
**BUCKMAN WELLS 10-13
(RG-20516-S-10 THROUGH S-13)
MONITORING PROGRAM
BIENNIAL REPORT
MARCH 2011**

prepared by

**CITY OF SANTA FE
Water Division**

and

**JOHN SHOMAKER & ASSOCIATES, INC.
Water-Resource and Environmental Consultants
2611 Broadbent Parkway NE
Albuquerque, NM, USA 87107
www.shomaker.com
505-345-3407**

prepared for

**New Mexico Office of the State Engineer
Santa Fe**

March 30, 2011



**BUCKMAN WELLS 10-13
(RG-20516-S-10 THROUGH S-13)
MONITORING PROGRAM
BIENNIAL REPORT
MARCH 2011**

prepared by

CITY OF SANTA FE
Water Division

and

JOHN SHOMAKER & ASSOCIATES, INC.
Water-Resource and Environmental Consultants
2611 Broadbent Parkway NE
Albuquerque, NM, USA 87107
www.shomaker.com

prepared for

New Mexico Office of the State Engineer
Santa Fe

March 30, 2011



CONTENTS

page

1.0 INTRODUCTION 1

 1.1 Buckman Monitoring Program Requirements 1

 1.2 Buckman Monitoring Program Biennial Report Requirements..... 4

2.0 BUCKMAN WELL FIELD (RG-20516 ET AL.) DIVERSIONS BETWEEN 2003 AND 2010..... 4

3.0 BUCKMAN MONITORING PROGRAM WATER-LEVEL TRENDS..... 6

 3.1 Calculation of Water-Level Trends 6

 3.2 Buckman Well Field Pumping Wells 6

 3.3 USGS Monitoring Wells..... 8

 3.4 Other Buckman Monitoring Program Wells..... 8

 3.5 Interpretation of Water-Level Trends 9

4.0 PROJECTIONS OF WATER-LEVEL CHANGES 10

 4.1 Buckman Monitoring Program Wells..... 10

 4.2 Buckman Monitoring Program Database Wells 11

5.0 HYDROGEOLOGIC CONSIDERATIONS 14

6.0 CONCLUSIONS..... 15

7.0 RECOMMENDATIONS..... 16

8.0 REFERENCES 17

TABLES

page

Table 1. Buckman Monitoring Program requirements	2
Table 2. Summary of Buckman Well Field diversions between 2003 and 2010.....	5
Table 3. Water-level trends for Buckman Monitoring Program area wells.....	7
Table 4. Ten- and 40-year projections for Buckman Monitoring Program area wells	12

ILLUSTRATIONS

(follow text)

- Figure 1. Map showing Buckman Monitoring Program area, Tano Road area, and selected wells.
- Figure 2. Geologic map (Koning and Read, 2010) showing Buckman Monitoring Program wells, other selected wells, and water-level decline rate contours in feet per year.
- Figure 3. West-east geologic cross-section C-C' (Koning and Read, 2010) showing selected Buckman Monitoring Program wells, and water-level decline rates, and explanation of geologic units and map symbols.
- Figure 4. Geologic map (Koning and Read, 2010) showing NMOSE groundwater-flow model-simulated average water-level decline rate contours, in feet per year, for model Layer 1, between end of September 2003 and end of 2010.
- Figure 5. Geologic map (Koning and Read, 2010) showing NMOSE groundwater-flow model-simulated average water-level decline rate contours, in feet per year, for model Layer 2, between end of September 2003 and end of 2010.

APPENDICES

(follow illustrations)

- Appendix A. Graphs showing Buckman Well Field diversions and water levels in Buckman Monitoring Program area wells
- Appendix B. Ten- and 40-year water column projections for Buckman Monitoring Program database wells

BUCKMAN WELLS 10-13 MONITORING PROGRAM BIENNIAL REPORT MARCH 2011

1.0 INTRODUCTION

As required by the Buckman Monitoring Program (BMP) document titled *Buckman Well Field Water-Level Monitoring Program Response to Condition of Approval No. 5, Permit No. RG-20516-S-10 thru RG-20516-S-13, City of Santa Fe*, this biennial report summarizes production and water-level data in the City of Santa Fe's Buckman Well Field, with a particular focus on Buckman Wells 10, 11, 12, and 13 (BW10-13), completed in 2003 (Fig. 1). This report also documents water-level data and trends for BMP wells. The BMP document can be downloaded from the City Water Division's web site at <http://www.santafenm.gov/index.asp?NID=1030>.

Buckman Wells 1 through 9 (BW1-9) are permitted under New Mexico Office of the State Engineer (NMOSE) file number RG-20516 through RG-20516-S-9, and BW10-13 are permitted under NMOSE file numbers RG-20516-S-10 through RG-20516-S-13. The Buckman Well Field diversions and water-level data summarized in this report are available in a Microsoft Excel spreadsheet "BW RG20516 prod and wtr lvl 1981 thru 2010.XLS," on the City Water Division's web site, <http://www.santafenm.gov/index.aspx?nid=2309>. The spreadsheet contains:

1. Buckman Well Field production data, monthly from October 2003 through December 2010
2. water-level data collected by the City municipal water utility and collected by the U.S. Geological Survey (USGS) for the Buckman area,
3. graphs of water levels over time.

1.1 Buckman Monitoring Program Requirements

The BMP area is defined by a 4-mile radius from BW10-13 (see Fig. 1). To monitor the effects of Buckman Well Field diversions, water-level data have been collected in the region for over 30 years as a NMOSE RG-20516 et al. permit requirement. The water-level monitoring program was expanded with the permitting of BW10-13. The BMP requires water-level monitoring at specified wells in and around the BMP area, at varying frequencies. BMP wells are listed in Table 1 and locations are shown on Figures 1 and 2.

Table 1. Buckman Monitoring Program requirements

NMOSE ID	other ID (NMBGMR/USGS, if any)	name	monitoring frequency	comments and status
	EB269/ 355000106092802	SF-2B	hourly	part of previous MP, USGS
	EB270/ 355000106092803	SF-2C	hourly	part of previous MP, USGS
	EB265/ 355002106093701	SF-3A	monthly	part of previous MP, USGS
	EB266/ 355002106093702	SF-3B	monthly	part of previous MP, USGS
	EB267/35500210609 3703	SF-3C	monthly	part of previous MP, USGS
	EB262/ 355003106094301	SF-4A	monthly	part of previous MP, USGS
	EB263/ 355003106094302	SF-4B	monthly	part of previous MP, USGS
	EB264/ 355003106094303	SF-4C	monthly	part of previous MP, USGS
	EB261/ 355006106094803	SF-5C	monthly	part of previous MP, USGS
	EB298/ 354731106072001	Buckman deep piez. (SF-6A)	hourly	BW10-13 MP, download monthly, USGS
	EB299/ 354731106072002	Buckman middle piez. (SF-6B)	hourly	BW10-13 MP, download monthly, USGS
	EB300/ 354731106072003	Buckman shallow piez. (SF-6C)	hourly	BW10-13 MP, download monthly, USGS
	EB608/ 354228106044901	Las Campanas deep piez.	hourly	BW10-13 MP, download monthly, USGS
	EB609/ 354228106044902	Las Campanas middle piez.	hourly	BW10-13 MP, download monthly, USGS
	EB610/ 354228106044903	Las Campanas shallow piez.	hourly	BW10-13 MP, download monthly, USGS
RG-20516-S-5	EB478	Buckman 1	monthly	part of previous MP
RG-20516-S-6	EB479	Buckman 2	monthly	part of previous MP
RG-20516-S	EB480	Buckman 3	monthly	part of previous MP
RG-20516-S-2	EB481	Buckman 4	monthly	part of previous MP

NMOSE - New Mexico Office of the State Engineer

NMBGMR - New Mexico Bureau of Geology and Mineral Resources

USGS - U.S. Geological Survey

MP - monitoring program

BW10-13 MP - Buckman Wells 10-13 monitoring program

piez. - piezometer

Table 1. Buckman Monitoring Program requirements (concluded)

NMOSE ID	other ID (NMBGMR/USGS, if any)	name	monitoring frequency	comments and status
RG-20516-S-3	EB482	Buckman 5	monthly	part of previous MP
RG-20516-S-4	EB483	Buckman 6	monthly	part of previous MP
RG-20516-S-7	EB484	Buckman 7	monthly	part of previous MP
RG-20516-S-8	EB485	Buckman 8	monthly	part of previous MP
RG-20516-S-9	EB486	Buckman 9	monthly	part of previous MP
RG-20516-S-10	EB487	Buckman 10	monthly	BW10-13 MP, measure daily production
RG-20516-S-11	EB488	Buckman 11	monthly	BW10-13 MP, measure daily production
RG-20516-S-12	EB489	Buckman 12	monthly	BW10-13 MP, measure daily production
RG-20516-S-13	EB490	Buckman 13	monthly	BW10-13 MP, measure daily production
RG-21318	EB288	Skillet	monthly	part of previous MP
RG-439	EB157	Weil Corral	monthly	part of previous MP
RG-16681	EB163	Permit	monthly	part of previous MP
RG-6386	EB160	Tony's Windmill	semi-annual	BW10-13 MP
RG-29524	EB085	Las Dos 1	semi-annual ^b	confined space
RG-25463	EB287	-	semi-annual, proposed hourly ^a	BW10-13 MP ^a
RG-24584	EB121	-	semi-annual ^b	no access
RG-438	EB251	Midway Windmill	semi-annual	BW10-13 MP
RG-29723	EB645	USFS Well	semi-annual	BW10-13 MP
RG-30777	EB064	-	hourly	BW10-13 MP
RG-28112		-	proposed semi-annual ^b	proposed alternative to RG-29524 Las Dos 1 ^b
RG-81860		Santa Fe Ranch	proposed semi-annual ^b	proposed alternative to RG-24584
-	-	new monitoring well	hourly	not yet completed

^a City will be installing sounding tube in RG-25463 and is proposing to install transducer to fulfill requirement of hourly measurement of water levels at active domestic well.

^b Access has not been granted at RG-24584, and City is proposing to measure water levels at RG-81860 on semi-annual basis as an alternative to RG-24584. Measuring RG-29524 requires confined space entry, and RG-28112 is proposed as alternative to RG-29524. The City has already been measuring water levels at RG-28112.

NMOSE - New Mexico Office of the State Engineer

NMBGMR - New Mexico Bureau of Geology and Mineral Resources

USGS - U.S. Geological Survey

MP - monitoring program

BW10-13 MP - Buckman Wells 10-13 monitoring program

Measuring water levels at RG-28112 is currently not a BMP requirement, but is proposed as an alternative to RG-29524 in semi-annual monitoring, due to confined space entry issues at RG-29524. The City has already measured the water level in RG-28112 four times since January 2009 (Fig. 1). Measuring water levels at RG-81860 on Santa Fe Ranch is currently not a BMP requirement, but is proposed as an alternative to RG-24584, for which access has not been granted.

The 1,200-ft City monitoring well has not yet been drilled due to acquisition of land access and easement agreements. The agreements are currently being negotiated with the La Tierra Homeowner's Association.

1.2 Buckman Monitoring Program Biennial Report Requirements

The requirements for the BMP biennial report are as follows:

- summarize RG-20516 production
- summarize water-level trends of monitored wells
- 10-year and 40-year projection of water-level declines in monitored wells
- projection of water-level declines for wells in the Monitoring Program area, or as specified in the RG-20516 permit
- 10-year and 40-year projections of water-level decline for one well near the western terminus of Tano Road Subdivision
- water columns in wells senior to RG-20516-S-10 through S-13 are to be determined from NMOSE Drillers' Well Logs, actual static water-levels, site-specific studies, or a combination of these data
- forecast whether remaining water column at the end of both projections will, in any monitored well, in any of the wells specifically identified in the Permit, or in any other senior well within Monitoring Plan Area, exceed 70 percent drawdown of the water column available at the initiation of monitoring program
- include a map depicting water-level trends in the monitored wells
- post report and more generalized map on an internet site accessible to the public within 30 days of submittal to the State Engineer

2.0 BUCKMAN WELL FIELD (RG-20516 ET AL.) DIVERSIONS BETWEEN 2003 AND 2010

A summary of Buckman Well Field diversions between 2003 and 2010 is presented in Table 2. Figures A1 through A14 in Appendix A present graphs showing Buckman Well field diversions and water levels since October 2003. BW10-13 began producing water for the municipal utility between October and December 2003. Between 2003 and 2010, total diversions from the Buckman Well Field have ranged from 3,053 to 5,823 ac-ft/yr (Table 2). Between 2003 and 2010, diversions from BW10-13 have ranged from 570 to 3,378 ac-ft/yr. Under NMOSE RG-20516 et al. permit, the City is permitted to pump 6,000 ac-ft annually from BW10-13.

Table 2. Summary of Buckman Well Field diversions between 2003 and 2010

year	BW1, ac-ft	BW2, ac-ft	BW3, ac-ft	BW4, ac-ft	BW5, ac-ft	BW6, ac-ft	BW7, ac-ft	BW8, ac-ft	BW9, ac-ft	BW10, ac-ft	BW11, ac-ft	BW12, ac-ft	BW13, ac-ft	BW1-13 total, ac-ft	BW10-13 subtotal, ac-ft	BW10-13, percent of total	comments
2003	508	540	338	386	234	1,188	987	780	292	0	251	259	60	5,823	570	10	BW10-13 on-line between Oct and Dec
2004	27	6	73	355	4	958	278	653	6	454	711	948	1,265	5,738	3,378	59	
2005	5	6	105	510	1	367	1,223	797	2	23	368	216	160	3,783	767	20	
2006	20	150	247	612	8	1,077	238	814	54	657	825	88	407	5,197	1,977	38	
2007	398	9	183	565	0	409	704	704	25	223	137	31	405	3,793	796	21	
2008	75	0	115	782	60	38	851	866	0	263	556	42	84	3,732	945	25	
2009	30	0	143	704	157	952	531	368	0	233	331	345	8	3,802	917	24	
2010	82	0	437	474	129	1,023	249	8	0	97	328	182	44	3,053	651	21	
2003-2010 total	1,145	711	1,641	4,388	593	6,012	5,061	4,990	379	1,950	3,507	2,111	2,433	34,921	10,001	-	
average	143	89	205	549	74	752	633	624	47	244	438	264	304	4,365	1,250	29	
average as percent of permitted amount										16	29	18	20	44	21		

BW - Buckman Well

bold - indicates well with maximum diversion

ac-ft - acre-feet

3.0 BUCKMAN MONITORING PROGRAM WATER-LEVEL TRENDS

3.1 Calculation of Water-Level Trends

The analysis of water-level trends focuses on the time period from October 2003 (when BW10-13 began pumping) to present. Water-level trends, or rates-of-change presented in Table 3 and Appendix A, were calculated by subtracting the most recent non-pumping water level from the earliest post-September 2003 non-pumping water level, and dividing by the respective time period. Positive numbers indicate a water-level rise and negative numbers represent a water-level decline.

These trends represent qualitative long-term trends and are not statistically significant for a variety of reasons including a lack of data in some cases, a mixture of pumping and non-pumping data points in some datasets, and/or the presence of more complicated short-term trends.

3.2 Buckman Well Field Pumping Wells

Although the effort was made to use only non-pumping water-level data in the analysis, water-level data in Buckman Well Field pumping wells must be interpreted cautiously, because non-pumping water levels reflect varying periods of recovery. The water-level datasets for these wells capture a range of conditions in and near the wells and not necessarily in the regional aquifer.

Water levels in eleven of the thirteen Buckman wells have been rising since October 2003, at rates ranging from 0.1 to 62 ft/yr (Table 3, Figs. 2, A2 through A11, and A14). Non-pumping water levels in BW11 appear to have declined since October 2003, at a rate of about 3.4 ft/yr (Fig. A12). Non-pumping water levels in BW12 appear to have declined since mid-2005, at a rate of about 6.2 ft/yr (Fig. A13). Hydrographs for BW12 and BW13 showed shifts in water-level trends in mid-2005, and the long-term water-level trend is defined from mid-2005 to present for these wells.

Table 3. Water-level trends for Buckman Monitoring Program area wells

NMOSE ID	other ID (NMBGMR/USGS, if any)	name	total depth, ft	points used to define water-level rate-of-change					water-level rate-of-change (+ rise / - decline), ft/yr	comments
				starting water level date ¹	starting non-pumping water level, ft bgl	recent water level date	recent non-pumping water level, ft bgl	time period, years		
	EB269/355000106092802	SF-2B middle piez.	824	3/31/05	172.7	5/4/10	116.62	5.1	11.0	shift in trend in mid-2005
	EB270/355000106092803	SF-2C shallow piez.	346	11/18/03	233.89	5/4/10	119.15	6.5	17.8	
	EB265/355002106093701	SF-3A deep piez.	294	11/18/03	185.56	5/4/10	70.91	6.5	17.8	
	EB266/355002106093702	SF-3B middle piez.	169	11/18/03	18.68	5/4/10	9.30	6.5	1.5	
	EB267/355002106093703	SF-3C shallow piez.	60	11/18/03	17.75	5/4/10	16.43	6.5	0.2	
	EB262/355003106094301	SF-4A deep piez.	280	11/18/03	155.37	5/4/10	59.75	6.5	14.8	
	EB263/355003106094302	SF-4B middle piez.	130	11/18/03	6.48	5/4/10	3.60	6.5	0.4	
	EB264/355003106094303	SF-4C shallow piez.	60	11/18/03	13.06	5/4/10	11.15	6.5	0.3	
	EB261/355006106094803	SF-5C shallow piez.	69	11/18/03	6.22	5/4/10	3.50	6.5	0.4	
	EB298/354731106072001	SF-6A (Buckman) deep piez.	2,440	1/20/05	124.66	5/4/10	158.30	5.3	-6.4	shift in trend in 2005
	EB299/354731106072002	SF-6B (Buckman) middle piez.	1,340	2/9/04	185.65	5/4/10	199.13	6.2	-2.2	shift in trend in 2004
	EB300/354731106072003	SF-6C (Buckman) shallow piez.	480	10/24/03	186.56	5/4/10	196.28	6.5	-1.5	
	EB608/354228106044901	Las Campanas deep piez.	1,990	7/6/05	216.53	5/4/10	216.19	4.8	0.1	
	EB609/354228106044902	Las Campanas middle piez.	1,320	7/6/05	262.92	5/4/10	249.49	4.8	2.8	
	EB610/354228106044903	Las Campanas shallow piez.	450	7/6/05	278.70	5/4/10	278.79	4.8	0.0	
RG-20516-S-5	EB478	Buckman 1	1,093	10/31/03	366.45	12/31/10	216.30	7.2	20.9	
RG-20516-S-6	EB479	Buckman 2	1,473	10/31/03	400.49	12/31/10	51.68	7.2	48.7	
RG-20516-S	EB480	Buckman 3	1,490	12/31/03	609.91	5/31/10	293.44	6.4	49.3	
RG-20516-S-2	EB481	Buckman 4	1,182	10/31/03	585.99	5/31/10	322.65	6.6	40.0	
RG-20516-S-3	EB482	Buckman 5	1,154	10/31/03	454.32	5/31/10	322.65	6.6	20.0	
RG-20516-S-4	EB483	Buckman 6	1,410	1/31/04	611.40	4/30/10	320.34	6.2	46.6	
RG-20516-S-7	EB484	Buckman 7	1,409	12/31/03	719.15	5/31/10	319.52	6.4	62.3	
RG-20516-S-8	EB485	Buckman 8	910	12/31/03	354.35	5/31/10	88.72	6.4	41.4	
RG-20516-S-9	EB486	Buckman 9	1,320	1/31/04	528.00	5/31/10	380.10	6.3	23.4	
RG-20516-S-10	EB487	Buckman 10	1,980	2/28/04	358.35	4/30/10	357.50	6.2	0.1	
RG-20516-S-11	EB488	Buckman 11	1,900	1/31/04	380.00	3/31/10	400.75	6.2	-3.4	
RG-20516-S-12	EB489	Buckman 12	1,900	5/31/05	369.77	12/31/09	398.20	4.6	-6.2	shift in trend in mid-2005
RG-20516-S-13	EB490	Buckman 13	1,980	3/31/05	337.15	5/31/10	317.35	5.2	3.8	shift in trend in mid-2005
RG-21318	EB288	Skillet	663	-	-	-	-	-	-	no discernible long-term trend
RG-439	EB157	Weil Corral, Artesian	325	10/31/03	294.75	5/31/10	262.10	6.6	5.0	
RG-16681	EB163	Permit	745	10/31/03	695.22	5/31/10	695.72	6.6	-0.1	
RG-6386	EB160	Tony's Windmill	350	6/6/05	291.89	8/19/10	297.17	5.2	-1.0	
RG-29524	EB085	Las Dos 1	773	-	-	-	-	-	-	data insufficient to define trend
RG-25463	EB287	-	841	5/26/04	468.25	4/9/10	474.11	5.9	-1.0	
RG-438	EB251	Midway Windmill	310	4/7/05	254.96	8/19/10	259.44	5.4	-0.8	
RG-29723	EB645	USFS Well	681	3/13/04	664.10	8/19/10	662.97	6.4	0.2	
RG-30777	EB064	-	644	3/13/04	540.02	8/19/10	544.27	6.4	-0.7	
RG-28112		-	701	1/21/09	548.31	8/19/10	548.74	1.6	-0.3	
RG-24584	EB121	-	602	7/23/03	426.45	-	-	-	-	no access agreement

¹ earliest post-September 2003 water level measurement available, except in case of RG-24584, where measurement was from July 2003

NMOSE - New Mexico Office of the State Engineer

NMBGMR - New Mexico Bureau of Geology and Mineral Resources

USGS - U.S. Geological Survey

ft bgl - feet below ground level

3.3 USGS Monitoring Wells

The USGS monitoring wells are non-pumping wells dedicated to water-level observation, and include piezometer nests that allow observation of water levels at multiple levels in the aquifer at six different locations (Figs. 2 and A15 through A20). Water levels have been rising in eleven of the fifteen piezometers monitored by USGS in and near the BMP area since October 2003, at rates ranging from 0.1 to 18 ft/yr (Table 3, Figs. A16 through A20). The water levels in the USGS Buckman shallow, middle, and deep piezometers (SF-6 C, B, and A, respectively), have been declining at rates ranging from -1.5 to -6.4 ft/yr (Table 3, Fig. A15). Trends in the USGS Las Campanas piezometers ranged from zero change (shallow piezometer) to water-level rises of 2.8 ft/yr (middle) and 0.1 ft/yr (deep; Table 3, Fig. A16).

Hydrographs for USGS Buckman deep and middle piezometers showed shifts in water-level trends in 2004 and 2005, respectively, and the long-term water-level trends are defined from 2004 and 2005 to present for these piezometers. The hydrographs for USGS SF-2 middle piezometer showed a shift in water-level trend in mid-2005, and the long-term water-level trend is defined from mid-2005 to present for this piezometer.

Note that the shallow (< 100 ft deep) USGS piezometers close to the Rio Grande, including SF-3C, SF-4C, and SF-5C, have historically had water-level variations that correlate to stages in the Rio Grande, and thus are not reflective of the groundwater system evaluated in this report.

3.4 Other Buckman Monitoring Program Wells

Other BMP wells include several wells measured under the previous monitoring program (Skillet, Permit, Weil Corral), wells equipped for stock watering use (Tony's Windmill and Midway Windmill), actively-pumping domestic wells (Las Dos 1 and RG-25463), and unequipped wells (USFS, RG-30777, and RG-28112; Figs. 1 and 2).

Water levels appear to have risen in two of the eight other BMP wells that show qualitative long-term trends, at rates of 0.2 and 5 ft/yr (Table 3, Figs. A27 and A30). Water levels in six wells have declined at rates ranging from -0.1 to -1.0 ft/yr (Figs. A20 through A26, and A28).

The hydrograph for RG-21318 Skillet Well showed no discernible long-term water-level trend, only short-term trends (Fig. A29). Data were insufficient to define a long-term water-level trend at RG-29524 Las Dos 1 Well (Fig. A23).

3.5 Interpretation of Water-Level Trends

Water-level-decline-rate contours for the BMP area are presented in Figure 2, based on water-level decline rates calculated for BMP wells (Fig. 2). The contours are consistent with rates calculated for non-pumping BMP wells, and for BMP wells equipped for stock watering use. Water-level trends in the Buckman (SF-6) piezometer indicate that the maximum water level decline in the shallow aquifer is -1.5 ft/yr.

Water-level rises observed at the USFS Well RG-29723 and the Las Campanas piezometer limit the western and southern extent of water-level decline contours (Fig. 2). The water-level decline rate of -1.5 ft/yr in the USGS Buckman shallow piezometer likely represents the maximum water-level decline observed in the shallow aquifer, in which many of the BMP wells are completed (Figs. 2 and 3).

Although a water-level decline rate of -1.0 ft/yr was calculated at RG-25463, the well lies between the -0.6 and -0.4 ft/yr contours (Fig. 2). The water-level decline rate is defined by only four data points at this actively pumped domestic well. Although the pump has not been running at the time of water-level measurements, it is difficult to know the stage of water-level recovery at the time of measurement.

An analysis of maximum impacts was conducted during the BW10-13 NMOSE permit application. The analysis assumed that each BW10-13 would produce 1,500 ac-ft/yr for 100 years. The amount actually pumped to date is 10,001 ac-ft versus the 43,500 ac-ft permitted through 2010; hence the water-level declines calculated here (-0.1 to -6.4 ft/yr) are significantly less than projected in the permit application.

In Finding 27 of NMOSE Hearing 03-004 (BW10-13), the hearing examiner accepted testimony from NMOSE hydrologist Andy Core that regional water-level changes prior to the granting of and the pumping from the BW10-13 well permit range from 0.89 ft/yr rise and -7.41 ft/yr decline with an average regional decline rate of -1.18 ft/yr. The water-level decline rates presented in Table 3 are less than the average regional decline rate presented by Core at all non-pumping BMP wells except the USGS Buckman piezometer.

4.0 PROJECTIONS OF WATER-LEVEL CHANGES

4.1 Buckman Monitoring Program Wells

Table 4 presents 10- and 40-year projected water levels for BMP wells based on water-level rates-of-change calculated for the wells. The water column in RG-6386 Tony's Windmill is projected to decline to 30 percent of the starting water column after 40 years (by 2050). This represents 70 percent drawdown of the starting water column. This stock well was completed in 1961, and had a starting water column of only 58 ft. In 2050, this stock well will be 90 years old.

Table 4 includes wells listed in table 30-B of the findings of the hearing examiner in Hearing No. 03-004, NMOSE file numbers RG-20516-S-10 thru RG-20516-S-13 (BW10-13), to satisfy BW10-13 permit condition 7, which states that the City furnish information to establish that wells included in table 30-B "will not go dry due to Applicant's pumping authorized under this Permit, or that owners or users of said wells have waived or released any claim of liability...." After 10 years, table 30-B wells are projected to have 91 to 100 percent of their starting water columns. After 40 years, table 30-B wells are projected to have 63 to 100 percent of their starting water columns. Thus, the projections presented in this report satisfy permit condition 7. Because observed water-level decline rates are less than those modeled by the NMOSE for Hearing No. 03-004, the projected future declines presented in Table 4 are less, and the lifespan of the water columns in the wells is longer.

Table 4 includes one well from the Tano Road area, located near the western boundary of the Tano Road area. RG-77553 was completed in T17N.R09E.04.231 in 2002, and drilled to a total depth of 900 ft. This well was selected for projections because the location has been verified (June 19, 2008 email from J.M. Smith), and the well record from 2002 likely gives a realistic estimate of the water column in the well around the time BW10-13 began pumping. After 40 years, RG-77553 is projected to have 99 percent of its starting water column. Projected water-level decline rates in the Tano Road area range from zero to -0.25 ft/yr.

Note that many wells in Table 4 have projected water-level rises. For these wells, projected water columns were limited by the total depth of the well. It is unlikely that water levels will rise to land surface in many of these wells.

4.2 Buckman Monitoring Program Database Wells

Water-level-decline-rate contours for the BMP area (Fig. 2) were interpolated to calculate 10- and 40-year projected water-levels for BMP database wells using Geographic Information Systems. Projections could only be made for database wells for which depth-to-water and total depth information are available (286 out of 777 total entries). Projections for BMP database wells are presented in Appendix B. There are no wells in the database for which the water columns are projected to experience more than 70 percent drawdown of the starting water column after 40 years.

**Table 4. Ten- and 40-year projections for Buckman Monitoring Program area wells
(see Appendix B for projections for additional BMP database wells)**

NMOSE ID	other ID (NMBGMR/USGS, if any)	name	total depth, ft	starting water level date	starting water level, ft bgl	water-level rate-of-change (+ rise / - decline), ft/yr	starting water column, ft	water column after 10 years, ft	percent water column remaining after 10 yrs	water column after 40 yrs, ft	percent water column remaining after 40 yrs	comments
	EB269/355000106092802	SF-2B middle piez.	824	3/31/05	172.7	11.0	651	761	117	824 ^a	168	
	EB270/355000106092803	SF-2C shallow piez.	346	11/18/03	233.89	17.8	112	290	258	346 ^a	734	
	EB265/355002106093701	SF-3A deep piez.	294	11/18/03	185.56	17.8	108	286	264	294 ^a	755	
	EB266/355002106093702	SF-3B middle piez.	169	11/18/03	18.68	1.5	150	165	110	169 ^a	139	
	EB267/355002106093703	SF-3C shallow piez.	60	11/18/03	17.75	0.2	42	44	105	50	119	
	EB262/355003106094301	SF-4A deep piez.	280	11/18/03	155.37	14.8	125	273	219	280 ^a	575	
	EB263/355003106094302	SF-4B middle piez.	130	11/18/03	6.48	0.4	124	128	104	130 ^a	114	
	EB264/355003106094303	SF-4C shallow piez.	60	11/18/03	13.06	0.3	47	50	106	59	125	
	EB261/355006106094803	SF-5C shallow piez.	69	11/18/03	6.22	0.4	63	67	107	69 ^a	127	
	EB298/354731106072001	SF-6A (Buckman) deep piez.	2,440	1/20/05	124.66	-6.4	2,315	2,252	97	2,061	89	
	EB299/354731106072002	SF-6B (Buckman) middle piez.	1,340	2/9/04	185.65	-2.2	1,154	1,133	98	1,068	93	
	EB300/354731106072003	SF-6C (Buckman) shallow piez.	480	10/24/03	186.56	-1.5	293	279	95	234	80	
	EB608/354228106044901	Las Campanas deep piez.	1,990	7/6/05	216.53	0.1	1,773	1,774	100	1,776	100	
	EB609/354228106044902	Las Campanas middle piez.	1,320	7/6/05	262.92	2.8	1,057	1,085	103	1,168	111	
	EB610/354228106044903	Las Campanas shallow piez.	450	7/6/05	278.70	0.0	171	171	100	171	100	
RG-20516-S-5	EB478	Buckman 1	1,093	10/31/03	366.45	24.2	727	969	133	1,093 ^a	a	
RG-20516-S-6	EB479	Buckman 2	1,473	10/31/03	400.49	53.7	1,073	1,473 ^a	a	1,473 ^a	a	
RG-20516-S	EB480	Buckman 3	1,490	12/31/03	609.91	49.3	880	1,373	156	1,490 ^a	a	
RG-20516-S-2	EB481	Buckman 4	1,182	10/31/03	585.99	40.0	596	996	167	1,182 ^a	a	
RG-20516-S-3	EB482	Buckman 5	1,154	10/31/03	454.32	20.0	700	900	129	1,154 ^a	a	
RG-20516-S-4	EB483	Buckman 6	1,410	1/31/04	611.40	46.6	799	1,265	158	1,410 ^a	a	
RG-20516-S-7	EB484	Buckman 7	1,409	12/31/03	719.15	62.3	690	1,313	190	1,409 ^a	a	
RG-20516-S-8	EB485	Buckman 8	910	12/31/03	354.35	41.4	556	910 ^a	a	910 ^a	a	
RG-20516-S-9	EB486	Buckman 9	1,320	1/31/04	528.00	23.4	792	1,026	130	1,320 ^a	a	
RG-20516-S-10	EB487	Buckman 10	1,980	2/28/04	358.35	0.1	1,622	1,623	100	1,627	100	
RG-20516-S-11	EB488	Buckman 11	1,900	1/31/04	380.00	-3.4	1,520	1,486	98	1,385	91	
RG-20516-S-12	EB489	Buckman 12	1,900	5/31/05	369.77	-6.2	1,530	1,468	96	1,282	84	
RG-20516-S-13	EB490	Buckman 13	1,980	3/31/05	337.15	3.8	1,643	1,681	102	1,796	109	
RG-21318	EB288	Skillet	663	1/31/05	205.70	-0.1	457	456	100	453	99	<i>contoured rate</i>
RG-439	EB157	Weil Corral, Artesian	325	10/31/03	294.75	5.0	30	80	264	229	756	
RG-16681	EB163	Permit	745	10/31/03	695.22	-0.1	50	49	98	47	94	

^a for wells with water-level rises, projection limited by total depth of well
italics - contoured rate, see Figure 2

NMOSE - New Mexico Office of the State Engineer
NMBGMR - New Mexico Bureau of Geology and Mineral Resources
USGS - U.S. Geological Survey

Table 4. Ten- and 40-year projections for Buckman Monitoring Program area wells (concluded)
(see Appendix B for projections for additional BMP database wells)

NMOSE ID	other ID (NMBGMR/USGS, if any)	name	total depth, ft	starting water level date	starting water level, ft bgl	water-level rate-of-change (+ rise / - decline), ft/yr	starting water column, ft	water column after 10 years, ft	percent water column remaining after 10 yrs	water column after 40 yrs, ft	percent water column remaining after 40 yrs	comments
RG-6386	EB160	Tony's Windmill	350	6/6/05	291.89	-1.0	58	48	83	18	30	
RG-29524	EB085	Las Dos 1	773	5/11/05	396.66	-0.6	376	370	98	352	94	<i>contoured rate</i>
RG-25463	EB287	-	841	5/26/04	468.25	-1.0	373	363	97	333	89	
RG-438	EB251	Midway Windmill	310	4/7/05	254.96	-0.8	55	47	85	22	39	table 30-A,
RG-29723	EB645	USFS Well	681	3/13/04	664.10	0.2	17	19	110	24	142	table 30-A
RG-30777	EB064	-	644	3/13/04	540.02	-0.7	104	97	94	78	75	
RG-28112		-	701	1/21/09	548.31	-0.3	153	150	98	142	93	
RG-24584	EB121	-	602	7/23/03	426.45	-0.55	176	170	97	154	87	<i>contoured rate</i>
RG-37078		-	755	well record	580	-0.35	175	172	98	161	92	table 30-B, <i>contoured rate</i>
RG-37113		-	700	well record	527	-0.5	173	168	97	153	88	table 30-B, <i>contoured rate</i>
RG-437	EB158	Dead Dog Windmill	700	3/17/06	407.68	-1.0	292	282	97	252	86	table 30-B, <i>contoured rate</i>
RG-48491		-	730	well record	530	-0.72	200	193	96	171	86	table 30-B, <i>contoured rate</i>
RG-54066		-	760	well record	540	-0.6	220	214	97	196	89	table 30-B, <i>contoured rate</i>
RG-54262		-	755	well record	535	-0.55	220	215	98	198	90	table 30-B, <i>contoured rate</i>
RG-55734		-	740	well record	500	-0.65	240	234	97	214	89	table 30-B, <i>contoured rate</i>
RG-56282		-	700	well record	520	-0.6	180	174	97	156	87	table 30-B, <i>contoured rate</i>
RG-59973		-	750	well record	540	-0.57	210	204	97	187	89	table 30-B, <i>contoured rate</i>
RG-60104		-	760	well record	580	-0.6	180	174	97	156	87	table 30-B, <i>contoured rate</i>
RG-60404		-	760	well record	580	-0.4	180	176	98	164	91	table 30-B, <i>contoured rate</i>
RG-6128		-	700	well record	525	-0.51	175	170	97	155	88	table 30-B, <i>contoured rate</i>
RG-64419		-	740	well record	500	-0.6	240	234	98	216	90	table 30-B, <i>contoured rate</i>
RG-65566		-	765	well record	542	-0.6	223	217	97	199	89	table 30-B, <i>contoured rate</i>
RG-69782		-	785	well record	572	-0.65	213	207	97	187	88	table 30-B, <i>contoured rate</i>
RG-65584		-	755	well record	535	-0.83	220	212	96	187	85	table 30-B, <i>contoured rate</i>
RG-71728		-	750	well record	485	-0.65	265	259	98	239	90	table 30-B, <i>contoured rate</i>
RG-75069		-	735	well record	500	-0.55	235	230	98	213	91	table 30-B, <i>contoured rate</i>
RG-61944		-	710	well record	585	-0.3	125	122	98	113	90	table 30-B, <i>contoured rate</i>
RG-54395		-	740	well record	580	-0.4	160	156	98	144	90	table 30-B, <i>contoured rate</i>
RG-55206		-	655	well record	580	-0.69	75	68	91	47	63	table 30-A, <i>contoured rate</i>
RG-23806		-	216	well record	163	0	53	53	100	53	100	table 30-A, <i>contoured rate</i>
RG-7248	EB161	Boondock	900	well record	434	0	466	466	100	466	100	<i>contoured rate</i>
RG-77553		Tano	900	well record	505	-0.1	395	394	99.7	391	99	Tano Road area, <i>contoured rate</i>

^a for wells with water-level rises, projection limited by total depth of well
table 30-A, table 30-B - included in findings of hearing examiner, Hearing No. 03-004, NMOSE file numbers RG-20516-S-10 thru RG-20516-S-13
italics - contoured rate, see Figure 2

NMOSE - New Mexico Office of the State Engineer
NMBGMR - New Mexico Bureau of Geology and Mineral Resources
USGS - U.S. Geological Survey

5.0 HYDROGEOLOGIC CONSIDERATIONS

Comparison of Observed and Model-Simulated Water-Level Declines

BW10-13 are located in the Canada Ancha graben and the distribution of water-level declines appears to be affected by the graben (Figs. 2 and 3). Water-level decline contours in Figure 2 are asymmetrical with no declines at the USFS Well in the Caja del Rio horst block to the west, or at the Las Campanas piezometer to the south. Propagation of water-level declines to the east does not appear to be depth-dependent, and there is little evidence for up-dip propagation in the pumping zone. BW10-13 are 1,920 to 2,000 ft in total depth and are screened between 400 and 1,980 ft. The most recent geologic mapping in the area indicates that BW10-13 are completed in interfingered beds of the Cuarteles Member (Ttcu), Lithosome A (Tta), Lithosome B (Ttb), and Lithosome S (Tts; Fig. 3; Koning and Read, 2010). Tta and Ttb beds appear to pinch out to the east. Thus, up-dip propagation appears to be limited by lateral stratigraphic variations, as well as multiple faults (Fig. 3; Koning and Read, 2010).

The NMOSE superposition groundwater-flow model (Core, 1996; latest version obtained from L.H. Petronis of NMOSE on November 5, 2010) was run with Buckman Well Field pumping updated through December 2010 to compare observed and model-simulated water-level decline rates in the BMP. Model-simulated drawdown between the end of September 2003 and end of December 2010 was used to calculate average water-level decline rates for that time period. Model-simulated results for model Layers 1 and 2 were contoured and compared to observed decline rates (Figs. 4 and 5). Model-simulated decline rates in model Layers 1 and 2, presented in Figures 4 and 5, provide the range of model-simulated results for the shallow aquifer.

Although model-simulated water-level decline rates in model Layers 1 and 2 are similar in magnitude to observed water-level decline rates, the shape of the cone of depression varies. The observed water-level decline rates observed at the Buckman piezometer are slightly greater than the model-simulated decline rates in Layers 1 and 2. The model simulates greater rates of decline to the west in Layers 1 and 2 than have been observed. The model simulates greater rates of decline to the south in Layer 2 than have been observed. Water-level rises have been observed at the USFS Well (RG-29723) in the west and the Las Campanas piezometer in the south.

6.0 CONCLUSIONS

- BW10-13 diversions have been significantly less than analyzed in the permit application; subsequently, water-level declines have not followed those projected in the application's hydrologic analyses. In fact, from October 2003 to present, water levels have risen in a number of wells.
- Water-level data collected at pumping wells has been interpreted conservatively, using qualitative and quantitative methods appropriate for the available datasets, and water-level trends in the BMP area have been primarily based on water-level data from non-pumping wells.
- Qualitative long-term water-level decline rates presented in Table 3 (-0.1 to -6.4 ft/yr) are within the regional water-level decline rates presented by Core (0.89 ft/yr to -7.41 ft/yr).
- Observed water-level decline rates at table 30-B wells and BMP database wells are less than the average regional decline rate of -1.18 ft/yr indicated in Finding 27 of NMOSE Hearing 03-004.
- There is little evidence of up-dip propagation of water-level declines to the east of BW10-13.
- There are no BMP wells, table 30-B wells, or wells in the BMP database for which the water columns are projected to experience more than 70 percent drawdown of the starting water column after 40 years.
- 40-year projections satisfy permit condition 7 by establishing that wells included in table 30-B "will not go dry due to Applicant's pumping authorized under this Permit..."
- 40-year projections indicate that no table 30-B wells and none of the 286 BMP database wells will go dry after 40 years due to BW10-13 pumping.
- Model-simulated water-level decline rates in model Layers 1 and 2 are similar in magnitude to observed water-level decline rates, but the shape of the cone of depression varies.

7.0 RECOMMENDATIONS

- Ten-year and 40-year projections should not be a requirement for the biennial report in the case that identified water-level declines are less than the regional average decline rate of 1.18 ft/yr (presented by Core in Finding 27 of NMOSE Hearing 03-004) at non-pumping BMP wells.
- Ten-year and 40-year projections should only be made for BMP database wells in areas where the observed water-level decline rates exceed the regional average decline rate of 1.18 ft/yr.
- In the case that observed water-level decline rates at table 30-B wells and BMP database wells are less than the average regional decline rate of -1.18 ft/yr, the City of Santa Fe should only be required to update this report every 5 years.
- The water-level measurement frequency at RG-30777 Bernstein well can be changed from hourly to daily. Very little fluctuation in water levels has been observed at RG-30777 Bernstein well and reducing the measurement frequency will prolong the life of the instrumentation and minimize data management issues that arise when measurements are collected at a high frequency over a long period of time.

8.0 REFERENCES

Core, A.B., 1996, Española Basin, Santa Fe Region, modified McAda-Wasiolek model user manual: New Mexico State Engineer Office Technical Division Hydrology Report 96-2.

Koning, D.J., and Read, A.S., 2010, Preliminary Draft, Geologic map of the Southern Española Basin, Santa Fe County, New Mexico: New Mexico Bureau of Geology and Mineral Resources Open-File Report 531.

ILLUSTRATIONS

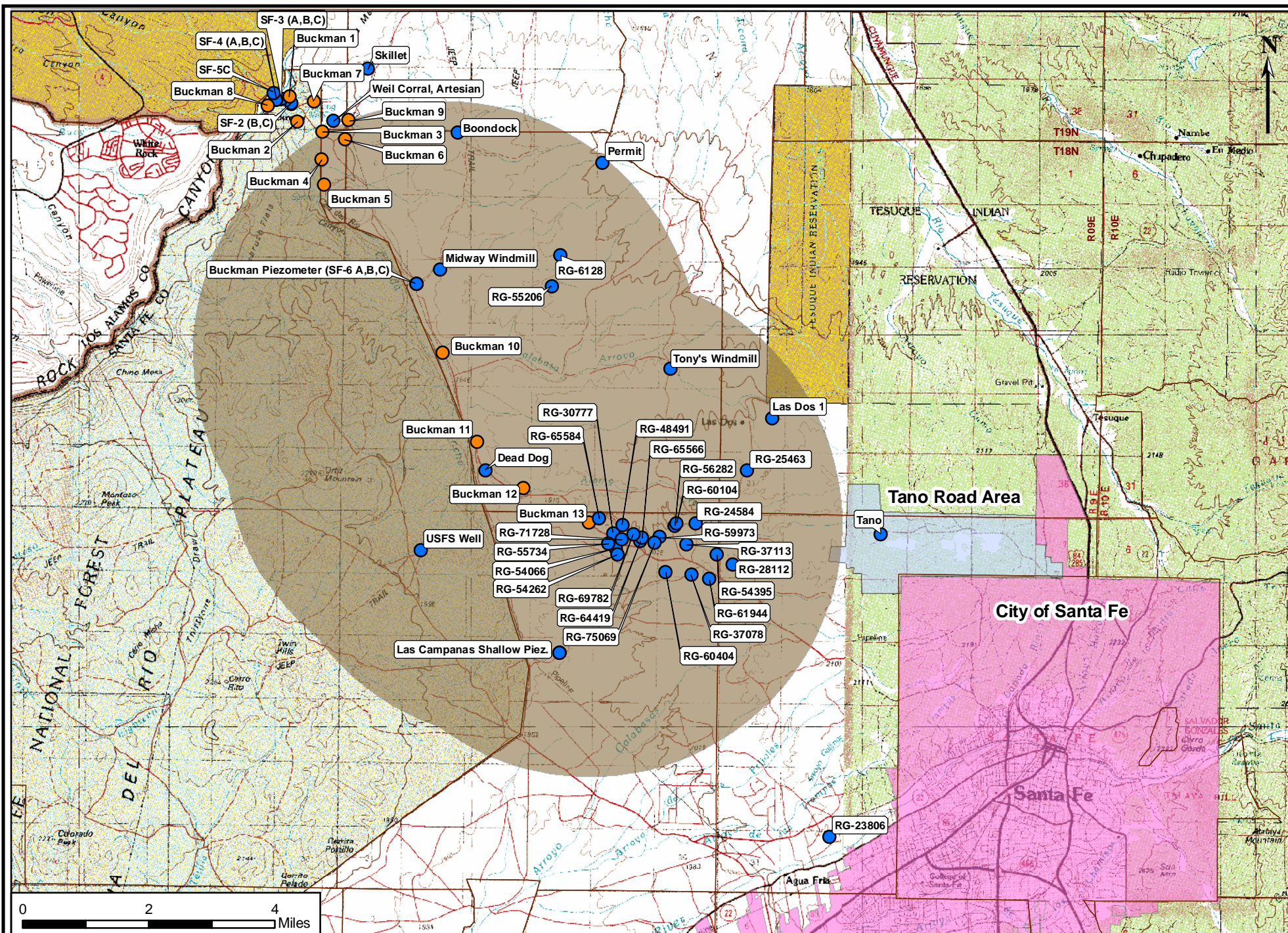


Figure 1. Map showing Buckman Monitoring Program area and Tano Road area, and selected wells.

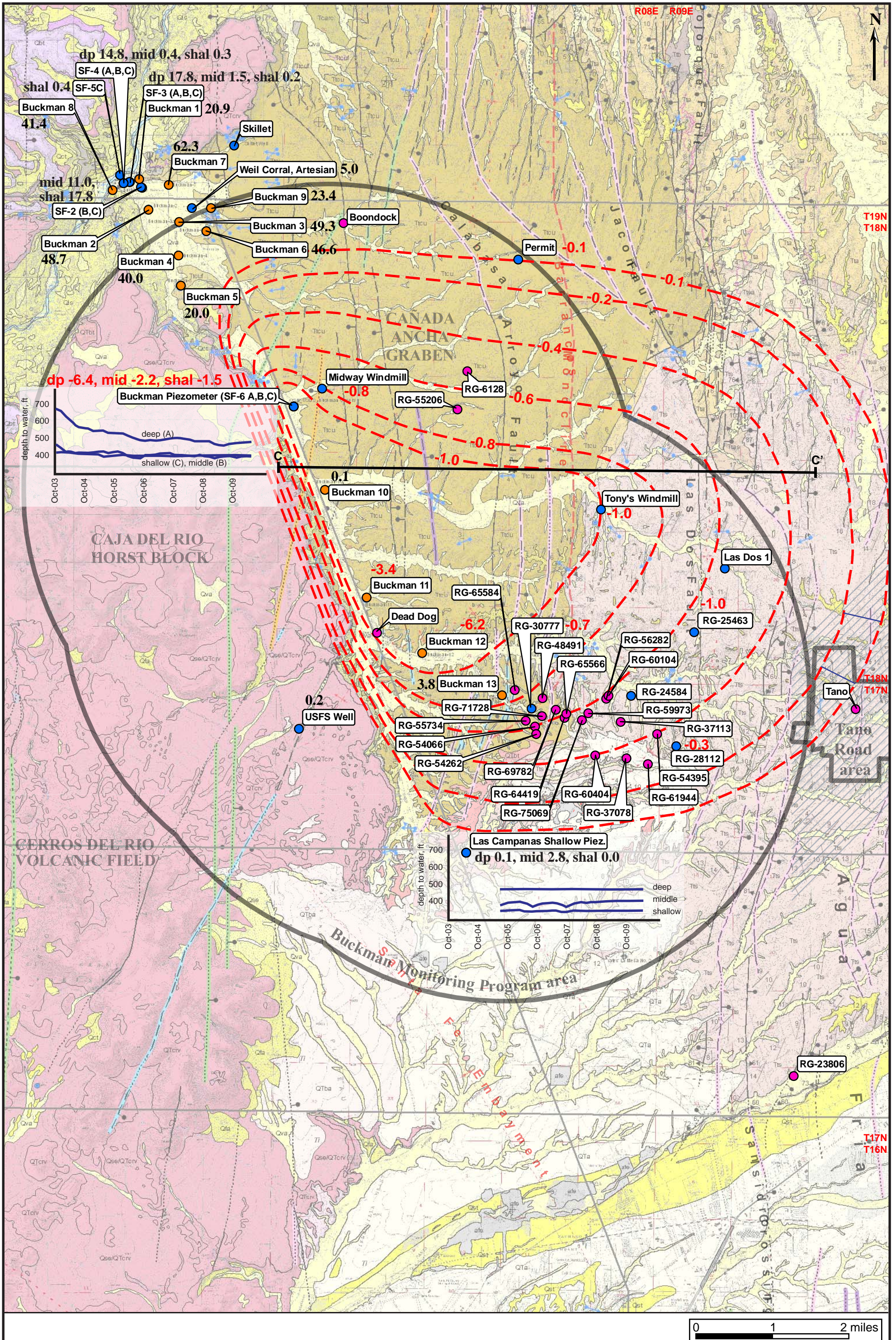


Figure 2. Geologic map (Koning and Read, 2010) showing Buckman Monitoring Program wells, other selected wells, and water-level decline rate contours in feet per year. See Figure 3 for explanation of geologic units, lines, and symbols.

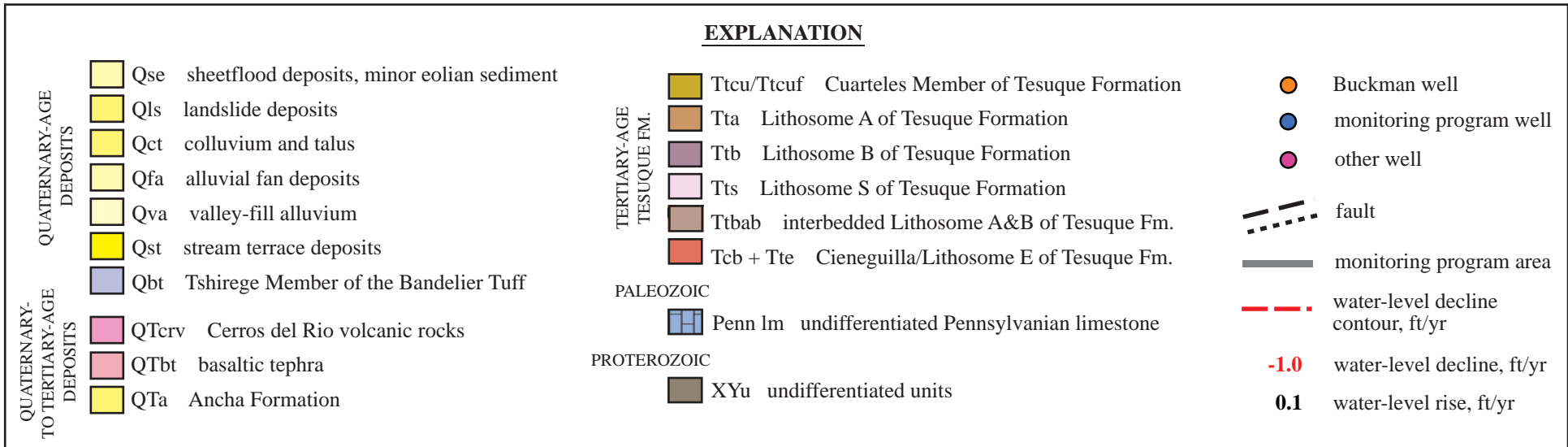
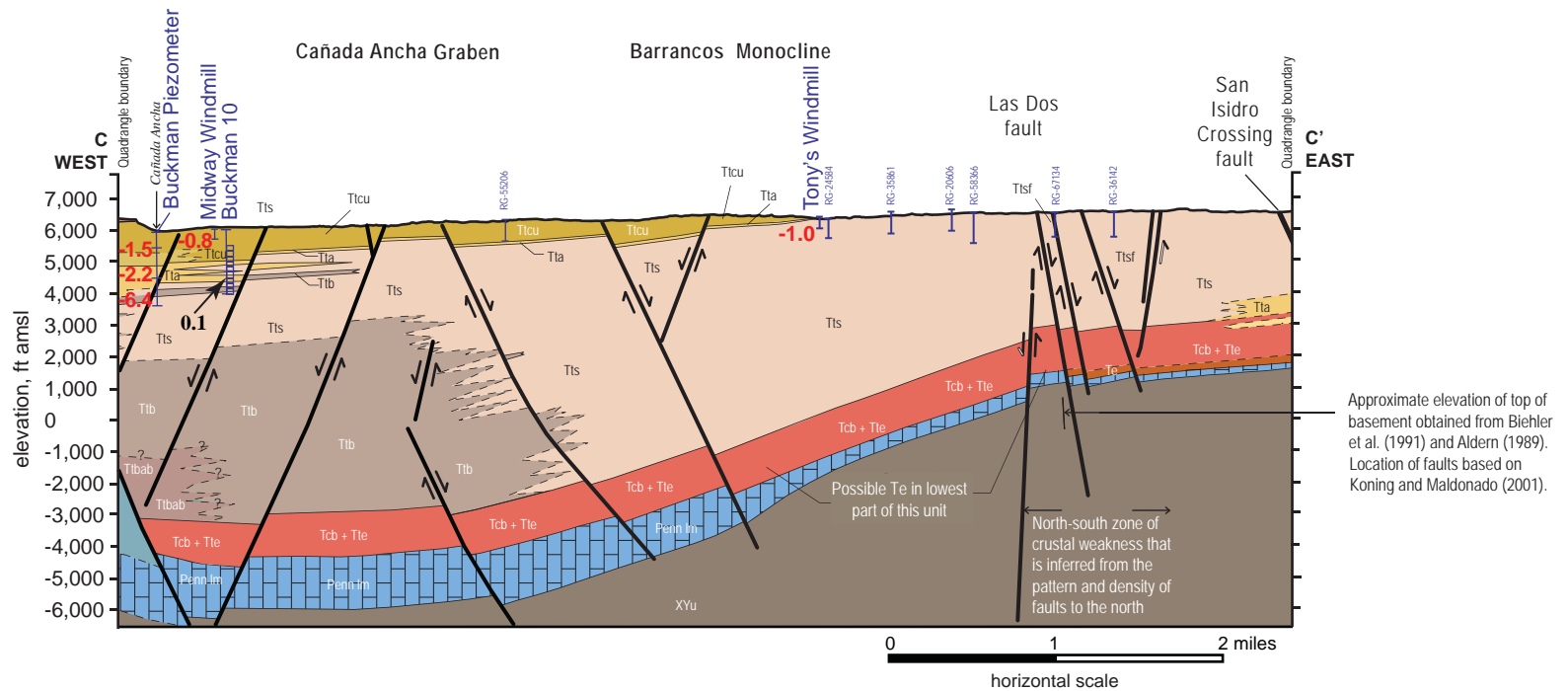


Figure 3. West-east geologic cross-section C-C' (Koning and Read, 2010) showing selected Buckman Monitoring Program wells, and water-level decline rates, and explanation of geologic units and map symbols.

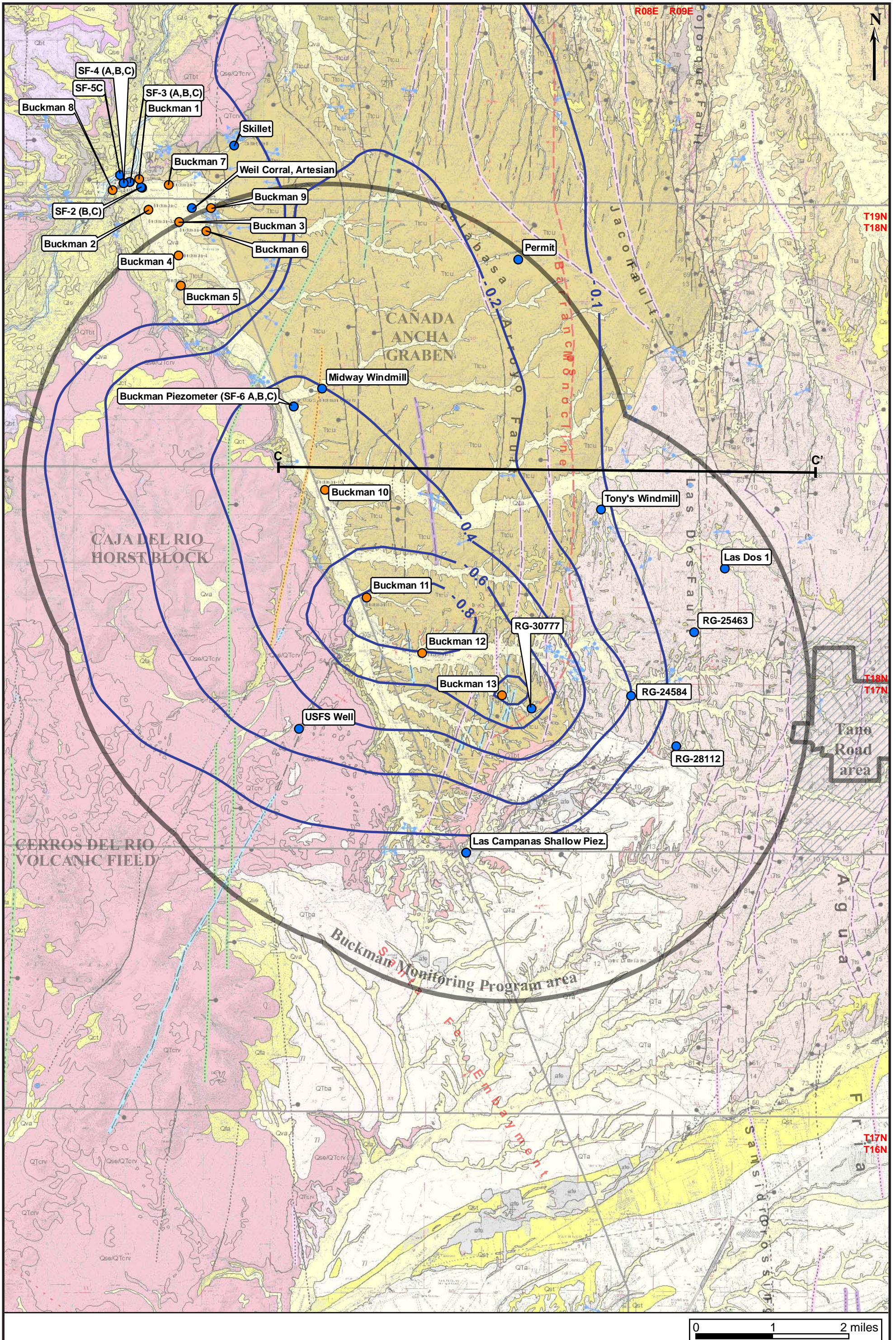


Figure 4. Geologic map (Koning and Read, 2010) showing NMOSE groundwater-flow model-simulated average water-level decline rate contours, in feet per year, for model Layer 1, between end of September 2003 and end of 2010.

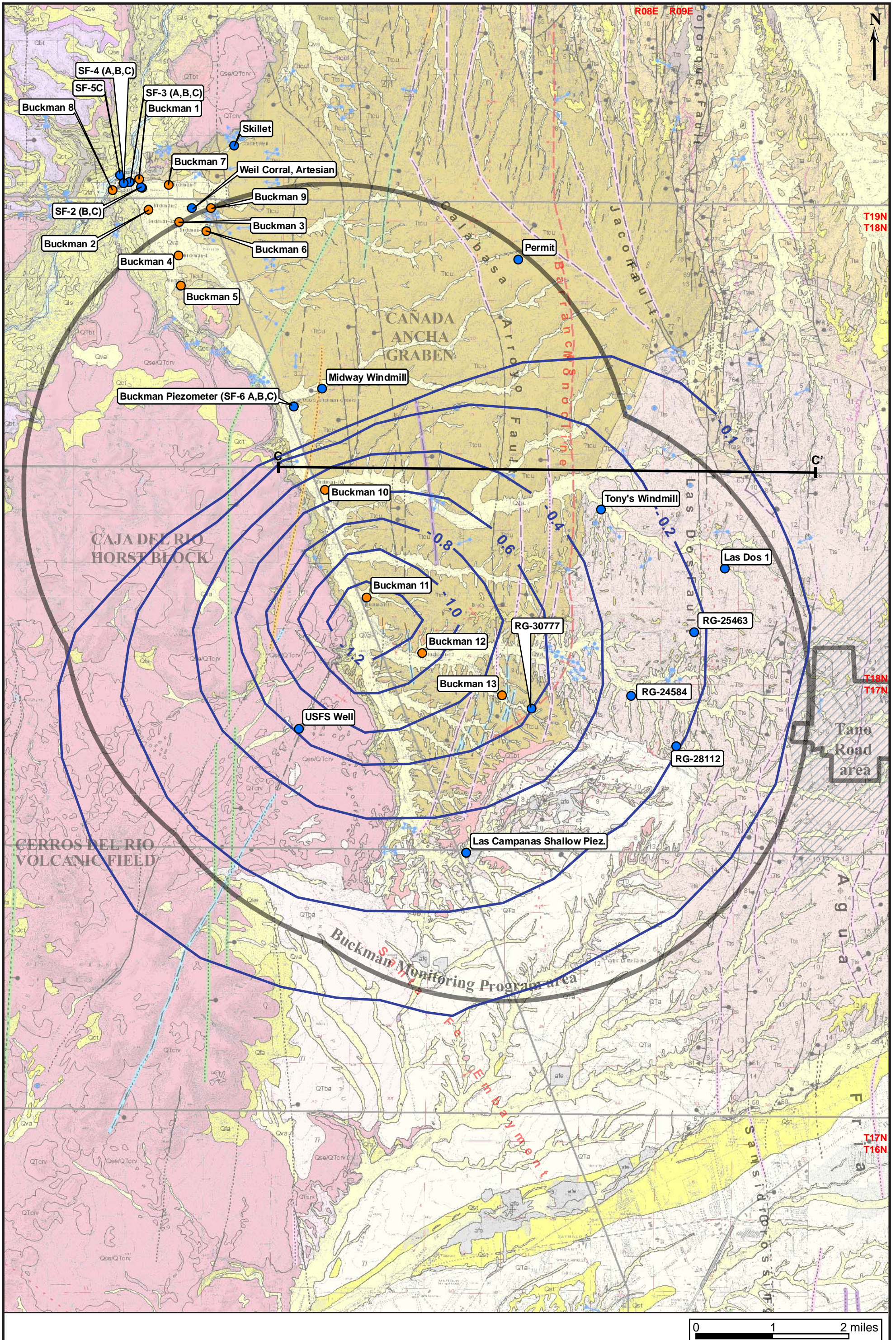


Figure 5. Geologic map (Koning and Read, 2010) showing NMOSE groundwater-flow model-simulated average water-level decline rate contours, in feet per year, for model Layer 2, between end of 2003 and end of 2010.

APPENDICES

Appendix A.

**Graphs showing Buckman Well Field diversions and
water levels in Buckman Monitoring Program area wells**

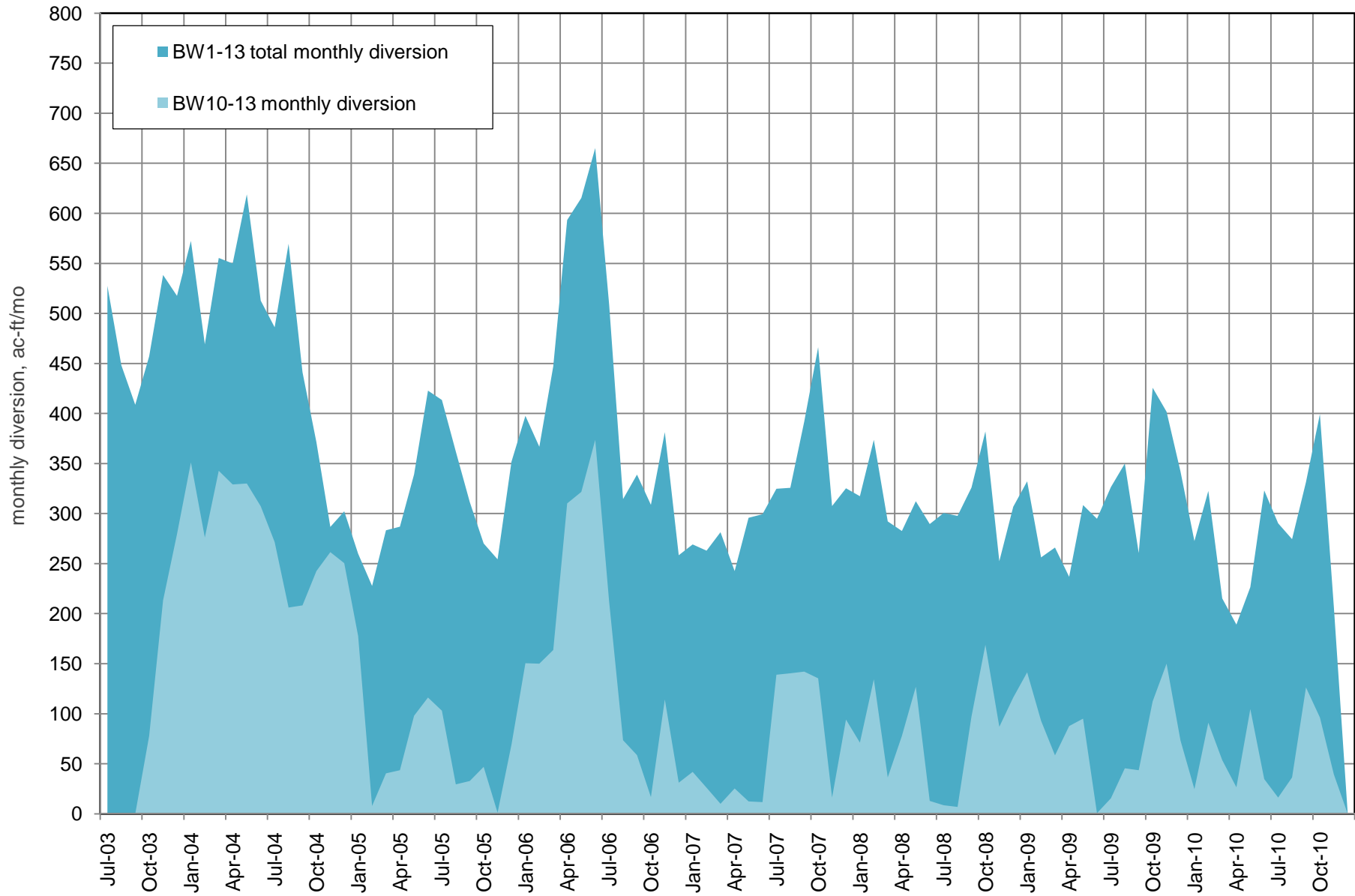


Figure A1. Diversions from Buckman Wells 1 through 13, October 2003 through 2010.

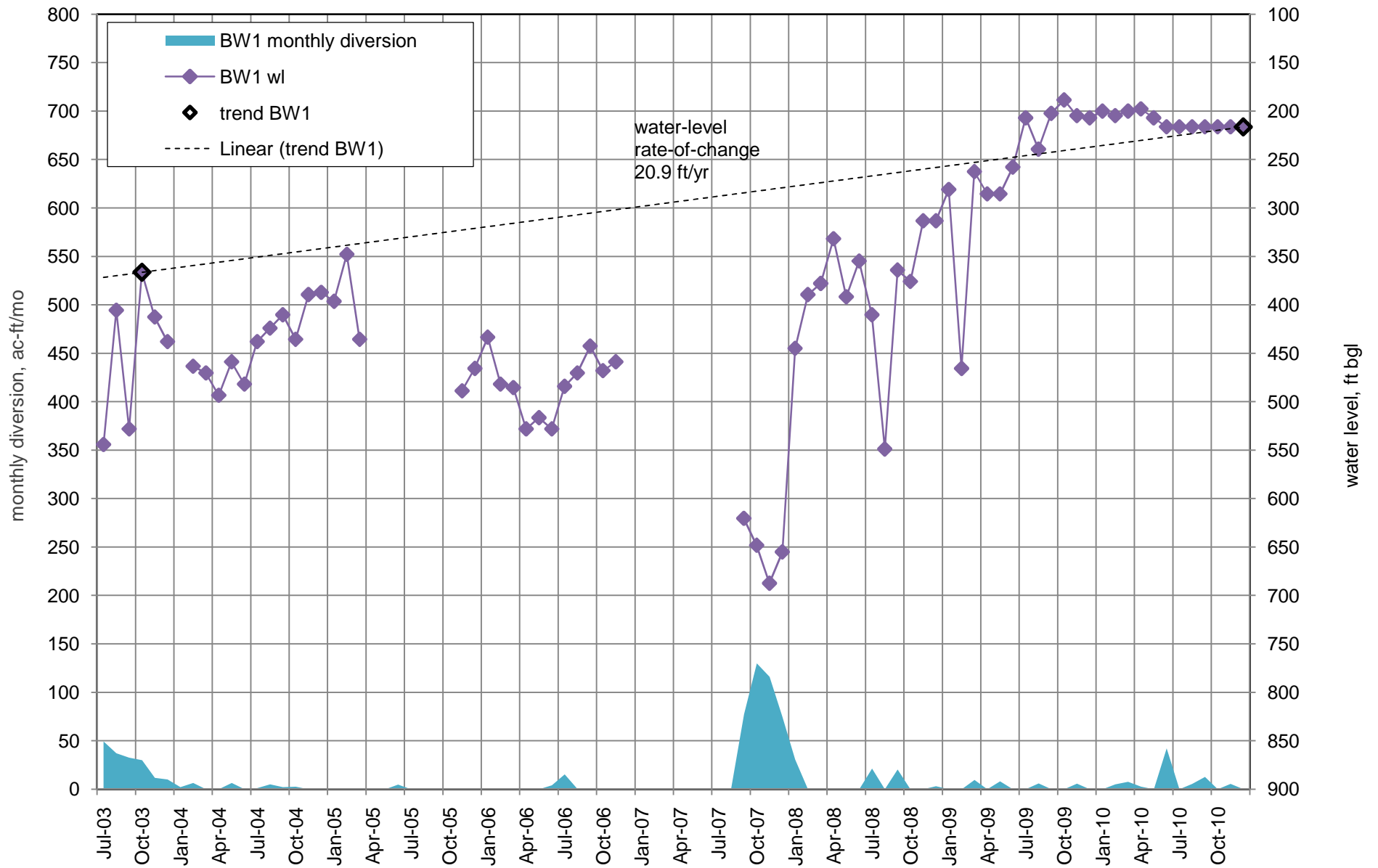


Figure A2. Water levels and diversions from Buckman Well 1 (RG-20516-S-5), October 2003 through 2010.

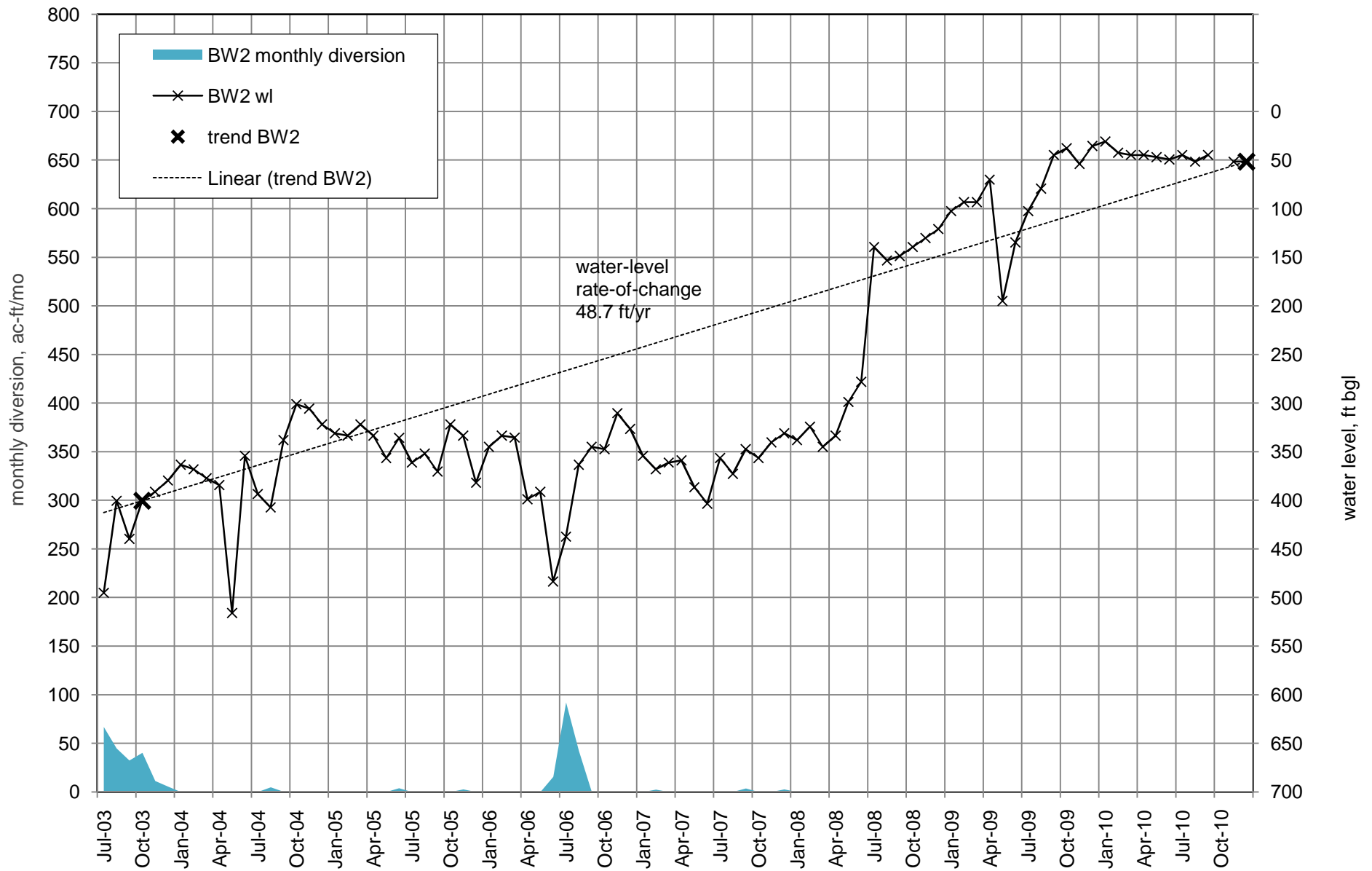


Figure A3. Water levels and diversions from Buckman Well 2 (RG-20516-S-6), October 2003 through 2010.

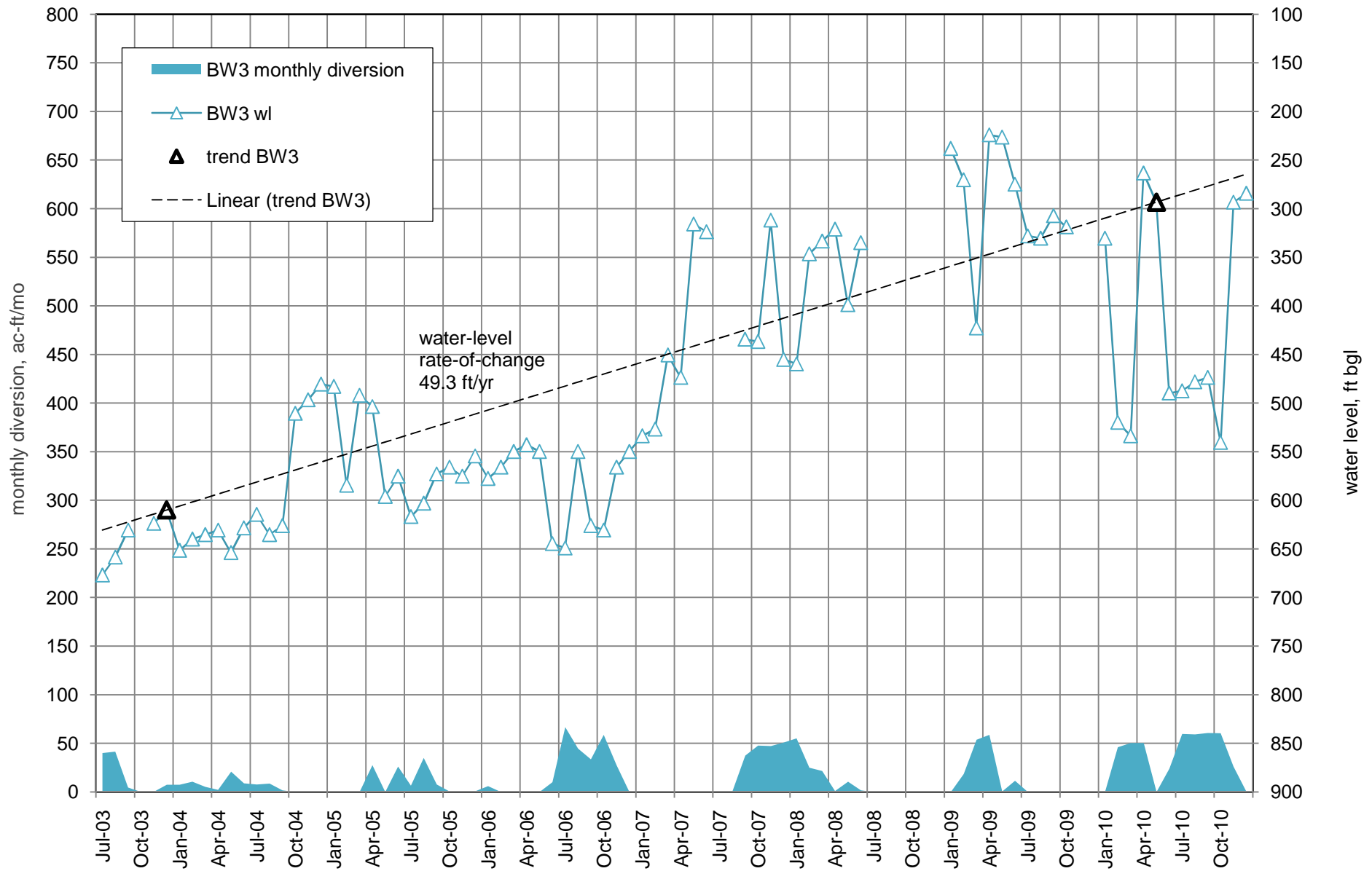


Figure A4. Water levels and diversions from Buckman Well 3 (RG-20516-S), October 2003 through 2010.

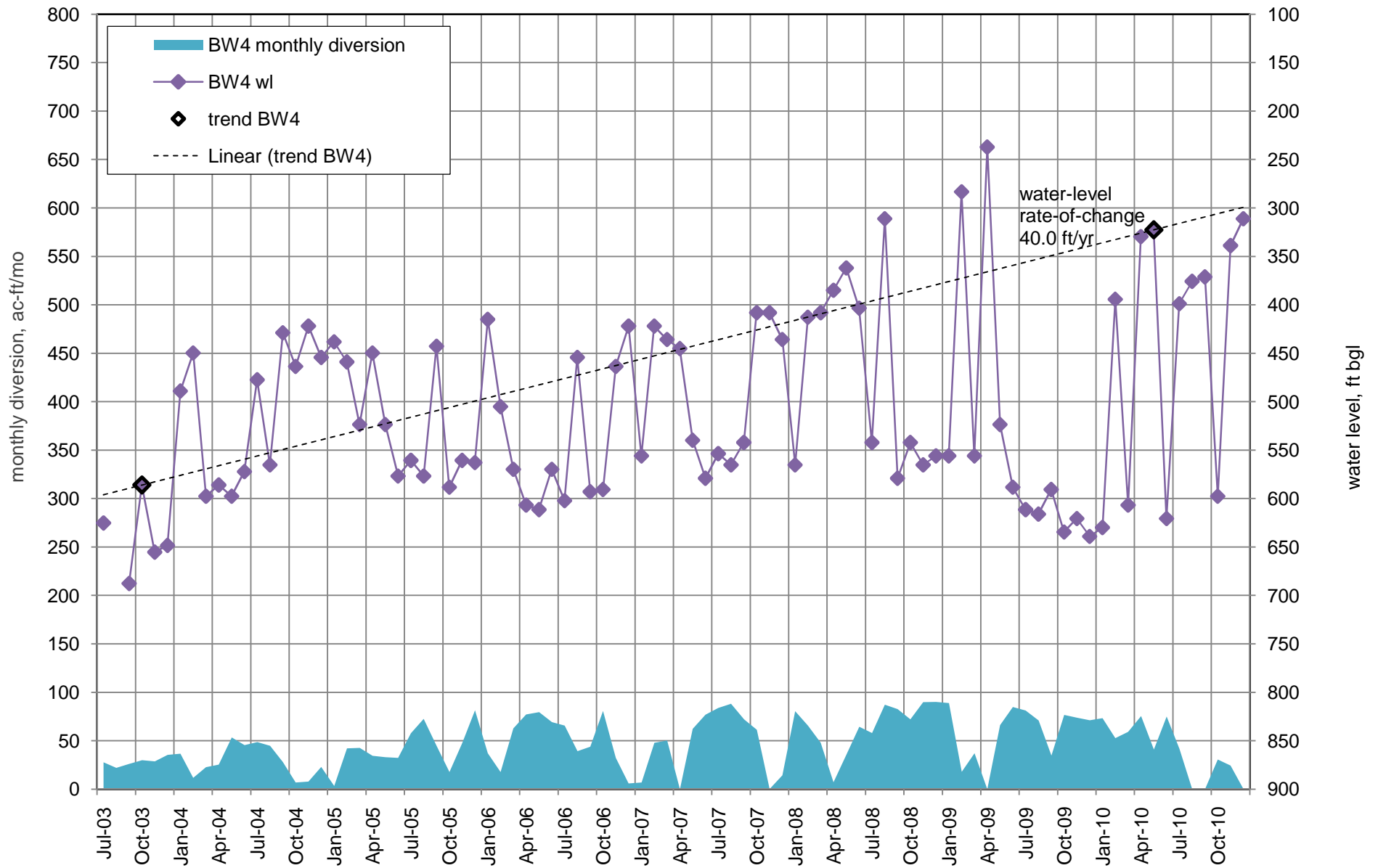


Figure A5. Water levels and diversions from Buckman Well 4 (RG-20516-S-2), October 2003 through 2010.

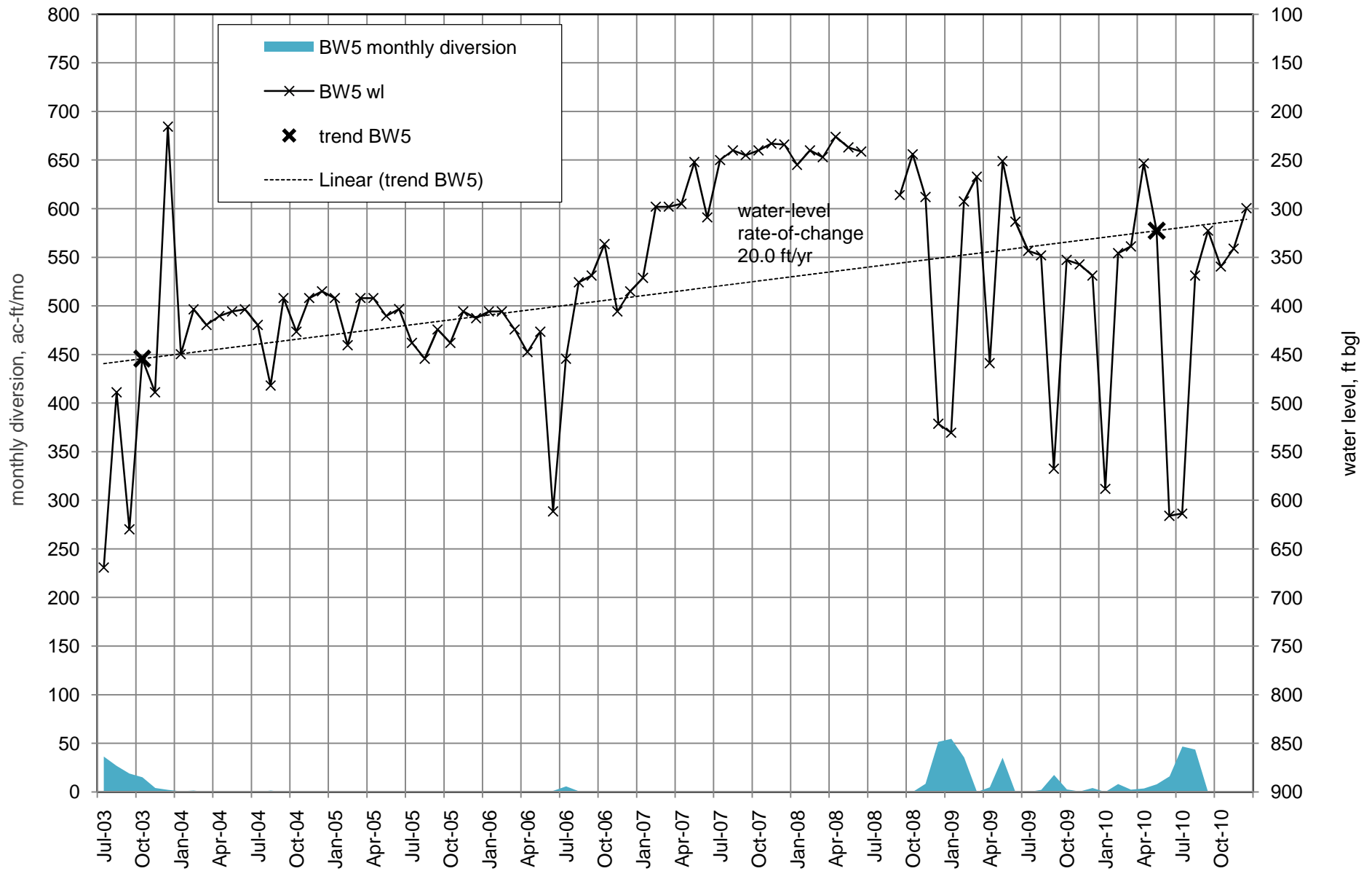


Figure A6. Water levels and diversions from Buckman Well 5 (RG-20516-S-3), October 2003 through 2010.

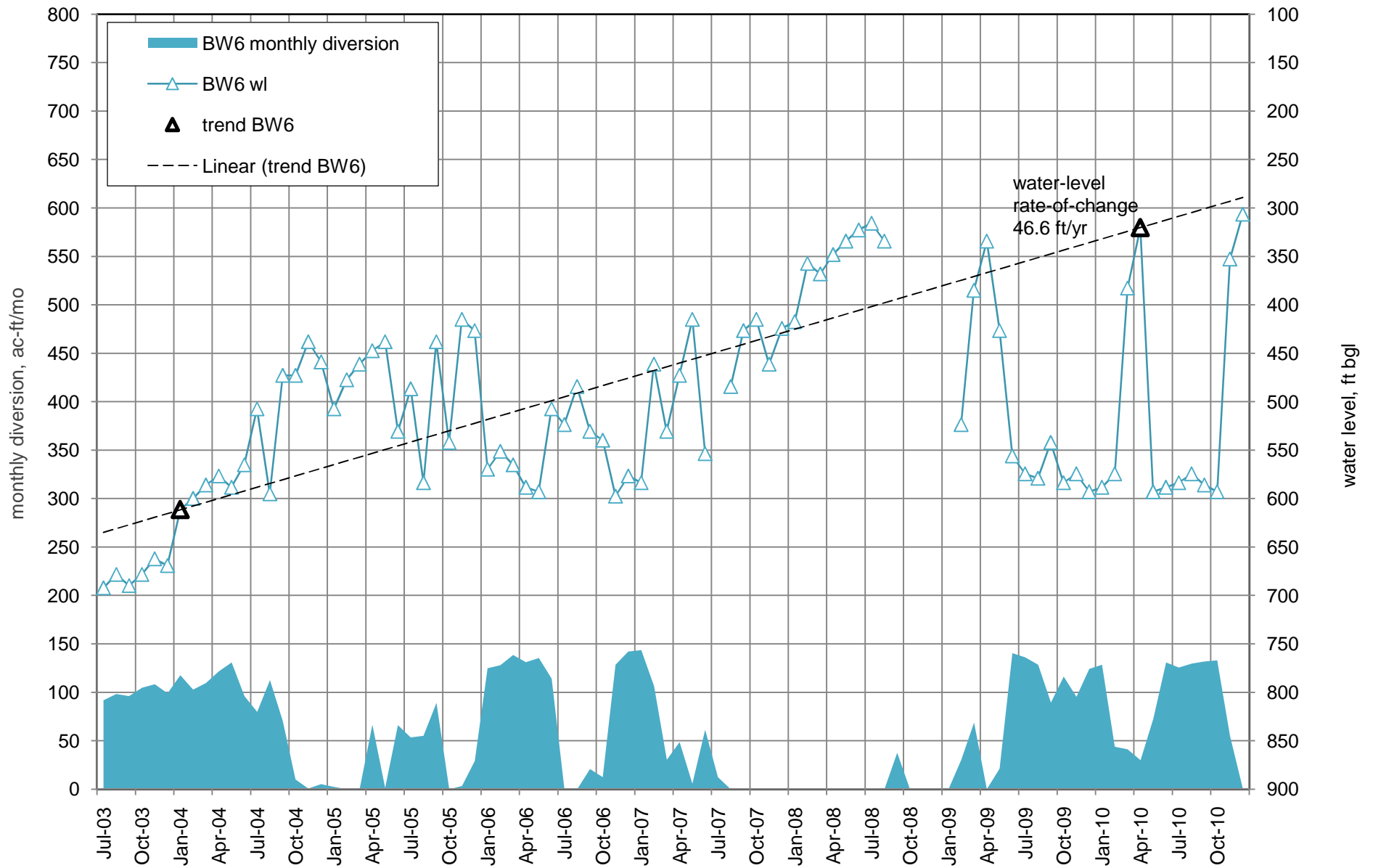


Figure A7. Water levels and diversions from Buckman Well 6 (RG-20516-S-4), October 2003 through 2010.

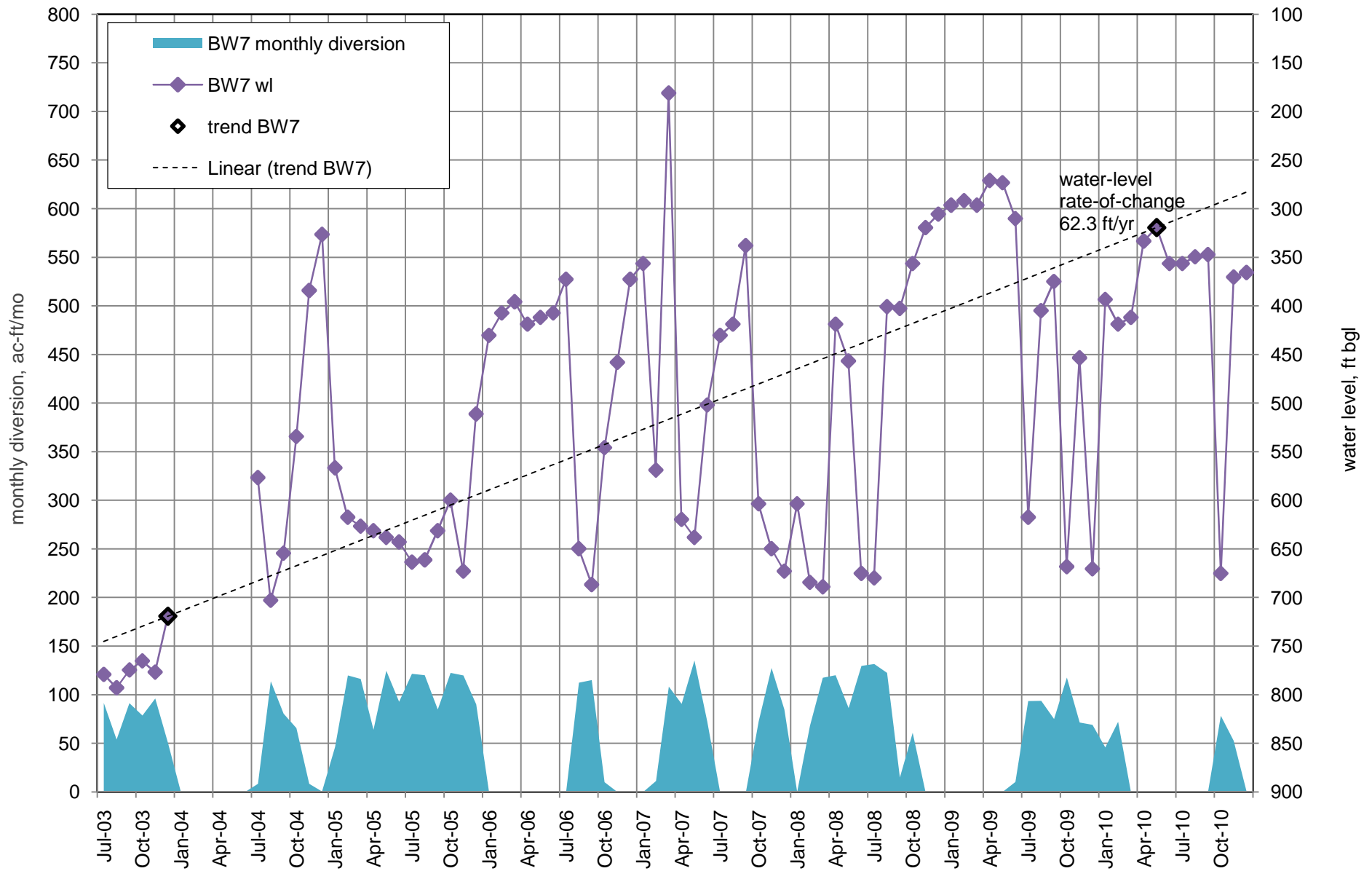


Figure A8. Water levels and diversions from Buckman Well 7 (RG-20516-S-7), October 2003 through 2010.

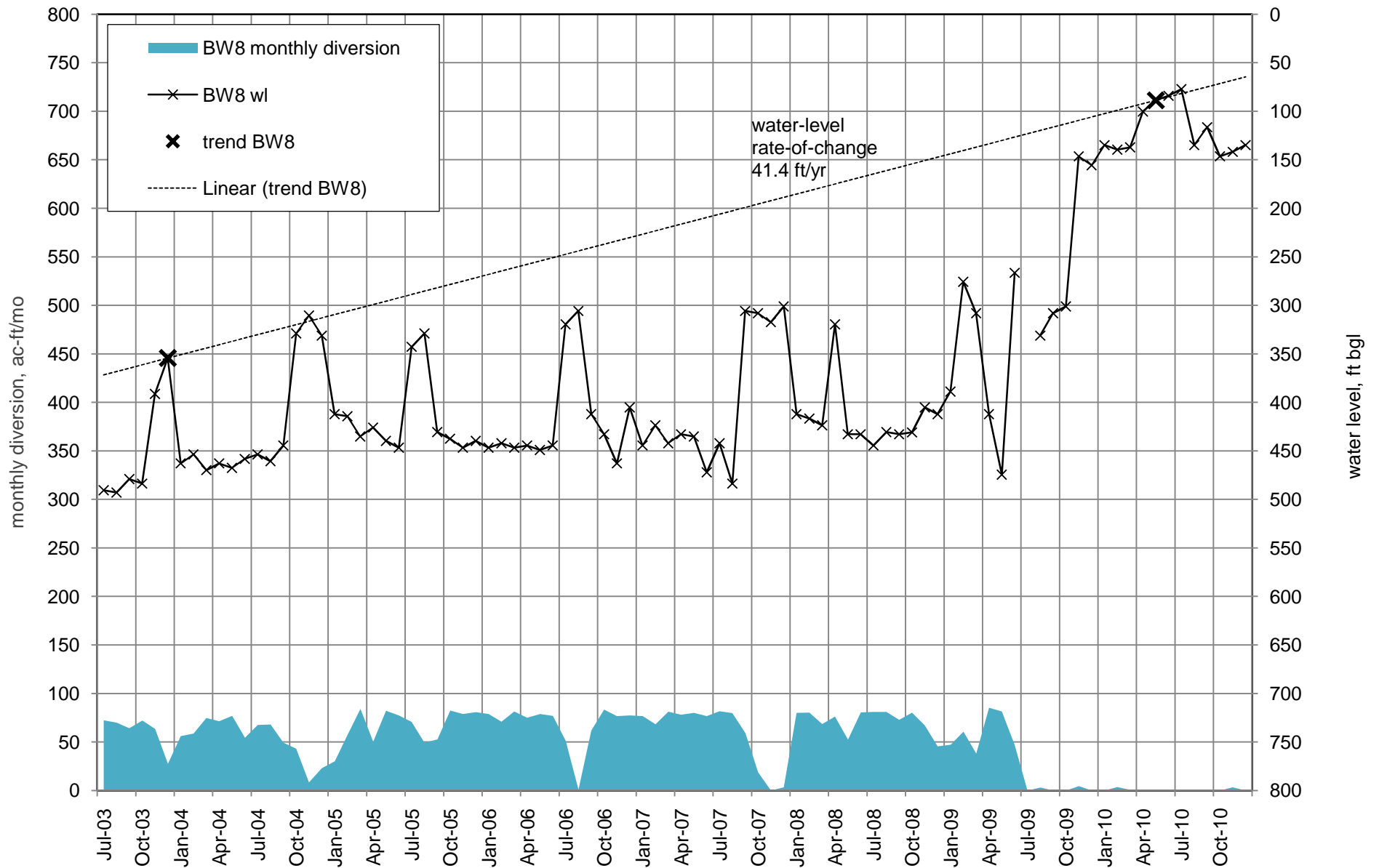


Figure A9. Water levels and diversions from Buckman Well 8 (RG-20516-S-8), October 2003 through 2010.

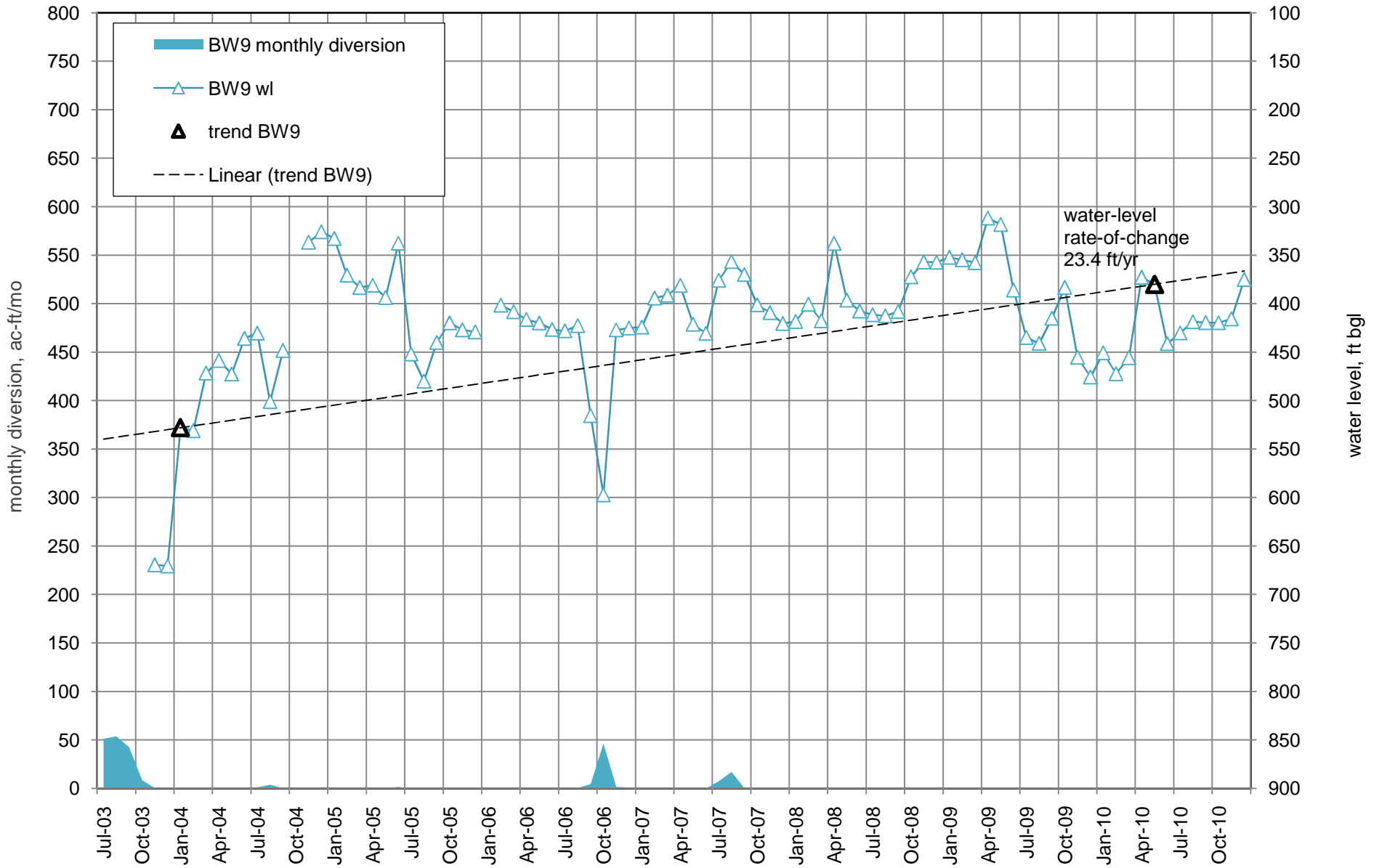


Figure A10. Water levels and diversions from Buckman Well 9 (RG-20516-S-9), October 2003 through 2010.

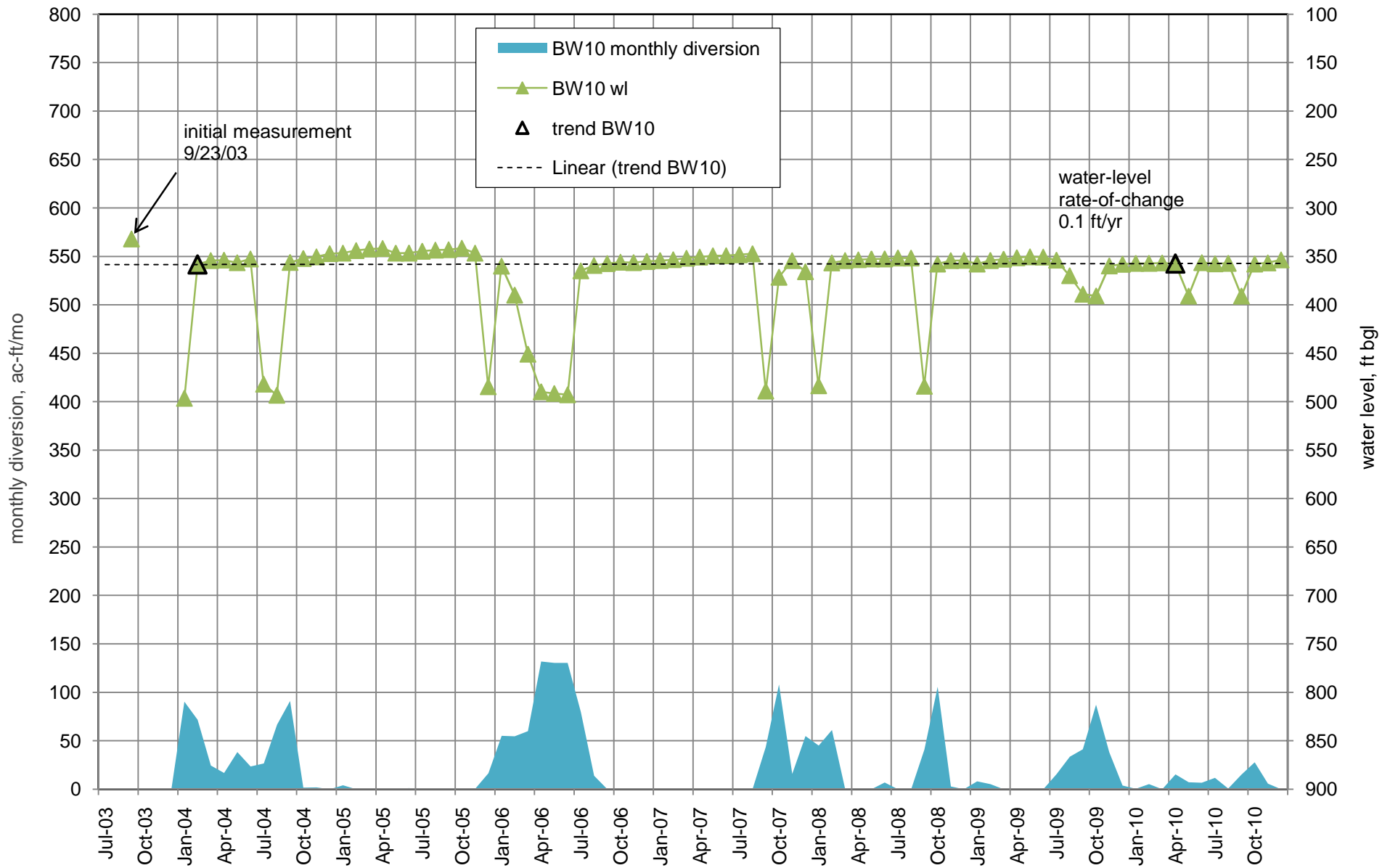


Figure A11. Water levels and diversions from Buckman Well 10 (RG-20516-S-10), October 2003 through 2010.

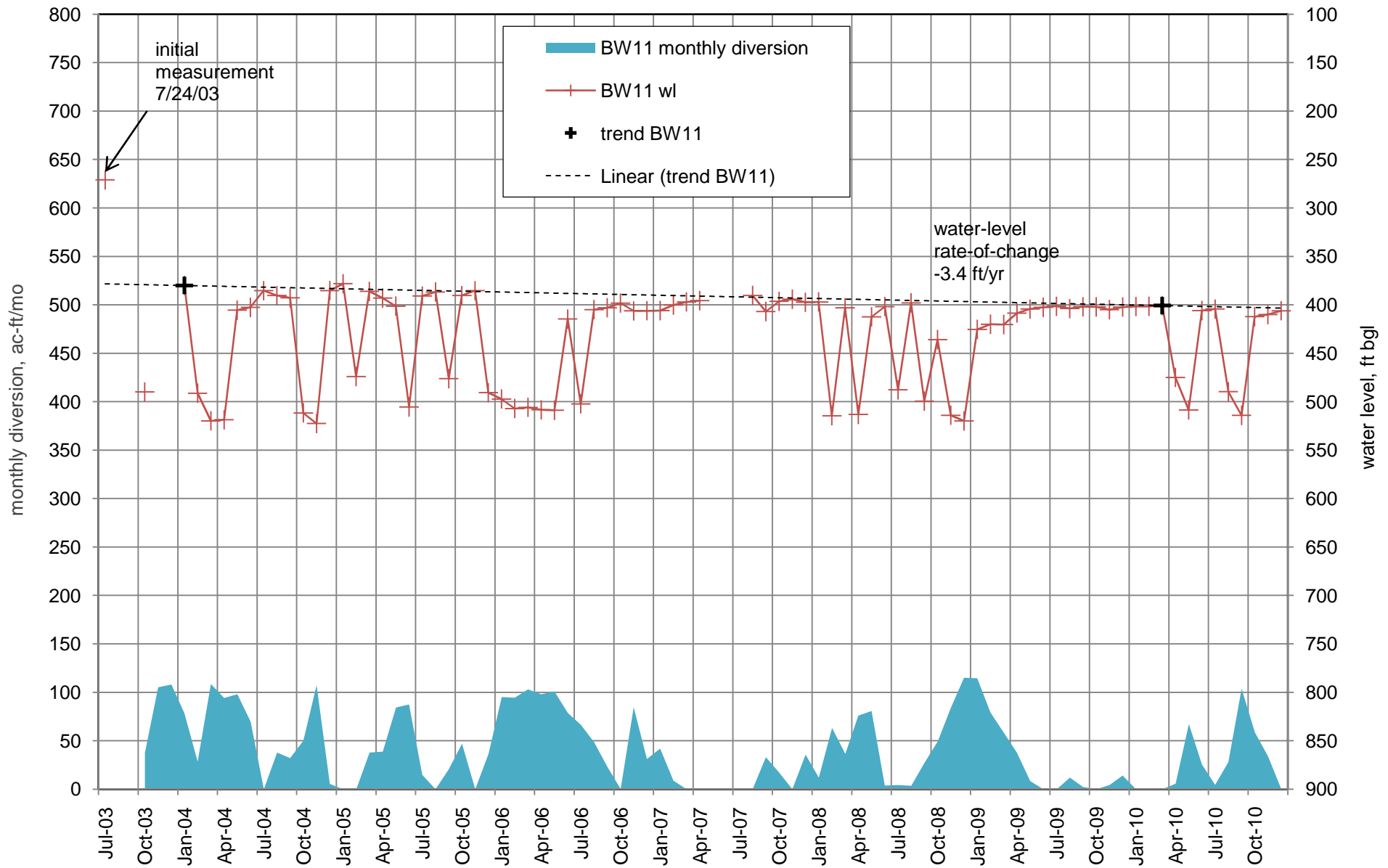


Figure A12. Water levels and diversions from Buckman Well 11 (RG-20516-S-11), October 2003 through 2010.

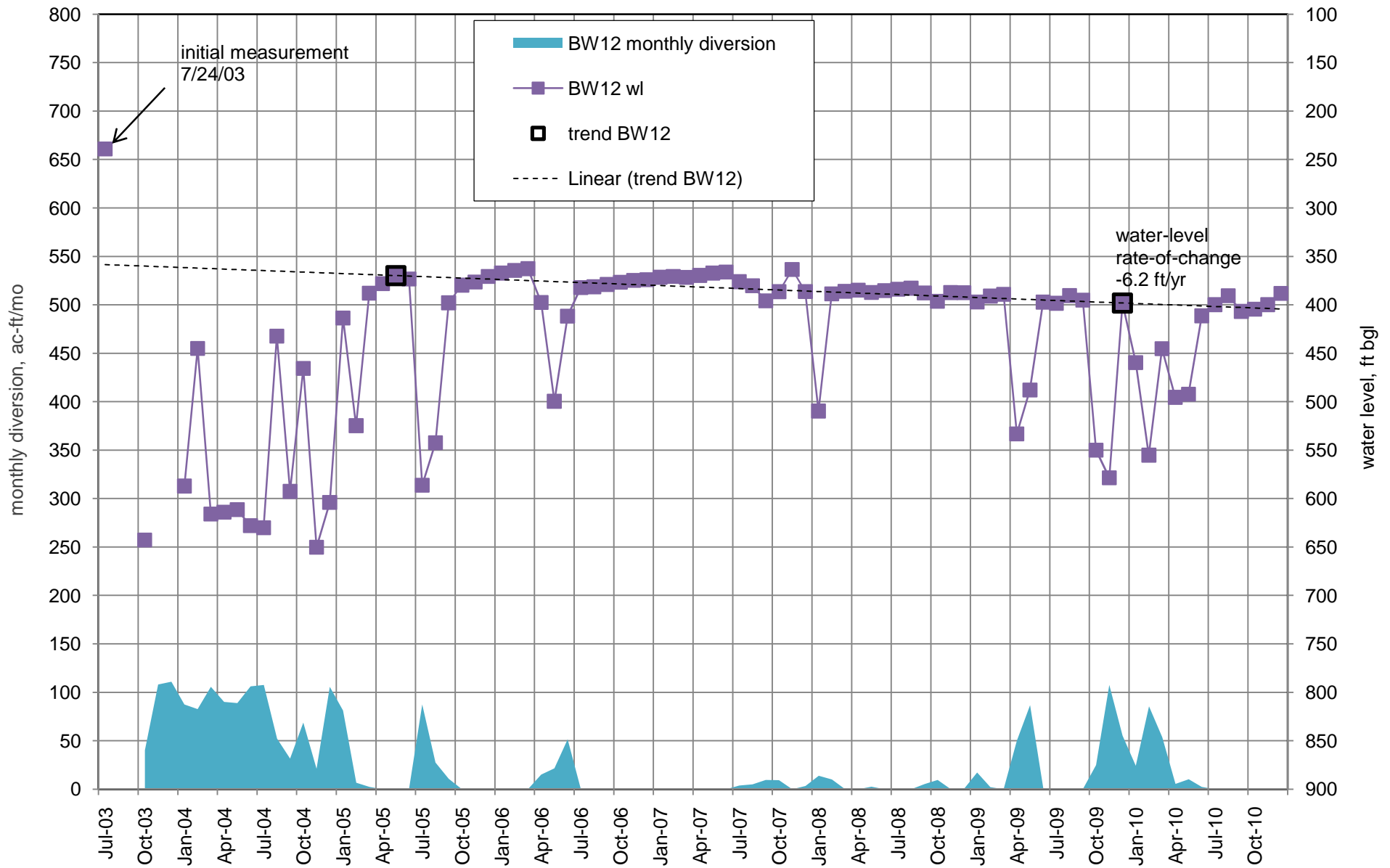


Figure A13. Water levels and diversions from Buckman Well 12 (RG-20516-S-12), October 2003 through 2010.

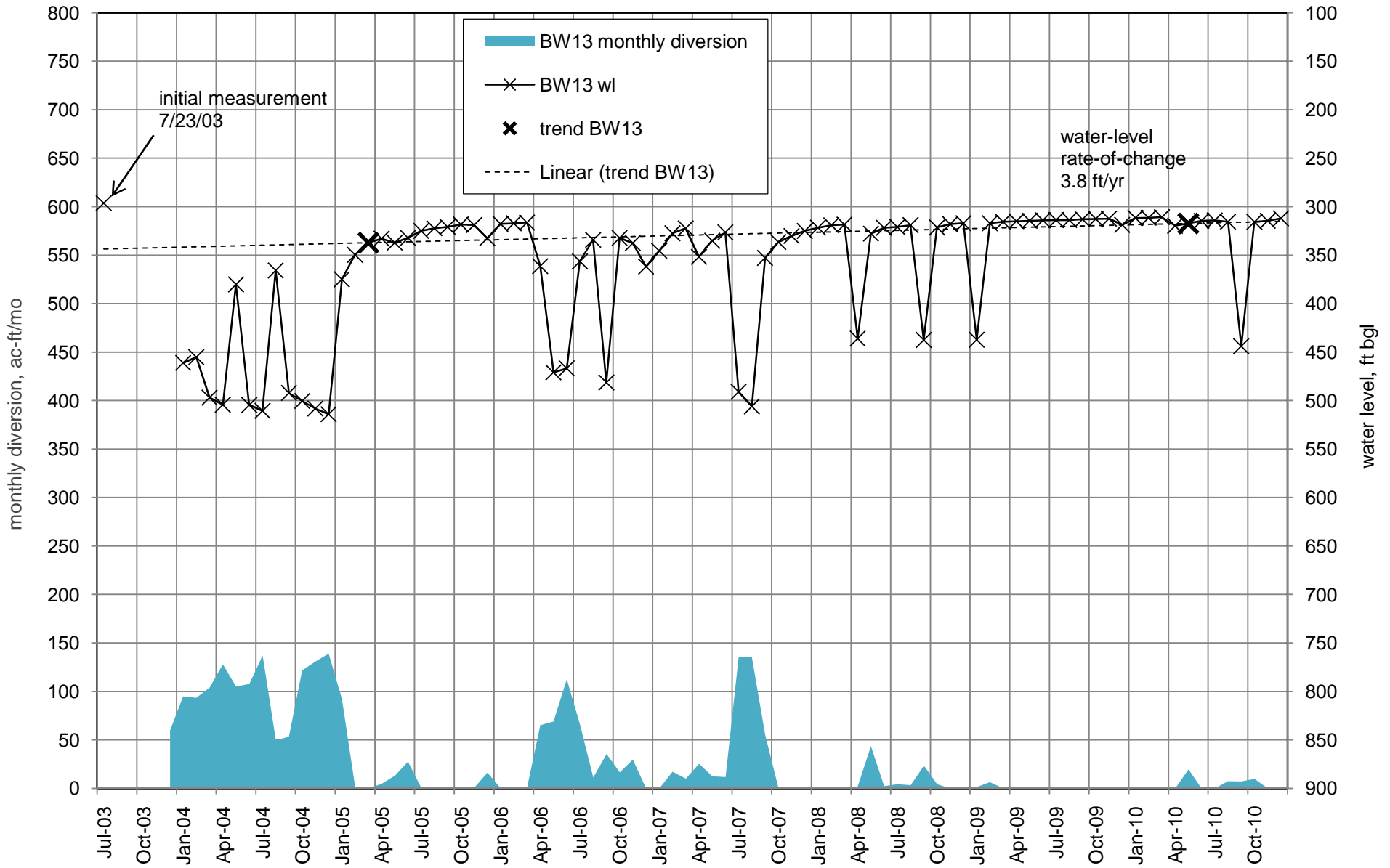


Figure A14. Water levels and diversions from Buckman Well 13 (RG-20516-S-13), October 2003 through 2010.

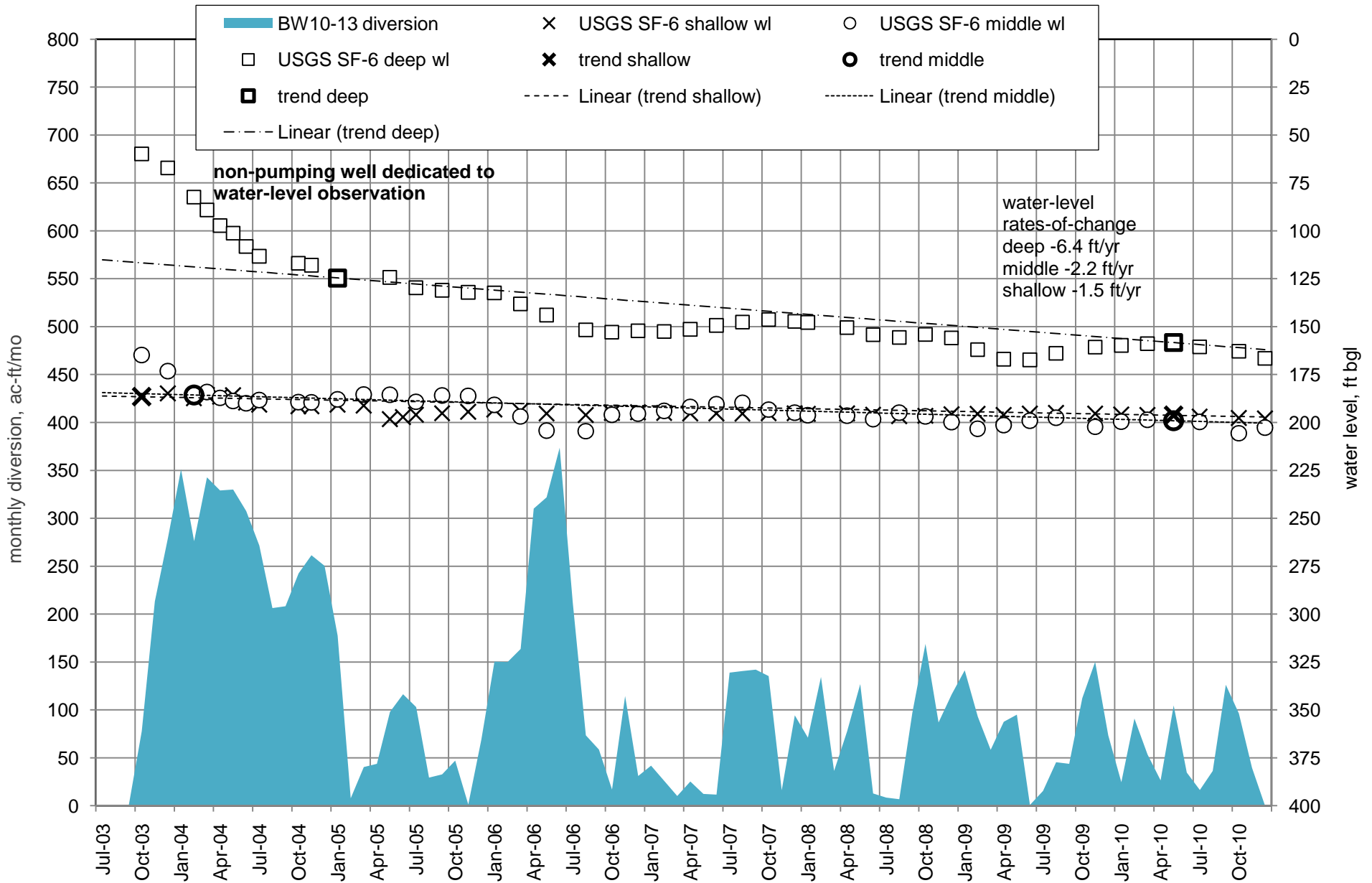


Figure A15. Water levels in U.S. Geological Survey Buckman shallow, middle, and deep piezometers (SF-6 C, B, and A, respectively), and diversions from Buckman Wells 10 through 13, October 2003 through 2010.

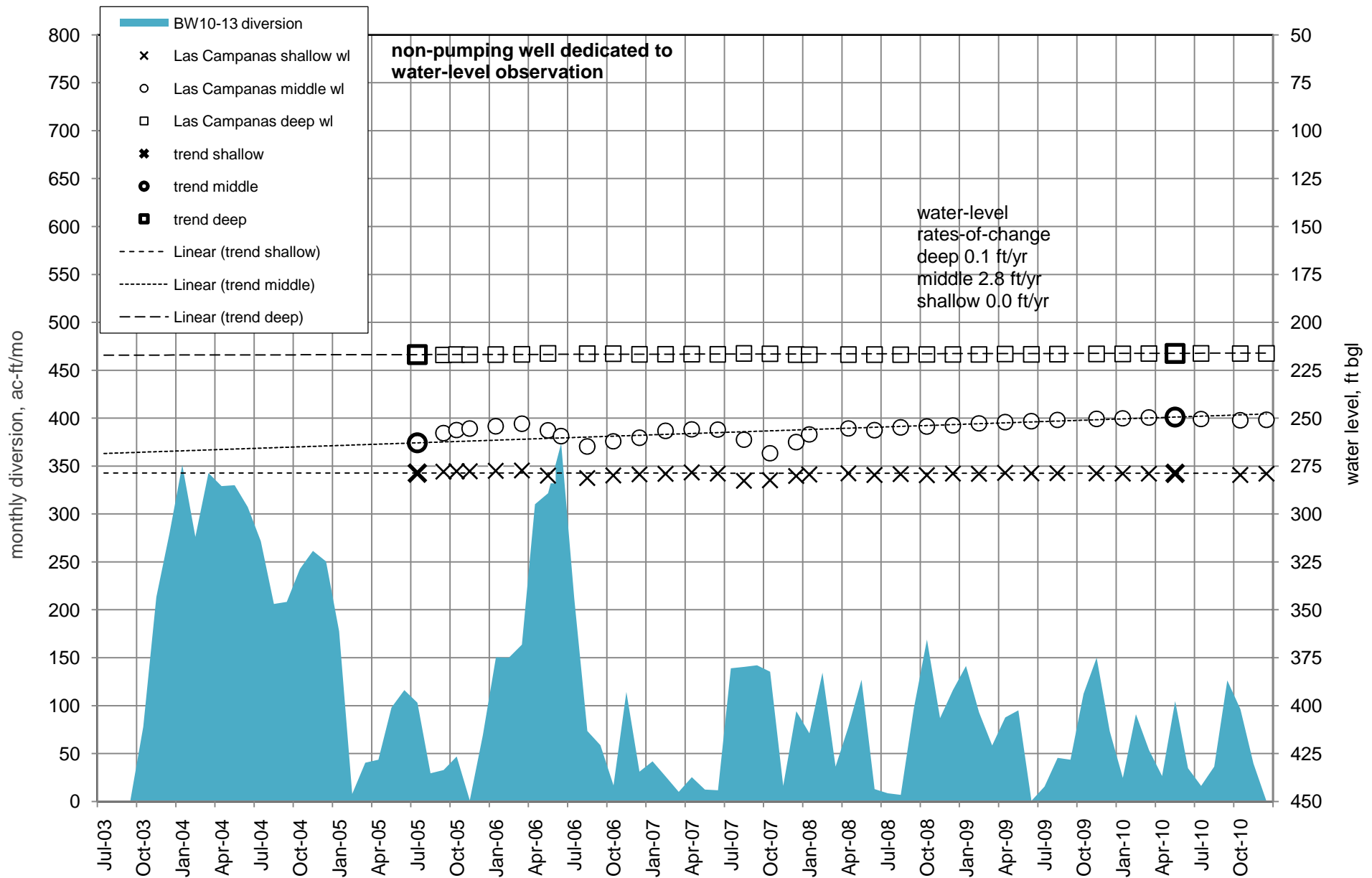


Figure A16. Water levels in U.S. Geological Survey Las Campanas shallow, middle and deep piezometers (C, B, and A, respectively), and diversions from Buckman Wells 10 through 13, October 2003 through 2010.

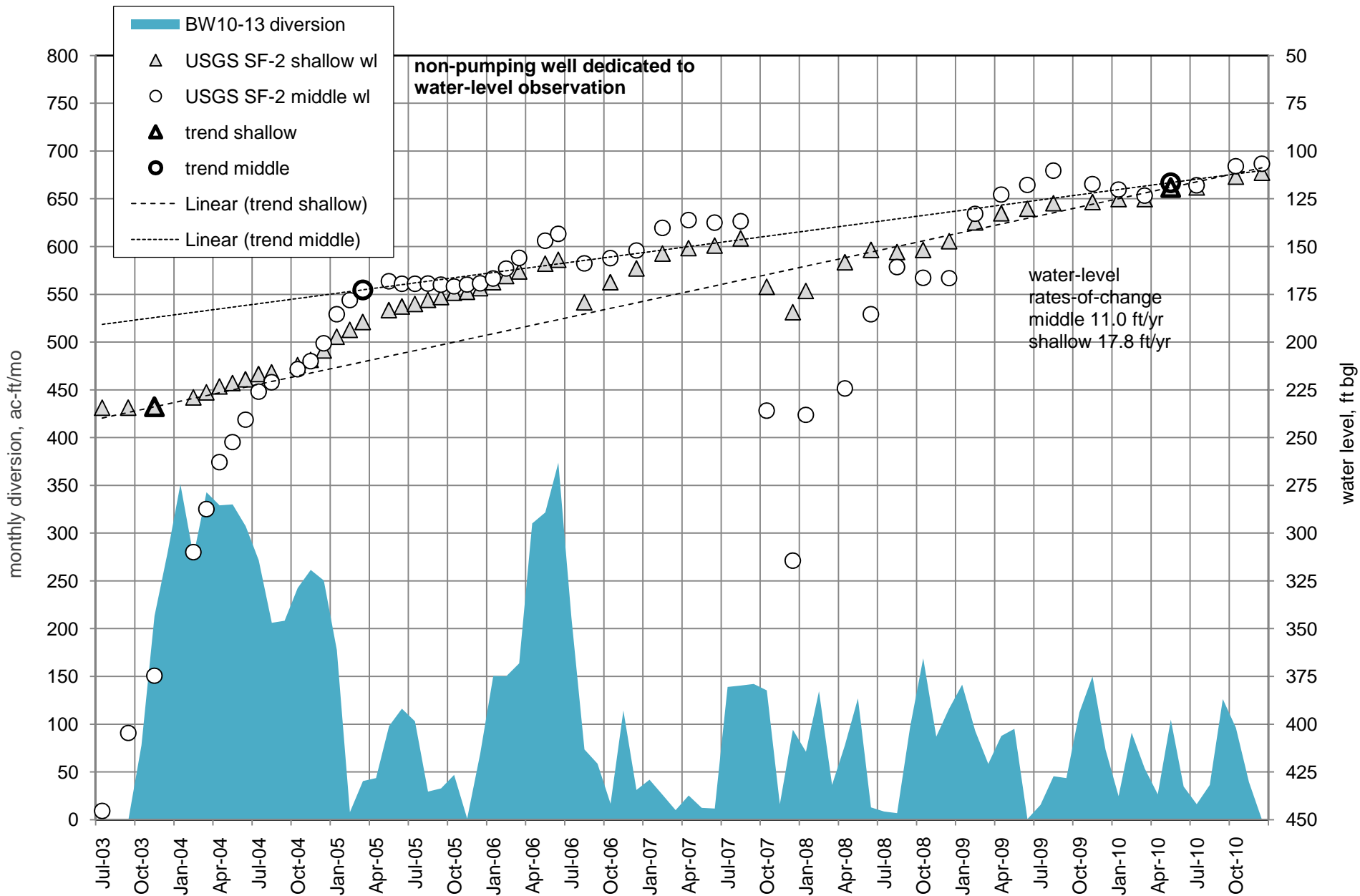


Figure A17. Water levels in U.S. Geological Survey SF-2 shallow and middle piezometers (SF-2 C and B, respectively), and diversions from Buckman Wells 10 through 13, October 2003 through 2010.

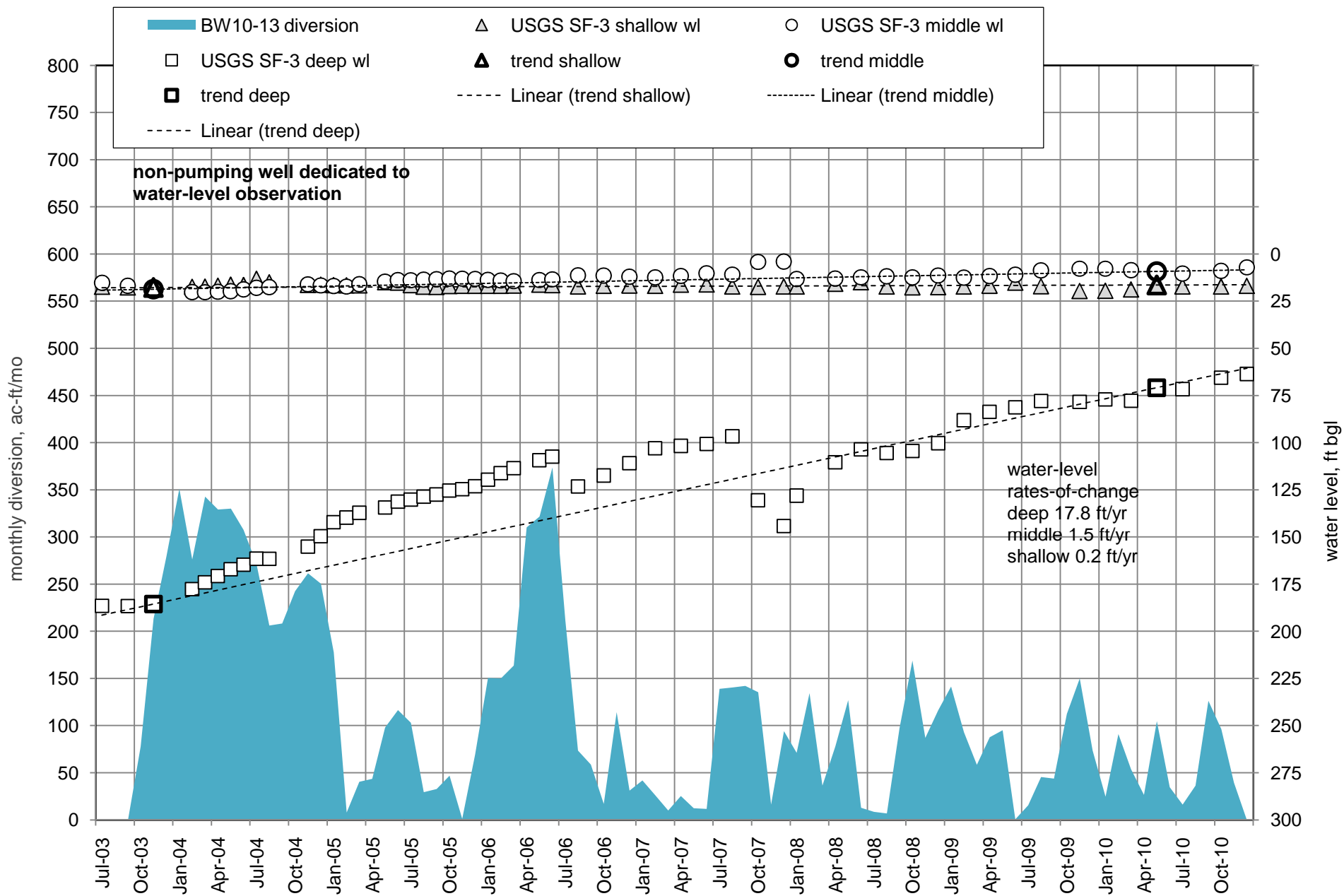


Figure A18. Water levels in U.S. Geological Survey SF-3 shallow, middle and deep piezometers (SF-3 C, B and A, respectively), and diversions from Buckman Wells 10 through 13, October 2003 through 2010.

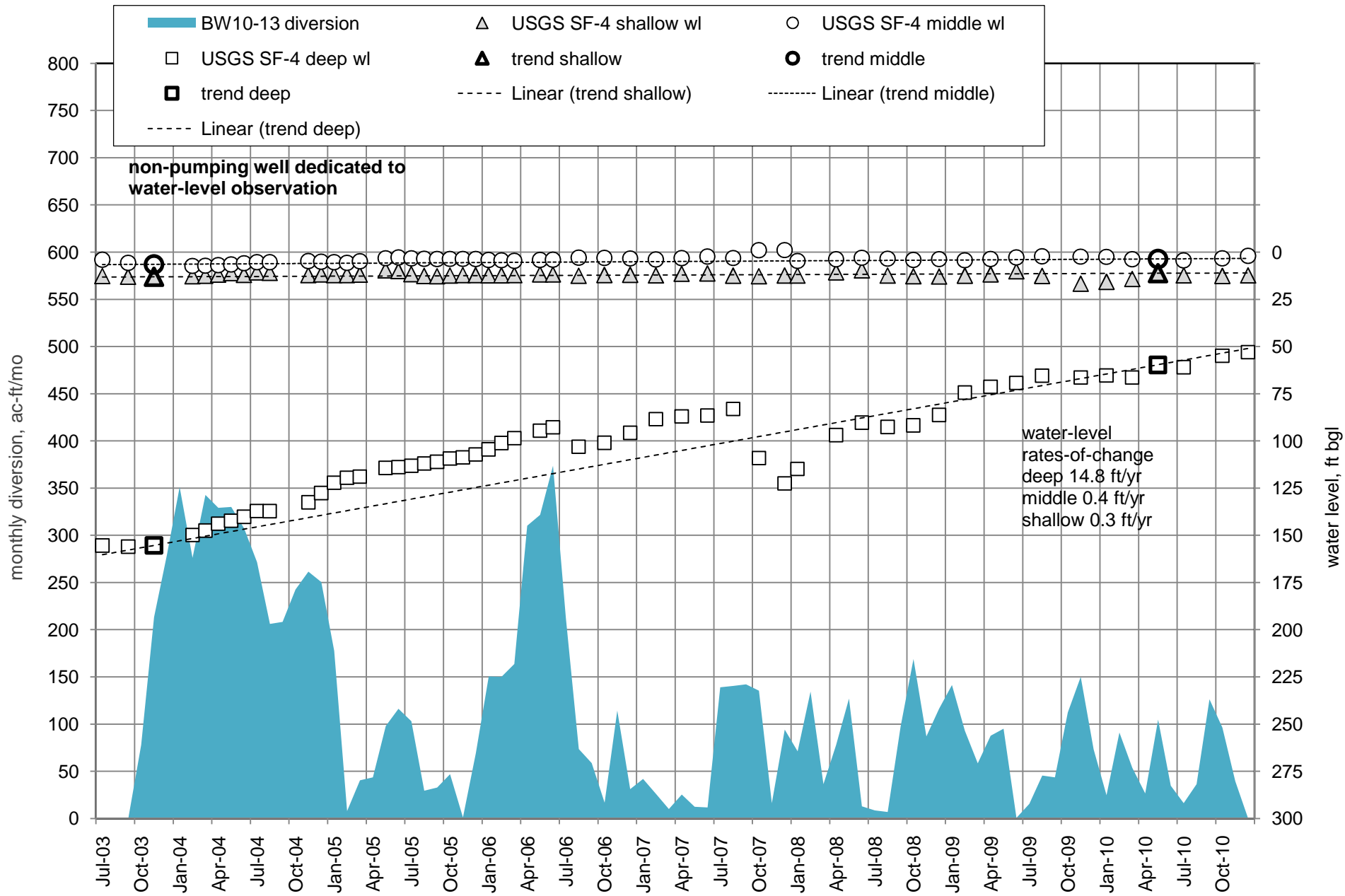


Figure A19. Water levels in U.S. Geological Survey SF-4 shallow, middle and deep piezometers (SF-4 C, B and A, respectively), and diversions from Buckman Wells 10 through 13, October 2003 through 2010.

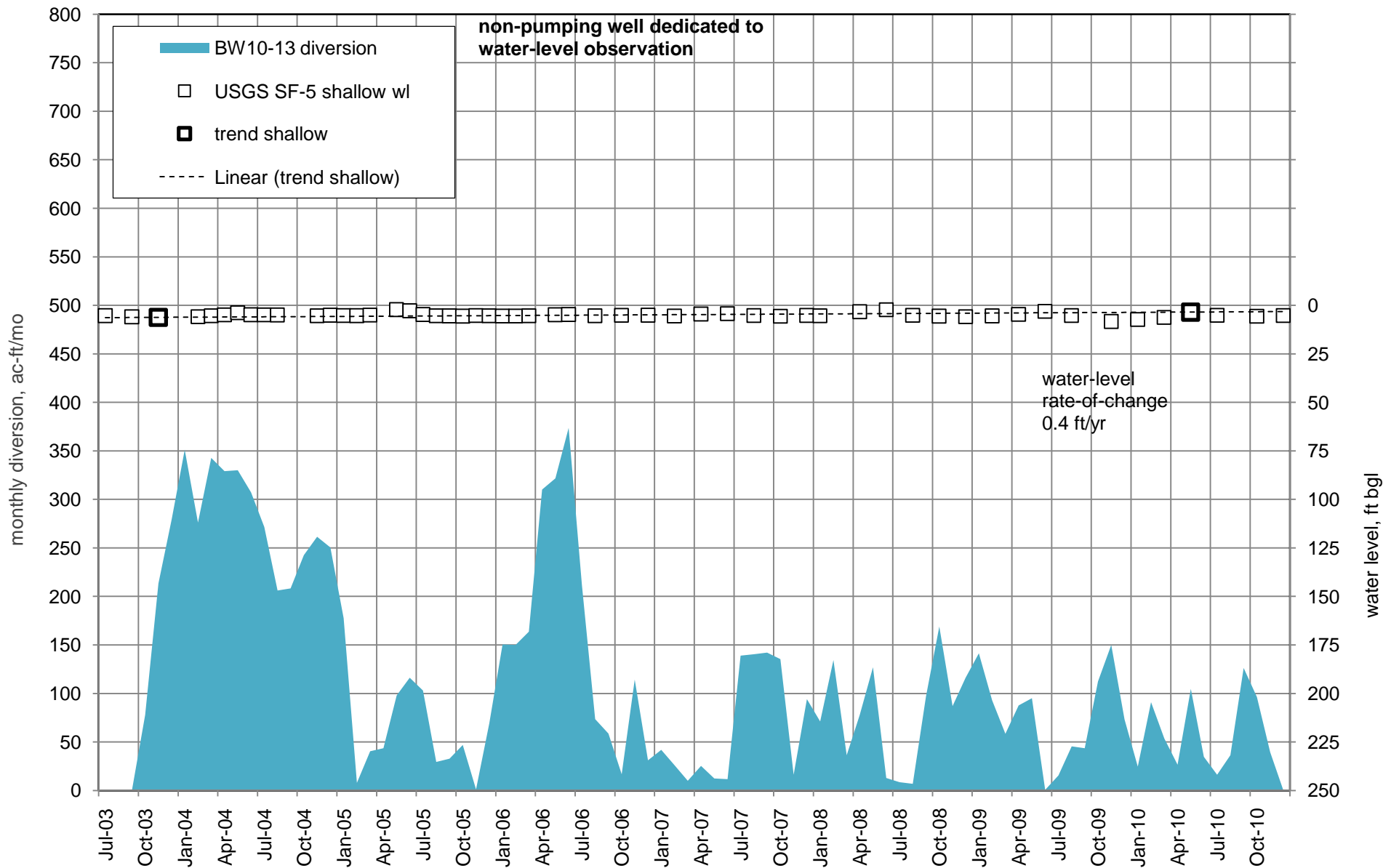


Figure A20. Water levels in U.S. Geological Survey SF-5 shallow piezometer (SF-5 C), and diversions from Buckman Wells 10 through 13, October 2003 through 2010.

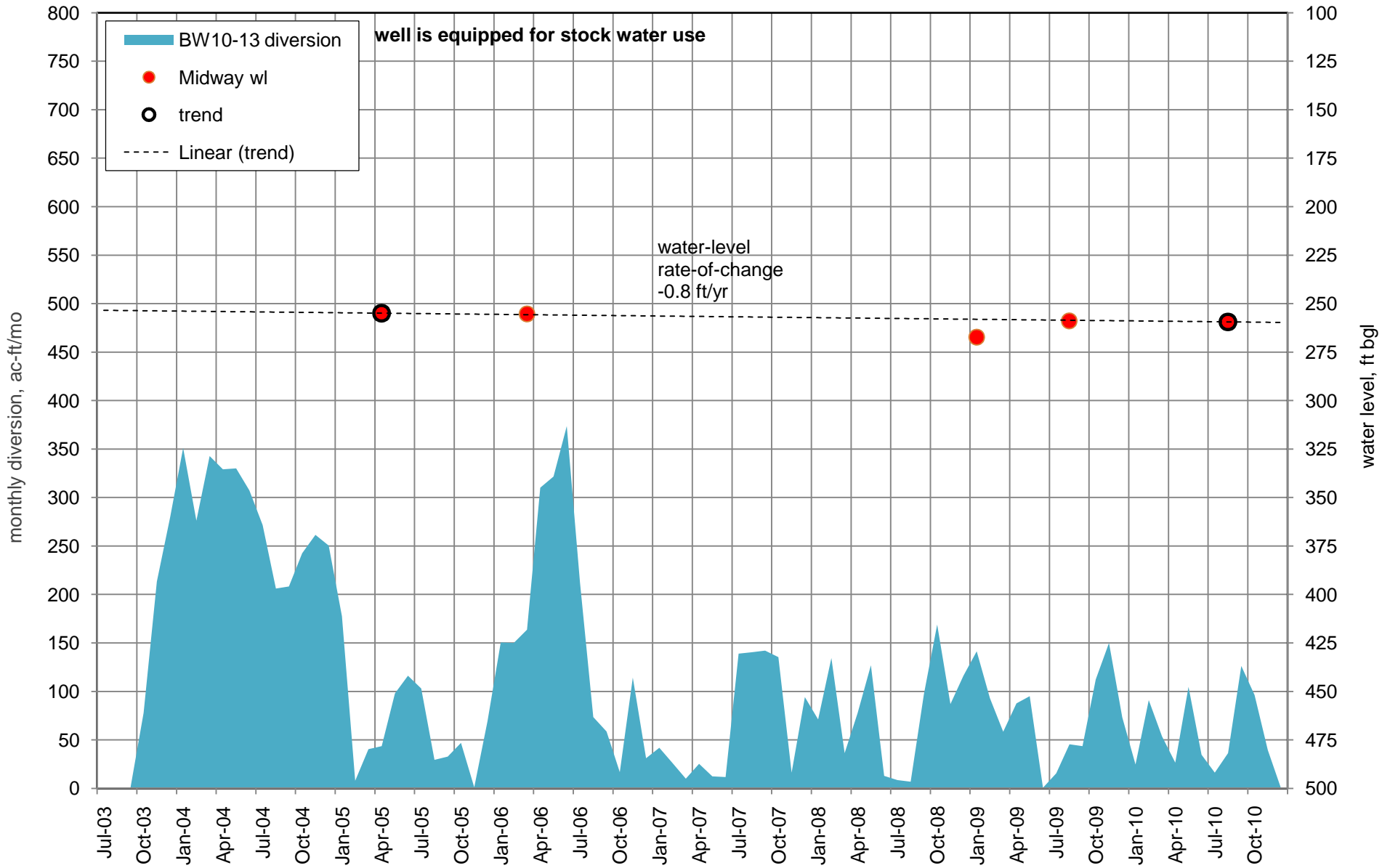


Figure A21. Water levels in Midway Windmill Well (RG-438) and diversions from Buckman Wells 10 through 13, October 2003 through 2010.

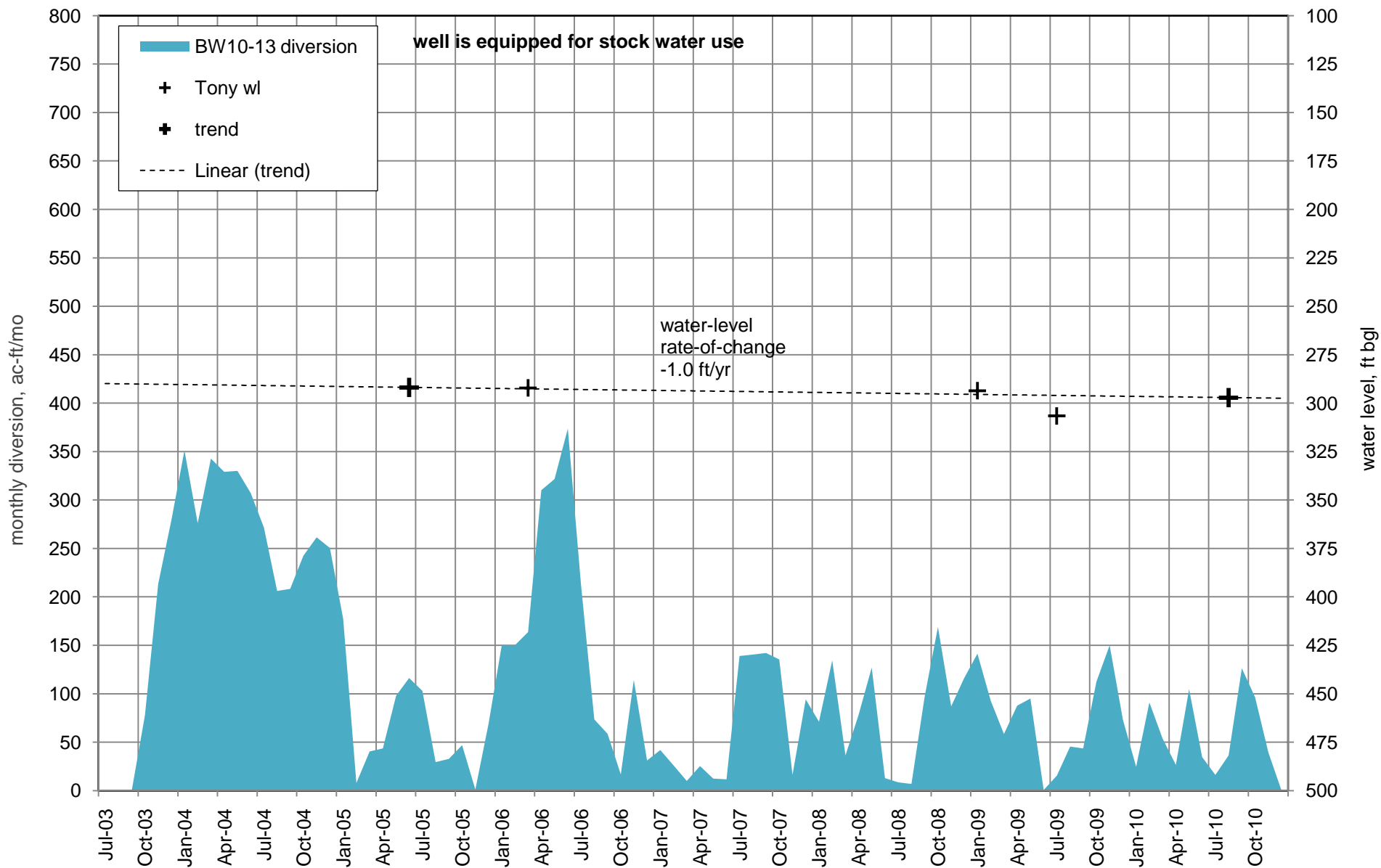


Figure A22. Water levels in Tony Windmill Well (RG-6386) and diversions from Buckman Wells 10 through 13, October 2003 through 2010.

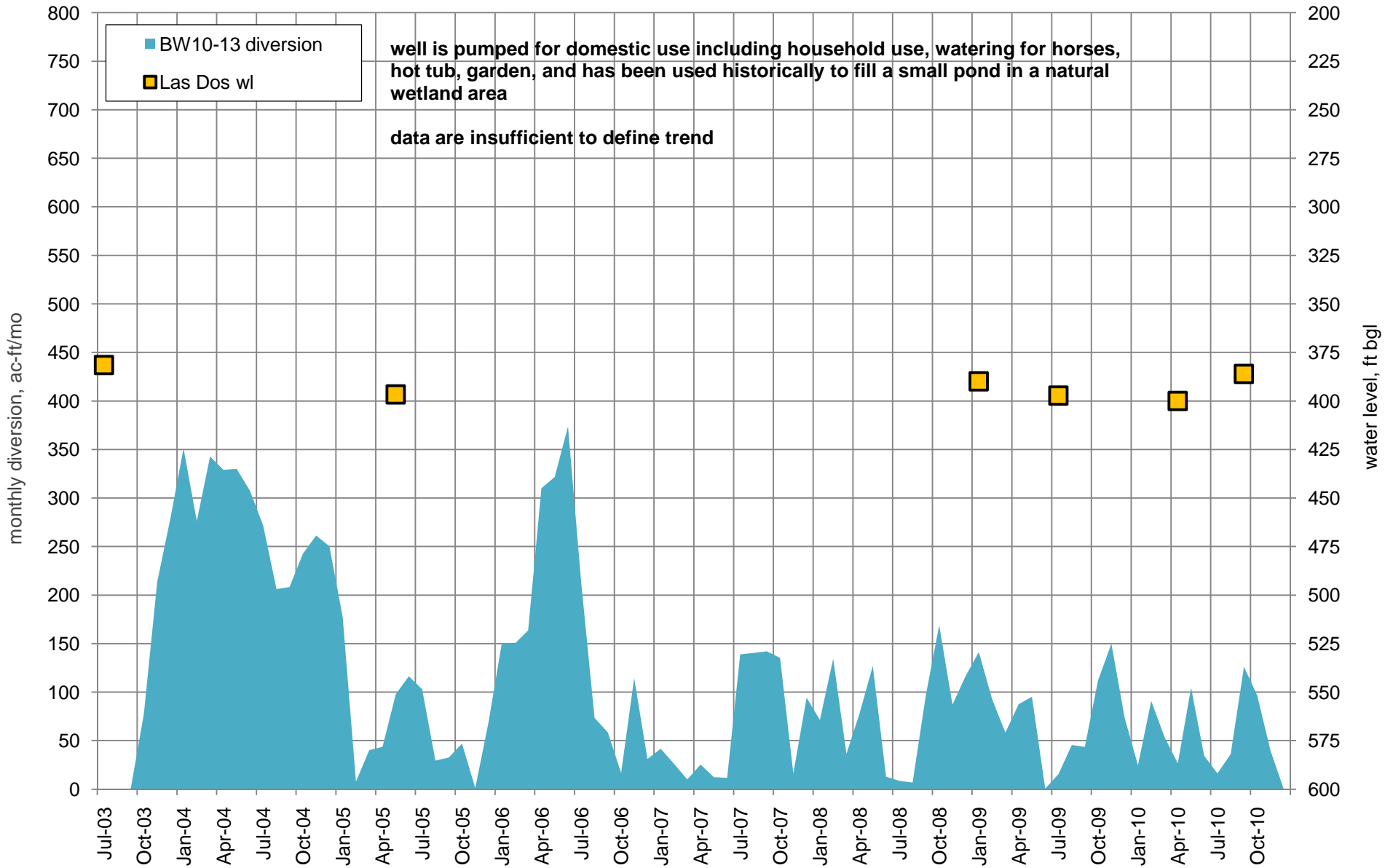


Figure A23. Water levels in Las Dos 1 Well (RG-29524) and diversions from Buckman Wells 10 through 13, October 2003 through 2010.

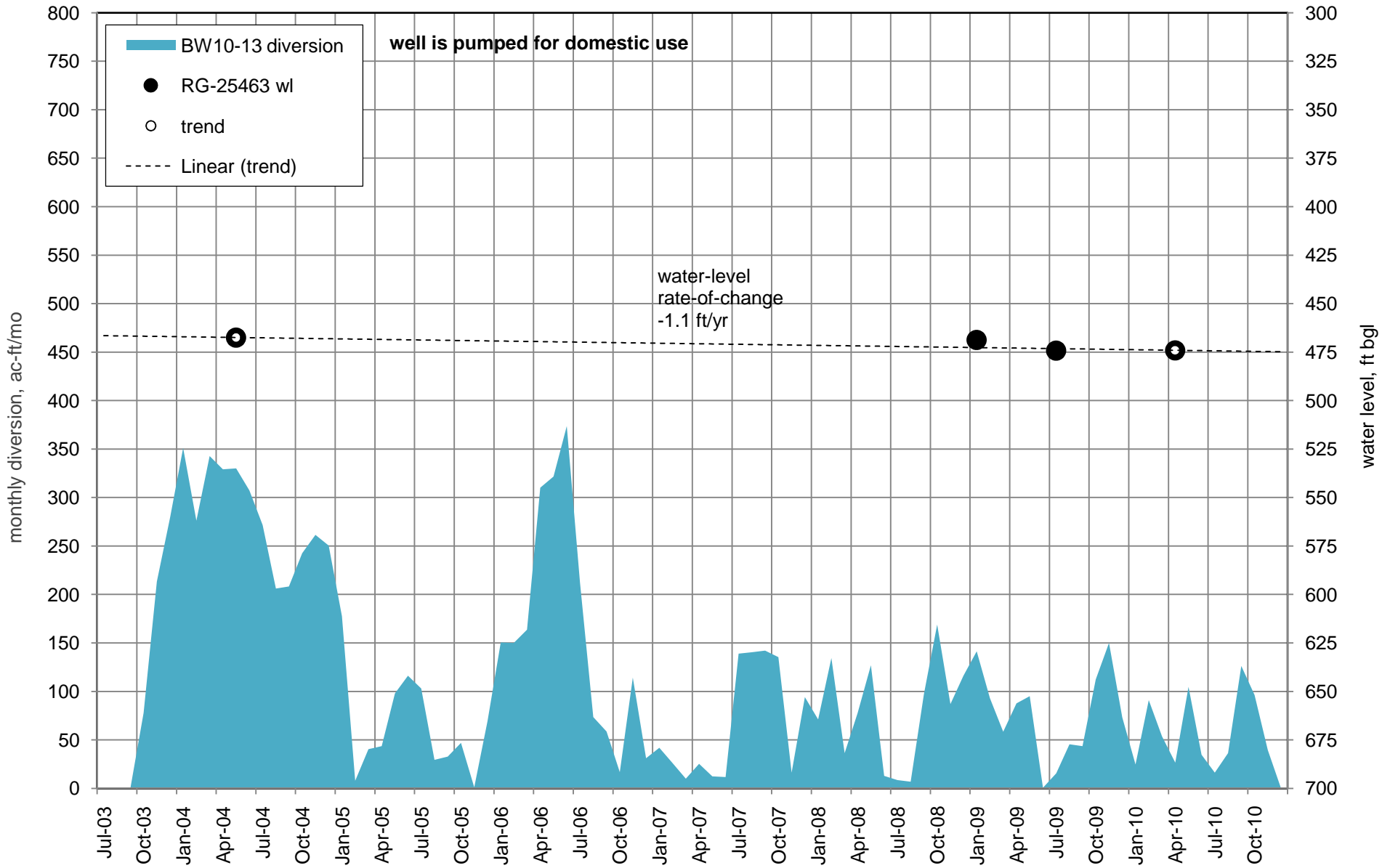


Figure A24. Water levels in Well RG-25463 and diversions from Buckman Wells 10 through 13, October 2003 through 2010.

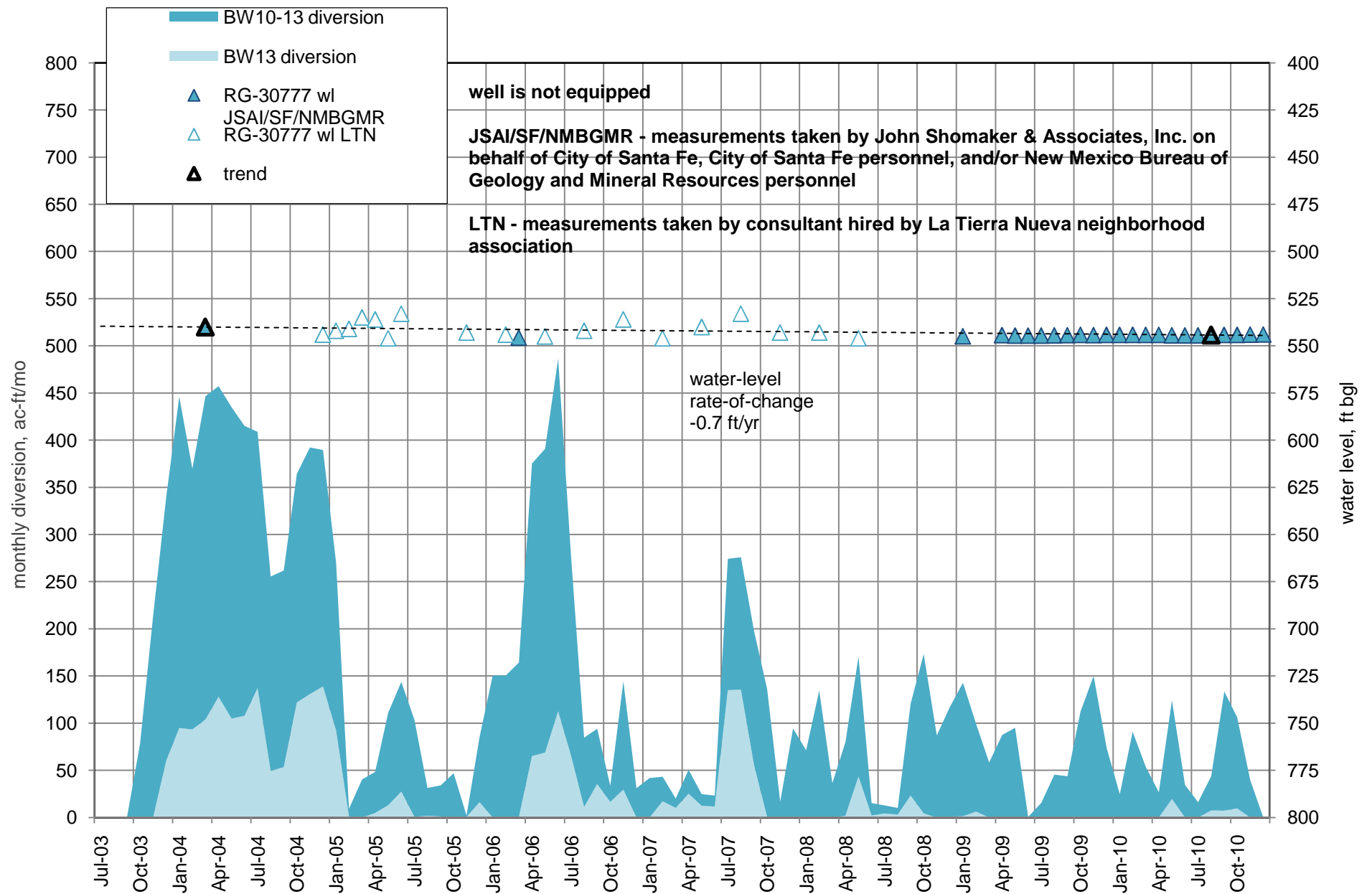


Figure A25. Water levels in Well RG-30777 and diversions from Buckman Wells 10 through 13, October 2003 through 2010.

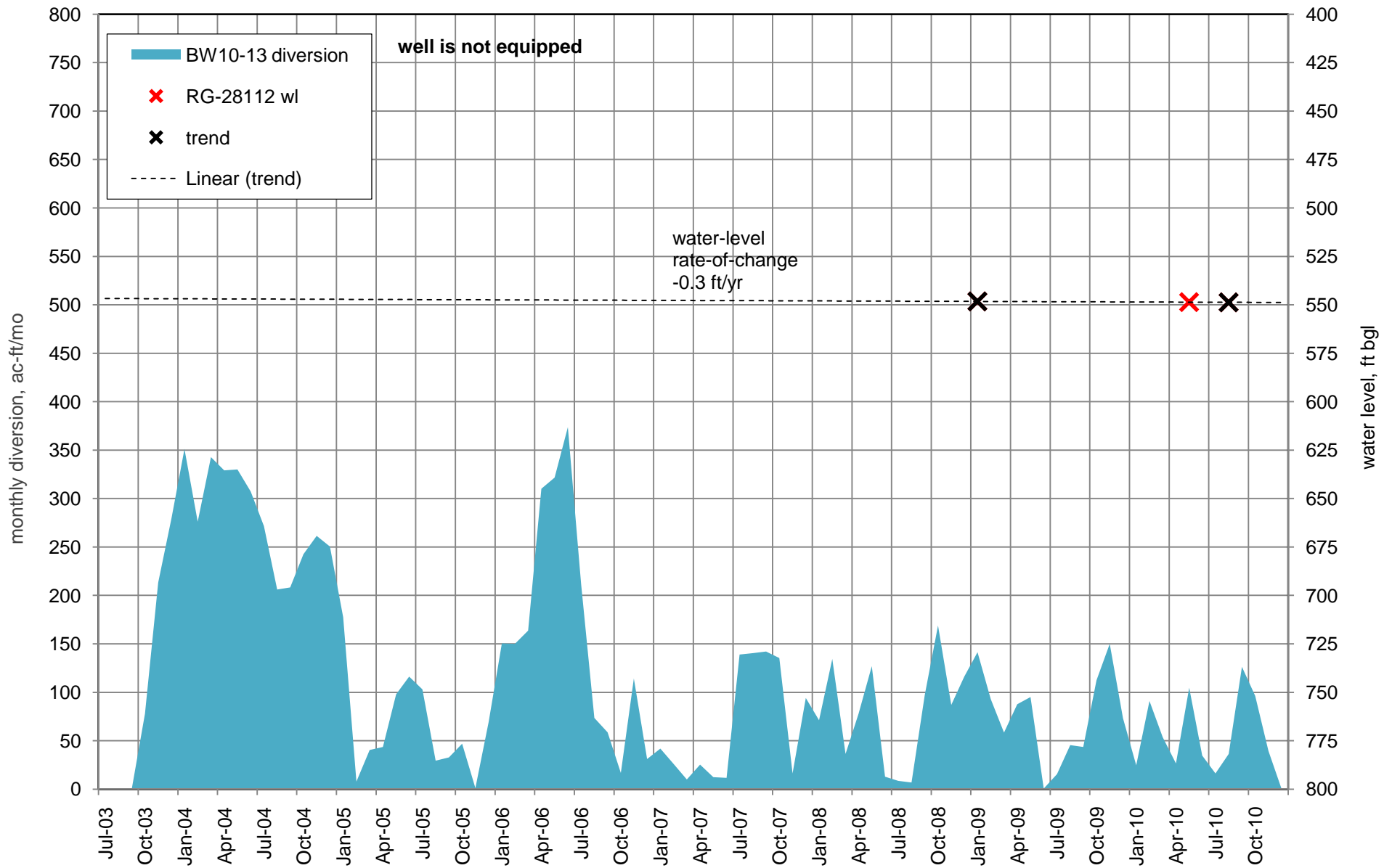


Figure A26. Water levels in Well RG-28112 and diversions from Buckman Wells 10 through 13, October 2003 through 2010.

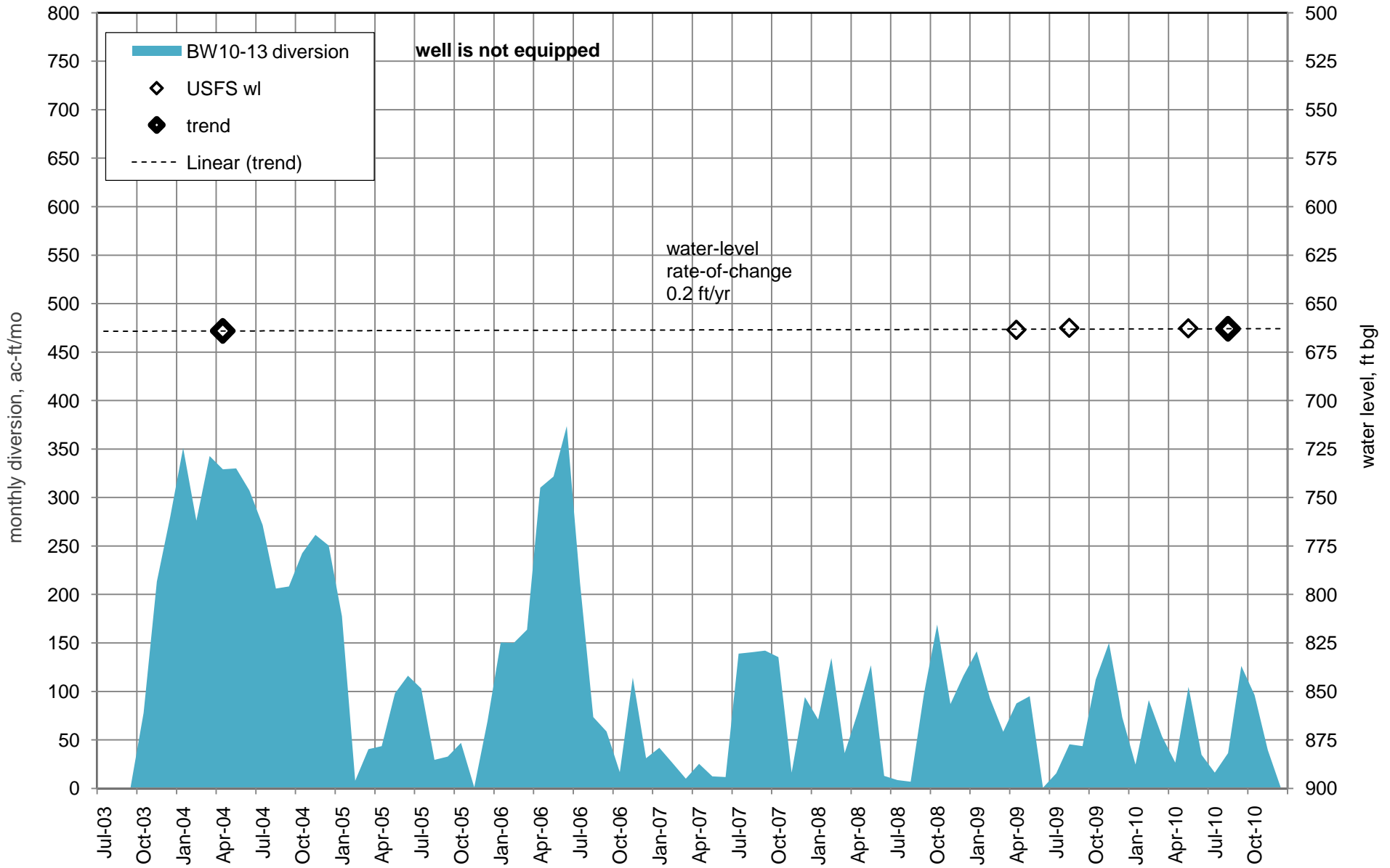


Figure A27. Water levels in U.S. Forest Service Well (RG-29723) and diversions from Buckman Wells 10 through 13, October 2003 through 2010.

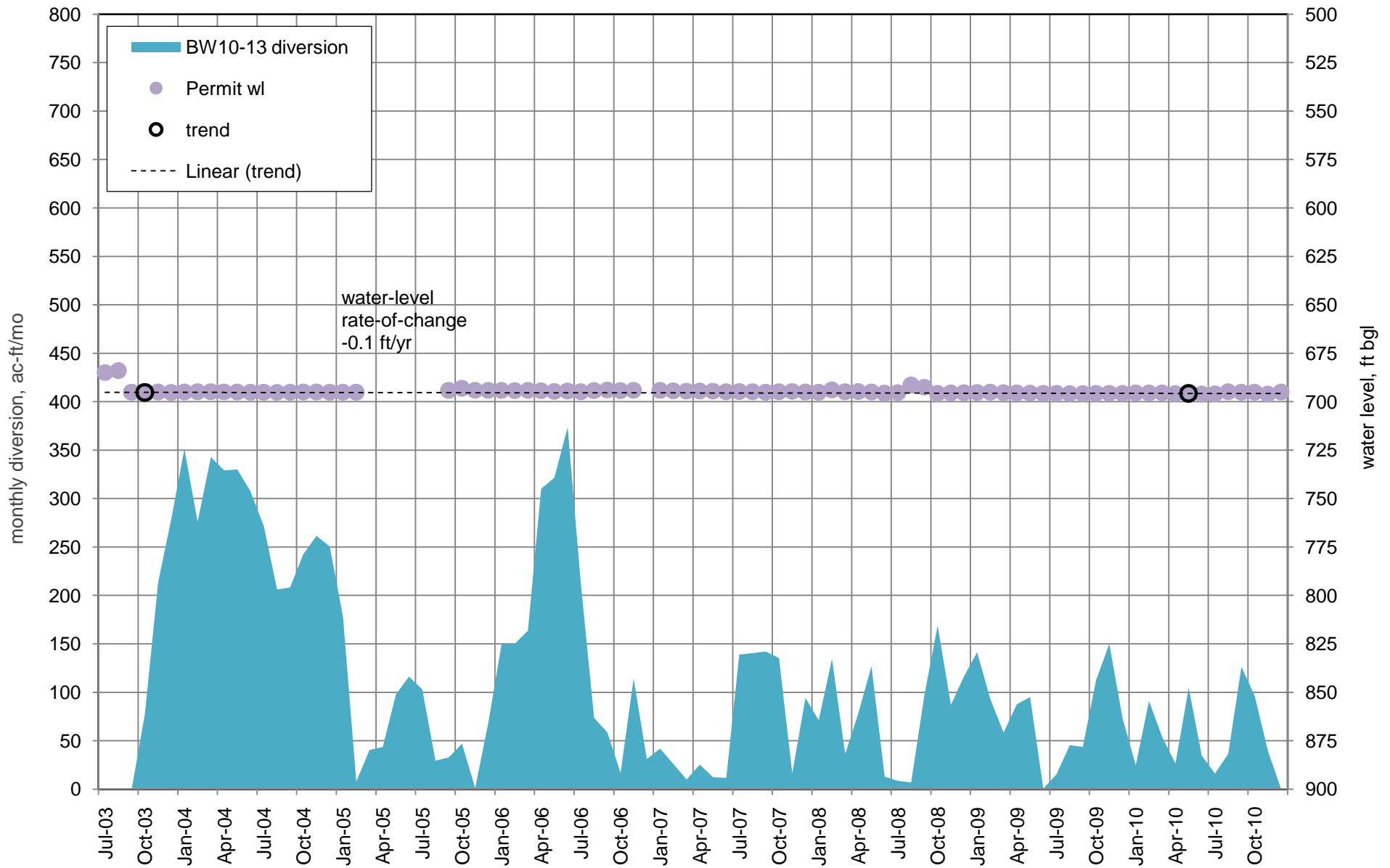


Figure A28. Water levels in Permit Well (RG-16681) and diversions from Buckman Wells 10 through 13, October 2003 through 2010.

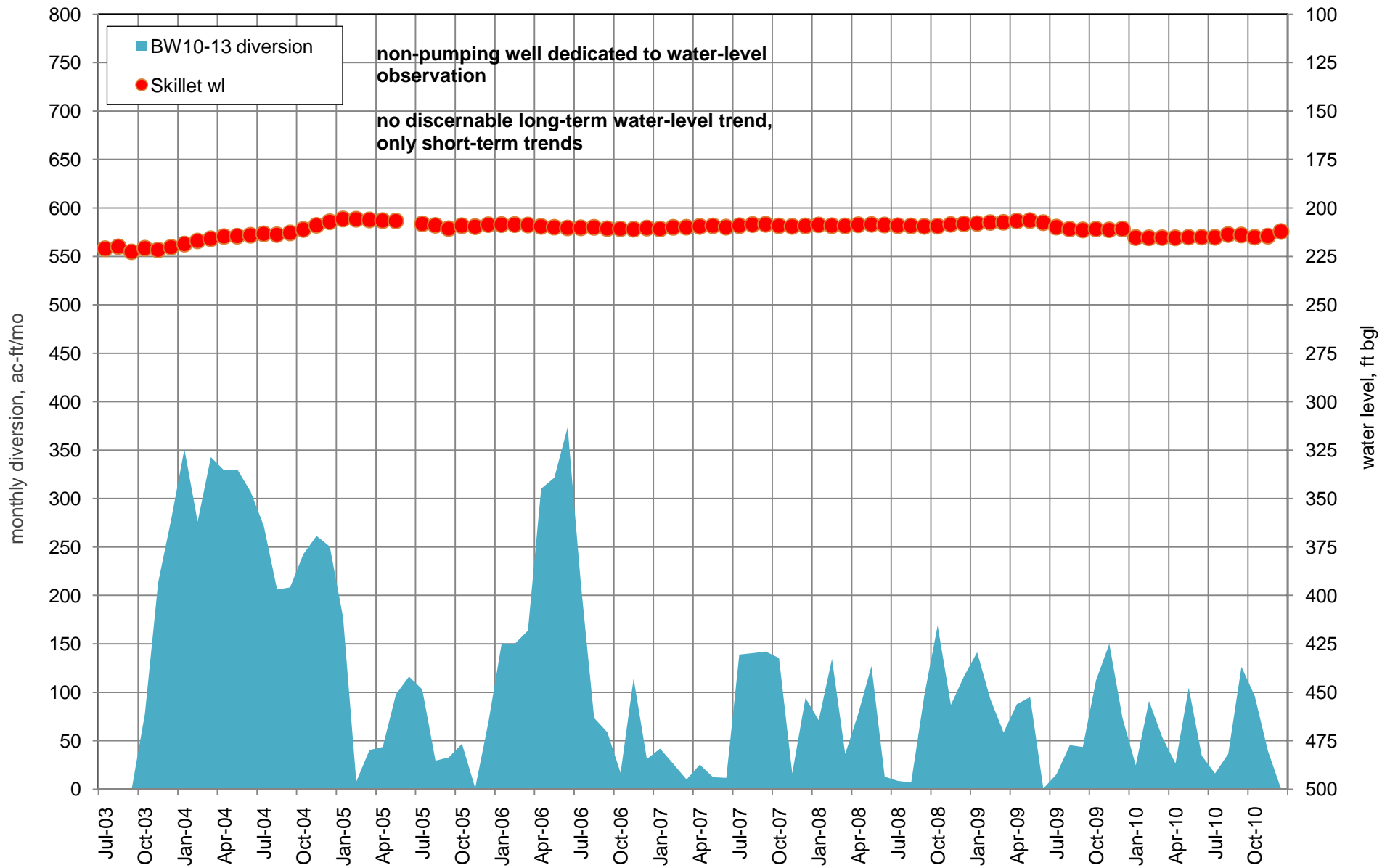


Figure A29. Water levels in Skillet Well (RG-21318) and diversions from Buckman Wells 10 through 13, October 2003 through 2010.

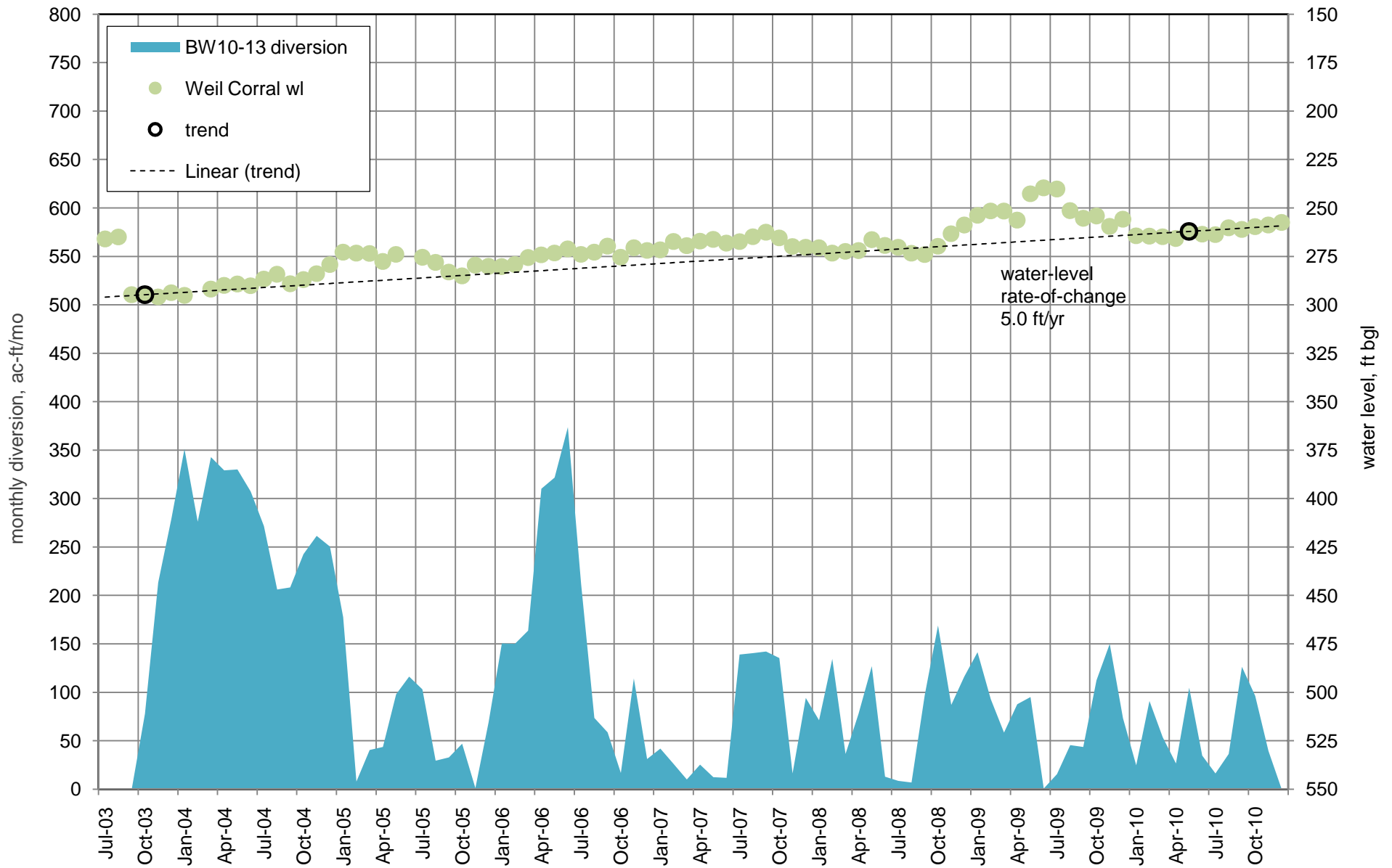


Figure A30. Water levels in Weil Corral Well (RG-439) and diversions from Buckman Wells 10 through 13, October 2003 through 2010.

Appendix B.

**Ten- and 40-year water column projections for
Buckman Monitoring Program database wells**

Appendix B. Buckman Monitoring Area Well and Well Permit Survey

(gray highlight = well location verified with site-specific data)

NMOSE Well ID	Well Owner(s) listed in NMOSE Database	Confirmed Well Owner	Other Well Names	Parcel Owner Listed in County Parcel Database	Street Address	Lot Description	Address Source	UTM Easting, m, NAD83	UTM Northing, m, NAD83	NMOSE T.R.Sec.qqq	Use	Diver-sion, ac-ft/yr	Drilling Date	Well Depth, ft	Depth to Water, ft	Con-toured decline rate, ft/yr	Starting Water Column, ft	Water Column After 10 Years, ft	Percent Water Column Remaining After 10 Years	Water Column After 40 Years, ft	Percent Water Column Remaining After 40 Years	Land Surface Elevation, ft amsl	Monitoring Area	Other IDs
RG-00316	REGINALDO ESPINOZA, III, CHOLENE ESPINOZA, COMMERCIAL RESOURCES INC., JENNIFER JOHNS							401496	3949086		IRR	5.966	3/27/1957	40	20.00	0.00	20.00	20.00	100	20.00	100		BMP	
RG-00437 CLW	COLLEGE AGRIC. HOME ECON. NEW, Frank Bond		Dead Dog WM					400343	3956715	18N.08E.33.134	STK	3	6/10/1995	700	407.68	-1.00	292.32	282.32	97	252.32	86	6166	BMP	
RG-00438	SUZANNE HOYT GARCIA, TRUSTEE, Robert H. Weil, McKinney		Midway WM					399191	3961850	18N.08E.17.21	STK	3	6/30/1962	310	256.40	-0.80	53.60	45.60	85	21.60	40	6034	BMP	
RG-00439	SUZANNE HOYT GARCIA, TRUSTEE, Robert H. Weil		Artesian, Corral					396449	3965653	19N.07E.36.44	STK	3	8/8/1947	325	265.80	0.00	59.20	59.20	100	59.20	100	5662	BMP	
RG-04523	RUFINO MRS. GONZALES,			MEAD, WALTER L JR & EMILY C	101 CALLE ADELINA	LOT B-2 44.534 AC, T18N R 9E S30	COUNTY PLAT	406421	3958329	18N.09E.30.131	DOM	3	9/30/1960	170	95.00	-0.78	75.00	67.15	90	43.61	58		BMP	
RG-06128	LILLIAN M. WALKER,							402245	3962216	18N.08E.10.344	DOM	3	4/25/1993	700	525.00	-0.51	175.00	169.90	97	154.60	88	6430	BMP	
RG-06141	SUZANNE HOYT GARCIA, TRUSTEE, Robert H. Weil			LA TIERRA ASSOC INC	RANCH ESTATES RD	T17N R 8E S12 375.855 AC, REMAINDER UNDEVELOPED AREA	COUNTY PLAT	407117	3952667	17N.09E.7.431	STK	3	9/11/1961	560	500.00	-0.13	60.00	58.73	98	54.93	92	6720	BMP	
RG-06275	ROBERT H. WEIL, Western Cattle Co.							403339	3952770	17N.08E.11.332	STK	3	9/5/1961	436	385.00	-0.15	51.00	49.53	97	45.12	88	6480	BMP	
RG-06386	COLLEGE AGRIC. HOME ECON. NEW, Robert H. Weil		Tony's Windmill					405066	3959311	18N.08E.24.33	STK	3	9/13/1961	350	292.99	-1.00	57.01	47.01	82	17.02	30	6397	BMP	
RG-07248	COLLEGE OF AGRIC. & ECON. NEW, Robert H. Weil		Boondock well					399636	3965339	19N.08E.32.44	STK	3	8/3/1975	900	434.00	0.00	466.00	466.00	100	466.00	100	6150	BMP	
RG-09740	U. S. FOREST SERVICE,		USFS Weir Well					400424	3951041	17N.08E.16.34	SAN	0	9/13/1963	514	461.00	0.00	53.00	53.00	100	53.00	100	6393	BMP	
RG-14073 -REPAI	U.S. FOREST SERVICE		1100 Ft Well					394978	3956163	18N.07E.35.4	STK	4.83	7/1/1966	1090	996.00	0.00	94.00	94.00	100	94.00	100	6641	BMP	
RG-14451	W. J. ROUNSEVILLE,			NOVBAKHIAN, ABDOLREZA, MASOUD	82 PASEO DE LA TIERRA	LOT 5 LA TIERRA S/D PH 1, T17N R9E S 6	COUNTY PLAT	407082	3954847	17N.09E.6.	DOM	3	12/23/1966	614	550.00	-0.38	64.00	60.18	94	48.73	76	6683	BMP	
RG-16681	ROBERT H. WEIL,		Permit					404578	3964298	18N.08E.2.42	PDM	3	6/20/1969	745	574.00	-0.10	171.00	170.00	99	167.00	98		BMP	
RG-17409	ROBERT H WEIL,			POMEROY, CHARLES W & BARBARA	6 COLUMBINE LN	LOT 22 SALVA TIERRA UNIT 1, 2.038 AC, T17N R 9E S8,	COUNTY PLAT	408234	3952574	17N.09E.8.334	DOL	3	1970	1980	466.00	-0.13	1514.00	1512.67	100	1508.70	100	6800	BMP	
RG-17410	ROBERT H WEIL,			SMITH, STEPHEN R	36 PICACHO PEAK DR	LOT 640 LAS CAMPANAS PH V, T17N R 9E S 7 5.029 AC	COUNTY PLAT	406809	3953748	17N.09E.7.123	DOL	3	1970	1000	567.00	-0.21	433.00	430.89	100	424.54	98	6765	BMP	
RG-18385	DR. WILLIAM STENNIS,			MCDUGALL, RICHARD & MARY	38 N VUELTA HERRADURA	LOT 117 LA TIERRA S/D PHASE 3, 14.07 AC, T18N R 9E S32,	COUNTY PLAT	409233	3955917	18N.09E.32.441	DOM	3	2/26/1971	710	625.00	-0.23	85.00	82.68	97	75.73	89	6914	BMP	
RG-19117	LU DEN. FRITZ, Kris Hotvedt			POLANCO, LEE B	17 WILDFLOWER WAY	T17N R 9E S18 2.51 AC LOT B,	COUNTY PLAT	407542	3951276	17N.09E.18.423	DOM	3	7/12/1971	608	565.00	0.00	43.00	43.00	100	43.00	100	6790	BMP	
RG-21516	CINCO PARA MANANA, VILLAGE GATE HOLDINGS			MILLER, NEIL Z & SUSANNE B	1 CAMINO DELILAH	T17N R 9E S9 3.380 AC, LOT 1-A	COUNTY PLAT	409481	3953882	17N.09E.5.44S	SAN	0	10/3/1972	220	140.00	-0.12	80.00	78.82	99	75.28	94		BMP	
RG-24203	JOHN D. GUNDZIK MD, A.A. Realty, Al Amiday			BOMSE, PEARL & MARC & NAMINGHA, DANIEL & FRANCES	59 SONRISA TRL	LOT 4 5.346 AC, T17N R 9E S18	COUNTY PLAT	406964	3951493	17N.09E.18.322	DOM	3	11/6/1973	777	448.00	0.00	329.00	329.00	100	329.00	100	6720	BMP	
RG-24364	E. C DE BACA,				68 PASEO DE LA TIERRA	LOT 4 LA TIERRA PHASE 1, T17N R 9E S 6	COUNTY PLAT	406977	3954740	17N.09E.6.322	DOM	3	12/29/1973	400	300.00	-0.37	100.00	96.29	96	85.15	85	6701	BMP	
RG-24584 POD1	BOB WEIL, Daniels	Jeanne C. Daniels	Headquarters, Daniels	CREED, JEANNE H	86 Headquarters Trail	T18N R 8E S36 14.58 AC SE4 & T17N R 8E S 1 NE4 PORT OF	COUNTY PLAT, 9/2/04 Charles Harrison submittal to Louis O'Dell, NMOSE	405692	3955377	17N.8E.1.2123	DOM	3	4/19/1974	602	426.45	-0.55	175.55	170.06	97	153.58	87	6554	BMP	
RG-24855	ROBET H. WEIL, Kubert		La Tierra	TURNEY, PATRICIA A	87 E ESTRADA CALABASA	LOT 59 LA TIERRA PHASE 2, T18N R 9E S31 10.009 AC	COUNTY PLAT	407931	3956170	18N.09E.32.41	DOM	3	5/16/1974	697	496.44	-0.40	200.56	196.52	98	184.42	92	6722	BMP	
RG-24968	DREW C. & LYNNE D. ARENA,			ARENA, DREW C & ELISE PINKOW	44 SONRISA TRL	T17N R 9E S18 23.982 AC, TRACT B	COUNTY PLAT	407040	3951072	17N.09E.18.324	DOM	3	7/22/1974	697	528.00	0.00	169.00	169.00	100	169.00	100		BMP	
RG-25463	JEANETTE LILIENTHAL,		La Tierra, Pinon	BOGLE, GLENN G & SUSAN R	218 PASEO DE LA TIERRA	LOT 16 LA TIERRA PHASE 1, T17N R 9E S31	COUNTY PLAT	407017	3956720	18N.09E.31.211	DOM	3	10/22/1974	841	468.25	-1.00	372.75	362.75	97	332.75	89	6664	BMP	
RG-25637	SUSAN MERWIN, W.P. Saunders		La Tierra, South Well	NAMINGHA, DANIEL & FRANCES	68 PASEO DE LA TIERRA	LOT 4 LA TIERRA PHASE 1, T17N R 9E S 6	COUNTY PLAT	407026	3954795	17N.09E.6.114	DOM	0	1975	735	445.85	-0.38	289.15	285.36	99	273.98	95	6708	BMP	
RG-25800	IRIS H WILSON,							401653	3973422	19N.08E..	DOM	3	4/25/1975	153	78.00	0.00	75.00	75.00	100	75.00	100		BMP	
RG-26125	WILLIAM S. ELKINS,							406010	3957550	18N.09E.25.431	DOM	3	7/5/1975	167	43.00	-0.78	124.00	116.18	94	92.73	75	6600	BMP	
RG-26697	MARK K. JONES,							401478	3960568	18N.08E.	DOM	3	12/15/1975	650	480.00	-0.93	170.00	160.65	95	132.61	78		BMP?	
RG-27928	PETER DYKE,			MACCORQUODALE, MICHAEL & PAM	29 VUELTA MONTUOSO	LOT 29 LA TIERRA PHASE 1, T17N R 9E S31	COUNTY PLAT	406599	3956321	18N.09E.31.312	DOM	3	4/10/2004	900	555.00	-0.59	345.00	339.09	98	321.37	93	6701	BMP	
RG-28007	DON HENRY,			LA TIERRA ASSOC INC	12 HORCADO RANCH RD	LOT 33 LA TIERRA PHASE 1 PARK, NEXT TO T17N R 9E S31, PARK NO TAXABLE VALUE,	COUNTY PLAT	406395	3955740	18N.09E.31.333	DOM	3	12/9/1976	585	385.00	-0.52	200.00	194.77	97	179.08	90	6575	BMP	
RG-28064	STEVEN H. TREMPER,		La Tierra 32-T-1	ANDERSON, JON R & ANNE-DRUE	22 N VUELTA HERRADURA	T18N R 9E S32 11.24 AC, LOT 115 LA TIERRA PHASE 3	COUNTY PLAT	408320	3956006	18N.09E.32.33	DOM	3	12/28/1976	750	529.00	-0.39	221.00	217.11	98	205.43	93	6769	BMP	

Appendix B. Buckman Monitoring Area Well and Well Permit Survey

(gray highlight = well location verified with site-specific data)

NMOSE Well ID	Well Owner(s) listed in NMOSE Database	Confirmed Well Owner	Other Well Names	Parcel Owner Listed in County Parcel Database	Street Address	Lot Description	Address Source	UTM Easting, m, NAD83	UTM Northing, m, NAD83	NMOSE T.R.Sec.qqq	Use	Diver-sion, ac-ft/yr	Drilling Date	Well Depth, ft	Depth to Water, ft	Con-toured decline rate, ft/yr	Starting Water Column, ft	Water Column After 10 Years, ft	Percent Water Column Remaining After 10 Years	Water Column After 40 Years, ft	Percent Water Column Remaining After 40 Years	Land Surface Elevation, ft amsl	Moni-toring Area	Other IDs
RG-28064	STEVEN H. TREMPER,		La Tierra 32-T-2	GREENKER, JEROLD A	12 ESTRADA REDONDA	T18N R 9E S32 10.39 AC, LOT 82 LA TIERRA PHASE 3	COUNTY PLAT	409264	3956135	18N.09E.32.42	DOM	3	2/4/1977	750	533.33	-0.26	216.67	214.05	99	206.21	95	6847	BMP	
RG-28064 X-2	STEVEN H. TREMPER,		Hilltop	NEIKRUG, MARC AND DOLLY L	59 ESTRADA MAYA	T18N R 9E S32 15.00 AC, LOT 99 LA TIERRA PHASE 3	COUNTY PLAT	409088	3956910	18N.09E.32.222	DOM	3	2/16/1977	727	498.00	-0.36	229.00	225.37	98	214.48	94	6863	BMP	
RG-28064 X-3	STEVEN H. TREMPER,		La Tierra 32-T-4	PHINNEY, ROBERT T & MARGARET	124 ESTRADA REDONDA	T18N R 9E S32 12.25 AC, LOT 93 LA TIERRA S/D, (OLD PHASE 3),	COUNTY PLAT	408163	3956965	18N.09E.32.11	DOM	3	1/12/1977	790	513.00	-0.43	277.00	272.68	98	259.71	94	6750	BMP	
RG-28112	HENRY SANDMEIER, Paul B. Schmidt and Elise Wheless Schmidt					Lot 47, La Tierra		406645	3954327		DOM	3	2/2/1977	701	549.00	-0.30	152.00	149.00	98	140.00	92	6747	BMP	
RG-28299	WILLIS A. SEYFFERT,		La Tierra 32-T-3					409347	3956949	18N.09E.32.22	DOM	3	3/4/1977	765	368.70	-0.31	396.30	393.17	99	383.78	97	6816	BMP	
RG-28345	ROBERT GILL,			GILL, ROBERT I & CHERYL L	11 E ESTRADA CALABASA	LOT 13 LA TIERRA PHASE 1, T17N R 9E S31	COUNTY PLAT	406825	3956116	18N.09E.31.323	DOM	3	3/19/1977	618	522.00	-0.52	96.00	90.77	95	75.09	78		BMP	
RG-29191	SANDRA LAUDEDALÉ GRAHAM,			GRAHAM, THOMAS R & SANDRA L	15 VUELTA SABIO	LOT 51 LA TIERRA PHASE 2, SEC 6 T17N R9E 10.578 AC	COUNTY PLAT	406386	3954945	17N.09E.6.133	DOM	3	8/17/1977	700	530.00	-0.41	170.00	165.95	98	153.80	90	6654	BMP	
RG-29356	DENNIS R. COOPER,			LICATA, WILLIAM M & CATHERINE	20 LOS PRADOS	T17N R 9E S 8 TR 1-A-2 1.0 AC, PLAT BK 225 PG 037	COUNTY PLAT	409205	3953067	17N.09E.8.421	DOM	3	1/23/1978	730	556.75	-0.13	173.25	171.97	99	168.14	97	6881	BMP	
RG-29359	CROCKER EDWARD E. JR.,			CROMWELL, FLORENCE C &	16 VUELTA LINDA	T18N R 9E S32 10.31 AC, LOT 111 LA TIERRA PHASE 3	COUNTY PLAT	408731	3956429	18N.09E.32.	DOM	3	7/3/1979	715	603.00	-0.37	112.00	108.29	97	97.16	87	6819	BMP	
RG-29524	BARBARA VIGIL,		Las Dos #1	MOONEY, HELEN W	45 MAMIES MILE	T18N R 9E S30 12.224 AC	COUNTY PLAT	407663	3958060	18N.09E.30.424	DOM	3	10/24/1977	768	389.16	-0.60	378.84	372.84	98	354.84	94	6612	BMP	
RG-29546	BERGERE KENNEY,		Los Dos #2					407940	3960307	18N.09E.19.22	NOT	0	11/3/1977	773	434.32	-0.51	338.68	333.59	98	318.33	94	6674	BMP	
RG-29550	KENNETH N. & WYONA T. JOY							397154	3964185	18N.08E.6.3	DOM	3	10/26/1977	675	535.00	-0.11	140.00	138.88	99	135.52	97	5791	BMP	
RG-29723	U.S. FOREST SERVICE, US Soil Conservation Service		700 Ft Well					398694	3954689	17N.08E.5.3	STK	2	1/1/1940	700	642.00	0.00	58.00	58.00	100	58.00	100	6486	BMP	
RG-29725	US FOREST SERVICE, US Soil Conservation Service		USFS Headquarters Well					400842	3949932	17N.08E.21.41	STK	2	1/1/1940	350	311.00	0.00	39.00	39.00	100	39.00	100	6442	BMP	
RG-30162	TODD BAILEY,			BAILEY, TODD J	124 ARROYO CALABASAS RD	T17N R 9E S18 2.5 AC TR 2,	COUNTY PLAT	406269	3951851	17N.09E.18.131	MUL	3	5/29/1978	725	500.00	0.00	225.00	225.00	100	225.00	100		BMP	
RG-30269	KIRSTIN MCMULLEN,			GALLANT, DANNY & MARCE MILLER	52 CAMINO DOS PERROS	T17N R 9E S18 LOT 3-B 5.0 AC, (OLD TR 3)	COUNTY PLAT	407048	3951873	17N.09E.18.124	MUL	3	4/20/1978	556	475.00	0.00	81.00	81.00	100	81.00	100		BMP	
RG-30777	BOB WELL,	Tom and Andrea Bernstein	Bernstein, La Tierra Lot 71; IV-1	BERNSTEIN, TOM A & ANDREA E	159 Longhorn Lane	LOT 46 TIERRA NUEVA, T17N R 8E S 2 17.385 AC	COUNTY PLAT, 9/2/04 Charles Harrison submittal to Louis O'Dell, NMOSE	403595	3955119	17N.08E.36.23	OBS	3	7/15/1978	663	547.79	-0.70	115.21	108.21	94	87.21	76	6550	BMP	
RG-31284	SUZANNE HOYT GARCIA, TRUSTEE,			HOYT, SUZANNE & LINDA WEIL	127 W ESTRADA CALABASA	T18N R 8E S36 1074.650 AC N2 &, PORT S2 RANCH & HEADQTRS, LIVESTOCK ON ACCT 970001777,	COUNTY PLAT	405804	3957152	18N.08E.36.212	DOM	3	10/30/1978	815	515.00	-0.77	300.00	292.28	97	269.12	90	6660	BMP	
RG-31487 EXPL	BOB WEIL, RICHARD CARLYON		La Tierra Lot 16; IV-2	STATE OF NEW MEXICO	STATE PROPERTY	LOT 1 LA TIERRA NUEVA, 10.432 AC T17N R 8E S 1	COUNTY PLAT	405575	3954126	17N.08E.1.433	DOM	3	10/20/1978	785	529.00	-0.38	256.00	252.22	99	240.90	94	6677	BMP	
RG-31845	HIROSHI AND NANCY MURATA,			NOVBAKHIAN, ABDOLREZA, MASOUD	82 PASEO DE LA TIERRA	LOT 5 LA TIERRA S/D PH 1, T17N R9E S 6	COUNTY PLAT	407082	3954847	17N.09E.6.	DOM	3	4/23/1979	700	580.00	-0.38	120.00	116.18	97	104.73	87	6683	BMP	
RG-31977	BILLY W. ROYBAL,							401605	3970215	19N.08E.	IRR	12	12/20/1979	300	75.00	0.00	225.00	225.00	100	225.00	100		BMP?	
RG-32871	MARK JONES, Paul B. Schmidt and Elise Wheless Schmidt					Lot 40, La Tierra		406879	3954516		DOM	3	7/19/1979	700	580.00	-0.35	120.00	116.51	97	106.05	88		BMP	
RG-33170	JOHN O. ZINN, Elise Wheless			WHELESS, ELISE	37 VUELTA TOMAS	LOT 46 LA TIERRA PHASE 2, T17N R 9E S 6 11.890 AC	COUNTY PLAT	406489	3954272		DOM	3	9/15/1979	680	540.00	-0.34	140.00	136.61	98	126.43	90		BMP	
RG-33382 EXPL1	RICHARD M. HAGER, ANNIE CONSTANT			NORTHWEST RANCHES LLC	28 CAMINO LOS SUENOS	T17N R 9E S19 2.500 AC, LOT 4	COUNTY PLAT	406448	3950465	17N.09E.19.11	DOM	3	9/8/1979	640	520.00	0.00	120.00	120.00	100	120.00	100		BMP	
RG-33451	LEONARD E. SHULMAN, M.D.,			KENNEY, NANCY BERGERE & ELLEN,		T18N R 9E S19 62.525 AC, LOT A-2, N2, SW4, SW4 SW4,	COUNTY PLAT	407031	3958929	18N.09E.19.344	DOM	3	10/30/1979	450	200.00	-0.70	250.00	243.02	97	222.07	89		BMP	
RG-33833	BURTON AND PAULA GEYER	Burton L. and Paula Geyer			21 Goodnight Trail West	Lot 19 La Tierra Nueva	9/2/04 Charles Harrison submittal to Louis O'Dell, NMOSE	405209	3954630		DOM	3	3/13/1980	700	580.00	-0.46	120.00	115.37	96	101.50	85		BMP	

Appendix B. Buckman Monitoring Area Well and Well Permit Survey

(gray highlight = well location verified with site-specific data)

NMOSE Well ID	Well Owner(s) listed in NMOSE Database	Confirmed Well Owner	Other Well Names	Parcel Owner Listed in County Parcel Database	Street Address	Lot Description	Address Source	UTM Easting, m, NAD83	UTM Northing, m, NAD83	NMOSE T.R.Sec.qqq	Use	Diver-sion, ac-ft/yr	Drilling Date	Well Depth, ft	Depth to Water, ft	Con-toured decline rate, ft/yr	Starting Water Column, ft	Water Column After 10 Years, ft	Percent Water Column Remaining After 10 Years	Water Column After 40 Years, ft	Percent Water Column Remaining After 40 Years	Land Surface Elevation, ft amsl	Moni-toring Area	Other IDs
RG-34804	MARIAM BROWNE,			LEBLANC, STEVEN R & ELLEN A		T16N R10E S21, 30.627 AC	COUNTY PLAT	407399	3951520	17N.09E.18.412	MUL	3	10/3/1980	400	60.00	0.00	340.00	340.00	100	340.00	100		BMP	
RG-35350	JOACHIM T. WIRTH,			GEORGE, JAMES S & BARBARA	86 PASEO DE LA TIERRA	LOT 6 LA TIERRA PHASE 1, T17N R 9E S 6	COUNTY PLAT	406982	3955141	17N.09E.6.142	PDM	3	12/2/1980	720	375.00	-0.40	345.00	341.02	99	329.07	95		BMP	
RG-35630	JAMES H. WHEELOCK,			HANDELSMAN, STUART	31 VISTA CALABASAS	T17N R 9E S18 5.037 AC TR A, HANSEN & ZILECEA SURVEY	COUNTY PLAT	406749	3952121	17N.09E.18.123	DOM	3	5/12/1986	605	455.00	0.00	150.00	150.00	100	150.00	100		BMP	
RG-35802	YARKO KOZIY,							395871	3958899	17N.09E.18.233	DOM	3	3/24/1981	720	600.00	0.00	120.00	120.00	100	120.00	100		BMP	
RG-36031	DAVID GARRISON,			GARRISON, DAVID	138 ESTRADA REDONDA	T18N R 9E S32 16.63 AC, LOT 91 LA TIERRA PHASE 3	COUNTY PLAT	408142	3956772	18N.09E.32.	DOM	3	4/27/1981	700	620.00	-0.42	80.00	75.81	95	63.22	79		BMP	
RG-37078 CLW	BOB WEIL, ROLAND BETTS	Roland and Lois Betts			6 Headquarters Trail	Lot 2 La Tierra Nueva	9/2/04 Charles Harrison submittal to Louis O'Dell, NMOSE	405591	3954061	17N.08E.1.413	DOM	0	12/15/1993	755	580.00	-0.35	175.00	171.52	98	161.09	92	6693	BMP	
RG-37113	EUGENE E., TRUSTEE BECK,			LINCOLN, CYNTHIA H TRUST		LOT 76 LA TIERRA NUEVA, T17N R 8E S 1	COUNTY PLAT	405476	3954840	17N.08E.1.	DOM	3	11/25/1981	700	527.00	-0.50	173.00	168.00	97	153.00	88	6668	BMP	
RG-37164	ROBERT MARCUS,		Mountain Vista	ROUNSVILLE, WILLIAM J	82 PASEO DE LA TIERRA	T17N R 9E S5 184.91 AC, TRACT A, LIVESTOCK ON ACCT 970001905,	COUNTY PLAT	408098	3955429	17N.09E.5.11	DOM	3	12/1/1981	950	604.70	-0.35	345.30	341.83	99	331.43	96	6919	BMP	
RG-37582	GLORIA GAUGHAN,			GEORGE, JAMES S & BARBARA	86 PASEO DE LA TIERRA	LOT 6 LA TIERRA PHASE 1, T17N R 9E S 6	COUNTY PLAT	399421	3950816	17N.09E.18.22	DOM	3	2/12/1982	700	550.00	0.00	150.00	150.00	100	150.00	100		BMP	
RG-37817	DAVID C NELSON,					LOT 17 VALLECITO DE LA TIERRA, T17N R 9E S18 2.97 AC	COUNTY PLAT	406685	3955076	17N.09E.6.	DOM	3	4/23/1982	720	600.00	-0.40	120.00	115.98	97	103.94	87	6683	BMP	
RG-37879	MARCIA J. WILSON,			RIMBEAUX, B C	44 VALLECITO RD	LOT 17 VALLECITO DE LA TIERRA, T17N R 9E S18 2.97 AC	COUNTY PLAT	407450	3951838	17N.08E.17.443	DOM	3	6/1/1982	600	460.00	0.00	140.00	140.00	100	140.00	100		BMP	
RG-40491	FRANCIS MURPHY	Francis Michael Murphy and Joan-Ann Ryan-Murphy		MURPHY, FRANCIS M & JOAN ANN	34 CHISHOLM TRL	LOT 26 LA TIERRA NUEVA, T17N R 8E S 1 10.869 AC	COUNTY PLAT	404883	3954138		DOM	3	9/16/1983	730	590.00	-0.40	140.00	135.96	97	123.85	88		BMP	
RG-40722	KATHLEEN MLOTOK,							403884	3956473	18N.08E.35.	DOM	3	9/9/1983	756	603.00	-0.88	153.00	144.18	94	117.73	77		BMP	
RG-40978	COURTLANDT & KATRINA BARNES,			BARNES, COURTLANDT D & KATRINA	2 WILDFLOWER WAY	T17N R 9E S18 10 AC SE4 PORT,	COUNTY PLAT	407745	3951291	17N.09E.18.424	DOM	3	1/26/1984	720	600.00	0.00	120.00	120.00	100	120.00	100		BMP	
RG-41872	EDWARD E. JR. CROCKER,			NAVA, GREGORY	29 ESTRADA MAYA	T18N R 9E S32 10.89 AC, LOT 97 LA TIERRA PHASE 3	COUNTY PLAT	408842	3957099	18N.09E.32.211	DOM	3	2/19/1984	730	550.00	-0.40	180.00	176.04	98	164.15	91	6783	BMP	
RG-42335	RANDLOW SMITH,			RIMBEAUX, B C	44 VALLECITO RD	LOT 17 VALLECITO DE LA TIERRA, T17N R 9E S18 2.97 AC	COUNTY PLAT	407450	3951838	17N.09E.1.332	DOM	3	8/7/1984	740	550.00	0.00	190.00	190.00	100	190.00	100		BMP	
RG-42618	CHARLES S. VON STADE	Eleanor T. and Charles S. von Stade			42 Chisholm Trail	Lot 28 La Tierra Nueva	9/2/04 Charles Harrison submittal to Louis O'Dell, NMOSE	404814	3954123		DOM	3	10/18/1984	605	520.00	-0.40	85.00	80.97	95	68.88	81		BMP	
RG-46386	DANIEL FORMAN,			CITY OF SANTA FE	CITY PROPERTY	CITY PROPERTY, MAPPING PURPOSE ONLY	COUNTY PLAT	411114	3953865	17N.09E.18.414	DOM	3	10/16/1986	605	380.00	-0.13	225.00	223.68	99	219.71	98		BMP	
RG-48491	DARLENE STREIT,	Michael and Tami Lang		LANG, MICHAEL S & TAMI	173 CHISHOLM TRL	LOT 49 LA TIERRA NUEVA, T17N R 8E S 2 15.425 AC	COUNTY PLAT	403827	3955337	17N.08E.2.121	DOM	3	11/24/1987	730	530.00	-0.72	200.00	192.80	96	171.20	86	6564	BMP	
RG-48897	WLATER L. & EMILY C. MEAD,			MEAD, WALTER L JR & EMILY C	29 CALLE ADELINA	T18N R 9E S30 40 AC SE4-SW4, UND INTEREST	COUNTY PLAT	406915	3957423	18N.09E.30.34	DOM	3	4/11/1988	800	580.00	-0.61	220.00	213.92	97	195.67	89	6638	BMP	
RG-48897 X2	WLATER L. & EMILY C. MEAD,			MEAD, WALTER L JR & EMILY C	29 CALLE ADELINA	T18N R 9E S30 40 AC SE4-SW4, UND INTEREST	COUNTY PLAT	407014	3957522	18N.09E.30.342	DOM	3	11/14/1996	760	422.00	-0.62	338.00	331.84	98	313.36	93	6617	BMP	
RG-49717	GLORIA GAUGHAM,			CHRIST, RONALD TRUSTEE OF	40 CAMINO CIELO	T17N R 9E S18 2.907 AC, LOT 4-A CIELO AZUL	COUNTY PLAT	406273	3952251	17N.09E.18.	DOM	3	9/6/1988	700	600.00	0.00	100.00	100.00	100	100.00	100		BMP	
RG-49952	JOSEPH MORSE	Florence and Joseph Morse			25 Goodnight Trail	Lot 20, La Tierra Nueva	9/2/04 Charles Harrison submittal to Louis O'Dell, NMOSE	405546	3954603		DOM	3	12/22/1988	710	540.00	-0.42	170.00	165.77	98	153.07	90		BMP	
RG-50395	TAYLOR A DALE,			BRANCH, DENNIS R		T17N R 9E S18 17.400 AC TR D4, NW4	COUNTY PLAT	406939	3952352	17N.09E.18.112	DOM	3	3/12/1989	700	480.00	0.00	220.00	220.00	100	220.00	100		BMP	
RG-50735	EUGENE D HIGGINS,			SCULLIN, MARC & CYNTHIA	136 ARROYO CALABASAS RD	T17N R 9E S18 2.5 AC TR 1,	COUNTY PLAT	406269	3951935	17N.09E.18.11	MUL	3	5/11/1989	700	500.00	0.00	200.00	200.00	100	200.00	100	6644	BMP	
RG-50944	DENNIS & ELLEN SANDERS,			BT HOMES INC		T17N R 9E S12 252.0120 AC, TR 14 W OF TAOS HWY	COUNTY PLAT	414355	3953833	17N.09E.18.1	DOM	0	7/1/1989	700	580.00	0.00	120.00	120.00	100	120.00	100		BMP	

Appendix B. Buckman Monitoring Area Well and Well Permit Survey

(gray highlight = well location verified with site-specific data)

NMOSE Well ID	Well Owner(s) listed in NMOSE Database	Confirmed Well Owner	Other Well Names	Parcel Owner Listed in County Parcel Database	Street Address	Lot Description	Address Source	UTM Easting, m, NAD83	UTM Northing, m, NAD83	NMOSE T.R.Sec.qqq	Use	Diver-sion, ac-ft/yr	Drilling Date	Well Depth, ft	Depth to Water, ft	Con-toured decline rate, ft/yr	Starting Water Column, ft	Water Column After 10 Years, ft	Percent Water Column Remaining After 10 Years	Water Column After 40 Years, ft	Percent Water Column Remaining After 40 Years	Land Surface Elevation, ft amsl	Moni-toring Area	Other IDs
RG-51854	RAY WINN	William A. and Janet F. Moffett			44 Chisholm Trail	Lot 29 La Tierra Nueva	9/2/04 Charles Harrison submittal to Louis O'Dell, NMOSE	404642	3954152		DOM	3	2/15/1990	695	590.00	-0.40	105.00	100.95	96	88.80	85		BMP	
RG-52506	WILLIAM AGNEW	Tucker Family Trust - Cecil R. Tucker/Janice W. Tucker			20 Goodnight Trail West		9/2/04 Charles Harrison submittal to Louis O'Dell, NMOSE	405241	3954362		DOM	3	8/7/1990	730	627.00	-0.42	103.00	98.84	96	86.36	84		BMP	
RG-52780 CLW	RICHARD BRENNER, VALLECITO HOMEOWNERS ASSOC		Vallecitos #1	LUDIN, FRITZ		T17N R 9E S18 10 AC NE4-SE4.	COUNTY PLAT	407446	3951438	17N.09E.18.412	DOM	3	12/23/1996	735	496.00	0.00	239.00	239.00	100	239.00	100	6718	BMP	
RG-52938	JACK & JUNE SMITH,			MILLER, MARK C	3 VUELTA LINDA	T18N R 9E S32 11.32 AC, LOT 107 LA TIERRA PHASE 3	COUNTY PLAT	408537	3956601	18N.09E.32.14	DOM	3	9/26/1990	1000	650.00	-0.40	350.00	346.01	99	334.06	95	6802	BMP	
RG-53071	LEROY BACA,							400288	3949351	17N.08E.21.343	DOM	3	10/10/1990	440	261.00	0.00	179.00	179.00	100	179.00	100		BMP	
RG-53404	MARC NEIKRUG,			FISCHER, CYNTHIA F & KURT	17 SONRISA TRL	LOT 4 SONRISA S/D 5.010 AC, T17N R 9E S18	COUNTY PLAT	406265	3951450	17N.09E.18.311	MUL	3	7/10/1991	800	410.00	0.00	390.00	390.00	100	390.00	100		BMP	
RG-53581	PATRICIA & J. SIGMUND FORMAN,			LUDIN, FRITZ		T17N R 9E S18 10 AC NE4-SE4.	COUNTY PLAT	407446	3951438	17N.09E.18.412	MUL	3	6/14/1991	700	580.00	0.00	120.00	120.00	100	120.00	100		BMP	
RG-53658	BRIAN K. GONZALES,			BLOG, THOMAS M & ANNE E	43 VUELTA MARIA	LOT 24 LAS DOS PHASE 1, T18N R 9E S30 13.177 AC, PER DEATH CERT & ATTY R FOX.	COUNTY PLAT	407484	3957507	18N.09E.30.432	DOM	3	5/7/1991	720	520.00	-0.58	200.00	194.19	97	176.77	88		BMP	
RG-53984	HERSCHEL COBB,			LOVE RANCH PARTNERS LLC		T17N R 9E S18, TR D, 20.00 AC,	COUNTY PLAT	407467	3951068	17N.09E.18.423	MUL	3	8/7/1991	735	500.00	0.00	235.00	235.00	100	235.00	100		BMP	
RG-53998	PETER GOODWIN,			LOVE RANCH PARTNERS LLC		T17N R 9E S18, TR D, 20.00 AC,	COUNTY PLAT	407467	3951068	17N.09E.18.423	MUL	3	7/15/1991	735	500.00	0.00	235.00	235.00	100	235.00	100		BMP	
RG-53999	ROBERT & CAROL CARUTHERS,			LOVE RANCH PARTNERS LLC		T17N R 9E S18, TR D, 20.00 AC,	COUNTY PLAT	407467	3951068	17N.09E.18.423	MUL	3	6/30/1991	700	500.00	0.00	200.00	200.00	100	200.00	100		BMP	
RG-54000	CANDIS NELSON,			LOVE RANCH PARTNERS LLC		T17N R 9E S18, TR D, 20.00 AC,	COUNTY PLAT	407467	3951068	17N.09E.18.423	MUL	3	7/9/1991	730	500.00	0.00	230.00	230.00	100	230.00	100		BMP	
RG-54001	B. C. RIMBEAUX,			LOVE RANCH PARTNERS LLC		T17N R 9E S18, TR D, 20.00 AC,	COUNTY PLAT	407467	3951068	17N.09E.18.423	MUL	3	9/5/1991	718	500.00	0.00	218.00	218.00	100	218.00	100		BMP	
RG-54066	JAMES KARP,	James and Arlene Karp		BERNSTEIN, TOM A & ANDREA E	11 Longhorn Lane	Lot 42 La Tierra Nueva	9/2/04 Charles Harrison submittal to Louis O'Dell, NMOSE	403672	3954737	17N.08E.2.142	DOM	3	7/31/1991	760	540.00	-0.60	220.00	214.00	97	196.00	89	6549	BMP	
RG-54262	WELLS W. WHITNEY,	Philip Grasso			17 Longhorn Lane	Lot 41 La Tierra Nueva	9/2/04 Charles Harrison submittal to Louis O'Dell, NMOSE	403699	3954577	17N.08E.2.223	DOM	3	11/8/1991	755	535.00	-0.55	220.00	214.50	98	198.00	90	6531	BMP	
RG-54319	JEROME MARSHAK,			KENNEY GRANDCHILDRENS	50 CALLE ADELINA	T18N R 9E S30 21.056 AC, TR D	COUNTY PLAT	406823	3958125	18N.09E.30.143	DOM	3	9/19/1991	715	560.00	-0.68	155.00	148.15	96	127.60	82	6575	BMP	
RG-54395	CLAY BERGER,	John L. Babitt			38 Goodnight Trail	Lot 9 La Tierra Nueva	9/2/04 Charles Harrison submittal to Louis O'Dell, NMOSE	406245	3954574	17N.08E.1.421	DOM	3	9/25/1991	740	580.00	-0.40	160.00	156.00	98	144.00	90	6646	BMP	
RG-54655	WILLIAM C. III HARKER,			ELTON, DEBBIE		T17N R 9E S18 5 AC LOT 4A, AS PER DEATH CERTIFICATE, #091019,	COUNTY PLAT	406979	3951747		MUL	3	12/23/1991	700	580.00	0.00	120.00	120.00	100	120.00	100	6681	BMP	
RG-54919	PING & DEBORAH LEE,			MURATA, HIROSHI & NANCY CHAMISA	22 VUELTA CHAMISA	LOT 8 LA TIERRA PHASE 1, T17N R 9E S 6	COUNTY PLAT	406788	3955542	17N.09E.6.121	DOM	3	3/8/1992	660	500.00	-0.45	160.00	155.50	97	141.99	89	6622	BMP	
RG-54938	WILLIAM & JOANNA SEITZ,			MEAD, WALTER L JR & EMILY C	57 CALLE ADELINA	LOT B-3 45.458 AC, T18N R 9E S30	COUNTY PLAT	406616	3957928	18N.09E.30.312	DOM	3	3/7/1992	700	550.00	-0.72	150.00	142.82	95	121.27	81	6555	BMP	
RG-55206	LA LUZ GROUP, LLC,							402036	3961412	18N.08E.15.143	DOM	0	9/28/1992	655	580.00	-0.69	75.00	68.10	91	47.40	63	6394	BMP	
RG-55696 CLW	R. L. BURKE,			MCCURDY, RICHARD B TRUSTEE	60 E ESTRADA CALABASA	LOT 57 LA TIERRA S/D PH 2, T18N R 9E S31 10.992 AC	COUNTY PLAT	407825	3955729	18N.09E.31.444	DOM	0	4/14/1993	850	685.00	-0.40	165.00	161.02	98	149.07	90	6727	BMP	
RG-55734	JILL & MITCHEL, PAUL NORTON,	Jill A. Norton			138 Chisholm Trail	Lot 44 La Tierra Nueva	9/2/04 Charles Harrison submittal to Louis O'Dell, NMOSE	403477	3954854	17N.08E.2.124	DOM	3	8/19/1992	740	500.00	-0.65	240.00	233.50	97	214.00	89	6558	BMP	
RG-55885	CUSTOM PROPERTIES OF SANTA FE, JAMES D. WARREN	William L. Oliver, Jr., and Mary Lynn Oliver			54 Headquarters Trail	Lot 78 La Tierra Nueva	9/2/04 Charles Harrison submittal to Louis O'Dell, NMOSE	405763	3954711	17N.08E.1.233	DOM	3	8/25/1992	750	530.00	-0.44	220.00	215.59	98	202.36	92	6622	BMP	

Appendix B. Buckman Monitoring Area Well and Well Permit Survey

(gray highlight = well location verified with site-specific data)

NMOSE Well ID	Well Owner(s) listed in NMOSE Database	Confirmed Well Owner	Other Well Names	Parcel Owner Listed in County Parcel Database	Street Address	Lot Description	Address Source	UTM Easting, m, NAD83	UTM Northing, m, NAD83	NMOSE T.R.Sec.qqq	Use	Diver-sion, ac-ft/yr	Drilling Date	Well Depth, ft	Depth to Water, ft	Con-toured decline rate, ft/yr	Starting Water Column, ft	Water Column After 10 Years, ft	Percent Water Column Remaining After 10 Years	Water Column After 40 Years, ft	Percent Water Column Remaining After 40 Years	Land Surface Elevation, ft amsl	Moni-toring Area	Other IDs
RG-56282	CLIFF WALBRIDGE,	Donald and Karen Berlanti Revocable Trust		BERLANTI, DONALD V & KAREN L	171 HEADQUARTERS TRL	LOT 69 LA TIERRA NUEVA, T17N R 8E S 1 27.273 AC	COUNTY PLAT	405170	3955316	17N.08E.1.123	DOM	3	12/18/1992	700	520.00	-0.60	180.00	174.05	97	156.18	87	6620	BMP	
RG-56667	DON & DEBBIE WOODIN,			LOVE RANCH PARTNERS LLC		T17N R 9E S18, TR C, 20.20 AC,	COUNTY PLAT	407065	3951041	17N.09E.18.431	MUL	3	4/3/1993	725	630.00	0.00	95.00	95.00	100	95.00	100		BMP	
RG-56804	MYRON G. RIGHTMAN,					T17N R 9E S18, TR C, 20.20 AC,	COUNTY PLAT	408252	3958516	18N.09E.29.114	DOM	3	3/3/1993	705	420.00	-0.50	285.00	280.01	98	265.03	93		BMP	
RG-56880	PRICILLA TEMPLE,			UNFRIED, CHARLES O JR & NANCY	17 VUELTA YUCCA	T18N R 9E S32 13.30 AC, LOT 79 LA TIERRA PHASE 3	COUNTY PLAT	408027	3955725	18N.09E.32.333	DOM	3	3/12/1993	755	578.00	-0.39	177.00	173.13	98	161.54	91	6766	BMP	
RG-57586	JAIME TRUJILLO,					T17N R 9E S18, TR C, 20.20 AC,	COUNTY PLAT	408250	3951460	17N.09E.17.134	MUL	3	7/1/1993	700	500.00	0.00	200.00	200.00	100	200.00	100		BMP	
RG-57619	ERIC A. SAMLER,			WAGNER, LINDA J	34 RABBITBRUSH	LOT 11 LA VIDA S/D 2.012 AC, T17N R 9E S19 T17N R 9E S 5 LOT 1-D 5.060 AC,	COUNTY PLAT	407031	3950240	17N.09E.19.124	MUL	3	2/18/1994	643	481.00	0.00	162.00	162.00	100	162.00	100		BMP	
RG-57851	SUSAN GARDNER, Trujillo		Guesthouse	TRUJILLO, RICARDO B	16 CAMINO LADERA	T17N R 9E S18 LOT 1 2.50 AC,	COUNTY PLAT	409294	3955311	17N.09E.5.412	DOM	3	9/29/1993	864	520.00	-0.20	344.00	342.01	99	336.02	98	6863	BMP	
RG-57909 EXPL	PETER ORDWAY,					T17N R 9E S18 LOT 1 2.50 AC,	COUNTY PLAT	407646	3956147	18N.09E.31.423	DOM	0	8/10/1993	900	550.00	-0.43	350.00	345.72	99	332.90	95	6729	BMP	
RG-57968	SARA VACHA,			SCHNEIDER, DAVID J &	16 CAMINO CALABASAS	T17N R 9E S18 LOT 1 2.50 AC,	COUNTY PLAT	407856	3952235	17N.09E.18.222	DOM	3	8/21/1993	700	540.00	0.00	160.00	160.00	100	160.00	100		BMP	
RG-58366	HACIENDA DEL CEREZO LTD.,		HDC1	HACIENDA DEL CEREZO LTD		T18N R 9E S 1 NW4-SW4-S2, SW4-, N2-NW4 & LOT 6, T18N R 9E S18 217.113 AC,	COUNTY PLAT	406473	3960061	18N.09E.19.113	SAN	3	1/6/1994	945	396.00	-0.75	549.00	541.52	99	519.07	95	6551	BMP	
RG-58534	CARRIE LEE KAYE,			ROSENZWOG, JANET		LOT 16 VALLECITO DE LA TIERRA, T17N R 9E S18	COUNTY PLAT	407475	3951869	17N.09E.18.223	DOM	0		800	500.00	0.00	300.00	300.00	100	300.00	100		BMP	
RG-59101	DAVID C. ZERBST,			GRANT, PETER A & JOAN C		T17N R 9E S18 5.0765 AC, LOT A-4	COUNTY PLAT	407454	3952239	17N.09E.18.212	MUL	3	3/16/1994	750	445.00	0.00	305.00	305.00	100	305.00	100		BMP	
RG-59195	MICHAEL HURLOCKER,		Los Suenos Expl	JANS, NEIL A & IRENE L	10 E CLOUD MARCH	T17N R 8E S13 2.727 AC, LOS SUENOS S/D LOT 8	COUNTY PLAT	406047	3951057	17N.08E.13.441	MUL	3	3/25/1994	845	448.70	0.00	396.30	396.30	100	396.30	100	6661	BMP	
RG-59213	MICHAEL & BARBARA OGG,	Barbara and Michael J. Ogg		OGG, MICHAEL J & BARBARA DOROB	209 HEADQUARTERS TRL	LOT 66 LA TIERRA NUEVA, T17N R 8E S 2 17.704 AC	COUNTY PLAT	404678	3955430	17N.08E.2.222	DOM	3	4/6/1994	750	500.00	-0.63	250.00	243.73	97	224.93	90	6508	BMP	
RG-59386	GABRIELLE BURKE,					T17N R 8E S13 2.727 AC, LOS SUENOS S/D LOT 8	COUNTY PLAT	405044	3961179	18N.08E.13.312	DOM	0	1/15/1995	905	480.00	-0.68	425.00	418.21	98	397.83	94	6516	BMP	
RG-59388	ROBERT & NANCY LEHRER,	Robert and Nancy Lehrer		LEHRER, ROBERT M & NANCY M	240 HEADQUARTERS TRL	LOT 61 LA TIERRA NUEVA, T17N R 8E S 2 12.643 AC	COUNTY PLAT	404339	3954999	17N.08E.2.222	DOM	3	4/15/1994	800	505.00	-0.60	295.00	288.98	98	270.90	92	6508	BMP	
RG-59728	HELEN LOUISE SWANKY,			JACOBS, LAURENCE S & KATHERINE	60 LA SERENA TRL	T17N R 9E S19 2.992 AC, LOT 9 LA SERENA S/D	COUNTY PLAT	407035	3950641	17N.09E.18.34	DOM	0	5/4/1994	855	485.00	0.00	370.00	370.00	100	370.00	100		BMP	
RG-59973	LOUIS & BARBARA SKLAR,	Louis S. and Barbara Sklar			19 Brahma Ln	Lot 60 La Tierra Nueva	COUNTY PLAT	404788	3955019	17N.08E.2.122	DOM	3	8/10/1994	750	540.00	-0.57	210.00	204.30	97	187.20	89	6511	BMP	
RG-60104	LEONARD & BARBARA RAND THE RAN,	Len and Barbara Rand		RAND, LEONARD M & BARBARA E	111 HEADQUARTERS TRL	LOT 73 LA TIERRA NUEVA S/D, T17N R 8E S 1	COUNTY PLAT	405218	3955382	17N.08E.1.142	DOM	3	1/20/1995	760	580.00	-0.60	180.00	174.04	97	156.16	87	6641	BMP	
RG-60135	RICHARD FALLOWS,			MOTODA, DARYL M & JEANETTE W	5 TERARY CT	T17N R 8E S13 4.001 AC, LOT 5 EL PRADO S/D	COUNTY PLAT	406154	3952301	17N.08E.13.222	MUL	3	8/30/1994	800	465.00	0.00	335.00	335.00	100	335.00	100	6690	BMP	
RG-60136	RICHARD FALLOWS,		El Prado Test Well	MARX, JAMES F &	10 LUPINE CT	T17N R 8E S13 4.081 AC, LOT 4 EL PRADO S/D	COUNTY PLAT	406139	3952312	17N.08E.13.242	MUL	3	8/21/1994	810	488.76	0.00	321.24	321.24	100	321.24	100	6680	BMP	
RG-60137	RICHARD FALLOWS,		El Prado ELP2	MOTODA, DARYL M & JEANETTE W	5 TERARY CT	T17N R 8E S13 4.001 AC, LOT 5 EL PRADO S/D	COUNTY PLAT	406179	3952187	17N.08E.13.224	MUL	3	8/26/1994	830	481.76	0.00	348.24	348.24	100	348.24	100	6686	BMP	
RG-60138	RICHARD FALLOWS,		El Prado ELP3	MARCELLUS, GARY W & LINDA	35 COPPERMALLOW RD	T17N R 8E S13 4.292 AC, LOT 11 EL PRADO S/D	COUNTY PLAT	406081	3951925	17N.08E.13.241	MUL	3	9/4/1994	820	448.19	0.00	371.81	371.81	100	371.81	100	6642	BMP	
RG-60404	SHERYL M LARNER,	Richard and Staci Smith			21 Chisholm Trail	Lot 25 La Tierra Nueva	COUNTY PLAT	404936	3954130	17N.08E.1.331	DOM	3	12/17/1994	760	580.00	-0.40	180.00	175.96	98	163.85	91	6647	BMP	
RG-61535	WILLIAM & SHARON EKLUND,			EKLUND, WILLIAM A & SHARON R	48 PASEO DE LA TIERRA	LOT 3 LA TIERRA PHASE 1, T17N R 9E S 6	COUNTY PLAT	407174	3954334	17N.09E.6.431	DOM	0	10/26/1998	750	522.00	-0.28	228.00	225.20	99	216.81	95	6742	BMP	
RG-61551	TOM BLOG,			MEAD, WALTER L JR & EMILY C	29 CALLE ADELINA	T18N R 9E S30 40 AC SE4-SW4, UND INTEREST	COUNTY PLAT	406814	3957522	18N.09E.30.341	DOM	3	2/11/1995	810	580.00	-0.64	230.00	223.61	97	204.46	89	6617	BMP	
RG-61944	ROBERT T RITTER,	Robert and Connie Ritter			10 SHORTHORN LN	Lot 6 La Tierra Nueva	COUNTY PLAT	406049	3953948	17N.08E.12.121	DOM	3	3/25/1995	710	585.00	-0.30	125.00	122.00	98	113.00	90	6625	BMP	

Appendix B. Buckman Monitoring Area Well and Well Permit Survey

(gray highlight = well location verified with site-specific data)

NMOSE Well ID	Well Owner(s) listed in NMOSE Database	Confirmed Well Owner	Other Well Names	Parcel Owner Listed in County Parcel Database	Street Address	Lot Description	Address Source	UTM Easting, m, NAD83	UTM Northing, m, NAD83	NMOSE T.R.Sec.qqq	Use	Diver-sion, ac-ft/yr	Drilling Date	Well Depth, ft	Depth to Water, ft	Con-toured decline rate, ft/yr	Starting Water Column, ft	Water Column After 10 Years, ft	Percent Water Remaining After 10 Years	Water Column After 40 Years, ft	Percent Water Remaining After 40 Years	Land Surface Elevation, ft amsl	Moni-toring Area	Other IDs
RG-62974	RICHARD S PODMORE,			MORO, RAYMOND & IRIS D	12 DEER CIR	LOT 269 LAS CAMPANAS ESTATES, II	COUNTY PLAT	407852	3951865	17N.09E.18.224	DOM	3	1/11/1996	800	460.00	0.00	340.00	340.00	100	340.00	100		BMP	
RG-63280	LAURA BETH CLAYTON,			COST, RICHARD & STACEY	19 VUELTA CHAMISA	LOT 10 LA TIERRA PHASE 1, T17N R 9E S 6	COUNTY PLAT	406988	3955542	17N.09E.6.122	DOM	3	10/4/1995	760	490.00	-0.43	270.00	265.71	98	252.83	94	6691	BMP	
RG-64419	SYLVIA SWANSON,	E. Gifford Stack and Sylvia E. Swanson		SWANSON, SYLVIA E & E GIFFORD	97 CHISHOLM TRL	LOT 36 LA TIERRA NUEVA 1, T17N R 8E S 2, 10.030 AC.	COUNTY PLAT	404293	3954920	17N.08E.2.421	DOM	3	5/31/1996	740	500.00	-0.60	240.00	233.99	97	215.96	90	6620	BMP	
RG-65175	GREGORY COLE,			MEAD, WALTER L JR & EMILY C	57 CALLE ADELINA	LOT B-3 45.458 AC, T18N R 9E S30	COUNTY PLAT	407019	3957723	18N.09E.30.324	MUL	3	8/22/1996	800	560.00	-0.63	240.00	233.71	97	214.84	90	6602	BMP	
RG-65180	SUKI GROSECLOSE,	Everett and Susan Groseclose		GROSECLOSE, EVERETT H & SUSAN	57 E GOODNIGHT TRL	LOT 14 LA TIERRA NUEVA, T17N R 8E S 1, 13.942 AC,	COUNTY PLAT	406081	3954653	17N.08E.1.423	SAN	3	5/10/1996	756	530.00	-0.40	226.00	222.00	98	209.99	93	6695	BMP	
RG-65244	MICHAEL LAWRENCE,			TARN, NATHANIEL R TRUSTEE	77 VUELTA MARIA	LOT 27 LAS DOS PHASE 1, T18N R 9E S29 10.856 AC	COUNTY PLAT	408245	3957711	18N.09E.29.314	DOM	3	10/22/1996	800	560.00	-0.46	240.00	235.38	98	221.51	92	6709	BMP	
RG-65566	PHYLLIS L. NEWCOMER,	Dr. Phyllis L. Newcomer		NEWCOMER, PHYLLIS L	79 CHISHOLM TRL	LOT 33 LA TIERRA NUEVA S/D, T17N R 8E S 2, 10.794 AC,	COUNTY PLAT	404331	3955009	17N.08E.2.421	DOM	3	5/5/1998	765	542.00	-0.60	223.00	216.98	97	198.90	89	6620	BMP	
RG-65584	CHARLES HARRISON,	Charles Harrison		HARRISON, CHARLES & RAWSON,	181 CHISHOLM TRL	LOT 51 LA TIERRA NUEVA, T17N R 8E S 2 14.399 AC	COUNTY PLAT	403243	3955504	17N.08E.2.112	DOM	3	8/17/1997	755	535.00	-0.83	220.00	211.70	96	186.80	85	6499	BMP	
RG-66147	ELISE WHELESS,			WHELESS, ELISE	22 VUELTA SABIO	LOT 49 LA TIERRA PHASE 2, T17N R 9E S 6 12.814 AC	COUNTY PLAT	406478	3954618	17N.09E.6.314	DOM	3	1/22/1997	750	500.00	-0.39	250.00	246.09	98	234.34	94	6702	BMP	
RG-66978	CITY OF SANTA FE/CIP,				146 CALLE JOSEPHINA	T18N R 9E S19 62.502 AC, TR C	COUNTY PLAT	403104	3949122	17N.08E.26.111	SAN	3	5/1/1997	890	240.00	0.00	650.00	650.00	100	650.00	100	6460	BMP	
RG-67134	DAVID KENNEY,			KENNEY, DAVID	146 CALLE JOSEPHINA	T18N R 9E S19 62.502 AC, TR C	COUNTY PLAT	407241	3959929	18N.09E.19.231	DOM	3	5/26/1999	270	60.00	-0.63	210.00	203.72	97	184.87	88	6543	BMP	
RG-67485	LAWRENCE BURKE,		Mariah Ranch				COUNTY PLAT	405067	3962076	18N.08E.13.141	DOM	3	11/25/1997	880	420.00	-0.51	460.00	454.90	99	439.59	96	6522	BMP	
RG-68309	DAN MCCOY,			LOGAN, STANLEY & MARJORIE	150 ESTRADA REDONDA	T18N R 9E S32 11.65 AC, LOT 89 LA TIERRA PHASE 3	COUNTY PLAT	408034	3956504	18N.09E.32.133	DOM	3	9/10/1997	700	550.00	-0.42	150.00	145.84	97	133.38	89	6785	BMP	
RG-68712	DENNIS & MARLYS WHITE,			WHITE, MARLYS RUTH	48 E ESTRADA CALABASA	LOT 54 LA TIERRA PHASE 2, T18N R 9E S31 10.134 AC	COUNTY PLAT	407365	3955733	18N.09E.31.434	DOM	3	4/10/1998	740	520.00	-0.41	220.00	215.86	98	203.43	92	6674	BMP	
RG-69121	GREGORY SWENDSEN,			BELL, SUSAN H	185 CALLE JOSEPHINA	T18N R 9E S19 12.50 AC, TR A-1	COUNTY PLAT	406438	3959936	18N.09E.19.131	DOM	3	6/8/1998	760	404.00	-0.77	356.00	348.30	98	325.22	91	6551	BMP	
RG-69782	RICHARD & HELEN WOLFORD,	Richard and Helen Wolford			103 Chisholm Trail	Lot 37 La Tierra Nueva		404106	3955085	17N.08E.2.233	MUL	3	6/13/1998	785	572.00	-0.65	213.00	206.50	97	187.00	88	6569	BMP	
RG-70634	STEPHEN KIRSCHENBAUM,		Hacienda del Cerezo HDC2	HACIENDA DEL CEREZO LTD		T18N R 9E S 1 NW4-SW4-S2, SW4-, N2-NW4 & LOT 6, T18N R 9E S18 217.113 AC,	COUNTY PLAT	406851	3960801	18N.09E.18.341	DOM	3	2/24/1999	800	426.00	-0.60	374.00	368.00	98	349.99	94	6587	BMP	
RG-71056	SUSAN B. HADLEY,			VELTMANN, JOSEPH R JR	TANO RD	T17N R 9E S 5 5.02 AC LOT 1A,	COUNTY PLAT	409408	3954304	17N.09E.5.442	MUL	3	12/15/1998	923	660.00	-0.10	263.00	261.98	100	258.91	98		BMP	
RG-71298	FRANK P.L. AND LYNNE S. MINAR,	Frank and Lynne Minard		MINARD, FRANK P L & LYNNE S	161 HEADQUARTERS TRL	LOT 70 LA TIERRA NUEVA, T17N R 8E S36 24.159 AC	COUNTY PLAT	405074	3955773	18N.08E.36.334	DOM	3	11/22/1993	700	580.00	-0.64	120.00	113.58	95	94.34	79	6558	BMP	
RG-71558	GAIL & PATRICK CASEY,			FARLEY, TERRANCE C & JOAN C	23 VUELTA YUCCA	T18N R 9E S32 12.75 AC, LOT 81 LA TIERRA PHASE 3	COUNTY PLAT	408429	3955921	18N.09E.32.341	DOM	3	6/11/1999	800	515.00	-0.37	285.00	281.32	99	270.29	95	6781	BMP	
RG-71583	JOYCE LIBUTTI,			HARRIS, JOHN G & M CHRISTINE	13 PASEO DEL PAJARO	T17N R 9E S 5 8.510 AC, TRACT B-3-D	COUNTY PLAT	408803	3954513	17N.09E.5.413	MUL	3	3/17/1999	853	440.00	-0.18	413.00	411.17	100	405.67	98	6857	BMP	
RG-71688	STEPHEN A. GIBSON,			GARCIA, ANGEL E &	71 BLUESTEM DR	T17N R 9E S 8 2.052 AC, LOT 7 COLINAS VERDES	COUNTY PLAT	408702	3953859	17N.09E.8.21	DOM	3	3/28/1999	851	645.00	-0.11	206.00	204.94	99	201.78	98		BMP	
RG-71728	WILLIAM BUCHANAN,	William Buchanan and Ellen Walton			135 Chisholm Trail	Lot 43 La Tierra Nueva		403821	3954959	17N.08E.2.141	DOM	3	4/21/1999	750	485.00	-0.65	265.00	258.48	98	238.91	90	6526	BMP	
RG-71748	KING BROTHERS RANCH,		Rancho de los Ninos Expl	GONZALES, GEORGE A & CELINE V	57 CALLE HACIENDA	LOT 14 RANCHO DE LOS NINOS SD, T17N R 8E S23 2.500 AC	COUNTY PLAT	403911	3950729	17N.08E.23.21		0	4/13/1999	854	407.80	0.00	446.20	446.20	100	446.20	100	6575	BMP	
RG-71811	MICHAEL & LEE MORE,			MORE, J MICHAEL & LEE	52 E ESTRADA CALABASA	LOT 55 LA TIERRA PHASE 2, T18N R 9E S31 10.438 AC	COUNTY PLAT	407503	3955730	18N.09E.31.434	DOM	3	5/4/1999	760	465.00	-0.40	295.00	290.99	99	278.94	95	6674	BMP	
RG-72263	JON WOLFE,						COUNTY PLAT	407827	3958118	18N.09E.30.244	DOM	3	7/31/1999	820	690.00	-0.57	130.00	124.29	96	107.18	82	6615	BMP	
RG-72292	GEORGE GOZIGIAN,			GOZIGIAN, GEORGE & JEANNE T	30 E ESTRADA CALABASA	LOT 52 LA TIERRA PHASE 2, T18N R 9E S31 10.180 AC	COUNTY PLAT	407022	3955736	18N.09E.31.344	DOM	3	6/30/1999	750	610.00	-0.45	140.00	135.51	97	122.03	87	6649	BMP	
RG-72317	KING BROTHERS RANCH,			GALLEGOS, FRANK & ELIZABETH	16 VIA DE ESTRELLAS	T17N R8E S23 2.500 AC, TRACT 4B-4B1	COUNTY PLAT	403214	3949828	17N.08E.23.31		3	9/28/1999	802	244.00	0.00	558.00	558.00	100	558.00	100	6526	BMP	

Appendix B. Buckman Monitoring Area Well and Well Permit Survey

(gray highlight = well location verified with site-specific data)

NMOSE Well ID	Well Owner(s) listed in NMOSE Database	Confirmed Well Owner	Other Well Names	Parcel Owner Listed in County Parcel Database	Street Address	Lot Description	Address Source	UTM Easting, m, NAD83	UTM Northing, m, NAD83	NMOSE T.R.Sec.qqq	Use	Diver-sion, ac-ft/yr	Drilling Date	Well Depth, ft	Depth to Water, ft	Con-toured decline rate, ft/yr	Starting Water Column, ft	Water Column After 10 Years, ft	Percent Water Column Remaining After 10 Years	Water Column After 40 Years, ft	Percent Water Column Remaining After 40 Years	Land Surface Elevation, ft amsl	Moni-toring Area	Other IDs
RG-79512	ELISE W SCHMIDT,			SCHMIDT, ELISE WHELESS & PAUL	20 VUELTA SABIO	LOT 48 LA TIERRA PHASE 2, T17N R 9E S 6 14.815 AC	COUNTY PLAT	406749	3954427	17N.09E.6.312		0	4/14/2003	800	462.00	-0.34	338.00	334.60	99	324.40	96	6718	BMP	
RG-79548	CAROL A JOHNSON,			BALANCE POINT ENTERPRISES	16 PASEO DEL CONEJO	T17N R 9E S 5, TR B-1-A2, 2.67 AC,	COUNTY PLAT	408802	3954107	17N.09E.5.433		3	2/21/2003	840	466.00	-0.13	374.00	372.68	100	368.74	99	6888	BMP	
RG-79574	JAMES NICKELL,			STEWART TITLE GUARANTY CO	2 ESCOPETA CT	T17N R 9E S19 2.511 AC, LOT H-2	COUNTY PLAT	407437	3950606	17N.09E.19.212	MUL	3	5/19/2003	660	474.00	0.00	186.00	186.00	100	186.00	100		BMP	
RG-79603	CLINTON HORN,			WEATHERFORD, JANICE L & BEAMER, JONATHAN & FRAN SALKIN	60 TIERRA GRANDE	T17N R 9E S19 2.450 AC, LOT 15 TIERRA GRANDE S/D	COUNTY PLAT	406897	3949478	17N.09E.19.321	MUL	3	3/14/2003	665	460.00	0.00	205.00	205.00	100	205.00	100		BMP	
RG-80255	JONATHAN BEAMER,			FRAN SALKIN		T17N R 9E S18 LOT 3-A 5.0 AC,	COUNTY PLAT	406983	3951951	17N.09E.18.142	DOM	3	11/15/2004	800	455.00	0.00	345.00	345.00	100	345.00	100	6670	BMP	
RG-80390	ABBIE BEN CORRIZ,			CORRIZ, ABBIE BEN	4654 SAN YSIDRO PL	T17N R 9E S32 2.50 AC, TR 8-A2	COUNTY PLAT	408153	3947295	17N.08E.23.144	MUL	3	7/14/2003	560	382.00	0.00	178.00	178.00	100	178.00	100	6539	BMP	
RG-80431	RON SMITH,			SUERTE DEL SUR, LLC	160 LOS SUENOS TRL	T17N R 9E S19 35.00 AC, LOT 2	COUNTY PLAT	406629	3950214	17N.09E.19.132	MUL	3	7/17/2003	560	385.00	0.00	175.00	175.00	100	175.00	100		BMP	
RG-80940	CYNTHIA FOWLER,			HOYT, SUZANNE & LINDA WEIL	127 W ESTRADA CALABASA	T18N R 8E S36 1074.650 AC N2 &, PORT S2 RANCH & HEADQTRS, LIVESTOCK ON ACCT 970001777,	COUNTY PLAT	405718	3956026		DOM	3	10/30/2005	692	352.00	-0.61	340.00	333.91	98	315.64	93	6581	BMP	
RG-81036	GRANT HOLLAND,			BALANCE POINT ENTERPRISES	22 PASEO DEL CONEJO	T17N R 9E S 5, 2.50 AC, TR B-1-A1,	COUNTY PLAT	408763	3954148	17N.09E.5.433	MUL	3	4/2/2004	905	575.00	-0.14	330.00	328.59	100	324.34	98	6888	BMP	
RG-81127	CALLE ALEGRE,							401299	3950384		MUL	3	8/13/2004	700	245.00	0.00	455.00	455.00	100	455.00	100	6417	BMP	
RG-81323	TIERRA DE LA VIDA LLC,			TIERRA DE LA VIDA, LLC	25 SENDERO DE LA VIDA	LOT 14 TIERRA DE LA VIDA, T17N R 9E S19 2.27 AC	COUNTY PLAT	406990	3949876	17N.09E.19.322	MUL	3	6/12/2004	760	435.00	0.00	325.00	325.00	100	325.00	100		BMP	
RG-81771	DEAN PRESTON,			WAGGONER, ALAN S & KAREN	11 PASEO DEL HALCON	T17N R 9E S 5 5.01 AC LOT 1C,	COUNTY PLAT	409208	3954304	17N.09E.5.441	DOM	3	4/16/2004	800	465.00	-0.13	335.00	333.75	100	330.00	99	6926	BMP	
RG-81838	SUZANNE HOYT GARCIA REVOCABLE,			HOYT, SUZANNE & LINDA WEIL	127 W ESTRADA CALABASA	T18N R 8E S36 1074.650 AC N2 &, PORT S2 RANCH & HEADQTRS, LIVESTOCK ON ACCT 970001777,	COUNTY PLAT	405595	3956349	18N.08E.36.411	STK	3	10/8/2004	1100	550.00	-0.67	550.00	543.34	99	523.36	95	6516	BMP	
RG-81854	SUZANNE H GARCIA IRREVOCABLE T,							401428	3961018	18N.08E.16.424		3	4/17/2004	910	724.00	-0.82	186.00	177.82	96	153.29	82	6305	BMP	
RG-81860	SUZANNE HOYT GARCIA REVOCABLE,			HOYT, SUZANNE & LINDA WEIL	127 W ESTRADA CALABASA	T18N R 8E S36 1074.650 AC N2 &, PORT S2 RANCH & HEADQTRS, LIVESTOCK ON ACCT 970001777,	COUNTY PLAT	404995	3956557	18N.08E.36.134	STK	3	7/31/2004	695	452.00	-0.78	243.00	235.16	97	211.65	87	6462	BMP	
RG-81861	SUZANNE HOYT GARCIA REVOCABLE,			HOYT, SUZANNE & LINDA WEIL	127 W ESTRADA CALABASA	T18N R 8E S36 1074.650 AC N2 &, PORT S2 RANCH & HEADQTRS, LIVESTOCK ON ACCT 970001777,	COUNTY PLAT	405388	3955950	18N.08E.36.342	STK	3	9/29/2004	850	460.00	-0.64	390.00	383.58	98	364.33	93	6517	BMP	
RG-82184	JACQUES CONSTANT,		New	EBERSOLE, GARY E & KATHY F	CAMINO LOS SUENOS	T17N R 9E S19 2.50 AC, LOT 2-2 NORTHWEST RANCHES S/D, PHASE 1,	COUNTY PLAT	406339	3950675	17N.09E.19.321	MUL	3	5/14/2004	900	485.00	0.00	415.00	415.00	100	415.00	100	6690	BMP	
RG-82337	JIM MCELROY,			STERTZ, RICHARD C	25 PASEO DEL CONEJO	T17N R 9E S 5 2.880 AC, TR B-2-D LOT 1	COUNTY PLAT	408740	3954194		DOM	3	5/26/2004	840	432.00	-0.15	408.00	406.52	100	402.07	99	6903	BMP	
RG-82398	HYDE PARK ASSOCIATES LLC,			LA VIDA DEVELOPMENT CORP		T17N R 9E S19 3.573 AC, OPEN SPACE LA VIDA S/D	COUNTY PLAT	407433	3950205	17N.09E.19.232	MUL	3	6/28/2004	660	486.00	0.00	174.00	174.00	100	174.00	100		BMP	
RG-82635	FRANK YARDMAN,			MARK, ANTHONY	8 CAMINO LADERA	T17N R 9E S 5 5.056 AC, LOT 2-D	COUNTY PLAT	409457	3955356	17N.09E.5.224	DOM	3	10/8/2004	840	465.00	-0.20	375.00	373.00	99	367.00	98	6846	BMP	
RG-83022	RICHARD BARELA,			STERTZ, RICHARD & GINNIE	17 PASEO DEL VENADO	T17N R 9E S 8 5.00 AC, LOT 1 TR C	COUNTY PLAT	409208	3953726		DOM	3	6/29/2004	800	558.00	-0.12	242.00	240.80	100	237.22	98		BMP	
RG-83025	KALOKO LAND CORPORATION,			STERTZ, RICHARD C & MARTHA V	10 VISTA DEL CIELO	LOT 11 LAS CORDILLERAS S/D, PHASE II 5.373 AC, T17N R 9E S 4 & 5,	COUNTY PLAT	409408	3954509	17N.09E.5.424		3	9/23/2005	860	569.00	-0.13	291.00	289.65	100	285.60	98	6938	TR/BMP	
RG-83026	ERIC FREEMAN,			STERTZ, RICHARD C & MARTHA V	10 VISTA DEL CIELO	LOT 11 LAS CORDILLERAS S/D, PHASE II 5.373 AC, T17N R 9E S 4 & 5,	COUNTY PLAT	409408	3954509	17N.09E.5.424		3	9/8/2005	860	447.00	-0.13	413.00	411.65	100	407.60	99	6938	TR/BMP	
RG-83027	KALOKO LAND CORPORATION,			FIRST NATIONAL BANK AS CUSTOD	33 PASEO DEL FONDO	LOT 18 LAS CORDILLERAS S/D, PHASE II 3.597 AC, T17N R 9E S 4 & 5,	COUNTY PLAT	409208	3954709	17N.09E.5.421		3	9/16/2005	860	484.00	-0.18	376.00	374.20	100	368.82	98	6912	TR/BMP	
RG-83782	PRADEEP SAFAYA,			HAPKA, CATHERINE M &	79 HEADQUARTERS TRL	TOT 75 LA TIERRA NUEVA, T17N R 8E S 1	COUNTY PLAT	405381	3955135	17N.08E.1.142	DOM	3	2/10/2005	995	487.00	-0.56	508.00	502.45	99	485.78	96	6641	BMP	

