5,773
5,772
5,771
5,770
5,769
5,768
5,767
1/1/11
5/1/11
9/1/11
1/1/12
5/1/12
9/1/12
1/1/13
5/1/13
9/1/13
1/1/14
5/1/14
9/1/14
1/1/15
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,877 ft amsl
Well Depth: 423 ft bgs
SNWA Periodic Water-Level Data

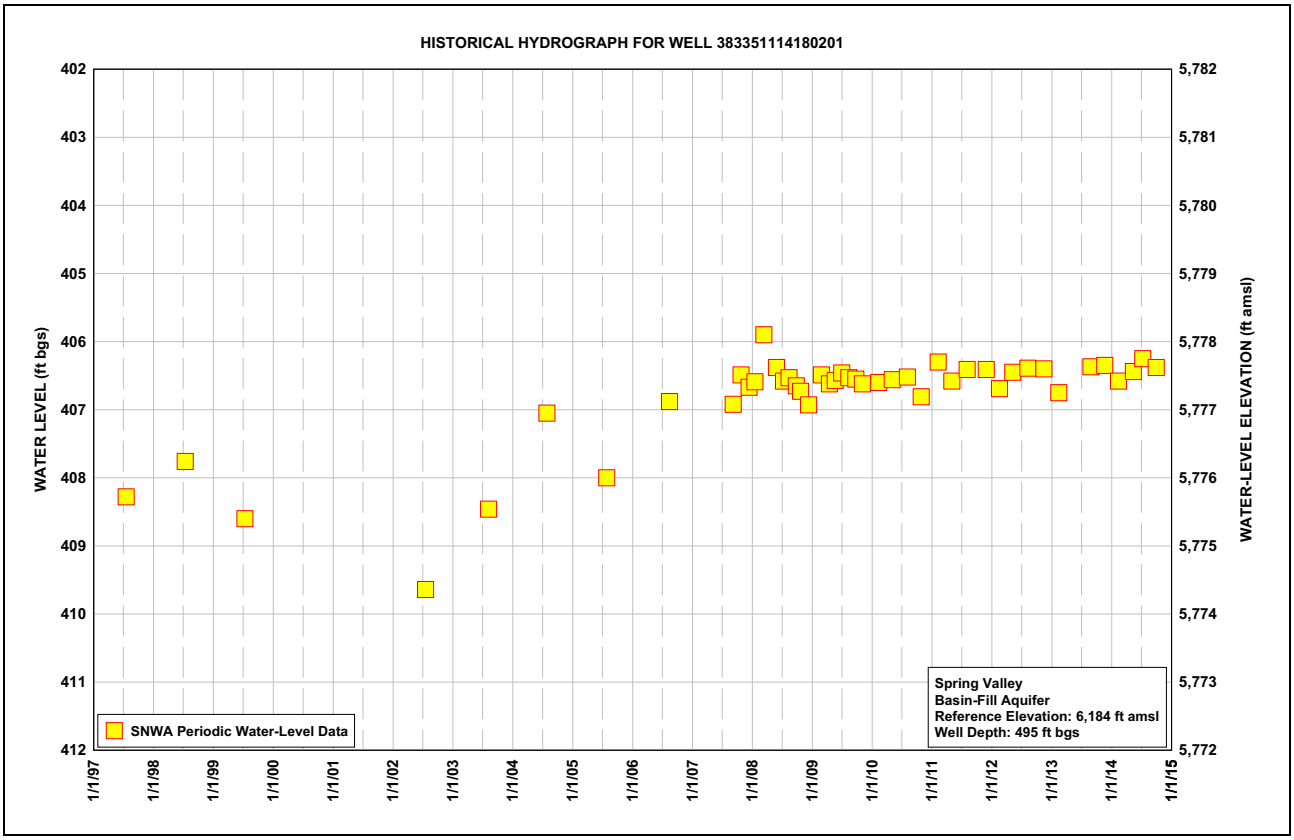

2014 HYDROGRAPH FOR WELL SPR7030M
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
-35
-34
-33
-32
-31
-30
-29
-28
-27
-26
-25
6,022
6,021
6,020
6,019
6,018
6,017
6,016
6,015
6,014
6,013
6,012
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Periodic Water-Level Data
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,617 ft amsl
Well Depth: 97 ft bgs

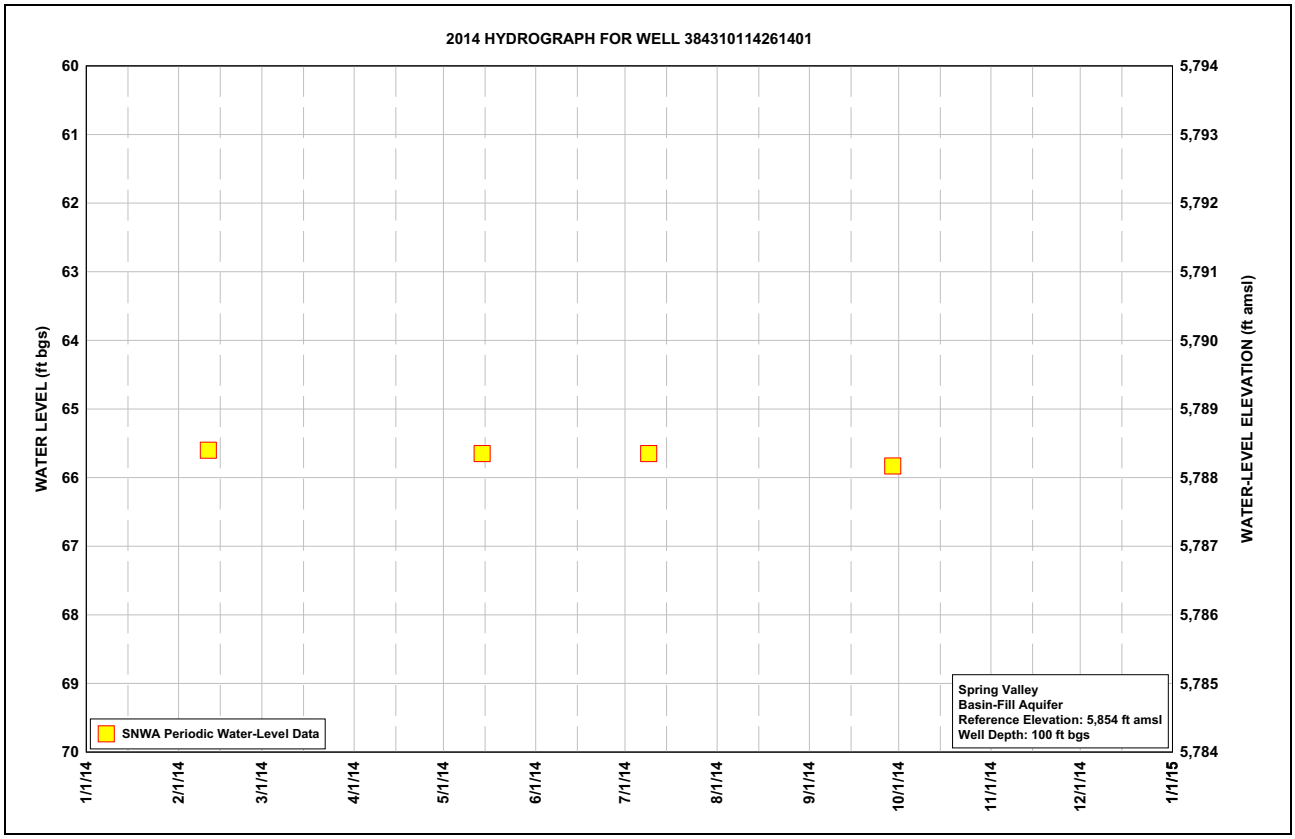

HISTORICAL HYDROGRAPH FOR WELL SPR7030M
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
-35
-34
-33
-32
-31
-30
-29
-28
-27
-26
-25
6,022
6,021
6,020
6,019
6,018
6,017
6,016
6,015
6,014
6,013
6,012
1/1/11
5/1/11
9/1/11
1/1/12
5/1/12
9/1/12
1/1/13
5/1/13
9/1/13
1/1/14
5/1/14
9/1/14
1/1/15
SNWA Periodic Water-Level Data
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,617 ft amsl
Well Depth: 97 ft bgs

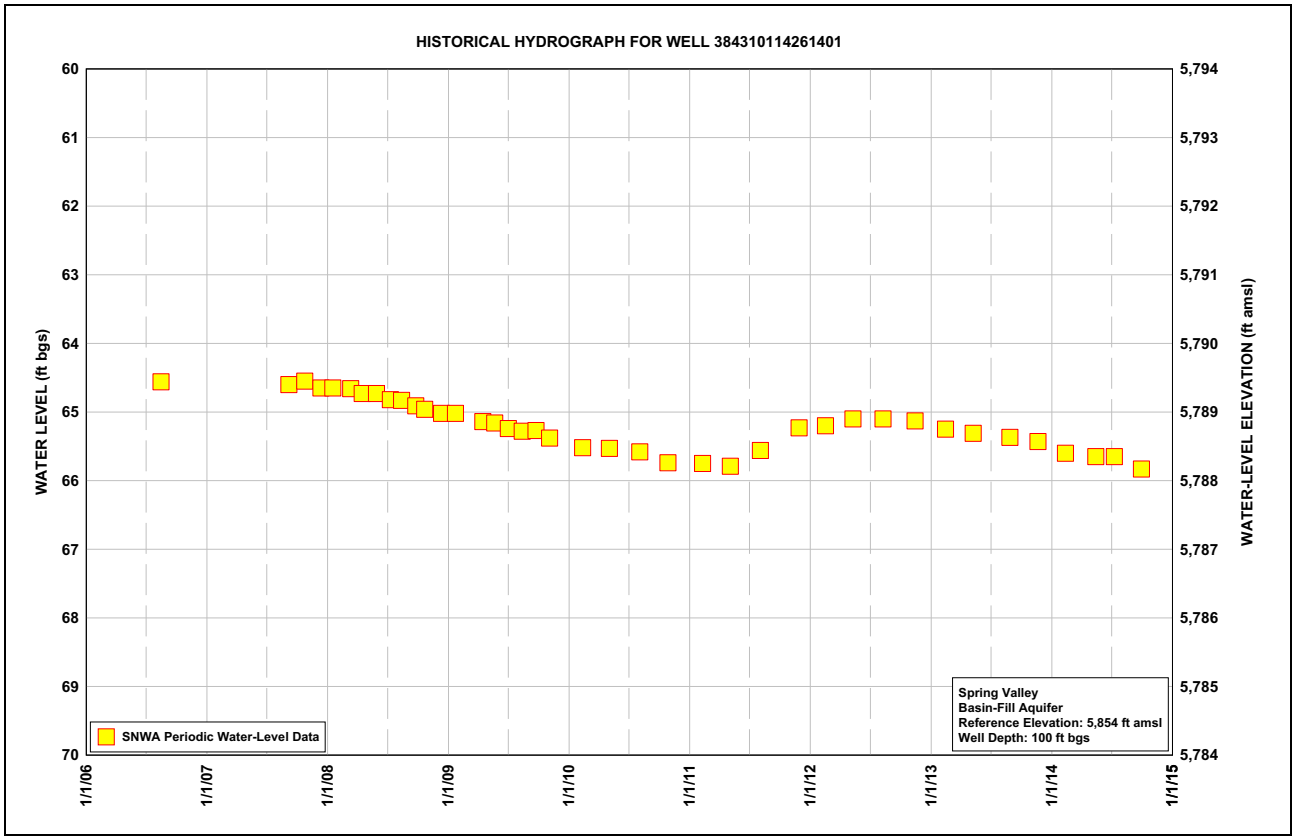

2014 HYDROGRAPH FOR WELL SPR7030M2
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
-45
-44
-43
-42
-41
-40
-39
-38
-37
-36
-35
-34
-33
-32
-31
-30
6,032
6,031
6,030
6,029
6,028
6,027
6,026
6,025
6,024
6,023
6,022
6,021
6,020
6,019
6,018
6,017
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Periodic Water-Level Data
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,618 ft amsl
Well Depth: 236 ft bgs

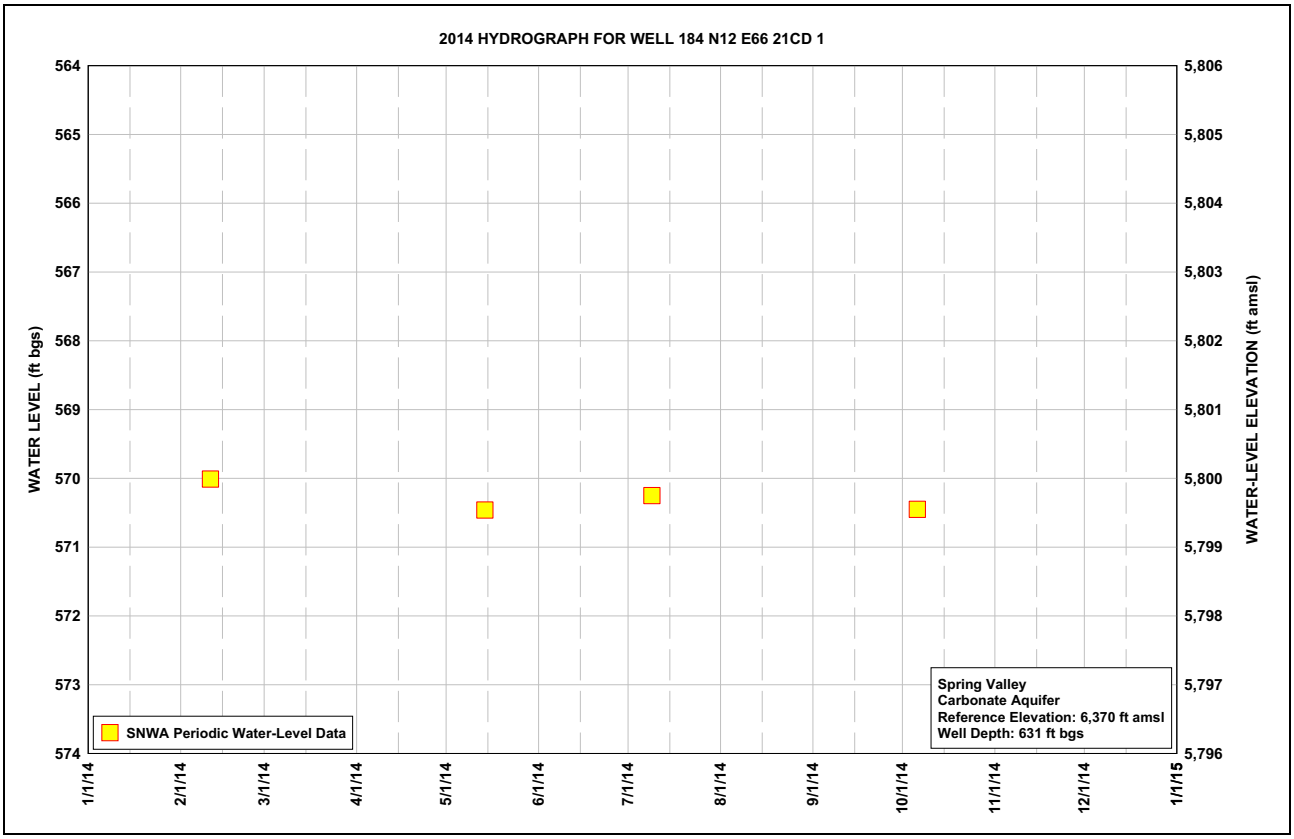

HISTORICAL HYDROGRAPH FOR WELL SPR7030M2
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
-45
-44
-43
-42
-41
-40
-39
-38
-37
-36
-35
-34
-33
-32
-31
-30
6,032
6,031
6,030
6,029
6,028
6,027
6,026
6,025
6,024
6,023
6,022
6,021
6,020
6,019
6,018
6,017
1/1/11
5/1/11
9/1/11
1/1/12
5/1/12
9/1/12
1/1/13
5/1/13
9/1/13
1/1/14
5/1/14
9/1/14
1/1/15
SNWA Periodic Water-Level Data
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,618 ft amsl
Well Depth: 236 ft bgs

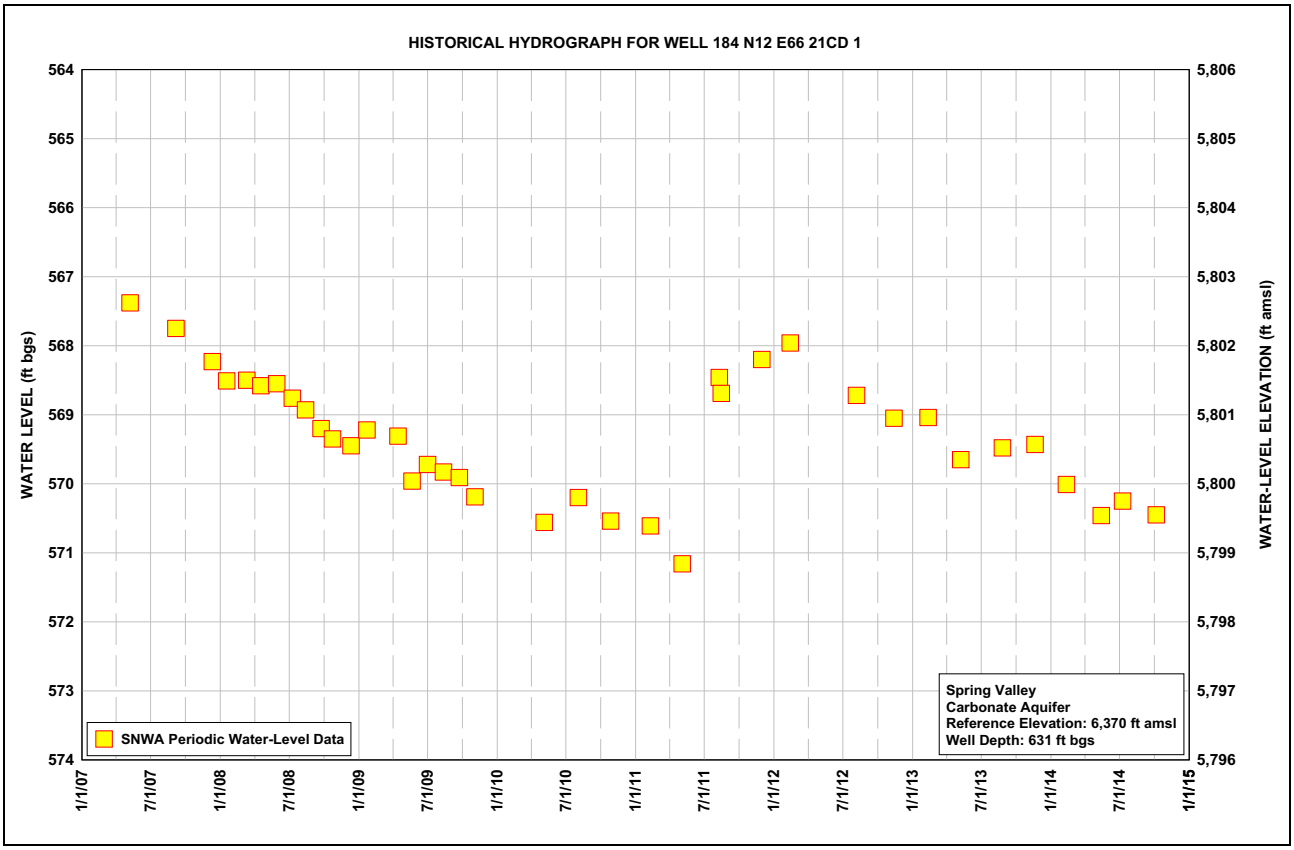

2014 HYDROGRAPH FOR WELL 383351114180201
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
402
403
404
405
406
407
408
409
410
411
412
5,782
5,781
5,780
5,779
5,778
5,777
5,776
5,775
5,774
5,773
5,772
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 6,184 ft amsl
Well Depth: 495 ft bgs

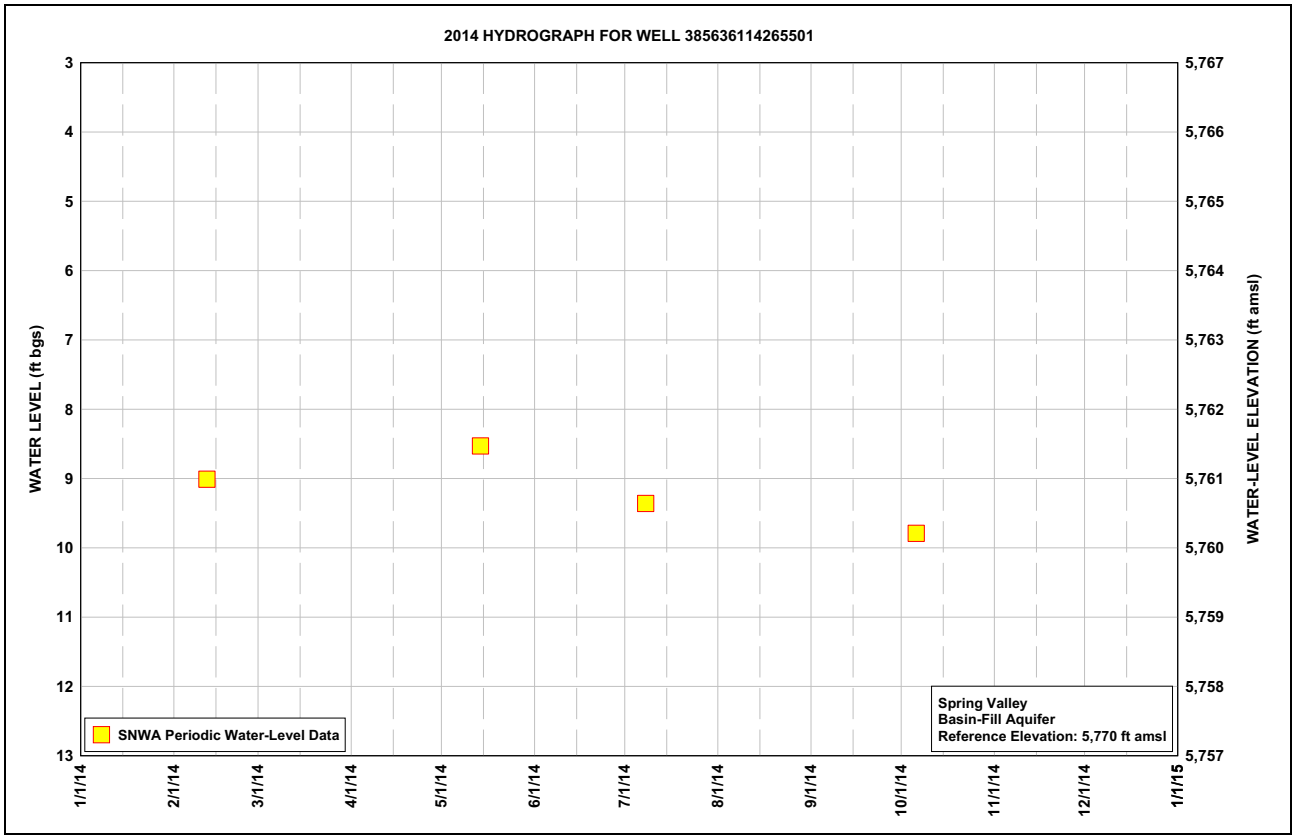

HISTORICAL HYDROGRAPH FOR WELL 383351114180201
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
402
403
404
405
406
407
408
409
410
411
412
5,782
5,781
5,780
5,779
5,778
5,777
5,776
5,775
5,774
5,773
5,772
1/1/97
1/1/98
1/1/99
1/1/00
1/1/01
1/1/02
1/1/03
1/1/04
1/1/05
1/1/06
1/1/07
1/1/08
1/1/09
1/1/10
1/1/11
1/1/12
1/1/13
1/1/14
1/1/15
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 6,184 ft amsl
Well Depth: 495 ft bgs

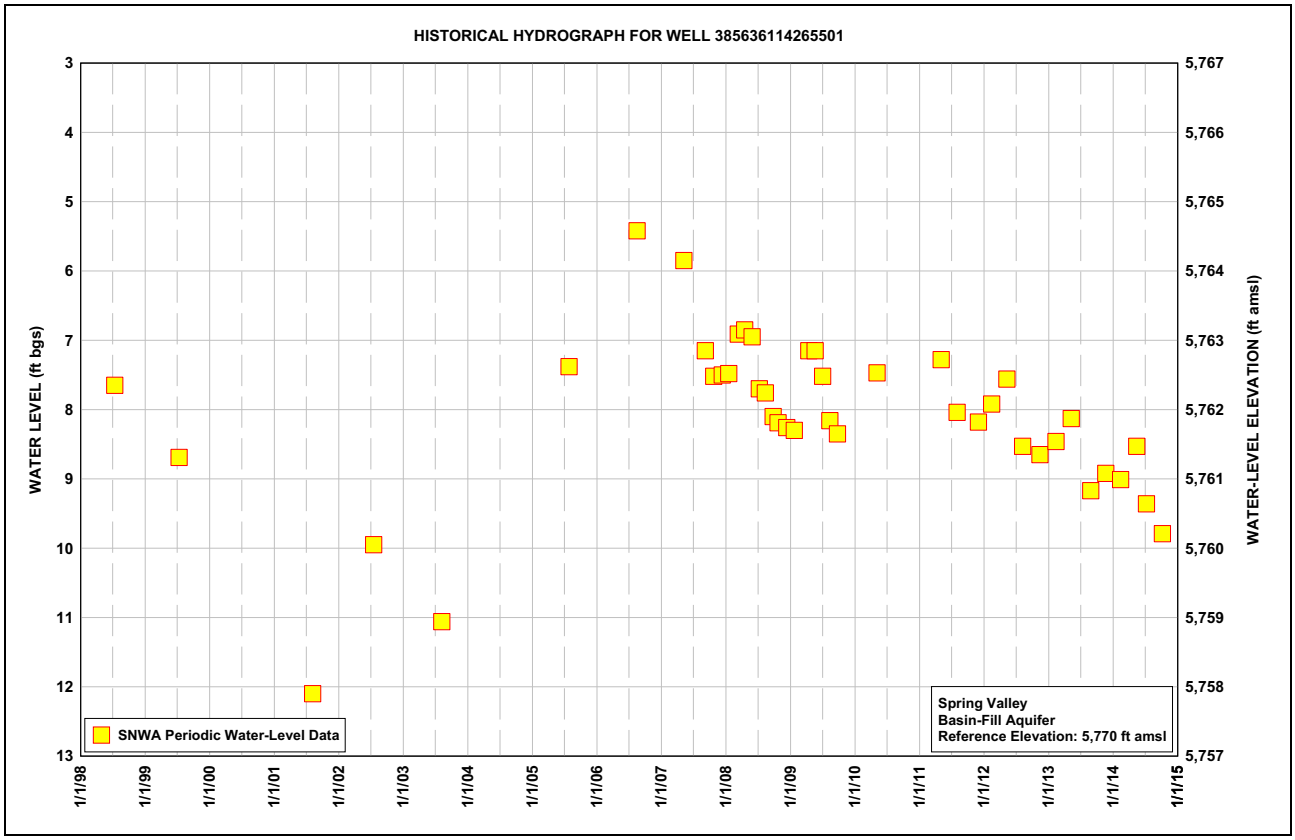

2014 HYDROGRAPH FOR WELL 384310114261401
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
60
61
62
63
64
65
66
67
68
69
70
5,794
5,793
5,792
5,791
5,790
5,789
5,788
5,787
5,786
5,785
5,784
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,854 ft amsl
Well Depth: 100 ft bgs

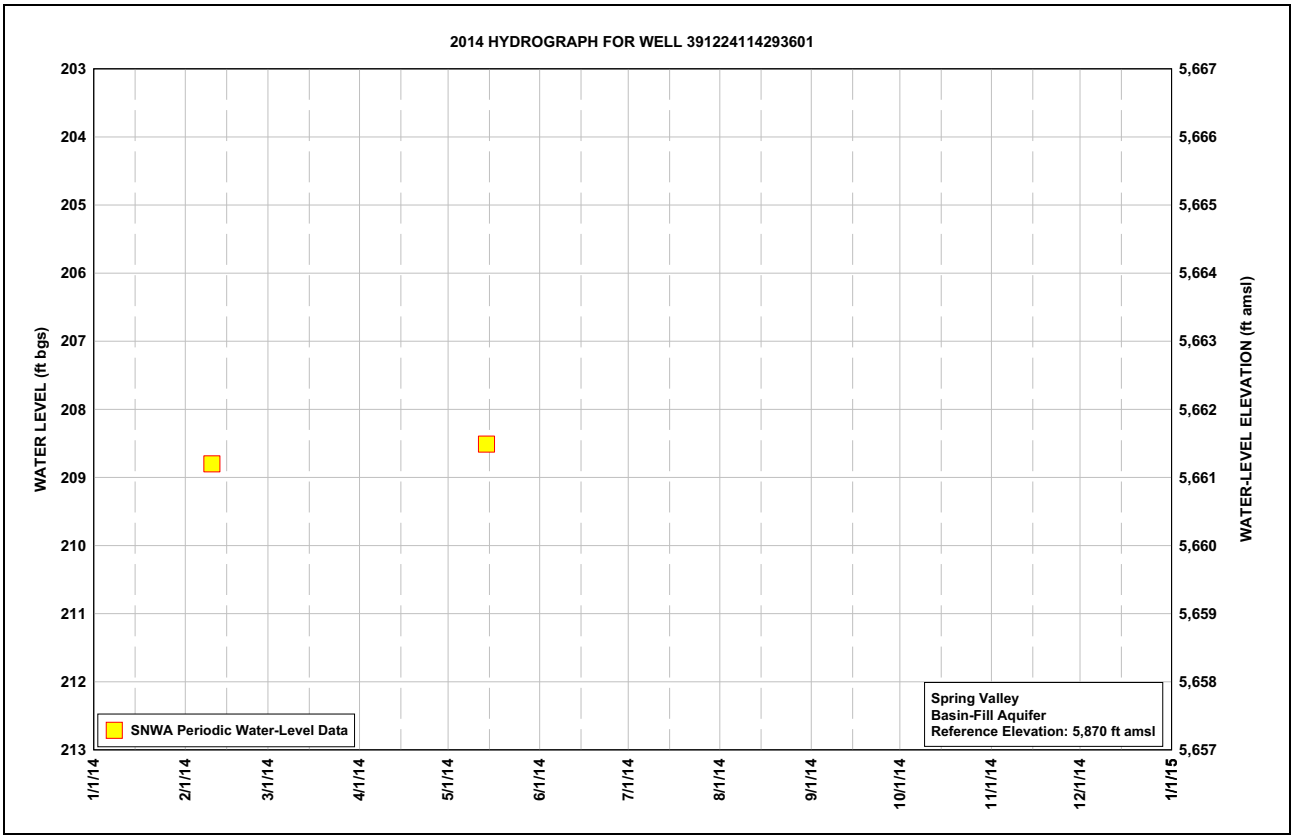

HISTORICAL HYDROGRAPH FOR WELL 384310114261401
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
60
61
62
63
64
65
66
67
68
69
70
5,794
5,793
5,792
5,791
5,790
5,789
5,788
5,787
5,786
5,785
5,784
1/1/06
1/1/07
1/1/08
1/1/09
1/1/10
1/1/11
1/1/12
1/1/13
1/1/14
1/1/15
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,854 ft amsl
Well Depth: 100 ft bgs

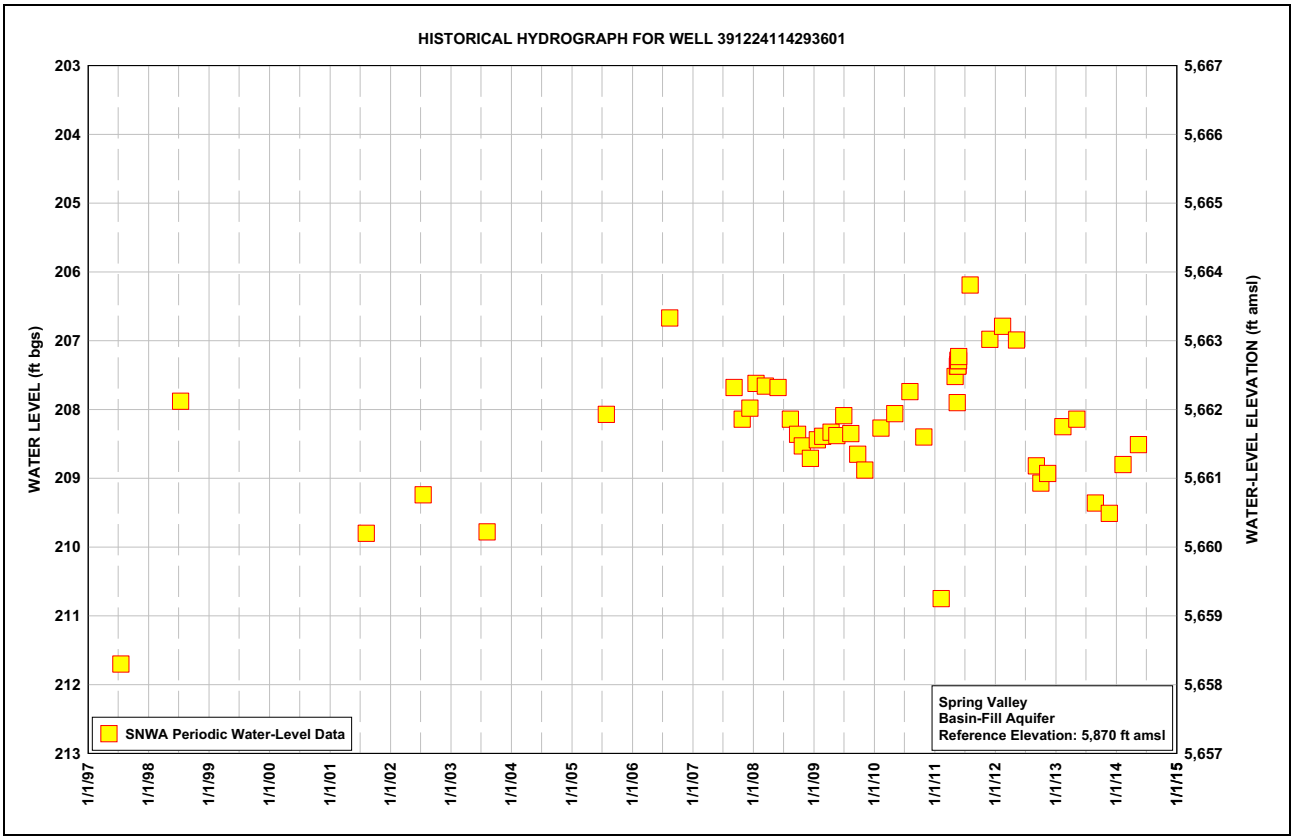

2014 HYDROGRAPH FOR WELL 184 N12 E66 21CD 1
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
564
565
566
567
568
569
570
571
572
573
574
5,806
5,805
5,804
5,803
5,802
5,801
5,800
5,799
5,798
5,797
5,796
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Periodic Water-Level Data
Spring Valley
Carbonate Aquifer
Reference Elevation: 6,370 ft amsl
Well Depth: 631 ft bgs

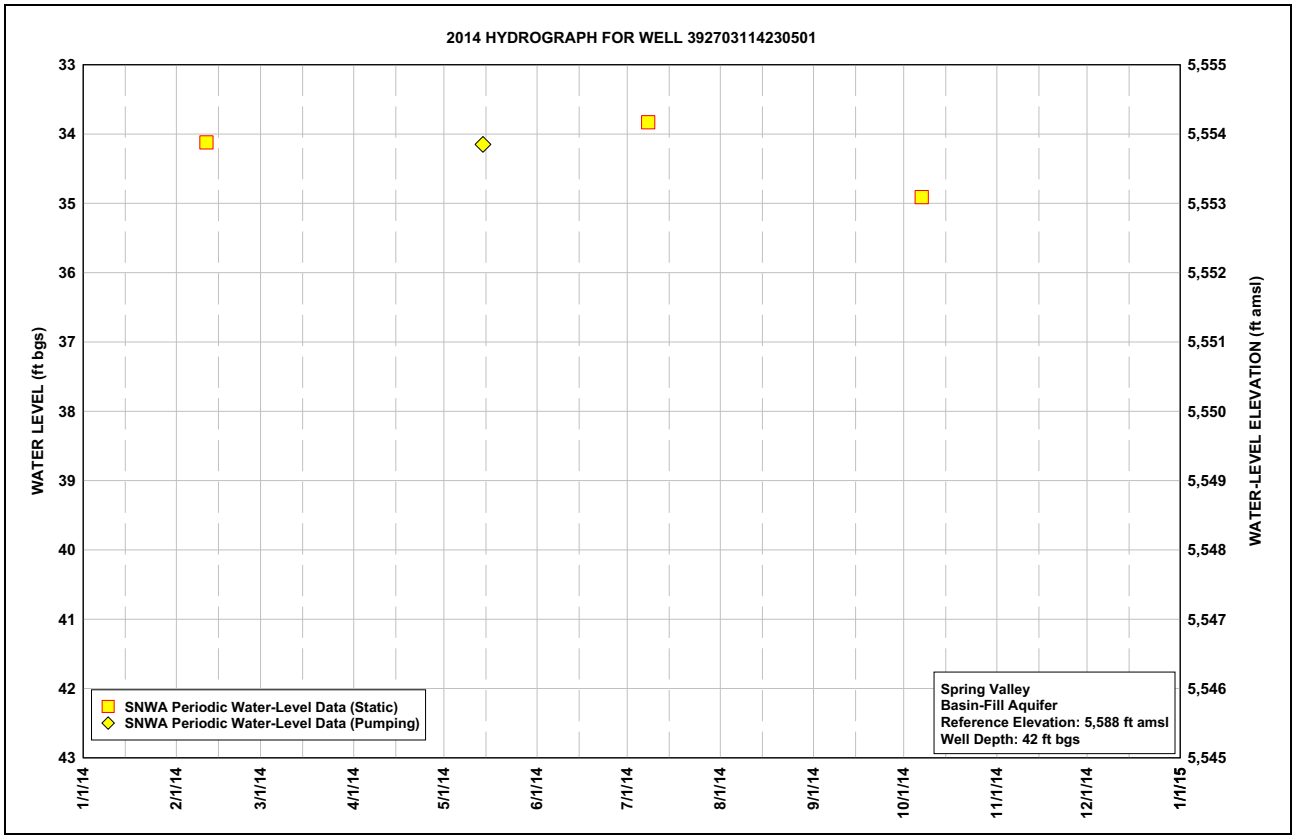

HISTORICAL HYDROGRAPH FOR WELL 184 N12 E66 21CD 1
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
564
565
566
567
568
569
570
571
572
573
574
5,806
5,805
5,804
5,803
5,802
5,801
5,800
5,799
5,798
5,797
5,796
1/1/07
7/1/07
1/1/08
7/1/08
1/1/09
7/1/09
1/1/10
7/1/10
1/1/11
7/1/11
1/1/12
7/1/12
1/1/13
7/1/13
1/1/14
7/1/14
1/1/15
SNWA Periodic Water-Level Data
Spring Valley
Carbonate Aquifer
Reference Elevation: 6,370 ft amsl
Well Depth: 631 ft bgs

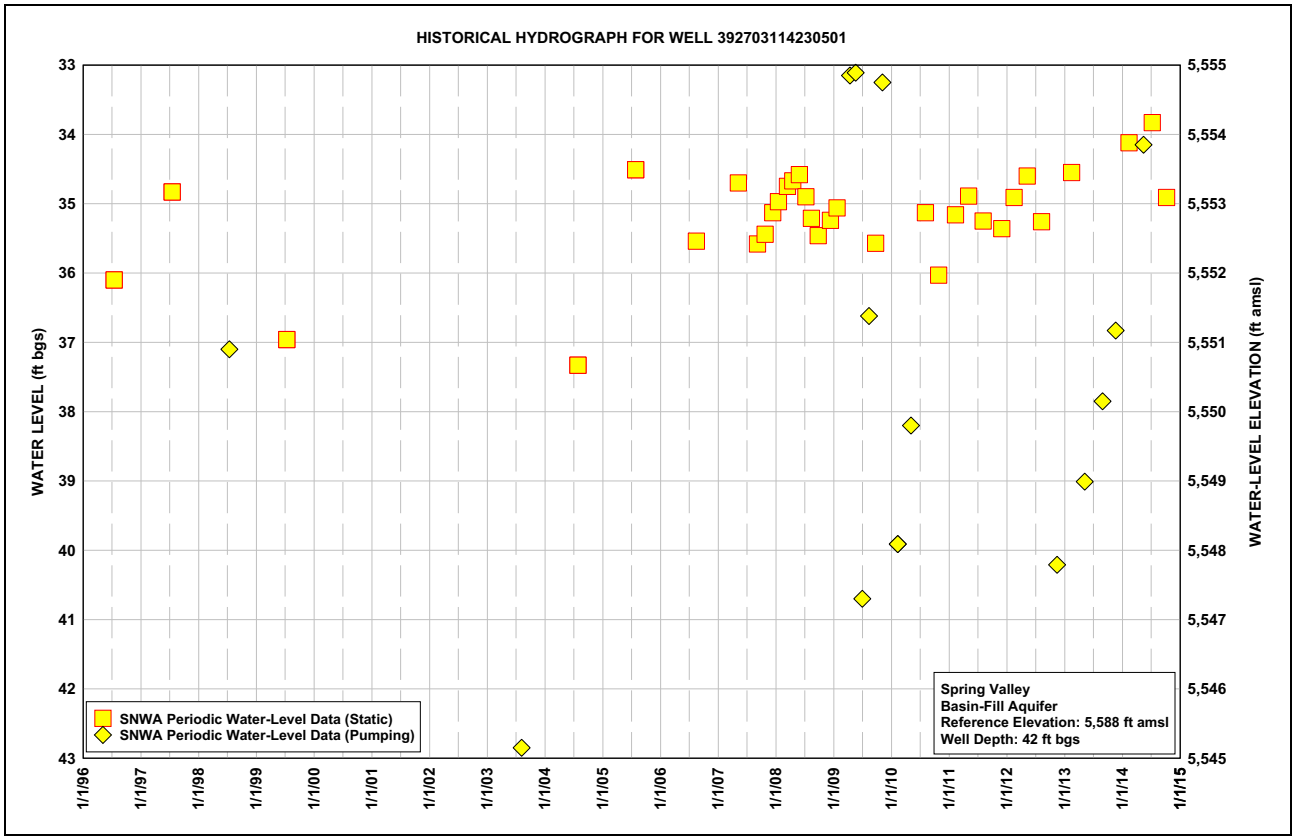

2014 HYDROGRAPH FOR WELL 385636114265501
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
3
4
5
6
7
8
9
10
11
12
13
5,767
5,766
5,765
5,764
5,763
5,762
5,761
5,760
5,759
5,758
5,757
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,770 ft amsl

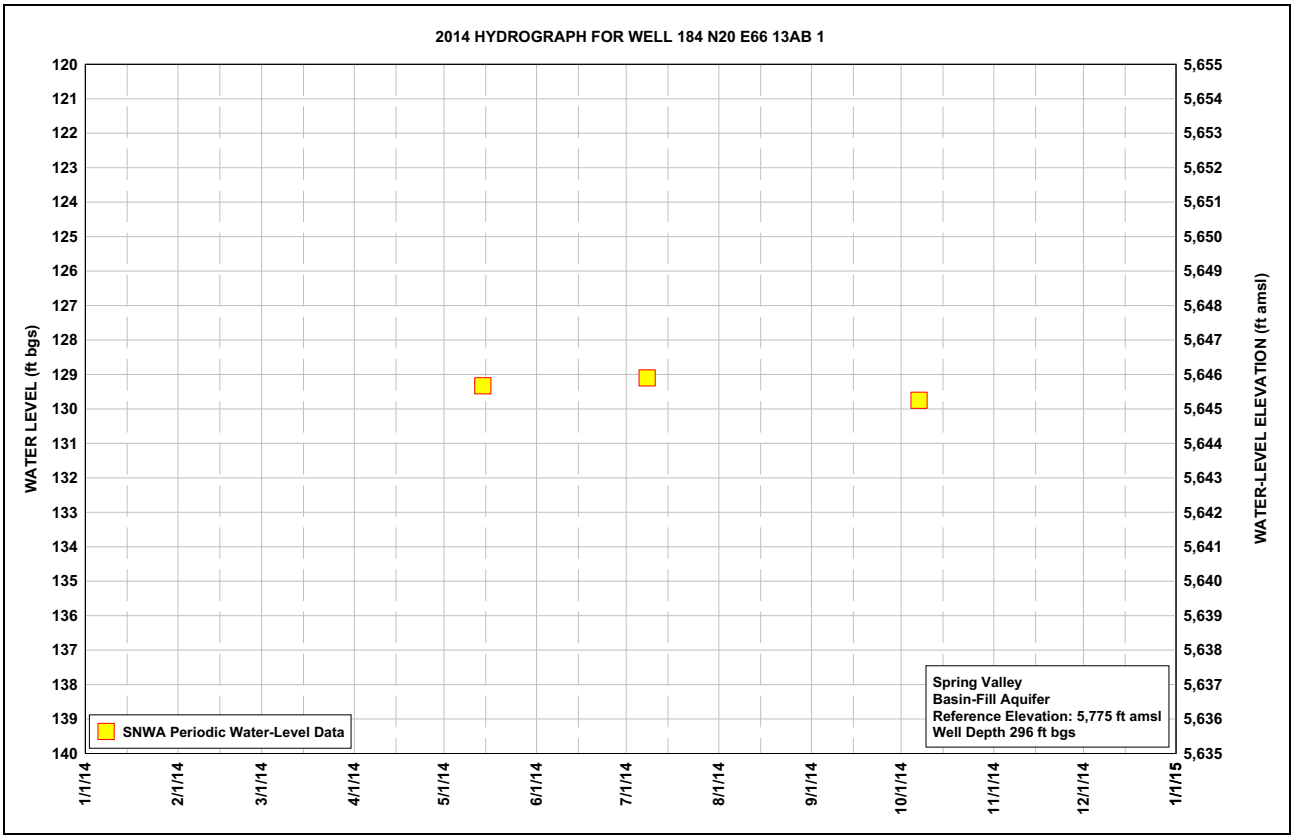

HISTORICAL HYDROGRAPH FOR WELL 385636114265501
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
3
4
5
6
7
8
9
10
11
12
13
5,767
5,766
5,765
5,764
5,763
5,762
5,761
5,760
5,759
5,758
5,757
1/1/98
1/1/99
1/1/00
1/1/01
1/1/02
1/1/03
1/1/04
1/1/05
1/1/06
1/1/07
1/1/08
1/1/09
1/1/10
1/1/11
1/1/12
1/1/13
1/1/14
1/1/15
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,770 ft amsl

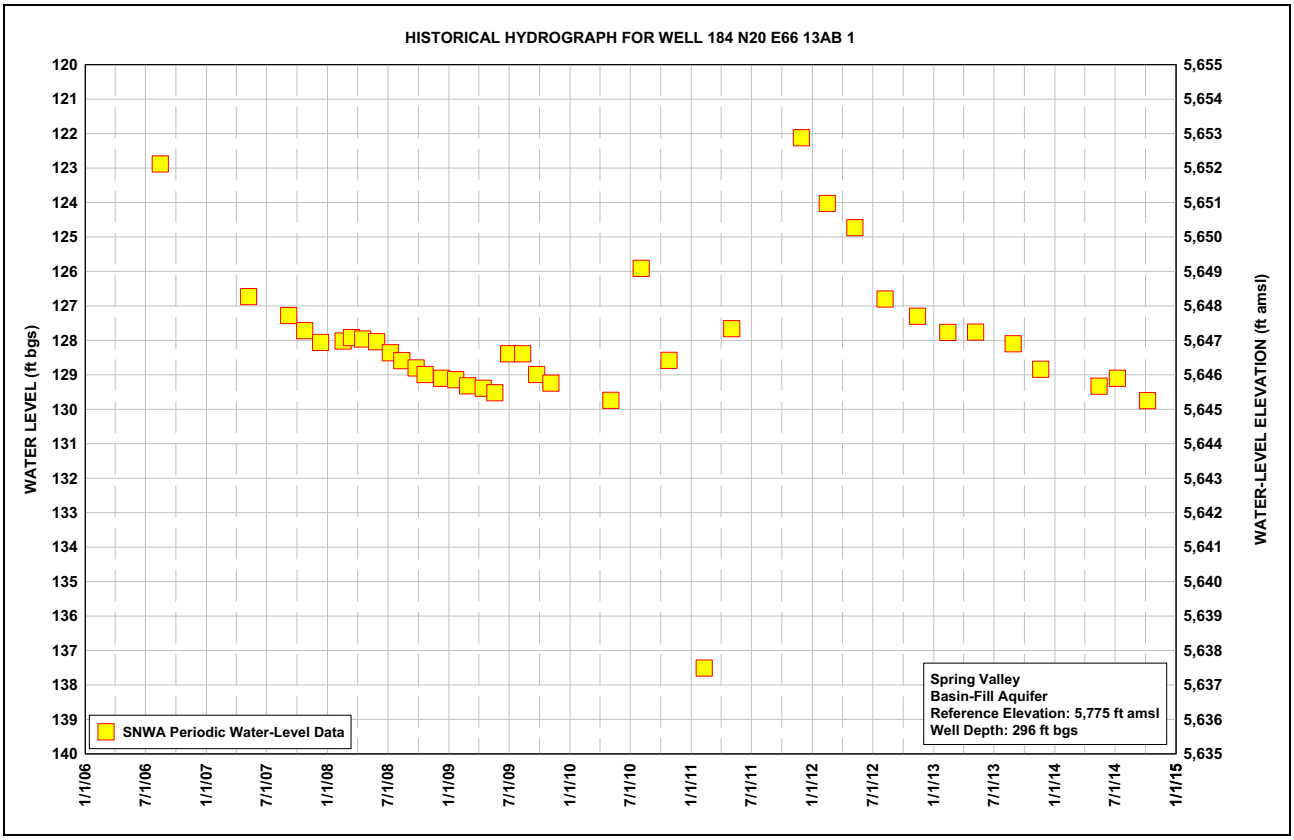

2014 HYDROGRAPH FOR WELL 391224114293601
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
203
204
205
206
207
208
209
210
211
212
213
5,667
5,666
5,665
5,664
5,663
5,662
5,661
5,660
5,659
5,658
5,657
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,870 ft amsl

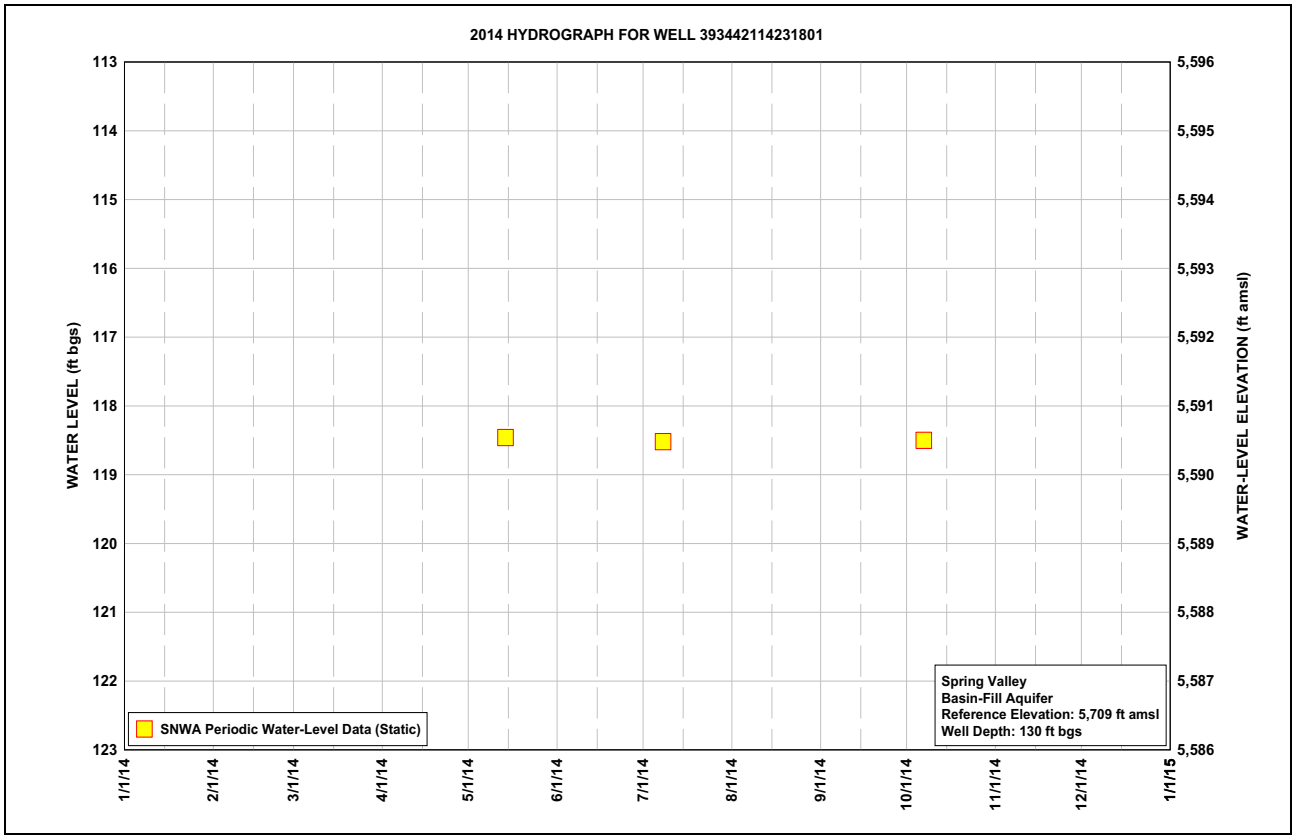

HISTORICAL HYDROGRAPH FOR WELL 391224114293601
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
203
204
205
206
207
208
209
210
211
212
213
5,667
5,666
5,665
5,664
5,663
5,662
5,661
5,660
5,659
5,658
5,657
1/1/97
1/1/98
1/1/99
1/1/00
1/1/01
1/1/02
1/1/03
1/1/04
1/1/05
1/1/06
1/1/07
1/1/08
1/1/09
1/1/10
1/1/11
1/1/12
1/1/13
1/1/14
1/1/15
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,870 ft amsl

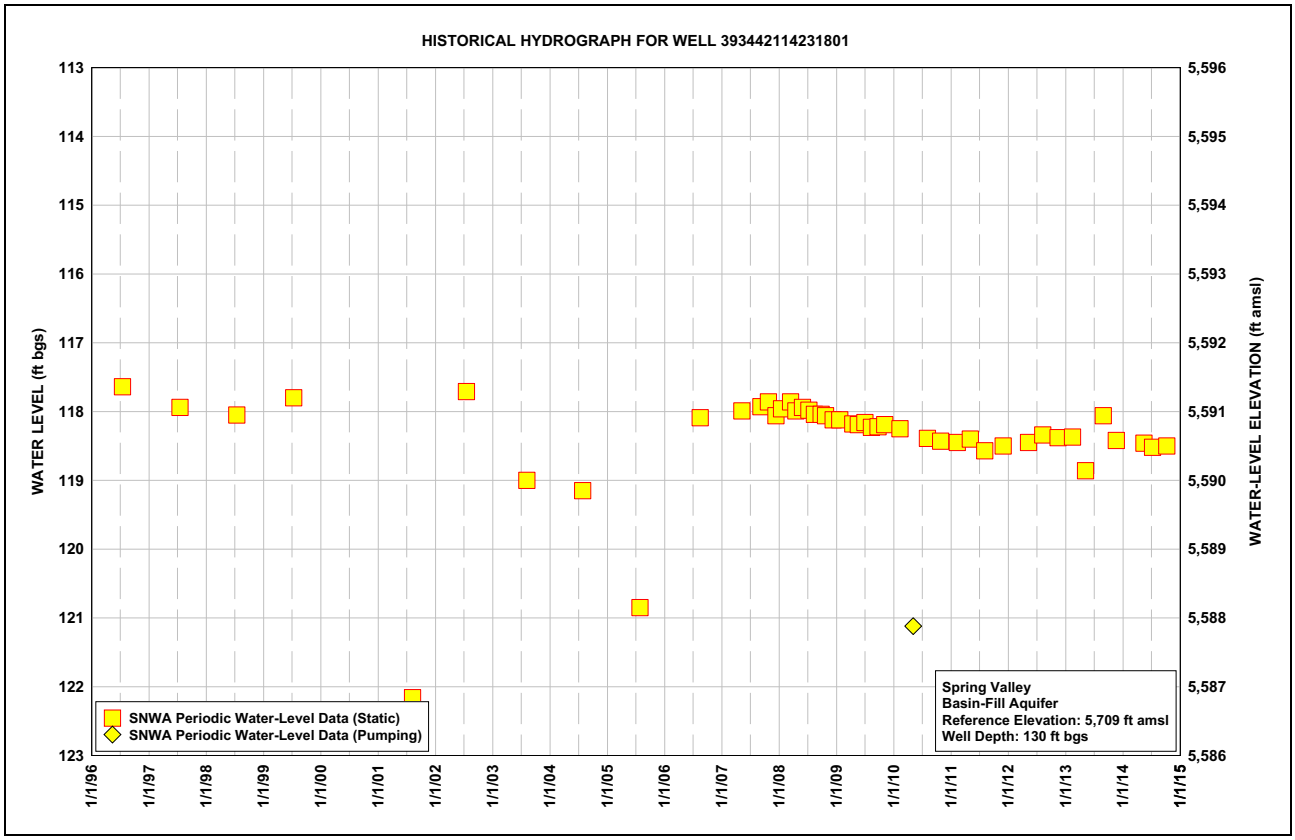

2014 HYDROGRAPH FOR WELL 392703114230501
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
33
34
35
36
37
38
39
40
41
42
43
5,555
5,554
5,553
5,552
5,551
5,550
5,549
5,548
5,547
5,546
5,545
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Periodic Water-Level Data (Static)
SNWA Periodic Water-Level Data (Pumping)
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,588 ft amsl
Well Depth: 42 ft bgs

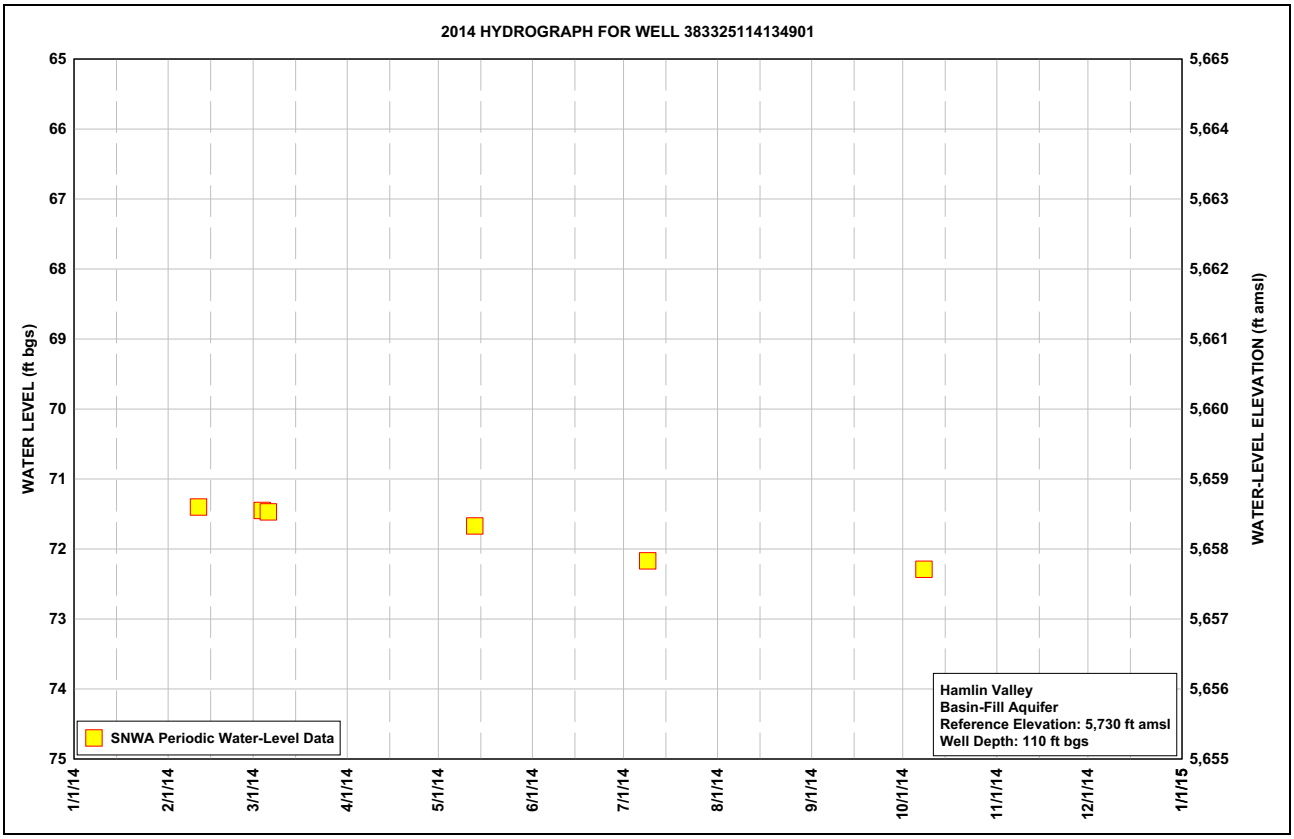

HISTORICAL HYDROGRAPH FOR WELL 392703114230501
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
33
34
35
36
37
38
39
40
41
42
43
5,555
5,554
5,553
5,552
5,551
5,550
5,549
5,548
5,547
5,546
5,545
1/1/96
1/1/97
1/1/98
1/1/99
1/1/00
1/1/01
1/1/02
1/1/03
1/1/04
1/1/05
1/1/06
1/1/07
1/1/08
1/1/09
1/1/10
1/1/11
1/1/12
1/1/13
1/1/14
1/1/15
SNWA Periodic Water-Level Data (Static)
SNWA Periodic Water-Level Data (Pumping)
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,588 ft amsl
Well Depth: 42 ft bgs

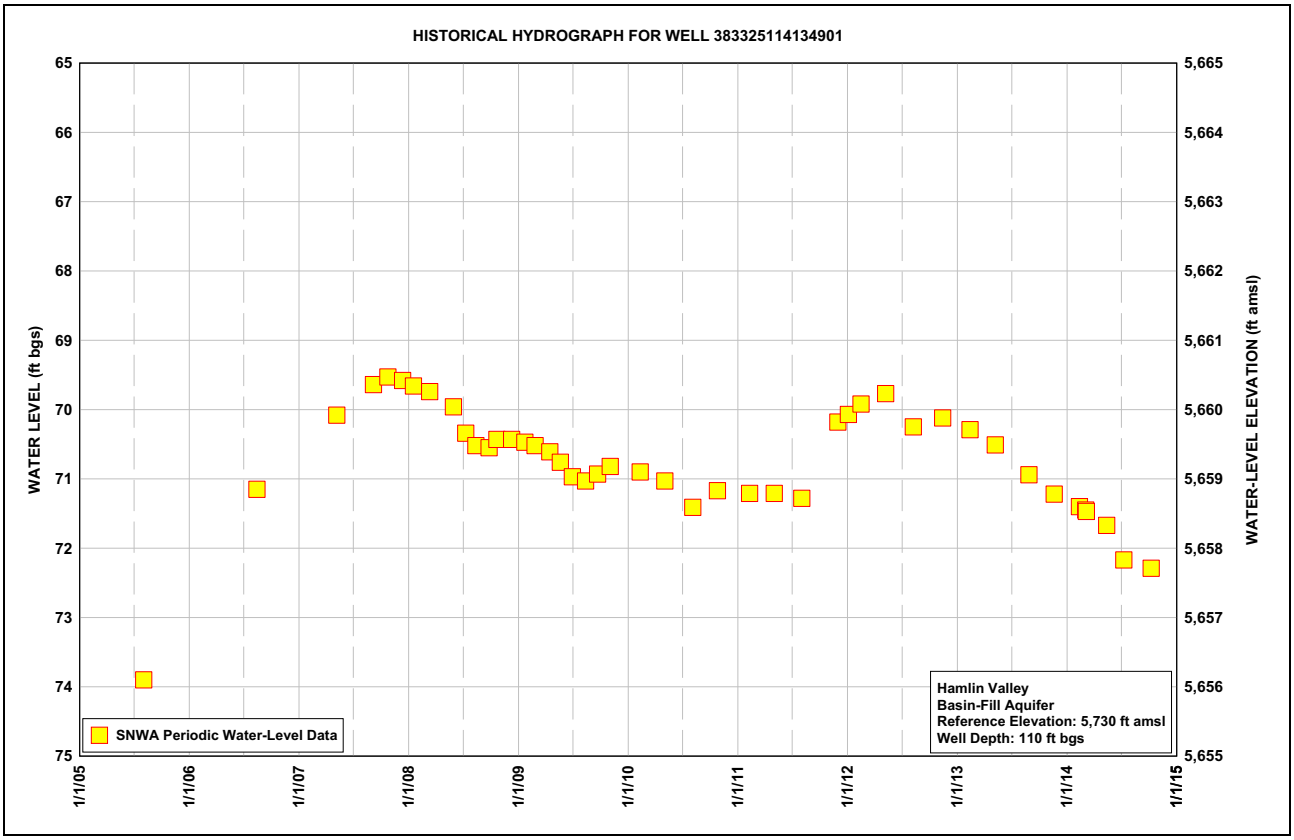

2014 HYDROGRAPH FOR WELL 184 N20 E66 13AB 1
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140
5,655 5,654 5,653 5,652 5,651 5,650 5,649 5,648 5,647 5,646 5,645 5,644 5,643 5,642 5,641 5,640 5,639 5,638 5,637 5,636 5,635
1/1/14 2/1/14 3/1/14 4/1/14 5/1/14 6/1/14 7/1/14 8/1/14 9/1/14 10/1/14 11/1/14 12/1/14 1/1/15
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,775 ft amsl
Well Depth 296 ft bgs

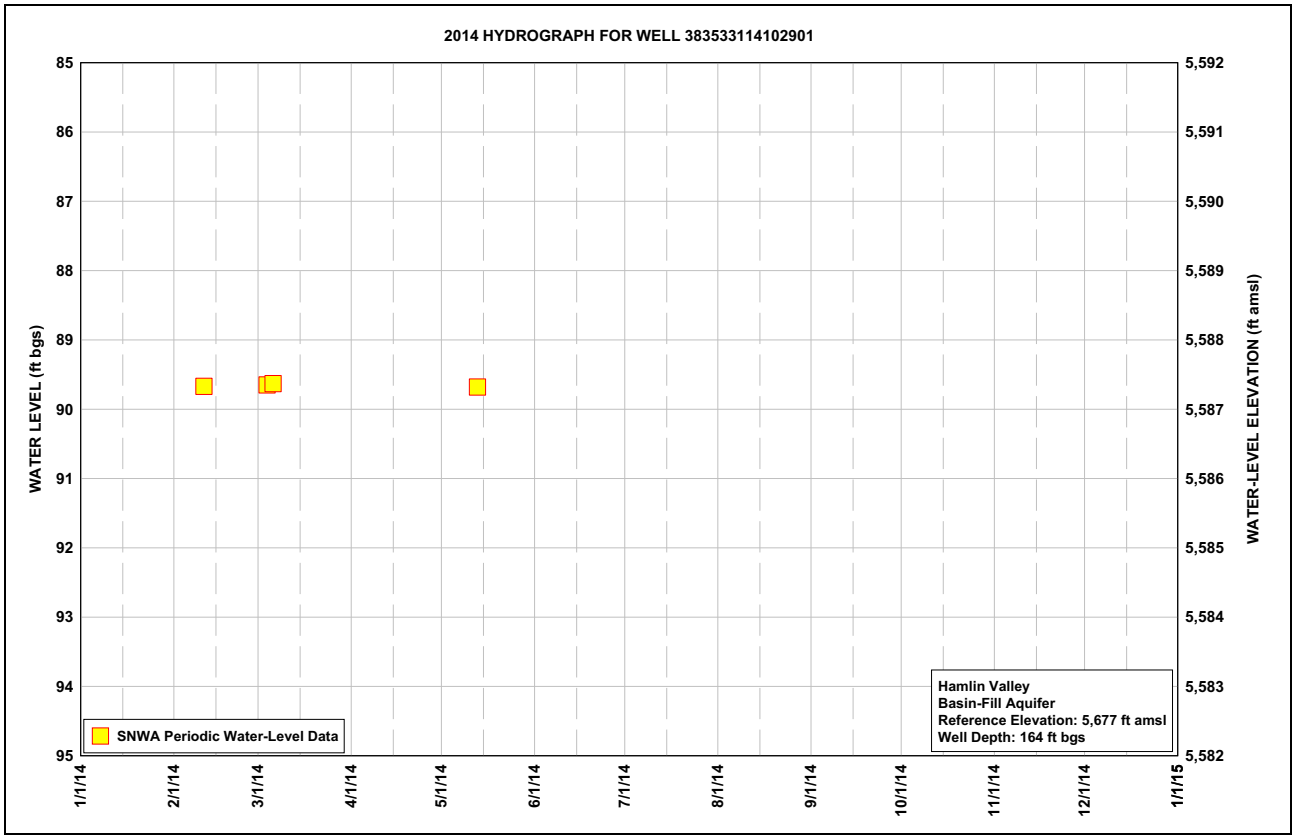

HISTORICAL HYDROGRAPH FOR WELL 184 N20 E66 13AB 1
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140
5,655 5,654 5,653 5,652 5,651 5,650 5,649 5,648 5,647 5,646 5,645 5,644 5,643 5,642 5,641 5,640 5,639 5,638 5,637 5,636 5,635
1/1/06 7/1/06 1/1/07 7/1/07 1/1/08 7/1/08 1/1/09 7/1/09 1/1/10 7/1/10 1/1/11 7/1/11 1/1/12 7/1/12 1/1/13 7/1/13 1/1/14 7/1/14 1/1/15
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,775 ft amsl
Well Depth: 296 ft bgs

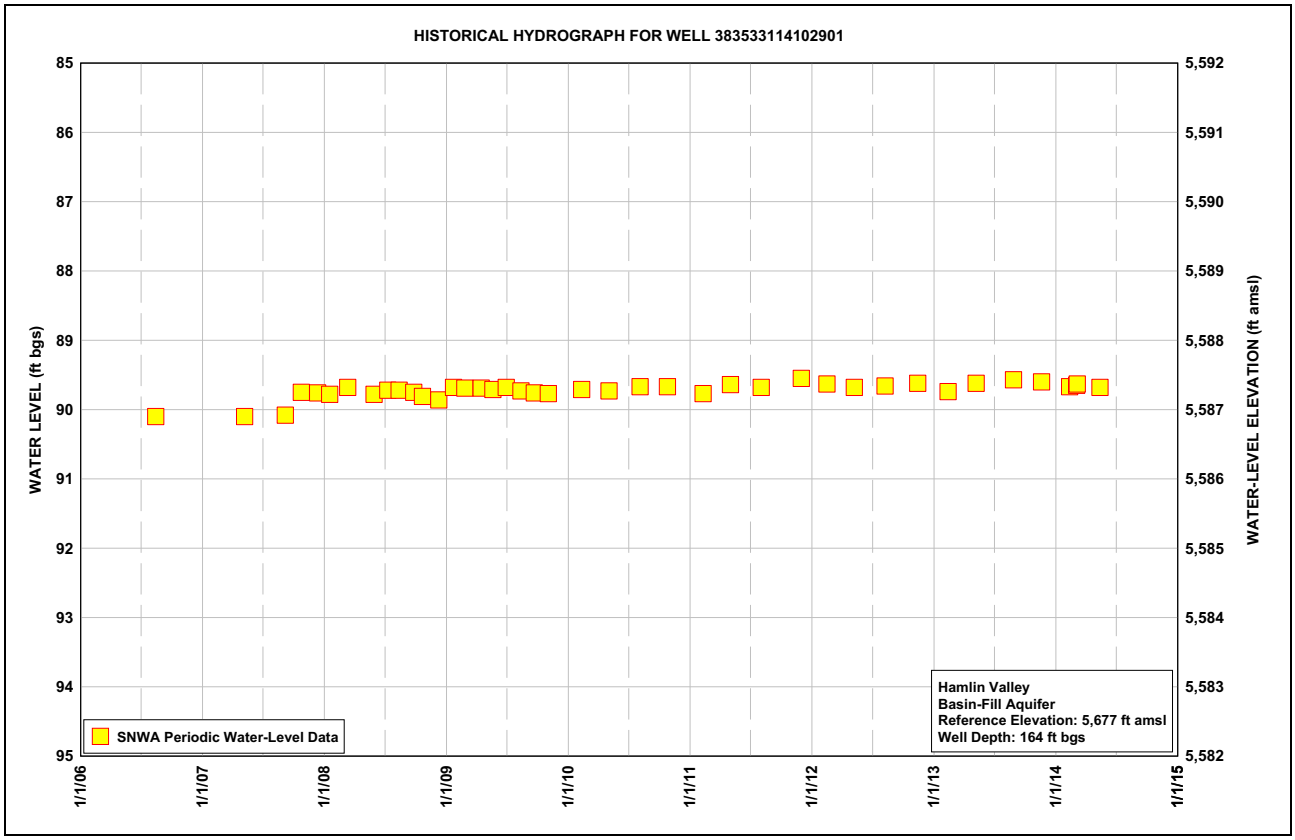

2014 HYDROGRAPH FOR WELL 393442114231801
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
113
114
115
116
117
118
119
120
121
122
123
5,596
5,595
5,594
5,593
5,592
5,591
5,590
5,589
5,588
5,587
5,586
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Periodic Water-Level Data (Static)
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,709 ft amsl
Well Depth: 130 ft bgs


HISTORICAL HYDROGRAPH FOR WELL 393442114231801
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
113
114
115
116
117
118
119
120
121
122
123
5,596
5,595
5,594
5,593
5,592
5,591
5,590
5,589
5,588
5,587
5,586
1/1/96
1/1/97
1/1/98
1/1/99
1/1/00
1/1/01
1/1/02
1/1/03
1/1/04
1/1/05
1/1/06
1/1/07
1/1/08
1/1/09
1/1/10
1/1/11
1/1/12
1/1/13
1/1/14
1/1/15
SNWA Periodic Water-Level Data (Static)
SNWA Periodic Water-Level Data (Pumping)
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,709 ft amsl
Well Depth: 130 ft bgs


2014 HYDROGRAPH FOR WELL 383325114134901
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
65
66
67
68
69
70
71
72
73
74
75
5,665
5,664
5,663
5,662
5,661
5,660
5,659
5,658
5,657
5,656
5,655
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Periodic Water-Level Data
Hamlin Valley
Basin-Fill Aquifer
Reference Elevation: 5,730 ft amsl
Well Depth: 110 ft bgs


HISTORICAL HYDROGRAPH FOR WELL 383325114134901
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
65
66
67
68
69
70
71
72
73
74
75
5,665
5,664
5,663
5,662
5,661
5,660
5,659
5,658
5,657
5,656
5,655
1/1/05
1/1/06
1/1/07
1/1/08
1/1/09
1/1/10
1/1/11
1/1/12
1/1/13
1/1/14
1/1/15
SNWA Periodic Water-Level Data
Hamlin Valley
Basin-Fill Aquifer
Reference Elevation: 5,730 ft amsl
Well Depth: 110 ft bgs


2014 HYDROGRAPH FOR WELL 383533114102901
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
85
86
87
88
89
90
91
92
93
94
95
5,592
5,591
5,590
5,589
5,588
5,587
5,586
5,585
5,584
5,583
5,582
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Periodic Water-Level Data
Hamlin Valley
Basin-Fill Aquifer
Reference Elevation: 5,677 ft amsl
Well Depth: 164 ft bgs


HISTORICAL HYDROGRAPH FOR WELL 383533114102901
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
85
86
87
88
89
90
91
92
93
94
95
5,592
5,591
5,590
5,589
5,588
5,587
5,586
5,585
5,584
5,583
5,582
1/1/06
1/1/07
1/1/08
1/1/09
1/1/10
1/1/11
1/1/12
1/1/13
1/1/14
1/1/15
SNWA Periodic Water-Level Data
Hamlin Valley
Basin-Fill Aquifer
Reference Elevation: 5,677 ft amsl
Well Depth: 164 ft bgs

This Page Left Intentionally Blank

Appendix B

SV3M Plan
Continuous Water-Level Data

B.1.0 MONITORING PROGRAM WELLS WITH CONTINUOUS TRANSDUCER DATA

Continuous data collection was performed in 2014 for the following monitor wells:

- 383704114225001
- 384039114232701
- 384112114091101
- 384227114082701
- 384831114314301
- 384745114224401
- 390352114305401
- 390803114251001
- Robison Crooked Well
- 383023114115302
- 184W502M
- 184W504M
- 184W506M
- 184W508M
- SPR7006M
- SPR7007M
- SPR7005M
- SPR7008M
- SPR7024M
- SPR7024M2

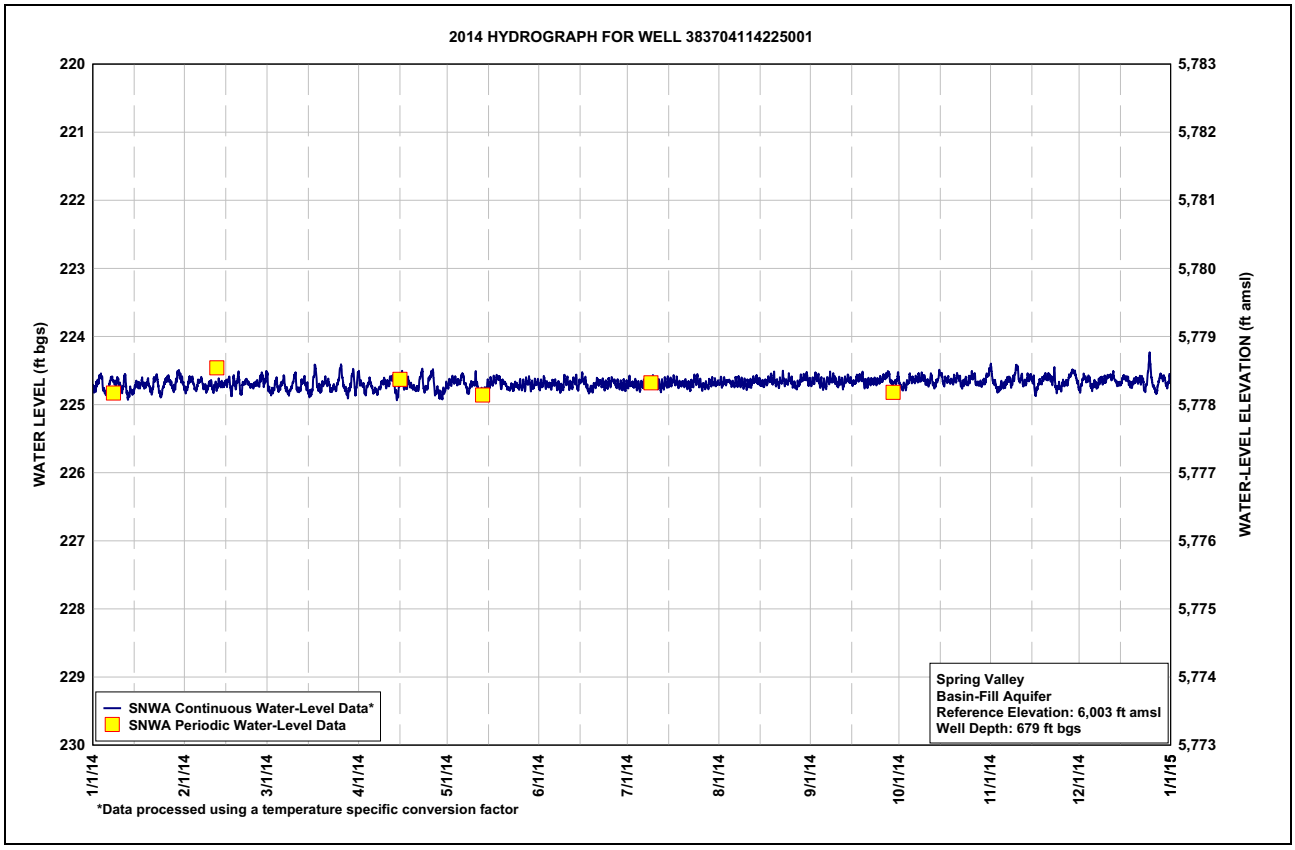
For these sites, the graphs are shown below and include historical data and data collected in 2014. Continuous data have been corrected for temperature and line stretch. Additional data processing, including barometric pressure corrections, may be applied in the future.

Table B-1
Spring Valley Well 383704114225001, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	224.76	224.78	224.76	224.65	224.71	224.73	224.72	224.69	224.69	224.71	224.56	224.76
2	224.69	224.66	224.81	224.72	224.69	224.69	224.71	224.68	224.62	224.74	224.69	224.62
3	224.59	224.63	224.76	224.83	224.65	224.70	224.70	224.68	224.61	224.71	224.77	224.63
4	224.77	224.77	224.72	224.68	224.68	224.72	224.74	224.66	224.69	224.64	224.73	224.63
5	224.82	224.71	224.75	224.74	224.66	224.70	224.73	224.70	224.72	224.64	224.72	224.74
6	224.76	224.64	224.66	224.80	224.59	224.69	224.70	224.69	224.71	224.64	224.65	224.71
7	224.63	224.73	224.77	224.81	224.74	224.72	224.69	224.68	224.64	224.63	224.63	224.69
8	224.68	224.77	224.81	224.74	224.79	224.75	224.70	224.67	224.64	224.62	224.66	224.65
9	224.65	224.70	224.73	224.66	224.69	224.69	224.69	224.70	224.65	224.63	224.51	224.65
10	224.74	224.76	224.60	224.70	224.68	224.66	224.68	224.72	224.69	224.68	224.61	224.60
11	224.67	224.73	224.79	224.68	224.77	224.70	224.70	224.71	224.68	224.66	224.63	224.59
12	224.81	224.72	224.74	224.62	224.85	224.71	224.73	224.67	224.69	224.70	224.70	224.58
13	224.83	224.70	224.64	224.80	224.86	224.65	224.72	224.64	224.64	224.70	224.63	224.66
14	224.81	224.70	224.72	224.84	224.75	224.75	224.71	224.68	224.65	224.58	224.61	224.70
15	224.72	224.68	224.84	224.64	224.69	224.65	224.69	224.70	224.69	224.57	224.66	224.66
16	224.72	224.72	224.75	224.70	224.68	224.66	224.66	224.69	224.63	224.68	224.81	224.60
17	224.68	224.70	224.50	224.74	224.66	224.75	224.66	224.66	224.60	224.65	224.69	224.62
18	224.71	224.70	224.75	224.70	224.61	224.77	224.71	224.64	224.61	224.66	224.65	224.71
19	224.69	224.62	224.79	224.75	224.70	224.77	224.69	224.66	224.70	224.65	224.60	224.68
20	224.78	224.82	224.68	224.77	224.69	224.68	224.68	224.67	224.70	224.61	224.61	224.63
21	224.71	224.67	224.68	224.71	224.76	224.67	224.72	224.68	224.68	224.63	224.62	224.63
22	224.60	224.68	224.78	224.56	224.75	224.68	224.74	224.64	224.66	224.72	224.62	224.63
23	224.80	224.72	224.75	224.77	224.74	224.71	224.67	224.66	224.66	224.66	224.76	224.77
24	224.81	224.72	224.75	224.72	224.71	224.70	224.66	224.66	224.65	224.68	224.75	224.47
25	224.66	224.70	224.57	224.57	224.73	224.68	224.69	224.64	224.62	224.60	224.69	224.60
26	224.62	224.67	224.60	224.66	224.74	224.66	224.74	224.73	224.59	224.60	224.68	224.76
27	224.68	224.60	224.76	224.80	224.72	224.71	224.72	224.73	224.55	224.69	224.60	224.77
28	224.75	224.62	224.83	224.85	224.68	224.73	224.72	224.68	224.68	224.71	224.53	224.59
29	224.62	---	224.68	224.85	224.72	224.73	224.68	224.62	224.67	224.68	224.54	224.61
30	224.57	---	224.64	224.77	224.72	224.75	224.70	224.59	224.62	224.60	224.67	224.70
31	224.67	---	224.68	---	224.68	---	224.70	224.66	---	224.53	---	224.65
Max	224.83	224.82	224.84	224.85	224.86	224.77	224.74	224.73	224.72	224.74	224.81	224.77
Min	224.57	224.60	224.50	224.56	224.59	224.65	224.66	224.59	224.55	224.53	224.51	224.47

Year 2014 Statistics: **Year Max 224.86 Year Min 224.47**

Note: Water level in ft bgs


2014 HYDROGRAPH FOR WELL 383704114225001
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
220
221
222
223
224
225
226
227
228
229
230
5,783
5,782
5,781
5,780
5,779
5,778
5,777
5,776
5,775
5,774
5,773
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 6,003 ft amsl
Well Depth: 679 ft bgs
*Data processed using a temperature specific conversion factor

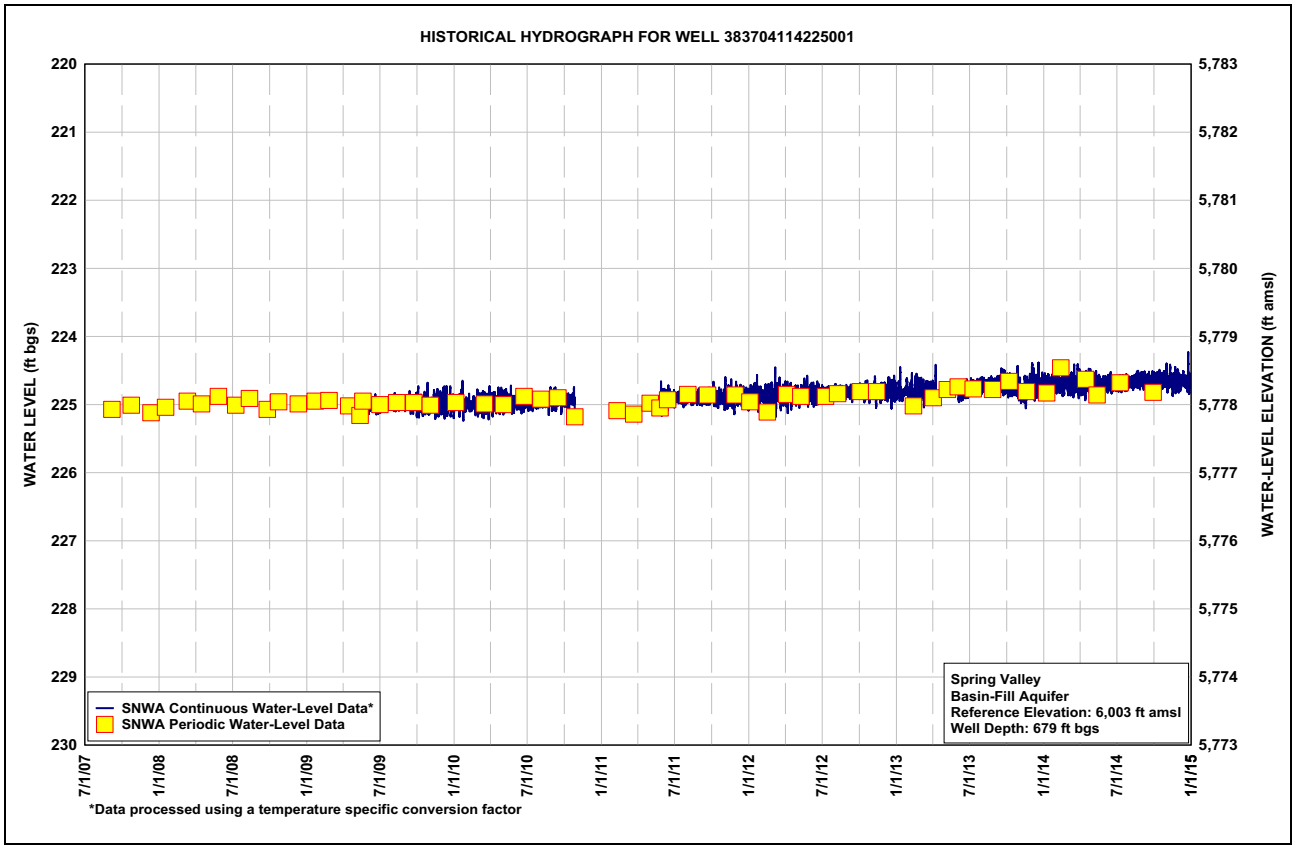

HISTORICAL HYDROGRAPH FOR WELL 383704114225001
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
220
221
222
223
224
225
226
227
228
229
230
5,783
5,782
5,781
5,780
5,779
5,778
5,777
5,776
5,775
5,774
5,773
7/1/07
1/1/08
7/1/08
1/1/09
7/1/09
1/1/10
7/1/10
1/1/11
7/1/11
1/1/12
7/1/12
1/1/13
7/1/13
1/1/14
7/1/14
1/1/15
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 6,003 ft amsl
Well Depth: 679 ft bgs
*Data processed using a temperature specific conversion factor

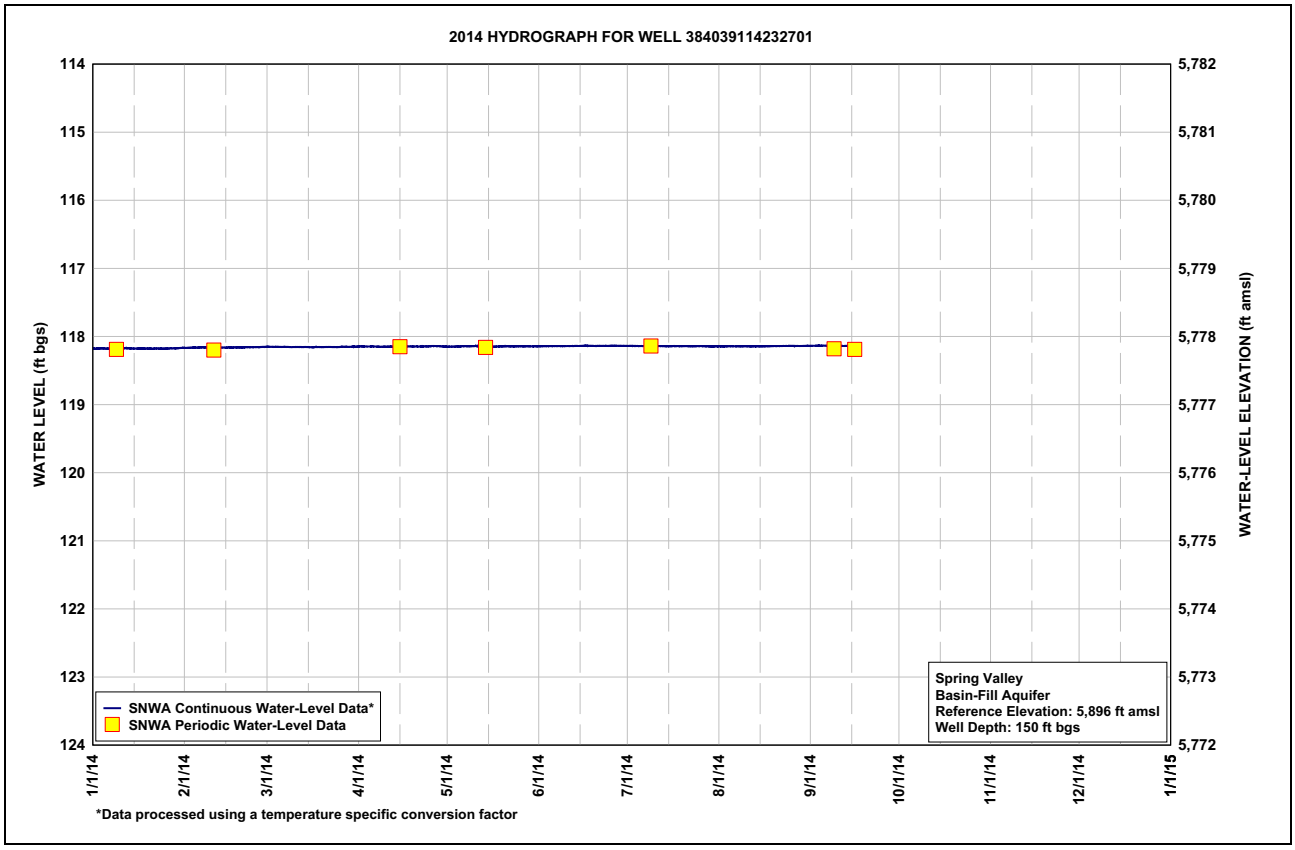
Table B-2
Spring Valley Well 384039114232701, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	118.18	118.17	118.15	118.15	118.15	118.14	118.14	118.14	118.14	---	---	---
2	118.18	118.17	118.15	118.15	118.15	118.14	118.14	118.14	118.14	---	---	---
3	118.18	118.16	118.15	118.15	118.15	118.14	118.14	118.14	118.13	---	---	---
4	118.17	118.16	118.15	118.15	118.15	118.14	118.14	118.14	118.13	---	---	---
5	118.18	118.16	118.15	118.15	118.15	118.14	118.14	118.14	118.13	---	---	---
6	118.18	118.16	118.15	118.15	118.14	118.14	118.14	118.14	118.14	---	---	---
7	118.17	118.16	118.15	118.15	118.14	118.14	118.14	118.14	118.13	---	---	---
8	118.17	118.16	118.16	118.15	118.14	118.14	118.14	118.14	118.13	---	---	---
9	118.17	118.16	118.16	118.15	118.14	118.14	118.14	118.14	118.14	---	---	---
10	118.17	118.16	118.16	118.15	118.14	118.14	118.14	118.14	118.14	---	---	---
11	118.17	118.16	118.16	118.15	118.14	118.14	118.14	118.14	118.14	---	---	---
12	118.17	118.16	118.16	118.15	118.14	118.14	118.14	118.14	118.14	---	---	---
13	118.17	118.16	118.16	118.15	118.15	118.14	118.14	118.14	118.14	---	---	---
14	118.18	118.16	118.16	118.15	118.15	118.14	118.14	118.14	118.14	---	---	---
15	118.18	118.16	118.16	118.15	118.15	118.14	118.14	118.14	118.14	---	---	---
16	118.18	118.16	118.16	118.15	118.15	118.14	118.14	118.14	118.14	---	---	---
17	118.18	118.16	118.16	118.15	118.15	118.13	118.14	118.14	[a]---	---	---	---
18	118.18	118.16	118.16	118.15	118.15	118.14	118.14	118.14	---	---	---	---
19	118.18	118.16	118.16	118.15	118.14	118.14	118.14	118.14	---	---	---	---
20	118.18	118.16	118.16	118.15	118.14	118.14	118.14	118.14	---	---	---	---
21	118.18	118.16	118.15	118.15	118.14	118.14	118.14	118.14	---	---	---	---
22	118.18	118.16	118.15	118.15	118.14	118.14	118.14	118.14	---	---	---	---
23	118.18	118.16	118.16	118.14	118.14	118.14	118.14	118.14	---	---	---	---
24	118.18	118.16	118.16	118.15	118.14	118.14	118.14	118.14	---	---	---	---
25	118.18	118.16	118.16	118.14	118.14	118.14	118.14	118.14	---	---	---	---
26	118.18	118.16	118.15	118.14	118.14	118.14	118.14	118.14	---	---	---	---
27	118.17	118.15	118.15	118.14	118.14	118.14	118.14	118.14	---	---	---	---
28	118.17	118.15	118.15	118.14	118.14	118.14	118.14	118.14	---	---	---	---
29	118.17	---	118.15	118.15	118.14	118.14	118.14	118.14	---	---	---	---
30	118.17	---	118.15	118.15	118.14	118.14	118.14	118.14	---	---	---	---
31	118.17	---	118.15	---	118.14	---	118.14	118.14	---	---	---	---
Max	118.18	118.17	118.16	118.15	118.15	118.14	118.14	118.14	118.14	---	---	---
Min	118.17	118.15	118.15	118.14	118.14	118.13	118.14	118.14	118.13	---	---	---

Year 2014 Statistics: **Year Max 118.18; Year Min 118.13**

Note: Water level in ft bgs

[a]Continuous monitoring ceases


2014 HYDROGRAPH FOR WELL 384039114232701
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
114
115
116
117
118
119
120
121
122
123
124
5,782
5,781
5,780
5,779
5,778
5,777
5,776
5,775
5,774
5,773
5,772
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,896 ft amsl
Well Depth: 150 ft bgs
*Data processed using a temperature specific conversion factor

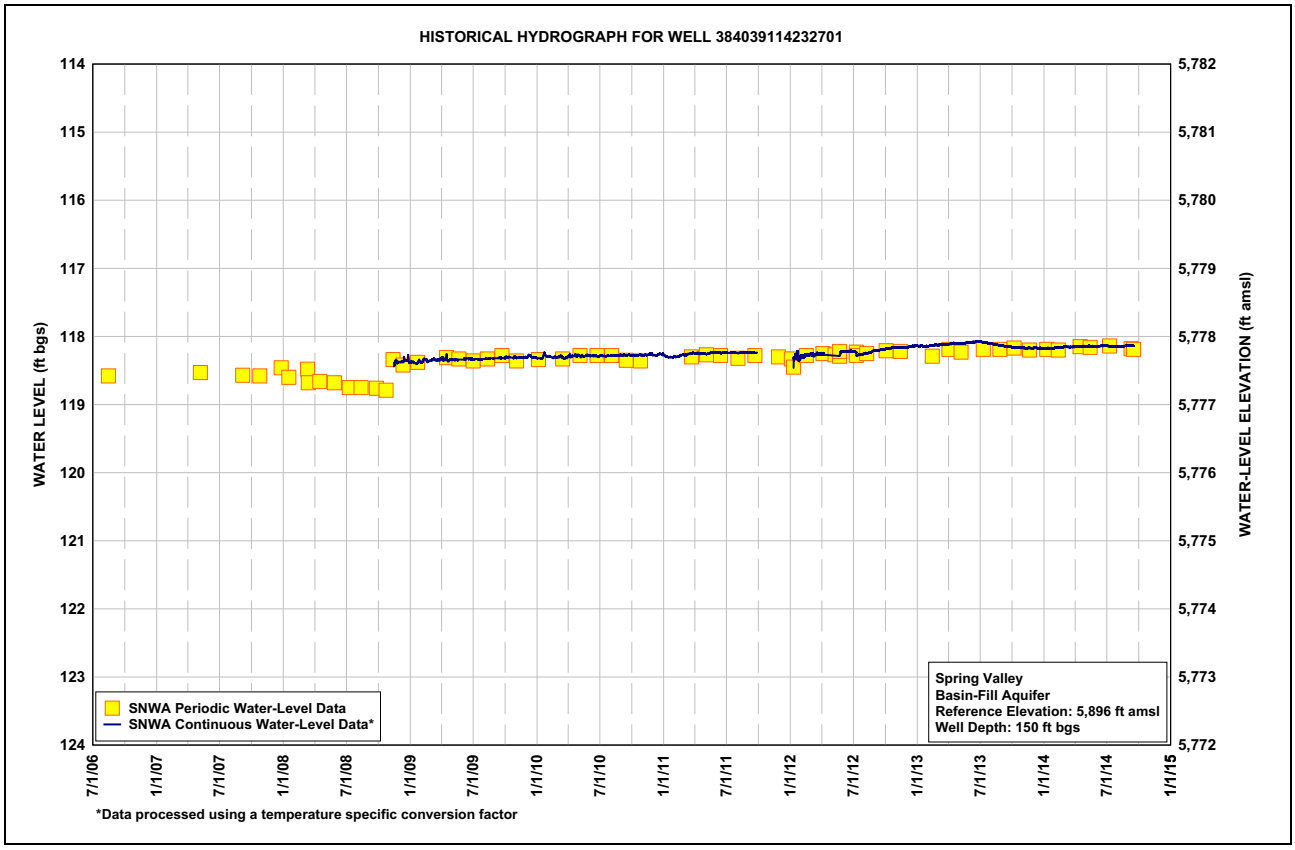

HISTORICAL HYDROGRAPH FOR WELL 384039114232701
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
114
115
116
117
118
119
120
121
122
123
124
5,782
5,781
5,780
5,779
5,778
5,777
5,776
5,775
5,774
5,773
5,772
7/1/06
1/1/07
7/1/07
1/1/08
7/1/08
1/1/09
7/1/09
1/1/10
7/1/10
1/1/11
7/1/11
1/1/12
7/1/12
1/1/13
7/1/13
1/1/14
7/1/14
1/1/15
SNWA Periodic Water-Level Data
SNWA Continuous Water-Level Data*
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,896 ft amsl
Well Depth: 150 ft bgs
*Data processed using a temperature specific conversion factor

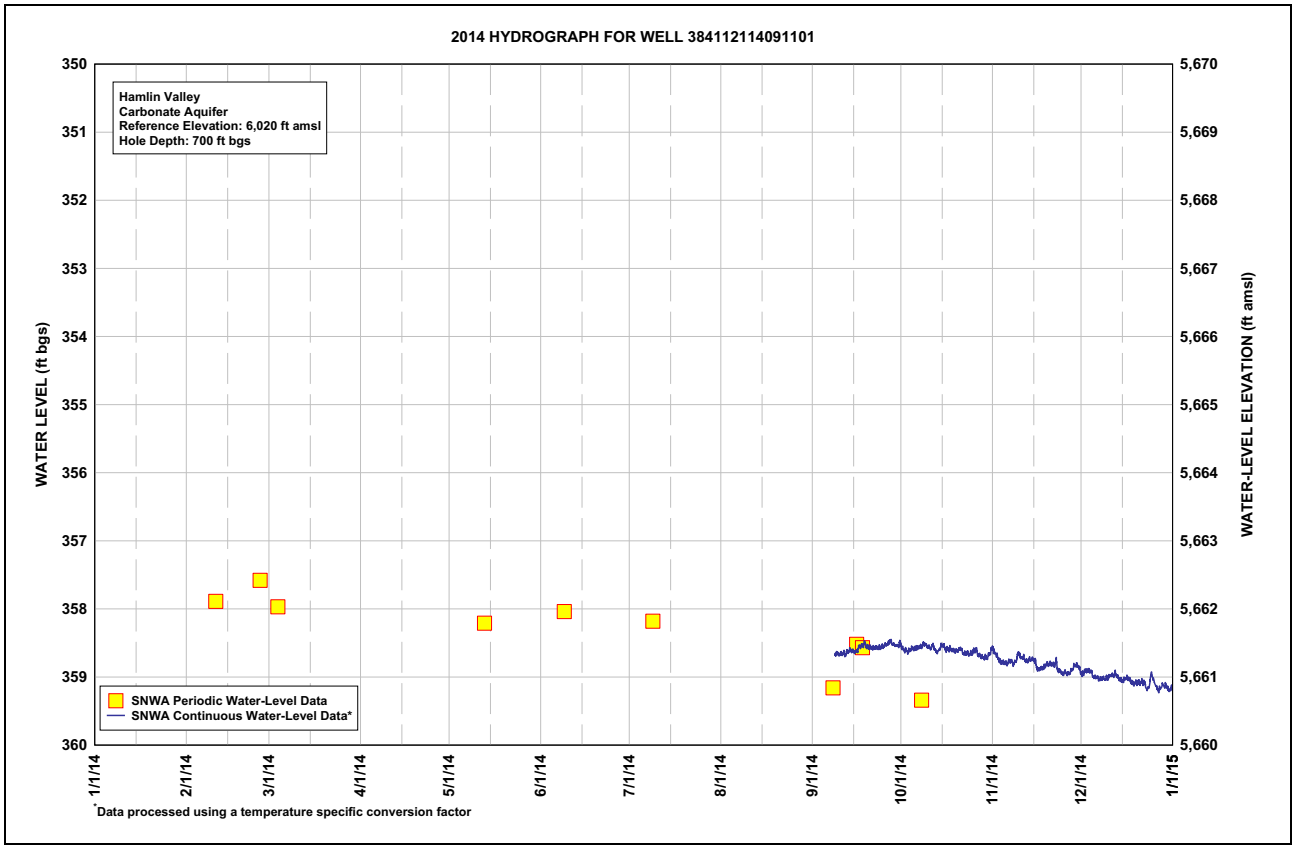
Table B-3
Spring Valley Well 384112114091101, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	---	---	---	---	---	---	---	---	---	358.58	358.61	358.96
2	---	---	---	---	---	---	---	---	---	358.61	358.68	358.92
3	---	---	---	---	---	---	---	---	---	358.62	358.77	358.92
4	---	---	---	---	---	---	---	---	---	358.59	358.78	358.93
5	---	---	---	---	---	---	---	---	---	358.58	358.80	359.00
6	---	---	---	---	---	---	---	---	---	358.58	358.77	359.00
7	---	---	---	---	---	---	---	---	[a]---	358.56	358.77	359.03
8	---	---	---	---	---	---	---	---	358.68	358.53	358.78	359.02
9	---	---	---	---	---	---	---	---	358.66	358.53	358.68	359.03
10	---	---	---	---	---	---	---	---	358.67	358.56	358.71	358.99
11	---	---	---	---	---	---	---	---	358.66	358.56	358.73	358.98
12	---	---	---	---	---	---	---	---	358.65	358.59	358.77	358.97
13	---	---	---	---	---	---	---	---	358.61	358.62	358.75	359.00
14	---	---	---	---	---	---	---	---	358.61	358.56	358.74	359.04
15	---	---	---	---	---	---	---	---	358.63	358.55	358.77	359.04
16	---	---	---	---	---	---	---	---	358.59	358.61	358.89	359.02
17	---	---	---	---	---	---	---	---	358.55	358.59	358.88	359.04
18	---	---	---	---	---	---	---	---	358.52	358.61	358.86	359.09
19	---	---	---	---	---	---	---	---	358.55	358.62	358.82	359.09
20	---	---	---	---	---	---	---	---	358.57	358.60	358.82	359.08
21	---	---	---	---	---	---	---	---	358.58	358.60	358.83	359.08
22	---	---	---	---	---	---	---	---	358.57	358.66	358.79	359.08
23	---	---	---	---	---	---	---	---	358.57	358.65	358.90	359.17
24	---	---	---	---	---	---	---	---	358.56	358.67	358.94	358.99
25	---	---	---	---	---	---	---	---	358.54	358.63	358.94	359.05
26	---	---	---	---	---	---	---	---	358.51	358.63	358.95	359.16
27	---	---	---	---	---	---	---	---	358.49	358.69	358.92	359.17
28	---	---	---	---	---	---	---	---	358.53	358.71	358.85	359.10
29	---	---	---	---	---	---	---	---	358.54	358.72	358.83	359.13
30	---	---	---	---	---	---	---	---	358.53	358.69	358.87	359.18
31	---	---	---	---	---	---	---	---	---	358.62	---	359.17
Max	---	---	---	---	---	---	---	---	358.68	358.72	358.95	359.18
Min	---	---	---	---	---	---	---	---	358.49	358.53	358.61	358.92

Year 2014 Statistics: **Year Max 359.18; Year Min 358.49**

Note: Water level in ft bgs

[a]Continuous monitoring begins


2014 HYDROGRAPH FOR WELL 384112114091101
Hamlin Valley
Carbonate Aquifer
Reference Elevation: 6,020 ft amsl
Hole Depth: 700 ft bgs
SNWA Periodic Water-Level Data
SNWA Continuous Water-Level Data*
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
350
351
352
353
354
355
356
357
358
359
360
5,670
5,669
5,668
5,667
5,666
5,665
5,664
5,663
5,662
5,661
5,660
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
*Data processed using a temperature specific conversion factor

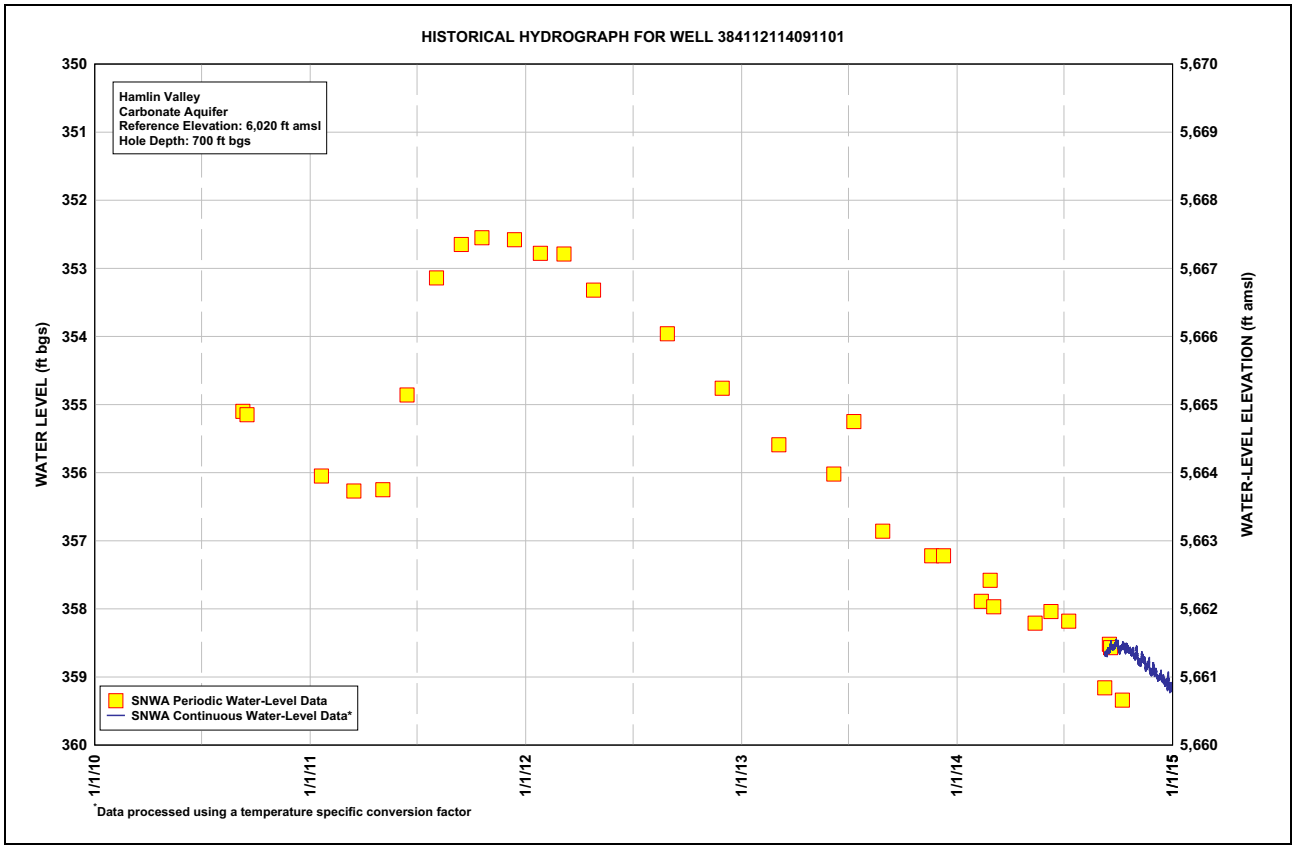

HISTORICAL HYDROGRAPH FOR WELL 384112114091101
Hamlin Valley
Carbonate Aquifer
Reference Elevation: 6,020 ft amsl
Hole Depth: 700 ft bgs
SNWA Periodic Water-Level Data
SNWA Continuous Water-Level Data*
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
350
351
352
353
354
355
356
357
358
359
360
5,670
5,669
5,668
5,667
5,666
5,665
5,664
5,663
5,662
5,661
5,660
1/1/10
1/1/11
1/1/12
1/1/13
1/1/14
1/1/15
*Data processed using a temperature specific conversion factor

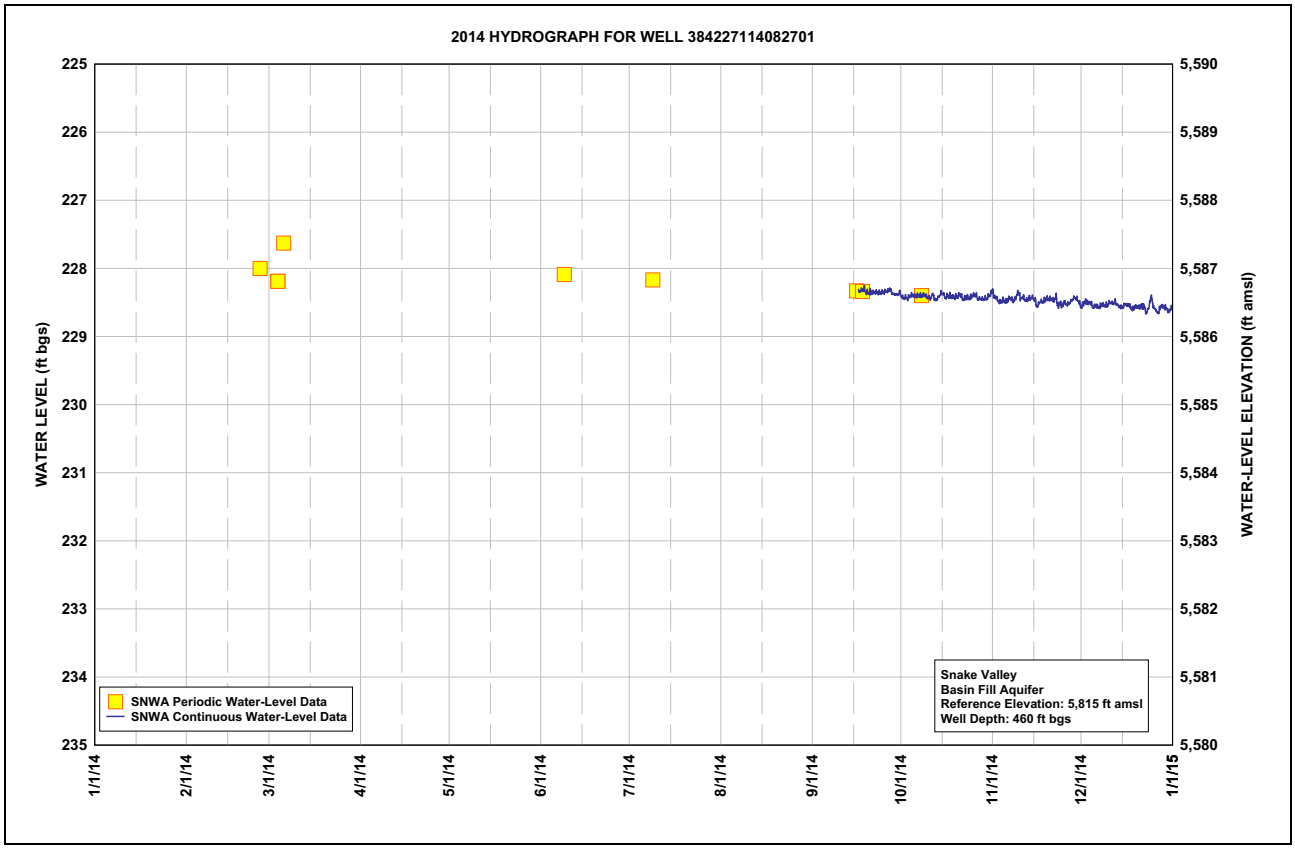
Table B-4
Spring Valley Well 384227114082701, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	---	---	---	---	---	---	---	---	---	228.43	228.40	228.54
2	---	---	---	---	---	---	---	---	---	228.43	228.44	228.50
3	---	---	---	---	---	---	---	---	---	228.43	228.49	228.51
4	---	---	---	---	---	---	---	---	---	228.40	228.48	228.50
5	---	---	---	---	---	---	---	---	---	228.41	228.48	228.56
6	---	---	---	---	---	---	---	---	---	228.40	228.45	228.55
7	---	---	---	---	---	---	---	---	---	228.40	228.45	228.56
8	---	---	---	---	---	---	---	---	---	228.40	228.46	228.54
9	---	---	---	---	---	---	---	---	---	228.40	228.38	228.54
10	---	---	---	---	---	---	---	---	---	228.43	228.43	228.52
11	---	---	---	---	---	---	---	---	---	228.40	228.43	228.51
12	---	---	---	---	---	---	---	---	---	228.45	228.47	228.51
13	---	---	---	---	---	---	---	---	---	228.43	228.44	228.54
14	---	---	---	---	---	---	---	---	---	228.39	228.44	228.56
15	---	---	---	---	---	---	---	---	[a]---	228.38	228.47	228.54
16	---	---	---	---	---	---	---	---	228.34	228.43	228.53	228.53
17	---	---	---	---	---	---	---	---	228.33	228.41	228.50	228.55
18	---	---	---	---	---	---	---	---	228.31	228.42	228.49	228.59
19	---	---	---	---	---	---	---	---	228.36	228.42	228.45	228.57
20	---	---	---	---	---	---	---	---	228.36	228.40	228.45	228.57
21	---	---	---	---	---	---	---	---	228.36	228.41	228.46	228.56
22	---	---	---	---	---	---	---	---	228.35	228.45	228.44	228.58
23	---	---	---	---	---	---	---	---	228.36	228.43	228.54	228.61
24	---	---	---	---	---	---	---	---	228.36	228.43	228.55	228.47
25	---	---	---	---	---	---	---	---	228.34	228.40	228.52	228.56
26	---	---	---	---	---	---	---	---	228.34	228.40	228.53	228.62
27	---	---	---	---	---	---	---	---	228.32	228.45	228.48	228.61
28	---	---	---	---	---	---	---	---	228.37	228.45	228.44	228.56
29	---	---	---	---	---	---	---	---	228.38	228.45	228.45	228.58
30	---	---	---	---	---	---	---	---	228.37	228.42	228.50	228.63
31	---	---	---	---	---	---	---	---	---	228.36	---	228.59
Max	---	---	---	---	---	---	---	---	228.38	228.45	228.55	228.63
Min	---	---	---	---	---	---	---	---	228.31	228.36	228.38	228.47

Year 2014 Statistics: **Year Max 228.63; Year Min 228.31**

Note: Water level in ft bgs

[a]Continuous monitoring begins


2014 HYDROGRAPH FOR WELL 384227114082701
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
225
226
227
228
229
230
231
232
233
234
235
5,590
5,589
5,588
5,587
5,586
5,585
5,584
5,583
5,582
5,581
5,580
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Periodic Water-Level Data
SNWA Continuous Water-Level Data
Snake Valley
Basin Fill Aquifer
Reference Elevation: 5,815 ft amsl
Well Depth: 460 ft bgs

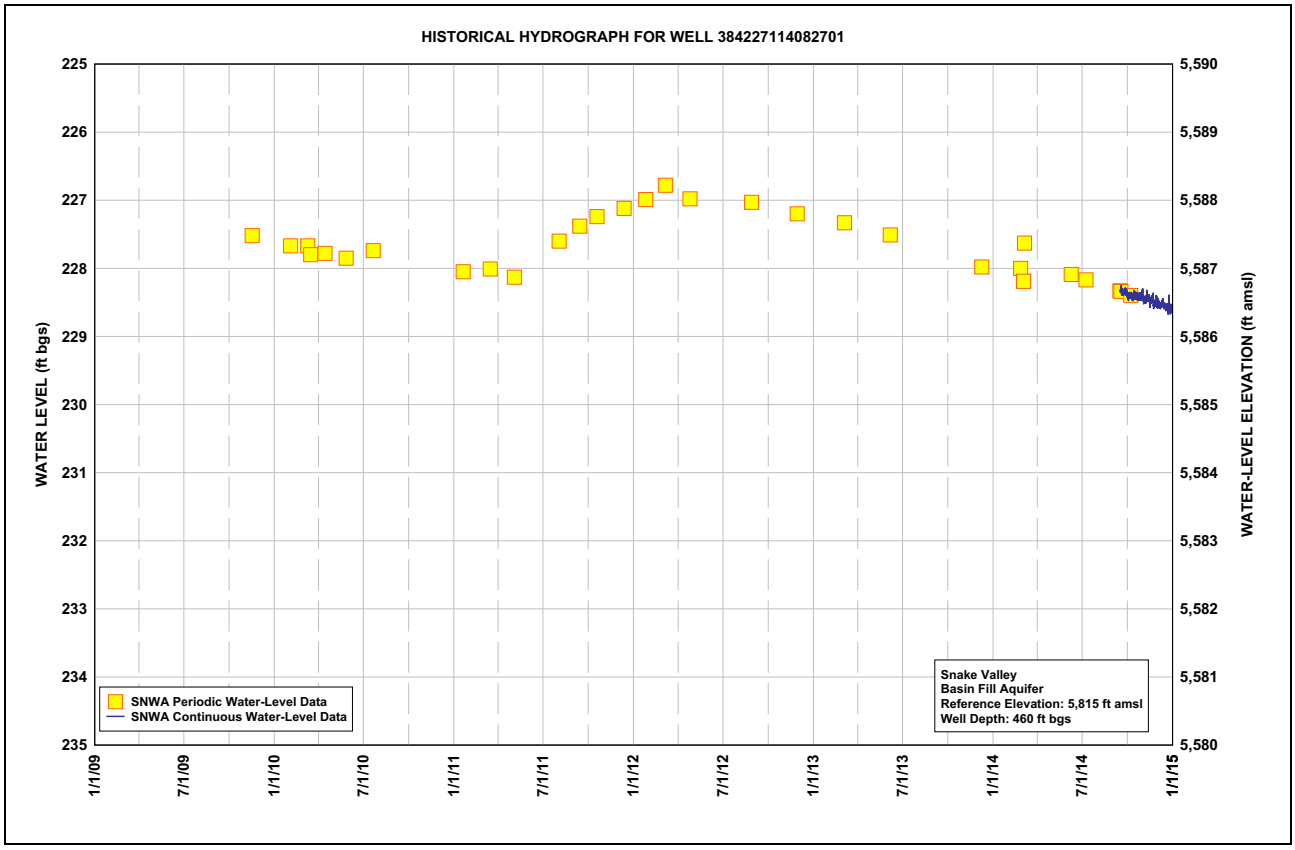
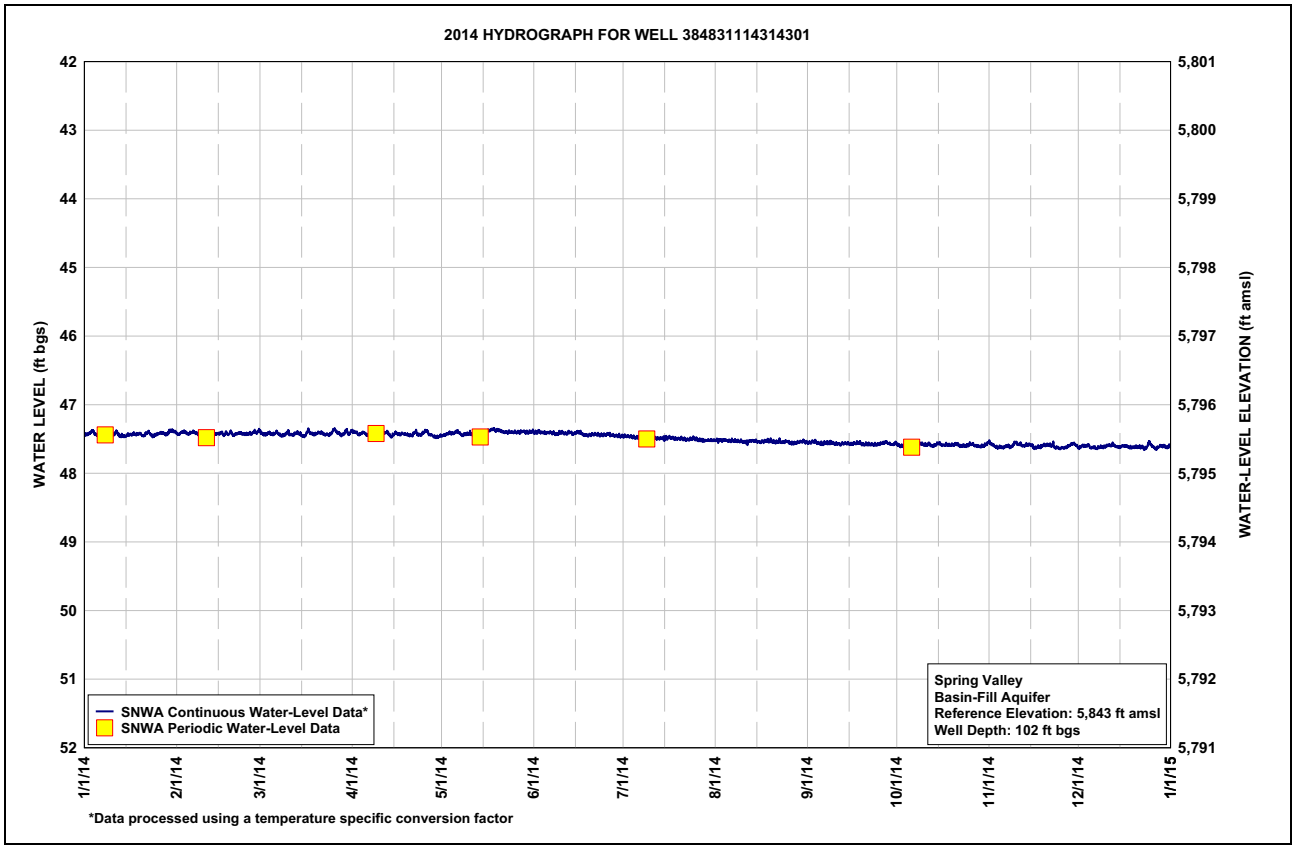

HISTORICAL HYDROGRAPH FOR WELL 384227114082701
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
225
226
227
228
229
230
231
232
233
234
235
5,590
5,589
5,588
5,587
5,586
5,585
5,584
5,583
5,582
5,581
5,580
1/1/09
7/1/09
1/1/10
7/1/10
1/1/11
7/1/11
1/1/12
7/1/12
1/1/13
7/1/13
1/1/14
7/1/14
1/1/15
SNWA Periodic Water-Level Data
SNWA Continuous Water-Level Data
Snake Valley
Basin Fill Aquifer
Reference Elevation: 5,815 ft amsl
Well Depth: 460 ft bgs

Table B-5
Spring Valley Well 384831114314301, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	47.44	47.43	47.41	47.40	47.45	47.41	47.46	47.52	47.56	47.59	47.57	47.62
2	47.42	47.41	47.43	47.41	47.43	47.39	47.47	47.52	47.55	47.61	47.59	47.60
3	47.39	47.40	47.42	47.43	47.42	47.41	47.47	47.53	47.54	47.60	47.62	47.60
4	47.43	47.42	47.42	47.41	47.42	47.41	47.48	47.52	47.56	47.59	47.62	47.60
5	47.45	47.42	47.43	47.43	47.41	47.41	47.49	47.52	47.57	47.59	47.62	47.63
6	47.44	47.41	47.41	47.44	47.40	47.41	47.47	47.53	47.57	47.58	47.61	47.63
7	47.41	47.41	47.43	47.45	47.43	47.42	47.47	47.53	47.56	47.58	47.61	47.64
8	47.41	47.44	47.45	47.44	47.44	47.43	47.48	47.53	47.56	47.57	47.61	47.62
9	47.41	47.42	47.43	47.42	47.43	47.42	47.48	47.54	47.56	47.57	47.56	47.62
10	47.43	47.43	47.40	47.43	47.42	47.41	47.48	47.55	47.57	47.59	47.57	47.60
11	47.40	47.44	47.44	47.42	47.45	47.42	47.48	47.54	47.58	47.58	47.58	47.60
12	47.44	47.43	47.43	47.41	47.47	47.42	47.49	47.53	47.57	47.59	47.60	47.59
13	47.46	47.43	47.41	47.44	47.48	47.41	47.49	47.53	47.56	47.60	47.59	47.61
14	47.46	47.43	47.43	47.45	47.42	47.43	47.50	47.53	47.57	47.57	47.59	47.61
15	47.45	47.42	47.45	47.42	47.40	47.40	47.49	47.54	47.58	47.57	47.60	47.61
16	47.44	47.43	47.43	47.43	47.38	47.40	47.47	47.54	47.57	47.59	47.64	47.60
17	47.43	47.42	47.39	47.42	47.37	47.43	47.48	47.53	47.57	47.59	47.61	47.61
18	47.43	47.43	47.43	47.43	47.36	47.44	47.50	47.53	47.56	47.59	47.61	47.63
19	47.42	47.41	47.43	47.44	47.38	47.45	47.50	47.53	47.58	47.59	47.59	47.63
20	47.45	47.44	47.41	47.44	47.38	47.44	47.50	47.54	47.59	47.58	47.59	47.62
21	47.43	47.42	47.41	47.43	47.40	47.43	47.51	47.55	47.58	47.58	47.59	47.62
22	47.41	47.41	47.43	47.40	47.40	47.44	47.51	47.54	47.58	47.59	47.59	47.62
23	47.44	47.43	47.43	47.44	47.40	47.45	47.50	47.55	47.59	47.60	47.63	47.64
24	47.46	47.43	47.43	47.42	47.40	47.44	47.49	47.54	47.58	47.60	47.63	47.57
25	47.43	47.42	47.38	47.40	47.41	47.44	47.50	47.54	47.57	47.58	47.63	47.59
26	47.41	47.41	47.38	47.40	47.41	47.43	47.52	47.56	47.56	47.58	47.63	47.62
27	47.42	47.40	47.41	47.44	47.41	47.45	47.52	47.57	47.54	47.60	47.61	47.63
28	47.43	47.39	47.44	47.47	47.39	47.45	47.52	47.56	47.57	47.61	47.58	47.60
29	47.40	---	47.41	47.48	47.40	47.45	47.52	47.55	47.58	47.61	47.57	47.60
30	47.39	---	47.41	47.46	47.40	47.46	47.53	47.53	47.56	47.59	47.60	47.62
31	47.40	---	47.40	---	47.40	---	47.52	47.55	---	47.56	---	47.61
Max	47.46	47.44	47.45	47.48	47.48	47.46	47.53	47.57	47.59	47.61	47.64	47.64
Min	47.39	47.39	47.38	47.40	47.36	47.39	47.46	47.52	47.54	47.56	47.56	47.57

Year 2014 Statistics: **Year Max 47.64; Year Min 47.36**

Note: Water level in ft bgs


2014 HYDROGRAPH FOR WELL 384831114314301
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
42
43
44
45
46
47
48
49
50
51
52
5,801
5,800
5,799
5,798
5,797
5,796
5,795
5,794
5,793
5,792
5,791
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,843 ft amsl
Well Depth: 102 ft bgs
*Data processed using a temperature specific conversion factor

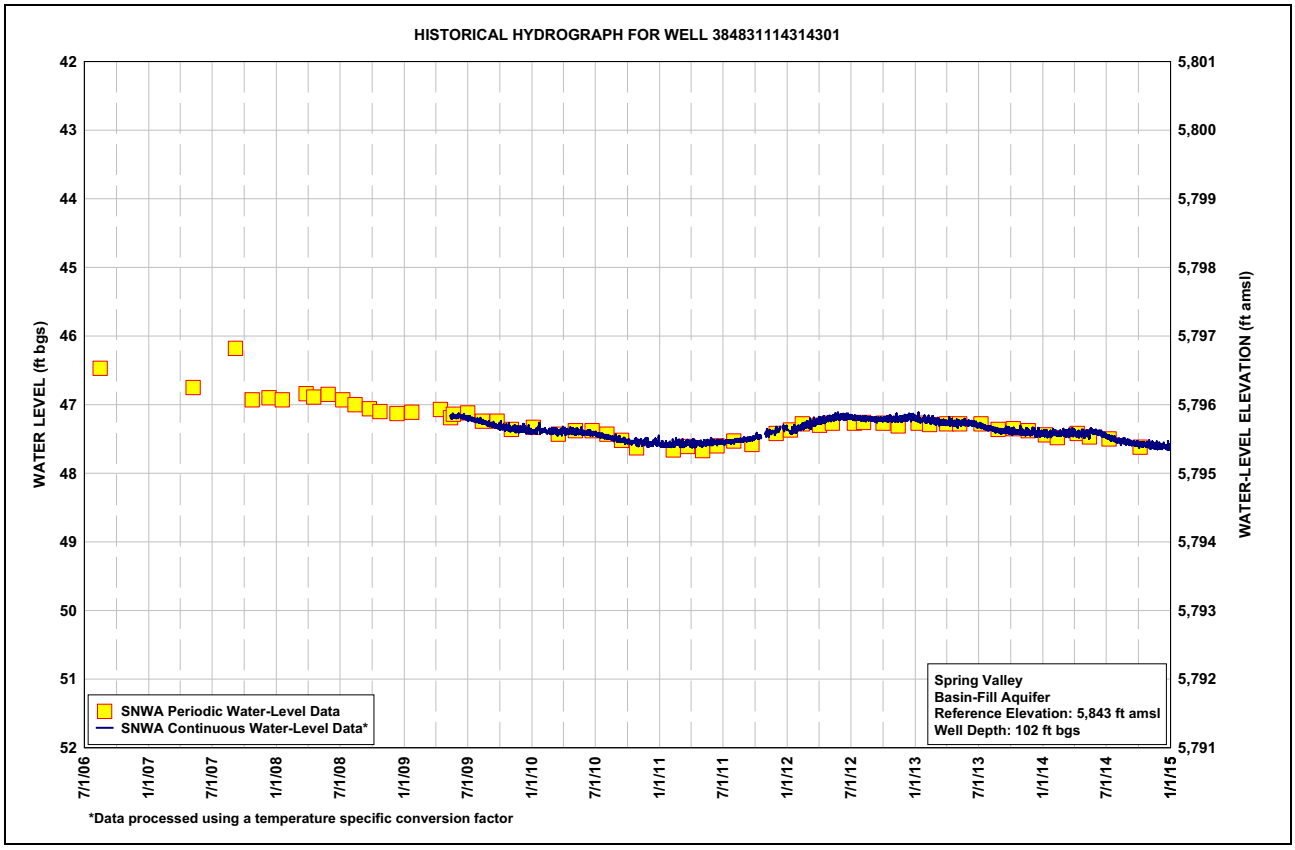
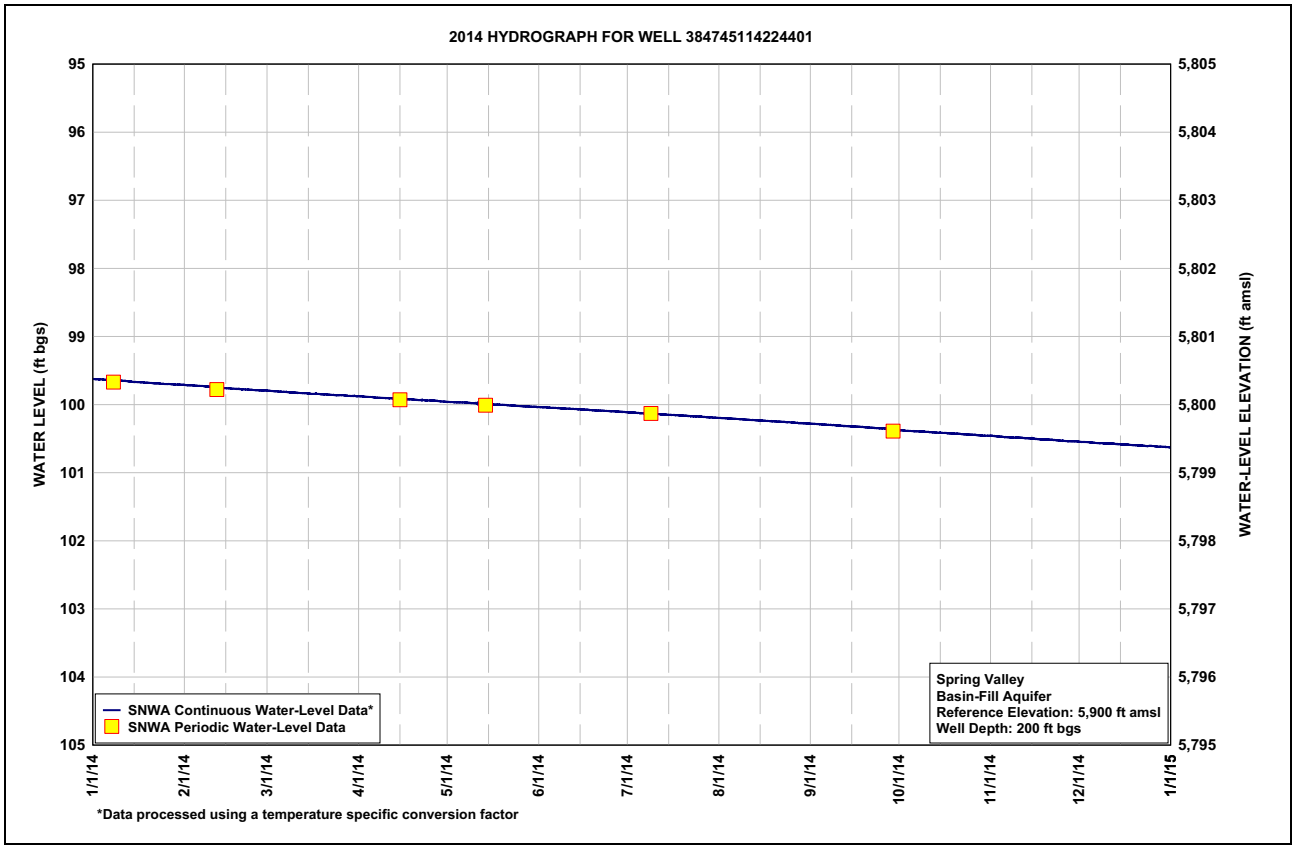

HISTORICAL HYDROGRAPH FOR WELL 384831114314301
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
42
43
44
45
46
47
48
49
50
51
52
5,801
5,800
5,799
5,798
5,797
5,796
5,795
5,794
5,793
5,792
5,791
7/1/06
1/1/07
7/1/07
1/1/08
7/1/08
1/1/09
7/1/09
1/1/10
7/1/10
1/1/11
7/1/11
1/1/12
7/1/12
1/1/13
7/1/13
1/1/14
7/1/14
1/1/15
SNWA Periodic Water-Level Data
SNWA Continuous Water-Level Data*
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,843 ft amsl
Well Depth: 102 ft bgs
*Data processed using a temperature specific conversion factor

Table B-6
Spring Valley Well 384745114224401, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	99.63	99.71	99.80	99.88	99.96	100.04	100.11	100.20	100.28	100.38	100.46	100.55
2	99.63	99.72	99.80	99.88	99.96	100.04	100.12	100.20	100.28	100.38	100.46	100.55
3	99.63	99.72	99.80	99.89	99.96	100.04	100.12	100.20	100.29	100.38	100.47	100.55
4	99.63	99.72	99.81	99.89	99.97	100.05	100.12	100.20	100.29	100.39	100.47	100.55
5	99.64	99.72	99.81	99.89	99.97	100.05	100.13	100.21	100.29	100.39	100.48	100.56
6	99.64	99.73	99.81	99.90	99.97	100.05	100.13	100.21	100.30	100.39	100.48	100.56
7	99.64	99.73	99.82	99.90	99.97	100.05	100.13	100.21	100.30	100.39	100.48	100.56
8	99.64	99.73	99.82	99.90	99.97	100.05	100.13	100.22	100.30	100.40	100.48	100.57
9	99.64	99.74	99.82	99.90	99.98	100.06	100.13	100.22	100.30	100.40	100.48	100.57
10	99.65	99.74	99.82	99.90	99.98	100.06	100.14	100.22	100.31	100.40	100.48	100.57
11	99.65	99.74	99.83	99.91	99.98	100.06	100.14	100.23	100.31	100.41	100.49	100.57
12	99.66	99.75	99.83	99.91	99.99	100.06	100.14	100.23	100.31	100.41	100.49	100.57
13	99.66	99.76	99.83	99.91	99.99	100.07	100.15	100.23	100.32	100.41	100.50	100.58
14	99.67	99.76	99.84	99.92	100.00	100.07	100.15	100.23	100.32	100.41	100.50	100.58
15	99.67	99.76	99.84	99.92	100.00	100.07	100.15	100.23	100.32	100.41	100.50	100.59
16	99.67	99.76	99.84	99.92	100.00	100.07	100.15	100.24	100.32	100.42	100.50	100.59
17	99.67	99.77	99.84	99.92	100.00	100.08	100.16	100.24	100.33	100.42	100.51	100.59
18	99.68	99.77	99.84	99.92	100.00	100.08	100.16	100.24	100.33	100.42	100.51	100.59
19	99.68	99.77	99.85	99.93	100.00	100.08	100.16	100.24	100.33	100.43	100.51	100.59
20	99.68	99.78	99.85	99.93	100.01	100.08	100.16	100.25	100.34	100.43	100.51	100.60
21	99.69	99.78	99.85	99.93	100.01	100.09	100.17	100.25	100.34	100.43	100.52	100.60
22	99.69	99.78	99.86	99.93	100.01	100.09	100.17	100.25	100.34	100.44	100.52	100.60
23	99.69	99.78	99.86	99.94	100.02	100.09	100.17	100.26	100.35	100.44	100.52	100.61
24	99.69	99.79	99.86	99.94	100.02	100.10	100.17	100.26	100.35	100.44	100.53	100.61
25	99.70	99.79	99.86	99.94	100.02	100.10	100.18	100.26	100.35	100.44	100.53	100.61
26	99.70	99.79	99.86	99.94	100.02	100.10	100.18	100.26	100.35	100.44	100.53	100.61
27	99.70	99.79	99.87	99.95	100.03	100.10	100.18	100.27	100.35	100.45	100.54	100.62
28	99.70	99.79	99.87	99.95	100.03	100.11	100.19	100.27	100.36	100.45	100.54	100.62
29	99.71	---	99.87	99.96	100.03	100.11	100.19	100.27	100.36	100.46	100.54	100.62
30	99.71	---	99.87	99.96	100.03	100.11	100.19	100.28	100.37	100.46	100.54	100.62
31	99.71	---	99.88	---	100.04	---	100.20	100.28	---	100.46	---	100.63
Max	99.71	99.79	99.88	99.96	100.04	100.11	100.20	100.28	100.37	100.46	100.54	100.63
Min	99.63	99.71	99.80	99.88	99.96	100.04	100.11	100.20	100.28	100.38	100.46	100.55

Year 2014 Statistics: **Year Max 100.63; Year Min 99.63**

Note: Water level in ft bgs


2014 HYDROGRAPH FOR WELL 384745114224401
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
95
96
97
98
99
100
101
102
103
104
105
5,805
5,804
5,803
5,802
5,801
5,800
5,799
5,798
5,797
5,796
5,795
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,900 ft amsl
Well Depth: 200 ft bgs
*Data processed using a temperature specific conversion factor

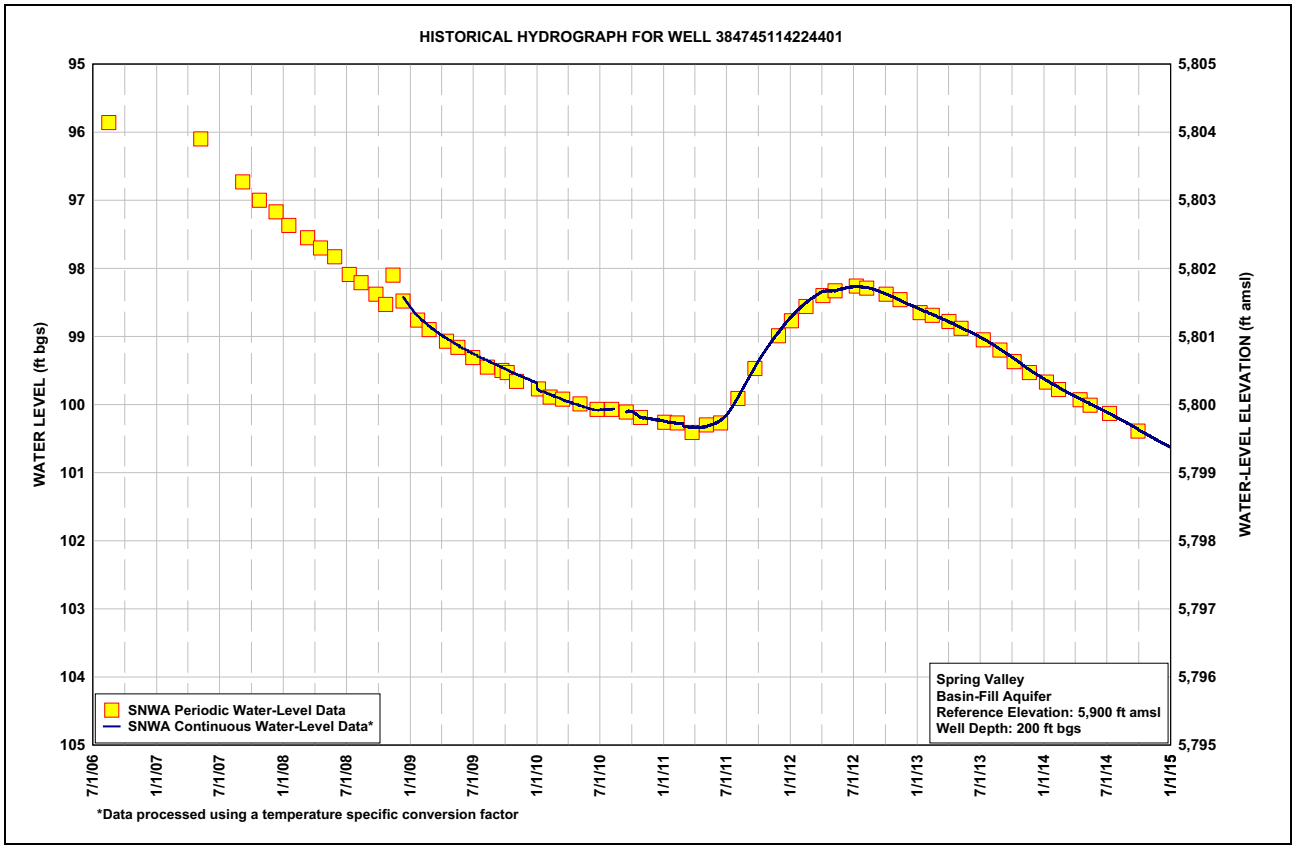

HISTORICAL HYDROGRAPH FOR WELL 384745114224401
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
95
96
97
98
99
100
101
102
103
104
105
5,805
5,804
5,803
5,802
5,801
5,800
5,799
5,798
5,797
5,796
5,795
7/1/06
1/1/07
7/1/07
1/1/08
7/1/08
1/1/09
7/1/09
1/1/10
7/1/10
1/1/11
7/1/11
1/1/12
7/1/12
1/1/13
7/1/13
1/1/14
7/1/14
1/1/15
SNWA Periodic Water-Level Data
SNWA Continuous Water-Level Data*
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,900 ft amsl
Well Depth: 200 ft bgs
*Data processed using a temperature specific conversion factor

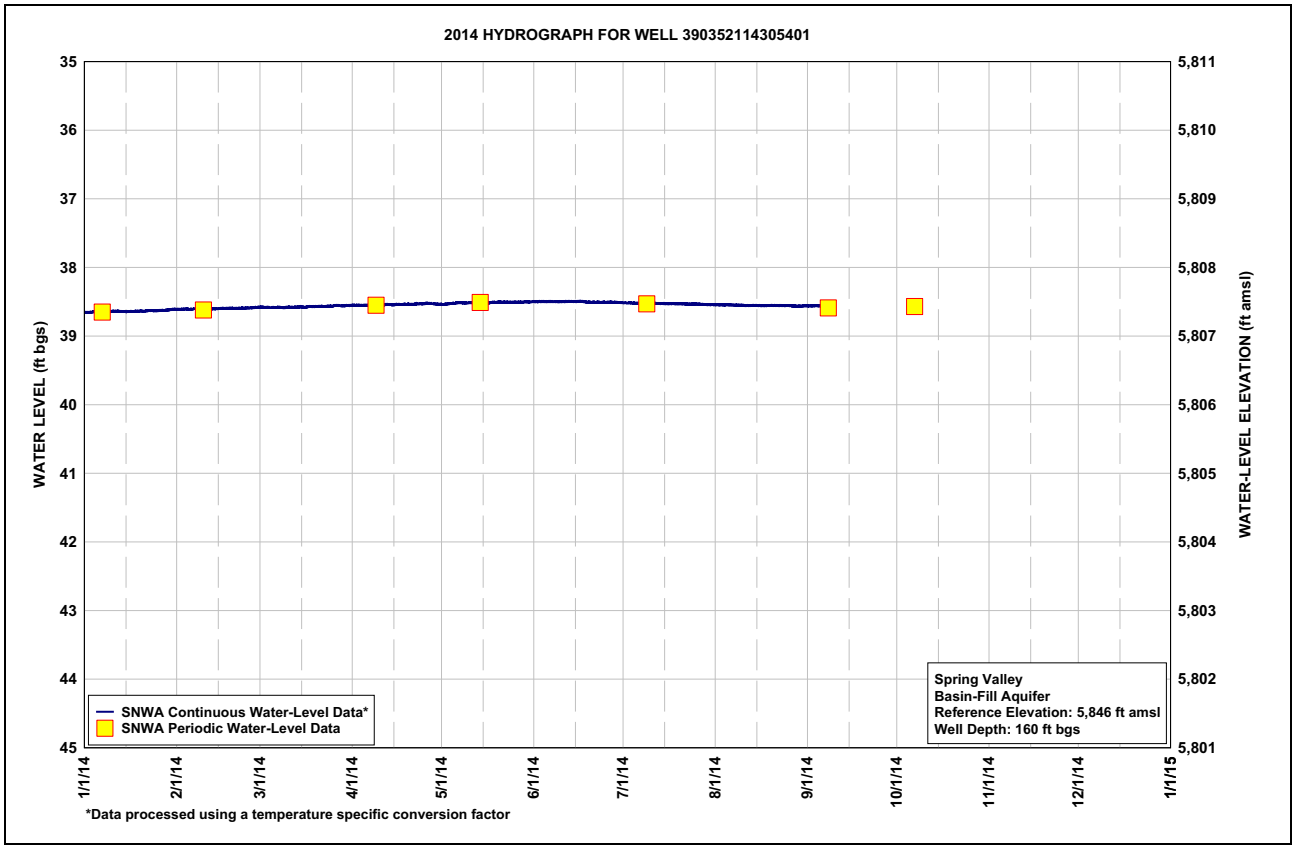
Table B-7
Spring Valley Well 390352114305401, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	38.66	38.61	38.58	38.55	38.54	38.50	38.52	38.54	38.55	---	---	---
2	38.66	38.61	38.59	38.55	38.54	38.51	38.52	38.54	38.56	---	---	---
3	38.66	38.61	38.59	38.56	38.53	38.51	38.52	38.54	38.56	---	---	---
4	38.65	38.61	38.59	38.56	38.53	38.50	38.52	38.54	38.55	---	---	---
5	38.65	38.61	38.59	38.55	38.52	38.50	38.53	38.54	38.57	---	---	---
6	38.66	38.61	38.59	38.56	38.52	38.50	38.53	38.54	38.56	---	---	---
7	38.65	38.61	38.59	38.56	38.52	38.50	38.53	38.55	38.56	---	---	---
8	38.65	38.61	38.59	38.56	38.52	38.50	38.53	38.54	38.57	---	---	---
9	38.64	38.61	38.59	38.56	38.52	38.51	38.52	38.54	[a]---	---	---	---
10	38.64	38.61	38.59	38.56	38.52	38.50	38.51	38.55	---	---	---	---
11	38.64	38.61	38.59	38.55	38.52	38.50	38.53	38.56	---	---	---	---
12	38.64	38.61	38.59	38.54	38.52	38.50	38.53	38.56	---	---	---	---
13	38.65	38.61	38.58	38.55	38.53	38.50	38.52	38.55	---	---	---	---
14	38.65	38.61	38.58	38.55	38.53	38.50	38.53	38.55	---	---	---	---
15	38.65	38.60	38.58	38.55	38.52	38.50	38.53	38.55	---	---	---	---
16	38.65	38.60	38.58	38.54	38.52	38.50	38.53	38.56	---	---	---	---
17	38.65	38.60	38.57	38.54	38.51	38.50	38.52	38.56	---	---	---	---
18	38.64	38.60	38.57	38.54	38.51	38.51	38.53	38.55	---	---	---	---
19	38.64	38.59	38.58	38.54	38.51	38.51	38.54	38.56	---	---	---	---
20	38.64	38.60	38.57	38.54	38.51	38.51	38.52	38.56	---	---	---	---
21	38.64	38.60	38.57	38.54	38.51	38.51	38.53	38.55	---	---	---	---
22	38.63	38.60	38.57	38.53	38.51	38.51	38.54	38.56	---	---	---	---
23	38.63	38.60	38.57	38.54	38.51	38.51	38.54	38.55	---	---	---	---
24	38.63	38.60	38.57	38.54	38.51	38.51	38.54	38.56	---	---	---	---
25	38.64	38.59	38.57	38.53	38.51	38.51	38.53	38.55	---	---	---	---
26	38.63	38.59	38.56	38.53	38.51	38.51	38.53	38.55	---	---	---	---
27	38.63	38.59	38.56	38.53	38.51	38.51	38.53	38.56	---	---	---	---
28	38.63	38.59	38.56	38.54	38.51	38.51	38.54	38.57	---	---	---	---
29	38.62	---	38.56	38.54	38.51	38.52	38.55	38.57	---	---	---	---
30	38.62	---	38.56	38.54	38.51	38.52	38.54	38.57	---	---	---	---
31	38.61	---	38.56	---	38.50	---	38.54	38.55	---	---	---	---
Max	38.66	38.61	38.59	38.56	38.54	38.52	38.55	38.57	38.57	---	---	---
Min	38.61	38.59	38.56	38.53	38.50	38.50	38.51	38.54	38.55	---	---	---

Year 2014 Statistics: **Year Max 38.66; Year Min 38.50**

Note: Water level in ft bgs

[a]Continuous monitoring ceases


2014 HYDROGRAPH FOR WELL 390352114305401
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
35
36
37
38
39
40
41
42
43
44
45
5,811
5,810
5,809
5,808
5,807
5,806
5,805
5,804
5,803
5,802
5,801
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,846 ft amsl
Well Depth: 160 ft bgs
*Data processed using a temperature specific conversion factor

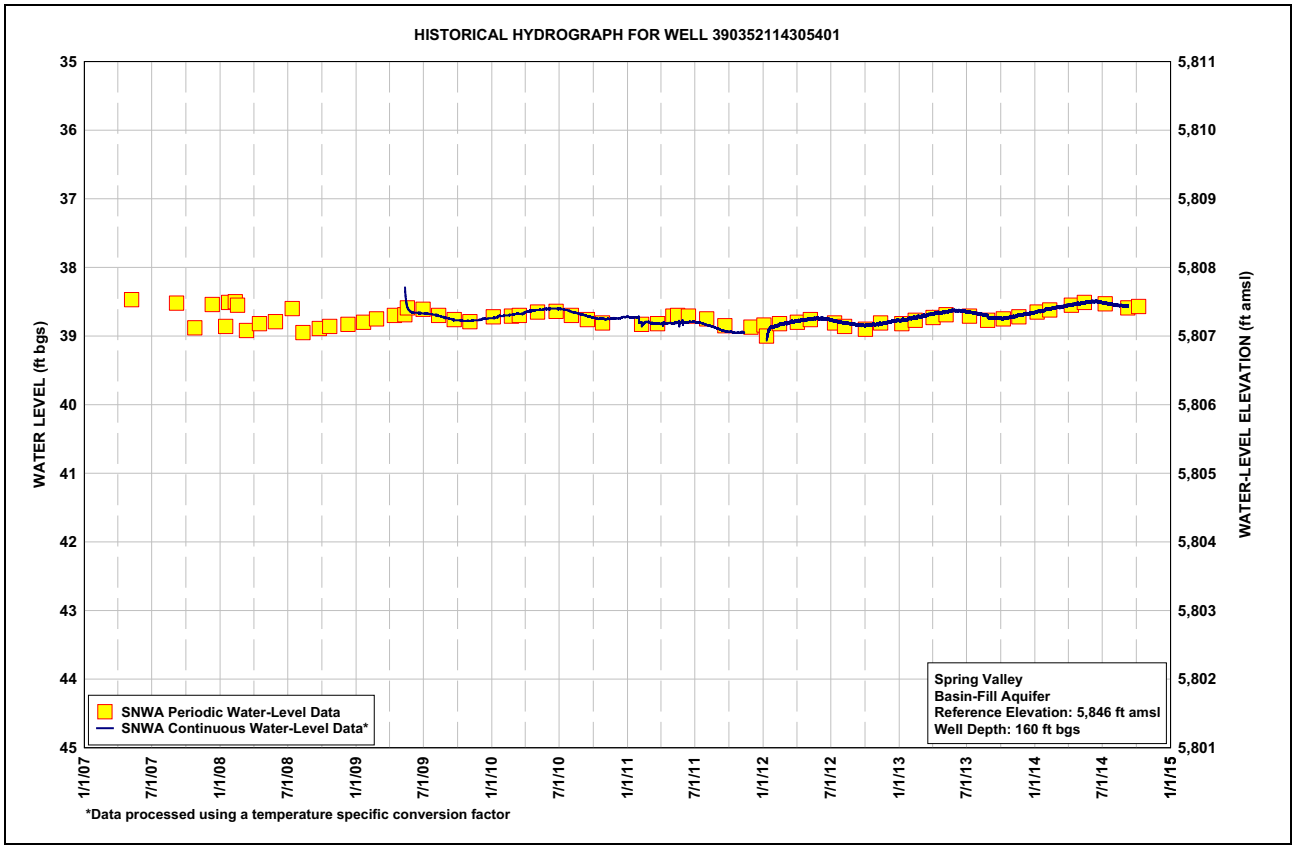
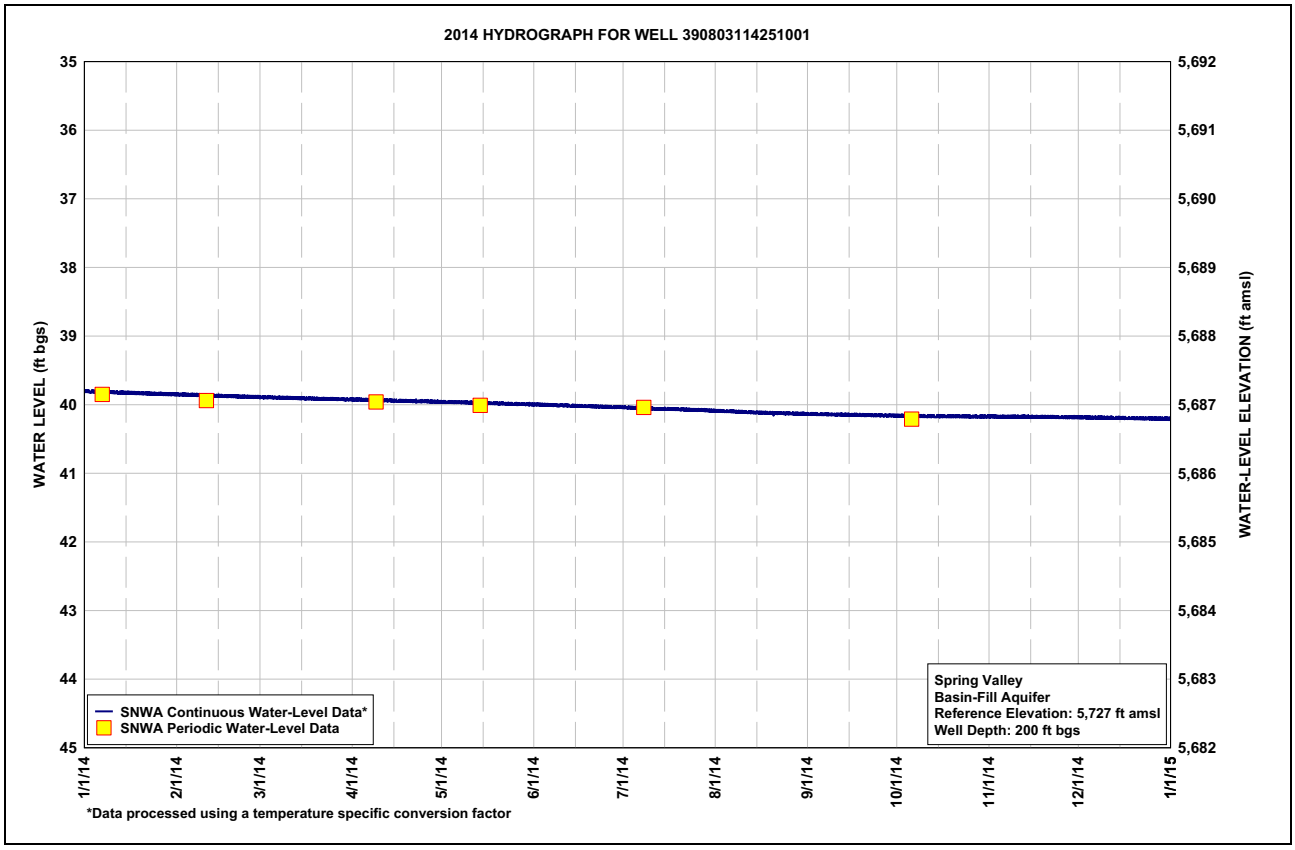

HISTORICAL HYDROGRAPH FOR WELL 390352114305401
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
35
36
37
38
39
40
41
42
43
44
45
5,811
5,810
5,809
5,808
5,807
5,806
5,805
5,804
5,803
5,802
5,801
1/1/07
7/1/07
1/1/08
7/1/08
1/1/09
7/1/09
1/1/10
7/1/10
1/1/11
7/1/11
1/1/12
7/1/12
1/1/13
7/1/13
1/1/14
7/1/14
1/1/15
SNWA Periodic Water-Level Data
SNWA Continuous Water-Level Data*
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,846 ft amsl
Well Depth: 160 ft bgs
*Data processed using a temperature specific conversion factor

Table B-8
Spring Valley Well 390803114251001, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	39.81	39.86	39.90	39.94	39.97	40.01	40.05	40.10	40.15	40.17	40.18	40.19
2	39.82	39.86	39.90	39.94	39.97	40.01	40.05	40.10	40.14	40.17	40.18	40.20
3	39.82	39.86	39.90	39.93	39.97	40.01	40.05	40.10	40.14	40.17	40.18	40.20
4	39.82	39.86	39.90	39.94	39.97	40.01	40.06	40.11	40.15	40.17	40.19	40.20
5	39.82	39.87	39.91	39.94	39.97	40.01	40.06	40.11	40.15	40.17	40.18	40.20
6	39.82	39.87	39.91	39.94	39.98	40.02	40.06	40.11	40.15	40.17	40.18	40.20
7	39.82	39.87	39.91	39.94	39.97	40.02	40.06	40.11	40.15	40.17	40.18	40.20
8	39.83	39.87	39.91	39.94	39.98	40.02	40.06	40.11	40.15	40.18	40.18	40.19
9	39.83	39.87	39.91	39.95	39.98	40.02	40.07	40.11	40.15	40.18	40.18	40.20
10	39.83	39.87	39.91	39.94	39.98	40.02	40.06	40.12	40.15	40.18	40.18	40.20
11	39.83	39.88	39.91	39.94	39.98	40.02	40.07	40.12	40.15	40.18	40.19	40.20
12	39.83	39.88	39.91	39.95	39.98	40.02	40.07	40.12	40.15	40.18	40.18	40.20
13	39.83	39.88	39.92	39.95	39.99	40.02	40.07	40.12	40.15	40.18	40.19	40.20
14	39.84	39.88	39.92	39.95	39.99	40.03	40.07	40.12	40.15	40.18	40.19	40.20
15	39.84	39.88	39.92	39.95	39.98	40.03	40.07	40.12	40.16	40.18	40.19	40.20
16	39.84	39.89	39.92	39.95	39.99	40.03	40.07	40.13	40.16	40.18	40.19	40.21
17	39.84	39.88	39.91	39.95	39.99	40.03	40.08	40.12	40.16	40.18	40.19	40.21
18	39.84	39.89	39.92	39.94	39.99	40.03	40.08	40.13	40.16	40.18	40.19	40.21
19	39.84	39.89	39.92	39.96	39.99	40.03	40.07	40.13	40.16	40.18	40.19	40.21
20	39.85	39.89	39.92	39.96	39.99	40.03	40.08	40.13	40.16	40.17	40.19	40.21
21	39.85	39.89	39.92	39.96	39.98	40.04	40.08	40.13	40.16	40.18	40.19	40.21
22	39.85	39.89	39.92	39.96	40.00	40.04	40.08	40.13	40.16	40.18	40.19	40.21
23	39.85	39.89	39.92	39.96	40.00	40.04	40.08	40.13	40.16	40.18	40.19	40.21
24	39.85	39.89	39.93	39.96	40.00	40.04	40.09	40.14	40.17	40.18	40.19	40.21
25	39.85	39.90	39.93	39.96	40.00	40.04	40.09	40.14	40.17	40.18	40.19	40.21
26	39.85	39.90	39.93	39.96	40.00	40.04	40.09	40.14	40.17	40.18	40.19	40.21
27	39.85	39.90	39.93	39.96	40.00	40.04	40.09	40.14	40.17	40.18	40.19	40.21
28	39.86	39.90	39.93	39.97	40.00	40.04	40.09	40.14	40.17	40.18	40.19	40.21
29	39.86	---	39.93	39.97	40.00	40.04	40.09	40.14	40.17	40.18	40.19	40.21
30	39.86	---	39.93	39.97	40.01	40.05	40.10	40.14	40.17	40.18	40.20	40.21
31	39.86	---	39.93	---	40.01	---	40.10	40.14	---	40.18	---	40.22
Max	39.86	39.90	39.93	39.97	40.01	40.05	40.10	40.14	40.17	40.18	40.20	40.22
Min	39.81	39.86	39.90	39.93	39.97	40.01	40.05	40.10	40.14	40.17	40.18	40.19

Year 2014 Statistics: **Year Max 40.22; Year Min 39.81**

Note: Water level in ft bgs


2014 HYDROGRAPH FOR WELL 390803114251001
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
35
36
37
38
39
40
41
42
43
44
45
5,692
5,691
5,690
5,689
5,688
5,687
5,686
5,685
5,684
5,683
5,682
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,727 ft amsl
Well Depth: 200 ft bgs
*Data processed using a temperature specific conversion factor

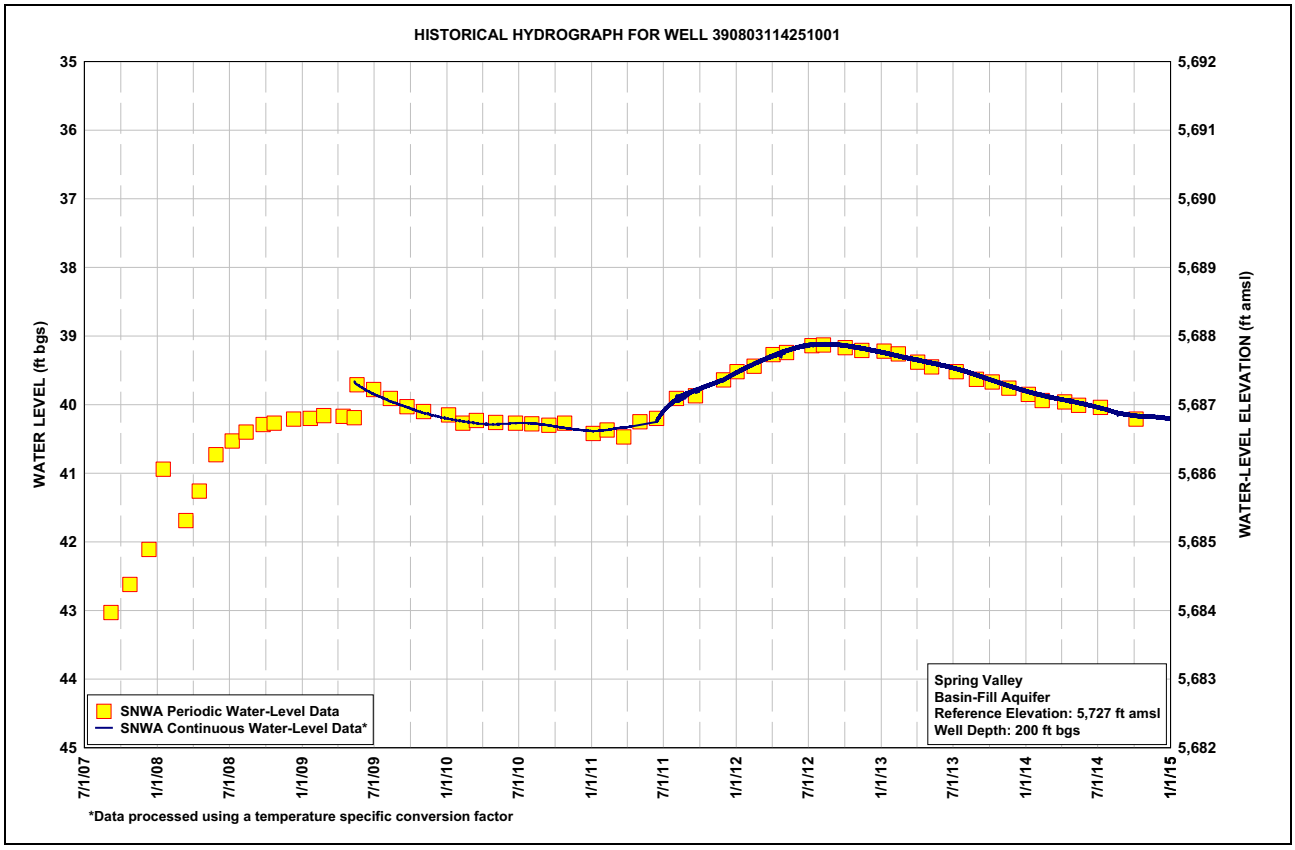
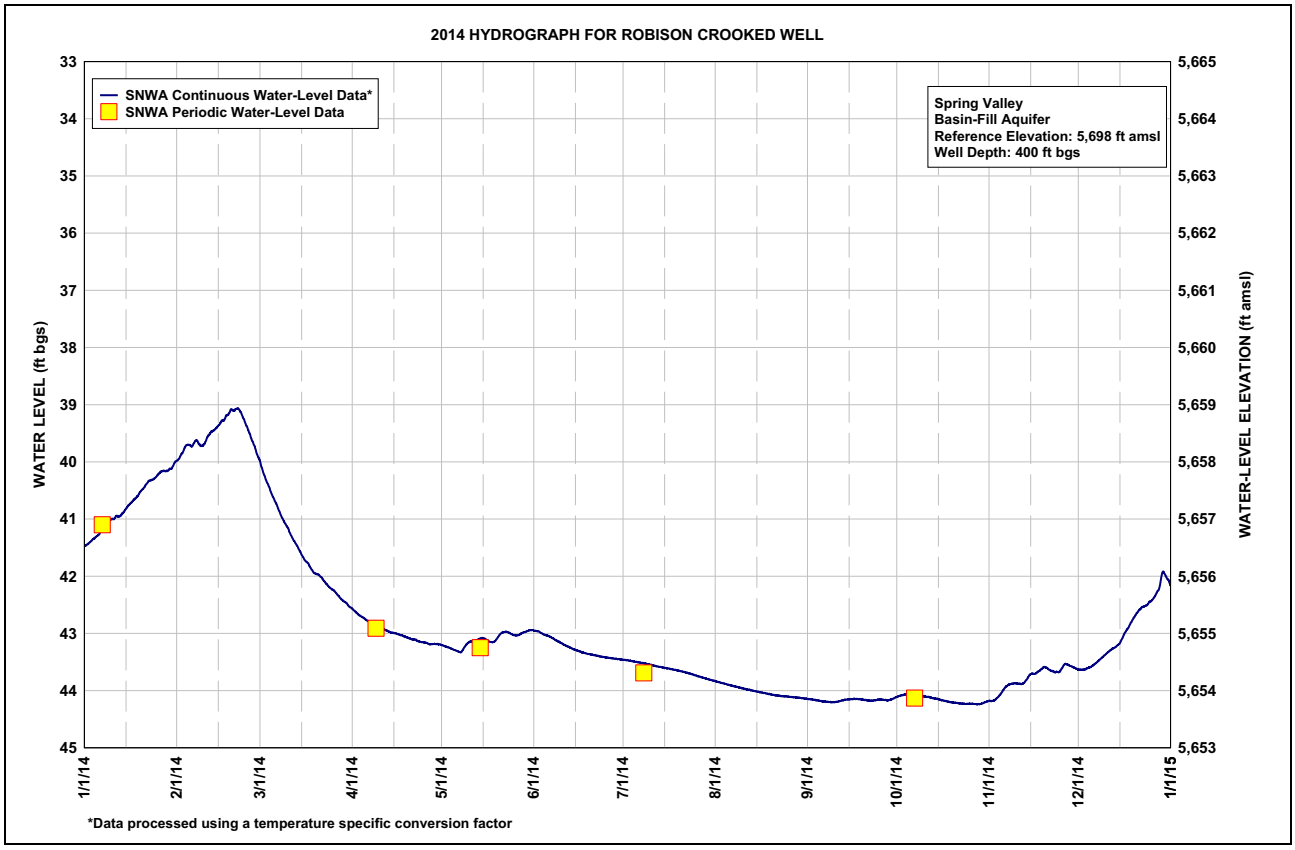

HISTORICAL HYDROGRAPH FOR WELL 390803114251001
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
35
36
37
38
39
40
41
42
43
44
45
5,692
5,691
5,690
5,689
5,688
5,687
5,686
5,685
5,684
5,683
5,682
7/1/07
1/1/08
7/1/08
1/1/09
7/1/09
1/1/10
7/1/10
1/1/11
7/1/11
1/1/12
7/1/12
1/1/13
7/1/13
1/1/14
7/1/14
1/1/15
SNWA Periodic Water-Level Data
SNWA Continuous Water-Level Data*
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,727 ft amsl
Well Depth: 200 ft bgs
*Data processed using a temperature specific conversion factor

Table B-9
Spring Valley Robison Crooked Well, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	41.46	39.96	40.08	42.59	43.21	42.95	43.46	43.84	44.15	44.10	44.18	43.64
2	41.42	39.87	40.24	42.64	43.23	42.96	43.47	43.85	44.15	44.08	44.17	43.63
3	41.38	39.78	40.37	42.69	43.25	42.99	43.48	43.87	44.16	44.07	44.14	43.62
4	41.33	39.71	40.50	42.72	43.27	43.02	43.49	43.88	44.17	44.06	44.08	43.60
5	41.29	39.71	40.62	42.76	43.29	43.04	43.50	43.90	44.18	44.06	44.01	43.58
6	41.21	39.71	40.73	42.79	43.31	43.06	43.51	43.91	44.19	44.06	43.94	43.54
7	41.06	39.63	40.86	42.82	43.33	43.08	43.52	43.92	44.19	44.07	43.90	43.49
8	41.02	39.68	40.98	42.85	43.26	43.12	43.53	43.94	44.20	44.08	43.88	43.45
9	41.01	39.72	41.08	42.88	43.19	43.15	43.54	43.95	44.20	44.09	43.87	43.40
10	41.00	39.68	41.16	42.91	43.15	43.17	43.55	43.97	44.20	44.10	43.88	43.35
11	40.96	39.55	41.29	42.93	43.14	43.20	43.56	43.98	44.19	44.11	43.88	43.30
12	40.95	39.48	41.38	42.95	43.13	43.23	43.58	43.99	44.17	44.12	43.87	43.26
13	40.92	39.45	41.47	42.97	43.10	43.25	43.59	44.00	44.16	44.13	43.82	43.24
14	40.86	39.40	41.57	42.99	43.09	43.28	43.60	44.01	44.15	44.14	43.74	43.19
15	40.79	39.34	41.67	43.00	43.09	43.30	43.61	44.02	44.15	44.16	43.71	43.11
16	40.72	39.28	41.74	43.01	43.13	43.31	43.61	44.03	44.15	44.17	43.70	43.00
17	40.67	39.21	41.81	43.03	43.15	43.33	43.63	44.04	44.15	44.18	43.67	42.92
18	40.62	39.17	41.89	43.05	43.15	43.35	43.64	44.05	44.15	44.19	43.63	42.83
19	40.55	39.09	41.95	43.07	43.10	43.36	43.65	44.06	44.16	44.20	43.59	42.74
20	40.48	39.10	41.97	43.09	43.03	43.37	43.66	44.08	44.17	44.21	43.61	42.66
21	40.41	39.07	42.01	43.10	42.98	43.38	43.67	44.08	44.17	44.22	43.64	42.59
22	40.34	39.13	42.08	43.11	42.97	43.39	43.69	44.09	44.18	44.23	43.66	42.54
23	40.32	39.24	42.14	43.14	42.98	43.40	43.70	44.10	44.17	44.23	43.68	42.52
24	40.29	39.37	42.20	43.15	43.01	43.41	43.72	44.10	44.16	44.23	43.67	42.48
25	40.24	39.50	42.24	43.16	43.03	43.42	43.73	44.11	44.16	44.23	43.61	42.43
26	40.18	39.64	42.29	43.18	43.04	43.43	43.75	44.11	44.16	44.23	43.54	42.37
27	40.16	39.77	42.35	43.19	43.01	43.44	43.77	44.12	44.17	44.23	43.55	42.27
28	40.16	39.92	42.41	43.19	42.99	43.44	43.78	44.12	44.17	44.24	43.57	42.14
29	40.14	---	42.45	43.19	42.97	43.45	43.80	44.13	44.15	44.23	43.59	41.93
30	40.11	---	42.50	43.19	42.95	43.46	43.81	44.13	44.12	44.20	43.62	42.00
31	40.00	---	42.55	---	42.94	---	43.83	44.14	---	44.19	---	42.08
Max	41.46	39.96	42.55	43.19	43.33	43.46	43.83	44.14	44.20	44.24	44.18	43.64
Min	40.00	39.07	40.08	42.59	42.94	42.95	43.46	43.84	44.12	44.06	43.54	41.93

Year 2014 Statistics: **Year Max 44.24; Year Min 39.07**

Note: Water level in ft bgs


2014 HYDROGRAPH FOR ROBISON CROOKED WELL
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,698 ft amsl
Well Depth: 400 ft bgs
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
33
34
35
36
37
38
39
40
41
42
43
44
45
5,665
5,664
5,663
5,662
5,661
5,660
5,659
5,658
5,657
5,656
5,655
5,654
5,653
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
*Data processed using a temperature specific conversion factor

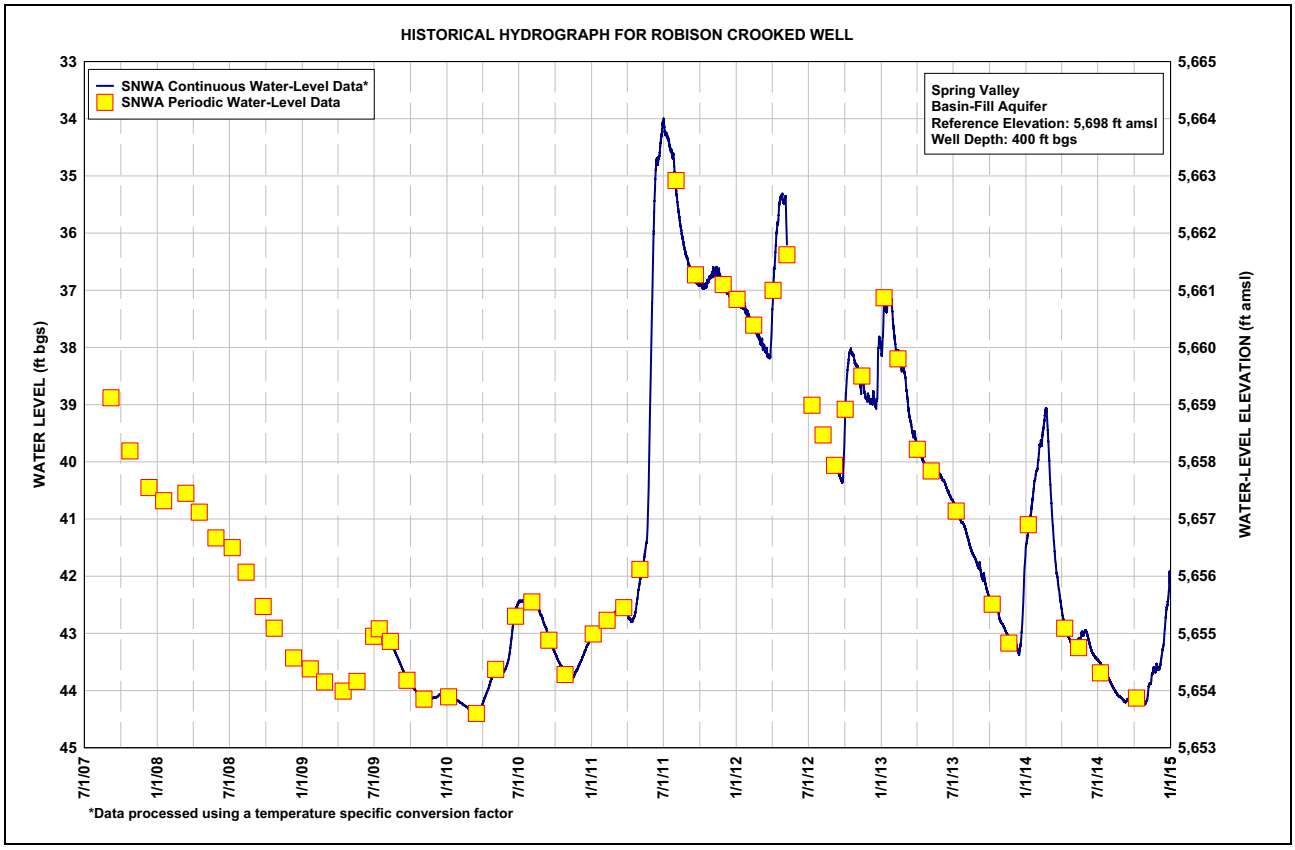
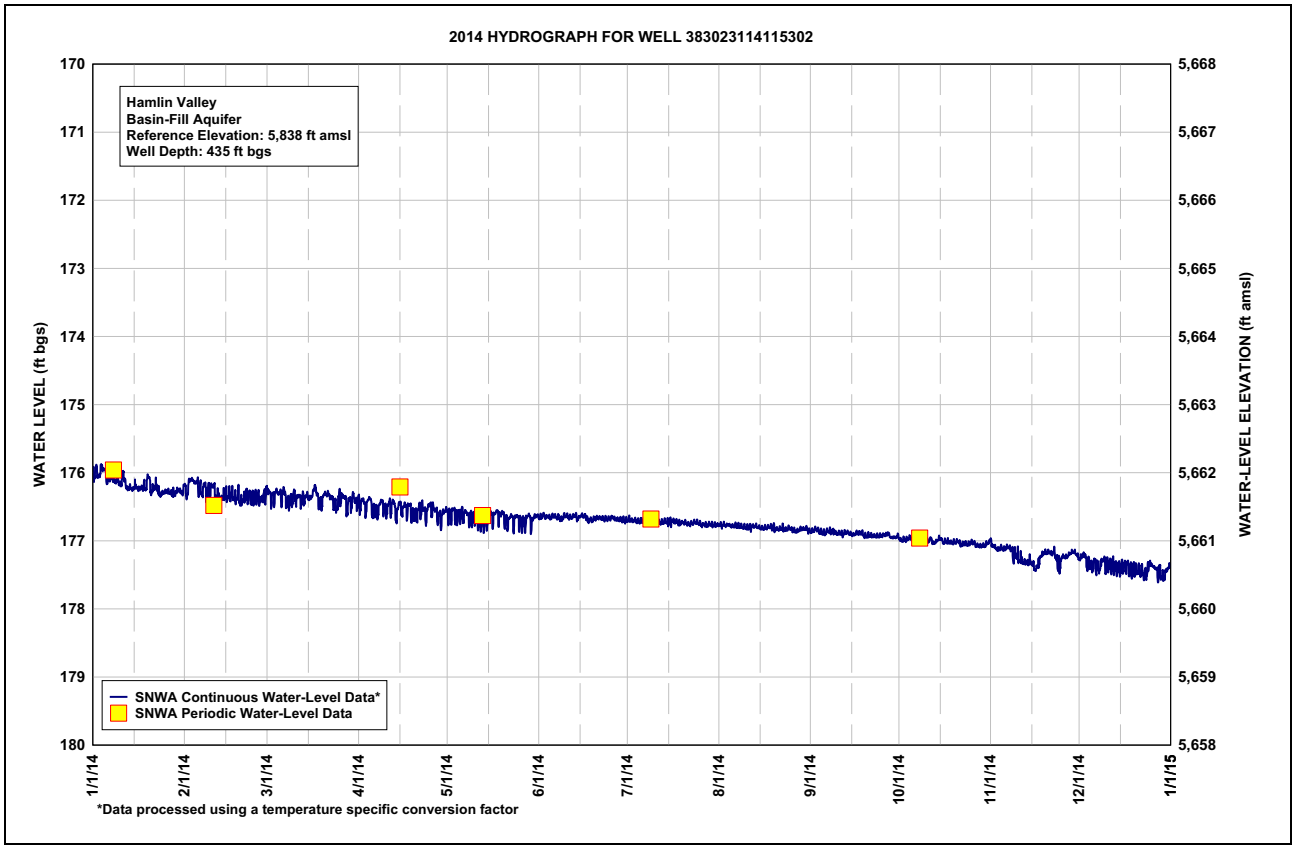

HISTORICAL HYDROGRAPH FOR ROBISON CROOKED WELL
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,698 ft amsl
Well Depth: 400 ft bgs
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
33
34
35
36
37
38
39
40
41
42
43
44
45
5,665
5,664
5,663
5,662
5,661
5,660
5,659
5,658
5,657
5,656
5,655
5,654
5,653
7/1/07
1/1/08
7/1/08
1/1/09
7/1/09
1/1/10
7/1/10
1/1/11
7/1/11
1/1/12
7/1/12
1/1/13
7/1/13
1/1/14
7/1/14
1/1/15
*Data processed using a temperature specific conversion factor

Table B-10
Hamlin Valley Well 383023114115302, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	175.98	176.20	176.29	176.44	176.56	176.66	176.71	176.78	176.87	176.99	177.06	177.25
2	176.05	176.14	176.32	176.40	176.55	176.62	176.70	176.77	176.84	176.99	177.09	177.22
3	176.02	176.11	176.31	176.49	176.55	176.64	176.70	176.78	176.84	176.99	177.12	177.31
4	175.94	176.14	176.28	176.39	176.57	176.65	176.72	176.77	176.89	176.97	177.11	177.32
5	175.99	176.15	176.29	176.51	176.56	176.65	176.72	176.79	176.88	176.98	177.12	177.31
6	176.02	176.30	176.27	176.55	176.60	176.65	176.71	176.79	176.87	176.97	177.10	177.31
7	176.07	176.21	176.38	176.51	176.58	176.66	176.71	176.79	176.87	176.97	177.10	177.37
8	176.12	176.33	176.37	176.43	176.62	176.68	176.71	176.80	176.86	176.97	177.18	177.30
9	176.12	176.23	176.33	176.48	176.60	176.65	176.72	176.81	176.88	176.98	177.24	177.28
10	176.15	176.19	176.39	176.49	176.64	176.64	176.72	176.81	176.89	177.00	177.29	177.43
11	176.08	176.36	176.35	176.46	176.67	176.65	176.72	176.80	176.90	176.97	177.28	177.35
12	176.22	176.36	176.35	176.43	176.69	176.65	176.74	176.79	176.89	177.03	177.33	177.42
13	176.23	176.36	176.36	176.63	176.66	176.64	176.73	176.79	176.89	177.01	177.32	177.34
14	176.24	176.37	176.34	176.49	176.65	176.66	176.73	176.80	176.90	176.98	177.33	177.35
15	176.21	176.36	176.38	176.56	176.62	176.63	176.73	176.82	176.92	176.98	177.35	177.36
16	176.23	176.35	176.30	176.50	176.61	176.64	176.71	176.82	176.90	177.03	177.41	177.33
17	176.22	176.37	176.23	176.49	176.58	176.69	176.73	176.80	176.89	177.01	177.34	177.33
18	176.25	176.39	176.39	176.49	176.60	176.69	176.74	176.80	176.90	177.02	177.21	177.38
19	176.07	176.40	176.37	176.67	176.61	176.69	176.73	176.82	176.94	177.02	177.17	177.37
20	176.28	176.43	176.32	176.57	176.65	176.66	176.73	176.83	176.93	177.02	177.17	177.47
21	176.24	176.39	176.33	176.53	176.67	176.67	176.75	176.83	176.93	177.03	177.18	177.47
22	176.23	176.29	176.36	176.54	176.65	176.67	176.76	176.82	176.92	177.06	177.17	177.49
23	176.30	176.29	176.42	176.55	176.67	176.69	176.74	176.83	176.93	177.04	177.28	177.52
24	176.31	176.30	176.51	176.50	176.65	176.68	176.74	176.82	176.93	177.05	177.29	177.36
25	176.28	176.32	176.34	176.48	176.67	176.67	176.75	176.83	176.92	177.03	177.23	177.36
26	176.27	176.39	176.34	176.53	176.67	176.66	176.77	176.86	176.91	177.03	177.24	177.39
27	176.30	176.38	176.37	176.56	176.67	176.69	176.76	176.86	176.90	177.08	177.20	177.47
28	176.33	176.27	176.43	176.61	176.64	176.70	176.76	176.85	176.95	177.08	177.18	177.52
29	176.26	---	176.39	176.60	176.70	176.70	176.76	176.83	176.95	177.08	177.17	177.56
30	176.28	---	176.38	176.57	176.66	176.71	176.77	176.82	176.94	177.05	177.22	177.44
31	176.28	---	176.41	---	176.63	---	176.77	176.85	---	177.01	---	177.38
Max	176.33	176.43	176.51	176.67	176.70	176.71	176.77	176.86	176.95	177.08	177.41	177.56
Min	175.94	176.11	176.23	176.39	176.55	176.62	176.70	176.77	176.84	176.97	177.06	177.22

Year 2014 Statistics: **Year Max 177.56; Year Min 175.94**

Note: Water level in ft bgs


2014 HYDROGRAPH FOR WELL 383023114115302
Hamlin Valley
Basin-Fill Aquifer
Reference Elevation: 5,838 ft amsl
Well Depth: 435 ft bgs
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
170
171
172
173
174
175
176
177
178
179
180
5,668
5,667
5,666
5,665
5,664
5,663
5,662
5,661
5,660
5,659
5,658
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
*Data processed using a temperature specific conversion factor

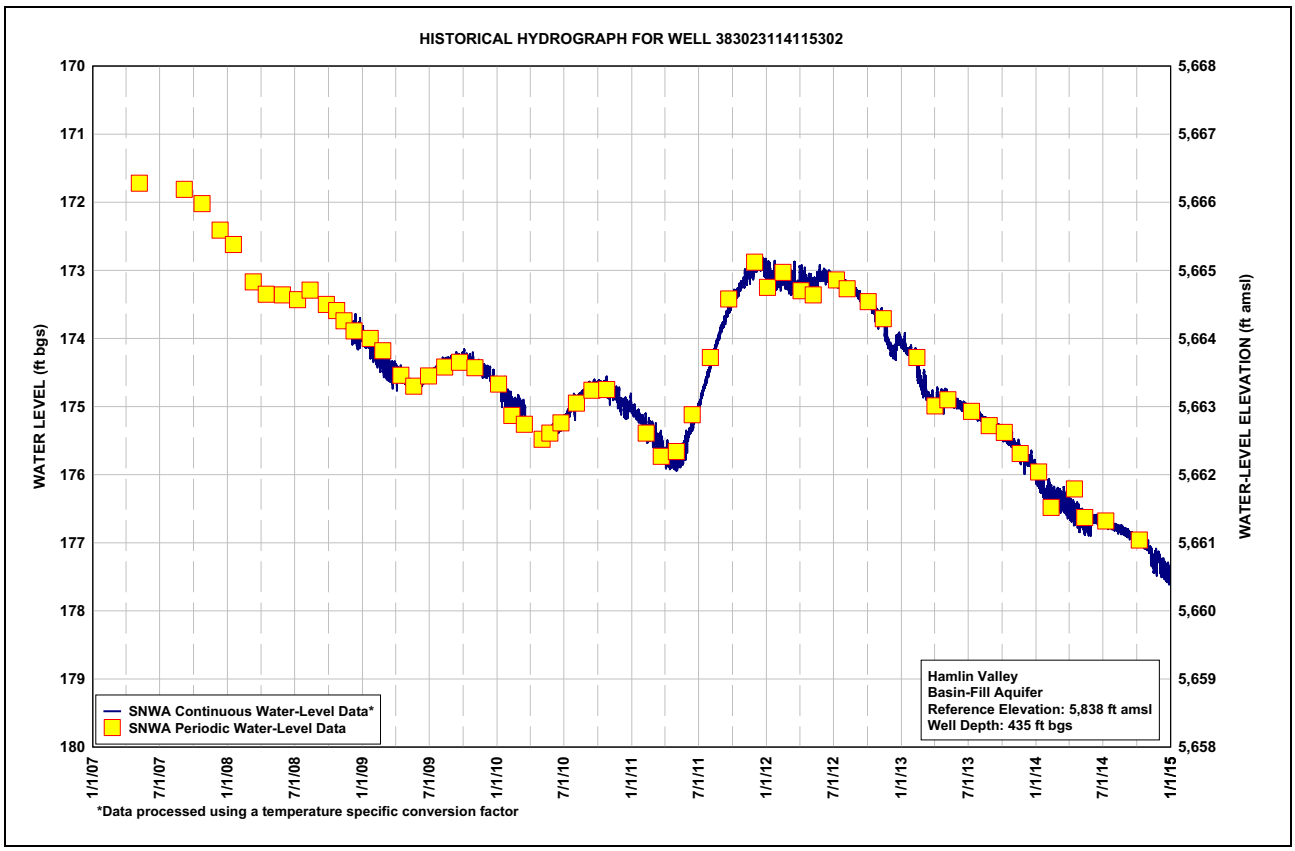
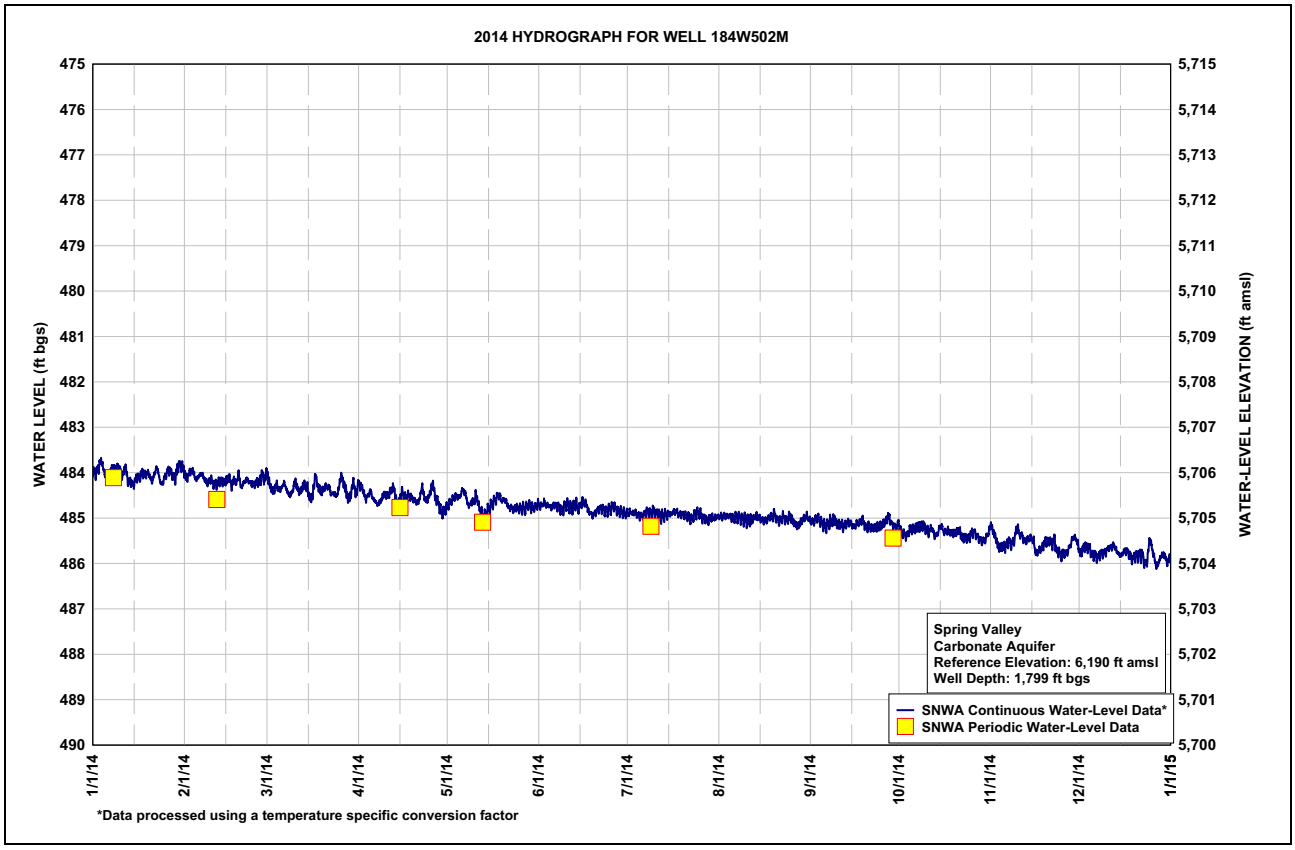

HISTORICAL HYDROGRAPH FOR WELL 383023114115302
Hamlin Valley
Basin-Fill Aquifer
Reference Elevation: 5,838 ft amsl
Well Depth: 435 ft bgs
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
170
171
172
173
174
175
176
177
178
179
180
5,668
5,667
5,666
5,665
5,664
5,663
5,662
5,661
5,660
5,659
5,658
1/1/07
7/1/07
1/1/08
7/1/08
1/1/09
7/1/09
1/1/10
7/1/10
1/1/11
7/1/11
1/1/12
7/1/12
1/1/13
7/1/13
1/1/14
7/1/14
1/1/15
*Data processed using a temperature specific conversion factor

Table B-11
Spring Valley Well 184W502M Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	483.98	484.09	484.16	484.26	484.73	484.73	484.93	484.98	485.07	485.24	485.20	485.75
2	483.95	484.03	484.34	484.39	484.64	484.70	484.89	485.00	485.04	485.35	485.38	485.67
3	483.78	483.95	484.36	484.54	484.56	484.71	484.89	484.97	484.99	485.37	485.58	485.64
4	483.90	484.09	484.32	484.48	484.52	484.74	484.93	484.94	485.07	485.29	485.63	485.64
5	484.08	484.13	484.37	484.52	484.51	484.73	484.95	484.98	485.16	485.25	485.62	485.79
6	484.07	484.05	484.27	484.62	484.39	484.72	484.91	484.97	485.15	485.23	485.59	485.81
7	483.91	484.11	484.35	484.70	484.54	484.74	484.88	484.98	485.08	485.21	485.49	485.82
8	483.89	484.21	484.50	484.62	484.70	484.81	484.89	484.99	485.07	485.19	485.53	485.77
9	483.87	484.18	484.42	484.50	484.63	484.79	484.87	485.00	485.07	485.18	485.33	485.75
10	483.96	484.19	484.22	484.48	484.61	484.69	484.87	485.05	485.15	485.26	485.32	485.69
11	483.97	484.24	484.37	484.46	484.67	484.72	484.89	485.06	485.16	485.26	485.37	485.63
12	484.02	484.22	484.39	484.36	484.87	484.74	484.94	485.01	485.19	485.28	485.50	485.61
13	484.20	484.19	484.27	484.51	484.95	484.68	484.94	484.97	485.12	485.37	485.49	485.68
14	484.23	484.19	484.33	484.70	484.88	484.76	484.91	484.99	485.11	485.25	485.46	485.79
15	484.15	484.16	484.52	484.49	484.76	484.71	484.91	485.03	485.17	485.22	485.51	485.79
16	484.09	484.18	484.49	484.49	484.68	484.67	484.87	485.05	485.14	485.30	485.76	485.73
17	484.03	484.19	484.12	484.53	484.60	484.76	484.85	485.02	485.09	485.30	485.72	485.74
18	484.03	484.18	484.30	484.51	484.51	484.89	484.92	484.97	485.06	485.32	485.67	485.85
19	484.01	484.12	484.41	484.58	484.61	484.91	484.92	484.95	485.15	485.33	485.55	485.86
20	484.11	484.30	484.34	484.65	484.62	484.84	484.91	485.00	485.21	485.30	485.50	485.80
21	484.09	484.21	484.32	484.62	484.72	484.79	484.97	485.04	485.21	485.29	485.51	485.82
22	483.92	484.16	484.46	484.40	484.77	484.79	484.98	485.00	485.20	485.42	485.50	485.81
23	484.08	484.22	484.47	484.57	484.79	484.80	484.96	485.00	485.20	485.42	485.69	486.00
24	484.24	484.26	484.50	484.56	484.75	484.82	484.87	485.01	485.18	485.41	485.78	485.70
25	484.10	484.22	484.28	484.39	484.78	484.78	484.90	485.01	485.14	485.35	485.76	485.58
26	483.97	484.21	484.11	484.37	484.77	484.75	484.99	485.10	485.08	485.28	485.75	485.86
27	483.98	484.05	484.31	484.60	484.77	484.80	485.02	485.17	484.97	485.39	485.66	486.04
28	484.08	484.07	484.51	484.75	484.71	484.85	485.01	485.14	485.12	485.48	485.48	485.87
29	483.98	---	484.44	484.88	484.74	484.89	485.00	485.04	485.17	485.49	485.45	485.83
30	483.81	---	484.31	484.83	484.78	484.92	485.00	484.98	485.13	485.42	485.56	485.89
31	483.91	---	484.40	---	484.71	---	484.98	485.03	---	485.27	---	485.93
Max	484.24	484.30	484.52	484.88	484.95	484.92	485.02	485.17	485.21	485.49	485.78	486.04
Min	483.78	483.95	484.11	484.26	484.39	484.67	484.85	484.94	484.97	485.18	485.20	485.58

Year 2014 Statistics: **Year Max 486.04; Year Min 483.78**

Note: Water level in ft bgs


2014 HYDROGRAPH FOR WELL 184W502M
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
5,715
5,714
5,713
5,712
5,711
5,710
5,709
5,708
5,707
5,706
5,705
5,704
5,703
5,702
5,701
5,700
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
Spring Valley
Carbonate Aquifer
Reference Elevation: 6,190 ft amsl
Well Depth: 1,799 ft bgs
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
*Data processed using a temperature specific conversion factor

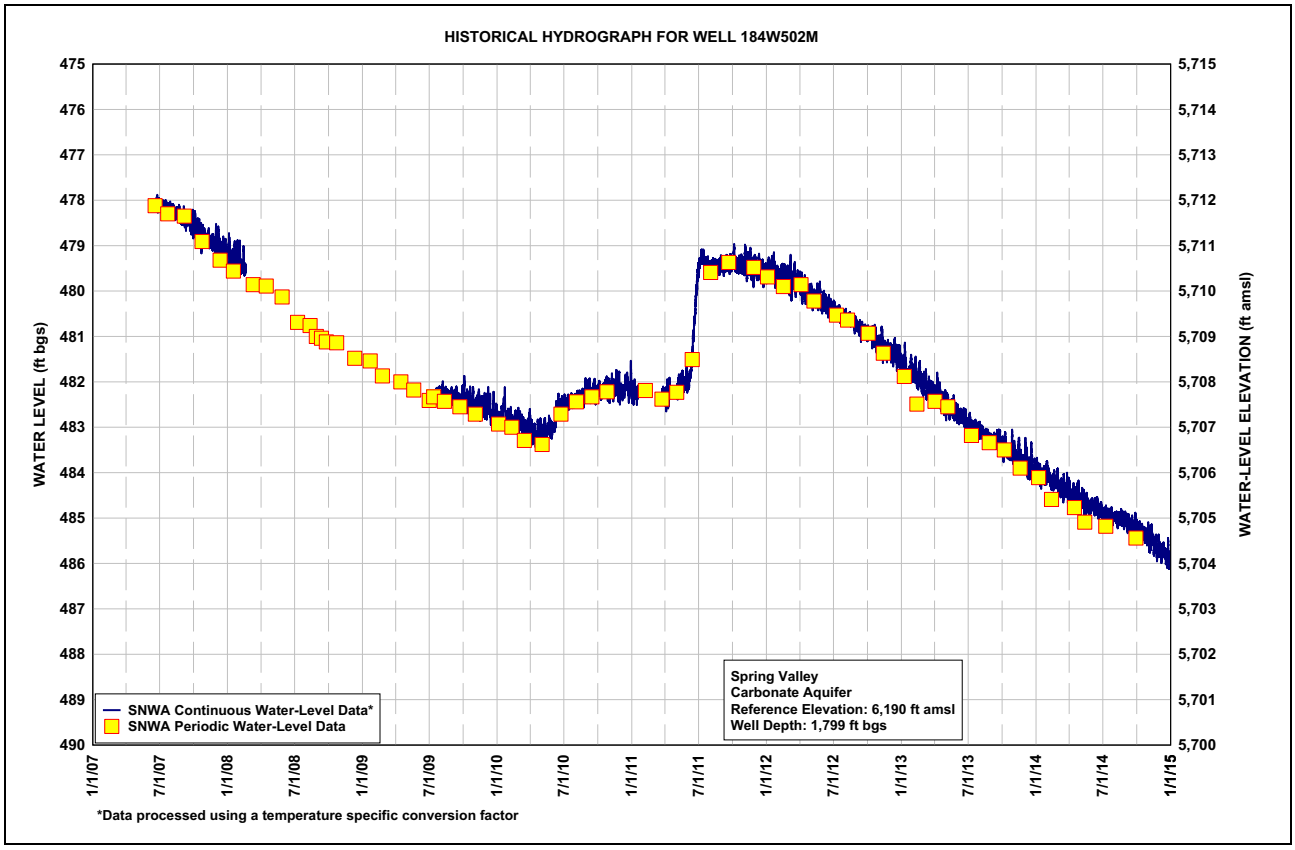
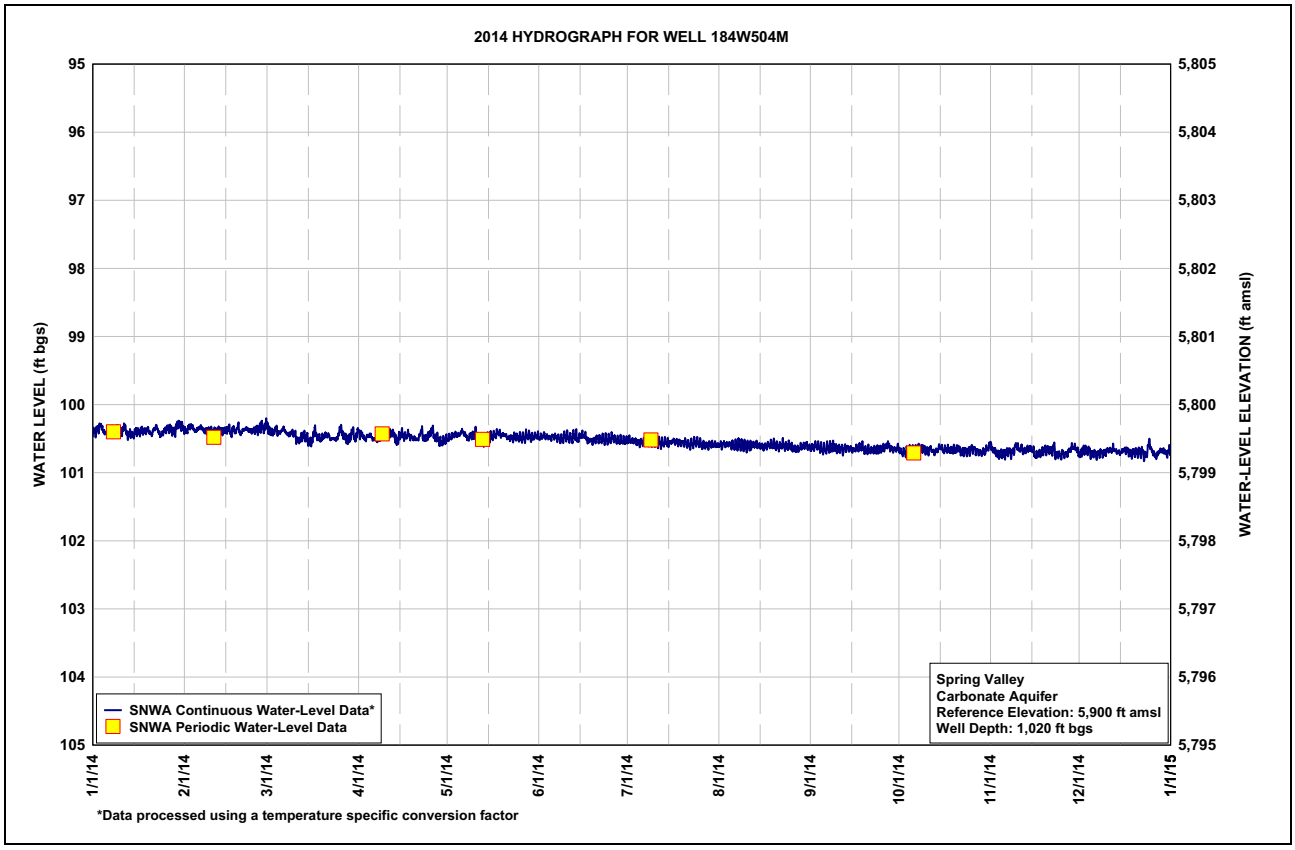

HISTORICAL HYDROGRAPH FOR WELL 184W502M
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
5,715
5,714
5,713
5,712
5,711
5,710
5,709
5,708
5,707
5,706
5,705
5,704
5,703
5,702
5,701
5,700
1/1/07
7/1/07
1/1/08
7/1/08
1/1/09
7/1/09
1/1/10
7/1/10
1/1/11
7/1/11
1/1/12
7/1/12
1/1/13
7/1/13
1/1/14
7/1/14
1/1/15
Spring Valley
Carbonate Aquifer
Reference Elevation: 6,190 ft amsl
Well Depth: 1,799 ft bgs
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
*Data processed using a temperature specific conversion factor

Table B-12
Spring Valley Well 184W504M, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	100.40	100.38	100.36	100.41	100.51	100.49	100.54	100.59	100.64	100.69	100.64	100.72
2	100.36	100.33	100.41	100.46	100.49	100.47	100.54	100.58	100.61	100.71	100.68	100.68
3	100.31	100.32	100.38	100.50	100.46	100.48	100.54	100.59	100.62	100.71	100.73	100.67
4	100.38	100.38	100.40	100.45	100.45	100.49	100.55	100.58	100.65	100.68	100.73	100.67
5	100.42	100.36	100.40	100.48	100.43	100.47	100.57	100.59	100.66	100.67	100.73	100.72
6	100.39	100.34	100.37	100.52	100.41	100.47	100.55	100.60	100.66	100.66	100.69	100.72
7	100.34	100.37	100.42	100.52	100.47	100.48	100.55	100.60	100.63	100.65	100.68	100.72
8	100.35	100.40	100.43	100.50	100.48	100.50	100.55	100.59	100.63	100.65	100.69	100.70
9	100.33	100.37	100.41	100.46	100.46	100.49	100.54	100.61	100.63	100.64	100.61	100.69
10	100.38	100.40	100.44	100.47	100.45	100.47	100.54	100.62	100.66	100.66	100.66	100.66
11	100.34	100.39	100.52	100.45	100.50	100.48	100.54	100.63	100.65	100.65	100.65	100.66
12	100.41	100.39	100.51	100.42	100.53	100.48	100.58	100.60	100.65	100.68	100.69	100.66
13	100.43	100.38	100.46	100.50	100.55	100.47	100.57	100.59	100.63	100.69	100.67	100.68
14	100.44	100.37	100.50	100.51	100.52	100.51	100.58	100.60	100.65	100.64	100.66	100.70
15	100.39	100.36	100.55	100.44	100.49	100.46	100.55	100.62	100.67	100.64	100.68	100.70
16	100.40	100.40	100.49	100.46	100.47	100.47	100.54	100.61	100.65	100.68	100.76	100.67
17	100.37	100.36	100.44	100.46	100.45	100.51	100.54	100.59	100.64	100.67	100.72	100.68
18	100.38	100.38	100.48	100.45	100.42	100.52	100.56	100.60	100.63	100.67	100.71	100.72
19	100.37	100.37	100.50	100.49	100.45	100.52	100.56	100.61	100.67	100.66	100.67	100.70
20	100.42	100.41	100.46	100.51	100.45	100.50	100.56	100.61	100.68	100.65	100.66	100.69
21	100.38	100.37	100.46	100.47	100.49	100.50	100.59	100.62	100.67	100.65	100.67	100.69
22	100.34	100.36	100.50	100.41	100.48	100.51	100.59	100.61	100.66	100.69	100.64	100.69
23	100.42	100.38	100.50	100.49	100.48	100.52	100.57	100.61	100.67	100.68	100.72	100.73
24	100.44	100.38	100.50	100.46	100.48	100.52	100.56	100.60	100.66	100.68	100.74	100.60
25	100.38	100.37	100.41	100.40	100.48	100.50	100.57	100.61	100.64	100.64	100.71	100.66
26	100.35	100.36	100.41	100.46	100.49	100.50	100.59	100.66	100.62	100.64	100.71	100.73
27	100.37	100.33	100.47	100.48	100.49	100.52	100.60	100.66	100.59	100.68	100.68	100.74
28	100.39	100.31	100.52	100.53	100.46	100.53	100.60	100.64	100.65	100.71	100.64	100.68
29	100.32	---	100.43	100.55	100.48	100.55	100.59	100.62	100.66	100.70	100.64	100.69
30	100.29	---	100.48	100.52	100.48	100.56	100.59	100.60	100.63	100.67	100.68	100.72
31	100.33	---	100.43	---	100.47	---	100.59	100.62	---	100.62	---	100.68
Max	100.44	100.41	100.55	100.55	100.55	100.56	100.60	100.66	100.68	100.71	100.76	100.74
Min	100.29	100.31	100.36	100.40	100.41	100.46	100.54	100.58	100.59	100.62	100.61	100.60

Year 2014 Statistics: **Year Max 100.76; Year Min 100.29**

Note: Water level in ft bgs


2014 HYDROGRAPH FOR WELL 184W504M
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
95
96
97
98
99
100
101
102
103
104
105
5,805
5,804
5,803
5,802
5,801
5,800
5,799
5,798
5,797
5,796
5,795
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
Spring Valley
Carbonate Aquifer
Reference Elevation: 5,900 ft amsl
Well Depth: 1,020 ft bgs
*Data processed using a temperature specific conversion factor

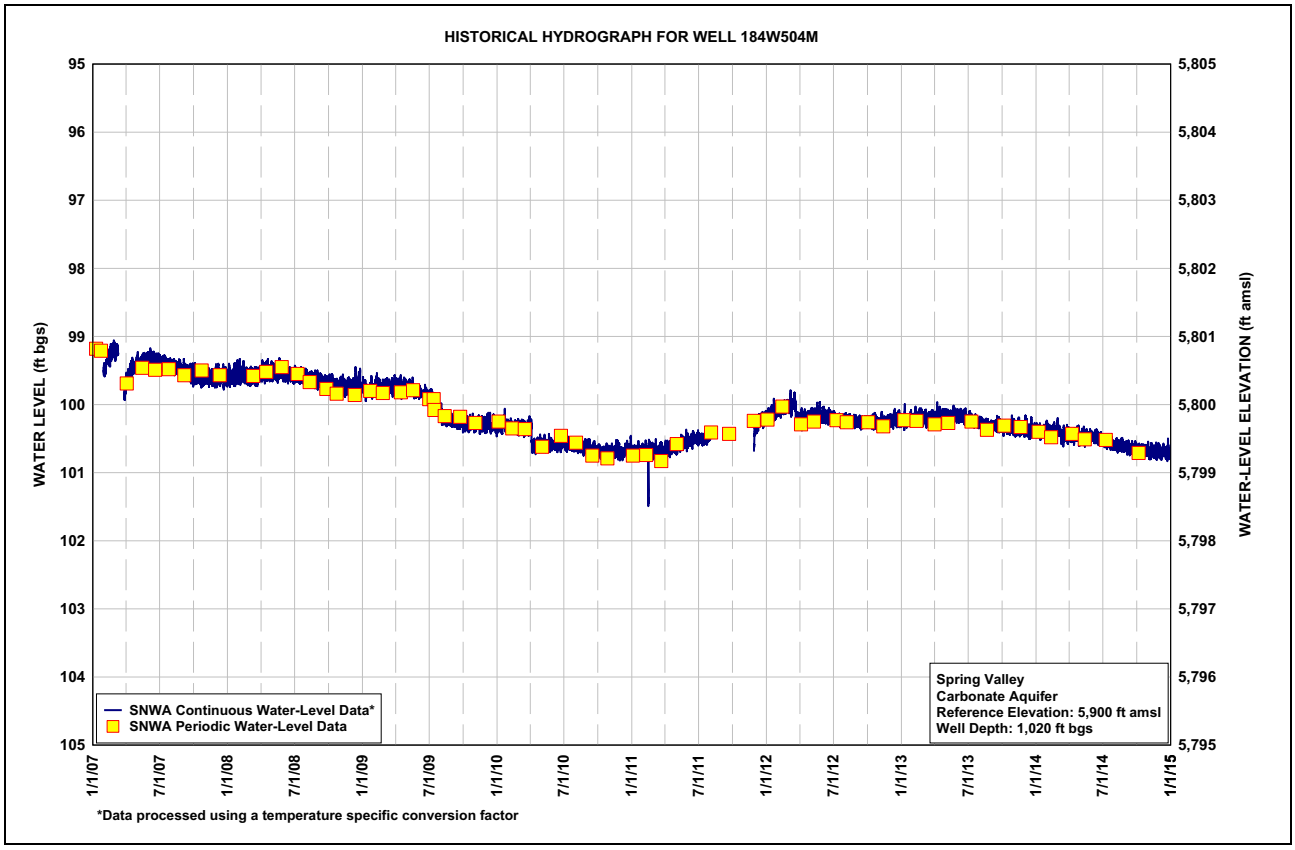
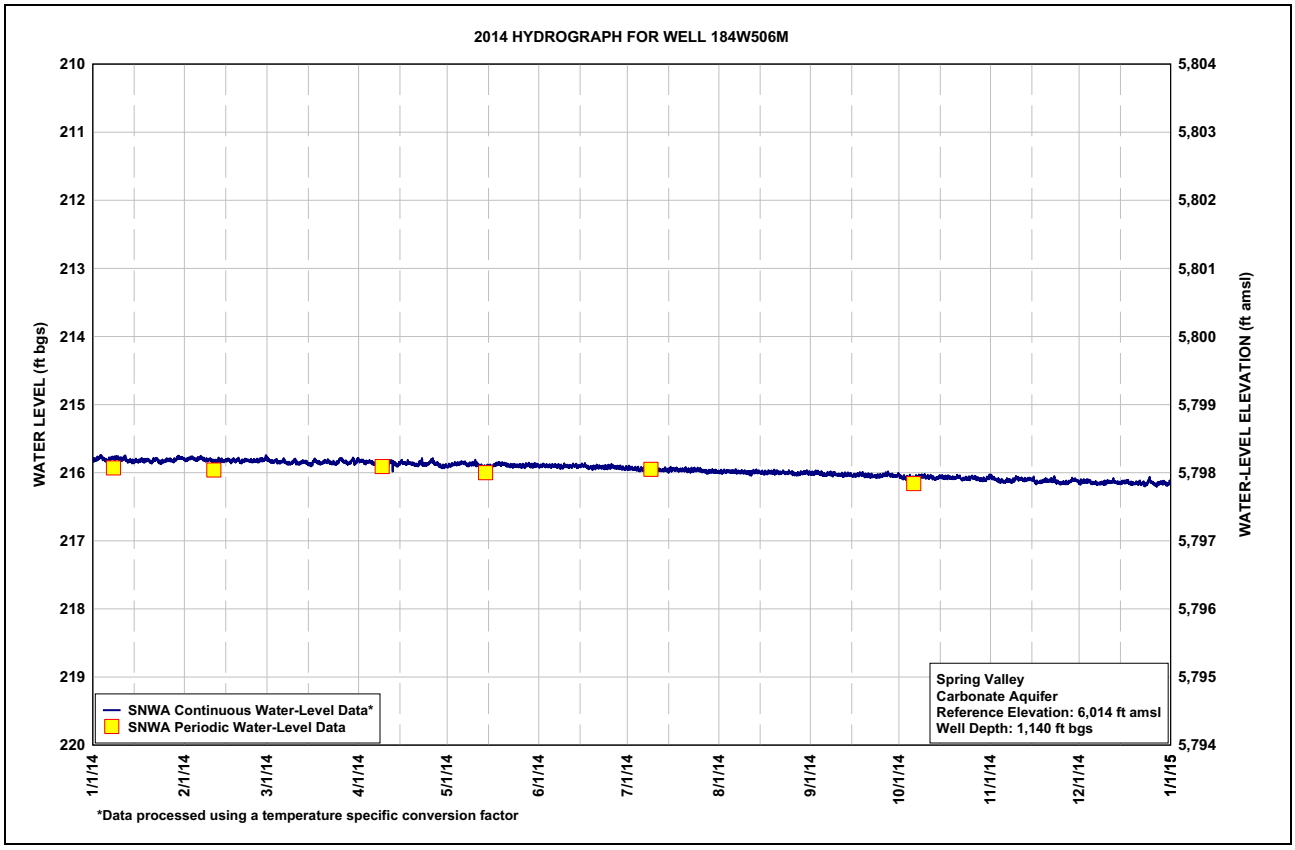

HISTORICAL HYDROGRAPH FOR WELL 184W504M
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
95
96
97
98
99
100
101
102
103
104
105
5,805
5,804
5,803
5,802
5,801
5,800
5,799
5,798
5,797
5,796
5,795
1/1/07
7/1/07
1/1/08
7/1/08
1/1/09
7/1/09
1/1/10
7/1/10
1/1/11
7/1/11
1/1/12
7/1/12
1/1/13
7/1/13
1/1/14
7/1/14
1/1/15
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
Spring Valley
Carbonate Aquifer
Reference Elevation: 5,900 ft amsl
Well Depth: 1,020 ft bgs
*Data processed using a temperature specific conversion factor

Table B-13
Spring Valley Well 184W506M, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	215.81	215.81	215.81	215.83	215.90	215.91	215.94	215.98	216.01	216.06	216.06	216.15
2	215.80	215.80	215.84	215.84	215.89	215.89	215.94	215.99	216.01	216.07	216.09	216.13
3	215.77	215.79	215.83	215.85	215.88	215.90	215.94	215.99	216.00	216.08	216.12	216.13
4	215.80	215.80	215.84	215.84	215.87	215.90	215.95	215.99	216.01	216.07	216.12	216.13
5	215.82	215.80	215.84	215.86	215.86	215.90	215.95	215.99	216.03	216.07	216.13	216.15
6	215.81	215.78	215.83	215.87	215.86	215.90	215.95	215.99	216.03	216.07	216.12	216.16
7	215.79	215.81	215.85	215.88	215.87	215.91	215.95	215.99	216.02	216.06	216.12	216.16
8	215.79	215.82	215.86	215.87	215.88	215.92	215.95	215.99	216.02	216.06	216.12	216.16
9	215.79	215.81	215.86	215.86	215.88	215.91	215.95	215.99	216.02	216.06	216.09	216.16
10	215.80	215.83	215.83	215.86	215.86	215.90	215.95	216.00	216.03	216.07	216.09	216.14
11	215.78	215.83	215.86	215.85	215.89	215.91	215.96	216.00	216.03	216.06	216.09	216.14
12	215.82	215.82	215.85	215.85	215.91	215.90	215.97	215.99	216.04	216.08	216.11	216.13
13	215.83	215.83	215.84	215.87	215.92	215.90	215.96	215.99	216.03	216.09	216.10	216.14
14	215.84	215.83	215.86	215.88	215.92	215.91	215.96	215.99	216.03	216.07	216.10	216.15
15	215.83	215.81	215.88	215.85	215.91	215.90	215.96	216.00	216.04	216.06	216.10	216.15
16	215.83	215.83	215.86	215.86	215.90	215.89	215.95	216.01	216.04	216.07	216.15	216.14
17	215.82	215.82	215.83	215.86	215.88	215.92	215.95	216.00	216.03	216.07	216.14	216.14
18	215.82	215.83	215.85	215.86	215.87	215.93	215.96	215.99	216.02	216.07	216.13	216.16
19	215.82	215.82	215.86	215.87	215.88	215.93	215.96	215.99	216.04	216.08	216.12	216.16
20	215.84	215.84	215.84	215.89	215.88	215.92	215.96	216.00	216.05	216.07	216.12	216.16
21	215.82	215.83	215.84	215.87	215.89	215.92	215.97	216.00	216.05	216.07	216.11	216.16
22	215.80	215.82	215.85	215.85	215.90	215.92	215.97	216.00	216.05	216.09	216.10	216.16
23	215.84	215.83	215.86	215.88	215.90	215.92	215.97	216.00	216.05	216.09	216.14	216.18
24	215.85	215.83	215.87	215.87	215.90	215.92	215.96	216.00	216.05	216.09	216.15	216.12
25	215.83	215.83	215.82	215.84	215.90	215.91	215.96	216.00	216.04	216.07	216.15	216.14
26	215.81	215.82	215.82	215.85	215.91	215.91	215.98	216.02	216.03	216.08	216.15	216.17
27	215.82	215.81	215.84	215.88	215.90	215.93	215.98	216.02	216.02	216.09	216.14	216.18
28	215.83	215.79	215.86	215.91	215.89	215.93	215.99	216.02	216.04	216.10	216.12	216.15
29	215.79	---	215.84	215.91	215.90	215.94	215.98	216.00	216.05	216.11	216.10	216.15
30	215.78	---	215.83	215.90	215.90	215.94	215.99	216.00	216.04	216.10	216.13	216.17
31	215.79	---	215.82	---	215.89	---	215.99	216.01	---	216.07	---	216.16
Max	215.85	215.84	215.88	215.91	215.92	215.94	215.99	216.02	216.05	216.11	216.15	216.18
Min	215.77	215.78	215.81	215.83	215.86	215.89	215.94	215.98	216.00	216.06	216.06	216.12

Year 2014 Statistics: **Year Max 216.18; Year Min 215.77**

Note: Water level in ft bgs


2014 HYDROGRAPH FOR WELL 184W506M
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
210
211
212
213
214
215
216
217
218
219
220
5,804
5,803
5,802
5,801
5,800
5,799
5,798
5,797
5,796
5,795
5,794
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
Spring Valley
Carbonate Aquifer
Reference Elevation: 6,014 ft amsl
Well Depth: 1,140 ft bgs
*Data processed using a temperature specific conversion factor

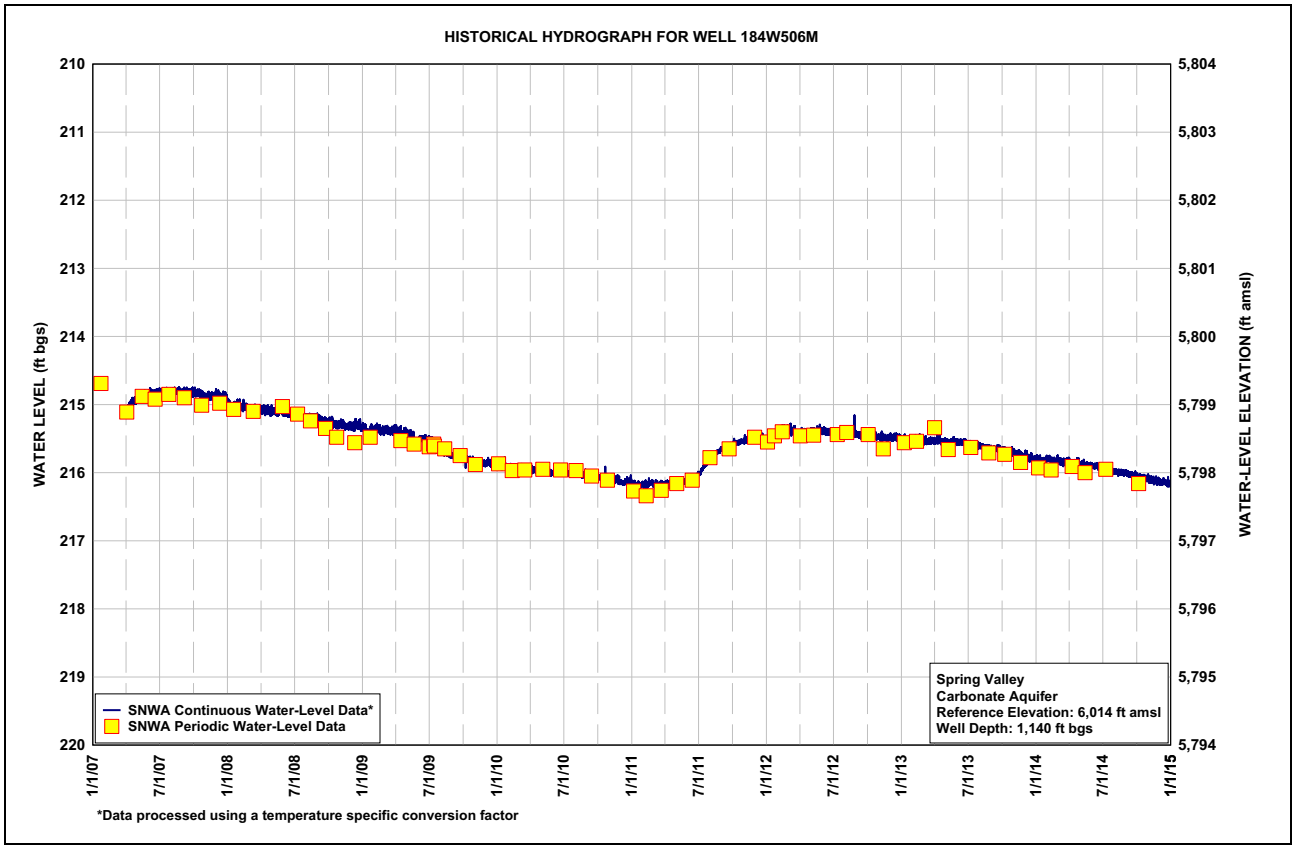
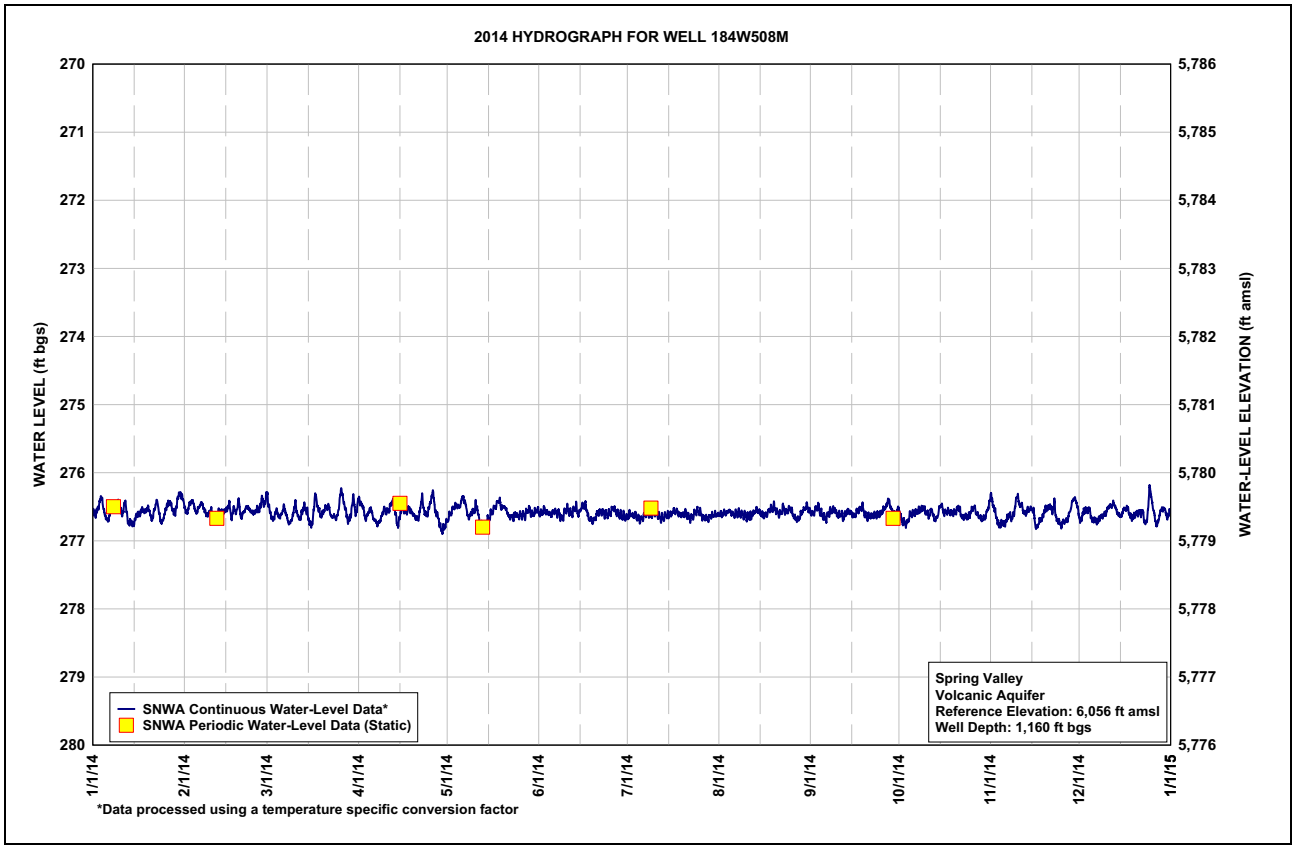

HISTORICAL HYDROGRAPH FOR WELL 184W506M
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
210
211
212
213
214
215
216
217
218
219
220
5,804
5,803
5,802
5,801
5,800
5,799
5,798
5,797
5,796
5,795
5,794
1/1/07
7/1/07
1/1/08
7/1/08
1/1/09
7/1/09
1/1/10
7/1/10
1/1/11
7/1/11
1/1/12
7/1/12
1/1/13
7/1/13
1/1/14
7/1/14
1/1/15
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
Spring Valley
Carbonate Aquifer
Reference Elevation: 6,014 ft amsl
Well Depth: 1,140 ft bgs
*Data processed using a temperature specific conversion factor

Table B-14
Spring Valley Well 184W508M, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	276.58	276.57	276.48	276.43	276.70	276.60	276.66	276.62	276.59	276.63	276.39	276.68
2	276.54	276.51	276.65	276.51	276.60	276.57	276.63	276.61	276.57	276.72	276.55	276.59
3	276.40	276.42	276.65	276.65	276.51	276.58	276.64	276.60	276.52	276.74	276.74	276.55
4	276.51	276.53	276.59	276.58	276.49	276.60	276.67	276.57	276.59	276.66	276.77	276.55
5	276.67	276.55	276.63	276.58	276.48	276.62	276.69	276.59	276.65	276.61	276.74	276.68
6	276.66	276.46	276.54	276.70	276.37	276.57	276.64	276.61	276.66	276.59	276.69	276.70
7	276.49	276.52	276.63	276.74	276.52	276.59	276.61	276.59	276.60	276.56	276.63	276.71
8	276.48	276.61	276.73	276.69	276.63	276.65	276.62	276.60	276.57	276.54	276.64	276.64
9	276.44	276.58	276.68	276.57	276.59	276.63	276.61	276.62	276.56	276.53	276.46	276.61
10	276.53	276.59	276.51	276.56	276.54	276.55	276.60	276.65	276.62	276.60	276.41	276.54
11	276.51	276.62	276.63	276.54	276.61	276.57	276.62	276.65	276.62	276.62	276.49	276.49
12	276.58	276.61	276.65	276.43	276.77	276.58	276.66	276.61	276.65	276.62	276.59	276.47
13	276.73	276.57	276.53	276.59	276.82	276.52	276.67	276.57	276.58	276.69	276.57	276.52
14	276.75	276.56	276.57	276.75	276.77	276.60	276.64	276.58	276.58	276.55	276.53	276.61
15	276.67	276.53	276.73	276.56	276.67	276.53	276.63	276.61	276.63	276.49	276.56	276.61
16	276.61	276.53	276.72	276.54	276.58	276.50	276.58	276.63	276.60	276.58	276.79	276.53
17	276.56	276.58	276.36	276.58	276.50	276.58	276.57	276.59	276.55	276.58	276.73	276.53
18	276.56	276.56	276.54	276.55	276.42	276.69	276.61	276.54	276.53	276.59	276.67	276.64
19	276.54	276.46	276.63	276.62	276.50	276.71	276.61	276.53	276.61	276.59	276.56	276.65
20	276.63	276.63	276.55	276.66	276.51	276.64	276.59	276.57	276.66	276.55	276.52	276.60
21	276.63	276.56	276.51	276.64	276.60	276.57	276.63	276.60	276.63	276.52	276.51	276.58
22	276.45	276.51	276.62	276.43	276.65	276.57	276.66	276.57	276.63	276.64	276.53	276.58
23	276.60	276.56	276.65	276.59	276.65	276.60	276.63	276.56	276.62	276.64	276.69	276.72
24	276.71	276.58	276.65	276.60	276.62	276.61	276.57	276.55	276.61	276.65	276.75	276.45
25	276.57	276.56	276.46	276.42	276.63	276.58	276.58	276.54	276.56	276.57	276.73	276.37
26	276.46	276.52	276.31	276.39	276.63	276.53	276.64	276.63	276.51	276.52	276.70	276.60
27	276.46	276.40	276.52	276.60	276.62	276.59	276.66	276.69	276.42	276.61	276.61	276.73
28	276.56	276.43	276.68	276.76	276.56	276.61	276.67	276.66	276.54	276.66	276.46	276.57
29	276.48	---	276.60	276.84	276.58	276.64	276.63	276.56	276.59	276.68	276.40	276.53
30	276.32	---	276.44	276.79	276.60	276.67	276.64	276.51	276.55	276.61	276.50	276.60
31	276.39	---	276.55	---	276.56	---	276.62	276.54	---	276.46	---	276.59
Max	276.75	276.63	276.73	276.84	276.82	276.71	276.69	276.69	276.66	276.74	276.79	276.73
Min	276.32	276.40	276.31	276.39	276.37	276.50	276.57	276.51	276.42	276.46	276.39	276.37

Year 2014 Statistics: **Year Max 276.84; Year Min 276.31**

Note: Water level in ft bgs


2014 HYDROGRAPH FOR WELL 184W508M
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
270
271
272
273
274
275
276
277
278
279
280
5,786
5,785
5,784
5,783
5,782
5,781
5,780
5,779
5,778
5,777
5,776
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data (Static)
Spring Valley
Volcanic Aquifer
Reference Elevation: 6,056 ft amsl
Well Depth: 1,160 ft bgs
*Data processed using a temperature specific conversion factor

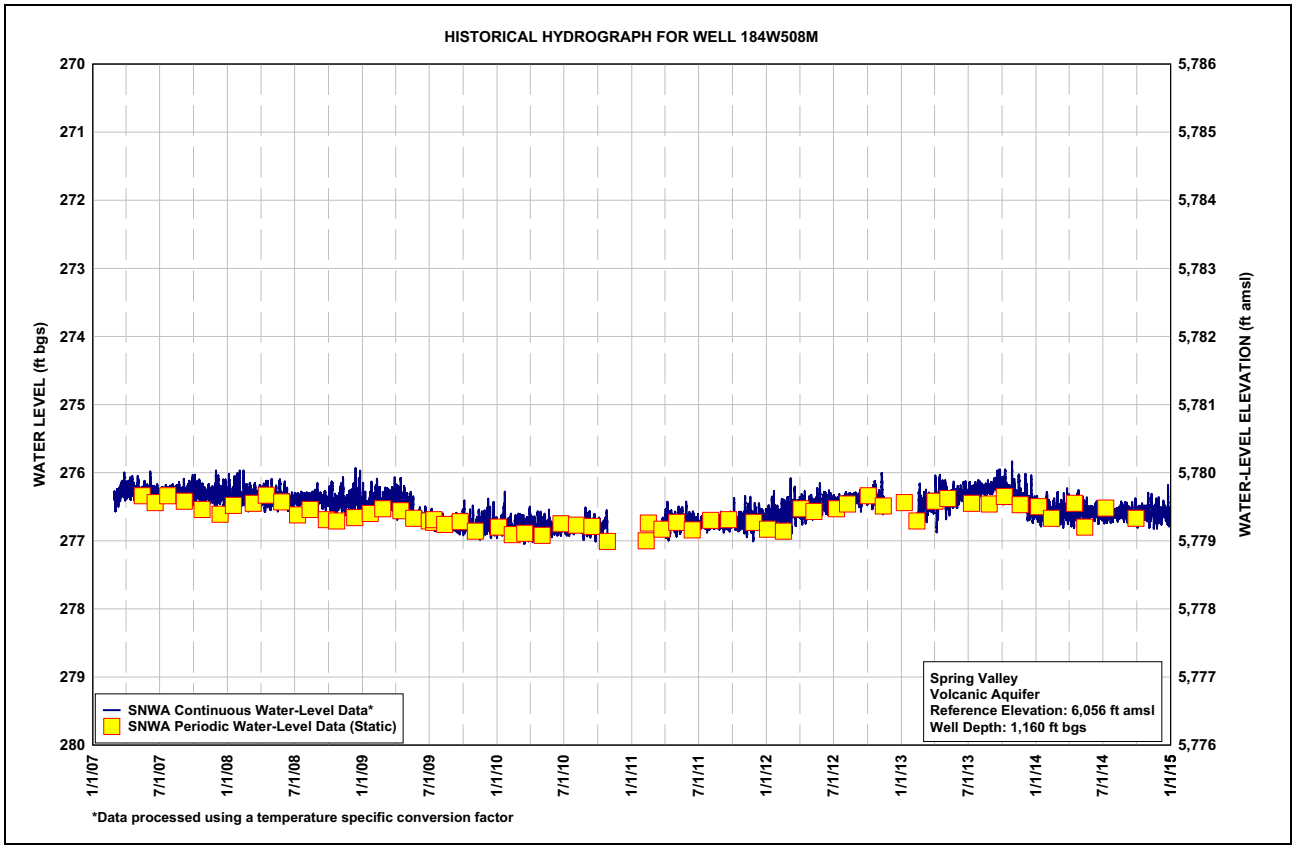
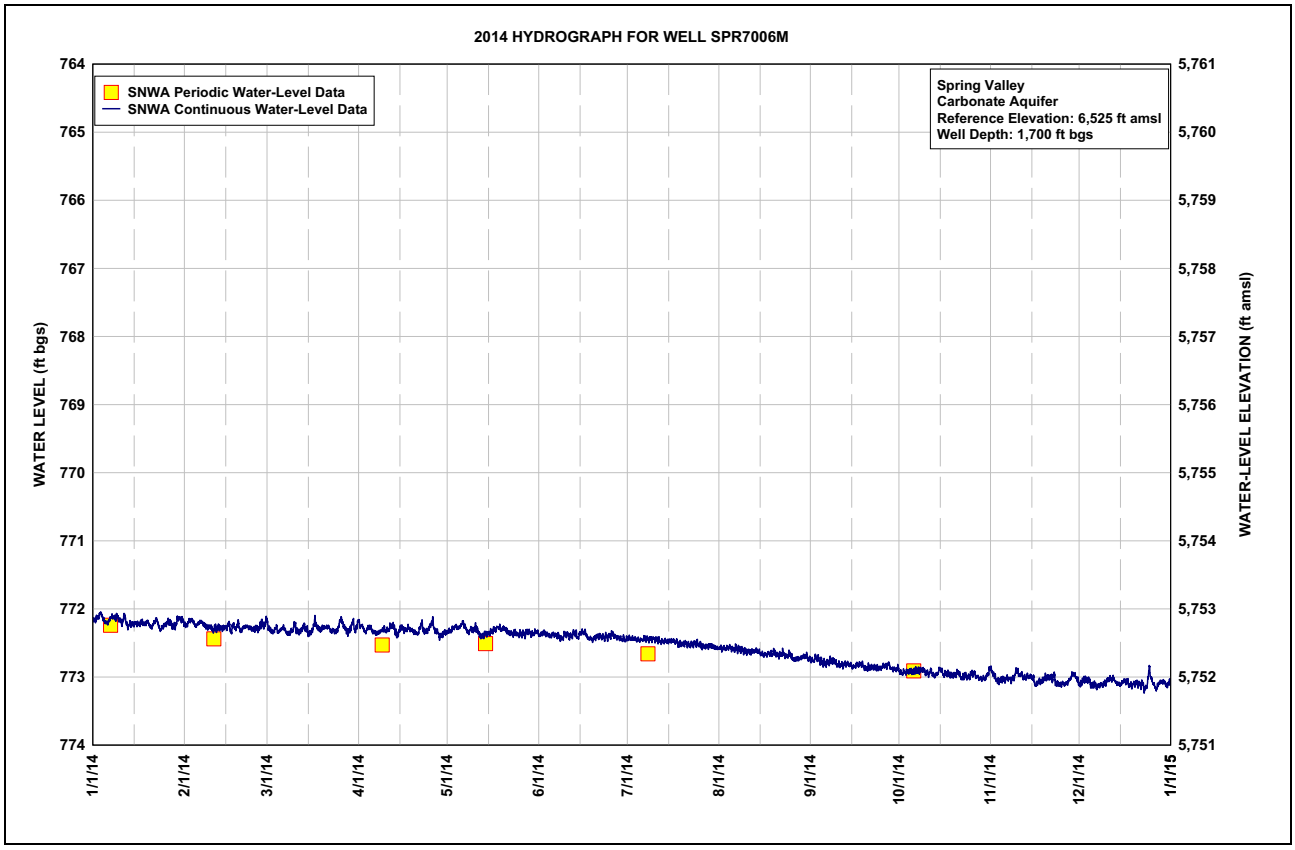

HISTORICAL HYDROGRAPH FOR WELL 184W508M
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
270
271
272
273
274
275
276
277
278
279
280
5,786
5,785
5,784
5,783
5,782
5,781
5,780
5,779
5,778
5,777
5,776
1/1/07
7/1/07
1/1/08
7/1/08
1/1/09
7/1/09
1/1/10
7/1/10
1/1/11
7/1/11
1/1/12
7/1/12
1/1/13
7/1/13
1/1/14
7/1/14
1/1/15
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data (Static)
Spring Valley
Volcanic Aquifer
Reference Elevation: 6,056 ft amsl
Well Depth: 1,160 ft bgs
*Data processed using a temperature specific conversion factor

Table B-15
Spring Valley Well SPR7006M, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	772.16	772.24	772.26	772.25	772.33	772.39	772.45	772.58	772.77	772.93	772.93	773.11
2	772.13	772.19	772.33	772.28	772.32	772.35	772.45	772.58	772.73	772.94	773.00	773.06
3	772.07	772.18	772.32	772.33	772.27	772.37	772.45	772.58	772.73	772.93	773.06	773.05
4	772.14	772.22	772.33	772.28	772.28	772.40	772.46	772.57	772.77	772.91	773.05	773.05
5	772.21	772.23	772.32	772.31	772.26	772.39	772.46	772.59	772.80	772.92	773.04	773.12
6	772.17	772.20	772.28	772.36	772.22	772.39	772.45	772.59	772.80	772.92	773.02	773.12
7	772.12	772.23	772.34	772.36	772.30	772.41	772.44	772.59	772.77	772.90	773.02	773.14
8	772.13	772.27	772.36	772.33	772.32	772.42	772.45	772.61	772.77	772.89	773.03	773.10
9	772.12	772.26	772.31	772.29	772.31	772.40	772.44	772.62	772.79	772.90	772.93	773.09
10	772.18	772.30	772.24	772.32	772.30	772.37	772.44	772.62	772.82	772.95	772.96	773.05
11	772.13	772.29	772.34	772.29	772.34	772.39	772.45	772.62	772.82	772.93	772.98	773.03
12	772.22	772.28	772.32	772.24	772.40	772.39	772.48	772.62	772.81	772.97	773.02	773.03
13	772.23	772.29	772.26	772.33	772.39	772.36	772.47	772.63	772.81	772.97	772.99	773.08
14	772.23	772.27	772.30	772.35	772.36	772.42	772.48	772.64	772.83	772.91	773.00	773.10
15	772.20	772.26	772.36	772.28	772.35	772.36	772.48	772.67	772.85	772.90	773.03	773.09
16	772.21	772.30	772.29	772.29	772.32	772.34	772.47	772.67	772.83	772.97	773.12	773.06
17	772.20	772.25	772.22	772.30	772.29	772.41	772.49	772.66	772.82	772.95	773.08	773.07
18	772.21	772.28	772.29	772.30	772.27	772.44	772.51	772.66	772.82	772.97	773.07	773.13
19	772.19	772.26	772.30	772.33	772.31	772.45	772.52	772.66	772.87	772.97	773.01	773.10
20	772.25	772.31	772.27	772.36	772.30	772.40	772.51	772.66	772.88	772.95	773.00	773.08
21	772.22	772.27	772.27	772.32	772.34	772.40	772.52	772.68	772.86	772.95	773.01	773.11
22	772.17	772.26	772.32	772.24	772.35	772.41	772.54	772.66	772.86	773.01	772.99	773.11
23	772.27	772.29	772.32	772.34	772.37	772.42	772.52	772.69	772.87	772.99	773.10	773.16
24	772.29	772.30	772.33	772.31	772.36	772.41	772.51	772.68	772.87	773.00	773.11	772.96
25	772.24	772.29	772.21	772.23	772.37	772.39	772.53	772.68	772.85	772.96	773.09	773.02
26	772.19	772.29	772.20	772.28	772.38	772.39	772.55	772.74	772.84	772.95	773.10	773.12
27	772.21	772.23	772.27	772.34	772.36	772.41	772.56	772.74	772.82	773.00	773.05	773.14
28	772.26	772.20	772.33	772.40	772.34	772.43	772.54	772.74	772.88	773.02	772.98	773.08
29	772.18	---	772.26	772.38	772.37	772.45	772.56	772.71	772.90	773.03	772.97	773.07
30	772.14	---	772.28	772.35	772.36	772.46	772.56	772.70	772.87	772.99	773.04	773.12
31	772.17	---	772.25	---	772.35	---	772.58	772.73	---	772.92	---	773.09
Max	772.29	772.31	772.36	772.40	772.40	772.46	772.58	772.74	772.90	773.03	773.12	773.16
Min	772.07	772.18	772.20	772.23	772.22	772.34	772.44	772.57	772.73	772.89	772.93	772.96

Year 2014 Statistics: **Year Max 773.16; Year Min 772.07**

Note: Water level in ft bgs


2014 HYDROGRAPH FOR WELL SPR7006M
SNWA Periodic Water-Level Data
SNWA Continuous Water-Level Data
Spring Valley
Carbonate Aquifer
Reference Elevation: 6,525 ft amsl
Well Depth: 1,700 ft bgs
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
764
765
766
767
768
769
770
771
772
773
774
5,761
5,760
5,759
5,758
5,757
5,756
5,755
5,754
5,753
5,752
5,751
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15

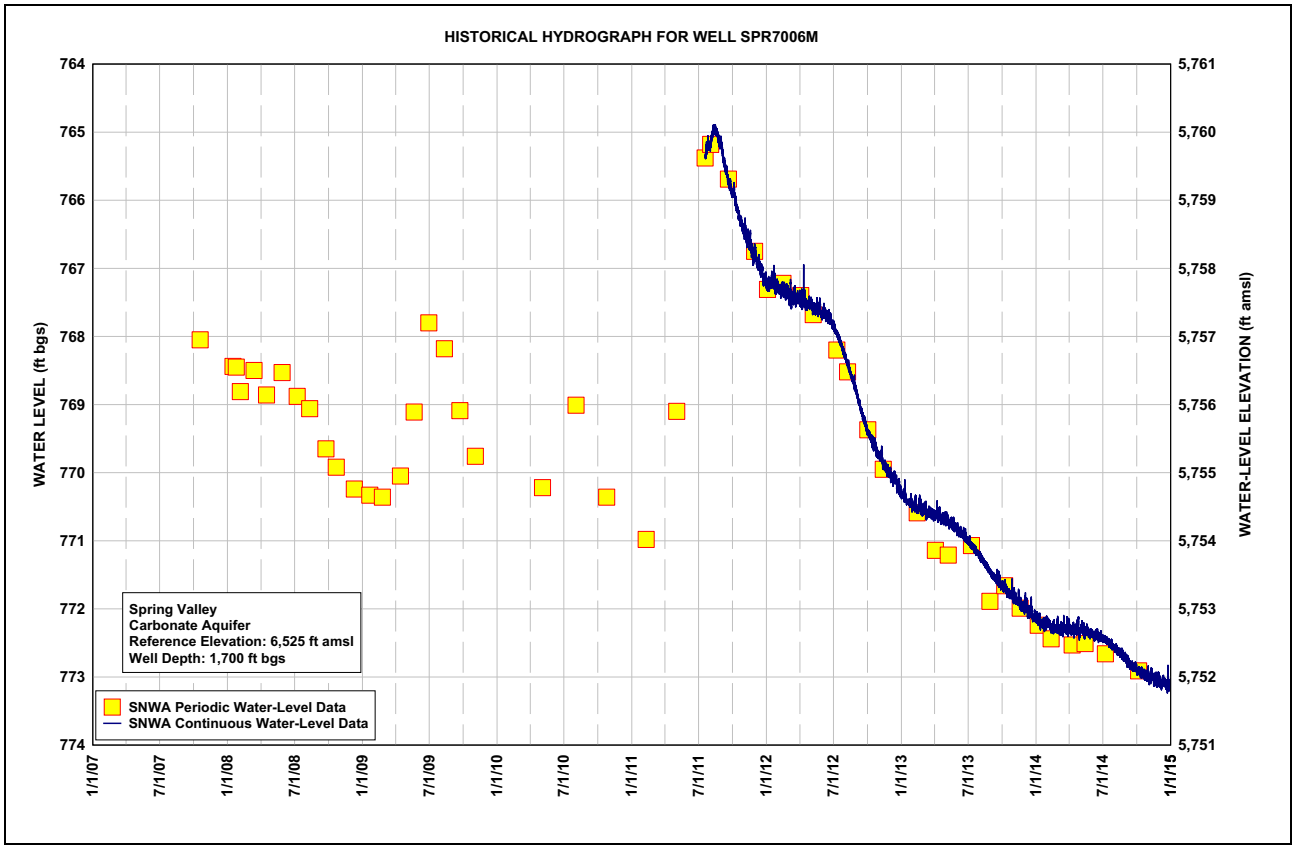
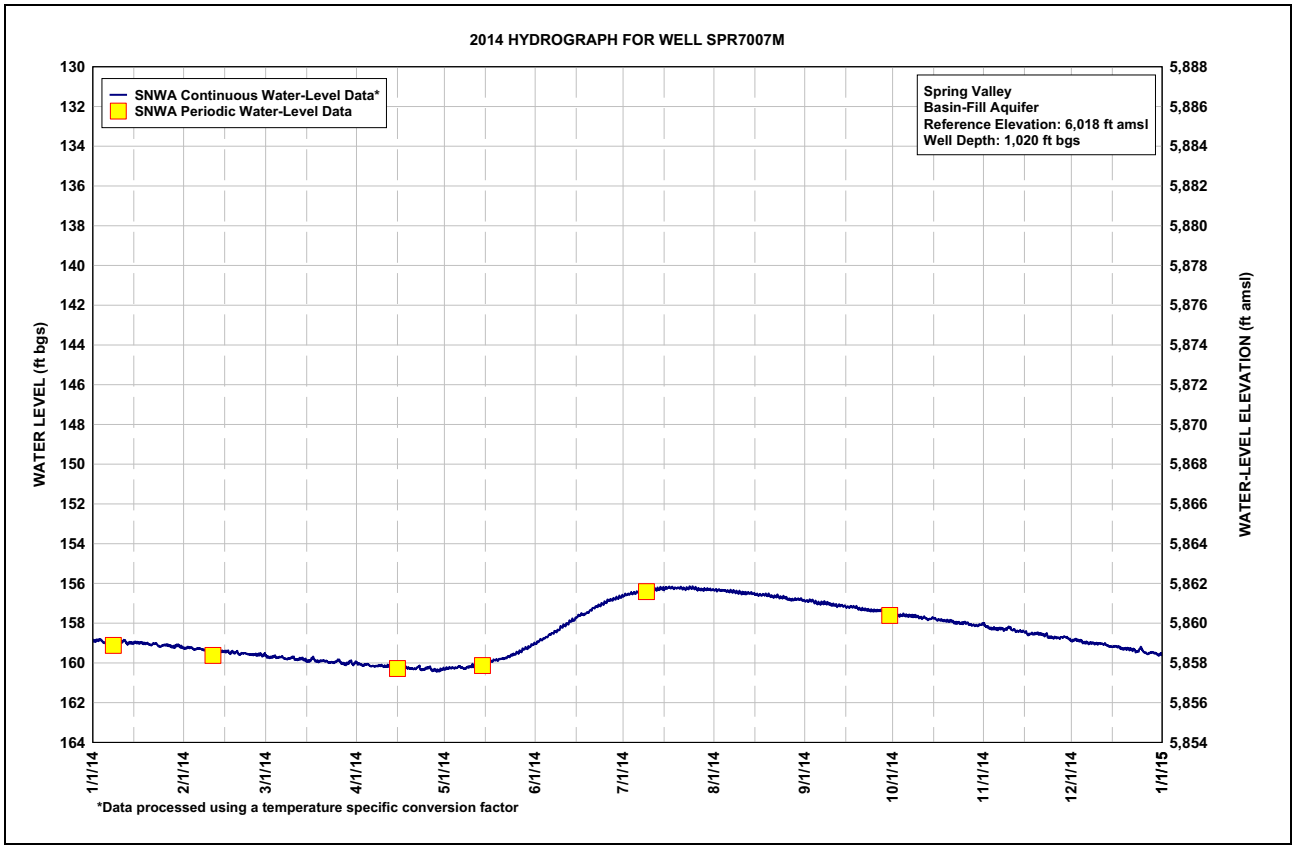

HISTORICAL HYDROGRAPH FOR WELL SPR7006M
Spring Valley
Carbonate Aquifer
Reference Elevation: 6,525 ft amsl
Well Depth: 1,700 ft bgs
SNWA Periodic Water-Level Data
SNWA Continuous Water-Level Data
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
764
765
766
767
768
769
770
771
772
773
774
5,761
5,760
5,759
5,758
5,757
5,756
5,755
5,754
5,753
5,752
5,751
1/1/07
7/1/07
1/1/08
7/1/08
1/1/09
7/1/09
1/1/10
7/1/10
1/1/11
7/1/11
1/1/12
7/1/12
1/1/13
7/1/13
1/1/14
7/1/14
1/1/15

Table B-16
Spring Valley Well SPR7007M, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	158.88	159.26	159.67	160.03	160.30	159.02	156.62	156.33	156.88	157.55	158.11	158.88
2	158.86	159.22	159.72	160.07	160.28	158.89	156.56	156.34	156.88	157.61	158.19	158.83
3	158.84	159.24	159.69	160.13	160.26	158.83	156.52	156.35	156.87	157.62	158.26	158.88
4	158.96	159.31	159.72	160.07	160.26	158.74	156.49	156.36	156.95	157.60	158.27	158.88
5	158.99	159.29	159.72	160.13	160.23	158.63	156.46	156.38	157.00	157.60	158.28	158.97
6	158.96	159.28	159.70	160.16	160.21	158.52	156.41	156.40	157.01	157.62	158.27	158.99
7	158.93	159.34	159.77	160.17	160.27	158.44	156.38	156.41	156.99	157.63	158.28	159.00
8	158.95	159.36	159.80	160.14	160.26	158.39	156.35	156.42	157.01	157.64	158.32	159.00
9	158.85	159.33	159.76	160.13	160.20	158.24	156.33	156.45	157.03	157.67	158.23	159.02
10	158.92	159.39	159.72	160.17	160.18	158.15	156.30	156.49	157.08	157.72	158.33	159.02
11	158.89	159.38	159.83	160.18	160.20	158.10	156.30	156.50	157.10	157.73	158.33	159.04
12	158.99	159.39	159.81	160.16	160.22	158.00	156.31	156.49	157.13	157.76	158.41	159.07
13	158.99	159.41	159.78	160.27	160.18	157.88	156.29	156.49	157.11	157.81	158.40	159.12
14	159.00	159.42	159.85	160.29	160.08	157.85	156.27	156.52	157.15	157.76	158.41	159.17
15	158.97	159.42	159.90	160.19	160.01	157.69	156.25	156.56	157.19	157.76	158.46	159.17
16	158.98	159.50	159.85	160.23	159.97	157.61	156.21	156.58	157.18	157.84	158.57	159.17
17	158.97	159.45	159.81	160.24	159.92	157.57	156.21	156.58	157.18	157.84	158.53	159.21
18	159.01	159.48	159.91	160.25	159.85	157.49	156.24	156.57	157.20	157.87	158.54	159.28
19	159.01	159.49	159.92	160.28	159.86	157.40	156.22	156.60	157.27	157.88	158.51	159.28
20	159.08	159.56	159.89	160.29	159.79	157.27	156.22	156.64	157.31	157.89	158.54	159.29
21	159.05	159.51	159.91	160.26	159.77	157.19	156.25	156.66	157.31	157.90	158.58	159.31
22	159.03	159.54	159.98	160.20	159.70	157.13	156.27	156.67	157.33	157.98	158.58	159.34
23	159.15	159.58	159.96	160.33	159.65	157.08	156.25	156.69	157.36	157.98	158.70	159.42
24	159.15	159.59	159.96	160.30	159.58	157.01	156.22	156.70	157.37	158.00	158.72	159.28
25	159.10	159.58	159.88	160.24	159.52	156.93	156.24	156.72	157.36	157.97	158.71	159.41
26	159.10	159.60	159.95	160.33	159.46	156.85	156.29	156.80	157.37	157.99	158.73	159.50
27	159.15	159.58	160.03	160.35	159.40	156.82	156.30	156.82	157.35	158.07	158.71	159.52
28	159.19	159.59	160.05	160.38	159.29	156.77	156.30	156.81	157.46	158.10	158.69	159.47
29	159.13	---	159.97	160.38	159.25	156.74	156.30	156.80	157.49	158.12	158.72	159.51
30	159.14	---	160.04	160.33	159.16	156.70	156.32	156.80	157.48	158.09	158.81	159.58
31	159.21	---	160.01	---	159.07	---	156.32	156.85	---	158.07	---	159.57
Max	159.21	159.60	160.05	160.38	160.30	159.02	156.62	156.85	157.49	158.12	158.81	159.58
Min	158.84	159.22	159.67	160.03	159.07	156.70	156.21	156.33	156.87	157.55	158.11	158.83

Year 2014 Statistics: **Year Max 160.38; Year Min 156.21**

Note: Water level in ft bgs


2014 HYDROGRAPH FOR WELL SPR7007M
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 6,018 ft amsl
Well Depth: 1,020 ft bgs
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
130
132
134
136
138
140
142
144
146
148
150
152
154
156
158
160
162
164
5,888
5,886
5,884
5,882
5,880
5,878
5,876
5,874
5,872
5,870
5,868
5,866
5,864
5,862
5,860
5,858
5,856
5,854
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
*Data processed using a temperature specific conversion factor

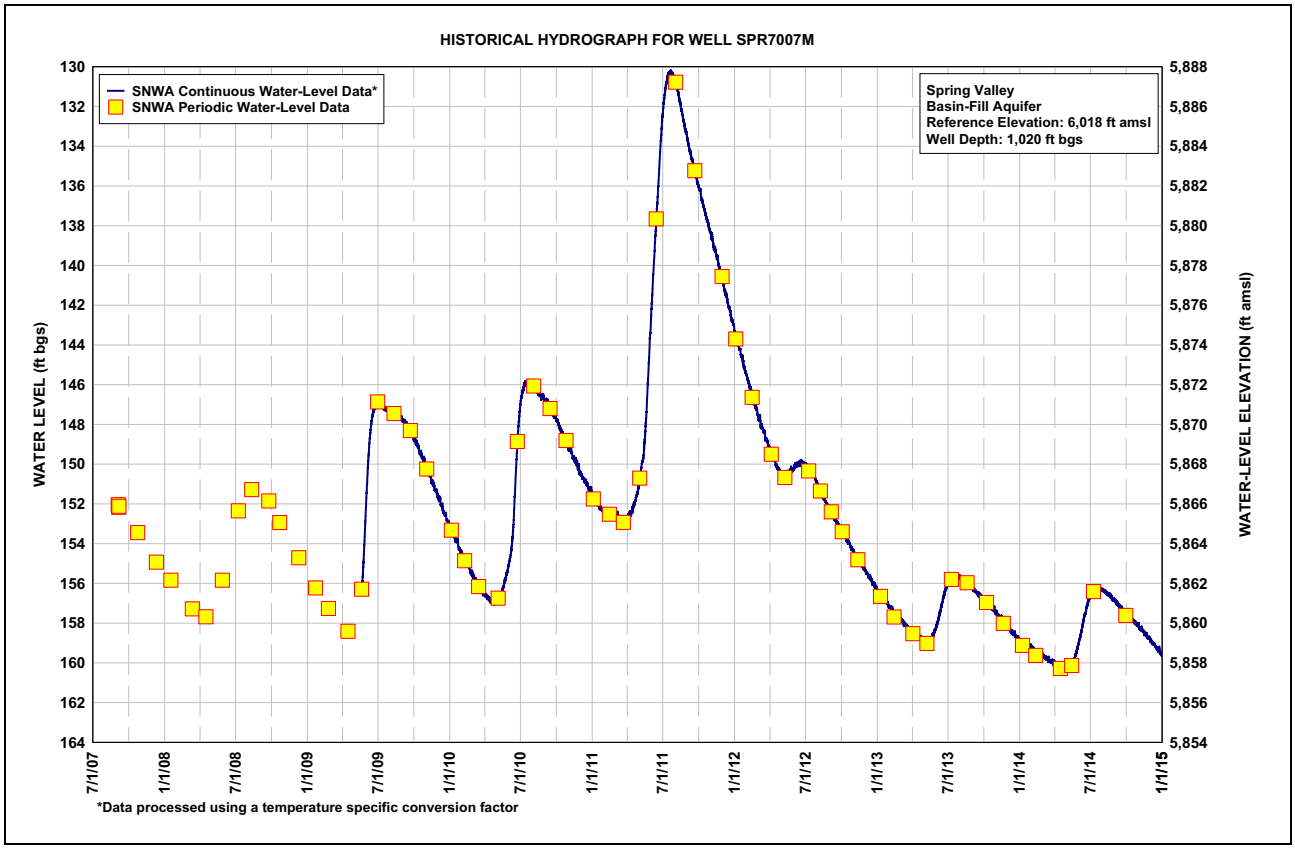
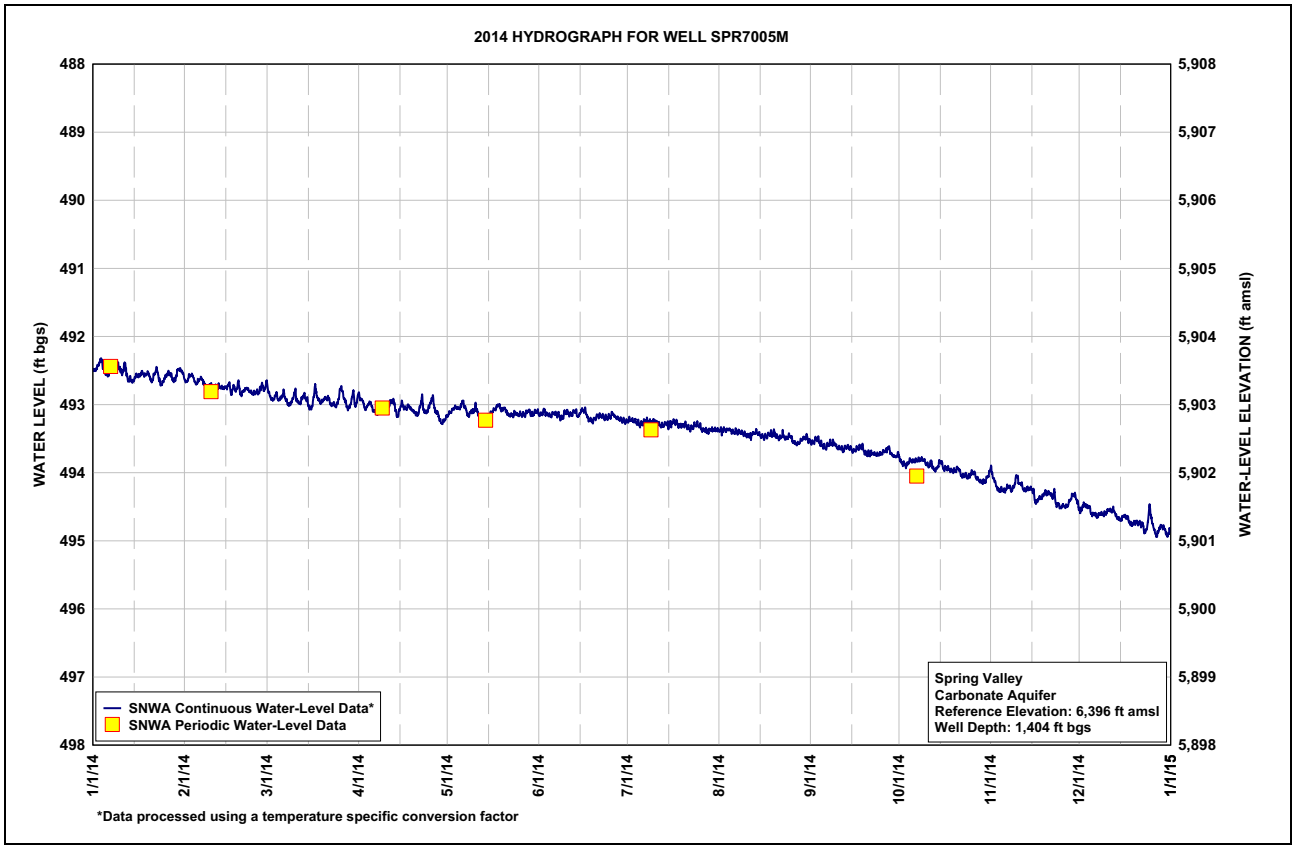

HISTORICAL HYDROGRAPH FOR WELL SPR7007M
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 6,018 ft amsl
Well Depth: 1,020 ft bgs
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
130
132
134
136
138
140
142
144
146
148
150
152
154
156
158
160
162
164
5,888
5,886
5,884
5,882
5,880
5,878
5,876
5,874
5,872
5,870
5,868
5,866
5,864
5,862
5,860
5,858
5,856
5,854
7/1/07
1/1/08
7/1/08
1/1/09
7/1/09
1/1/10
7/1/10
1/1/11
7/1/11
1/1/12
7/1/12
1/1/13
7/1/13
1/1/14
7/1/14
1/1/15
*Data processed using a temperature specific conversion factor

Table B-17
Spring Valley Well SPR7005M, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	492.48	492.66	492.81	492.91	493.14	493.14	493.24	493.38	493.55	493.82	494.01	494.55
2	492.44	492.59	492.91	492.96	493.10	493.10	493.23	493.37	493.53	493.87	494.13	494.48
3	492.35	492.57	492.91	493.05	493.05	493.13	493.25	493.38	493.52	493.88	494.24	494.49
4	492.47	492.66	492.91	492.99	493.05	493.15	493.27	493.37	493.57	493.84	494.25	494.51
5	492.56	492.66	492.91	493.03	493.03	493.15	493.29	493.39	493.61	493.83	494.26	494.61
6	492.52	492.63	492.86	493.09	492.97	493.13	493.26	493.41	493.63	493.82	494.22	494.61
7	492.42	492.67	492.93	493.12	493.08	493.16	493.25	493.40	493.59	493.82	494.21	494.63
8	492.43	492.74	492.99	493.08	493.14	493.19	493.26	493.41	493.58	493.81	494.23	494.61
9	492.42	492.72	492.94	493.02	493.11	493.15	493.25	493.43	493.59	493.82	494.09	494.61
10	492.49	492.77	492.83	493.03	493.09	493.12	493.26	493.46	493.64	493.88	494.15	494.56
11	492.45	492.75	492.96	493.00	493.16	493.14	493.28	493.45	493.65	493.88	494.17	494.56
12	492.56	492.75	492.96	492.95	493.24	493.14	493.31	493.43	493.65	493.93	494.25	494.57
13	492.63	492.75	492.88	493.08	493.27	493.11	493.30	493.42	493.62	493.95	494.23	494.63
14	492.65	492.74	492.92	493.16	493.22	493.17	493.29	493.43	493.64	493.87	494.24	494.67
15	492.59	492.74	493.03	493.01	493.15	493.09	493.28	493.46	493.68	493.85	494.28	494.67
16	492.57	492.76	492.98	493.04	493.10	493.09	493.26	493.48	493.65	493.94	494.43	494.64
17	492.54	492.75	492.80	493.05	493.06	493.18	493.27	493.46	493.64	493.93	494.38	494.66
18	492.56	492.77	492.93	493.05	493.01	493.22	493.29	493.43	493.63	493.96	494.35	494.74
19	492.55	492.72	492.96	493.09	493.08	493.23	493.30	493.44	493.70	493.97	494.31	494.75
20	492.62	492.83	492.91	493.13	493.06	493.18	493.30	493.47	493.73	493.95	494.30	494.73
21	492.59	492.78	492.91	493.08	493.14	493.17	493.33	493.49	493.73	493.96	494.32	494.74
22	492.50	492.77	492.99	492.97	493.15	493.18	493.36	493.46	493.72	494.05	494.33	494.76
23	492.63	492.81	492.99	493.10	493.15	493.20	493.32	493.49	493.73	494.04	494.46	494.86
24	492.69	492.84	493.00	493.08	493.14	493.19	493.30	493.48	493.73	494.07	494.51	494.63
25	492.60	492.82	492.84	492.95	493.15	493.17	493.32	493.48	493.70	494.01	494.49	494.67
26	492.55	492.80	492.80	493.00	493.15	493.16	493.37	493.56	493.68	494.02	494.50	494.84
27	492.57	492.73	492.95	493.11	493.15	493.20	493.39	493.57	493.64	494.08	494.43	494.89
28	492.64	492.74	493.04	493.22	493.09	493.22	493.38	493.55	493.73	494.12	494.34	494.80
29	492.55	---	492.97	493.27	493.14	493.24	493.37	493.50	493.76	494.14	494.32	494.80
30	492.49	---	492.90	493.21	493.13	493.25	493.38	493.48	493.74	494.10	494.44	494.89
31	492.54	---	492.94	---	493.11	---	493.38	493.52	---	494.00	---	494.87
Max	492.69	492.84	493.04	493.27	493.27	493.25	493.39	493.57	493.76	494.14	494.51	494.89
Min	492.35	492.57	492.80	492.91	492.97	493.09	493.23	493.37	493.52	493.81	494.01	494.48

Year 2014 Statistics: **Year Max 494.89; Year Min 492.35**

Note: Water level in ft bgs


2014 HYDROGRAPH FOR WELL SPR7005M
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
488
489
490
491
492
493
494
495
496
497
498
5,908
5,907
5,906
5,905
5,904
5,903
5,902
5,901
5,900
5,899
5,898
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
Spring Valley
Carbonate Aquifer
Reference Elevation: 6,396 ft amsl
Well Depth: 1,404 ft bgs
*Data processed using a temperature specific conversion factor

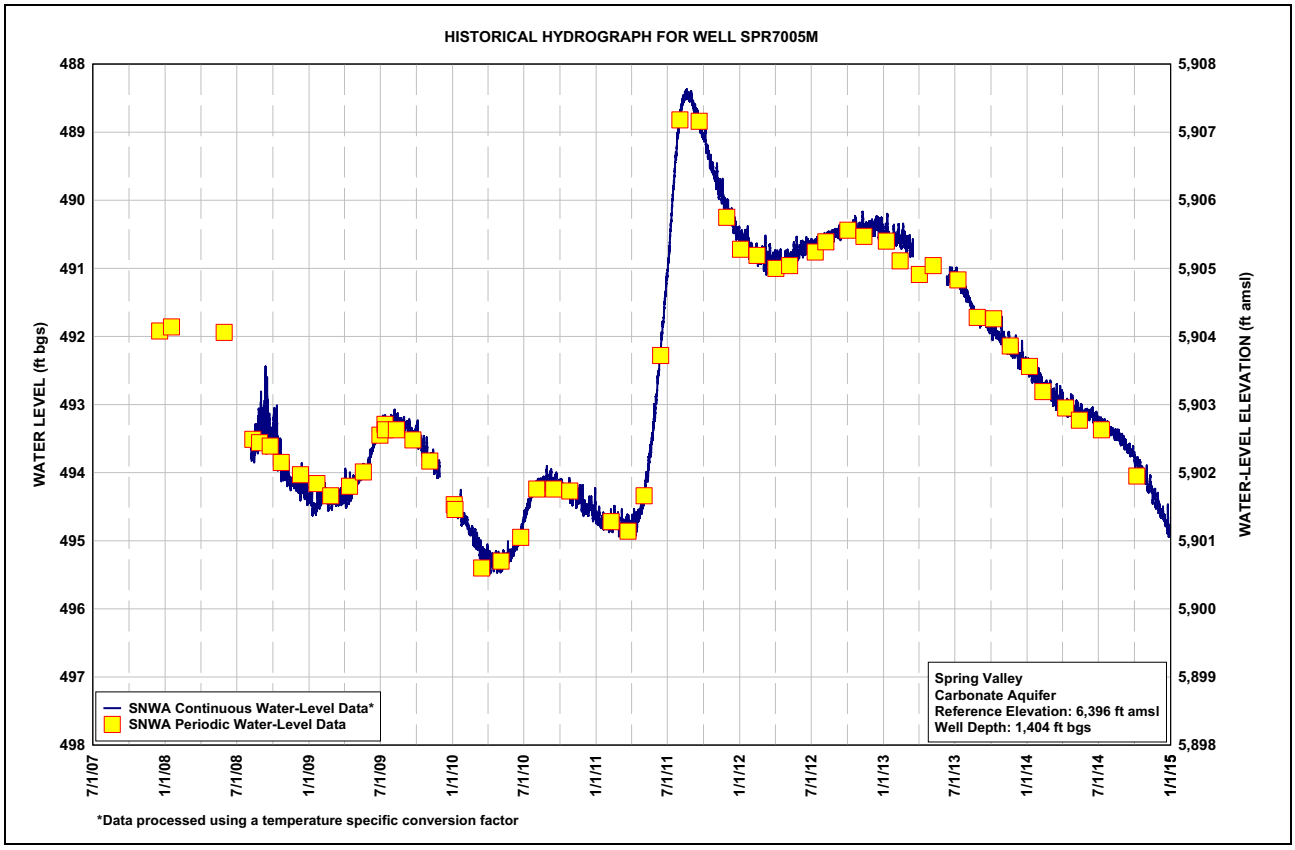
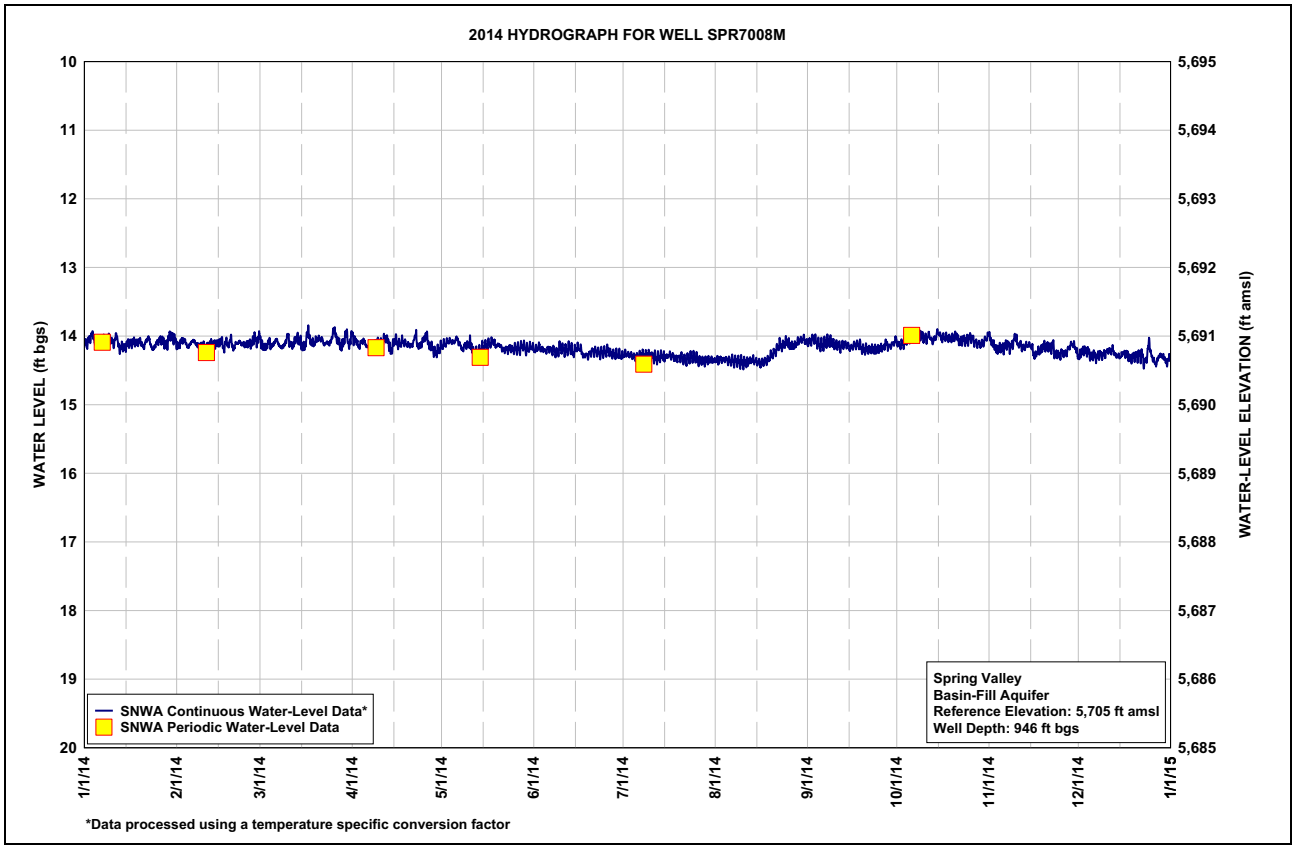

HISTORICAL HYDROGRAPH FOR WELL SPR7005M
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
488
489
490
491
492
493
494
495
496
497
498
5,908
5,907
5,906
5,905
5,904
5,903
5,902
5,901
5,900
5,899
5,898
7/1/07
1/1/08
7/1/08
1/1/09
7/1/09
1/1/10
7/1/10
1/1/11
7/1/11
1/1/12
7/1/12
1/1/13
7/1/13
1/1/14
7/1/14
1/1/15
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
Spring Valley
Carbonate Aquifer
Reference Elevation: 6,396 ft amsl
Well Depth: 1,404 ft bgs
*Data processed using a temperature specific conversion factor

Table B-18
Spring Valley Well SPR7008M, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	14.09	14.14	14.09	14.02	14.16	14.22	14.29	14.35	14.08	14.12	14.04	14.28
2	14.05	14.08	14.15	14.08	14.13	14.18	14.27	14.34	14.04	14.12	14.12	14.22
3	13.98	14.06	14.12	14.14	14.08	14.19	14.28	14.35	14.06	14.11	14.19	14.21
4	14.09	14.14	14.12	14.08	14.08	14.21	14.29	14.34	14.12	14.06	14.18	14.22
5	14.14	14.12	14.12	14.13	14.08	14.20	14.30	14.35	14.13	14.04	14.17	14.29
6	14.10	14.08	14.07	14.15	14.05	14.19	14.28	14.37	14.12	14.03	14.14	14.28
7	14.03	14.11	14.14	14.16	14.15	14.20	14.28	14.36	14.09	14.01	14.13	14.29
8	14.04	14.15	14.16	14.12	14.17	14.23	14.28	14.37	14.09	14.00	14.14	14.26
9	14.01	14.12	14.11	14.07	14.14	14.20	14.27	14.38	14.10	13.99	14.04	14.26
10	14.07	14.15	14.01	14.09	14.12	14.18	14.28	14.40	14.13	14.02	14.11	14.22
11	14.04	14.14	14.13	14.07	14.19	14.21	14.30	14.40	14.13	14.01	14.12	14.21
12	14.13	14.12	14.10	14.03	14.24	14.20	14.32	14.36	14.14	14.04	14.18	14.21
13	14.16	14.12	14.04	14.15	14.25	14.19	14.31	14.35	14.11	14.04	14.14	14.26
14	14.16	14.10	14.09	14.19	14.20	14.25	14.31	14.37	14.13	13.96	14.14	14.30
15	14.11	14.09	14.15	14.07	14.16	14.18	14.29	14.38	14.16	13.97	14.17	14.28
16	14.10	14.15	14.09	14.11	14.13	14.19	14.28	14.38	14.14	14.03	14.29	14.24
17	14.08	14.10	13.99	14.12	14.11	14.27	14.28	14.36	14.13	14.03	14.24	14.27
18	14.09	14.12	14.09	14.09	14.08	14.28	14.31	14.35	14.13	14.03	14.20	14.32
19	14.07	14.10	14.10	14.12	14.15	14.26	14.30	14.31	14.19	14.03	14.15	14.30
20	14.14	14.16	14.04	14.14	14.14	14.21	14.31	14.26	14.21	14.01	14.15	14.28
21	14.10	14.11	14.05	14.09	14.19	14.22	14.33	14.21	14.19	14.02	14.17	14.27
22	14.04	14.10	14.11	14.00	14.19	14.23	14.35	14.15	14.19	14.08	14.14	14.29
23	14.15	14.12	14.10	14.15	14.18	14.25	14.32	14.15	14.21	14.05	14.27	14.36
24	14.17	14.12	14.10	14.09	14.18	14.24	14.31	14.11	14.20	14.06	14.27	14.16
25	14.10	14.11	13.96	14.02	14.19	14.23	14.33	14.10	14.18	14.02	14.22	14.27
26	14.05	14.10	13.98	14.09	14.18	14.23	14.36	14.14	14.16	14.03	14.23	14.36
27	14.07	14.05	14.07	14.15	14.18	14.26	14.36	14.14	14.10	14.08	14.19	14.36
28	14.12	14.03	14.14	14.21	14.15	14.27	14.36	14.11	14.14	14.11	14.13	14.29
29	14.02	---	14.04	14.24	14.19	14.28	14.35	14.06	14.11	14.11	14.14	14.30
30	14.00	---	14.09	14.18	14.20	14.30	14.36	14.05	14.05	14.05	14.21	14.37
31	14.05	---	14.06	---	14.17	---	14.35	14.08	---	14.00	---	14.33
Max	14.17	14.16	14.16	14.24	14.25	14.30	14.36	14.40	14.21	14.12	14.29	14.37
Min	13.98	14.03	13.96	14.00	14.05	14.18	14.27	14.05	14.04	13.96	14.04	14.16

Year 2014 Statistics: **Year Max 14.40; Year Min 13.96**

Note: Water level in ft bgs


2014 HYDROGRAPH FOR WELL SPR7008M
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
10
11
12
13
14
15
16
17
18
19
20
5,695
5,694
5,693
5,692
5,691
5,690
5,689
5,688
5,687
5,686
5,685
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,705 ft amsl
Well Depth: 946 ft bgs
*Data processed using a temperature specific conversion factor

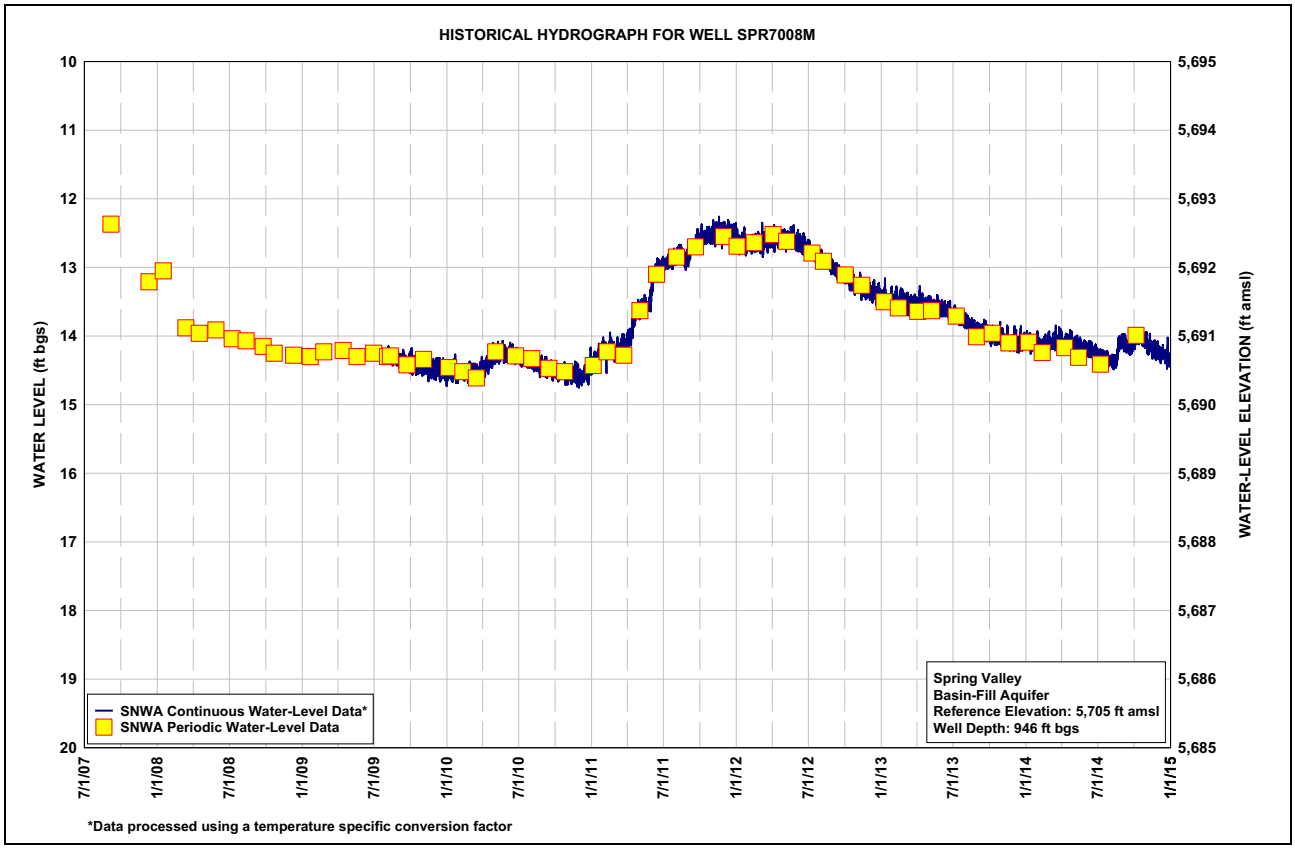
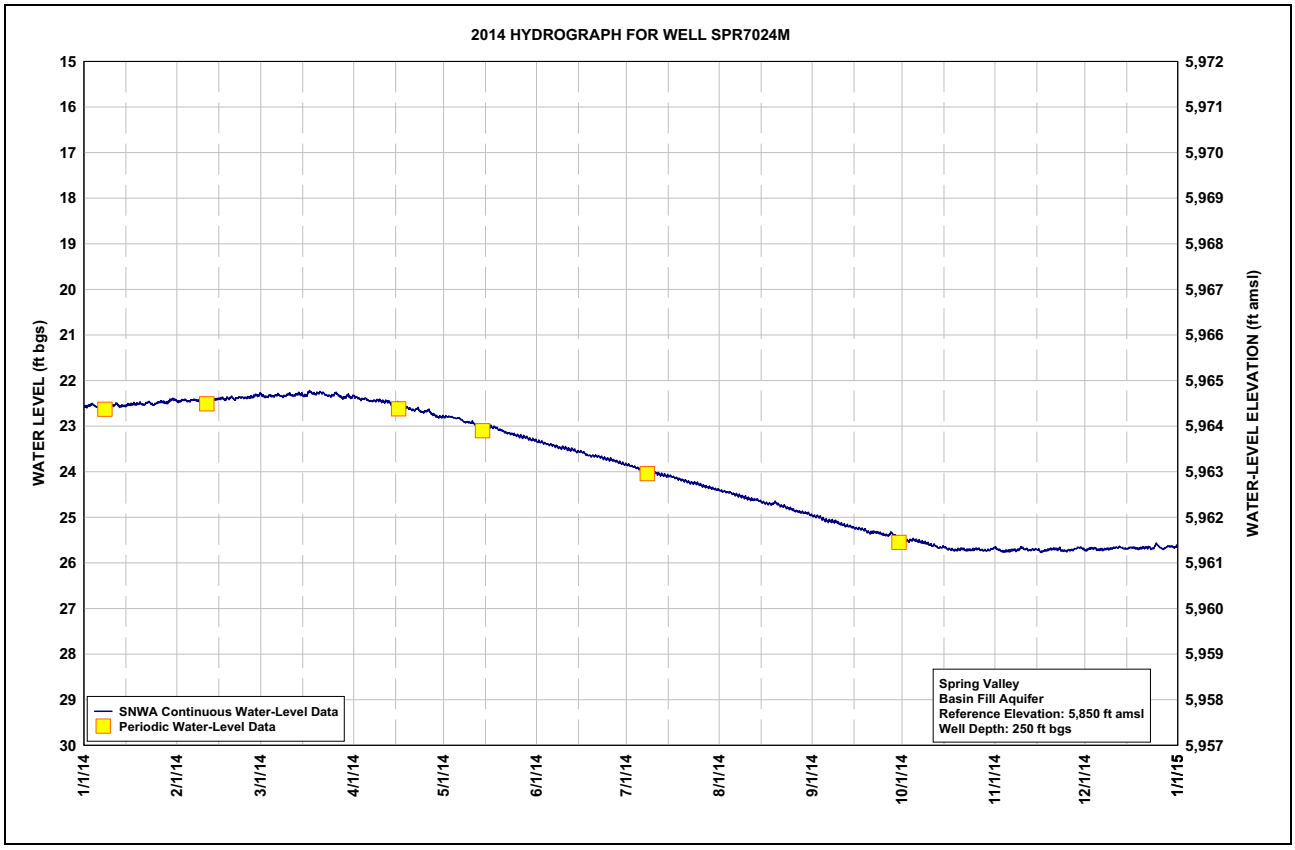

HISTORICAL HYDROGRAPH FOR WELL SPR7008M
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
10
11
12
13
14
15
16
17
18
19
20
5,695
5,694
5,693
5,692
5,691
5,690
5,689
5,688
5,687
5,686
5,685
7/1/07
1/1/08
7/1/08
1/1/09
7/1/09
1/1/10
7/1/10
1/1/11
7/1/11
1/1/12
7/1/12
1/1/13
7/1/13
1/1/14
7/1/14
1/1/15
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,705 ft amsl
Well Depth: 946 ft bgs
*Data processed using a temperature specific conversion factor

Table B-19
Spring Valley Well SPR7024M, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	22.57	22.46	22.32	22.35	22.80	23.34	23.86	24.41	24.97	25.48	25.69	25.72
2	22.56	22.44	22.35	22.38	22.80	23.35	23.87	24.43	24.98	25.51	25.71	25.69
3	22.53	22.42	22.35	22.41	22.80	23.37	23.89	24.45	25.00	25.51	25.74	25.68
4	22.55	22.45	22.33	22.40	22.82	23.39	23.92	24.46	25.03	25.50	25.74	25.68
5	22.57	22.45	22.34	22.42	22.83	23.41	23.94	24.48	25.06	25.50	25.74	25.71
6	22.57	22.42	22.32	22.45	22.83	23.42	23.95	24.50	25.08	25.52	25.72	25.71
7	22.53	22.43	22.33	22.44	22.89	23.44	23.96	24.52	25.08	25.54	25.71	25.71
8	22.53	22.44	22.35	22.44	22.91	23.47	23.98	24.54	25.09	25.56	25.72	25.69
9	22.52	22.42	22.33	22.43	22.92	23.48	23.99	24.56	25.11	25.57	25.68	25.69
10	22.54	22.42	22.29	22.45	22.92	23.48	24.01	24.58	25.15	25.61	25.69	25.67
11	22.53	22.43	22.33	22.46	22.96	23.50	24.04	24.60	25.17	25.62	25.70	25.66
12	22.54	22.42	22.32	22.46	23.00	23.51	24.06	24.61	25.19	25.64	25.72	25.65
13	22.56	22.41	22.29	22.51	23.02	23.52	24.08	24.61	25.20	25.67	25.71	25.67
14	22.56	22.41	22.30	22.55	23.01	23.56	24.09	24.64	25.22	25.66	25.71	25.68
15	22.53	22.39	22.33	22.51	23.01	23.56	24.10	24.67	25.24	25.66	25.71	25.68
16	22.53	22.40	22.32	22.53	23.01	23.57	24.11	24.69	25.25	25.70	25.76	25.66
17	22.51	22.39	22.24	22.56	23.02	23.61	24.13	24.70	25.26	25.70	25.74	25.66
18	22.51	22.39	22.29	22.57	23.03	23.64	24.16	24.71	25.27	25.72	25.72	25.68
19	22.51	22.38	22.30	22.61	23.07	23.65	24.18	24.68	25.31	25.71	25.70	25.68
20	22.52	22.41	22.27	22.64	23.10	23.65	24.19	24.71	25.34	25.70	25.69	25.67
21	22.52	22.38	22.26	22.65	23.13	23.66	24.22	24.75	25.33	25.69	25.70	25.66
22	22.48	22.37	22.31	22.62	23.15	23.68	24.24	24.76	25.33	25.72	25.69	25.66
23	22.51	22.37	22.33	22.68	23.17	23.70	24.25	24.79	25.34	25.71	25.73	25.69
24	22.53	22.37	22.34	22.69	23.18	23.71	24.25	24.81	25.37	25.71	25.73	25.62
25	22.49	22.36	22.31	22.66	23.20	23.73	24.28	24.83	25.39	25.69	25.72	25.62
26	22.47	22.35	22.30	22.69	23.22	23.74	24.31	24.86	25.39	25.69	25.72	25.67
27	22.47	22.32	22.35	22.74	23.23	23.76	24.33	24.88	25.34	25.72	25.69	25.68
28	22.49	22.32	22.37	22.78	23.24	23.79	24.34	24.89	25.39	25.73	25.67	25.64
29	22.45	---	22.36	22.80	23.28	23.81	24.36	24.90	25.41	25.72	25.67	25.64
30	22.41	---	22.35	22.79	23.29	23.84	24.38	24.91	25.44	25.71	25.69	25.65
31	22.42	---	22.36	---	23.31	---	24.40	24.95	---	25.68	---	25.65
Max	22.57	22.46	22.37	22.80	23.31	23.84	24.40	24.95	25.44	25.73	25.76	25.72
Min	22.41	22.32	22.24	22.35	22.80	23.34	23.86	24.41	24.97	25.48	25.67	25.62

Year 2014 Statistics: **Year Max 25.76; Year Min 22.24**

Note: Water level in ft bgs


2014 HYDROGRAPH FOR WELL SPR7024M
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
5,972
5,971
5,970
5,969
5,968
5,967
5,966
5,965
5,964
5,963
5,962
5,961
5,960
5,959
5,958
5,957
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
SNWA Continuous Water-Level Data
Periodic Water-Level Data
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,850 ft amsl
Well Depth: 250 ft bgs

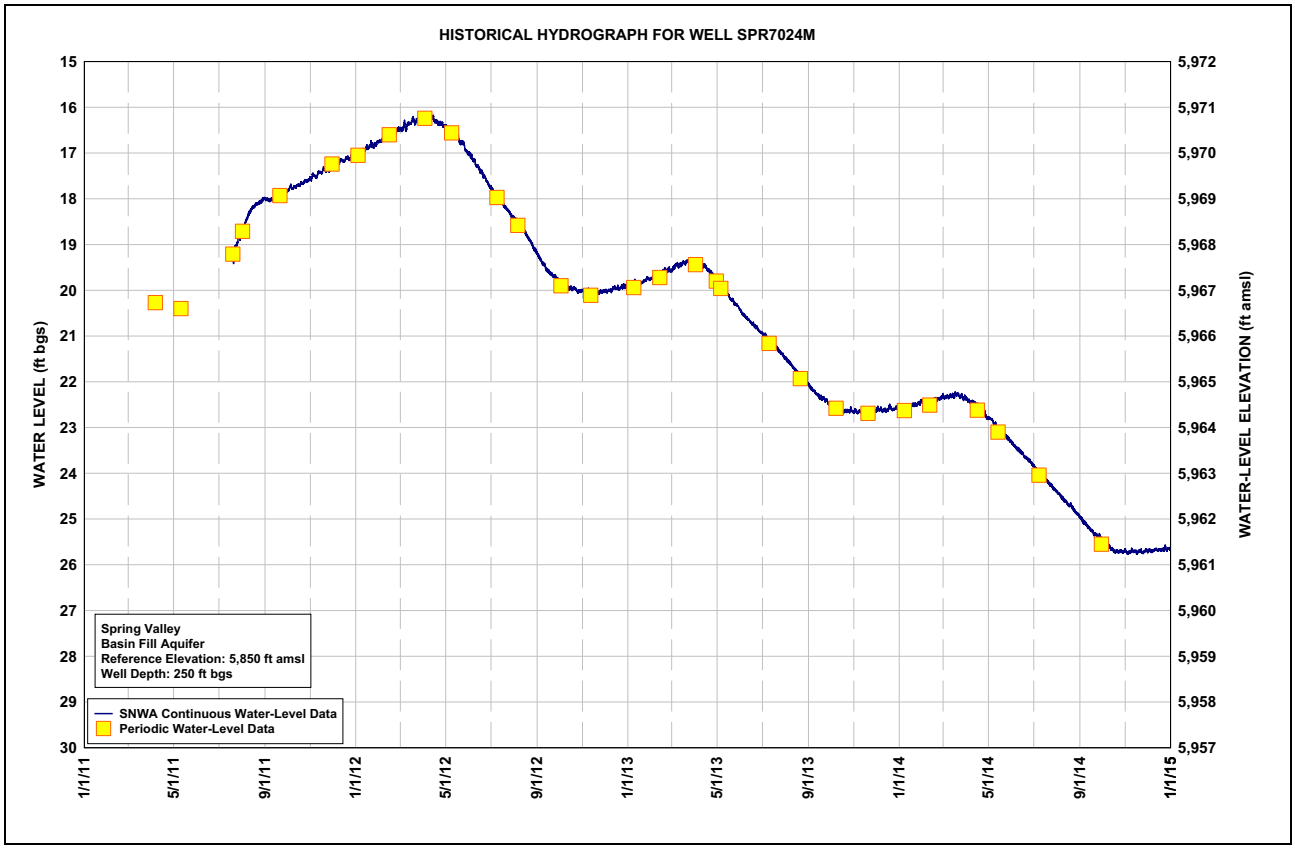
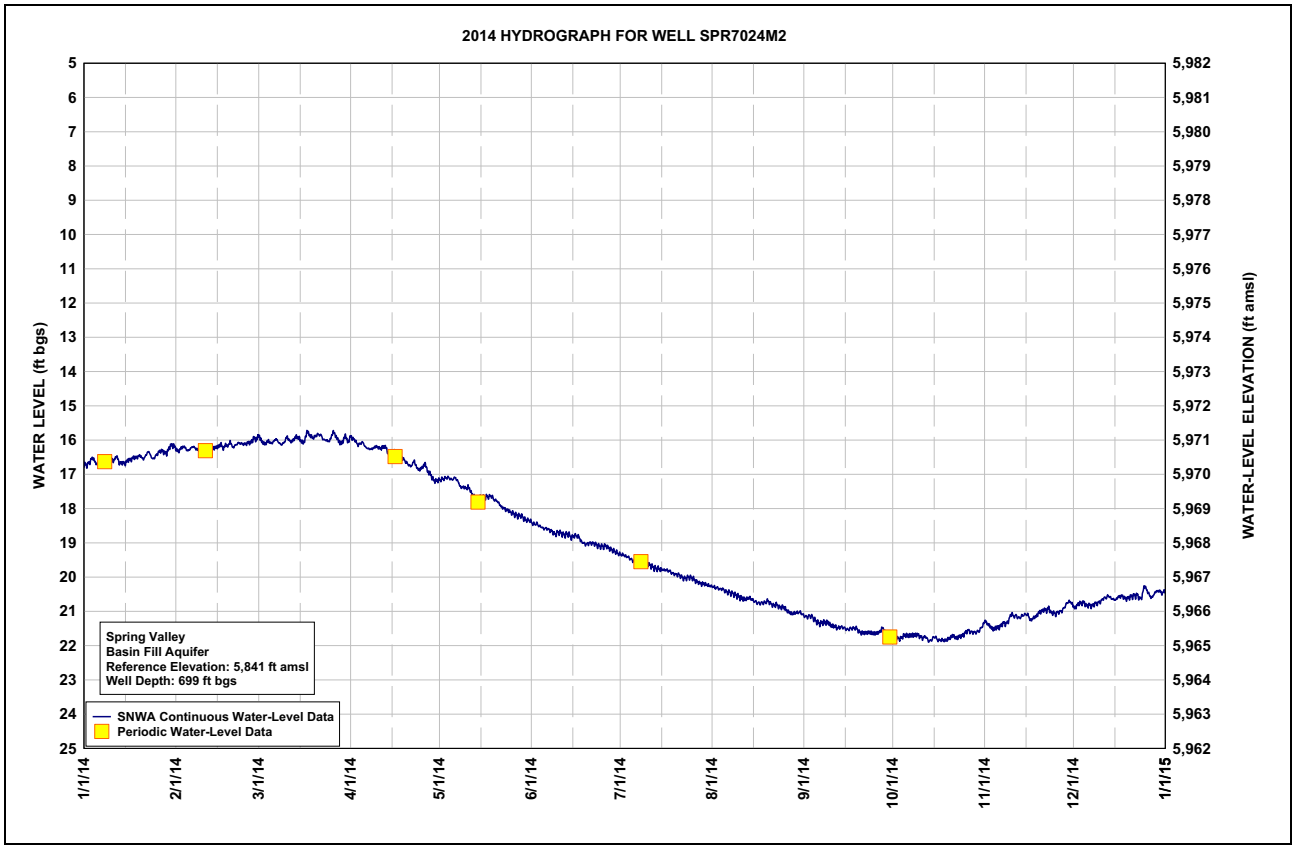

HISTORICAL HYDROGRAPH FOR WELL SPR7024M
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
5,972
5,971
5,970
5,969
5,968
5,967
5,966
5,965
5,964
5,963
5,962
5,961
5,960
5,959
5,958
5,957
1/1/11
5/1/11
9/1/11
1/1/12
5/1/12
9/1/12
1/1/13
5/1/13
9/1/13
1/1/14
5/1/14
9/1/14
1/1/15
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,850 ft amsl
Well Depth: 250 ft bgs
SNWA Continuous Water-Level Data
Periodic Water-Level Data

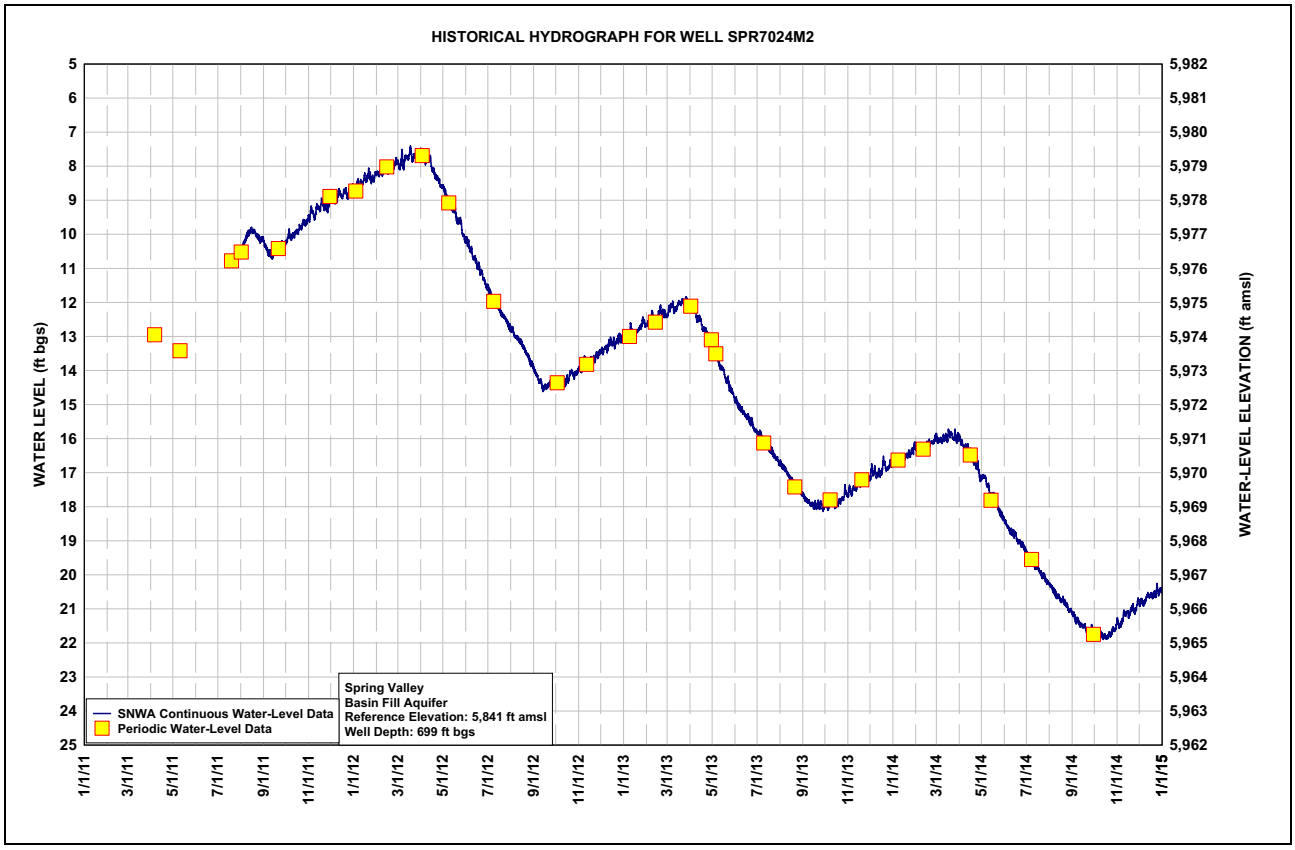
Table B-20
Spring Valley Well SPR7024M2, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	16.72	16.31	15.95	15.93	17.16	18.42	19.35	20.29	21.14	21.69	21.30	20.89
2	16.67	16.27	16.07	16.01	17.13	18.46	19.37	20.31	21.15	21.78	21.40	20.81
3	16.55	16.20	16.09	16.11	17.10	18.49	19.42	20.34	21.15	21.79	21.48	20.76
4	16.59	16.26	16.05	16.10	17.12	18.55	19.47	20.35	21.23	21.74	21.50	20.74
5	16.71	16.28	16.09	16.13	17.15	18.58	19.52	20.41	21.31	21.70	21.47	20.82
6	16.70	16.21	16.00	16.23	17.11	18.60	19.52	20.44	21.34	21.71	21.41	20.81
7	16.57	16.23	16.05	16.27	17.25	18.64	19.53	20.47	21.33	21.70	21.33	20.82
8	16.54	16.29	16.13	16.24	17.38	18.71	19.57	20.50	21.33	21.68	21.33	20.76
9	16.50	16.26	16.08	16.19	17.39	18.73	19.59	20.53	21.35	21.69	21.17	20.73
10	16.55	16.26	15.94	16.22	17.40	18.69	19.61	20.59	21.42	21.74	21.12	20.66
11	16.53	16.28	16.02	16.23	17.49	18.73	19.66	20.64	21.44	21.76	21.13	20.60
12	16.56	16.26	16.01	16.20	17.63	18.75	19.71	20.63	21.48	21.78	21.18	20.56
13	16.67	16.23	15.92	16.35	17.71	18.74	19.75	20.61	21.45	21.85	21.13	20.59
14	16.67	16.21	15.94	16.48	17.71	18.81	19.76	20.65	21.48	21.77	21.10	20.65
15	16.62	16.18	16.04	16.38	17.69	18.81	19.78	20.71	21.52	21.77	21.10	20.64
16	16.57	16.18	16.03	16.42	17.67	18.80	19.80	20.75	21.50	21.85	21.25	20.57
17	16.52	16.19	15.78	16.48	17.65	18.91	19.82	20.75	21.49	21.84	21.21	20.55
18	16.50	16.16	15.87	16.52	17.63	19.00	19.88	20.74	21.49	21.85	21.14	20.61
19	16.47	16.11	15.93	16.63	17.74	19.03	19.90	20.72	21.58	21.82	21.04	20.61
20	16.51	16.21	15.87	16.72	17.79	19.00	19.92	20.75	21.62	21.76	20.98	20.56
21	16.50	16.13	15.84	16.75	17.90	19.00	19.97	20.81	21.63	21.71	20.95	20.53
22	16.35	16.09	15.95	16.65	17.98	19.03	20.02	20.82	21.62	21.77	20.92	20.51
23	16.44	16.11	16.00	16.82	18.03	19.07	20.02	20.86	21.62	21.73	21.03	20.61
24	16.54	16.11	16.03	16.84	18.07	19.09	20.00	20.88	21.64	21.70	21.05	20.42
25	16.44	16.08	15.91	16.77	18.12	19.10	20.03	20.90	21.64	21.61	21.01	20.32
26	16.34	16.06	15.79	16.79	18.16	19.10	20.11	20.99	21.59	21.55	20.99	20.48
27	16.32	15.95	15.95	16.95	18.19	19.16	20.15	21.05	21.50	21.59	20.91	20.58
28	16.37	15.93	16.07	17.09	18.21	19.21	20.18	21.06	21.58	21.60	20.77	20.45
29	16.28	---	16.03	17.18	18.28	19.26	20.19	21.04	21.62	21.58	20.74	20.41
30	16.15	---	15.95	17.18	18.33	19.31	20.23	21.03	21.67	21.51	20.77	20.43
31	16.19	---	16.01	---	18.35	---	20.26	21.09	---	21.38	---	20.44
Max	16.72	16.31	16.13	17.18	18.35	19.31	20.26	21.09	21.67	21.85	21.50	20.89
Min	16.15	15.93	15.78	15.93	17.10	18.42	19.35	20.29	21.14	21.38	20.74	20.32

Year 2014 Statistics: **Year Max 21.85; Year Min 15.78**

Note: Water level in ft bgs


2014 HYDROGRAPH FOR WELL SPR7024M2
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,841 ft amsl
Well Depth: 699 ft bgs
SNWA Continuous Water-Level Data
Periodic Water-Level Data
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15


HISTORICAL HYDROGRAPH FOR WELL SPR7024M2
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,841 ft amsl
Well Depth: 699 ft bgs
SNWA Continuous Water-Level Data
Periodic Water-Level Data
1/1/11
3/1/11
5/1/11
7/1/11
9/1/11
11/1/11
1/1/12
3/1/12
5/1/12
7/1/12
9/1/12
11/1/12
1/1/13
3/1/13
5/1/13
7/1/13
9/1/13
11/1/13
1/1/14
3/1/14
5/1/14
7/1/14
9/1/14
11/1/14
1/1/15

This Page Left Intentionally Blank

Appendix C

SV3M Plan
Spring-Discharge and Piezometer Data

Table C-1
Spring Valley Miscellaneous Discharge Data
(Page 1 of 3)

Spring Number	Spring Name	Date	Time	Discharge[a] (gpm)	Discharge[a] (cfs)	Measurement Rated as: (E, G, F, P)[b]	Water Temp (°C)	Air Temp (°C)	Electrical Conductivity (µS/cm)	pH	Method[c]	Remarks	Data Source
1845501	Willow Spring	01/07/2014	13:55	5	0.01	E	---	---	---	---	F	---	SNWA
		04/09/2014	10:35	5	0.01	E	---	---	---	---	F	---	SNWA
		05/14/2014	13:40	5	0.01	E	---	22	---	---	F	---	SNWA
		07/08/2014	12:25	3	0.01	E	---	33	---	---	F	---	SNWA
		10/07/2014	13:00	4	0.01	E	---	---	---	---	F	---	SNWA
1845702	South Millick Spring	01/07/2014	15:32	525	1.2	E	---	---	---	---	F	---	SNWA
		04/09/2014	09:35	525	1.2	G	---	---	---	---	F	---	SNWA
		05/14/2014	11:08	525	1.2	E	---	---	---	---	F	---	SNWA
		07/08/2014	10:26	503	1.1	P	---	---	---	---	F	---	SNWA
		10/07/2014	15:45	480	1.1	F	---	---	---	---	F	---	SNWA
		10/23/2014	09:00	525	1.2	G	---	14	---	---	F	---	SNWA
1845901	Layton Spring	01/07/2014	16:27	0.0	0.0	E	---	---	---	---	NA	Site is dry.	SNWA
		02/11/2014	08:21	0.0	0.0	E	---	---	---	---	NA	Site is dry.	SNWA
		04/09/2014	08:45	0.0	0.0	E	---	---	---	---	NA	Site is dry.	SNWA
		05/14/2014	09:00	0.0	0.0	E	---	---	---	---	NA	Site is dry.	SNWA
		07/08/2014	09:09	0.0	0.0	E	---	---	---	---	NA	Site is dry.	SNWA
		10/06/2014	17:33	0.0	0.0	E	---	---	---	---	NA	Site is dry.	SNWA
1846201	Swallow Springs	01/15/2014	10:30	337	0.75	P	11.1	3	350	7.55	M	Sum of all channels.	SNWA
		03/18/2014	10:57	373	0.83	P	11.7	3	348	7.23	M	Sum of all channels.	SNWA
		05/13/2014	15:00	408	0.91	P	---	---	---	---	M	Sum of all channels.	SNWA
		06/04/2014	16:13	390	0.87	P	---	24	---	---	M	Sum of all channels.	SNWA
		07/09/2014	15:16	359	0.80	P	---	---	---	---	M	Sum of all channels.	SNWA
		09/09/2014	10:21	337	0.75	P	12.1	19	334	7.93	M	Sum of all channels.	SNWA
		10/23/2014	12:34	346	0.77	P	11.2	---	353	7.70	M	Sum of all channels.	SNWA
		12/02/2014	09:30	311	0.69	P	10.5	1	339	7.75	M	Sum of all channels.	SNWA

Table C-1
Spring Valley Miscellaneous Discharge Data
(Page 2 of 3)

Spring Number	Spring Name	Date	Time	Discharge[a] (gpm)	Discharge[a] (cfs)	Measurement Rated as: (E, G, F, P)[b]	Water Temp (°C)	Air Temp (°C)	Electrical Conductivity (µS/cm)	pH	Method[c]	Remarks	Data Source
1847101	Keegan Spring near Piermont, NV	01/07/2014	12:17	184	0.41	E	---	---	---	---	F	---	SNWA
		01/27/2014	15:30	176	0.39	G	---	7	---	---	F	---	SNWA
		03/19/2014	10:25	184	0.41	E	11.5	4	74.3	6.54	F	---	SNWA
		05/14/2014	11:15	217	0.48	G	14.2	---	68.9	7.24	F	---	SNWA
		06/03/2014	16:30	201	0.45	E	---	24	---	---	F	---	SNWA
		07/09/2014	12:30	168	0.38	E	---	---	---	---	F	---	SNWA
		10/07/2014	11:52	217	0.48	G	---	---	---	---	F	---	SNWA
		10/14/2014	12:25	217	0.48	G	---	---	---	---	F	---	SNWA
		12/03/2014	14:37	209	0.46	G	---	---	---	---	F	---	SNWA
1847301	Rock Spring	01/14/2014	09:36	18	0.04	E	---	---	---	---	F	---	SNWA
		03/18/2014	10:20	21	0.05	E	10.7	---	---	7.69	F	---	SNWA
		04/07/2014	13:46	16	0.04	E	17	---	634	8.16	F	---	SNWA
		5/13/2014	10:28	18	0.04	E	15.5	---	632	7.95	F	---	SNWA
		6/03/2014	09:16	16	0.04	E	15.2	19	637	7.88	F	---	SNWA
		7/07/2014	16:38	14	0.03	G	---	---	---	---	F	---	SNWA
		09/08/2014	16:35	18	0.04	E	---	---	---	---	F	---	SNWA
		10/21/2014	10:52	14	0.03	G	14	20.5	698	6.89	F	---	SNWA
		10/27/2014	11:42	18	0.04	E	---	10	---	---	F	---	SNWA
		12/01/2014	16:15	18	0.04	E	---	---	---	---	F	---	SNWA
1848001	Turnley Spring	01/14/2014	09:10	71	0.16	E	11.6	4	544	7.07	F	---	SNWA
		03/18/2014	08:50	91	0.20	E	11.5	2	---	6.91	F	---	SNWA
		05/13/2014	09:40	75	0.17	E	12.9	8	558	7.57	F	---	SNWA
		06/03/2014	08:25	56	0.12	E	11.8	19	549	6.98	F	---	SNWA
		07/08/2014	09:10	53	0.12	E	---	---	---	---	F	---	SNWA
		10/21/2014	08:30	60	0.13	E	12.5	---	578	---	F	---	SNWA
1848401	Cleveland Ranch Spring North Flume	01/07/2014	10:10	21	0.05	E	---	---	---	---	F	---	SNWA
		5/14/2014	17:47	16	0.04	E	---	---	---	---	F	---	SNWA
		07/08/2014	16:35	18	0.04	G	---	---	---	---	F	---	SNWA
		10/07/2014	10:51	18	0.04	E	---	---	---	---	F	---	SNWA

Table C-1
Spring Valley Miscellaneous Discharge Data
(Page 3 of 3)

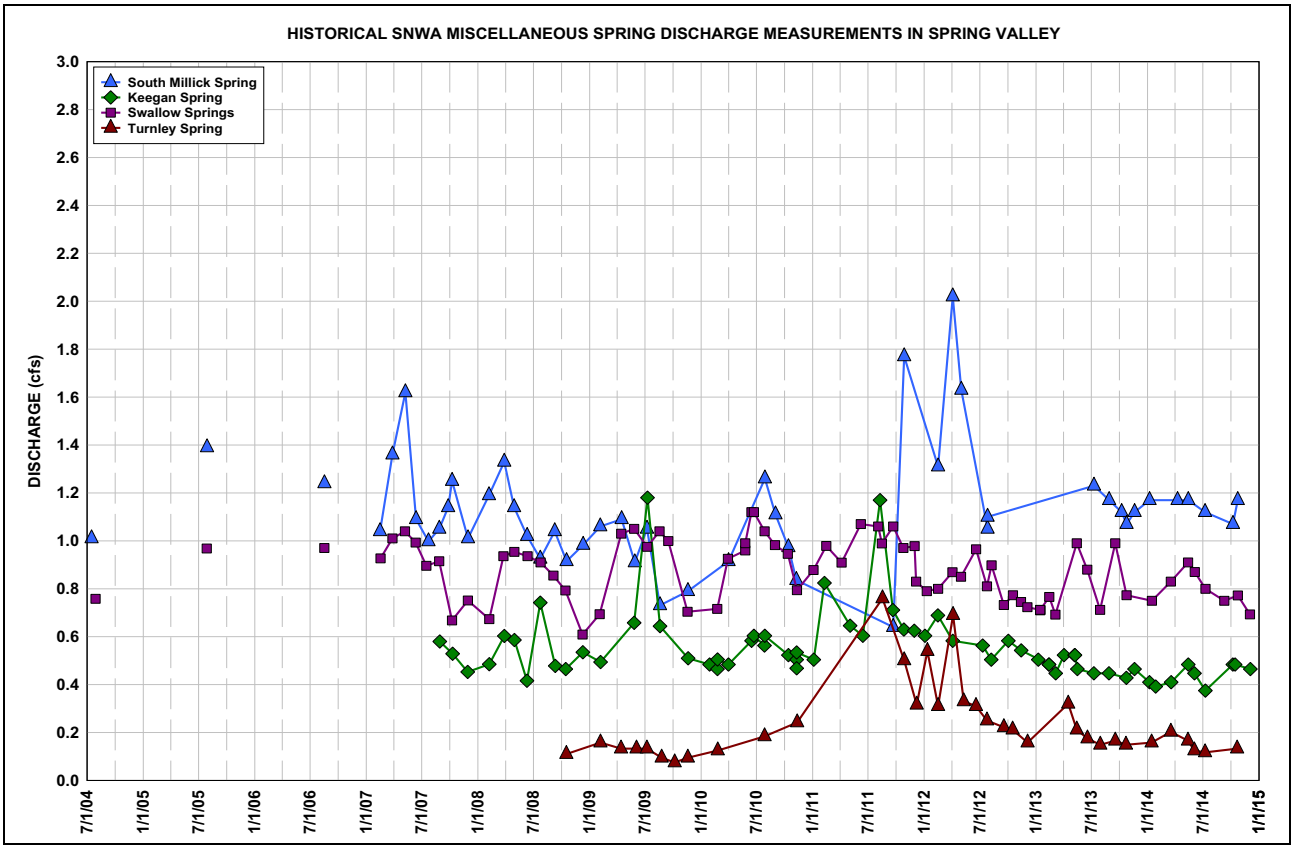
Spring Number	Spring Name	Date	Time	Discharge[a] (gpm)	Discharge[a] (cfs)	Measurement Rated as: (E, G, F, P)[b]	Water Temp (°C)	Air Temp (°C)	Electrical Conductivity (µS/cm)	pH	Method[c]	Remarks	Data Source
1848501	Cleveland Ranch Spring South	04/09/2014	13:20	71	0.16	E	---	---	---	---	F	---	SNWA
		05/14/2014	18:09	67	0.15	G	---	---	---	---	F	---	SNWA
		10/07/2014	10:16	67	0.15	E	---	---	---	---	F	---	SNWA

[a]Discharge is reported in cfs for values >0.01 and in gpm for values <0.01 cfs.

[b]Measurement Rating: E = Excellent; G = Good; F = Fair; P = Poor

[c]Measurement Method: F = Flume; M = Multiple; NA = Not Applicable

Note: The Seep was observed to be dry in 2014.


HISTORICAL SNWA MISCELLANEOUS SPRING DISCHARGE MEASUREMENTS IN SPRING VALLEY
South Millick Spring
Keegan Spring
Swallow Springs
Turnley Spring
DISCHARGE (cfs)
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
7/1/04
1/1/05
7/1/05
1/1/06
7/1/06
1/1/07
7/1/07
1/1/08
7/1/08
1/1/09
7/1/09
1/1/10
7/1/10
1/1/11
7/1/11
1/1/12
7/1/12
1/1/13
7/1/13
1/1/14
7/1/14
1/1/15

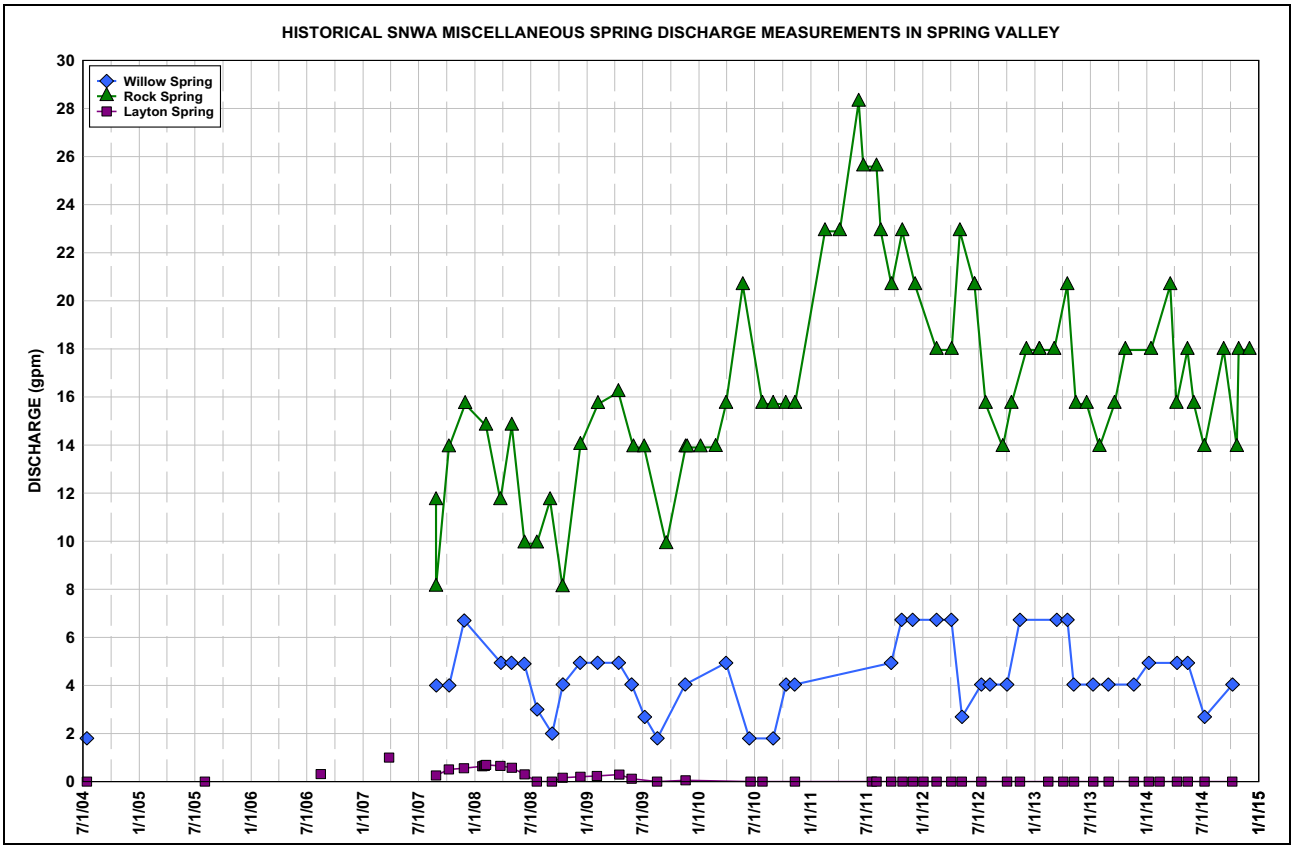

HISTORICAL SNWA MISCELLANEOUS SPRING DISCHARGE MEASUREMENTS IN SPRING VALLEY
Willow Spring
Rock Spring
Layton Spring
DISCHARGE (gpm)
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
7/1/04
1/1/05
7/1/05
1/1/06
7/1/06
1/1/07
7/1/07
1/1/08
7/1/08
1/1/09
7/1/09
1/1/10
7/1/10
1/1/11
7/1/11
1/1/12
7/1/12
1/1/13
7/1/13
1/1/14
7/1/14
1/1/15

Table C-2
SV3M Plan Periodic Piezometer Water-Level Data
(Page 1 of 2)

Site Number	Station Local Number[a]	Associated Spring	Well Depth (ft bgs)	Surface Elevation (ft amsl)	Water Level			
					Date	Depth to Water (ft bgs)	Well Status[b]	Measurement Method[c]
SPR7007Z	184 N11 E67 12DACA1	Minerva Spring	31	5,828.66	2/12/2014	14.04	S	T
					4/15/2014	14.61	S	T
					5/14/2014	14.03	S	T
					7/9/2014	12.8	S	T
					9/30/2014	13.55	S	T
SPR7011Z	184 N11 E67 23ADDD1	Blind Spring	31	5,769.71	1/9/2014	6.18	S	T
					2/12/2014	5.97	S	T
					4/15/2014	5.38	S	T
					5/14/2014	5.44	S	T
					7/9/2014	6.83	S	T
					9/30/2014	7.2	S	T
SPR7012Z	184 N15 E67 30BDBD1	Four Wheel Drive Spring	25	5,756.22	1/7/2014	1.65	S	T
					4/9/2014	1.34	S	T
					5/14/2014	1.42	S	T
					7/9/2014	1.84	S	T
					10/7/2014	2.27	S	T
SPR7014Z	184 N12 E67 26ACAD1	The Seep	31	5,778.54	1/9/2014	11.91	S	T
					2/12/2014	11.85	S	T
					4/15/2014	11.8	S	T
					5/14/2014	11.86	S	T
					7/9/2014	12.43	S	T
					9/30/2014	13.01	S	T
SPR7015Z	184 N17 E67 30CADA1	West Spring Valley Complex	38	5,602.90	1/7/2014	5.31	S	T
					2/10/2014	5.18	S	T
					4/9/2014	5.25	S	T
					5/14/2014	5.37	S	T
					7/8/2014	6.12	S	T
					10/7/2014	5.67	S	T
SPR7016Z	184 N15 E67 09BBBA1	Unnamed Spring 5	32	5,645.67	1/7/2014	1.92	S	T
					4/9/2014	1.48	S	T
					5/14/2014	1.53	S	T
					7/8/2014	2.09	S	T
					10/7/2014	2.3	S	T
SPR7018Z	184 N17 E67 25CDCA1	South Millick Spring	25	5,587.16	1/7/2014	5.66	S	T
					2/11/2014	5.69	S	T
					4/9/2014	5.7	S	T
					5/14/2014	5.7	S	T
					7/8/2014	5.7	S	T
					10/7/2014	5.79	S	T

Table C-2
SV3M Plan Periodic Piezometer Water-Level Data
(Page 2 of 2)

Site Number	Station Local Number[a]	Associated Spring	Well Depth (ft bgs)	Surface Elevation (ft amsl)	Water Level			
					Date	Depth to Water (ft bgs)	Well Status[b]	Measurement Method[c]
SPR7019Z	184 N14 E67 04DBAB1	Layton Spring	35	5,686.63	1/7/2014	9.67	S	T
					2/11/2014	9.52	S	T
					4/9/2014	9.33	S	T
					5/14/2014	9.23	S	T
					7/8/2014	9.61	S	T
					10/6/2014	9.61	S	T
SPR7020Z	184 N22 E66 17CAAC1	Stonehouse Spring	9	6,264.62	1/7/2014	0.77	S	T
					2/10/2014	0.57	S	T
					4/9/2014	1.32	S	T
					5/14/2014	1.48	S	T
					7/8/2014	2.78	S	T
					10/7/2014	2.08	S	T
SPR7021Z	184 N18 E66 01CCAA1	Keegan Spring	21	5,613.12	1/7/2014	-1.18	S	T
					2/10/2014	-1.21	S	T
					4/9/2014	-0.8	S	T
					5/14/2014	-1.19	S	T
					7/8/2014	-0.35	S	T
					10/7/2014	-1.54	S	T
SPR7022Z	184 N21 E66 15BCDD1	Willow Spring	35	5,987.54	1/7/2014	13.05	S	T
					4/9/2014	13.08	S	T
					5/14/2014	13.16	S	T
					7/8/2014	13.67	S	T
					10/7/2014	13.52	S	T
SPR7031Z	184 N16 E67 20CCDC1	Cleveland Ranch North Spring	10.3	5,637.32	1/7/2014	0.93	S	S
					2/10/2014	0.59	S	S
					5/14/2014	1.42	S	S
					7/8/2014	3.01	S	T
					10/7/2014	1.6	S	T

[a]Station Local Numbers provided by the Nevada Department of Water Resources.
[b]S = Static Conditions.
[c]T = Electric tape measurement, S = Steel tape measurement, O = Other.
Note: SNWA tape calibration program started in August 2008.

Table C-3
Station Number 1847301 - Rock Spring near Osceola, NV, Water Year 2014
Mean Daily Discharge Values

Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.04	0.04	0.04	0.04	0.05
2	0.04	0.04	0.04	0.04	0.04	0.05	0.04	0.04	0.04	0.04	0.04	0.05
3	0.04	0.04	0.04	0.04	0.04	0.05	0.04	0.05	0.04	0.04	0.04	0.05
4	0.04	0.04	0.04	0.04	0.04	0.05	0.04	0.04	0.04	0.04	0.05	0.05
5	0.05	0.04	0.04	0.04	0.04	0.05	0.04	0.05	0.04	0.04	0.05	0.05
6	0.04	0.04	0.04	0.04	0.04	0.05	0.04	0.04	0.04	0.04	0.04	0.05
7	0.05	0.04	0.05	0.05	0.05	0.05	0.04	0.05	0.04	0.04	0.04	0.05
8	0.04	0.04	0.04	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.05	0.04
9	0.04	0.04	0.04	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.05	0.04
10	0.04	0.04	0.04	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.05	0.04
11	0.04	0.04	0.04	0.04	0.05	0.05	0.04	0.04	0.04	0.04	0.05	0.04
12	0.04	0.04	0.04	0.04	0.05	0.05	0.04	0.05	0.04	0.04	0.05	0.04
13	0.04	0.04	0.05	0.04	0.04	0.05	0.04	0.05	0.04	0.04	0.05	0.04
14	0.04	0.04	0.05	0.04	0.04	0.05	0.04	0.05	0.04	0.04	0.05	0.04
15	0.04	0.04	0.04	0.04	0.05	0.04	0.04	0.05	0.04	0.04	0.05	0.04
16	0.05	0.04	0.04	0.04	0.05	0.05	0.04	0.05	0.04	0.04	0.05	0.04
17	0.05	0.04	0.05	0.04	0.05	0.05	0.04	0.05	0.04	0.04	0.05	0.04
18	0.05	0.04	0.04	0.04	0.05	0.04	0.04	0.05	0.04	0.04	0.05	0.04
19	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.04	0.04	0.05	0.04
20	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.04	0.04	0.06	0.04
21	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05
22	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05
23	0.05	0.04	0.05	0.04	0.04	0.04	0.04	0.05	0.04	0.04	0.05	0.05
24	0.05	0.04	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.04
25	0.04	0.04	0.04	0.04	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04
26	0.04	0.04	0.04	0.04	0.05	0.04	0.04	0.04	0.04	0.04	0.05	0.05
27	0.04	0.04	0.04	0.04	0.05	0.04	0.04	0.04	0.04	0.04	0.05	0.04
28	0.05	0.04	0.04	0.04	0.05	0.04	0.04	0.04	0.04	0.04	0.05	0.04
29	0.04	0.04	0.04	0.04	--	0.04	0.04	0.04	0.04	0.04	0.04	0.04
30	0.04	0.04	0.04	0.04	--	0.04	0.04	0.04	0.04	0.04	0.04	0.03
31	0.05	--	0.04	0.04	--	0.04	--	0.04	--	0.04	0.05	--
Total	1.4	1.2	1.3	1.3	1.3	1.4	1.2	1.4	1.2	1.2	1.5	1.3
Min	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03
Max	0.05	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.06	0.05
Mean	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.04
Acre-feet	2.7	2.4	2.6	2.5	2.5	2.8	2.4	2.7	2.4	2.5	2.9	2.6

Note: Values are in cfs unless noted otherwise.
e = Estimated day.

Annual Statistics	
Min:	0.03
Max:	0.06
Annual Total (Acre-ft):	31
Annual Mean (cfs)	0.04

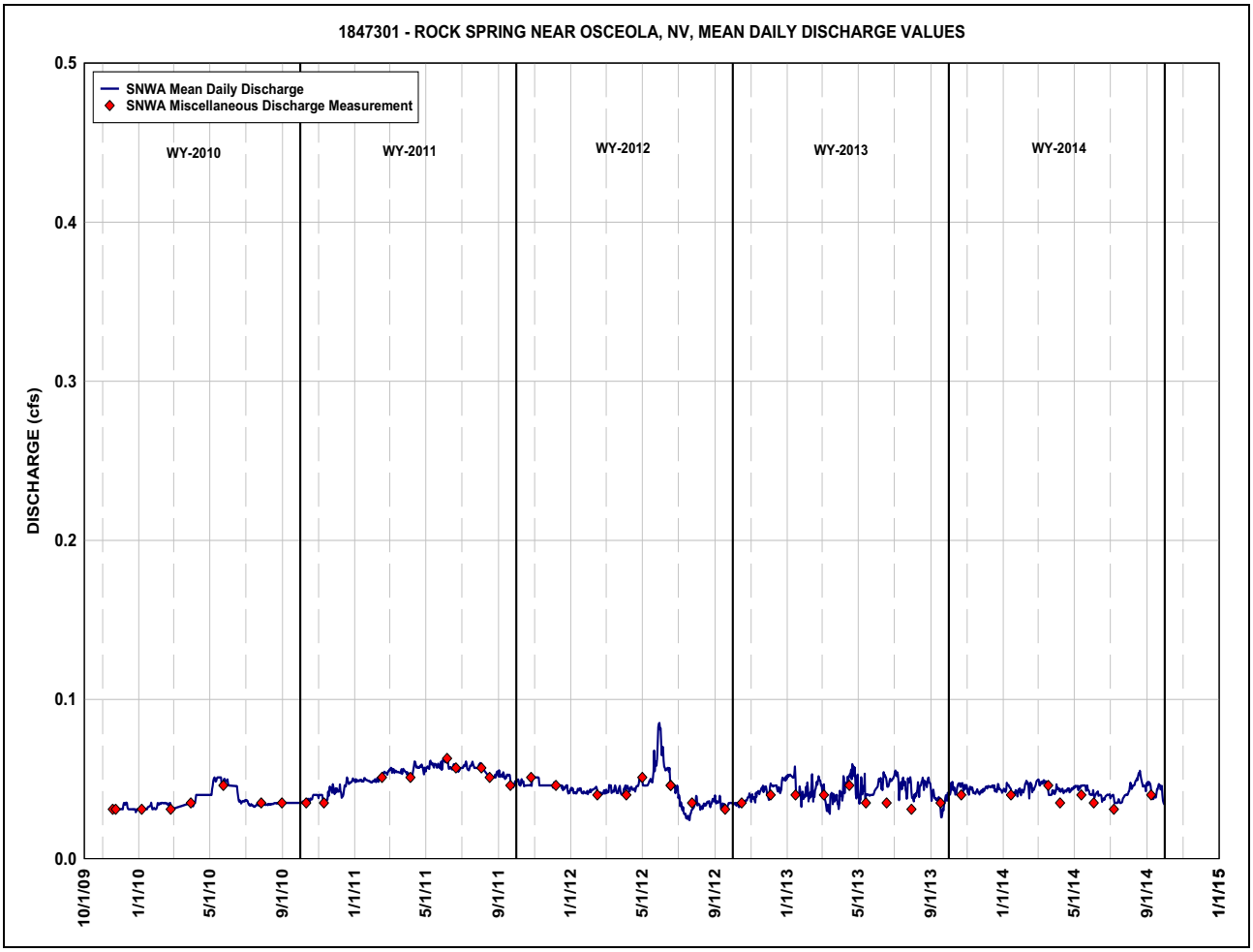

1847301 - ROCK SPRING NEAR OSCEOLA, NV, MEAN DAILY DISCHARGE VALUES
SNWA Mean Daily Discharge
SNWA Miscellaneous Discharge Measurement
WY-2010
WY-2011
WY-2012
WY-2013
WY-2014
DISCHARGE (cfs)
0.5
0.4
0.3
0.2
0.1
0.0
10/1/09
1/1/10
5/1/10
9/1/10
1/1/11
5/1/11
9/1/11
1/1/12
5/1/12
9/1/12
1/1/13
5/1/13
9/1/13
1/1/14
5/1/14
9/1/14
1/1/15

Table C-4
Station Number 1846203 - Swallow Springs South near Minerva, NV, Water Year 2014
Mean Daily Discharge Values

Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.71	0.62	0.64	0.66	0.63	0.62	0.72	0.80	0.74	0.69	0.61	0.64
2	0.71	0.62	0.64	0.67	0.63	0.62	0.71	0.80	0.74	0.69	0.60	0.64
3	0.70	0.62	0.64	0.67	0.63	0.62	0.70	0.80	0.74	0.69	0.60	0.63
4	0.69	0.62	0.64	0.67	0.63	0.63	0.69	0.80	0.73	0.68	0.60	0.63
5	0.69	0.62	0.64	0.67	063	0.63	0.68	0.80	0.73	0.69	0.62	0.62
6	0.69	0.62	0.64	0.67	0.63	0.64	0.68	0.80	0.72	0.69	0.62	0.62
7	0.68	0.62	0.64	0.67	0.63	0.64	0.67	0.80	0.73	0.68	0.61	0.62
8	0.68	0.62	0.64	0.66	0.63	0.64	0.67	0.79	0.72	0.68	0.60	0.61
9	0.68	0.62	0.64	0.66	0.62	0.66	0.70	0.79	0.72	0.68	0.60	0.63
10	0.68	0.62	0.64	0.66	0.62	0.68	0.78	0.78	0.72	0.68	0.60	0.64
11	0.68	0.62	0.65	0.65	0.62	0.70	0.81	0.79	0.72	0.68	0.60	0.63
12	0.68	0.62	0.65	0.66	0.62	0.70	0.83	0.78	0.72	0.68	0.60	0.63
13	0.67	0.62	0.65	0.65	0.62	0.70	0.83	0.78	0.72	0.68	0.60	0.62
14	0.67	0.62	0.65	0.65	0.62	0.69	0.83	0.77	0.73	0.68	0.60	0.62
15	0.67	0.62	0.65	0.64	0.62	0.69	0.83	0.77	0.72	0.67	0.60	0.62
16	0.67	0.62	0.65	0.63	0.62	0.70	0.84	0.77	0.72	0.68	0.60	0.62
17	0.66	0.62	0.65	0.63	0.62	0.71	0.84	0.77	0.72	0.67	0.60	0.63
18	0.66	0.62	0.65	0.63	0.62	0.73	0.84	0.77	0.71	0.67	0.60	0.62
19	0.66	0.62	0.65	0.63	0.62	0.72	0.85	0.76	0.71	0.66	0.60	0.63
20	0.66	0.62	0.65	0.63	0.62	0.71	0.86	0.76	0.71	0.66	0.66	0.63
21	0.66	0.62	0.65	0.63	0.62	0.71	0.85	0.76	0.70	0.65	0.66	0.63
22	0.66	0.62	0.66	0.63	0.62	0.71	0.84	0.76	0.70	0.65	0.65	0.65
23	0.66	0.62	0.66	0.63	0.62	0.71	0.84	0.76	0.70	0.64	0.74	0.65
24	0.64	0.62	0.66	0.63	0.62	0.72	0.84	0.75	0.70	0.64	0.75	0.65
25	0.63	0.62	0.67	0.63	0.62	0.75	0.83	0.75	0.70	0.64	0.71	0.65
26	0.62	0.62	0.66	0.63	0.62	0.79	0.83	0.75	0.70	0.63	0.69	0.65
27	0.62	0.62	0.66	0.63	0.62	0.80	0.83	0.75	0.70	0.63	0.68	0.71
28	0.62	0.63	0.67	0.63	0.62	0.77	0.82	0.75	0.70	0.63	0.68	0.89
29	0.62	0.63	0.67	0.63	--	0.75	0.82	0.75	0.70	0.62	0.67	0.87
30	0.62	0.64	0.67	0.63	--	0.74	0.81	0.75	0.69	0.62	0.66	0.84
31	0.62	--	0.67	0.63	--	0.72	--	0.74	--	0.61	0.65	--
Total	21	19	20	20	17	22	24	24	22	20	20	20
Min	0.62	0.62	0.64	0.63	0.62	0.62	0.67	0.74	0.69	0.61	0.60	0.61
Max	0.71	0.64	0.67	0.67	0.63	0.80	0.86	0.80	0.74	0.69	0.75	0.89
Mean	0.66	0.62	0.65	0.64	0.62	0.70	0.79	0.77	0.72	0.66	0.63	0.66
Acre-feet	41	37	40	40	34	43	47	47	42	41	39	39

Note: Values are in cfs unless noted otherwise.
e = Estimated day.

Annual Statistics	
Min:	0.60
Max:	0.89
Annual Total (Acre-ft):	490
Annual Mean (cfs)	0.68

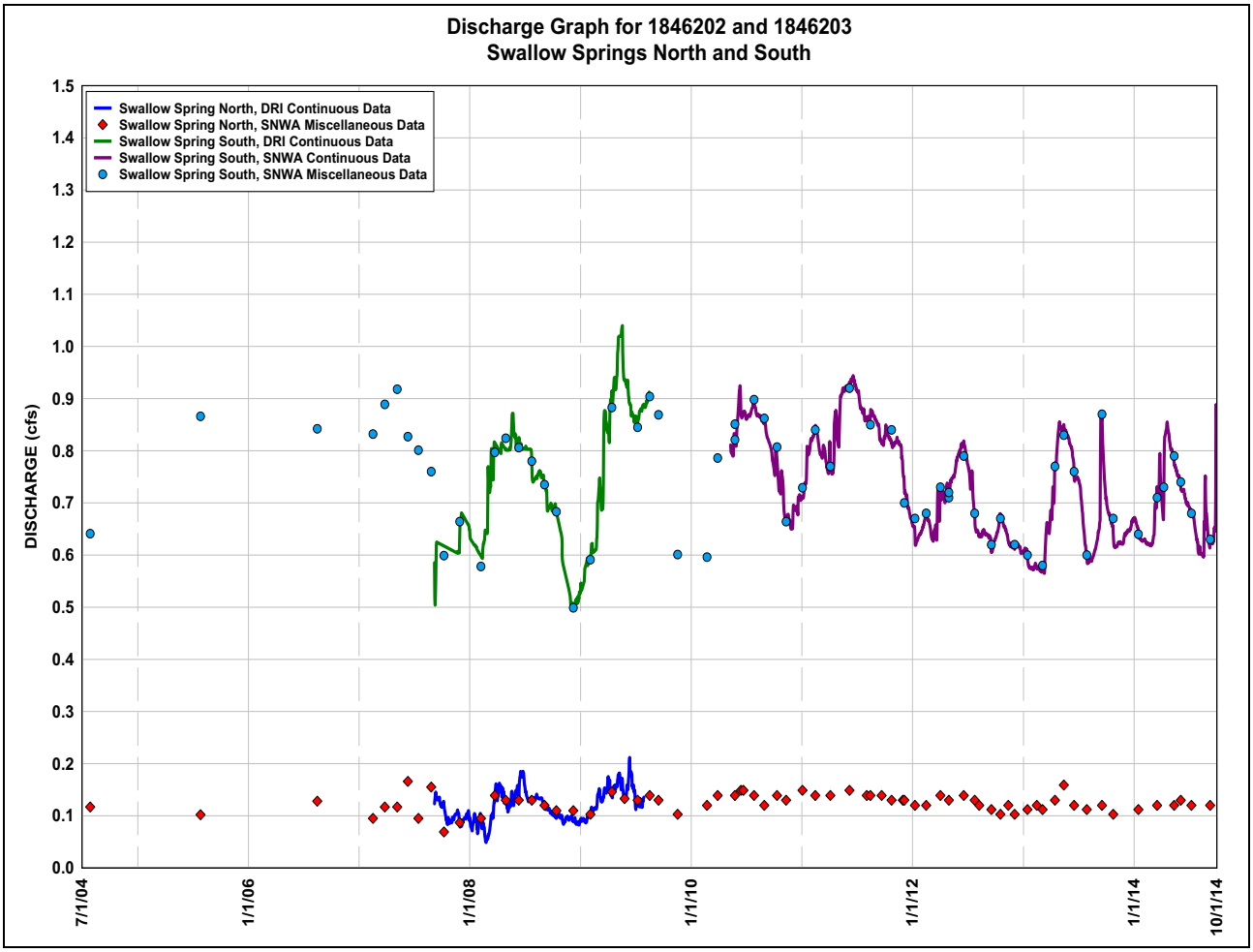
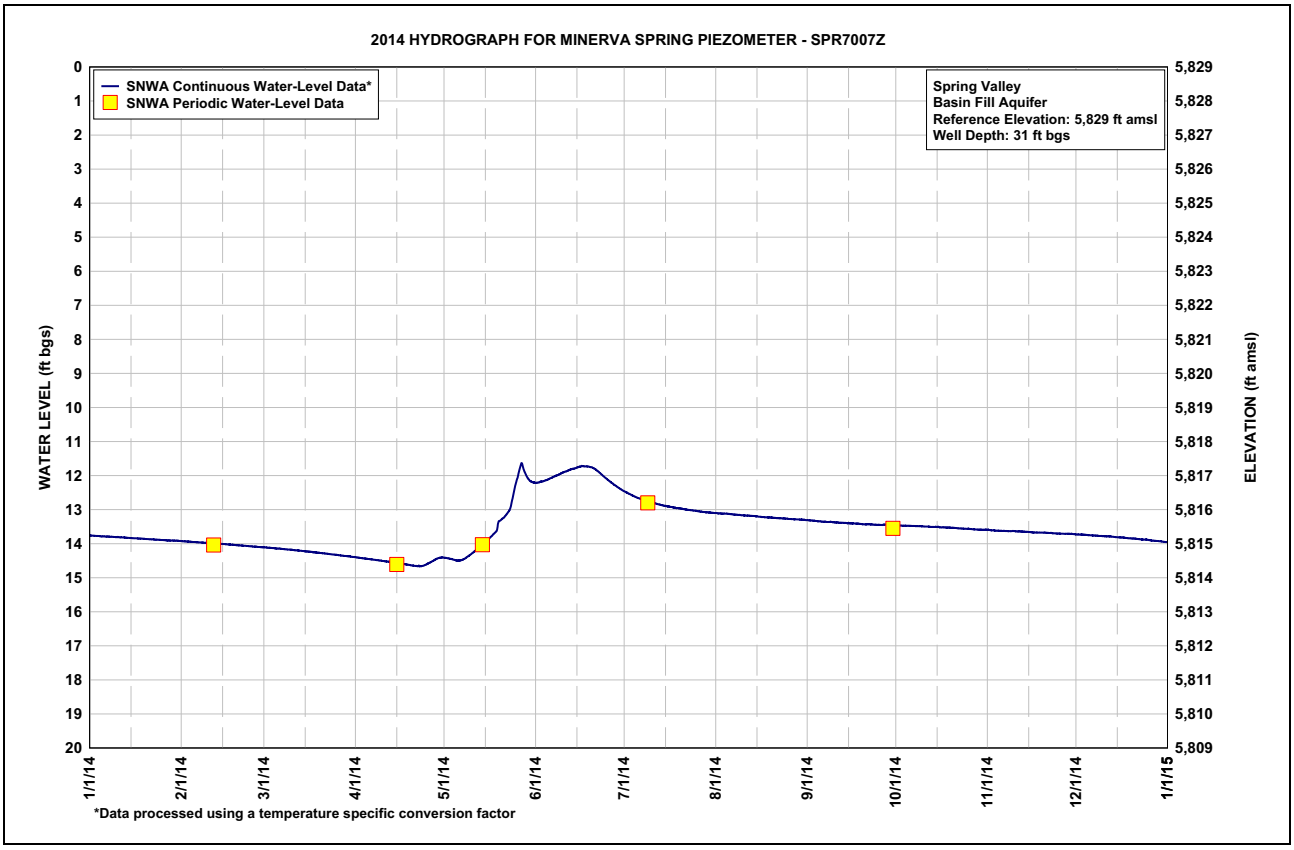

Discharge Graph for 1846202 and 1846203
Swallow Springs North and South
Swallow Spring North, DRI Continuous Data
Swallow Spring North, SNWA Miscellaneous Data
Swallow Spring South, DRI Continuous Data
Swallow Spring South, SNWA Continuous Data
Swallow Spring South, SNWA Miscellaneous Data
DISCHARGE (cfs)
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
7/1/04
1/1/06
1/1/08
1/1/10
1/1/12
1/1/14
10/1/14

Table C-5
Minerva Spring Piezometer SPR7007Z, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	13.76	13.93	14.11	14.40	14.41	12.21	12.48	13.10	13.31	13.47	13.60	13.73
2	13.77	13.93	14.12	14.42	14.43	12.19	12.53	13.11	13.32	13.47	13.61	13.73
3	13.77	13.94	14.12	14.43	14.45	12.17	12.57	13.12	13.33	13.47	13.61	13.74
4	13.78	13.95	14.13	14.44	14.47	12.14	12.61	13.12	13.34	13.47	13.62	13.74
5	13.79	13.95	14.14	14.45	14.50	12.11	12.65	13.13	13.35	13.48	13.62	13.75
6	13.79	13.96	14.15	14.46	14.49	12.06	12.68	13.14	13.35	13.48	13.63	13.76
7	13.79	13.96	14.16	14.47	14.46	12.02	12.71	13.15	13.36	13.48	13.63	13.76
8	13.80	13.97	14.17	14.49	14.41	11.99	12.74	13.15	13.36	13.48	13.63	13.77
9	13.80	13.98	14.17	14.50	14.35	11.95	12.77	13.16	13.37	13.49	13.63	13.78
10	13.81	13.98	14.18	14.51	14.28	11.90	12.79	13.17	13.38	13.49	13.63	13.78
11	13.81	13.99	14.19	14.52	14.22	11.88	12.82	13.18	13.38	13.50	13.64	13.78
12	13.82	13.99	14.20	14.53	14.14	11.84	12.84	13.18	13.39	13.50	13.64	13.79
13	13.83	14.00	14.21	14.55	14.07	11.80	12.86	13.18	13.39	13.51	13.65	13.80
14	13.83	14.01	14.22	14.56	13.99	11.79	12.88	13.19	13.40	13.51	13.65	13.81
15	13.84	14.01	14.23	14.57	13.91	11.75	12.90	13.21	13.40	13.51	13.66	13.81
16	13.84	14.02	14.24	14.59	13.83	11.73	12.92	13.22	13.41	13.52	13.67	13.82
17	13.85	14.03	14.25	14.60	13.75	11.73	12.93	13.22	13.41	13.52	13.67	13.83
18	13.85	14.03	14.26	14.61	13.66	11.73	12.95	13.23	13.42	13.53	13.68	13.84
19	13.86	14.04	14.27	14.63	13.35	11.75	12.96	13.23	13.42	13.53	13.68	13.84
20	13.86	14.05	14.28	14.64	13.29	11.77	12.97	13.24	13.43	13.54	13.68	13.85
21	13.87	14.05	14.29	14.65	13.21	11.83	12.99	13.25	13.43	13.54	13.68	13.86
22	13.87	14.06	14.30	14.66	13.10	11.90	13.00	13.25	13.44	13.55	13.69	13.87
23	13.88	14.07	14.31	14.66	12.95	11.98	13.02	13.26	13.44	13.56	13.69	13.88
24	13.89	14.08	14.32	14.63	12.58	12.05	13.03	13.26	13.45	13.56	13.70	13.88
25	13.89	14.08	14.33	14.59	12.18	12.13	13.04	13.27	13.45	13.56	13.71	13.89
26	13.90	14.09	14.34	14.54	11.85	12.19	13.06	13.28	13.45	13.57	13.71	13.90
27	13.90	14.10	14.35	14.49	11.68	12.26	13.07	13.28	13.44	13.58	13.71	13.91
28	13.91	14.10	14.36	14.45	11.92	12.32	13.08	13.29	13.45	13.58	13.71	13.92
29	13.91	---	14.37	14.41	12.09	12.38	13.08	13.29	13.45	13.59	13.71	13.93
30	13.91	---	14.38	14.41	12.17	12.44	13.09	13.29	13.46	13.59	13.72	13.94
31	13.92	---	14.39	---	12.20	---	13.10	13.31	---	13.59	---	13.95
Max	13.92	14.10	14.39	14.66	14.50	12.44	13.10	13.31	13.46	13.59	13.72	13.95
Min	13.76	13.93	14.11	14.40	11.68	11.73	12.48	13.10	13.31	13.47	13.60	13.73

Year 2014 Statistics: **Year Max 14.66; Year Min 11.68**

Note: Water level in ft bgs.


2014 HYDROGRAPH FOR MINERVA SPRING PIEZOMETER - SPR7007Z
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,829 ft amsl
Well Depth: 31 ft bgs
WATER LEVEL (ft bgs)
ELEVATION (ft amsl)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
5,829 5,828 5,827 5,826 5,825 5,824 5,823 5,822 5,821 5,820 5,819 5,818 5,817 5,816 5,815 5,814 5,813 5,812 5,811 5,810 5,809
1/1/14 2/1/14 3/1/14 4/1/14 5/1/14 6/1/14 7/1/14 8/1/14 9/1/14 10/1/14 11/1/14 12/1/14 1/1/15
*Data processed using a temperature specific conversion factor

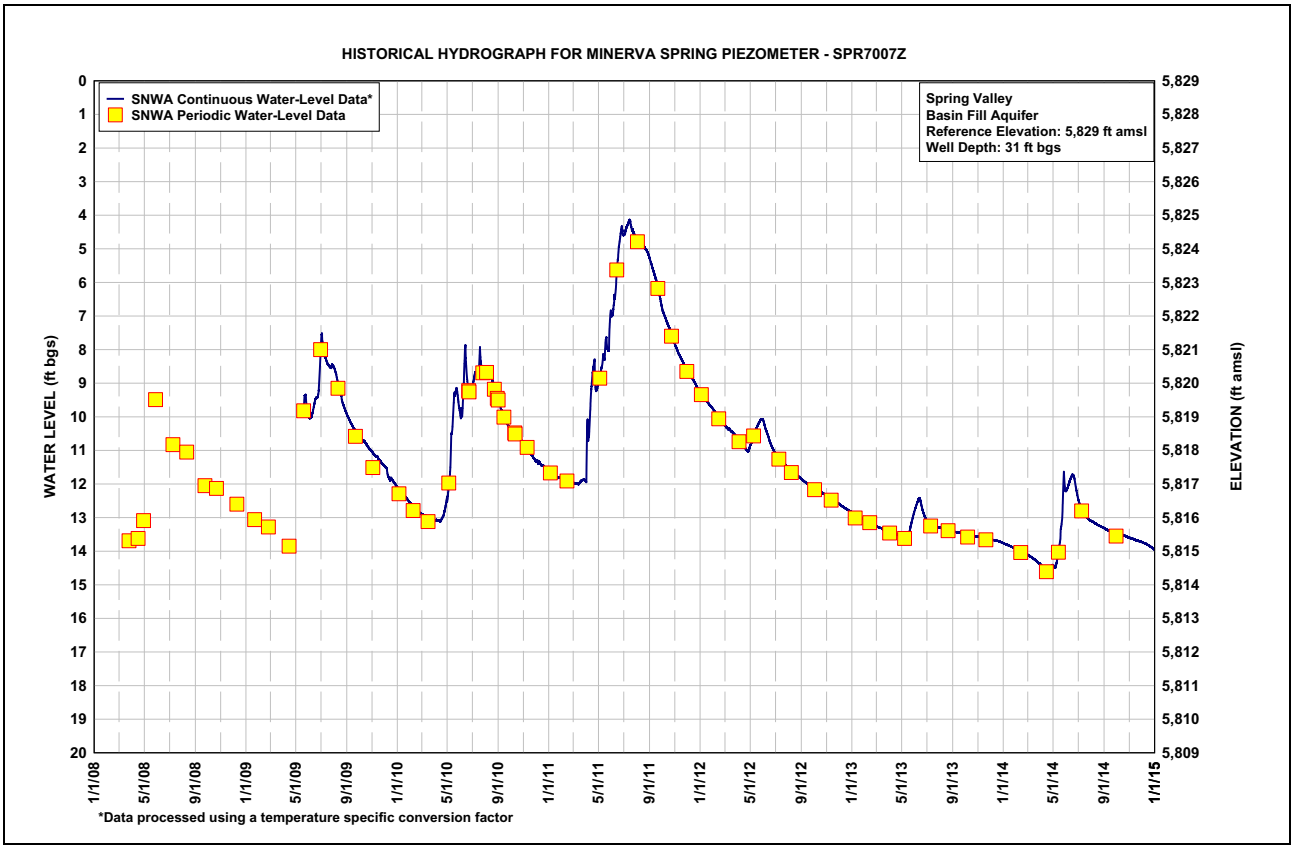
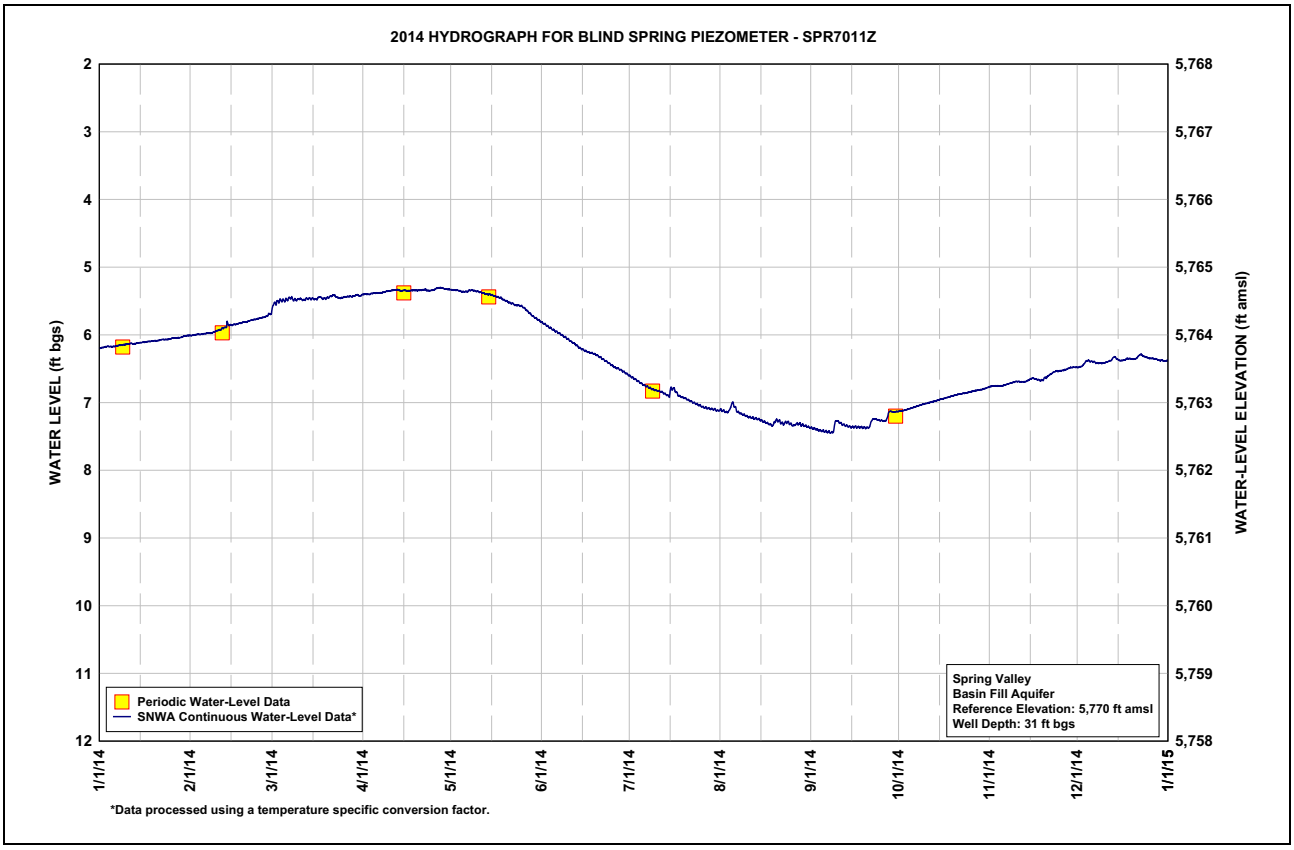

HISTORICAL HYDROGRAPH FOR MINERVA SPRING PIEZOMETER - SPR7007Z
SNWA Continuous Water-Level Data*
SNWA Periodic Water-Level Data
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,829 ft amsl
Well Depth: 31 ft bgs
WATER LEVEL (ft bgs)
ELEVATION (ft amsl)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
5,829 5,828 5,827 5,826 5,825 5,824 5,823 5,822 5,821 5,820 5,819 5,818 5,817 5,816 5,815 5,814 5,813 5,812 5,811 5,810 5,809
1/1/08 5/1/08 9/1/08 1/1/09 5/1/09 9/1/09 1/1/10 5/1/10 9/1/10 1/1/11 5/1/11 9/1/11 1/1/12 5/1/12 9/1/12 1/1/13 5/1/13 9/1/13 1/1/14 5/1/14 9/1/14 1/1/15
*Data processed using a temperature specific conversion factor

Table C-6
Blind Spring Piezometer SPR7011Z, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	6.20	6.01	5.56	5.40	5.33	5.82	6.61	7.12	7.38	7.13	6.76	6.48
2	6.18	6.00	5.52	5.40	5.34	5.85	6.64	7.13	7.39	7.12	6.75	6.47
3	6.17	5.99	5.50	5.40	5.34	5.88	6.67	7.14	7.41	7.11	6.75	6.42
4	6.17	5.99	5.49	5.39	5.35	5.91	6.70	7.09	7.42	7.10	6.75	6.38
5	6.17	5.99	5.49	5.38	5.36	5.93	6.73	7.01	7.43	7.08	6.75	6.39
6	6.17	5.98	5.48	5.38	5.36	5.96	6.76	7.09	7.44	7.07	6.74	6.39
7	6.16	5.97	5.45	5.38	5.34	5.99	6.77	7.15	7.45	7.05	6.72	6.41
8	6.15	5.97	5.48	5.37	5.34	6.02	6.79	7.17	7.44	7.04	6.71	6.42
9	6.14	5.95	5.48	5.35	5.35	6.05	6.81	7.19	7.27	7.02	6.70	6.42
10	6.14	5.94	5.47	5.35	5.36	6.08	6.83	7.21	7.28	7.01	6.69	6.41
11	6.13	5.92	5.48	5.34	5.37	6.11	6.84	7.22	7.31	7.00	6.69	6.40
12	6.13	5.90	5.47	5.33	5.39	6.14	6.85	7.23	7.33	6.99	6.69	6.38
13	6.13	5.88	5.46	5.34	5.40	6.17	6.88	7.24	7.34	6.98	6.69	6.33
14	6.12	5.85	5.47	5.35	5.40	6.20	6.89	7.25	7.36	6.97	6.67	6.36
15	6.11	5.85	5.47	5.34	5.42	6.22	6.80	7.27	7.36	6.95	6.65	6.38
16	6.11	5.84	5.47	5.35	5.43	6.25	6.80	7.29	7.36	6.94	6.65	6.38
17	6.10	5.83	5.44	5.35	5.45	6.26	6.87	7.31	7.36	6.93	6.66	6.37
18	6.10	5.83	5.46	5.34	5.46	6.27	6.91	7.33	7.37	6.91	6.67	6.35
19	6.09	5.81	5.46	5.34	5.49	6.29	6.93	7.29	7.37	6.90	6.66	6.36
20	6.09	5.80	5.44	5.34	5.51	6.32	6.95	7.26	7.37	6.89	6.63	6.36
21	6.08	5.79	5.43	5.34	5.53	6.34	6.97	7.27	7.30	6.88	6.60	6.34
22	6.07	5.78	5.42	5.33	5.54	6.37	6.99	7.31	7.25	6.87	6.57	6.30
23	6.07	5.77	5.45	5.35	5.56	6.40	7.01	7.30	7.25	6.86	6.54	6.31
24	6.07	5.76	5.46	5.34	5.57	6.43	7.03	7.29	7.26	6.85	6.53	6.33
25	6.06	5.75	5.44	5.33	5.58	6.46	7.05	7.33	7.27	6.84	6.53	6.35
26	6.05	5.74	5.44	5.31	5.61	6.49	7.07	7.33	7.27	6.83	6.52	6.35
27	6.04	5.72	5.43	5.30	5.66	6.50	7.08	7.31	7.17	6.82	6.51	6.35
28	6.04	5.69	5.43	5.31	5.70	6.53	7.09	7.32	7.13	6.82	6.49	6.37
29	6.03	---	5.42	5.32	5.73	6.56	7.10	7.34	7.14	6.81	6.48	6.38
30	6.02	---	5.42	5.33	5.76	6.58	7.11	7.35	7.13	6.79	6.48	6.38
31	6.01	---	5.42	---	5.79	---	7.12	7.37	---	6.78	---	6.38
Max	6.20	6.01	5.56	5.40	5.79	6.58	7.12	7.37	7.45	7.13	6.76	6.48
Min	6.01	5.69	5.42	5.30	5.33	5.82	6.61	7.01	7.13	6.78	6.48	6.30

Year 2014 Statistics: **Year Max 7.45; Year Min 5.30**

Note: Water level in ft bgs.


2014 HYDROGRAPH FOR BLIND SPRING PIEZOMETER - SPR7011Z
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
2
3
4
5
6
7
8
9
10
11
12
5,768
5,767
5,766
5,765
5,764
5,763
5,762
5,761
5,760
5,759
5,758
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
Periodic Water-Level Data
SNWA Continuous Water-Level Data*
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,770 ft amsl
Well Depth: 31 ft bgs
*Data processed using a temperature specific conversion factor.

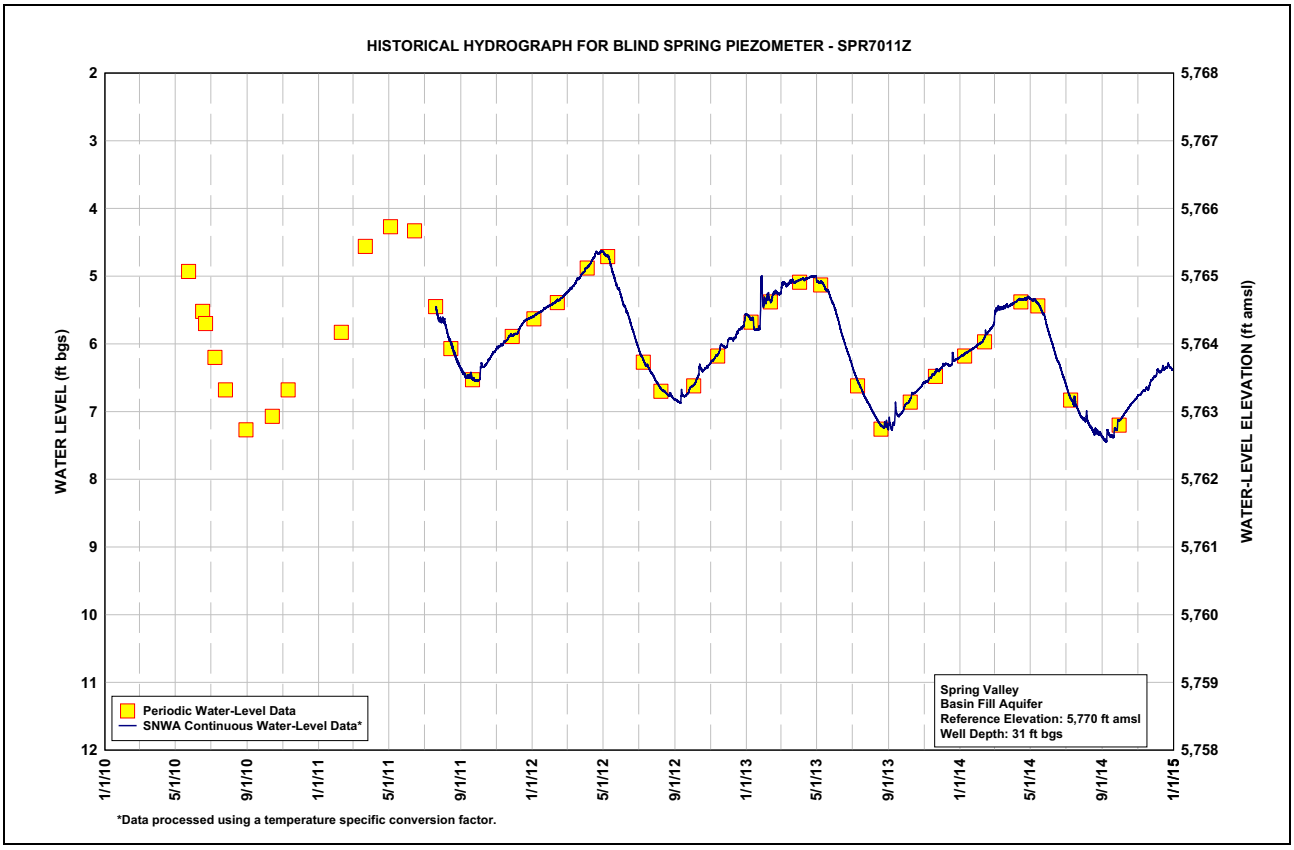
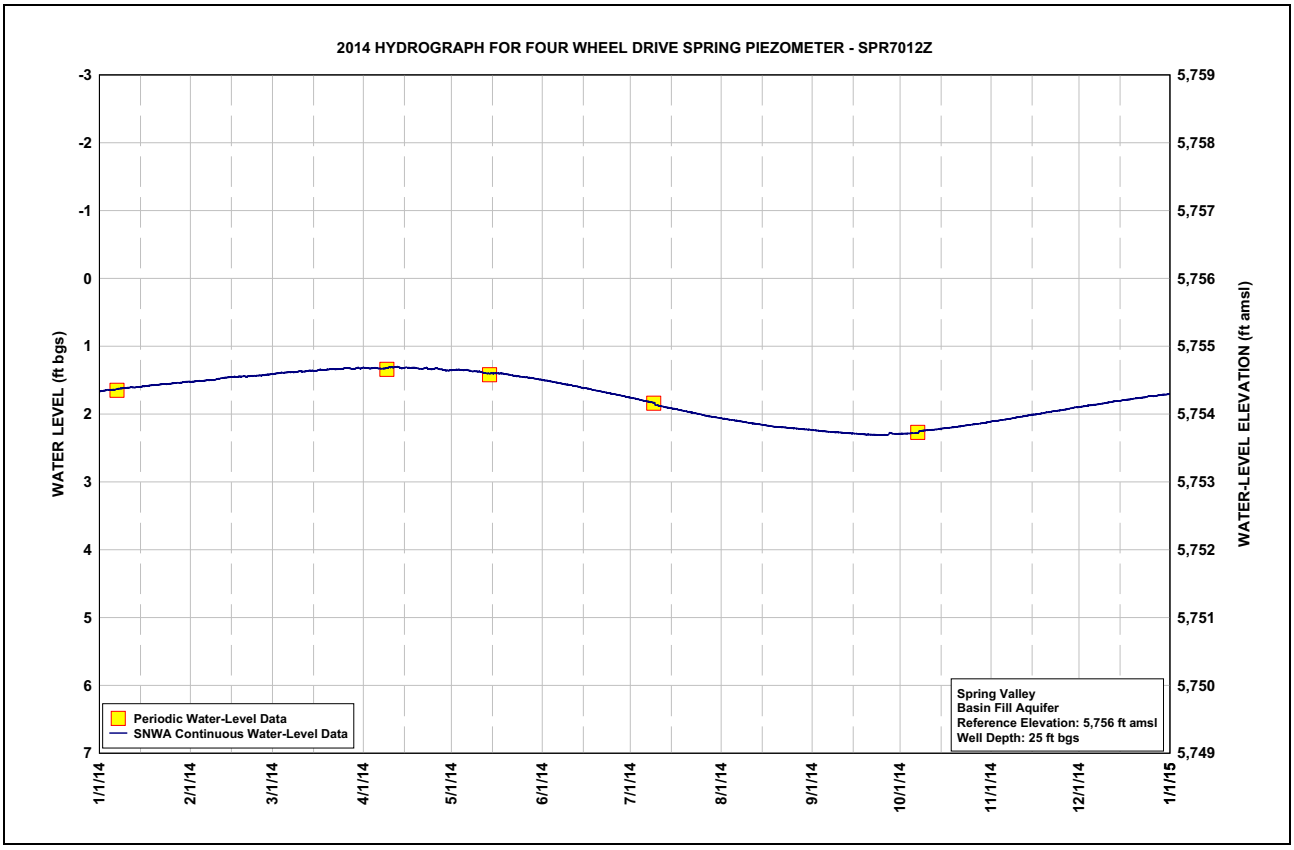

HISTORICAL HYDROGRAPH FOR BLIND SPRING PIEZOMETER - SPR7011Z
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
2
3
4
5
6
7
8
9
10
11
12
5,768
5,767
5,766
5,765
5,764
5,763
5,762
5,761
5,760
5,759
5,758
1/1/10
5/1/10
9/1/10
1/1/11
5/1/11
9/1/11
1/1/12
5/1/12
9/1/12
1/1/13
5/1/13
9/1/13
1/1/14
5/1/14
9/1/14
1/1/15
Periodic Water-Level Data
SNWA Continuous Water-Level Data*
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,770 ft amsl
Well Depth: 31 ft bgs
*Data processed using a temperature specific conversion factor.

Table C-7
Four Wheel Drive Spring Piezometer SPR7012Z, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	1.66	1.52	1.41	1.32	1.35	1.50	1.76	2.06	2.24	2.29	2.10	1.89
2	1.66	1.52	1.40	1.32	1.35	1.51	1.77	2.07	2.24	2.29	2.10	1.89
3	1.65	1.51	1.39	1.33	1.34	1.52	1.78	2.08	2.25	2.29	2.10	1.88
4	1.64	1.51	1.39	1.32	1.35	1.52	1.79	2.09	2.25	2.29	2.09	1.87
5	1.64	1.51	1.39	1.32	1.35	1.53	1.80	2.09	2.26	2.28	2.08	1.87
6	1.64	1.50	1.38	1.33	1.35	1.54	1.81	2.10	2.26	2.28	2.08	1.86
7	1.63	1.50	1.38	1.33	1.36	1.55	1.82	2.11	2.27	2.26	2.07	1.86
8	1.62	1.50	1.38	1.33	1.37	1.56	1.83	2.11	2.27	2.24	2.06	1.85
9	1.61	1.49	1.37	1.32	1.37	1.57	1.87	2.12	2.27	2.24	2.05	1.84
10	1.61	1.48	1.37	1.31	1.37	1.57	1.87	2.13	2.27	2.24	2.04	1.83
11	1.61	1.47	1.37	1.31	1.38	1.58	1.88	2.14	2.28	2.23	2.04	1.82
12	1.61	1.47	1.37	1.31	1.39	1.59	1.89	2.14	2.28	2.23	2.03	1.82
13	1.61	1.46	1.36	1.32	1.40	1.60	1.90	2.15	2.28	2.23	2.02	1.81
14	1.60	1.46	1.36	1.32	1.40	1.61	1.91	2.15	2.29	2.22	2.01	1.81
15	1.59	1.45	1.36	1.31	1.40	1.62	1.92	2.16	2.29	2.21	2.01	1.80
16	1.59	1.45	1.36	1.32	1.40	1.62	1.93	2.17	2.29	2.21	2.00	1.79
17	1.58	1.45	1.35	1.32	1.40	1.63	1.94	2.18	2.30	2.20	2.00	1.79
18	1.58	1.45	1.35	1.32	1.40	1.64	1.95	2.18	2.30	2.20	1.99	1.78
19	1.57	1.44	1.34	1.33	1.41	1.65	1.96	2.19	2.30	2.19	1.98	1.77
20	1.57	1.45	1.34	1.33	1.42	1.66	1.96	2.19	2.30	2.19	1.97	1.77
21	1.57	1.44	1.34	1.33	1.43	1.67	1.97	2.19	2.30	2.18	1.97	1.76
22	1.56	1.43	1.34	1.32	1.44	1.68	1.98	2.20	2.30	2.17	1.96	1.76
23	1.56	1.43	1.34	1.34	1.44	1.69	1.99	2.20	2.31	2.17	1.95	1.75
24	1.56	1.43	1.34	1.34	1.45	1.70	2.00	2.21	2.31	2.16	1.94	1.74
25	1.55	1.43	1.33	1.33	1.45	1.70	2.01	2.21	2.31	2.16	1.94	1.73
26	1.54	1.43	1.32	1.33	1.46	1.71	2.02	2.21	2.31	2.15	1.93	1.73
27	1.54	1.42	1.33	1.34	1.46	1.72	2.03	2.22	2.28	2.14	1.92	1.73
28	1.54	1.41	1.34	1.35	1.47	1.73	2.04	2.22	2.29	2.14	1.91	1.72
29	1.53	---	1.32	1.36	1.48	1.74	2.04	2.23	2.29	2.13	1.90	1.71
30	1.52	---	1.32	1.36	1.48	1.75	2.05	2.23	2.29	2.12	1.90	1.71
31	1.52	---	1.32	---	1.49	---	2.06	2.23	---	2.12	---	1.71
Max	1.66	1.52	1.41	1.36	1.49	1.75	2.06	2.23	2.31	2.29	2.10	1.89
Min	1.52	1.41	1.32	1.31	1.34	1.50	1.76	2.06	2.24	2.12	1.90	1.71

Year 2014 Statistics: **Year Max 2.31; Year Min 1.31**

Note: Water level in ft bgs.


2014 HYDROGRAPH FOR FOUR WHEEL DRIVE SPRING PIEZOMETER - SPR7012Z
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
-3
-2
-1
0
1
2
3
4
5
6
7
5,759
5,758
5,757
5,756
5,755
5,754
5,753
5,752
5,751
5,750
5,749
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
Periodic Water-Level Data
SNWA Continuous Water-Level Data
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,756 ft amsl
Well Depth: 25 ft bgs

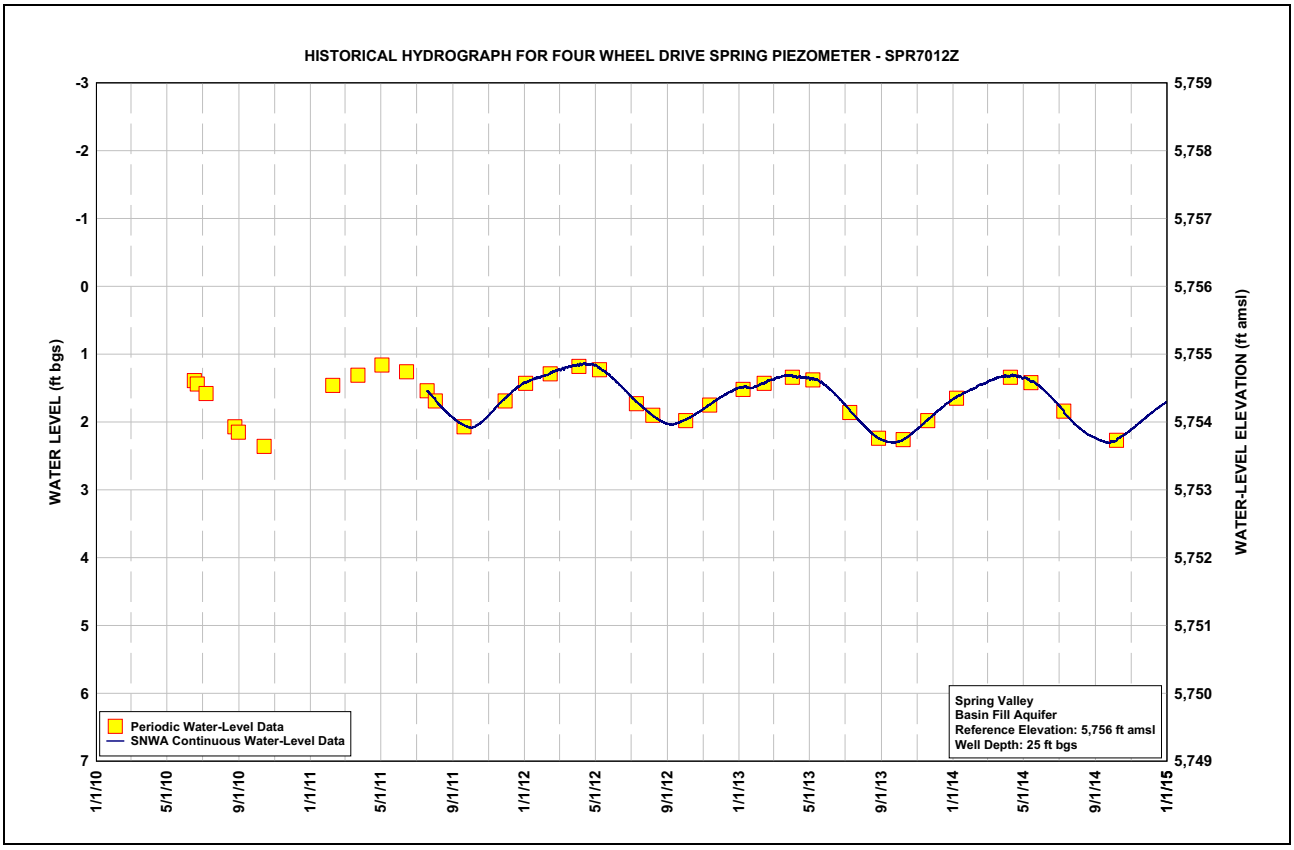
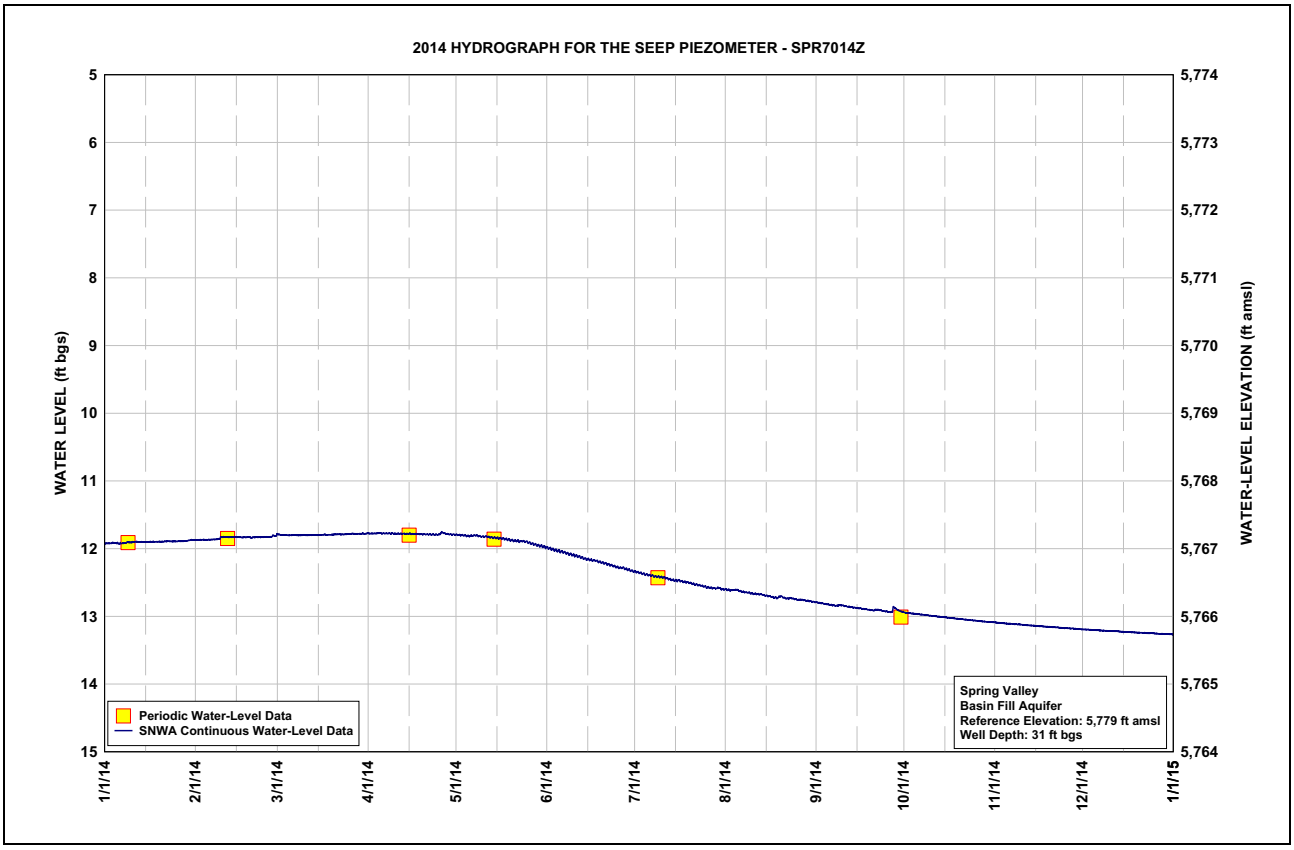

HISTORICAL HYDROGRAPH FOR FOUR WHEEL DRIVE SPRING PIEZOMETER - SPR7012Z
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
-3
-2
-1
0
1
2
3
4
5
6
7
5,759
5,758
5,757
5,756
5,755
5,754
5,753
5,752
5,751
5,750
5,749
1/1/10
5/1/10
9/1/10
1/1/11
5/1/11
9/1/11
1/1/12
5/1/12
9/1/12
1/1/13
5/1/13
9/1/13
1/1/14
5/1/14
9/1/14
1/1/15
Periodic Water-Level Data
SNWA Continuous Water-Level Data
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,756 ft amsl
Well Depth: 25 ft bgs

Table C-8
The Seep Piezometer SPR7014Z, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	11.92	11.87	11.79	11.78	11.79	11.99	12.34	12.60	12.80	12.94	13.09	13.19
2	11.92	11.87	11.80	11.78	11.80	12.00	12.36	12.61	12.80	12.95	13.10	13.19
3	11.92	11.87	11.80	11.78	11.80	12.02	12.37	12.61	12.81	12.96	13.10	13.20
4	11.92	11.87	11.80	11.77	11.81	12.03	12.38	12.61	12.82	12.96	13.10	13.20
5	11.92	11.87	11.80	11.77	11.81	12.04	12.39	12.62	12.83	12.97	13.11	13.20
6	11.92	11.87	11.80	11.77	11.81	12.05	12.40	12.63	12.83	12.97	13.11	13.21
7	11.92	11.86	11.80	11.77	11.80	12.06	12.40	12.64	12.84	12.98	13.12	13.21
8	11.91	11.86	11.80	11.77	11.81	12.08	12.41	12.65	12.84	12.98	13.12	13.21
9	11.91	11.85	11.80	11.78	11.82	12.09	12.42	12.66	12.84	12.99	13.12	13.21
10	11.90	11.83	11.80	11.78	11.82	12.10	12.43	12.67	12.85	12.99	13.12	13.21
11	11.90	11.83	11.80	11.78	11.82	12.11	12.43	12.67	12.85	13.00	13.13	13.22
12	11.90	11.83	11.80	11.78	11.83	12.13	12.45	12.67	12.86	13.00	13.13	13.22
13	11.90	11.83	11.80	11.78	11.84	12.14	12.46	12.68	12.87	13.01	13.13	13.22
14	11.90	11.83	11.80	11.78	11.84	12.15	12.47	12.69	12.87	13.01	13.14	13.23
15	11.90	11.83	11.80	11.78	11.84	12.16	12.47	12.70	12.88	13.02	13.14	13.23
16	11.90	11.83	11.80	11.78	11.85	12.17	12.48	12.71	12.89	13.02	13.15	13.23
17	11.90	11.83	11.80	11.78	11.86	12.17	12.49	12.72	12.89	13.03	13.15	13.23
18	11.90	11.83	11.80	11.79	11.87	12.19	12.49	12.73	12.90	13.03	13.15	13.24
19	11.90	11.83	11.80	11.79	11.87	12.20	12.50	12.71	12.91	13.04	13.15	13.24
20	11.90	11.83	11.79	11.79	11.88	12.22	12.52	12.71	12.91	13.04	13.16	13.24
21	11.89	11.83	11.79	11.79	11.88	12.23	12.53	12.73	12.90	13.05	13.16	13.24
22	11.89	11.83	11.79	11.79	11.89	12.24	12.54	12.73	12.91	13.05	13.16	13.24
23	11.89	11.83	11.79	11.79	11.89	12.25	12.55	12.73	12.92	13.05	13.17	13.25
24	11.89	11.83	11.79	11.79	11.89	12.27	12.56	12.74	12.93	13.06	13.17	13.25
25	11.89	11.83	11.78	11.79	11.91	12.28	12.57	12.76	12.93	13.06	13.18	13.25
26	11.89	11.83	11.78	11.76	11.92	12.28	12.58	12.75	12.93	13.07	13.18	13.25
27	11.89	11.81	11.78	11.78	11.93	12.29	12.58	12.76	12.87	13.07	13.18	13.26
28	11.89	11.81	11.78	11.79	11.95	12.31	12.58	12.77	12.89	13.08	13.18	13.26
29	11.88	---	11.78	11.79	11.96	12.32	12.58	12.77	12.92	13.08	13.18	13.26
30	11.87	---	11.78	11.79	11.97	12.33	12.59	12.78	12.93	13.08	13.19	13.26
31	11.87	---	11.78	---	11.98	---	12.60	12.79	---	13.09	---	13.27
Max	11.92	11.87	11.80	11.79	11.98	12.33	12.60	12.79	12.93	13.09	13.19	13.27
Min	11.87	11.81	11.78	11.76	11.79	11.99	12.34	12.60	12.80	12.94	13.09	13.19

Year 2014 Statistics: **Year Max 13.27; Year Min 11.76**

Note: Water level in ft bgs.


2014 HYDROGRAPH FOR THE SEEP PIEZOMETER - SPR7014Z
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
5
6
7
8
9
10
11
12
13
14
15
5,774
5,773
5,772
5,771
5,770
5,769
5,768
5,767
5,766
5,765
5,764
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
Periodic Water-Level Data
SNWA Continuous Water-Level Data
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,779 ft amsl
Well Depth: 31 ft bgs

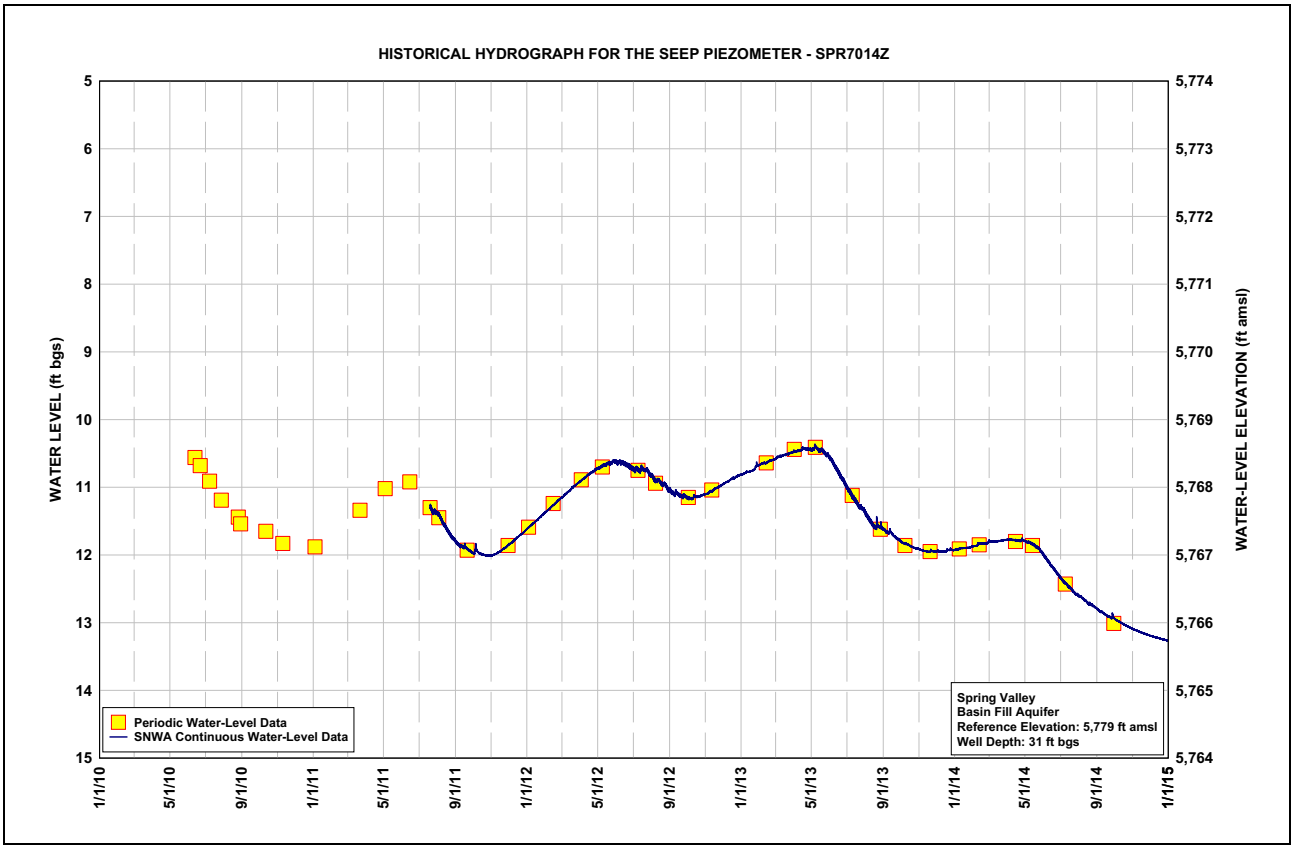
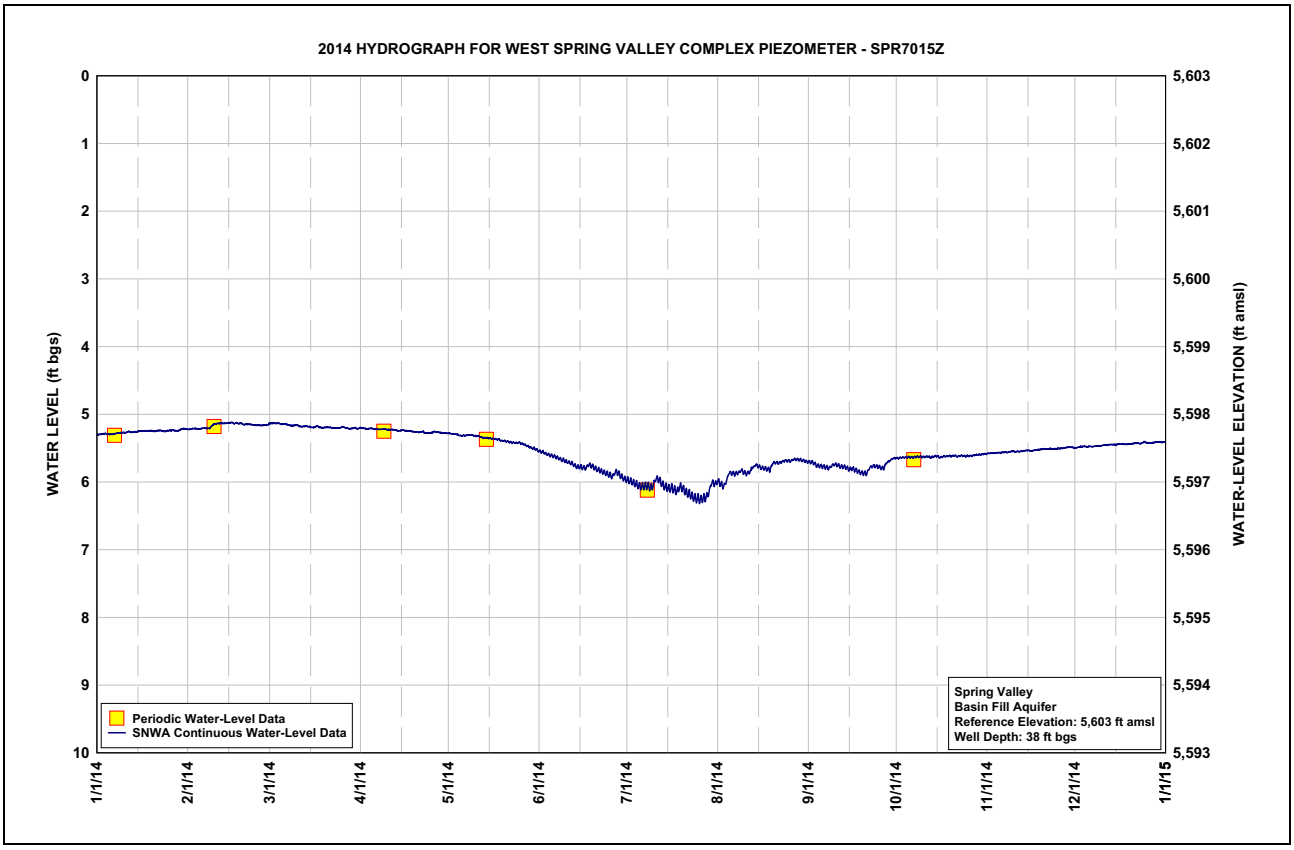

HISTORICAL HYDROGRAPH FOR THE SEEP PIEZOMETER - SPR7014Z
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
5
6
7
8
9
10
11
12
13
14
15
5,774
5,773
5,772
5,771
5,770
5,769
5,768
5,767
5,766
5,765
5,764
1/1/10
5/1/10
9/1/10
1/1/11
5/1/11
9/1/11
1/1/12
5/1/12
9/1/12
1/1/13
5/1/13
9/1/13
1/1/14
5/1/14
9/1/14
1/1/15
Periodic Water-Level Data
SNWA Continuous Water-Level Data
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,779 ft amsl
Well Depth: 31 ft bgs

Table C-9
West Spring Valley Complex Piezometer SPR7015Z, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	5.30	5.22	5.13	5.20	5.28	5.54	5.98	5.99	5.70	5.65	5.58	5.49
2	5.29	5.21	5.13	5.21	5.29	5.56	5.99	6.04	5.71	5.64	5.57	5.48
3	5.29	5.21	5.13	5.21	5.29	5.59	6.02	6.03	5.73	5.64	5.57	5.48
4	5.29	5.22	5.14	5.21	5.31	5.60	6.04	5.91	5.76	5.63	5.57	5.47
5	5.29	5.21	5.15	5.21	5.31	5.61	6.06	5.86	5.77	5.63	5.57	5.48
6	5.29	5.21	5.15	5.22	5.31	5.62	6.07	5.87	5.77	5.63	5.56	5.48
7	5.28	5.21	5.16	5.22	5.31	5.64	6.06	5.87	5.78	5.63	5.56	5.47
8	5.28	5.21	5.17	5.22	5.30	5.66	6.07	5.85	5.78	5.63	5.56	5.47
9	5.27	5.16	5.16	5.22	5.31	5.68	6.08	5.83	5.75	5.63	5.55	5.47
10	5.27	5.14	5.16	5.23	5.32	5.70	5.99	5.87	5.74	5.63	5.55	5.46
11	5.26	5.13	5.18	5.23	5.32	5.71	5.95	5.87	5.76	5.62	5.55	5.45
12	5.26	5.13	5.18	5.23	5.34	5.73	5.98	5.82	5.77	5.63	5.55	5.45
13	5.26	5.13	5.18	5.24	5.35	5.76	6.04	5.77	5.78	5.63	5.54	5.45
14	5.26	5.13	5.18	5.24	5.35	5.78	6.08	5.75	5.79	5.62	5.53	5.45
15	5.25	5.12	5.19	5.23	5.36	5.78	6.10	5.77	5.81	5.62	5.53	5.45
16	5.25	5.13	5.19	5.24	5.36	5.79	6.09	5.79	5.81	5.63	5.54	5.44
17	5.24	5.13	5.18	5.25	5.37	5.77	6.12	5.80	5.82	5.62	5.53	5.44
18	5.24	5.13	5.19	5.25	5.37	5.75	6.12	5.81	5.85	5.62	5.52	5.44
19	5.24	5.14	5.20	5.26	5.39	5.77	6.07	5.76	5.86	5.61	5.52	5.44
20	5.25	5.15	5.19	5.26	5.39	5.80	6.10	5.72	5.87	5.61	5.51	5.43
21	5.24	5.15	5.19	5.26	5.40	5.82	6.15	5.71	5.82	5.62	5.51	5.43
22	5.24	5.15	5.20	5.26	5.41	5.84	6.18	5.71	5.77	5.62	5.51	5.43
23	5.25	5.16	5.20	5.28	5.42	5.86	6.21	5.69	5.77	5.61	5.51	5.43
24	5.25	5.16	5.20	5.28	5.42	5.88	6.24	5.68	5.77	5.62	5.51	5.42
25	5.24	5.16	5.19	5.27	5.42	5.90	6.25	5.69	5.78	5.62	5.51	5.42
26	5.24	5.16	5.19	5.26	5.44	5.90	6.26	5.68	5.79	5.62	5.50	5.42
27	5.24	5.16	5.20	5.26	5.46	5.85	6.24	5.66	5.73	5.61	5.50	5.42
28	5.24	5.15	5.21	5.27	5.48	5.88	6.19	5.67	5.70	5.60	5.49	5.41
29	5.23	---	5.20	5.28	5.50	5.92	6.07	5.67	5.66	5.60	5.48	5.41
30	5.22	---	5.21	5.28	5.51	5.96	6.01	5.68	5.65	5.59	5.49	5.41
31	5.22	---	5.21	---	5.53	---	6.02	5.70	---	5.59	---	5.41
Max	5.30	5.22	5.21	5.28	5.53	5.96	6.26	6.04	5.87	5.65	5.58	5.49
Min	5.22	5.12	5.13	5.20	5.28	5.54	5.95	5.66	5.65	5.59	5.48	5.41

Year 2014 Statistics: **Year Max 6.26; Year Min 5.12**

Note: Water level in ft bgs.


2014 HYDROGRAPH FOR WEST SPRING VALLEY COMPLEX PIEZOMETER - SPR7015Z
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
0
1
2
3
4
5
6
7
8
9
10
5,603
5,602
5,601
5,600
5,599
5,598
5,597
5,596
5,595
5,594
5,593
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
Periodic Water-Level Data
SNWA Continuous Water-Level Data
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,603 ft amsl
Well Depth: 38 ft bgs

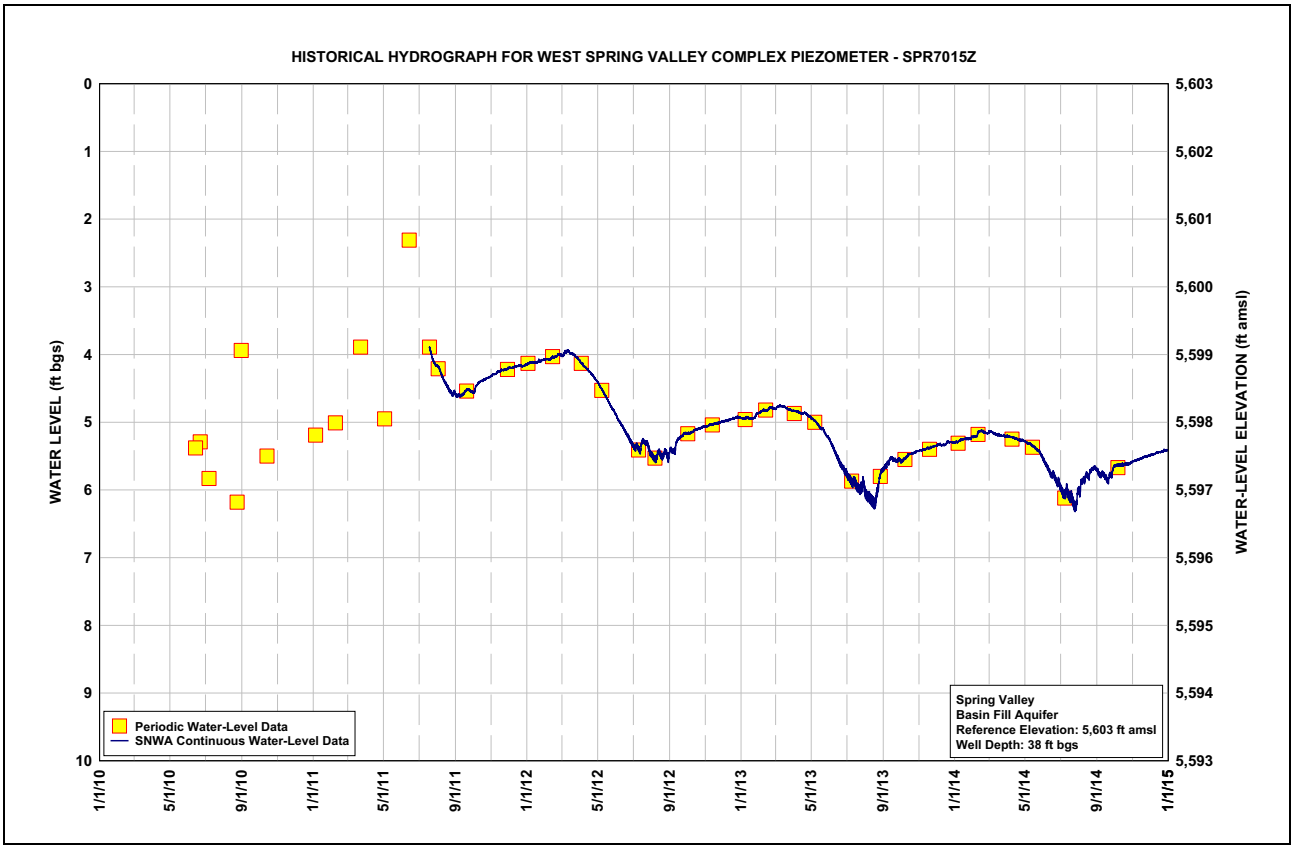

HISTORICAL HYDROGRAPH FOR WEST SPRING VALLEY COMPLEX PIEZOMETER - SPR7015Z
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
0
1
2
3
4
5
6
7
8
9
10
5,603
5,602
5,601
5,600
5,599
5,598
5,597
5,596
5,595
5,594
5,593
1/1/10
5/1/10
9/1/10
1/1/11
5/1/11
9/1/11
1/1/12
5/1/12
9/1/12
1/1/13
5/1/13
9/1/13
1/1/14
5/1/14
9/1/14
1/1/15
Periodic Water-Level Data
SNWA Continuous Water-Level Data
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,603 ft amsl
Well Depth: 38 ft bgs

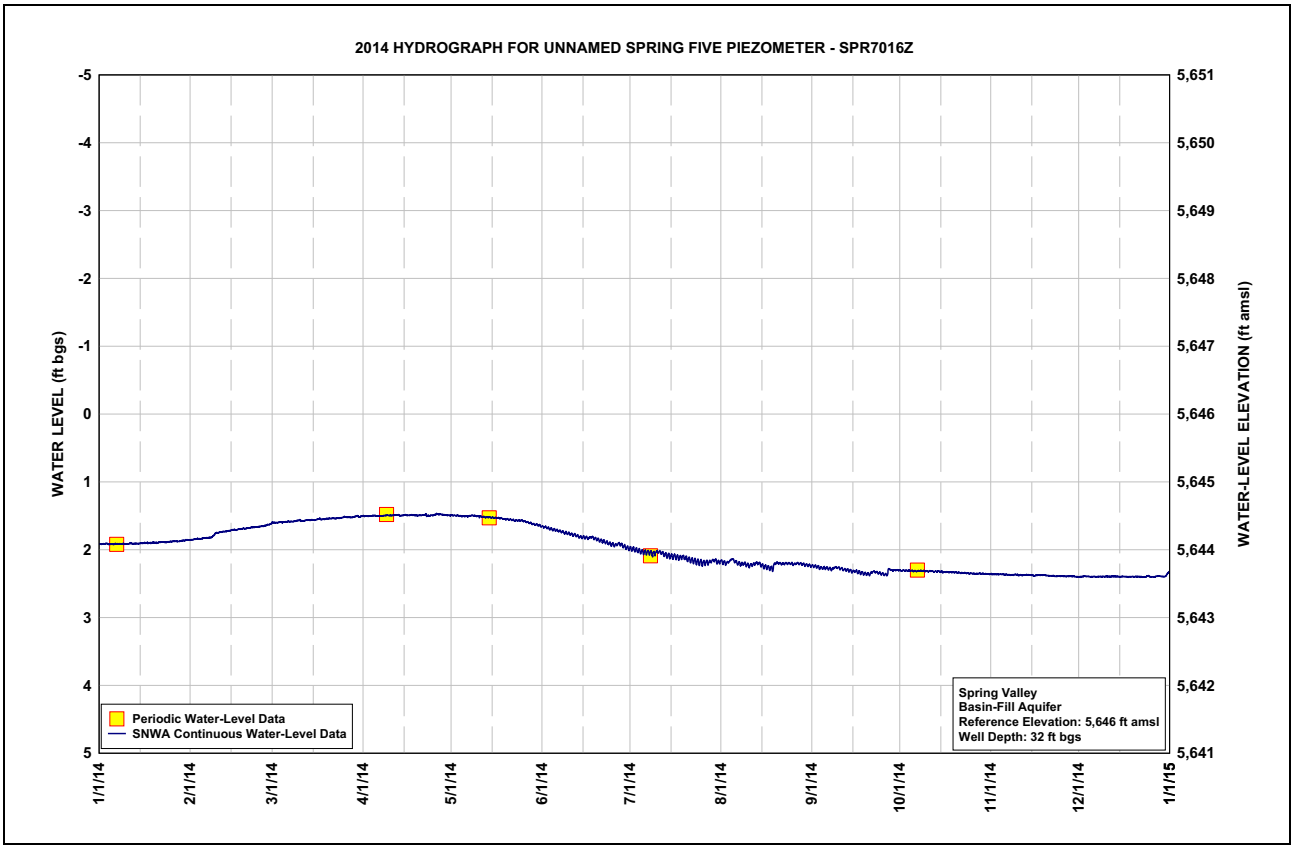
Table C-10
Unnamed Spring Five Piezometer SPR7016Z, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	1.92	1.85	1.60	1.50	1.49	1.67	1.99	2.18	2.24	2.31	2.36	2.40
2	1.91	1.85	1.60	1.50	1.50	1.67	2.00	2.19	2.25	2.30	2.36	2.39
3	1.91	1.84	1.59	1.50	1.50	1.69	2.01	2.18	2.27	2.31	2.36	2.39
4	1.92	1.84	1.59	1.50	1.51	1.70	2.02	2.14	2.27	2.31	2.36	2.39
5	1.92	1.83	1.59	1.50	1.51	1.71	2.03	2.16	2.27	2.31	2.36	2.40
6	1.91	1.82	1.58	1.50	1.50	1.72	2.03	2.20	2.28	2.31	2.36	2.40
7	1.91	1.82	1.58	1.50	1.50	1.73	2.04	2.20	2.28	2.31	2.37	2.40
8	1.91	1.81	1.58	1.50	1.49	1.75	2.05	2.21	2.27	2.31	2.37	2.39
9	1.91	1.77	1.57	1.49	1.50	1.76	2.04	2.22	2.26	2.31	2.37	2.39
10	1.91	1.75	1.57	1.49	1.50	1.77	2.03	2.23	2.27	2.32	2.38	2.39
11	1.91	1.74	1.57	1.49	1.51	1.78	2.04	2.22	2.29	2.32	2.37	2.39
12	1.91	1.73	1.57	1.49	1.52	1.79	2.06	2.20	2.29	2.32	2.37	2.39
13	1.91	1.73	1.56	1.49	1.52	1.81	2.09	2.20	2.30	2.32	2.37	2.39
14	1.91	1.72	1.56	1.49	1.52	1.81	2.09	2.22	2.32	2.32	2.37	2.39
15	1.90	1.71	1.56	1.49	1.53	1.82	2.10	2.24	2.32	2.33	2.38	2.40
16	1.90	1.71	1.55	1.49	1.53	1.83	2.10	2.26	2.33	2.33	2.38	2.40
17	1.90	1.70	1.55	1.49	1.53	1.82	2.11	2.27	2.34	2.33	2.37	2.40
18	1.90	1.70	1.55	1.49	1.54	1.82	2.10	2.27	2.35	2.33	2.37	2.40
19	1.89	1.69	1.54	1.49	1.55	1.84	2.11	2.20	2.35	2.33	2.37	2.40
20	1.90	1.68	1.54	1.49	1.55	1.86	2.14	2.19	2.36	2.33	2.38	2.40
21	1.89	1.67	1.54	1.49	1.56	1.86	2.15	2.21	2.33	2.34	2.38	2.40
22	1.88	1.67	1.54	1.49	1.57	1.89	2.16	2.20	2.33	2.34	2.39	2.40
23	1.89	1.67	1.53	1.50	1.57	1.90	2.17	2.20	2.34	2.35	2.39	2.40
24	1.88	1.66	1.53	1.49	1.57	1.92	2.18	2.20	2.35	2.35	2.39	2.39
25	1.88	1.65	1.52	1.49	1.58	1.93	2.19	2.21	2.36	2.35	2.39	2.40
26	1.88	1.65	1.52	1.48	1.59	1.92	2.18	2.21	2.36	2.35	2.39	2.40
27	1.88	1.63	1.52	1.48	1.60	1.92	2.18	2.20	2.29	2.35	2.39	2.39
28	1.88	1.62	1.52	1.48	1.62	1.95	2.17	2.21	2.30	2.35	2.39	2.39
29	1.87	---	1.51	1.49	1.63	1.96	2.15	2.22	2.30	2.35	2.39	2.39
30	1.86	---	1.51	1.49	1.64	1.98	2.18	2.23	2.30	2.35	2.40	2.39
31	1.86	---	1.51	---	1.65	---	2.17	2.24	---	2.36	---	2.34
Max	1.92	1.85	1.60	1.50	1.65	1.98	2.19	2.27	2.36	2.36	2.40	2.40
Min	1.86	1.62	1.51	1.48	1.49	1.67	1.99	2.14	2.24	2.30	2.36	2.34

Year 2014 Statistics: **Year Max 2.40; Year Min 1.48**

Note: Water level in ft bgs.

[a]Data unavailable due to equipment malfunction.


2014 HYDROGRAPH FOR UNNAMED SPRING FIVE PIEZOMETER - SPR7016Z
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
-5
-4
-3
-2
-1
0
1
2
3
4
5
5,651
5,650
5,649
5,648
5,647
5,646
5,645
5,644
5,643
5,642
5,641
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
Periodic Water-Level Data
SNWA Continuous Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,646 ft amsl
Well Depth: 32 ft bgs

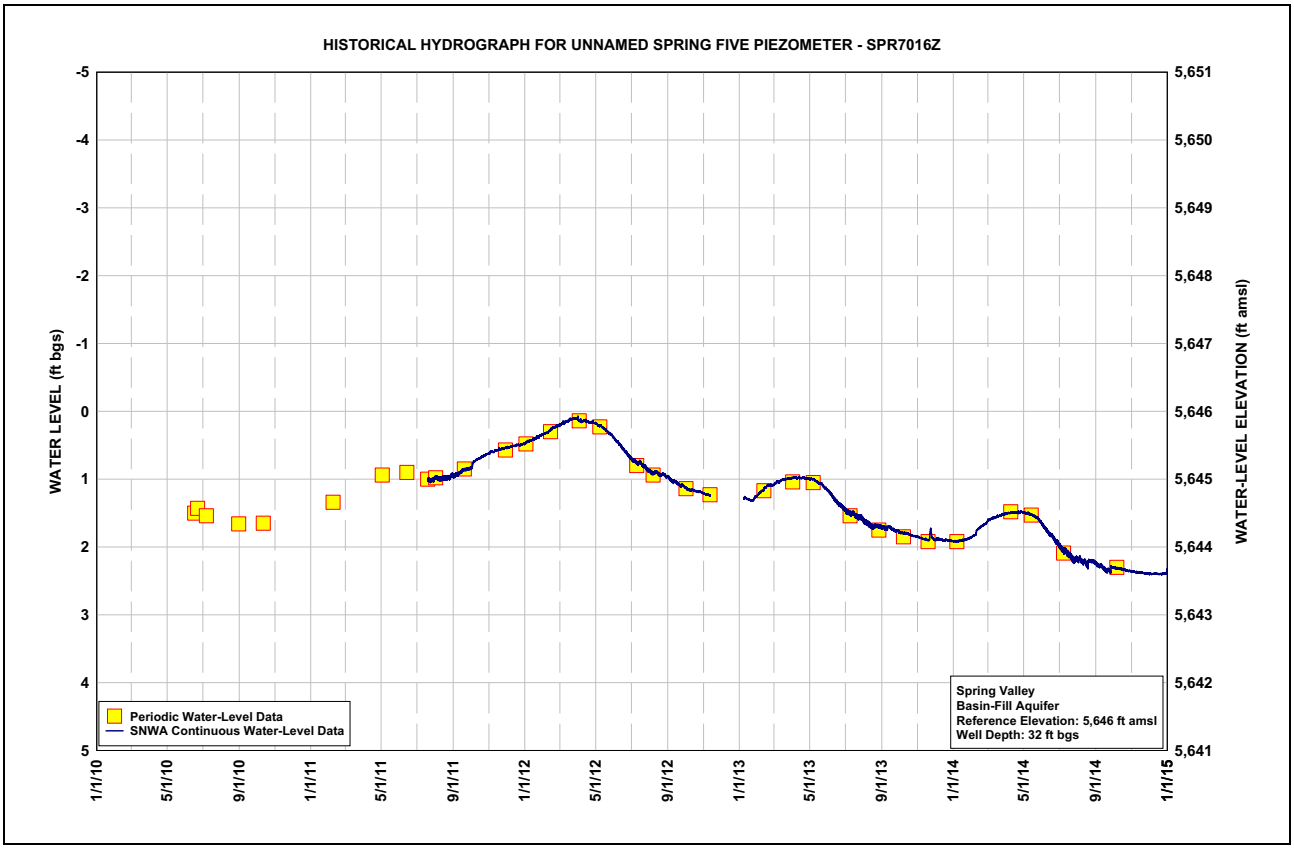
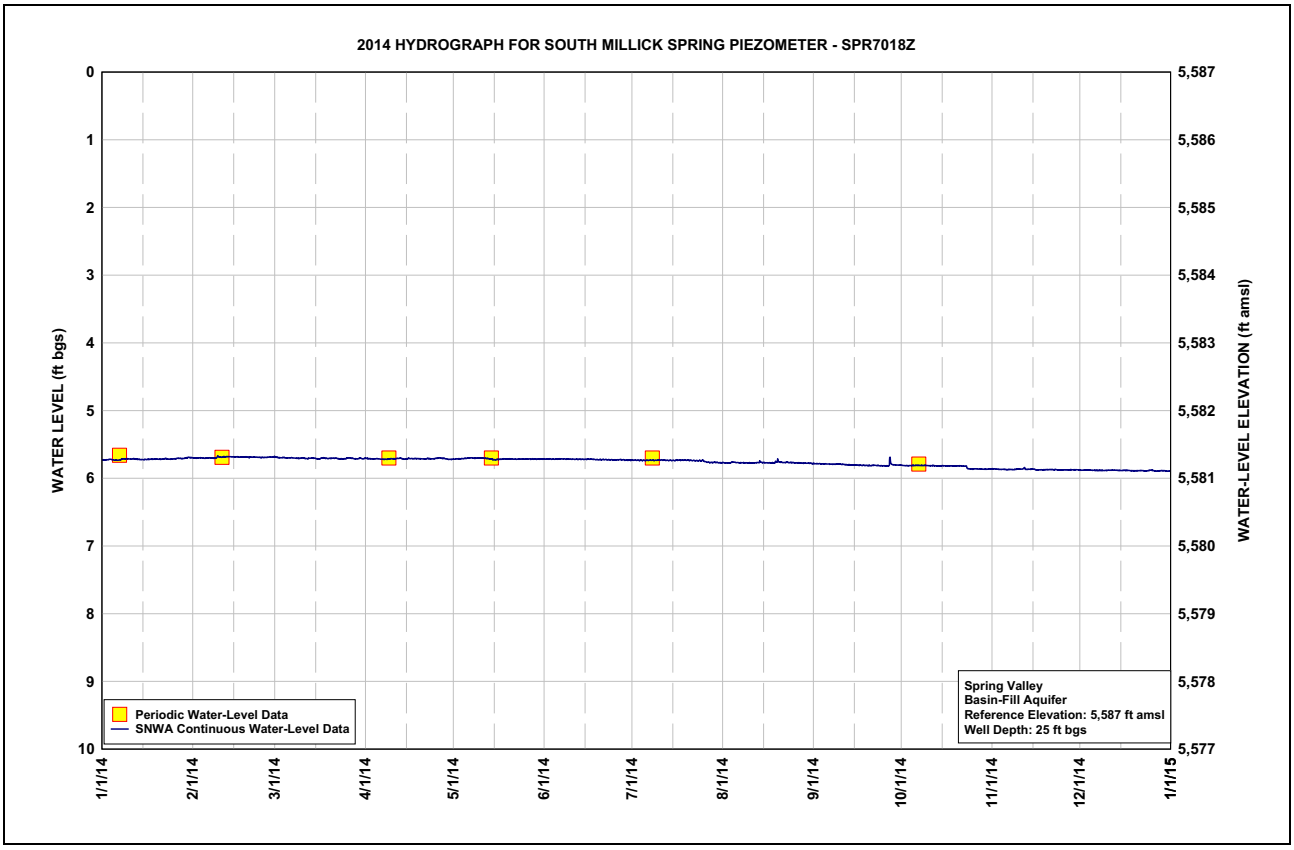

HISTORICAL HYDROGRAPH FOR UNNAMED SPRING FIVE PIEZOMETER - SPR7016Z
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
-5
-4
-3
-2
-1
0
1
2
3
4
5
5,651
5,650
5,649
5,648
5,647
5,646
5,645
5,644
5,643
5,642
5,641
1/1/10
5/1/10
9/1/10
1/1/11
5/1/11
9/1/11
1/1/12
5/1/12
9/1/12
1/1/13
5/1/13
9/1/13
1/1/14
5/1/14
9/1/14
1/1/15
Periodic Water-Level Data
SNWA Continuous Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,646 ft amsl
Well Depth: 32 ft bgs

Table C-11
South Millick Spring Piezometer SPR7018Z, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	5.73	5.70	5.69	5.71	5.72	5.72	5.73	5.77	5.78	5.81	5.86	5.88
2	5.73	5.70	5.69	5.71	5.71	5.72	5.73	5.77	5.78	5.81	5.86	5.88
3	5.72	5.70	5.70	5.71	5.71	5.72	5.73	5.77	5.79	5.81	5.87	5.88
4	5.72	5.70	5.70	5.71	5.71	5.72	5.73	5.76	5.79	5.81	5.87	5.88
5	5.72	5.70	5.70	5.71	5.70	5.72	5.73	5.77	5.79	5.81	5.87	5.88
6	5.72	5.70	5.70	5.72	5.70	5.71	5.73	5.77	5.79	5.81	5.87	5.88
7	5.71	5.70	5.70	5.72	5.70	5.71	5.73	5.77	5.79	5.81	5.87	5.89
8	5.71	5.70	5.70	5.72	5.70	5.72	5.73	5.77	5.79	5.81	5.87	5.89
9	5.71	5.68	5.70	5.71	5.70	5.72	5.73	5.77	5.79	5.81	5.86	5.89
10	5.72	5.69	5.70	5.71	5.70	5.72	5.73	5.77	5.79	5.81	5.86	5.88
11	5.72	5.68	5.71	5.71	5.70	5.72	5.73	5.77	5.80	5.81	5.86	5.88
12	5.72	5.68	5.71	5.71	5.71	5.72	5.73	5.77	5.80	5.82	5.87	5.88
13	5.72	5.68	5.70	5.71	5.71	5.72	5.73	5.77	5.80	5.82	5.87	5.88
14	5.72	5.68	5.70	5.72	5.72	5.72	5.74	5.77	5.80	5.82	5.87	5.89
15	5.72	5.68	5.71	5.71	5.73	5.72	5.74	5.77	5.80	5.82	5.87	5.89
16	5.72	5.68	5.71	5.71	5.72	5.72	5.73	5.77	5.81	5.82	5.88	5.88
17	5.72	5.69	5.70	5.71	5.72	5.72	5.73	5.77	5.81	5.82	5.87	5.88
18	5.72	5.68	5.70	5.71	5.71	5.72	5.73	5.77	5.81	5.82	5.87	5.89
19	5.72	5.68	5.71	5.71	5.72	5.73	5.73	5.76	5.81	5.82	5.87	5.89
20	5.72	5.69	5.70	5.71	5.71	5.72	5.73	5.76	5.81	5.82	5.87	5.89
21	5.72	5.69	5.70	5.71	5.72	5.72	5.74	5.77	5.81	5.82	5.87	5.89
22	5.71	5.69	5.71	5.71	5.72	5.73	5.74	5.77	5.81	5.82	5.87	5.89
23	5.72	5.69	5.71	5.71	5.72	5.73	5.74	5.77	5.81	5.85	5.88	5.89
24	5.72	5.69	5.71	5.71	5.71	5.73	5.74	5.77	5.82	5.86	5.88	5.89
25	5.71	5.69	5.71	5.70	5.72	5.73	5.74	5.77	5.82	5.86	5.88	5.88
26	5.71	5.69	5.70	5.70	5.71	5.73	5.76	5.77	5.82	5.86	5.88	5.89
27	5.71	5.69	5.70	5.71	5.71	5.73	5.77	5.77	5.78	5.86	5.88	5.89
28	5.71	5.69	5.71	5.71	5.72	5.73	5.77	5.78	5.80	5.86	5.87	5.89
29	5.70	---	5.71	5.72	5.72	5.73	5.77	5.78	5.80	5.87	5.87	5.89
30	5.69	---	5.71	5.72	5.72	5.73	5.77	5.78	5.80	5.87	5.88	5.89
31	5.69	---	5.71	---	5.72	---	5.77	5.78	---	5.86	---	5.89
Max	5.73	5.70	5.71	5.72	5.73	5.73	5.77	5.78	5.82	5.87	5.88	5.89
Min	5.69	5.68	5.69	5.70	5.70	5.71	5.73	5.76	5.78	5.81	5.86	5.88

Year 2014 Statistics: **Year Max 5.89; Year Min 5.68**

Note: Water level in ft bgs.


2014 HYDROGRAPH FOR SOUTH MILLICK SPRING PIEZOMETER - SPR7018Z
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
0
1
2
3
4
5
6
7
8
9
10
5,587
5,586
5,585
5,584
5,583
5,582
5,581
5,580
5,579
5,578
5,577
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
Periodic Water-Level Data
SNWA Continuous Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,587 ft amsl
Well Depth: 25 ft bgs

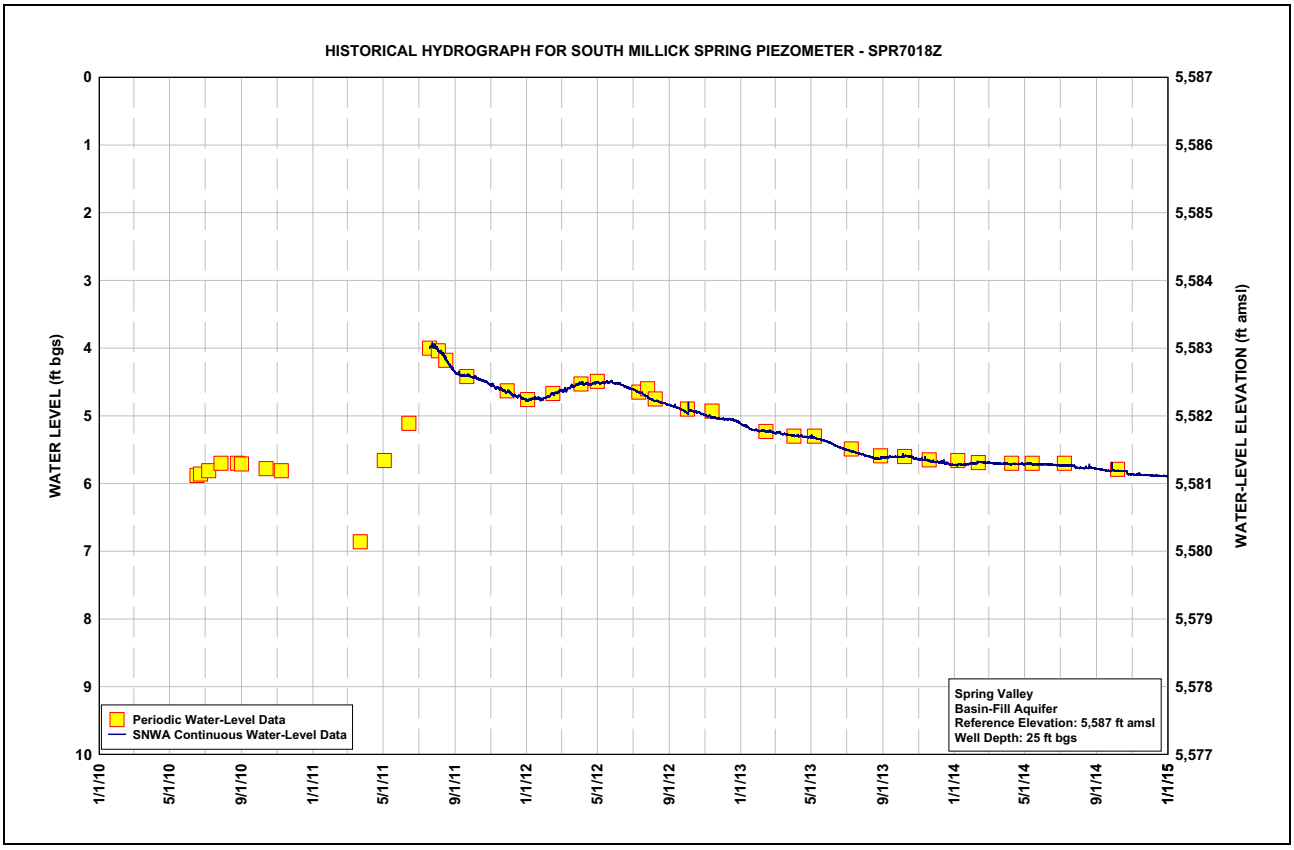
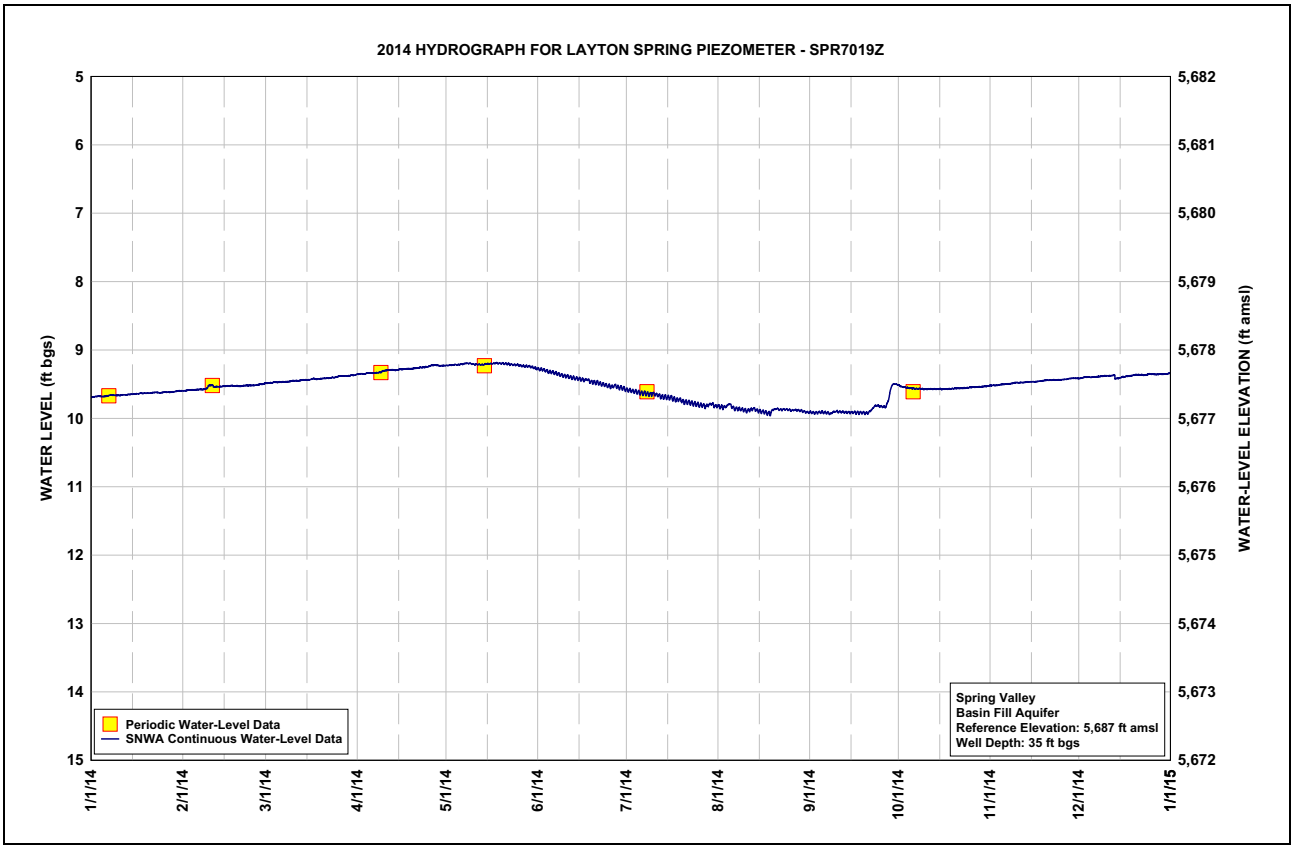

HISTORICAL HYDROGRAPH FOR SOUTH MILLICK SPRING PIEZOMETER - SPR7018Z
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
0
1
2
3
4
5
6
7
8
9
10
5,587
5,586
5,585
5,584
5,583
5,582
5,581
5,580
5,579
5,578
5,577
1/1/10
5/1/10
9/1/10
1/1/11
5/1/11
9/1/11
1/1/12
5/1/12
9/1/12
1/1/13
5/1/13
9/1/13
1/1/14
5/1/14
9/1/14
1/1/15
Periodic Water-Level Data
SNWA Continuous Water-Level Data
Spring Valley
Basin-Fill Aquifer
Reference Elevation: 5,587 ft amsl
Well Depth: 25 ft bgs

Table C-12
Layton Spring Piezometer SPR7019Z, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	9.69	9.60	9.49	9.35	9.23	9.28	9.59	9.83	9.91	9.52	9.52	9.42
2	9.68	9.59	9.48	9.35	9.22	9.29	9.60	9.84	9.92	9.54	9.52	9.40
3	9.68	9.58	9.48	9.35	9.22	9.30	9.61	9.83	9.91	9.55	9.52	9.40
4	9.68	9.58	9.47	9.34	9.22	9.32	9.61	9.80	9.91	9.56	9.51	9.39
5	9.68	9.58	9.47	9.34	9.21	9.32	9.63	9.82	9.91	9.56	9.50	9.40
6	9.67	9.58	9.47	9.34	9.21	9.33	9.63	9.86	9.91	9.56	9.50	9.39
7	9.66	9.58	9.46	9.33	9.20	9.35	9.63	9.86	9.93	9.57	9.49	9.39
8	9.66	9.57	9.46	9.33	9.19	9.36	9.64	9.87	9.92	9.56	9.49	9.39
9	9.66	9.54	9.46	9.31	9.20	9.37	9.63	9.88	9.90	9.57	9.48	9.38
10	9.66	9.52	9.45	9.30	9.21	9.38	9.65	9.89	9.90	9.57	9.48	9.38
11	9.66	9.54	9.45	9.30	9.21	9.40	9.66	9.88	9.91	9.57	9.48	9.38
12	9.66	9.54	9.45	9.29	9.21	9.40	9.68	9.86	9.91	9.57	9.47	9.37
13	9.65	9.54	9.44	9.29	9.21	9.42	9.69	9.86	9.91	9.57	9.47	9.42
14	9.65	9.53	9.44	9.29	9.21	9.42	9.69	9.89	9.91	9.57	9.46	9.41
15	9.64	9.53	9.44	9.28	9.20	9.43	9.70	9.90	9.91	9.57	9.46	9.40
16	9.64	9.52	9.43	9.28	9.20	9.44	9.71	9.91	9.91	9.57	9.46	9.39
17	9.63	9.52	9.42	9.28	9.20	9.43	9.72	9.92	9.91	9.57	9.46	9.38
18	9.63	9.53	9.42	9.28	9.19	9.45	9.72	9.92	9.92	9.57	9.45	9.38
19	9.63	9.53	9.42	9.27	9.20	9.47	9.74	9.88	9.92	9.57	9.45	9.37
20	9.63	9.53	9.42	9.27	9.20	9.48	9.76	9.86	9.92	9.56	9.44	9.36
21	9.63	9.52	9.41	9.26	9.20	9.48	9.76	9.87	9.89	9.56	9.44	9.36
22	9.62	9.52	9.41	9.26	9.21	9.50	9.77	9.87	9.85	9.56	9.44	9.37
23	9.62	9.52	9.40	9.25	9.21	9.51	9.78	9.87	9.81	9.56	9.44	9.36
24	9.63	9.52	9.40	9.25	9.22	9.52	9.79	9.87	9.82	9.55	9.43	9.36
25	9.62	9.51	9.39	9.24	9.22	9.54	9.81	9.88	9.83	9.55	9.43	9.35
26	9.62	9.51	9.38	9.22	9.24	9.53	9.81	9.88	9.83	9.54	9.43	9.36
27	9.62	9.50	9.38	9.22	9.24	9.52	9.82	9.88	9.75	9.54	9.42	9.36
28	9.61	9.49	9.38	9.23	9.24	9.55	9.81	9.89	9.56	9.54	9.42	9.35
29	9.61	---	9.37	9.23	9.25	9.56	9.79	9.90	9.50	9.53	9.41	9.35
30	9.60	---	9.37	9.23	9.26	9.58	9.81	9.91	9.50	9.53	9.42	9.35
31	9.60	---	9.37	---	9.27	---	9.82	9.91	---	9.52	---	9.34
Max	9.69	9.60	9.49	9.35	9.27	9.58	9.82	9.92	9.93	9.57	9.52	9.42
Min	9.60	9.49	9.37	9.22	9.19	9.28	9.59	9.80	9.50	9.52	9.41	9.34

Year 2014 Statistics: **Year Max 9.93; Year Min 9.19**

Note: Water level in ft bgs.


2014 HYDROGRAPH FOR LAYTON SPRING PIEZOMETER - SPR7019Z
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
5
6
7
8
9
10
11
12
13
14
15
5,682
5,681
5,680
5,679
5,678
5,677
5,676
5,675
5,674
5,673
5,672
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
Periodic Water-Level Data
SNWA Continuous Water-Level Data
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,687 ft amsl
Well Depth: 35 ft bgs

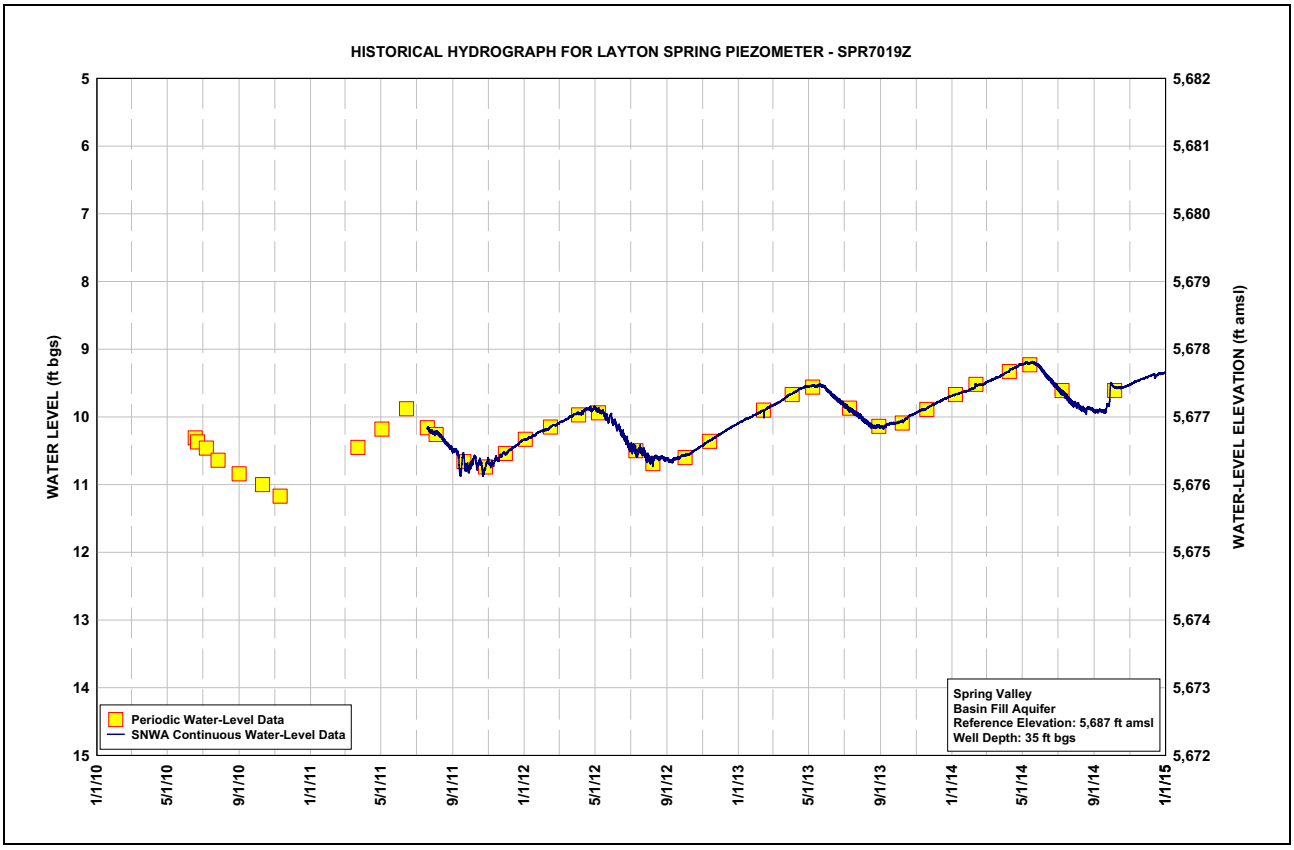
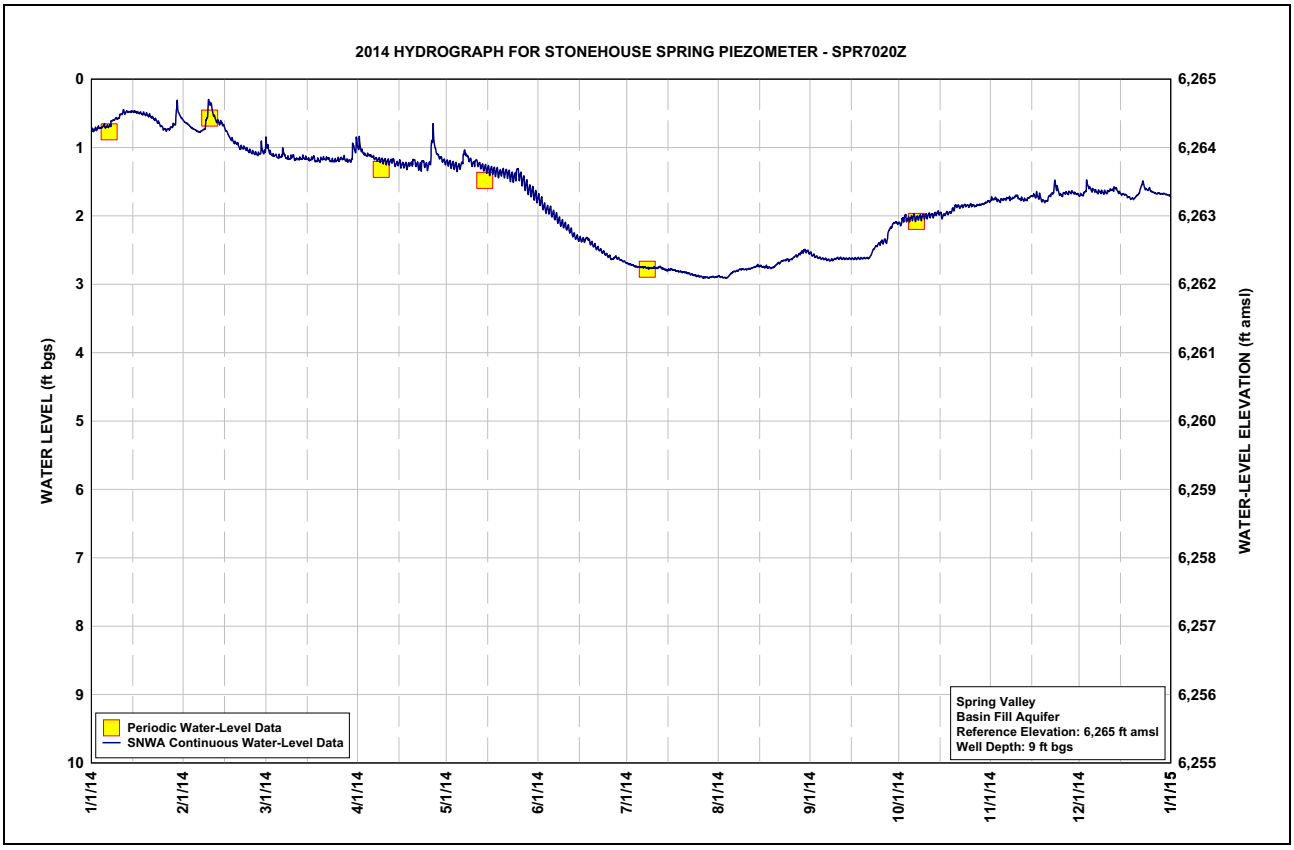

HISTORICAL HYDROGRAPH FOR LAYTON SPRING PIEZOMETER - SPR7019Z
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
5
6
7
8
9
10
11
12
13
14
15
5,682
5,681
5,680
5,679
5,678
5,677
5,676
5,675
5,674
5,673
5,672
1/1/10
5/1/10
9/1/10
1/1/11
5/1/11
9/1/11
1/1/12
5/1/12
9/1/12
1/1/13
5/1/13
9/1/13
1/1/14
5/1/14
9/1/14
1/1/15
Periodic Water-Level Data
SNWA Continuous Water-Level Data
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,687 ft amsl
Well Depth: 35 ft bgs

Table C-13
Stonehouse Spring Piezometer SPR7020Z, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.76	0.62	0.98	0.99	1.22	1.77	2.70	2.89	2.56	2.12	1.76	1.70
2	0.74	0.65	1.09	1.05	1.24	1.83	2.71	2.90	2.58	2.04	1.75	1.69
3	0.72	0.69	1.12	1.11	1.25	1.90	2.73	2.91	2.60	2.03	1.77	1.57
4	0.71	0.73	1.12	1.11	1.28	1.91	2.74	2.89	2.62	2.04	1.77	1.59
5	0.68	0.75	1.14	1.12	1.27	1.94	2.75	2.84	2.63	2.03	1.76	1.62
6	0.69	0.77	1.11	1.14	1.22	1.99	2.75	2.81	2.63	2.03	1.75	1.63
7	0.67	0.75	1.12	1.17	1.09	2.03	2.76	2.80	2.64	2.02	1.74	1.65
8	0.60	0.73	1.16	1.18	1.15	2.09	2.77	2.78	2.65	2.01	1.74	1.65
9	0.58	0.39	1.15	1.18	1.21	2.13	2.76	2.78	2.63	2.01	1.71	1.66
10	0.56	0.37	1.14	1.20	1.21	2.17	2.76	2.78	2.62	2.00	1.74	1.65
11	0.51	0.54	1.17	1.21	1.20	2.19	2.76	2.77	2.62	1.98	1.76	1.62
12	0.49	0.61	1.17	1.19	1.26	2.24	2.75	2.76	2.63	1.99	1.77	1.61
13	0.48	0.63	1.16	1.22	1.29	2.30	2.78	2.74	2.63	1.97	1.75	1.60
14	0.48	0.67	1.16	1.23	1.30	2.32	2.79	2.73	2.63	1.95	1.72	1.66
15	0.48	0.75	1.18	1.23	1.33	2.35	2.79	2.74	2.63	2.00	1.71	1.68
16	0.49	0.83	1.17	1.25	1.32	2.35	2.78	2.75	2.63	1.98	1.71	1.69
17	0.50	0.89	1.18	1.26	1.35	2.33	2.80	2.75	2.62	1.96	1.72	1.72
18	0.51	0.93	1.19	1.25	1.37	2.36	2.81	2.76	2.62	1.95	1.77	1.75
19	0.52	0.95	1.18	1.22	1.36	2.42	2.82	2.76	2.62	1.90	1.79	1.74
20	0.54	1.00	1.17	1.21	1.38	2.45	2.82	2.72	2.62	1.86	1.76	1.71
21	0.56	1.00	1.17	1.26	1.37	2.48	2.83	2.69	2.58	1.86	1.69	1.65
22	0.59	1.03	1.18	1.23	1.41	2.51	2.85	2.66	2.49	1.86	1.62	1.54
23	0.63	1.06	1.20	1.22	1.42	2.55	2.87	2.65	2.44	1.85	1.59	1.60
24	0.68	1.08	1.20	1.26	1.39	2.59	2.87	2.64	2.40	1.85	1.68	1.62
25	0.73	1.09	1.19	1.22	1.39	2.61	2.88	2.64	2.38	1.84	1.69	1.64
26	0.73	1.10	1.17	0.90	1.46	2.63	2.89	2.61	2.37	1.85	1.66	1.66
27	0.73	1.04	1.16	1.04	1.53	2.60	2.90	2.58	2.23	1.85	1.66	1.67
28	0.69	1.07	1.20	1.13	1.60	2.63	2.90	2.56	2.17	1.84	1.66	1.67
29	0.65	---	1.19	1.17	1.63	2.66	2.90	2.52	2.10	1.83	1.67	1.68
30	0.49	---	0.99	1.20	1.68	2.67	2.89	2.51	2.10	1.81	1.68	1.69
31	0.57	---	1.00	---	1.73	---	2.89	2.53	---	1.79	---	1.70
Max	0.76	1.10	1.20	1.26	1.73	2.67	2.90	2.91	2.65	2.12	1.79	1.75
Min	0.48	0.37	0.98	0.90	1.09	1.77	2.70	2.51	2.10	1.79	1.59	1.54

Year 2014 Statistics: **Year Max 2.91; Year Min 0.37**

Note: Water level in ft bgs.


2014 HYDROGRAPH FOR STONEHOUSE SPRING PIEZOMETER - SPR7020Z
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
0
1
2
3
4
5
6
7
8
9
10
6,265
6,264
6,263
6,262
6,261
6,260
6,259
6,258
6,257
6,256
6,255
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
Periodic Water-Level Data
SNWA Continuous Water-Level Data
Spring Valley
Basin Fill Aquifer
Reference Elevation: 6,265 ft amsl
Well Depth: 9 ft bgs

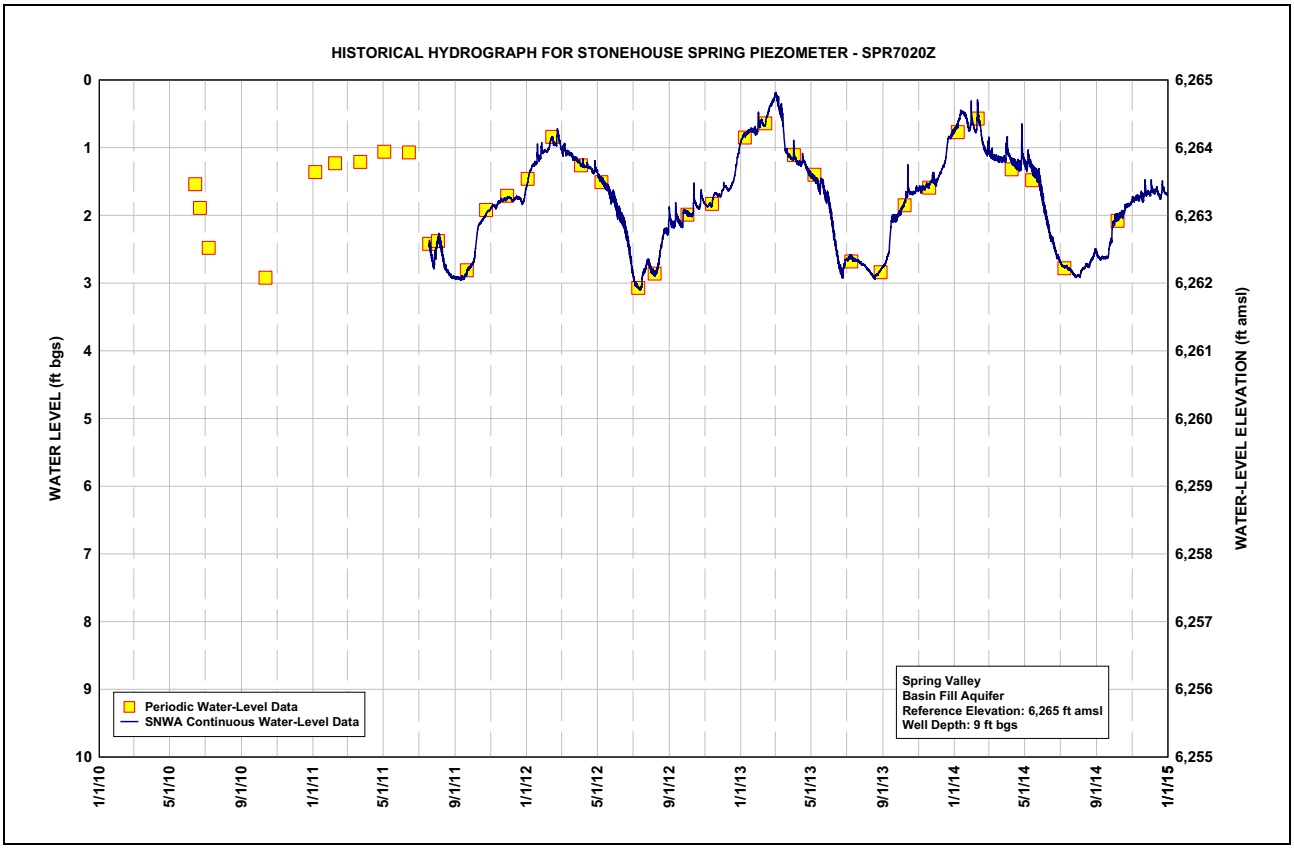
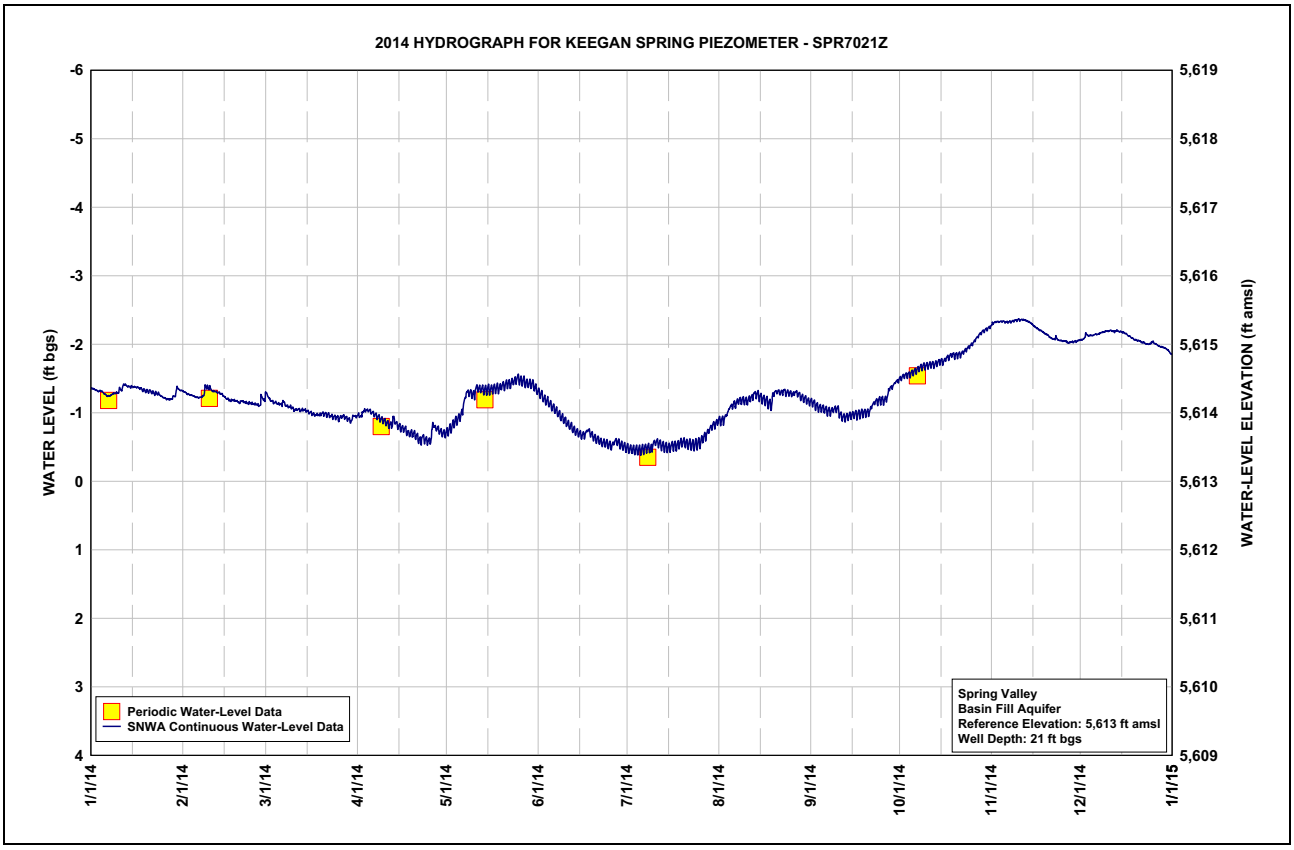

HISTORICAL HYDROGRAPH FOR STONEHOUSE SPRING PIEZOMETER - SPR7020Z
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
0
1
2
3
4
5
6
7
8
9
10
6,265
6,264
6,263
6,262
6,261
6,260
6,259
6,258
6,257
6,256
6,255
1/1/10
5/1/10
9/1/10
1/1/11
5/1/11
9/1/11
1/1/12
5/1/12
9/1/12
1/1/13
5/1/13
9/1/13
1/1/14
5/1/14
9/1/14
1/1/15
Periodic Water-Level Data
SNWA Continuous Water-Level Data
Spring Valley
Basin Fill Aquifer
Reference Elevation: 6,265 ft amsl
Well Depth: 9 ft bgs

Table C-14
Keegan Spring Piezometer SPR7021Z, Calendar Year 2014
Water-Level Data, Daily Mean Values

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	-1.36	-1.31	-1.27	-0.96	-0.74	-1.28	-0.48	-0.90	-1.15	-1.51	-2.30	-2.07
2	-1.33	-1.28	-1.20	-0.98	-0.79	-1.22	-0.47	-0.92	-1.12	-1.55	-2.33	-2.10
3	-1.32	-1.26	-1.16	-1.03	-0.86	-1.18	-0.46	-0.96	-1.08	-1.56	-2.33	-2.13
4	-1.31	-1.25	-1.15	-1.03	-0.90	-1.14	-0.46	-1.06	-1.07	-1.58	-2.33	-2.13
5	-1.28	-1.23	-1.13	-1.01	-0.95	-1.09	-0.46	-1.11	-1.06	-1.60	-2.33	-2.13
6	-1.25	-1.22	-1.13	-0.98	-1.04	-1.05	-0.48	-1.14	-1.04	-1.63	-2.33	-2.15
7	-1.25	-1.23	-1.13	-0.95	-1.22	-0.99	-0.50	-1.17	-1.03	-1.66	-2.33	-2.16
8	-1.27	-1.37	-1.10	-0.91	-1.30	-0.94	-0.48	-1.19	-1.05	-1.68	-2.34	-2.17
9	-1.28	-1.36	-1.08	-0.90	-1.29	-0.90	-0.52	-1.18	-1.06	-1.69	-2.35	-2.19
10	-1.32	-1.35	-1.05	-0.86	-1.30	-0.84	-0.57	-1.18	-1.01	-1.70	-2.36	-2.19
11	-1.34	-1.31	-1.05	-0.83	-1.36	-0.81	-0.56	-1.21	-0.94	-1.72	-2.36	-2.20
12	-1.41	-1.31	-1.05	-0.84	-1.35	-0.77	-0.53	-1.25	-0.94	-1.71	-2.35	-2.19
13	-1.39	-1.29	-1.04	-0.89	-1.34	-0.73	-0.51	-1.28	-0.96	-1.73	-2.33	-2.20
14	-1.38	-1.26	-1.04	-0.81	-1.35	-0.70	-0.50	-1.25	-0.97	-1.76	-2.30	-2.18
15	-1.38	-1.22	-1.01	-0.79	-1.34	-0.67	-0.51	-1.21	-0.98	-1.75	-2.26	-2.17
16	-1.37	-1.20	-1.00	-0.77	-1.36	-0.69	-0.53	-1.19	-0.99	-1.78	-2.23	-2.15
17	-1.36	-1.18	-0.97	-0.73	-1.37	-0.73	-0.53	-1.16	-1.00	-1.82	-2.20	-2.12
18	-1.34	-1.18	-0.97	-0.71	-1.37	-0.70	-0.56	-1.13	-1.01	-1.85	-2.18	-2.09
19	-1.32	-1.16	-0.97	-0.70	-1.39	-0.65	-0.58	-1.28	-1.01	-1.85	-2.15	-2.07
20	-1.32	-1.16	-0.99	-0.67	-1.40	-0.61	-0.57	-1.31	-1.02	-1.86	-2.11	-2.05
21	-1.31	-1.16	-0.98	-0.62	-1.43	-0.59	-0.55	-1.30	-1.08	-1.86	-2.08	-2.04
22	-1.29	-1.14	-0.96	-0.63	-1.44	-0.56	-0.55	-1.32	-1.14	-1.89	-2.08	-2.02
23	-1.28	-1.14	-0.95	-0.62	-1.46	-0.56	-0.54	-1.30	-1.18	-1.93	-2.06	-2.00
24	-1.25	-1.13	-0.94	-0.59	-1.49	-0.54	-0.56	-1.30	-1.19	-1.96	-2.05	-2.01
25	-1.22	-1.12	-0.92	-0.61	-1.49	-0.52	-0.59	-1.28	-1.19	-2.01	-2.05	-2.03
26	-1.20	-1.11	-0.94	-0.79	-1.47	-0.56	-0.63	-1.29	-1.22	-2.06	-2.03	-2.01
27	-1.20	-1.22	-0.95	-0.77	-1.44	-0.59	-0.68	-1.28	-1.35	-2.11	-2.03	-1.97
28	-1.20	-1.19	-0.92	-0.74	-1.42	-0.55	-0.73	-1.24	-1.38	-2.16	-2.03	-1.96
29	-1.24	---	-0.88	-0.71	-1.42	-0.52	-0.80	-1.22	-1.43	-2.20	-2.04	-1.95
30	-1.35	---	-0.95	-0.71	-1.38	-0.50	-0.84	-1.19	-1.47	-2.23	-2.06	-1.92
31	-1.32	---	-0.95	---	-1.32	---	-0.88	-1.17	---	-2.25	---	-1.87
Max	-1.20	-1.11	-0.88	-0.59	-0.74	-0.50	-0.46	-0.90	-0.94	-1.51	-2.03	-1.87
Min	-1.41	-1.37	-1.27	-1.03	-1.49	-1.28	-0.88	-1.32	-1.47	-2.25	-2.36	-2.20

Year 2014 Statistics: **Year Max -0.46; Year Min -2.36.**

Note: Water level in ft bgs.


2014 HYDROGRAPH FOR KEEGAN SPRING PIEZOMETER - SPR7021Z
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
-6
-5
-4
-3
-2
-1
0
1
2
3
4
5,619
5,618
5,617
5,616
5,615
5,614
5,613
5,612
5,611
5,610
5,609
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
Periodic Water-Level Data
SNWA Continuous Water-Level Data
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,613 ft amsl
Well Depth: 21 ft bgs

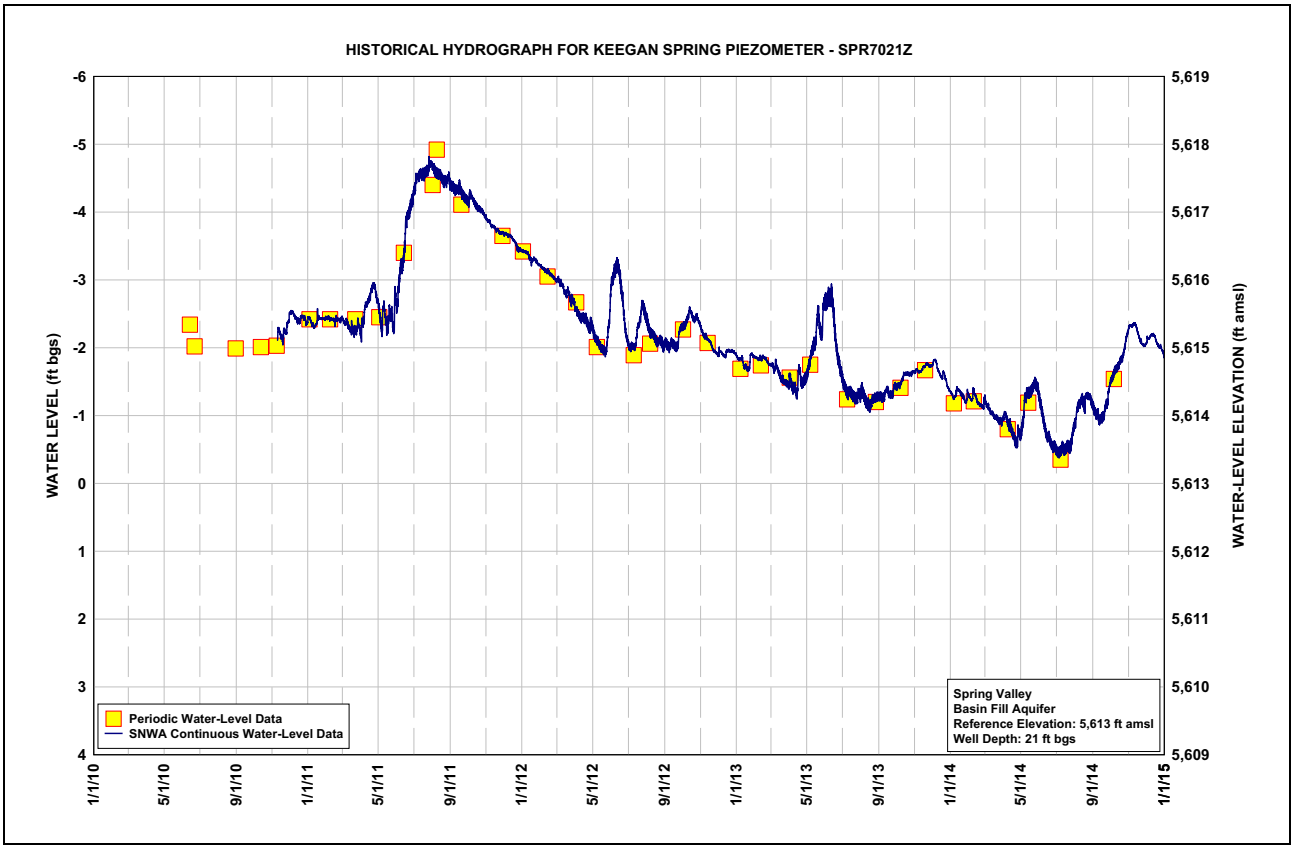
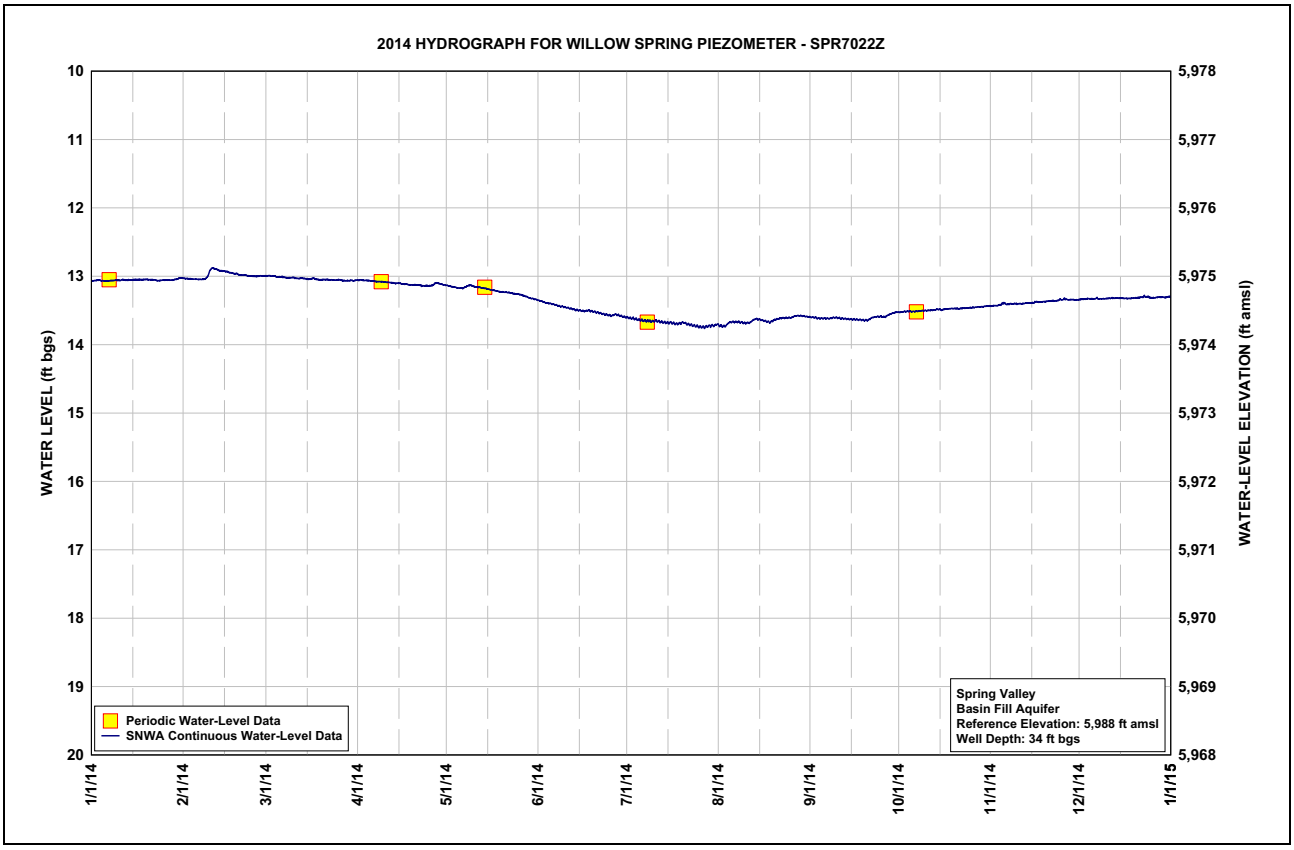

HISTORICAL HYDROGRAPH FOR KEEGAN SPRING PIEZOMETER - SPR7021Z
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
-6
-5
-4
-3
-2
-1
0
1
2
3
4
5,619
5,618
5,617
5,616
5,615
5,614
5,613
5,612
5,611
5,610
5,609
1/1/10
5/1/10
9/1/10
1/1/11
5/1/11
9/1/11
1/1/12
5/1/12
9/1/12
1/1/13
5/1/13
9/1/13
1/1/14
5/1/14
9/1/14
1/1/15
Periodic Water-Level Data
SNWA Continuous Water-Level Data
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,613 ft amsl
Well Depth: 21 ft bgs

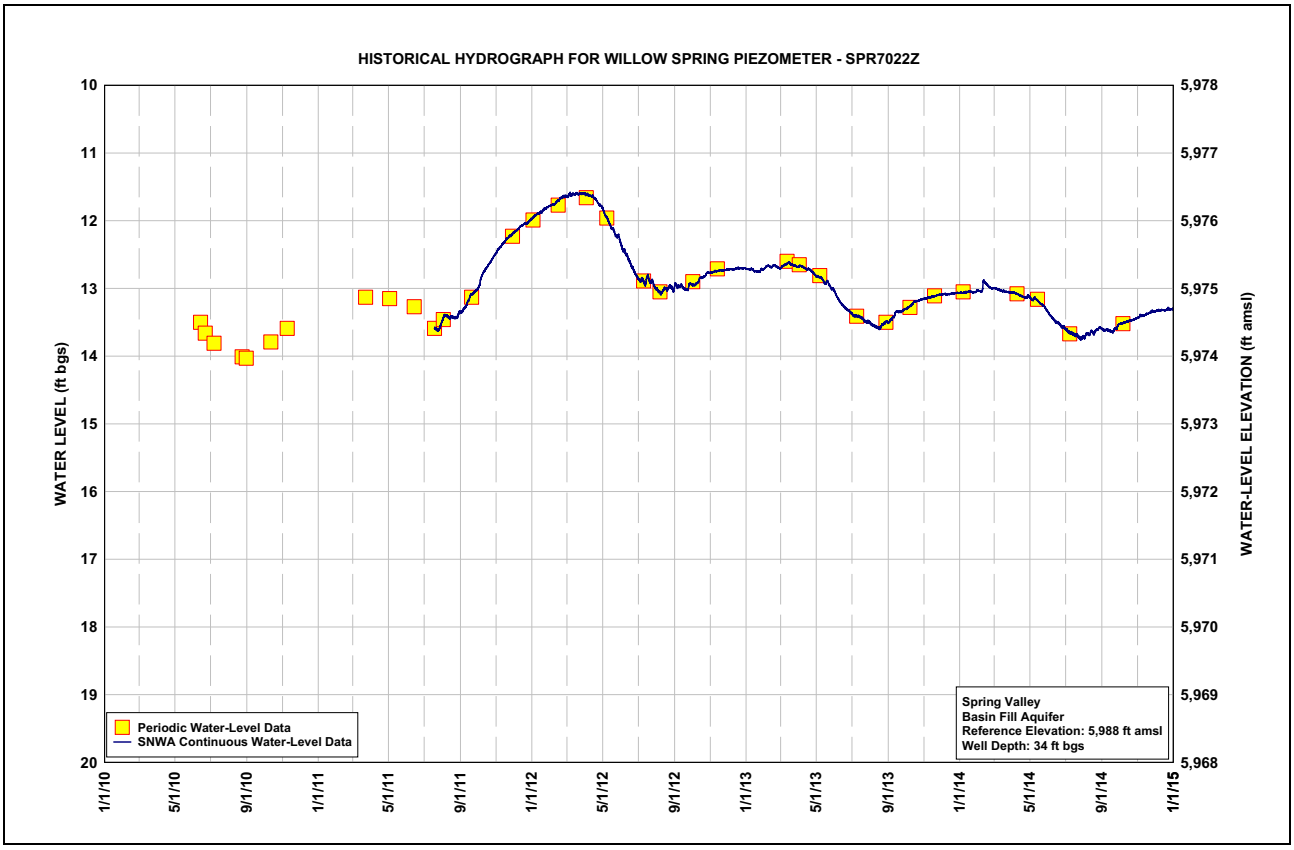
Table C-15
Willow Spring Piezometer SPR7022Z, Calendar Year 2014
Water-Level Data, Daily Mean Values

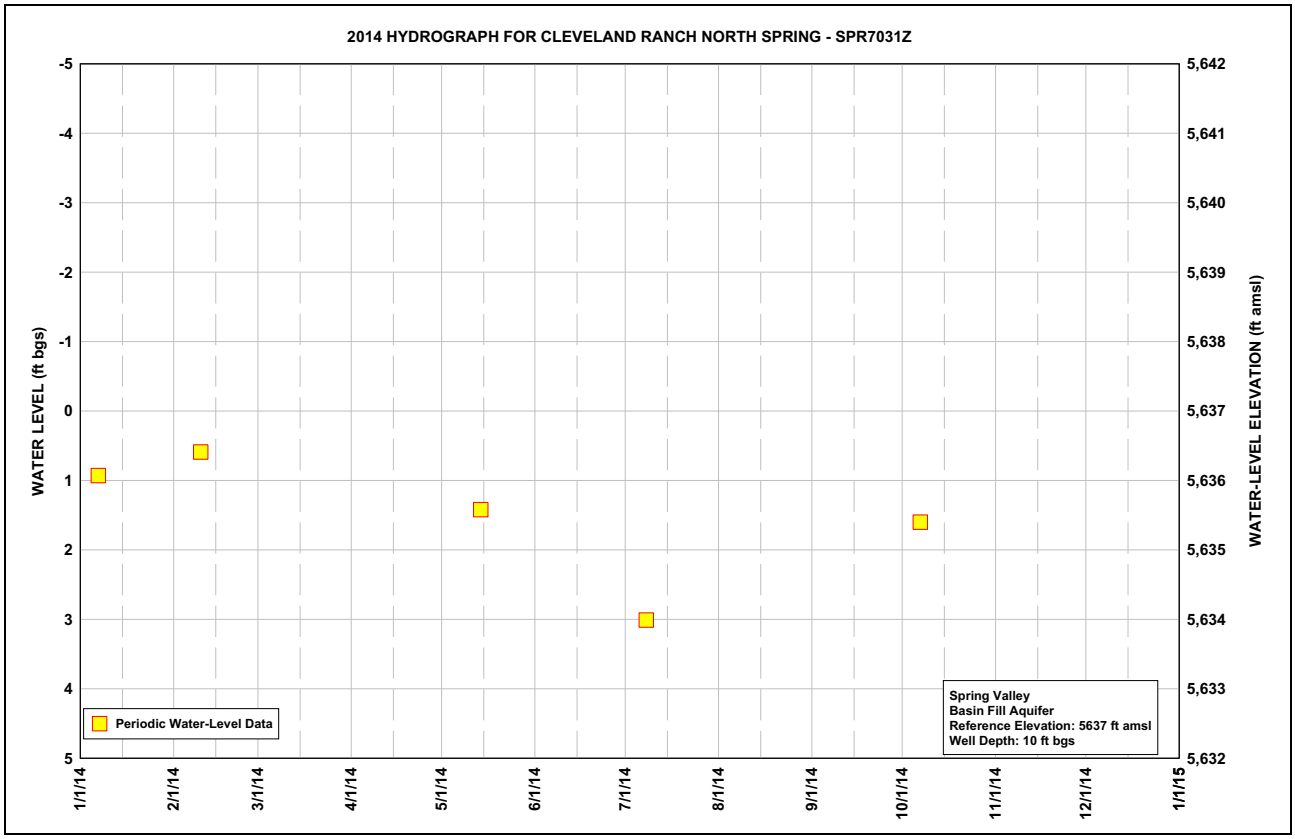
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	13.07	13.03	12.99	13.06	13.14	13.36	13.61	13.72	13.60	13.53	13.43	13.34
2	13.06	13.04	12.99	13.05	13.15	13.37	13.62	13.73	13.60	13.52	13.43	13.33
3	13.06	13.04	13.00	13.06	13.15	13.39	13.62	13.73	13.61	13.51	13.43	13.33
4	13.06	13.04	13.01	13.06	13.16	13.40	13.63	13.69	13.61	13.51	13.42	13.33
5	13.07	13.04	13.01	13.07	13.17	13.40	13.64	13.67	13.62	13.52	13.39	13.33
6	13.07	13.05	13.01	13.07	13.17	13.41	13.65	13.67	13.62	13.51	13.41	13.33
7	13.06	13.04	13.02	13.08	13.16	13.42	13.65	13.67	13.62	13.51	13.41	13.33
8	13.06	13.04	13.02	13.08	13.14	13.44	13.65	13.67	13.61	13.51	13.41	13.33
9	13.06	12.99	13.02	13.08	13.13	13.44	13.66	13.68	13.61	13.50	13.40	13.33
10	13.06	12.89	13.02	13.09	13.15	13.46	13.66	13.68	13.61	13.50	13.40	13.33
11	13.05	12.89	13.03	13.09	13.16	13.47	13.66	13.68	13.62	13.50	13.40	13.32
12	13.06	12.90	13.03	13.09	13.16	13.48	13.67	13.65	13.62	13.50	13.40	13.32
13	13.05	12.92	13.03	13.10	13.17	13.49	13.67	13.63	13.62	13.49	13.39	13.32
14	13.05	12.92	13.04	13.10	13.18	13.49	13.68	13.63	13.63	13.48	13.39	13.32
15	13.05	12.93	13.04	13.10	13.19	13.50	13.68	13.64	13.63	13.49	13.39	13.32
16	13.05	12.94	13.04	13.11	13.20	13.51	13.68	13.65	13.63	13.48	13.37	13.32
17	13.05	12.95	13.04	13.12	13.21	13.50	13.69	13.66	13.64	13.48	13.38	13.32
18	13.05	12.96	13.05	13.12	13.22	13.50	13.69	13.67	13.64	13.47	13.37	13.32
19	13.05	12.97	13.05	13.13	13.23	13.51	13.68	13.65	13.64	13.47	13.37	13.32
20	13.05	12.98	13.05	13.13	13.23	13.53	13.68	13.63	13.64	13.47	13.37	13.31
21	13.05	12.98	13.05	13.13	13.24	13.53	13.70	13.62	13.62	13.47	13.36	13.31
22	13.05	12.99	13.05	13.13	13.24	13.55	13.71	13.61	13.60	13.47	13.36	13.31
23	13.06	12.99	13.05	13.14	13.25	13.56	13.72	13.61	13.59	13.47	13.36	13.30
24	13.06	13.00	13.06	13.14	13.26	13.57	13.73	13.61	13.59	13.46	13.34	13.30
25	13.06	13.00	13.05	13.14	13.26	13.58	13.74	13.61	13.59	13.46	13.34	13.31
26	13.06	13.00	13.06	13.13	13.27	13.57	13.74	13.59	13.59	13.46	13.34	13.31
27	13.06	12.99	13.06	13.10	13.29	13.56	13.74	13.58	13.57	13.45	13.34	13.31
28	13.05	12.99	13.07	13.10	13.30	13.58	13.73	13.58	13.55	13.45	13.34	13.31
29	13.04	---	13.06	13.12	13.32	13.59	13.72	13.58	13.54	13.44	13.34	13.31
30	13.03	---	13.07	13.13	13.33	13.60	13.72	13.59	13.52	13.44	13.34	13.31
31	13.03	---	13.06	---	13.34	---	13.71	13.59	---	13.43	---	13.30
Max	13.07	13.05	13.07	13.14	13.34	13.60	13.74	13.73	13.64	13.53	13.43	13.34
Min	13.03	12.89	12.99	13.05	13.13	13.36	13.61	13.58	13.52	13.43	13.34	13.30

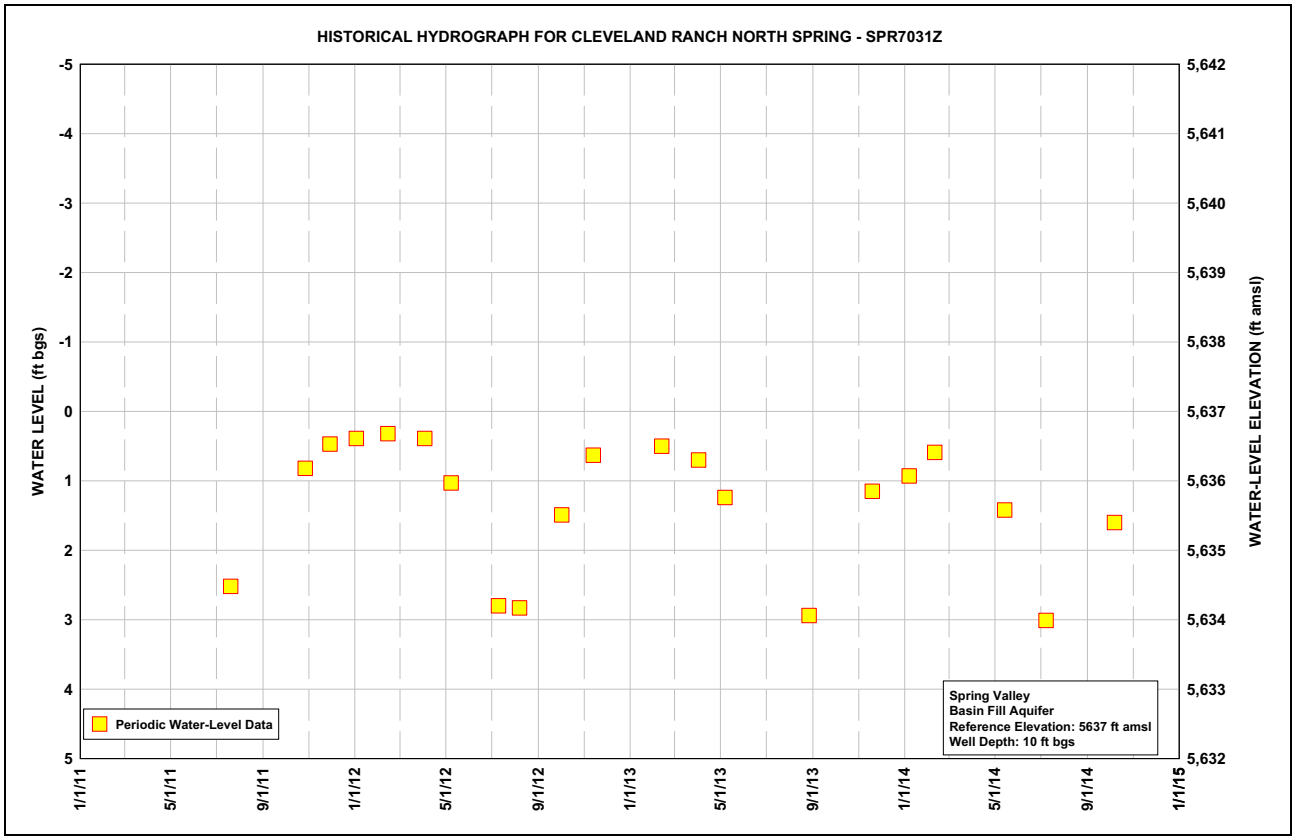
Year 2014 Statistics: **Year Max 13.74; Year Min 12.89**

Note: Water level in ft bgs.


2014 HYDROGRAPH FOR WILLOW SPRING PIEZOMETER - SPR7022Z
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
10
11
12
13
14
15
16
17
18
19
20
5,978
5,977
5,976
5,975
5,974
5,973
5,972
5,971
5,970
5,969
5,968
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
Periodic Water-Level Data
SNWA Continuous Water-Level Data
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,988 ft amsl
Well Depth: 34 ft bgs


HISTORICAL HYDROGRAPH FOR WILLOW SPRING PIEZOMETER - SPR7022Z
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
10
11
12
13
14
15
16
17
18
19
20
5,978
5,977
5,976
5,975
5,974
5,973
5,972
5,971
5,970
5,969
5,968
1/1/10
5/1/10
9/1/10
1/1/11
5/1/11
9/1/11
1/1/12
5/1/12
9/1/12
1/1/13
5/1/13
9/1/13
1/1/14
5/1/14
9/1/14
1/1/15
Periodic Water-Level Data
SNWA Continuous Water-Level Data
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5,988 ft amsl
Well Depth: 34 ft bgs


2014 HYDROGRAPH FOR CLEVELAND RANCH NORTH SPRING - SPR7031Z
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
-5
-4
-3
-2
-1
0
1
2
3
4
5
5,642
5,641
5,640
5,639
5,638
5,637
5,636
5,635
5,634
5,633
5,632
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
11/1/14
12/1/14
1/1/15
Periodic Water-Level Data
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5637 ft amsl
Well Depth: 10 ft bgs


HISTORICAL HYDROGRAPH FOR CLEVELAND RANCH NORTH SPRING - SPR7031Z
WATER LEVEL (ft bgs)
WATER-LEVEL ELEVATION (ft amsl)
-5
-4
-3
-2
-1
0
1
2
3
4
5
5,642
5,641
5,640
5,639
5,638
5,637
5,636
5,635
5,634
5,633
5,632
1/1/11
5/1/11
9/1/11
1/1/12
5/1/12
9/1/12
1/1/13
5/1/13
9/1/13
1/1/14
5/1/14
9/1/14
1/1/15
Periodic Water-Level Data
Spring Valley
Basin Fill Aquifer
Reference Elevation: 5637 ft amsl
Well Depth: 10 ft bgs

This Page Left Intentionally Blank

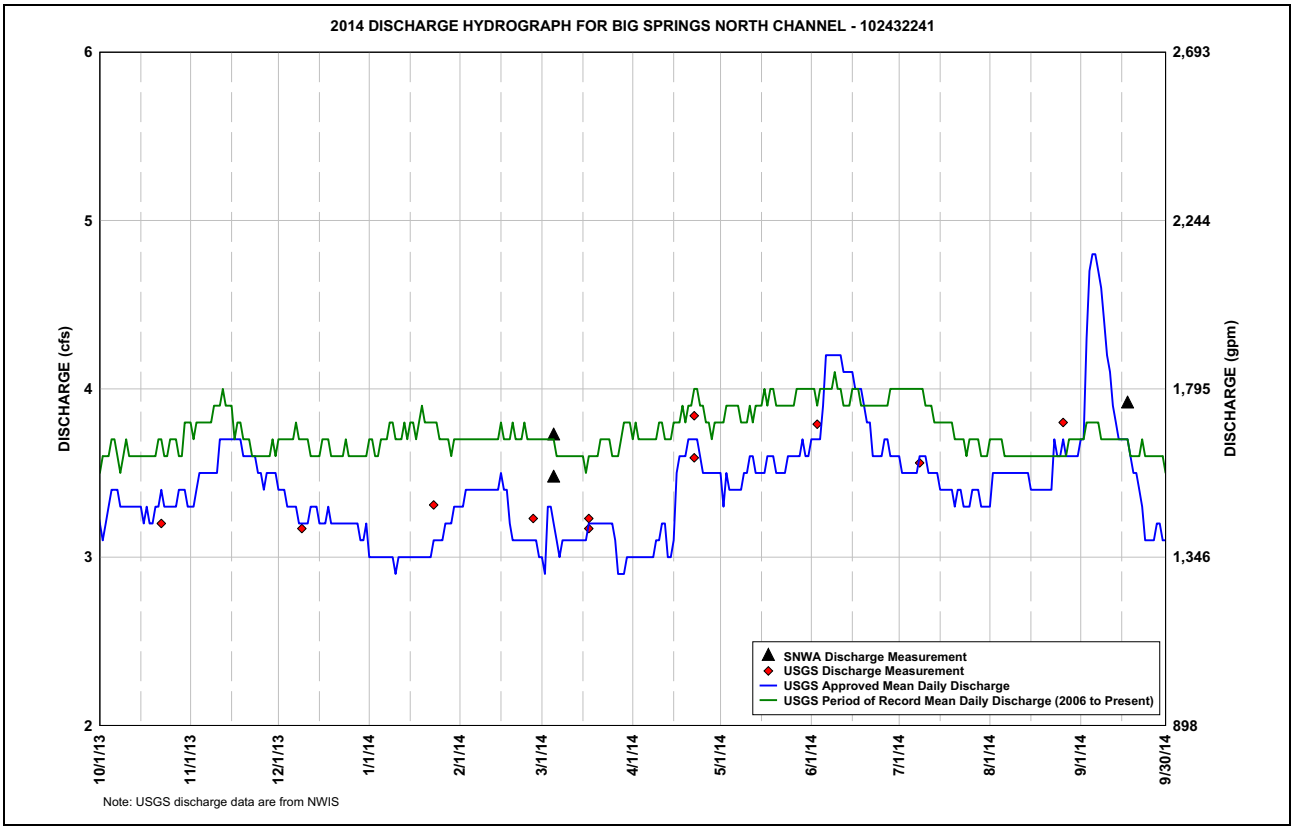
Appendix D

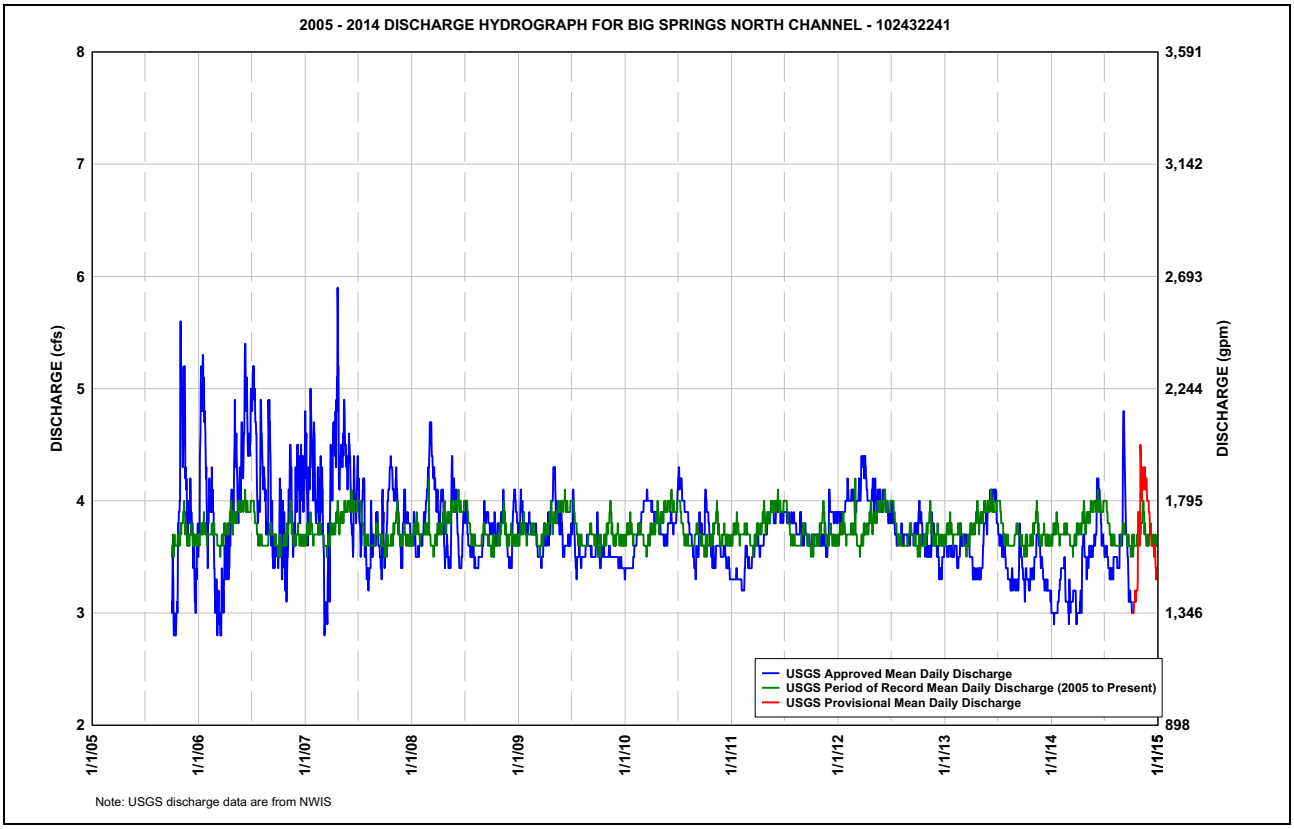
SNWA and USGS Discharge Measurements and Hydrographs for Big Springs Creek and Cleve Creek

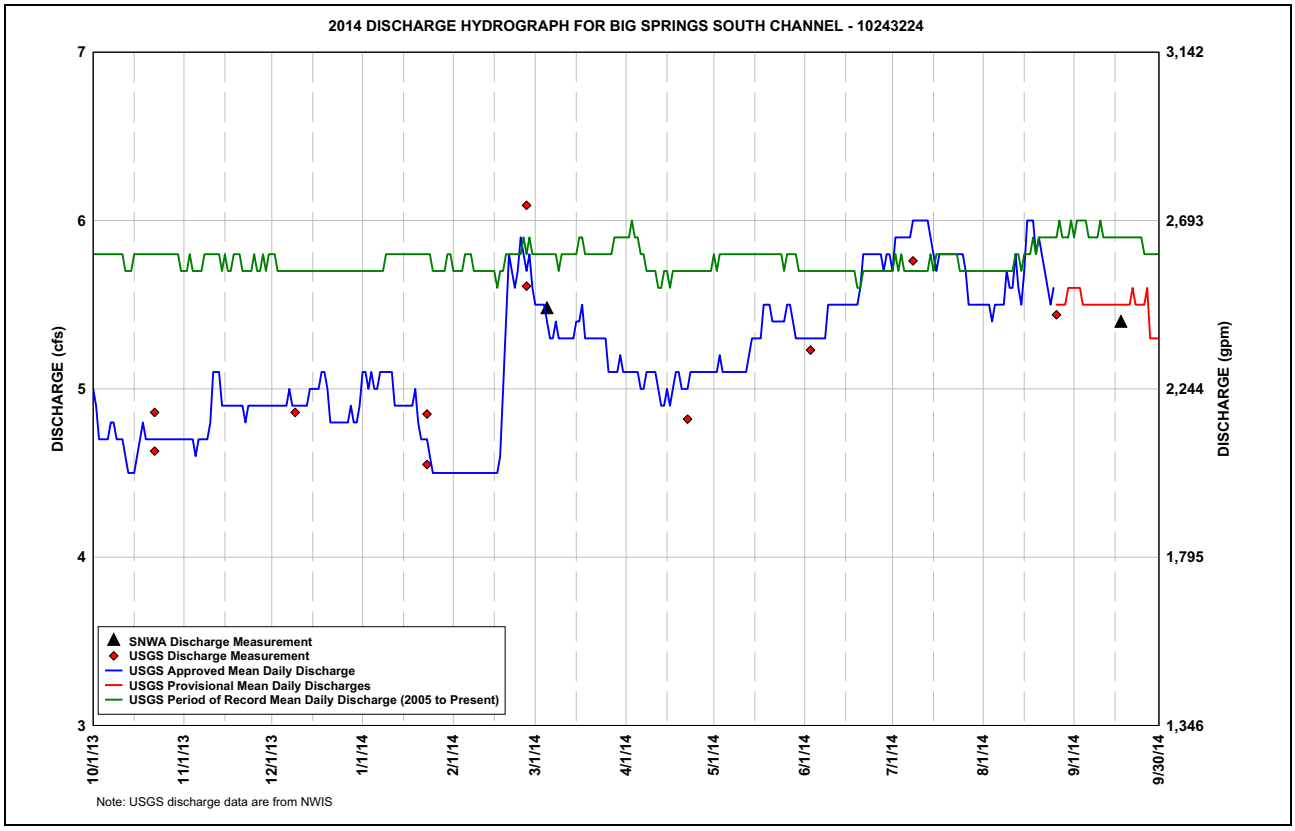
Table D-1
USGS Discharge Measurements at Big Springs Creek near Baker, Nevada

SNWA Station Number	USGS Station Number	Station Name	Date	Time	Discharge (cfs)	Measurement Rated as:	Method	Data Source
1951904	102432241	Big Springs Creek North Channel	10/22/2013	11:37	3.20	FAIR	Reported	USGS-NWIS
			12/9/2013	11:28	3.17	FAIR	Reported	USGS-NWIS
			1/23/2014	11:20	3.31	POOR	Reported	USGS-NWIS
			2/26/2014	11:58	3.23	FAIR	Reported	USGS-NWIS
			3/5/2014	11:00	3.47	POOR	Current Meter	SNWA
			3/5/2014	16:10	3.72	POOR	Current Meter	SNWA
			3/17/2014	13:50	3.23	FAIR	Reported	USGS-NWIS
			3/17/2014	14:50	3.17	FAIR	Reported	USGS-NWIS
			4/22/2014	9:37	3.59	POOR	Reported	USGS-NWIS
			4/22/2014	10:33	3.84	POOR	Reported	USGS-NWIS
			6/3/2014	10:38	3.79	POOR	Reported	USGS-NWIS
			7/8/2014	9:50	3.56	POOR	Reported	USGS-NWIS
			8/26/2014	10:44	3.80	POOR	Reported	USGS-NWIS
			9/17/2014	11:03	3.91	POOR	Current Meter	SNWA
1951903	10243224	Big Springs Creek South Channel	10/22/2013	10:01	4.63	FAIR	Reported	USGS-NWIS
			10/22/2013	10:43	4.86	FAIR	Reported	USGS-NWIS
			12/9/2013	10:26	4.86	GOOD	Reported	USGS-NWIS
			1/23/2014	9:37	4.55	FAIR	Reported	USGS-NWIS
			1/23/2014	10:22	4.85	FAIR	Reported	USGS-NWIS
			2/26/2014	10:02	6.09	FAIR	Reported	USGS-NWIS
			2/26/2014	10:52	5.61	FAIR	Reported	USGS-NWIS
			3/5/2014	10:00	5.47	FAIR	Current Meter	SNWA
			4/22/2014	10:40	4.82	FAIR	Reported	USGS-NWIS
			6/3/2014	9:39	5.23	FAIR	Reported	USGS-NWIS
			7/8/2014	8:54	5.76	FAIR	Reported	USGS-NWIS
			8/26/2014	9:42	5.44	FAIR	Reported	USGS-NWIS
			9/17/2014	10:00	5.39	FAIR	Current Meter	SNWA

Note: USGS-NWIS data are provisional.


2014 DISCHARGE HYDROGRAPH FOR BIG SPRINGS NORTH CHANNEL - 102432241
DISCHARGE (cfs)
DISCHARGE (gpm)
6
5
4
3
2
2,693
2,244
1,795
1,346
898
10/1/13
11/1/13
12/1/13
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
9/30/14
SNWA Discharge Measurement
USGS Discharge Measurement
USGS Approved Mean Daily Discharge
USGS Period of Record Mean Daily Discharge (2006 to Present)
Note: USGS discharge data are from NWIS


2005 - 2014 DISCHARGE HYDROGRAPH FOR BIG SPRINGS NORTH CHANNEL - 102432241
DISCHARGE (cfs)
DISCHARGE (gpm)
8
7
6
5
4
3
2
3,591
3,142
2,693
2,244
1,795
1,346
898
1/1/05
1/1/06
1/1/07
1/1/08
1/1/09
1/1/10
1/1/11
1/1/12
1/1/13
1/1/14
1/1/15
USGS Approved Mean Daily Discharge
USGS Period of Record Mean Daily Discharge (2005 to Present)
USGS Provisional Mean Daily Discharge
Note: USGS discharge data are from NWIS


2014 DISCHARGE HYDROGRAPH FOR BIG SPRINGS SOUTH CHANNEL - 10243224
DISCHARGE (cfs)
DISCHARGE (gpm)
7
6
5
4
3
3,142
2,693
2,244
1,795
1,346
10/1/13
11/1/13
12/1/13
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
9/30/14
SNWA Discharge Measurement
USGS Discharge Measurement
USGS Approved Mean Daily Discharge
USGS Provisional Mean Daily Discharges
USGS Period of Record Mean Daily Discharge (2005 to Present)
Note: USGS discharge data are from NWIS

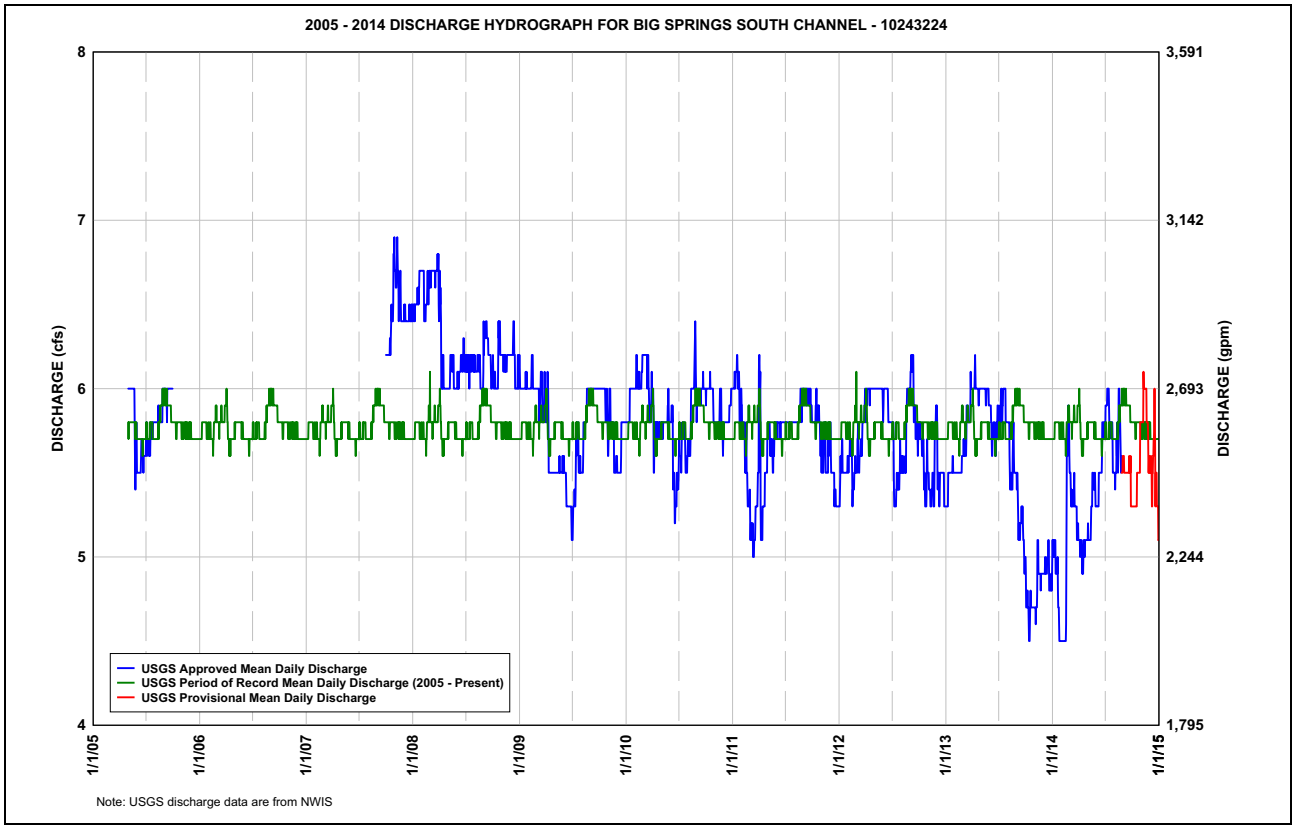
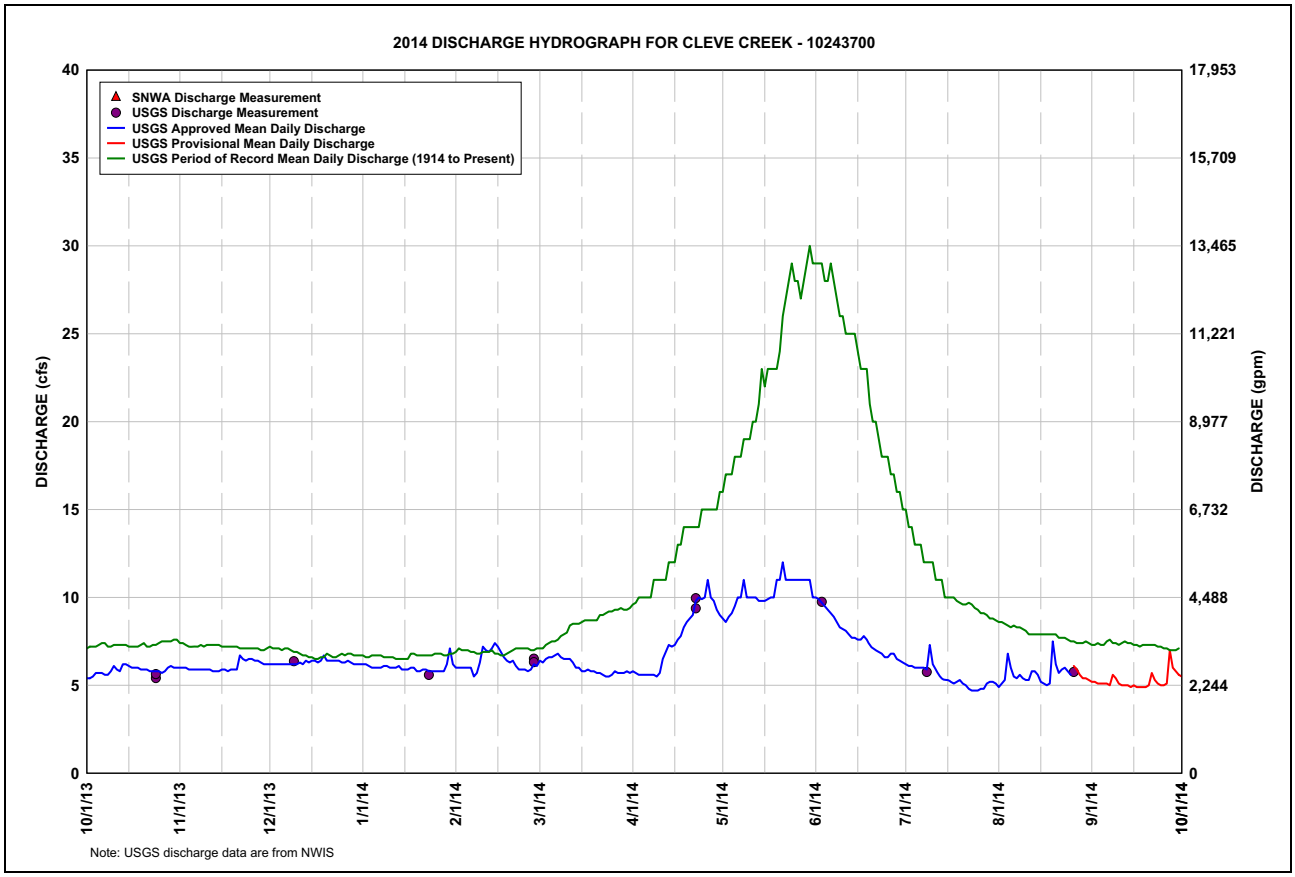
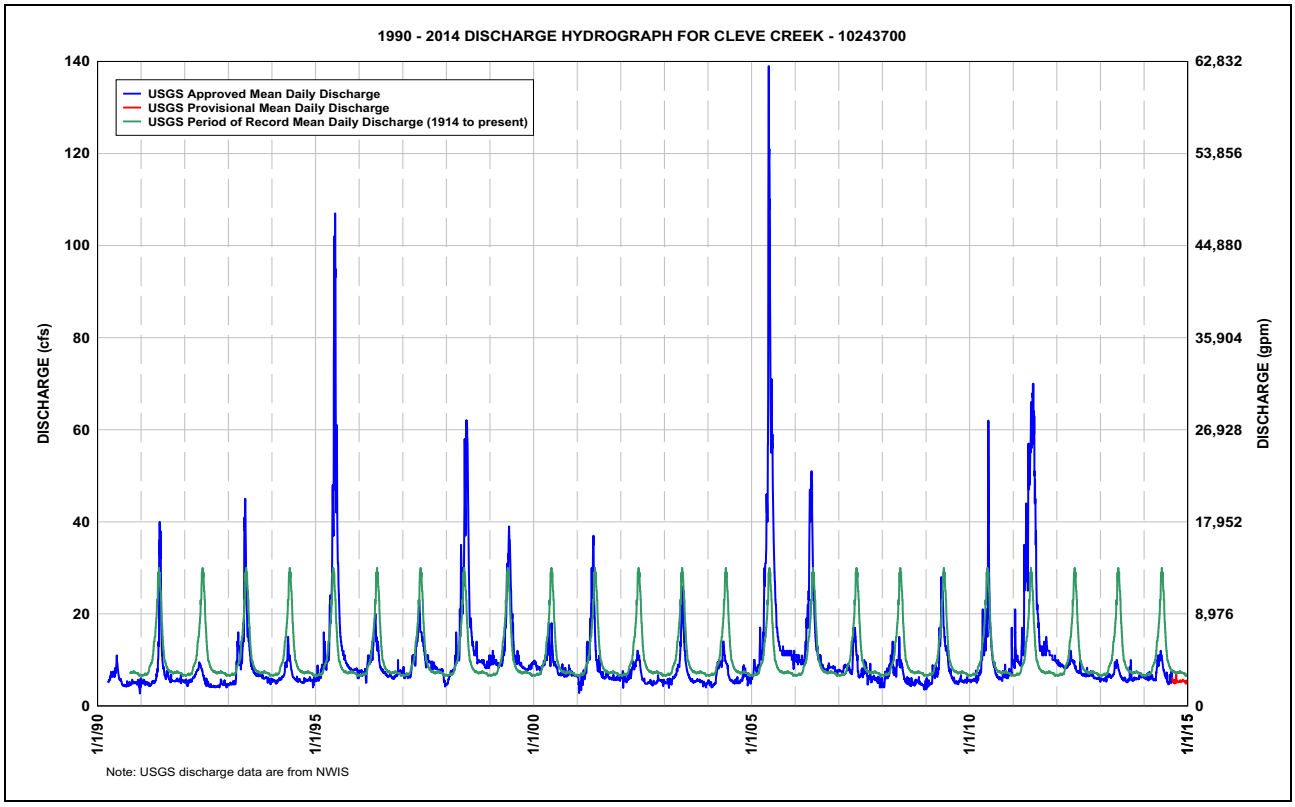

2005 - 2014 DISCHARGE HYDROGRAPH FOR BIG SPRINGS SOUTH CHANNEL - 10243224
DISCHARGE (cfs)
DISCHARGE (gpm)
8
7
6
5
4
3,591
3,142
2,693
2,244
1,795
1/1/05
1/1/06
1/1/07
1/1/08
1/1/09
1/1/10
1/1/11
1/1/12
1/1/13
1/1/14
1/1/15
USGS Approved Mean Daily Discharge
USGS Period of Record Mean Daily Discharge (2005 - Present)
USGS Provisional Mean Daily Discharge
Note: USGS discharge data are from NWIS

Table D-2
10243700 - Cleve Creek near Ely, Nevada (Discharge Measurements)

SNWA Station Number	USGS Station Number	Station Name	Date	Time	Discharge (cfs)	Measurement Rated As:	Method[a]	Data Source[b]
1841611	10243700	Cleve Creek near Ely, NV	10/24/2013	15:02	5.41	FAIR	R	USGS-NWIS
			10/24/2013	16:30	5.64	FAIR	R	USGS-NWIS
			12/9/2013	14:59	6.37	POOR	R	USGS-NWIS
			1/23/2014	14:16	5.59	FAIR	R	USGS-NWIS
			2/27/2014	10:38	6.52	FAIR	R	USGS-NWIS
			2/27/2014	11:13	6.32	FAIR	R	USGS-NWIS
			4/22/2014	13:42	9.38	POOR	R	USGS-NWIS
			4/22/2014	14:22	9.96	POOR	R	USGS-NWIS
			6/3/2014	15:22	9.75	POOR	R	USGS-NWIS
			7/8/2014	14:22	5.76	FAIR	R	USGS-NWIS
			8/26/2014	14:54	5.76	POOR	R	USGS-NWIS

[a]Measurement Method: R = Reported
[b]USGS-NWIS data are provisional.


2014 DISCHARGE HYDROGRAPH FOR CLEVE CREEK - 10243700
SNWA Discharge Measurement
USGS Discharge Measurement
USGS Approved Mean Daily Discharge
USGS Provisional Mean Daily Discharge
USGS Period of Record Mean Daily Discharge (1914 to Present)
DISCHARGE (cfs)
DISCHARGE (gpm)
0
5
10
15
20
25
30
35
40
0
2,244
4,488
6,732
8,977
11,221
13,465
15,709
17,953
10/1/13
11/1/13
12/1/13
1/1/14
2/1/14
3/1/14
4/1/14
5/1/14
6/1/14
7/1/14
8/1/14
9/1/14
10/1/14
Note: USGS discharge data are from NWIS


1990 - 2014 DISCHARGE HYDROGRAPH FOR CLEVE CREEK - 10243700
USGS Approved Mean Daily Discharge
USGS Provisional Mean Daily Discharge
USGS Period of Record Mean Daily Discharge (1914 to present)
DISCHARGE (cfs)
DISCHARGE (gpm)
0
20
40
60
80
100
120
140
0
8,976
17,952
26,928
35,904
44,880
53,856
62,832
1/1/90
1/1/95
1/1/00
1/1/05
1/1/10
1/1/15
Note: USGS discharge data are from NWIS

This Page Left Intentionally Blank

Appendix E

Precipitation-Station Data

Table E-1
2014 Precipitation Data
(Page 1 of 6)

Lages, NV (RP1790201)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	0.67	0.93	0.28	1.38	0.77	0.09	0.99	3.05	1.23	0.02	0.65	0.26	10.32
Period of Recod Statistics (1984 to Present)													
Mean	0.62	0.60	0.73	0.95	0.91	0.61	0.71	0.55	0.66	0.92	0.49	0.50	8.25
Min	0.02	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	4.10
Max	2.34	2.01	2.74	2.76	2.89	3.05	2.24	3.05	2.19	3.89	1.75	2.44	13.20
No. Yrs.	30	31	30	31	31	30	30	30	31	31	30	31	27
McGill, NV (RP1790202)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	0.85	0.55	0.66	0.96	0.64	0.18a	0.78	2.25	1.30	0.00	0.40	0.64	9.21
Period of Recod Statistics (1892 to Present)													
Mean	0.63	0.66	0.74	0.95	1.02	0.75	0.68	0.77	0.70	0.79	0.56	0.61	8.86
Min	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.76
Max	4.58	2.38	2.54	3.19	3.33	4.30	3.03	3.25	5.57	3.38	1.90	3.05	16.21
No. Yrs.	105	106	107	108	106	106	106	105	105	103	106	107	93
Ely, NV (RP1790203)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	0.79	0.94	0.42	1.06	0.96	0.18	0.43	2.48	0.83	0.00	0.44	0.73	9.26
Period of Recod Statistics (1893 to Present)													
Mean	0.77	0.78	1.00	1.02	1.09	0.63	0.63	0.83	0.77	0.81	0.68	0.70	9.71
Min	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.22
Max	2.50	3.75	4.30	5.52	3.55	3.53	2.30	3.00	4.99	3.67	2.40	3.33	16.16
No. Yrs.	92	92	92	92	92	90	91	93	92	91	90	90	83
Cedar Pass, NV (RP1940201)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	0.36	1.12	0.75a	1.06a	1.08	0.24a	1.15	2.88a	2.20	0.00	0.49	0.36	11.69
Period of Recod Statistics (1989 to Present)													
Mean	0.35	0.65	0.83	1.26	1.11	0.88	0.84	0.84	0.75	0.85	0.35	0.38	9.09
Min	0.10	0.04	0.16	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.03	5.30
Max	1.12	1.55	1.84	4.01	4.83	3.24	1.75	2.88	2.89	2.64	0.92	2.24	14.77
No. Yrs.	20	21	21	21	18	20	19	20	19	21	20	22	13
Callao, UT (RP1950201)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	0.29	0.46	0.22	0.40	0.21	0.32	0.41	1.65	1.14	0.04	0.12	0.32	5.58
Period of Recod Statistics (1902 to Present)													
Mean	0.37	0.38	0.38	0.57	0.80	0.63	0.39	0.57	0.45	0.57	0.37	0.31	5.79
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.94
Max	2.50	1.45	1.60	2.24	4.20	3.03	2.27	3.11	4.08	3.00	1.88	1.94	10.59
No. Yrs.	77	76	74	77	77	75	79	77	79	78	75	80	71

Table E-1
2014 Precipitation Data
(Page 2 of 6)

Partoun, UT (RP1950202)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	0.83	0.40b	0.00	0.67	0.00	0.00	0.19	1.35	1.89	0.00	0.06	0.28	5.67
Period of Recod Statistics (1905 to Present)													
Mean	0.42	0.50	0.52	0.72	0.93	0.67	0.56	0.57	0.62	0.60	0.45	0.37	6.93
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.03
Max	1.85	1.92	1.50	2.22	5.08	3.29	2.66	2.27	4.58	2.57	2.20	1.81	12.34
No. Yrs.	62	62	64	66	67	65	64	64	67	64	67	63	50
Eskdale, UT (RP1950203)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	0.72	0.07	0.38	0.16	0.28	0.04	0.36	2.91	1.41	0.00	0.08	0.36	6.77
Period of Recod Statistics (1966 to Present)													
Mean	0.28	0.40	0.61	0.66	0.66	0.58	0.55	0.60	0.68	0.63	0.37	0.35	6.37
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.18
Max	1.77	2.38	2.03	2.21	3.35	2.32	3.26	2.91	3.57	2.24	1.40	2.57	12.57
No. Yrs.	45	46	44	48	48	49	48	48	47	48	46	45	33
Mather, NV (RP1950204)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	0.04	0.64	0.83a	0.57	0.27	0.27	3.17	4.94	3.09	0.00	0.27	0.48	14.57
Period of Recod Statistics (1998 to Present)													
Mean	0.24	0.52	0.64	1.30	1.23	1.10	1.57	1.49	1.25	1.30	0.48	0.25	11.37
Min	0.02	0.05	0.25	0.50	0.06	0.00	0.20	0.00	0.16	0.00	0.03	0.01	7.64
Max	0.72	1.15	1.32	2.59	3.76	3.27	3.17	4.94	3.09	3.63	1.80	1.50	14.57
No. Yrs.	14	15	15	14	16	16	15	14	15	14	15	14	10
Great Basin National Park, NV (RP1950205)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	1.11	0.44	1.28	0.60	0.36b	0.24b	3.47c	5.25	2.04	0.02	0.33	1.05a	16.19
Period of Recod Statistics (1948 to Present)													
Mean	1.04	1.16	1.37	1.22	1.22	0.85	1.01	1.24	1.14	1.21	0.98	1.00	13.44
Min	0.03	0.09	0.00	0.03	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.00	7.37
Max	3.78	3.59	4.96	3.02	4.74	3.73	3.90	5.25	6.02	5.22	3.40	4.23	21.20
No. Yrs.	63	63	63	65	65	63	65	65	66	66	65	64	58
Baker Flat, NV (RP1950206)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	---z	---z	---z	---z	0.02s	0.22	2.98	3.10	2.19	0.01	0.48	0.22b	9.20
Period of Recod Statistics (2000 to Present)													
Mean	0.82	0.78	0.40	0.57	0.34	0.25	0.70	0.82	0.56	0.98	0.35	0.48	7.05
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.00	3.95
Max	3.52	2.15	1.06	2.65	1.13	0.97	2.98	3.10	2.19	4.23	1.95	1.41	15.26
No. Yrs.	10	10	11	11	12	14	12	13	11	11	11	11	5

Table E-1
2014 Precipitation Data
(Page 3 of 6)

Clifton Flat, UT (RP2530201)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	0.25	0.92a	0.58a	0.84	0.96	0.38a	0.45	1.53	1.24	0.00	0.46	0.37	7.98
Period of Recod Statistics (2004 to Present)													
Mean	0.31	0.48	0.57	1.52	2.18	0.86	0.51	0.57	0.78	0.97	0.42	0.36	9.53
Min	0.10	0.21	0.08	0.11	0.31	0.00	0.11	0.00	0.13	0.00	0.00	0.02	4.84
Max	0.74	0.92	1.21	3.60	8.02	3.09	0.95	1.53	2.09	1.70	1.19	2.10	15.92
No. Yrs.	9	8	9	10	9	11	9	10	10	10	11	10	7
Ibapah, UT (RP2530202)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	0.41	1.00	0.66	1.15	0.90	0.37	0.93	1.82a	1.49	0.11	0.48	0.61	9.93
Period of Recod Statistics (1903 to Present)													
Mean	0.62	0.77	0.93	1.29	1.43	0.96	0.82	0.91	0.74	0.93	0.60	0.67	10.67
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.20
Max	2.41	1.96	3.14	4.81	6.15	4.16	2.58	4.10	5.85	3.42	1.94	2.03	16.41
No. Yrs.	83	89	93	90	91	90	93	93	90	92	87	86	49
Tule Valley, UT (RP2570201)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	0.14	0.50	0.65b	0.28	1.37	0.15a	0.99	0.90	1.79	0.01	0.11	0.29	7.18
Period of Recod Statistics (1987 to Present)													
Mean	0.26	0.36	0.54	0.64	0.77	0.34	0.45	0.39	0.56	0.54	0.32	0.30	5.47
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.75
Max	1.03	0.84	1.49	2.17	3.80	1.44	1.80	1.14	1.79	1.18	1.28	1.31	10.96
No. Yrs.	21	24	19	21	20	21	18	19	19	18	21	22	13
Fish Springs Refuge, UT (RP2580201)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	0.06	0.47	0.59e	0.38d	0.94a	0.00	0.09	1.18c	0.40	0.60	0.23	0.17g	4.94
Period of Recod Statistics (1960 to Present)													
Mean	0.38	0.49	0.68	1.04	1.05	0.67	0.49	0.54	0.69	0.80	0.52	0.43	7.78
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.89
Max	1.04	1.60	2.42	2.63	4.89	2.94	1.91	3.16	3.14	3.47	1.67	1.67	12.64
No. Yrs.	51	54	54	51	53	53	55	55	51	53	55	54	43
Bird Creek, NV (RP1790301)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	0.9	1.6	1.0	1.6	1.6	0.2	0.9	4.7	1.4	0.0	0.6	1.6	16.1
Period of Recod Statistics (2011 to Present)													
Mean	1.13	1.30	0.93	1.27	0.83	0.07	0.77	1.75	2.22	1.02	0.50	1.50	13.29
Min	0.9	1.1	0.1	0.7	0.3	0.0	0.4	0.1	1.4	0.0	0.4	0.3	12.0
Max	1.3	1.6	1.7	1.6	1.6	0.2	1.0	4.7	4.5	1.8	0.6	2.6	16.1
No. Yrs.	3	3	3	3	3	3	3	4	4	4	4	4	3

Table E-1
2014 Precipitation Data
(Page 4 of 6)

Berry Creek, NV (RP1790302)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	2.1	3.1	1.8	2.5	2.3	0.4	1.4	4.0	2.9	0.0	1.5	2.5	24.5
Period of Recod Statistics (1976 to Present)													
Mean	2.58	2.95	3.26	3.52	2.78	1.37	1.39	1.44	1.45	2.24	2.08	2.55	27.61
Min	0.6	1.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	17.2
Max	5.2	7.6	5.9	11.4	7.9	4.9	3.6	5.6	4.7	7.2	7.0	7.1	40.0
No. Yrs.	34	34	34	34	34	34	34	33	33	39	38	37	32
Kalamazoo, NV (RP1840301)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	1.3	2.4	1.6	1.8	1.8	0.5	1.3	5.2	1.4	0.1	0.8	1.9	20.1
Period of Recod Statistics (2011 to Present)													
Mean	1.53	1.80	1.50	1.87	1.00	0.17	0.83	2.65	2.15	1.38	0.75	1.75	17.38
Min	1.3	1.1	0.7	1.6	0.2	0.0	0.3	0.5	1.2	0.1	0.4	0.4	15.7
Max	1.9	2.4	2.2	2.2	1.8	0.5	1.3	5.2	4.0	2.0	1.1	2.9	20.1
No. Yrs.	3	3	3	3	3	3	3	4	4	4	4	4	3
Cave Mountain, NV (RP1840302)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	0.9	2.8	1.4	1.6	0.8	0.2	1.2	5.3	2.6	0.1	0.8	2.9	20.6
Period of Recod Statistics (2011 to Present)													
Mean	1.60	1.73	1.77	1.67	0.90	0.10	1.50	3.35	2.52	1.55	1.00	2.08	19.77
Min	0.9	1.0	0.7	1.4	0.4	0.0	1.0	1.1	1.2	0.1	0.6	0.4	20.6
Max	2.0	2.8	3.2	2.0	1.5	0.2	2.3	5.3	3.4	2.8	1.8	3.2	21.8
No. Yrs.	3	3	3	3	3	3	3	4	4	4	4	4	3
Wheeler Peak, NV (RP1840303)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	1.6	2.9	2.0	2.2	1.5	0.0	2.3	5.3	6.0	0.3	1.1	2.6	27.8
Period of Recod Statistics (2010 to Present)													
Mean	1.78	2.52	3.28	3.40	2.78	0.12	2.20	2.54	3.46	2.88	2.48	4.18	31.62
Min	1.6	1.2	1.2	2.2	0.6	0.0	0.5	0.8	0.1	0.3	1.1	0.8	27.2
Max	2.0	3.1	5.9	5.3	7.3	0.5	4.3	5.3	6.0	5.7	5.4	11.2	34.7
No. Yrs.	4	4	4	4	4	4	4	5	5	5	5	5	4
Goshute, UT (RP2530301)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	0.50	1.07	0.46	1.16	1.05	0.32	1.50	2.62	1.53	0.01	0.33	0.44	10.99
Period of Recod Statistics (2010 to Present)													
Mean	0.40	0.69	0.50	1.13	2.33	0.36	0.74	0.98	0.77	0.63	0.52	0.84	9.89
Min	0.17	0.29	0.34	0.48	0.09	0.00	0.38	0.21	0.13	0.01	0.26	0.36	5.80
Max	0.61	1.07	0.86	2.14	6.54	1.07	1.50	2.62	1.53	1.27	1.22	1.57	13.93
No. Yrs.	4	4	4	5	5	5	5	5	5	5	5	5	4

Table E-1
2014 Precipitation Data
(Page 5 of 6)

Hals Canyon, UT (RP2550301)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	0.31	0.26b	0.40	0.23b	0.25	0.11	0.31	2.60	1.78	0.15	0.10	0.29	6.79
Period of Recod Statistics (2010 to Present)													
Mean	0.21	0.25	0.22	0.62	0.55	0.19	0.63	1.26	1.21	0.85	0.34	0.47	6.80
Min	0.00	0.18	0.10	0.17	0.01	0.00	0.08	0.32	0.00	0.15	0.10	0.15	4.52
Max	0.31	0.35	0.40	1.13	1.82	0.65	1.00	2.60	2.09	1.56	0.82	1.43	7.96
No. Yrs.	4	4	4	5	5	5	5	5	5	5	5	5	4
Tule Valley, UT (RP2570301)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	0.73	0.44	0.64	0.27	0.49	0.15	0.30	0.92	1.60	0.00	0.04	0.14	5.72
Period of Recod Statistics (2010 to Present)													
Mean	0.36	0.50	0.44	0.98	1.51	0.14	0.40	0.56	1.07	0.58	0.53	0.66	7.73
Min	0.00	0.35	0.28	0.27	0.02	0.00	0.09	0.18	0.00	0.00	0.04	0.14	5.72
Max	0.73	0.84	0.64	1.48	5.48	0.33	1.23	0.97	1.82	1.09	1.25	1.74	12.37
No. Yrs.	4	4	4	5	5	5	5	5	5	5	5	5	4
Subalpine (west), NV (RP1840501)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	0.49	2.29	2.34	1.71	0.52	0.25	1.66	3.56	3.67	0.07k	0.36p	0.75h	16.49
Period of Recod Statistics (2010 to Present)													
Mean	0.90	1.52	1.96	2.14	2.34	0.12	2.33	2.32	2.29	2.76	2.32	3.45	24.45
Min	0.00	0.47	0.86	1.25	0.50	0.00	1.04	1.09	0.08	1.03	0.50	0.28	14.83
Max	2.67	2.29	3.41	3.50	6.56	0.25	3.82	3.56	3.67	4.90	4.48	10.88	25.06
No. Yrs.	4	4	4	4	4	4	4	4	4	4	4	4	2
Montane (west), NV (RP1840502)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	0.00	0.50	1.35	0.74	0.39	0.07	1.18	3.14	3.25	0.00k	0.13p	0.81h	10.62
Period of Recod Statistics (2010 to Present)													
Mean	0.73	1.21	1.70	1.71	1.88	0.08	1.52	1.79	1.79	2.42	1.79	2.17	18.79
Min	0.00	0.50	0.79	0.74	0.36	0.00	0.75	0.60	0.04	1.41	0.59	0.30	15.30
Max	1.44	1.84	2.66	2.27	5.53	0.25	2.44	3.14	3.25	3.60	3.53	6.02	20.59
No. Yrs.	4	4	4	4	4	4	4	4	5	4	4	4	3
Pinyon-Juniper (west), NV (RP1840503)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	0.00f	1.22	0.46	0.59	0.21	0.02	0.64	1.97	2.27	0.00k	0.04p	0.47h	7.38
Period of Recod Statistics (2011 to Present)													
Mean	0.66	0.94	0.76	0.79	0.37	0.05	1.28	1.39	1.65	1.37	0.62	0.54	10.42
Min	0.57	0.40	0.46	0.59	0.18	0.00	0.59	0.47	0.99	1.01	0.41	0.22	10.10
Max	0.74	1.22	1.30	1.16	0.72	0.19	2.18	1.97	2.27	2.01	0.97	0.77	11.45
No. Yrs.	2	3	3	3	3	4	4	4	4	3	3	3	2

Table E-1
2014 Precipitation Data
(Page 6 of 6)

Sagebrush (west), NV (RP1840504)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	0.05	0.96	0.12	0.43	0.07	---z	0.64	2.22	2.62	0.00	0.02	0.63	7.76
Period of Recod Statistics (2010 to Present)													
Mean	0.19	0.66	0.41	0.52	0.78	0.04	1.02	1.17	0.99	0.89	0.39	0.90	7.96
Min	0.05	0.18	0.11	0.23	0.07	0.00	0.04	0.37	0.00	0.00	0.02	0.09	6.44
Max	0.49	0.96	0.84	0.92	2.53	0.11	2.65	2.22	2.62	1.38	0.98	2.99	10.83
No. Yrs.	4	4	4	4	4	3	5	5	5	4	5	5	2
Subalpine (east), NV (RP1950501)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	0.02f	0.36	1.32	0.97	0.88	0.17	1.77	3.71	4.00	0.00m	0.07p	0.07g	13.18
Period of Recod Statistics (2011 to Present)													
Mean	1.47	1.58	1.26	1.42	0.64	0.07	1.79	2.92	2.72	1.71	0.75	0.63	16.96
Min	1.47	0.36	1.20	0.97	0.39	0.00	0.68	2.22	1.64	1.09	0.65	0.53	17.26
Max	1.47	2.79	1.32	1.88	0.88	0.17	2.92	3.71	4.00	2.94	0.89	0.80	17.26
No. Yrs.	1	2	2	2	2	3	3	3	4	3	3	3	1
Sagebrush (east), NV (RP1950502)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	0.10	0.77	0.41	0.17	0.14	0.02	1.18	2.97	1.87	0.00k	0.08p	0.26h	7.63
Period of Recod Statistics (2010 to Present)													
Mean	0.16	0.78	0.48	0.56	0.80	0.04	0.74	0.88	1.20	0.81	0.56	1.08	8.09
Min	0.10	0.22	0.23	0.04	0.01	0.00	0.33	0.11	0.17	0.24	0.10	0.34	5.37
Max	0.20	1.09	0.65	1.15	2.71	0.13	1.18	2.97	2.47	1.39	1.10	3.01	8.64
No. Yrs.	4	4	4	4	4	4	5	5	5	4	4	4	3
Salt Desert Shrub (east), NV (RP1950503)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2014	0.89	0.23	0.22	0.20	0.17	0.01	0.71	3.45	1.32	0.00k	0.06p	0.24g	7.20
Period of Recod Statistics (2011 to Present)													
Mean	0.38	0.34	0.34	0.36	0.17	0.00	0.62	1.28	1.16	0.47	0.31	0.21	5.64
Min	0.12	0.12	0.17	0.11	0.00	0.00	0.51	0.26	0.23	0.34	0.09	0.12	3.91
Max	0.89	0.67	0.64	0.78	0.35	0.01	0.71	3.45	2.34	0.70	0.65	0.26	6.77
No. Yrs.	3	3	3	3	3	3	3	4	4	3	3	3	2

Note: a = 1 day missing, b = 2 days missing, c = 3 days missing, etc.., z = 26 or more days missing; Long-term means based on summation of period of record monthly mean row values.

Table E-2
2014 High-Altitude Precipitation Data

Source	Station Number	Station Name	2014 Precipitation (in.)	Period of Record Statistics				
				Time Period	Mean	Min	Max	No. Yrs.
NDWR	RP1790101	Schellborne	13.90	1954 - 2014	14.49	0.00	26.80	55
NDWR	RP1790102	Connors	13.25	1956 - 2014	13.95	3.40	23.94	55
NDWR	RP1830101	Mount Wilson	12.00	1954 - 2014	16.55	7.50	28.30	58
USGS	RP1840401	Mount Washington	19.50	1984 - 2014	26.08	12.00	62.00	30
USGS	RP1840402	Cave Mountain	20.25	1984 - 2014	20.35	12.00	32.16	31
USGS	RP1950401	Unnamed Peak Northwest of Mount Moriah	18.25	1984 - 2014	18.15	8.50	28.75	28

This Page Left Intentionally Blank

Appendix F

Memorandums

May 4, 2010

M E M O R A N D U M

TO: Executive Committee for Spring Valley and Delamar, Dry Lake, and Cave Valleys Stipulation Agreements

FROM: Technical Review Panel for Spring Valley and Delamar, Dry Lake, and Cave Valleys Stipulation Agreements

SUBJECT: TRP CONSENSUS AGREEMENT IN REGARDS TO WATER-CHEMISTRY SAMPLING IN SPRING VALLEY AND DELAMAR, DRY LAKE, AND CAVE VALLEYS

The Technical Review Panel (TRP) held a conference call on March 31, 2010 to discuss the water-chemistry sampling programs required by the Spring Valley and the Delamar, Dry Lake, and Cave Valleys (DDC) Stipulation Hydrologic Monitoring, Management, and Mitigation Plans. The Stipulation Agreement for Spring Valley requires that three rounds of water-chemistry sampling at 40 locations be completed within five years from the approval date of the agreement (September 8, 2006). The Stipulation Agreement for DDC requires that two rounds of water-chemistry sampling at 10 locations be completed within three years from the approval date of the agreement (January 7, 2008). Both hydrologic monitoring networks include new monitor wells which will not be installed in time to meet the water-chemistry sampling requirements set forth in the agreements. The TRP evaluated various implementation alternatives for the water-chemistry programs, including: (1) sampling this year and next year from the existing network without the planned new monitor wells; (2) delaying the sampling until the monitor wells are installed, and then sampling from the complete monitoring network; or (3) some combination of these ideas. The TRP reached a consensus agreement as to the preferred course of action which is summarized below.

For Spring Valley, the TRP recommends that the water-chemistry sampling program be modified to proceed with the collection and analysis of water-chemistry samples at 35 locations selected by the TRP in 2010. The remainder of the water-chemistry program will be postponed until after the five new Interbasin Groundwater Monitoring Zone (Zone) monitor wells specified in the Stipulation Hydrologic Monitoring, Management, and Mitigation Plan have been installed. SNWA will complete the initial three rounds of water chemistry sampling within two years after installing the five Zone wells. The program will consist of the collection of water-chemistry samples from the five new Zone wells, followed by two rounds of sample collection six months apart at the 35 locations sampled in 2010 and the five Zone wells (a total of 40 sites per sampling event as originally specified in the Stipulation Hydrologic Monitoring, Management, and Mitigation Plan). The sample sites and parameters may be modified by the TRP based upon results of previous sampling rounds.

For DDC, the TRP recommends that the water-chemistry sampling program be postponed and implemented after the three new monitor wells specified in the Stipulation Hydrologic Monitoring, Management, and Mitigation Plan have been installed. Implementation of the program will include collection of two rounds of water-chemistry samples six months apart at 10 locations selected by the TRP

TRP Members:

Dan Netcher, Bureau of Land Management
James Prieur, Southern Nevada Water Authority
Raymond Roessel, Bureau of Indian Affairs
Rick Felling, Nevada State Engineer Office
Sue Braumiller, U.S. Fish and Wildlife Service
William Van Liew, National Park Service

October 29, 2014

M E M O R A N D U M

TO: Executive Committee for Spring Valley Stipulation

FROM: Technical Review Panel for Spring Valley Stipulation

SUBJECT: CONSENSUS RECOMMENDATIONS REGARDING REVISIONS TO THE "EXISTING MONITORING WELLS" NETWORK

Overview

The Technical Review Panel (TRP) has reached consensus regarding the following recommendations for revisions to the Spring Valley Stipulation Hydrologic 3M Plan (3M Plan) "Existing Monitoring Wells" network. The recommended revisions are designed to work in unison to improve network performance and are based on a review of groundwater-level data collected since 2007, the current availability of wells and their condition, and other hydrogeologic considerations. The revisions also resolve a difference in interpretation of the Stipulation as to the total number of wells in the "Existing Monitoring Wells" network and double counting of a well previously included in both the "Interbasin Groundwater Monitoring Zone" and "Existing Monitoring Wells" networks. The revised "Existing Monitoring Wells" network comprises 15 continuously monitored wells and 10 quarterly monitored wells, in accordance with the 3M Plan.

Background

The "Stipulation for Withdrawal of Protests" of Southern Nevada Water Authority (SNWA) water-right applications in Spring Valley ("Spring Valley Stipulation") was developed and agreed upon by SNWA and the Department of the Interior Bureaus (Bureau of Land Management, U.S. Fish & Wildlife Service, National Park Service, and Bureau of Indian Affairs), and was signed on September 8, 2006. This Stipulation includes an "EXHIBIT A: Hydrologic Monitoring, Management, and Mitigation Plan" (3M Plan) that describes common goals and specifies monitoring, management, and mitigation requirements.

Monitoring. A principal component of the monitoring requirements is a network of monitoring wells. As of 2014, most of the required monitoring-well network has been installed with the exception of five wells in the Interbasin Groundwater Monitoring Zone ("Zone") and two near-Zone wells. Monitoring from this network has been in operation since 2007 and is ongoing. Descriptions and results of the monitoring program are maintained on an online data-exchange site and documented in annual reports prepared by SNWA for the TRP and the Nevada State Engineer's Office since 2007.

Management. One of the cornerstones of the 3M Plan is an adaptive management approach. On page 1 of the 3M Plan, *"Management Requirements"* are summarized, including *"…the creation of a Technical Review Panel ("TRP") to review information collected under this Plan and advise the Executive Committee,… and the establishment of a consensus-based decision-making process"*.

Section 3.C. of the 3M Plan "*Management Requirements, Technical Review Panel (TRP)"* (pg 9-10) specifies the responsibilities of the TRP in detail, including 10 itemized requirements. Item #9 states: "[*The TRP shall*] *form recommendations about monitoring, modeling, groundwater management, and mitigation, including but not limited to addition, deletion, or replacement of monitoring wells, the frequency of data collection, and the types of monitoring, sampling, and testing to be conducted"*.

Monitoring Requirements for the "Existing Monitoring Wells" Network

The 3M Plan (Section 2.C. "*Monitoring Requirements, Existing Monitoring Wells*") requires groundwater-level monitoring from 25 existing wells in the Spring Valley and Hamlin Valley Hydrographic Basins (pg. 3); 15 wells to be monitored continuously and 10 wells to be monitored quarterly. Many of the 25 wells were selected by the TRP from 221 existing wells listed in Table D.1-1 of the 2006 SNWA water-rights hearing exhibit #509 entitled "*Water Resources Assessment for Spring Valley, June 2006*", as specified in Section 2.C. During the initial selection process, the TRP also considered and incorporated a number of new SNWA exploration wells into the "Existing Monitoring Wells" network (wells not listed in Table D.1-1 of the 2006 Water Resources Assessment report).

Furthermore, it is stated in this section that: *"Modification of this monitoring requirement, including any addition, subtraction or replacement of the wells initially selected by the TRP or the frequency of monitoring for these wells may be made through consensus recommendations from the TRP as set forth in Section 3 of this Plan"* and that *"The wells shall include as many existing carbonate wells as is possible…"*.

Difference of Interpretation of the 3M Plan Monitoring Requirements

A difference of interpretation of the 3M Plan monitoring requirements arose in 2007 when the TRP selected one of the established 15 continuously monitored wells in the "Existing Monitoring Wells" network (well 184W502M) to be an "Interbasin Groundwater Monitoring Zone" well. This action was consistent with Section 2.D.I. of the 3M Plan ("Monitoring Requirements, New Monitoring Wells, New Monitoring Wells located within the 'Zone'") which states that: *"SNWA may substitute existing wells for the monitoring wells required to be constructed pursuant to this paragraph if agreed upon by the TRP"*. However, it resulted in a double counting of the well (as both a "Zone" well and one of the 15 continuously monitored wells comprising the "Existing Monitoring Wells" network). There was a difference of interpretation within the TRP whether the 3M Plan option to *"…substitute existing wells…"* to meet requirements for monitoring wells within the "Zone" was intended to apply to: (a) the table of 221 existing wells in SNWA Exhibit #509 (from which the wells comprising the "Existing Monitoring Wells" network were to be selected); or (b) the 15 wells that were already selected as part of the "Existing Monitoring Wells" network.

Recommended Revisions to the "Existing Monitoring Wells" Network

The TRP members, in accordance with the provisions of the Spring Valley Stipulation and by consensus, recommend that the following revisions be made to the current 3M Plan "Existing Monitoring Wells" network. These recommended revisions serve two objectives: (1) to improve the collection of baseline groundwater-level data to meet the goals of the Stipulation; and (2) to resolve the difference in the interpretation of the 3M Plan monitoring requirements. The recommended revisions are described below, summarized in Table 1, and shown on Figure 1.

Add 3 Continuously monitored Wells:

- ***"Big Springs SW Well"*** *(northern Hamlin Valley)* ***and "Big Springs NW Well" (****southern Snake Valley)*

  The addition of these monitoring wells will provide two new high-quality wells in the vicinity of Big Springs. These wells were installed by the U.S. Geological Survey (USGS) as part of the Department of the Interior (DOI) investigation entitled: *"A study of the connection among basin-fill aquifers, carbonate-rock aquifers, and surface-water resources in southern Snake Valley, Nevada"*, which was funded by the Southern Nevada Public Lands Management Act (SNPLMA) program. The Big Springs SW Well is completed in the carbonate-rock aquifer [500 to 700 feet below ground surface (ft bgs)] and the Big Springs NW Well is completed in a basin-fill aquifer (300 to 460 ft bgs) uphill about 1.5 miles northwest of Big Springs. These two monitoring wells were monitored continuously for approximately 2-3 years during the DOI investigation. The investigation was completed at the end of 2012, at which time continuous monitoring of these wells ceased. Even though the Big Springs NW well is located in Snake Valley, the monitoring location provides valuable hydrologic data for the network and in the vicinity of Big Springs and other nearby springs.

  In addition, these two monitoring wells serve the following purpose stated in the 3M Plan. In Section 2.C., "*Monitoring Requirements, Spring and Stream Discharge Measurements*" (pg 7), it is stated that: *"SNWA shall work with the TRP to collect data in order to investigate the relationship between discharge at Big Springs and hydraulic head in the basin-fill and regional carbonate-rock aquifers, including but not limited to the installation, equipping, and maintenance of one or more monitoring wells located in the immediate vicinity of Big Springs*". Moreover, continuous groundwater level monitoring at the Big Springs SW well during the period of baseline data collection is needed to assist in characterizing the potential effects of Granite Peak Ranch irrigation pumping in southern Snake Valley on Big Springs apart from the effects of any future Spring Valley pumping by SNWA.

  Further, the addition of these two wells will facilitate one of "[*t*]*he common goals of the Parties*" to "*accurately characterize the groundwater gradient from Spring Valley HB to Snake Valley*" (Section 1.A. "*Introduction, Common Goals*", pg 1-2). Funding for the installation of these monitoring wells, which was provided to USGS by the DOI Bureaus through the SNPLMA program, also meets the intent set forth in Section 2.A. "*Monitoring Requirements, General*" (pg 2), in which it is stated: "*The cost of the monitoring plan shall be borne primarily by SNWA. The DOI Bureaus shall… seek funding to contribute to monitoring efforts*". These wells were also sited by DOI in cooperation with SNWA, TRP and the Nevada Division of Water Resources (Nevada State Engineer's Office) with the express purpose of augmenting and supporting, but not replacing, the required "*New Monitoring Wells located within the Interbasin Groundwater Monitoring Zone*" (Section 2.D.I. "*Monitoring Requirements, New Monitoring Wells*", pg 3-4), which will be installed by SNWA in the future.

- ***Osceola Well (SPR7006M) (****east-central Spring Valley)*

  The Osceola Well (SPR7006M) is a high-quality SNWA test well completed in the carbonate-rock aquifer from 167 to 1720 ft bgs. It has been monitored continuously by SNWA for the past three years on a voluntary basis.

Eliminate 2 Wells:

- ***Well 384039114232701*** *(southern Spring Valley)* – ***monitored continuously***

  This well, which is located near the White Pine – Lincoln county line, is likely in poor communication with the basin-fill aquifer, and thus is not a high-quality monitoring well. It is completed in the basin-fill aquifer from 50 to 150 ft bgs and has been monitored continuously for the past seven years, during which time the water level in the well has varied little. Other basin-fill monitoring wells are located in the vicinity of this well and deemed by the TRP to provide sufficient water-level data in the basin-fill aquifer in this portion of Spring Valley under current (predevelopment) conditions.

- ***Well 383533114102901 (aka the Monument Well)*** *(northern Hamlin Valley)* **– *monitored quarterly***

  This well is also likely is in poor communication with the basin-fill aquifer. It is completed in basin fill from 111 to 164 ft bgs and has been monitored quarterly for the past seven years, during which time the water level in the well has varied little. In addition, data compiled by the USGS shows that the level of water in this well has varied little since its construction in the mid-1900s. In comparison, groundwater levels in nearby basin-fill wells exhibit greater fluctuations seasonally and year-to-year, supporting the conclusion that the Monument Well is not in good communication with the basin-fill aquifer.

Reduce Frequency of Monitoring at One Well:

- ***Well 390352114305401 (aka USGS-MX Spring Valley N)*** *(central Spring Valley)* - ***from continuous to quarterly.***

  This well is completed in the basin-fill aquifer from 50 to 160 ft bgs. The water level in the well has varied little during the past seven years. The TRP interprets this to be the result of the well's location on the valley floor, rather than an issue with the condition of the well. The TRP believes that quarterly water-level measurements in this well likely will provide sufficient hydrologic information for the basin-fill aquifer in this area of Spring Valley at this time (under pre-development conditions). The Nevada State Engineer's Office, as an invited participant on the TRP, has suggested that the frequency of monitoring in this well may need to be restored to continuous in advance of SNWA production in Spring Valley.

Replace the Old Cleve Creek Well with Well SPR 7029M:

- ***Eliminate Well 391224114293601 (aka the Old Cleve Creek Well)*** *(central Spring Valley)*

- ***Add Well SPR7029M*** *(central Spring Valley)*

  Eliminate a well of unknown construction in the vicinity of Cleve Creek in central Spring Valley and add a new high-quality well (installed by SNWA voluntarily in 2011) in its place. The Old Cleve Creek well, which is a quarterly monitored well, is of unknown construction. Well SPR 7029M is completed from 213 to 262 ft bgs. Both wells are completed in the basin-fill aquifer. Well SPR 7029M has been monitored quarterly for the last three years in conjunction with the Old Cleve Creek well, ensuring overlap in data collection to assist in interpretation of data collected at the new well in the context of longer-term trends.

(NOTE: Well SPR7029M was constructed by SNWA on a voluntary basis at the time of installation of a deeper well (SPR7029M2, completed nearby in the basin-fill aquifer from 360 to 430 ft bgs) under a requirement by the Nevada State Engineer.

Summary and Conclusions

Overall, the TRP recommends that three high-quality continuously monitored wells be added to the 3M Plan "Existing Monitoring Wells" network, two poorer-quality monitoring wells be eliminated from the network (one continuously monitored well and one monitored quarterly), and the frequency of groundwater-level monitoring in one well be reduced from continuous to quarterly. In addition, the TRP recommends that one older basin-fill well be replaced with a recently drilled basin-fill well (both monitored quarterly).

The recommended revisions work in unison to improve the performance of the "Existing Monitoring Wells" network. The difference of interpretation regarding the 3M Plan monitoring requirements is resolved by adding the Osceola Well (SPR 7006M) to the network (a well which is already being monitored continuously on a voluntary basis by SNWA). This results in an "Existing Monitoring Wells" network of 15 continuously monitored wells and 10 quarterly monitored wells, in accordance with the 3M Plan monitoring requirements.

The TRP agrees that the revised "Existing Monitoring Wells" network meets the goals and objectives of the Stipulation at this time.

The Office of the Nevada State Engineer has agreed to the above combination of revisions, which will be reflected in the Spring Valley Monitoring, Management, and Mitigation Plan approved by the Nevada State Engineer.

TRP Members:

Bill Van Liew, National Park Service
Sue Braumiller, U.S. Fish & Wildlife Service
Jim Prieur, Southern Nevada Water Authority
Dan Netcher, Bureau of Land Management
Ray Roessel, Bureau of Indian Affairs
Adam Sullivan, Nevada State Engineers Office

Table 1. Recommended revisions to the 3M Plan's "Existing Monitoring Wells" network under the Spring Valley Stipulation, October 2014.

Well	**Location (Completion)**	**Action**
Add to Stipulation network:		
▪ Big Springs SW Well	One mile southwest of Big Springs in Limestone Hills (carbonate aquifer)	Add as continuously monitored well
▪ Big Springs NW Well	Southern Snake Valley above Big Springs (basin fill)	Add as continuously monitored well
▪ Osceola Well (SPR7006M)	Seven miles south of Sacramento Pass on east side of Spring Valley (lower carbonate aquifer)	Add as continuously monitored well
Eliminate from Stipulation network:		
▪ Well 184 N10 E68 31CD 1 USGS-MX, site no. 384039114232701	Southern Spring Valley ~3.5 mi south of groundwater (basin fill).	Drop as continuously monitored well
▪ Well 196 N08 E70 06 B 1 (USBLM Monument Well), site no. 383533114102901	Centrally located in northern Hamlin Valley (basin fill).	Drop as quarterly monitored well
Reduce frequency of monitoring:		
▪ Well 184 N14 E66 24BDDD1 (USGS-MX Spring Valley N.), site no. 390352114305401	Centrally located in Spring Valley (south to north) in western half of the basin (basin fill).	Frequency of monitoring reduced from continuous to quarterly
Replace Old Cleve Creek Well with new Cleve Creek Well (installed by SNWA):		
Old Cleve Creek Well, 184 N16 E66 36DBAD1, site no. 391224114293601	Central Spring Valley near Cleve Creek (basin fill, unknown construction).	Drop as quarterly monitored well
Well SPR7029M	Near Cleve Creek on western side of the central Spring Valley (basin fill); paired-up with deeper basin fill well installed for the State Engineer	Add as quarterly monitored well

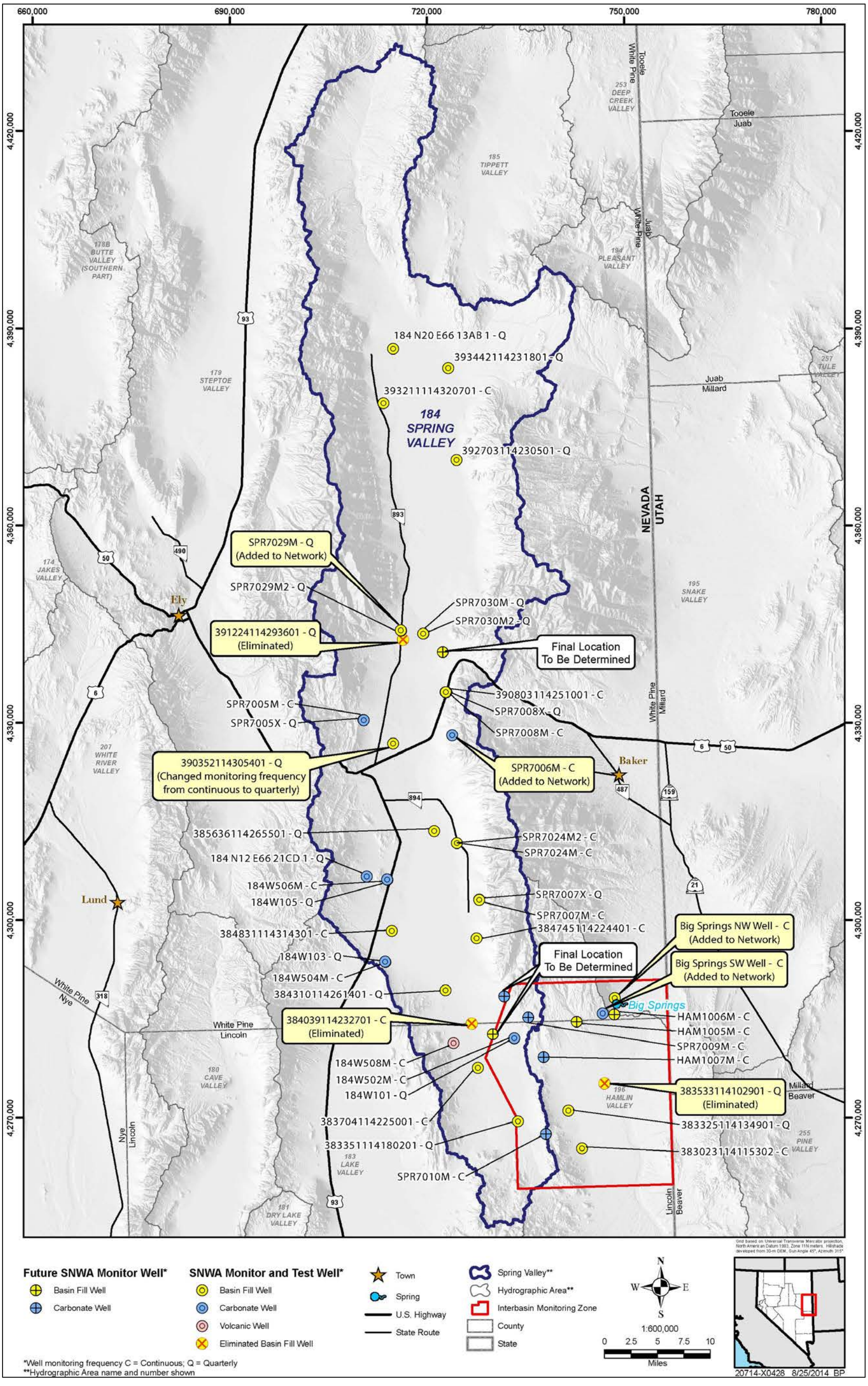


Figure 1. Recommended revisions to the Spring Valley Stipulation 3M Plan "Existing Monitoring Wells" network, October 2014, by consensus of the TRP.

February 04, 2015

M E M O R A N D U M

TO: Executive Committee for Spring Valley Stipulation

FROM: Biological Work Group & Technical Review Panel for Spring Valley Stipulation

SUBJECT: CONSENSUS RECOMMENDATIONS REGARDING ADDITIONAL LOCAL HYDROLOGIC MONITORING AT BIOLOGICAL MONITORING SITES

The Biological Work Group (BWG) and Technical Review Panel (TRP) provide the following consensus recommendations for additional hydrologic monitoring at Spring Valley Stipulation biological monitoring sites. The recommendations are designed to facilitate developing relationships and interpreting changes between spring hydrologic conditions and monitored aquatic biological resources (springsnails, frogs, fishes, and their habitats).

The BWG and TRP arrived at these recommendations collaboratively during an October 15-16, 2014 reconnaissance visit to selected biological monitoring sites. The BWG and TRP aimed to maximize the degree to which additional local hydrologic monitoring can support the biological monitoring program, serve multiple purposes, and be cost-effective. This effort was conducted as part of the BWG's biological monitoring plan evaluation (detailed discussions available in BWG 2014, 2015a, and 2015b).

The following recommendations include up to 11 staff plates and one flume placed in representative locations, to be read at least on a quarterly basis during TRP hydrologic monitoring, and during BWG biological surveys. The BWG and TRP recommend that the equipment be installed at least five years prior to SNWA groundwater withdrawal from Spring Valley, so that data are collected during the remaining five years of baseline biological monitoring specified in the Biological Monitoring Plan for the Spring Valley Stipulation (BWG 2009). Earlier installation is recommended where it is needed to support BWG interim-period efforts approved by the EC[1].

Biological Monitoring Site	Hydrographic Area	Equipment
Stonehouse Spring Complex	Spring Valley, NV	1-2 staff plates[a]
Keegan Spring Complex	Spring Valley, NV	1 staff plate, 1 flume[b]
West Spring Valley Complex 1	Spring Valley, NV	2 staff plates[c]
Unnamed 5 Spring	Spring Valley, NV	1 staff plate
Minerva Spring Complex	Spring Valley, NV	2 staff plates at North, 2 at Middle[d]
Unnamed 1 Spring North of Big	Snake Valley, NV	1 staff plate[c]

[a] Install 1 staff plate; survey second sampling area to determine if the elevation difference warrants a second plate.
[b] If it is determined that a flume would adversely affect relict dace movement, the recommended alternative is to perform manual flow measurements directly below the culvert.
[c] Subject to landowner access.
[d] North and Middle = designated sample areas within Minerva Spring Complex.

[1] Timing of installation will be considered in BWG's prioritization of potential interim-period activities in 2015; specific recommendations will be forwarded to the EC for approval.

At Shoshone Ponds, the BWG has recommended to the Pahrump Poolfish Recovery Implementation Team (RIT) to install a staff plate in the stock pond, and maintain a functional staff plate in each refuge pond. The BWG and TRP recommend that hydrologic data collected by the RIT or Bureau of Land Management (BLM) at Shoshone Ponds be incorporated into biological monitoring data analyses. Data may include pond levels at staff plates, flow rate and artesian pressure at the BLM Well #2 using the flow meter and pressure transducer, and groundwater levels at nearby artesian wells collected by BLM.

Stage and discharge data collected regularly at the recommended staff plates and flume (i.e., fixed locations) would reflect local hydrologic conditions and dynamics of groundwater-influenced ecosystems where springsnail, frog, and fish populations are monitored. This information would enable the BWG to interpret and anticipate changes in the populations and their habitats with respect to changes in local and seasonal hydrologic conditions. For example, BWG could develop relationships between stage and springsnail extent to better understand how future reductions in water quantity might affect springsnail populations. Additional analyses would be performed to evaluate the possible relationship between the local hydrologic data described in this memo (stage, discharge) to local spring piezometer groundwater elevation data or other existing local discharge data where available. Analyses would also be performed to evaluate relationships between local hydrologic data and regional hydrologic data collected within the hydrologic monitoring network (precipitation, stream discharge and groundwater elevations).

Specific recommendations and brief explanations follow for the sites listed in the table above. These recommendations outline appropriate and representative hydrologic data collection at locations where the BWG is monitoring springsnail, fish and frog populations and their habitats. Figure 1 provides a map of the sites within the Initial Biological Monitoring Area (IBMA).

- **Stonehouse Spring Complex** (Spring Valley; SNWA deeded property)
    - Recommendation: One staff plate in Springhead E within the springsnail designated sample area (Figure 2). After installation, survey the staff plate, piezometer and 2-3 representative points within the relict dace designated sample area (Figure 2); if there is a significant elevation difference, a second staff plate in the relict dace sample area is recommended.
    - Explanation: Springhead E harbors springsnails (*Pyrgulopsis kolobensis*) and shares water with the relict dace designated sample area in this large marshy complex. Thus, one staff plate may provide relevant data for evaluating potential changes to both the springsnail and fish populations. Two staff plates are recommended if elevation differs between the sample areas, as this may cause the habitats to respond differently to changing groundwater levels.
- **Keegan Spring Complex** (Spring Valley, NV; SNWA deeded property)
    - Recommendation: One staff plate in the northeast pool within the current designated sample area; and, if possible, one ramped flume above the far downstream pools (BWG-recommended second reach; BWG 2014) (Figure 3). The flume would be placed directly below the culvert, as long as the BWG determines that it would not adversely affect relict

dace movement. Otherwise, the recommended alternative is to perform manual flow measurements at the same location.

- Explanation: The northeast pool is a documented northern leopard frog (*Lithobates pipiens*) breeding pool, and is adjacent to relict dace (*Relictus solitarius*) habitat. The pools farther down in the system (approximately 2 miles from the first springhead) have harbored relict dace, and encompass the BWG-recommended second sampling reach. Because various springs and diffuse subsurface inflow contribute water to the system, and water management occurs along the system, a staff plate and flume would help quantify hydrologic conditions in these sampling areas.

- **West Spring Valley Complex 1** (Spring Valley; private property)
  - Recommendation: One staff plate in Springhead A, and one staff plate in the Channel A downstream pool, within the designated sample area (subject to landowner access) (Figure 4).
  - Explanation: Springhead A harbors springsnails (*P. kolobensis*), and is a potential breeding area for northern leopard frogs. The Channel A downstream pool is a documented northern leopard frog breeding pool. Two staff plates are recommended due to the elevation difference between the sample areas and the diversions that occur between them, as these may cause the habitats to respond differently to changing groundwater levels.

- **Unnamed 5 Spring** (Spring Valley; SNWA deeded property)
  - Recommendation: One staff plate in Springhead A within the designated sample area (Figure 5).
  - Explanation: Springhead A harbors springsnails (*P. kolobensis*), is a potential breeding area for northern leopard frogs, and is in proximity to the piezometer. Springhead A is at a similar elevation and provides water to the Channel A downstream pool where northern leopard frog breeding has been documented. One staff plate in the northern pool would provide relevant data for evaluating potential changes to both the springsnail and frog populations.

- **Minerva Spring Complex** (Spring Valley; SNWA deeded property)

  <u>North designated sample area</u>
  - Recommendation: One staff plate in Springhead A, and one staff plate in the Channel B downstream pool, within the designated sample area (Figure 6).
  - Explanation: Springhead A harbors springsnails (*P. kolobensis*), and the Channel B downstream pool is a documented northern leopard frog breeding pool. Two staff plates are recommended because the sampling areas are sourced from different springheads and separated by dry land.

  <u>Middle designated sample area</u>
  - Recommendation: One staff plate in Springhead B within the current designated sample area, and one staff plate in the southern pool (BWG-recommended addition to the designated sample area; BWG 2015a) (Figure 6).

- Explanation: Springhead B harbors springsnails (*P. kolobensis*), and the southern pool is a documented northern leopard frog breeding pool. Two staff plates are recommended because the sampling areas are sourced from different springheads and separated by dry land.

- **Unnamed 1 Spring North of Big** (Snake Valley, NV; private property)
  - Recommendation: One staff plate in Springhead B within the designated sample area (subject to landowner access) (Figure 7).
  - Explanation: Springhead B harbors springsnails (*P. anguina*). Because the springsnails span the converging Channels A and B (Figure 7), one staff plate at Springhead B would provide relevant data for evaluating potential changes to the springsnail population.

- **Installation and maintenance**
  - Upon installation, the staff plates would be surveyed and an elevation benchmark established at each site. Protective material would be placed around the plates to reduce animal disturbance as needed. During years of data collection, staff plate and spring pool/channel control point elevations would be surveyed annually to check for changes due to frost heave or land settling. Physical changes to the pools or channel control points that could affect readings will be documented at each visit. The flume and area around the flume would be maintained at each visit to ensure representative readings.

References

BWG [Biological Work Group]. 2014. Evaluation of fish sampling designs for the Spring Valley Stipulation. Nevada. March.

BWG. 2015a. Evaluation of northern leopard frog sampling designs for the Spring Valley Stipulation. Nevada. In progress.

BWG. 2015b. Evaluation of springsnail and macroinvertebrate sampling designs for the Spring Valley Stipulation. Nevada. January.

BWG and TRP

2006 SNWA-DOI Spring Valley Stipulation Parties:
Bureau of Indian Affairs
Bureau of Land Management
National Park Service
Southern Nevada Water Authority
U.S. Fish and Wildlife Service

Invited Participants:
U.S. Forest Service (via 2011 SNWA-FS Spring Valley Stipulation)
Nevada Department of Wildlife (BWG)
Utah Division of Wildlife Resources (BWG)
Office of the Nevada State Engineer

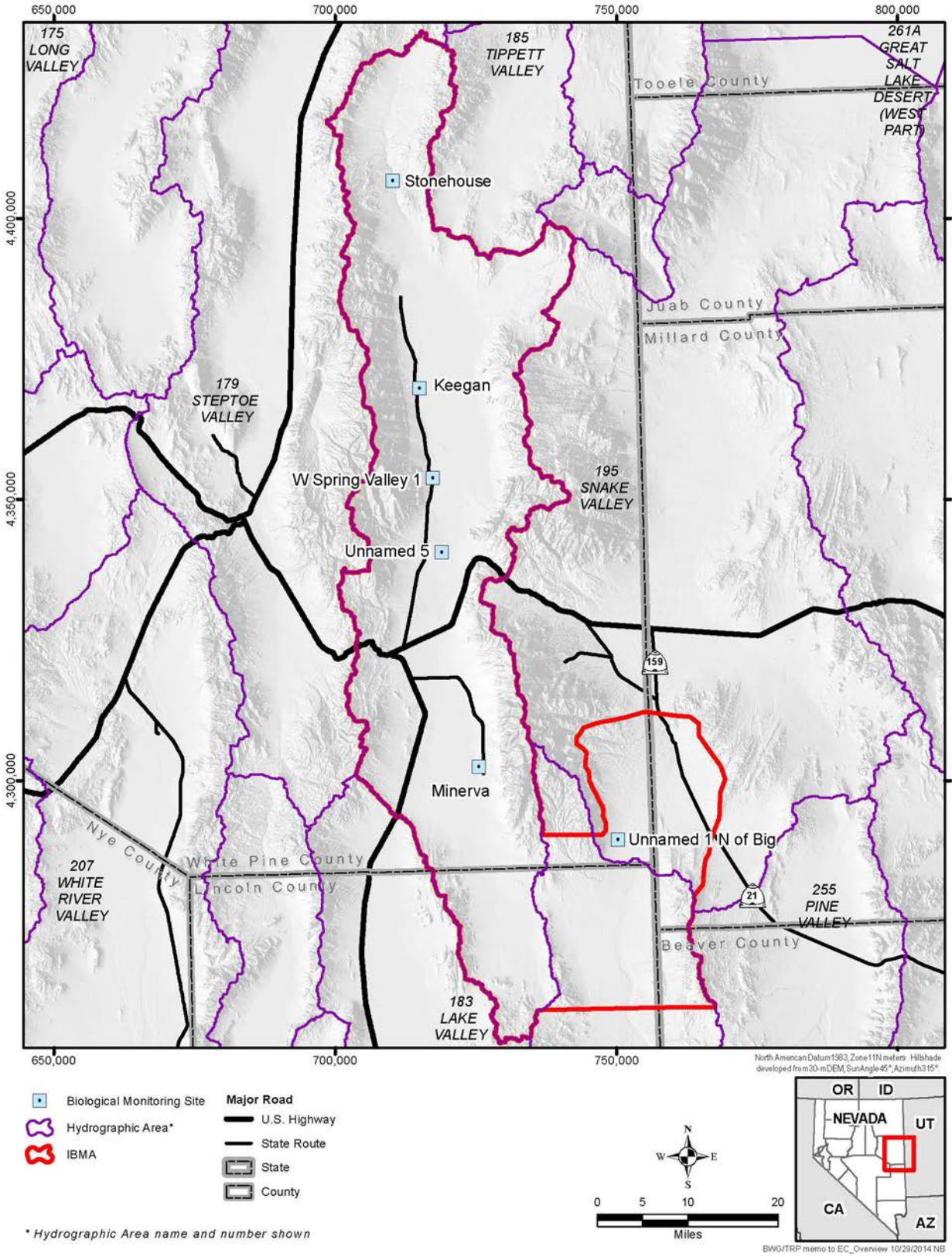


Figure 1. Biological monitoring sites with recommended additional hydrologic monitoring within the IBMA.

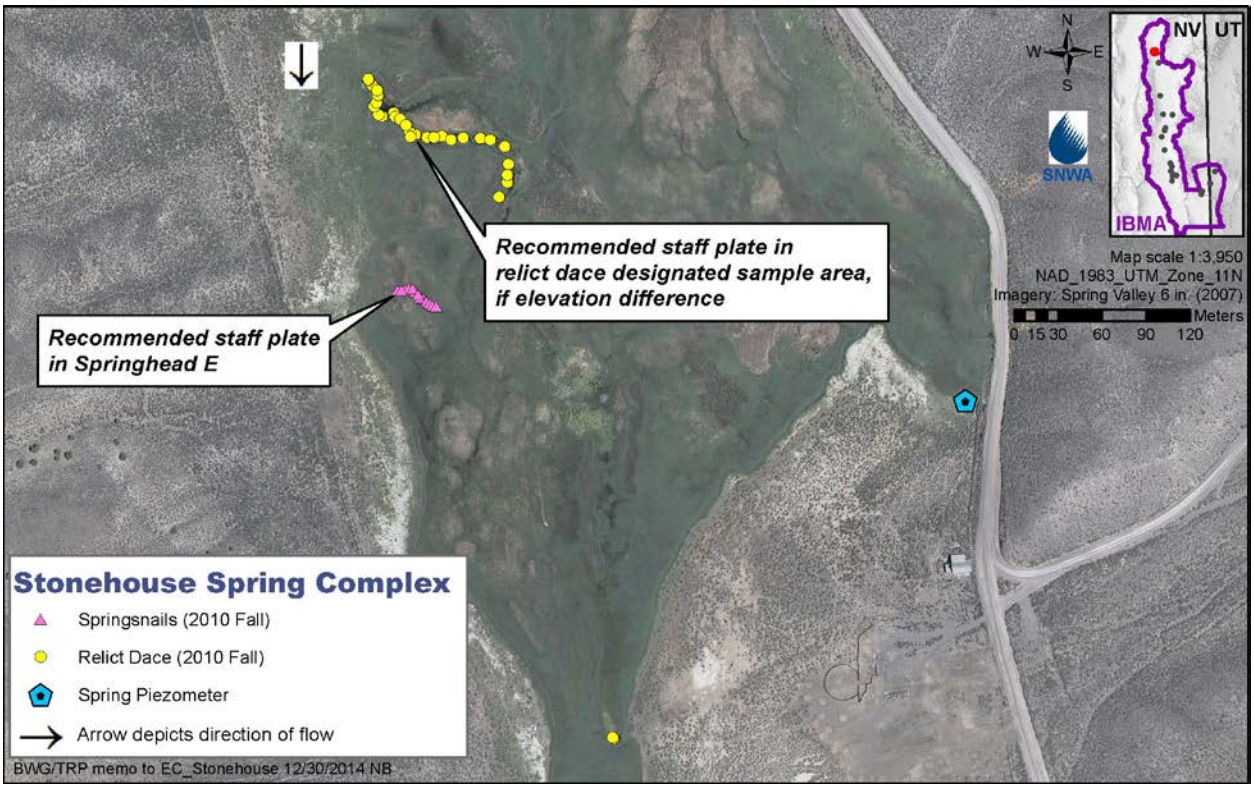


Figure 2. Recommended additional hydrologic monitoring at Stonehouse Spring Complex (Spring Valley, Nevada).

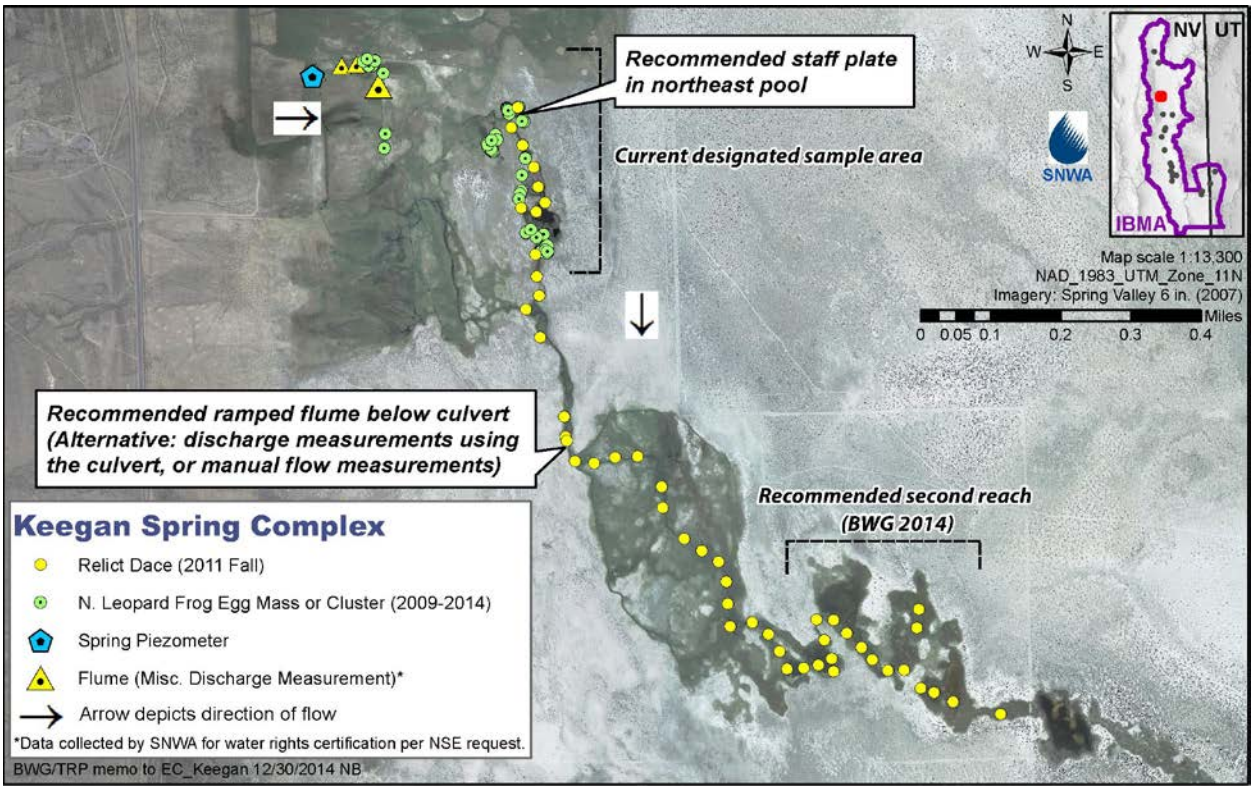


Figure 3. Recommended additional hydrologic monitoring at Keegan Spring Complex (Spring Valley, Nevada).

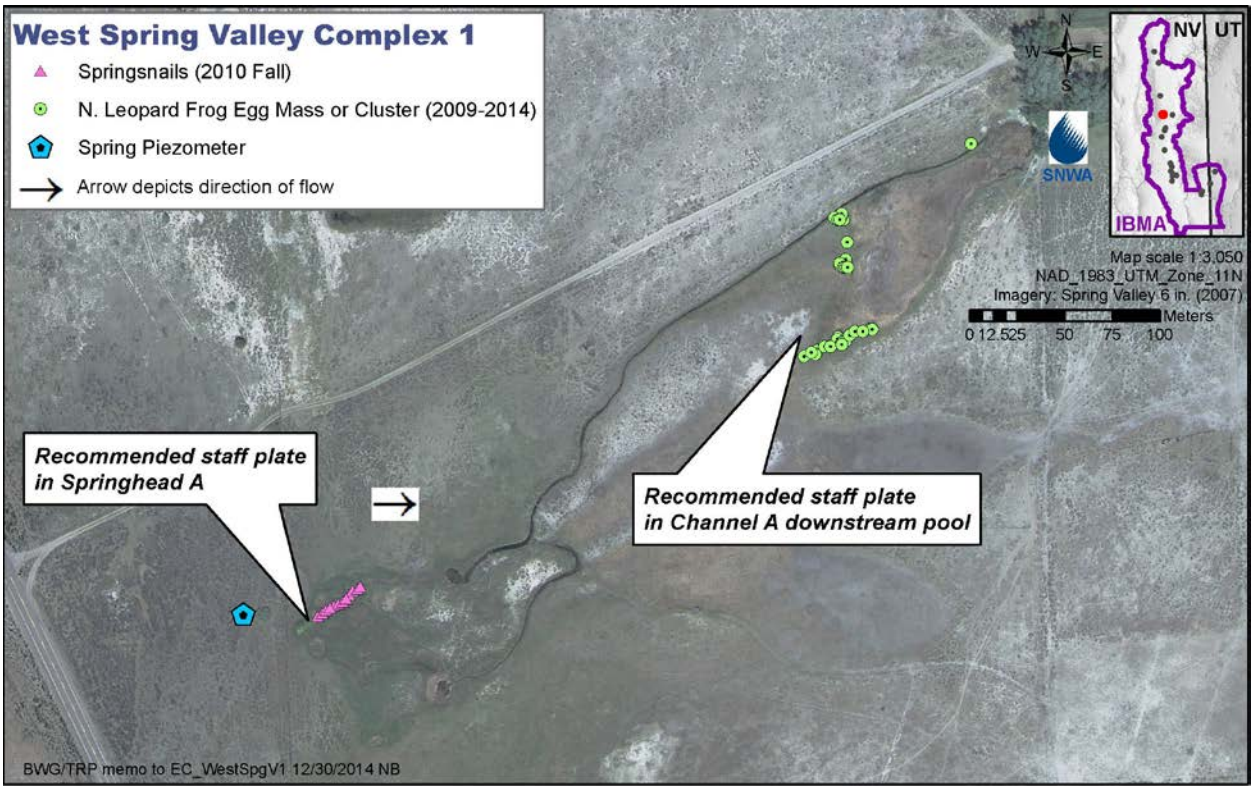


Figure 4. Recommended additional hydrologic monitoring at West Spring Valley Complex 1 (Spring Valley, Nevada).
[subject to landowner access]

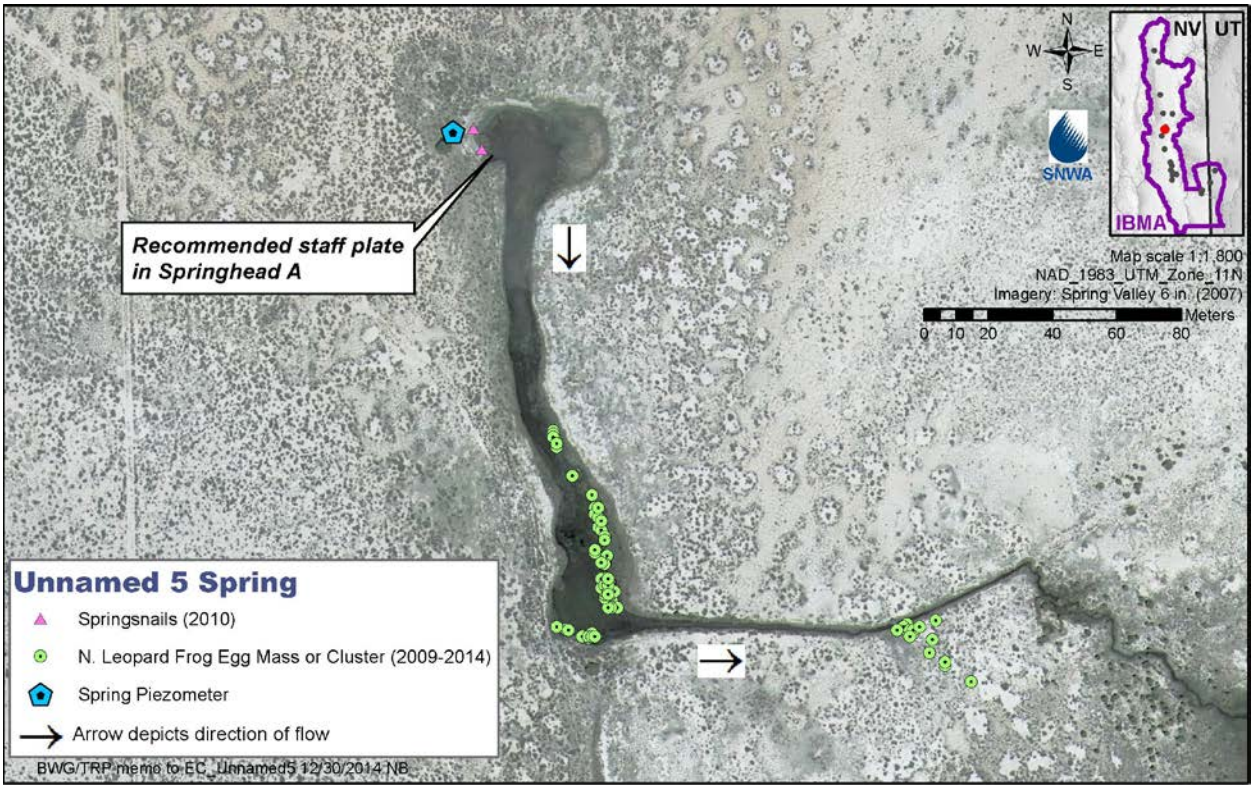


Figure 5. Recommended additional hydrologic monitoring at Unnamed 5 Spring (Spring Valley, Nevada).

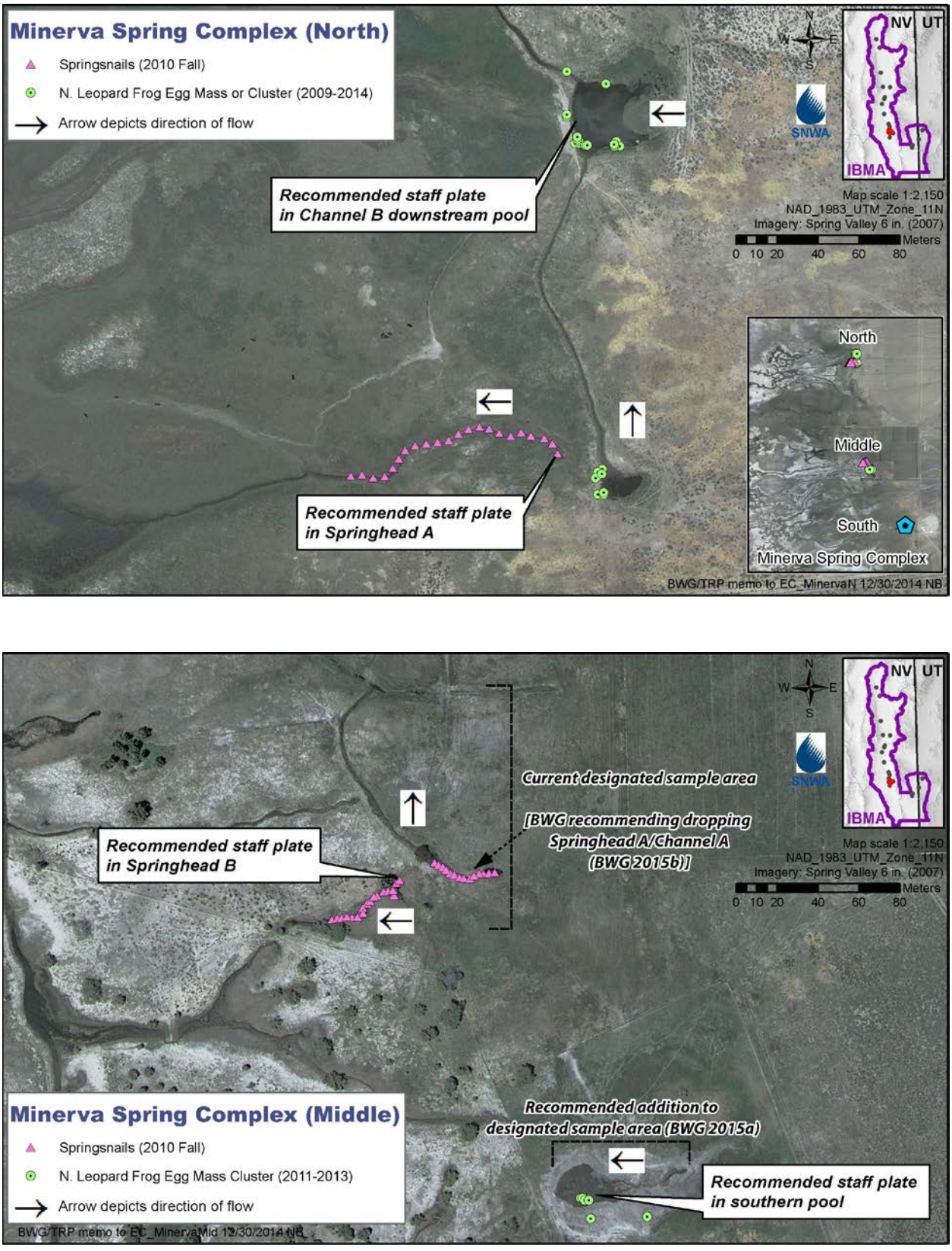


Figure 6. Recommended additional hydrologic monitoring at Minerva Spring Complex (Spring Valley, Nevada).

\

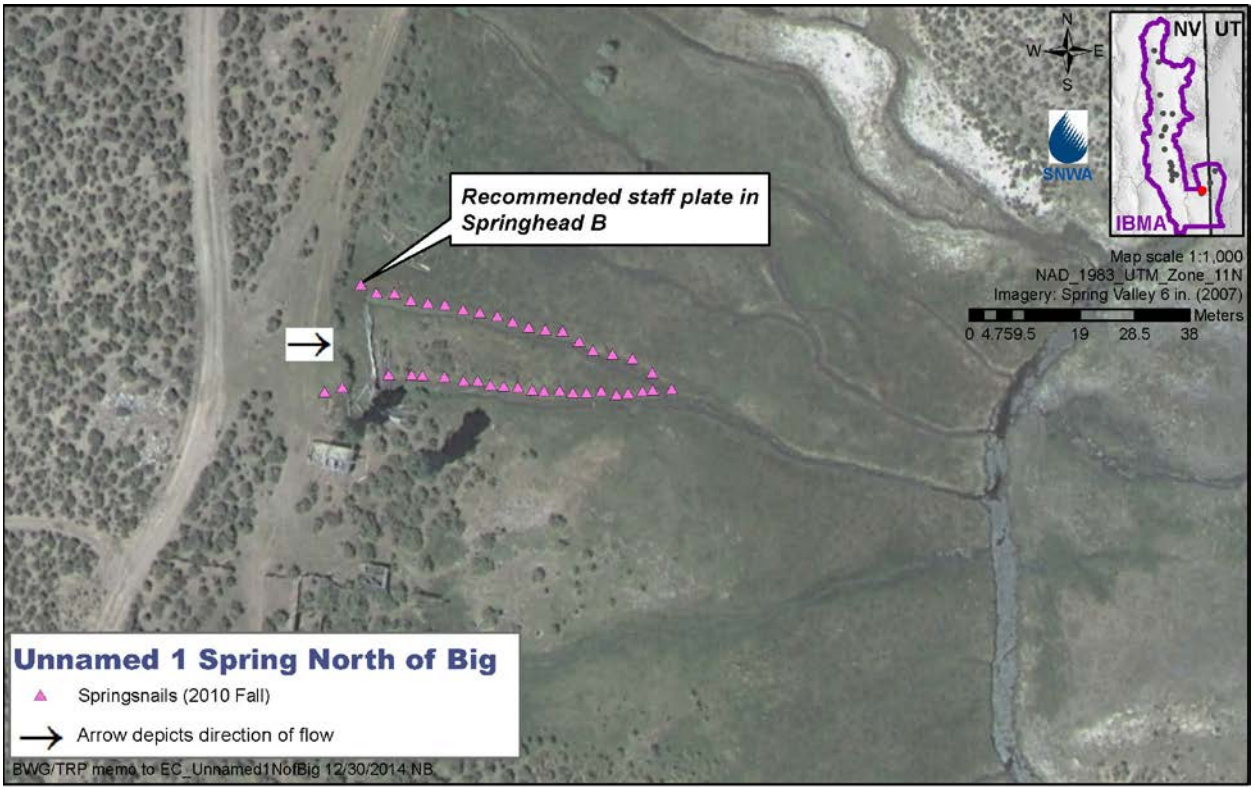


Figure 7. Recommended additional hydrologic monitoring at Unnamed 1 Spring North of Big (Snake Valley, Nevada).
[subject to landowner access]

SOUTHERN NEVADA WATER AUTHORITY
100 City Parkway, Suite 700 • Las Vegas, NV 89106
MAILING ADDRESS: P.O. Box 99956 • Las Vegas, NV 89193-9956
(702) 862-3400 • snwa.com

March 30, 2015

Jason King, P.E., State Engineer
Nevada Division of Water Resources
901 S. Stewart Street, Suite 2002
Carson City, Nevada 89701

Dear Mr. King:

SUBJECT: SUBMITTAL OF ANNUAL MONITORING REPORTS FOR SELECTED SNWA PERMITS IN SOUTHERN AND EASTERN NEVADA

Please find enclosed the subject reports which are submitted in compliance with hydrologic monitoring and reporting requirements associated with water-right permits owned by the Southern Nevada Water Authority (SNWA) in eastern and southern Nevada. The reports and associated permits included in this submittal are described below:

2014 Annual Monitoring Report for SNWA Groundwater Permits in Coyote Spring, Garnet, and Hidden Valleys, Clark and Lincoln Counties, Nevada submitted for Permit Numbers 54073, 54074, 68822, 77291-77306, 70429, 70430, 74094, 74095, 79001-79010, and 83490. The report also includes data collected at monitoring sites located in adjacent hydrographic areas comprising the remaining portions of the southern White River and Lower Meadow Valley Wash flow systems.

2014 Spring Valley Hydrologic Monitoring, Management, and Mitigation Plan Status and Data Report submitted in satisfaction of reporting requirements set forth in the hydrologic monitoring plan approved by the Nevada State Engineer (NSE) associated with Ruling 6164.

2014 Delamar, Dry Lake, and Cave Valleys Hydrologic Monitoring, Management, and Mitigation Plan Status and Data Report submitted in satisfaction of reporting requirements set forth in the hydrologic monitoring plan approved by the NSE associated with Rulings 6165 through 6167.

Electronic files containing the 2014 hydrologic and groundwater-production data collected under the various monitoring programs associated with these permits have previously been submitted to your office in the required format.

If you have any questions concerning these reports, please contact Andrew Burns at (702) 862-3772.

Sincerely,

Zane L. Marshall
Director, Resources & Facilities

ZLM:lmv

Enclosures (3)

c: Adam Sullivan, Hydrology Section Chief, Nevada Division of Water Resources
Matt Dillion, Water Resource Specialist, NDWR Nevada Division of Water Resources
John Guillory, Supervising Engineer, Nevada Division of Water Resources

SOUTHERN NEVADA WATER AUTHORITY
100 City Parkway, Suite 700 • Las Vegas, NV 89106
MAILING ADDRESS: P.O. Box 99956 • Las Vegas, NV 89193-9956
(702) 862-3400 • snwa.com

March 30, 2015

Bill Hansen, Chief Water Rights Branch
National Park Service, WRD
1201 Oak Ridge Drive, Suite 250
Ft. Collins, Colorado 80525

William Dunkelberger, Forest Supervisor
U.S. Forest Service
1200 Franklin Way
Sparks, Nevada 89431

Michael Senn, Nevada State Supervisor
U.S. Fish and Wildlife Service
1340 Financial Boulevard, Suite 234
Reno, Nevada 89502

Michael Herder, Ely District Manager
Bureau of Land Management
702 N. Industrial Way
HC 33 Box 3350
Ely, Nevada 89301

Cathy Wilson, Area Director
Bureau of Indian Affairs, Western Region
2600 N. Central Avenue, MS#460
Phoenix, Arizona 85004

Dear Stipulation Executive Committee Members:

SUBJECT: SUBMITTAL OF THE 2014 SPRING VALLEY AND DDC VALLEYS HYDROLOGIC MONITORING, MANAGEMENT AND MITIGATION PLAN STATUS AND DATA REPORTS

The Southern Nevada Water Authority (SNWA) hereby submits the subject reports to the Stipulation Executive Committee (EC). These reports are submitted in satisfaction of reporting requirements set forth in hydrologic monitoring plans associated with Exhibit A of the Stipulations for Withdrawal of Protests for Spring Valley and Delamar, Dry Lake, and Cave (DDC) valleys.

These reports provide the EC and Technical Review Panel with hydrologic data for calendar year 2014 and a status update of monitoring activities performed by SNWA. Copies of the reports and electronic data submittal have also been posted on the Spring Valley and DDC valleys data-exchange website.

If you have any questions regarding these reports, please contact Andrew Burns at (702) 862-3772.

Sincerely,

Zane L. Marshall
Director, Resources & Facilities

ZLM:lmv
Enclosures (2)

c: Dan Netcher, Bureau of Land Management
Sarah Peterson, Bureau of Land Management
Ray Roessel, Bureau of Indian Affairs, Western Region
Sue Braumiller, U.S. Fish and Wildlife Service
Joe Gurrieri, U.S. Forest Service
Gary Karst, National Park Service
Jose Noriega, U.S. Forest Service
Andrew Burns, Southern Nevada Water Authority
James Prieur, Southern Nevada Water Authority