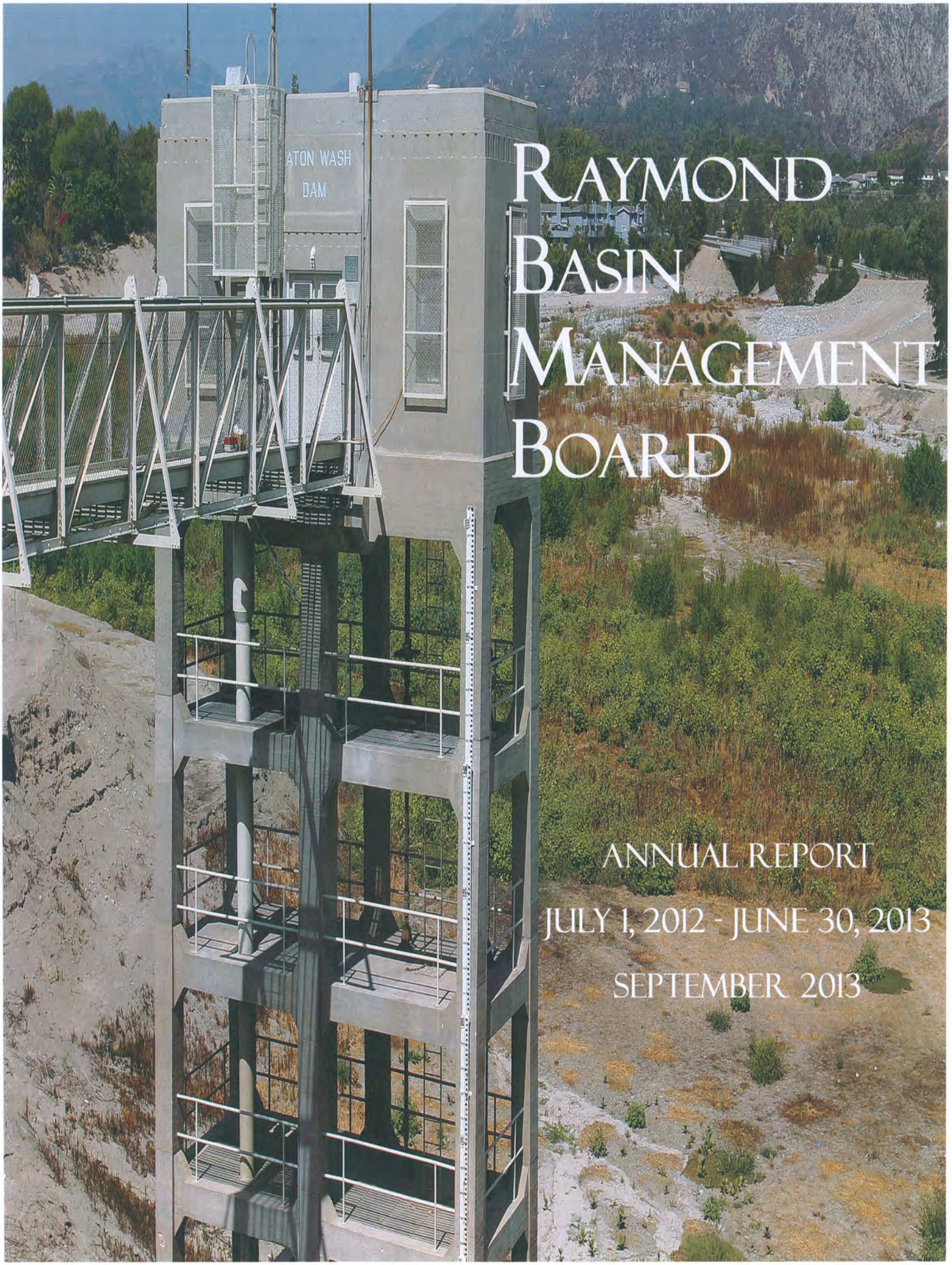

RAYMOND BASIN MANAGEMENT BOARD

ANNUAL REPORT

JULY 1, 2012 - JUNE 30, 2013

SEPTEMBER 2013

WATERMASTER SERVICE IN THE RAYMOND BASIN

July 1, 2012 – June 30, 2013

September 2013

MISSION STATEMENT

The Raymond Basin Management Board is responsible for managing the current and future quality and quantity of water resources for the benefit of its members and the communities they serve.

FOREWORD

The Raymond Basin Management Board, as Watermaster, is pleased to submit this report on water supply conditions in the Raymond Basin during the 2012-13 fiscal year. It is prepared annually in accordance with the provisions of the Superior Court of California, County of Los Angeles Judgment in the City of Pasadena vs. City of Alhambra, et al., Case No. Pasadena C-1323.

The Watermaster utilizes the services of the Raymond Basin Staff, Stetson Engineers, and Geoscience Support Services Inc. to prepare the annual report. This report summarizes the Watermaster work, conditions of groundwater supply, water use, storage, groundwater replenishment, and gives a financial summary for the fiscal year.

The Raymond Basin Staff wishes to acknowledge and express appreciation for the assistance and support received from the public and private parties and the individuals whose contributions were essential to the preparation of this report.

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2012-13

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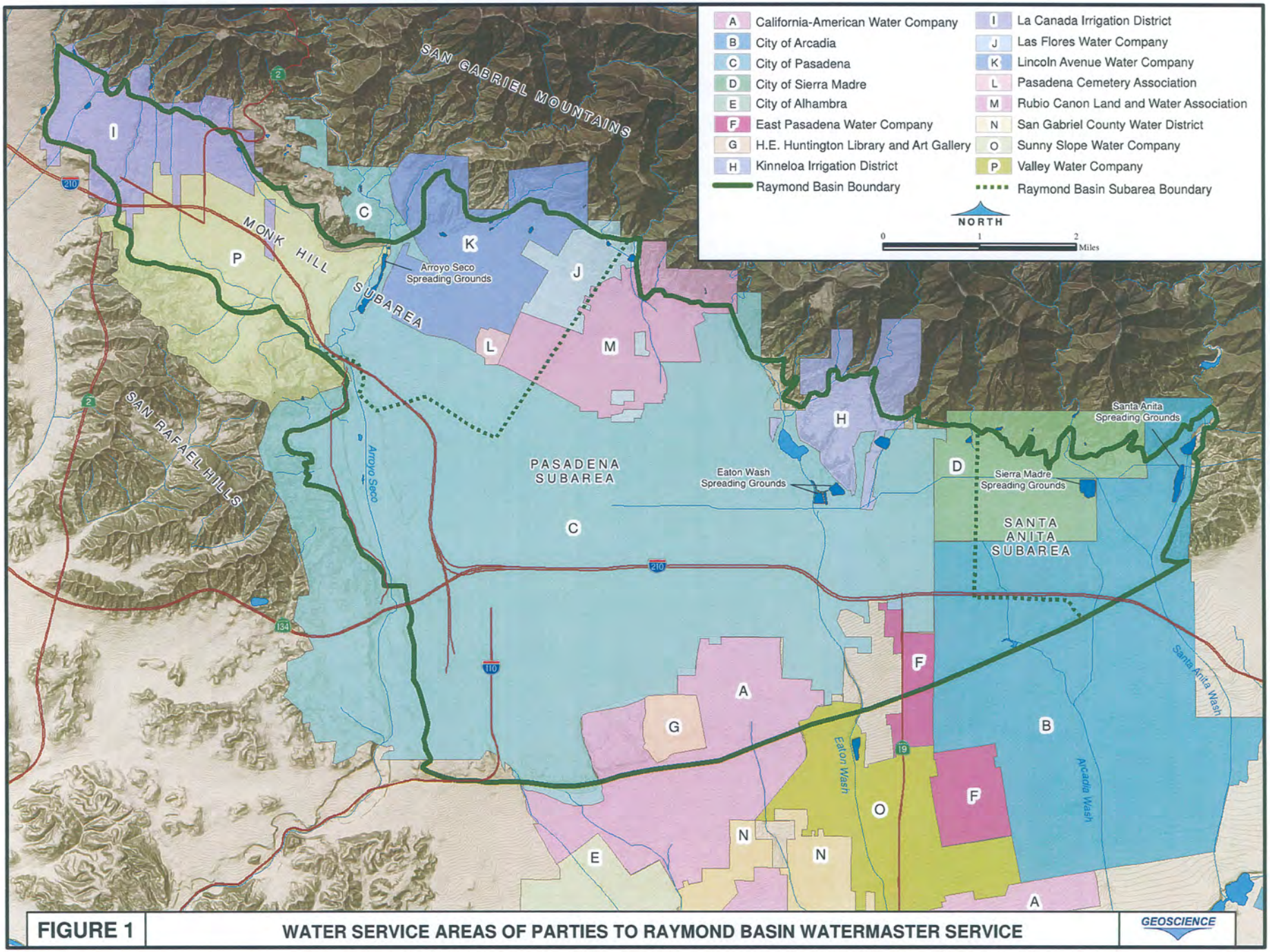


FIGURE 1 WATER SERVICE AREAS OF PARTIES TO RAYMOND BASIN WATERMASTER SERVICE

GEOSCIENCE

SUMMARY OF WATER CONDITIONS AND OPERATIONS

Summarized below, and in Tables 1 to 4, are highlights of operations for the current fiscal year. Details of the operations and the historic and operational data follow these tables.

1. Precipitation (Tables 1 and 5; Figures 2, 3, and 4)

   Precipitation has decreased from the previous year (11.43 inches during 2012-13 versus 13.50 inches during 2011-12) approximately 57% percent of 50 year mean (23.76 inches).

   Water spread in the Basin decreased by approximately 61% from last fiscal year (2,354 acre feet during 2012-13 versus 6,063 acre feet during 2011-12)

2. Groundwater Levels Measured in October 2012 and April 2013 (Table 8; Figures 8-12)

   Although water levels have continued to fluctuate throughout the Basin, during the 2012-13 fiscal year, increases occurred in the Pasadena Subarea. The Monk Hill Subarea displayed the most significant decrease in groundwater levels. (Figure 8)

3. Water Quality Monitoring Program in the Raymond Basin

   Water in the Basin continues to be of good quality in regard to most constituents except for a few sources with high fluoride concentrations in the foothills and high nitrate concentrations in the Monk Hill Subarea and Pasadena Subarea. Volatile organic compound (VOC) contaminants have been detected in several areas, particularly in the Arroyo Seco.

   In late June of 1997, perchlorate, a previously unknown contaminant, was detected in several basin wells and several monitoring wells at the JPL Superfund site.

4. Nonparty Pumpers

   The Las Encinas Hospital produced approximately 19.46 AF from July 2012 to June 2013.

5. JPL Superfund Clean-Up Project

   Progress has been made over the past few years with respect to groundwater

cleanup efforts by the National Aeronautics and Space Administration (NASA) Jet Propulsion Laboratory (JPL). NASA funded and completed the installation of a 2,000 gpm ion exchange treatment plant at Lincoln Avenue Water Company in July 2004. It is within the area known as OU-1 under a clean-up order issued by the USEPA for the removal of Perchlorate. The intent is to contain high levels of VOC's and Perchlorate that are known to be migrating from beneath the JPL property.

Additionally, NASA owns and operates a Bio-remediation treatment plant located on the JPL site intended to intercept high-level contaminants at the source. A new extraction (EW-3) and injection well (IW-3) were added to the OU-1 system and began operation in October 2007. This plant extracted, treated and re-injected 457.12 acre-feet of groundwater from July 1, 2012 through June 30, 2013 (detailed production and injection data contained in Appendix G).

6. Cost Account for Water Salvaged by Sierra Madre (Table 12)

Expenditures during 2012-13 totaled $1,801.

7. Over Extractions (Table 3)

There were no over extractions.

8. Meters Tested (Table 13)

The Management Board requires annual testing of well water production meters. Meters recording more than 5% slow require adjustment to production records. Meters recording fast are the responsibility of the party to adjust. 46 production meters were tested under the program.

9. Long Term Storage Accounts, (Table 4A and 4B)

The Management Board affirmed the previously approved 1.0 percent loss factor and $1.50 administrative charge per acre foot for the 2012-13 fiscal year. A net decrease of 279.7 acre-feet in Long Term Storage occurred between July 1, 2012 and June 30, 2013. Beginning June 30, 2009 Long Term Storage Accounts in the Pasadena Subarea will not be allowed to increase in size beyond certified 2007-2008 amounts.

TABLE 1. SUMMARY OF WATER CONDITIONS AND OPERATIONS

Item	2011-12 Fiscal Year	2012-13 Fiscal Year	Change From Previous Fiscal Year
Number of:			
Parties	16	16	0%
Active pumpers	15	15	0%
Active non-parties	2	2	0%
Watermaster expenses	$351,260.00	$281,315.00	-20%
Valley rainfall, in inches	13.71	11.43	-17%
Spreading operation, in acre feet	6,063	2,354	-61%
"Decreed Right", in acre feet	30,622	30,622	
Water Use, in acre feet:			
Extractions	29,026	31,956	10%
Surface water diversions	889	548	-38%
Imported water	31,112	32,649	5%
Exported water	(390)	(682)	75%
Net water use	60,637	64,470	6%

TABLE 2. DECREED RIGHTS AND AMOUNTS OF WATER EXTRACTED AND EXCHANGED

(acre feet)

Party Name	"Decreed Right, 1955" (1a)	Reductions in Subareas 2012-13 (1b)	Decreed Right Carryover From 2011-12 (2)	Net Leases [1/] (3)	Prior Year Spread Credit (4)	Long Term Storage Activity [2/] (5)	Injection (6)	Adjustments (7)	Pump from Perchlorate Treatment Pool (8)	Allowable Extraction 2012-13 +(1 thru 8) (9)	Amount Extracted (10)	Balance (9)-(10) (11)	Carryover into 2013-14 (12)
Monk Hill Subarea													
La Canada Irrigation District	100.0		10.0	0.0	0.0	(5.7)	0.0	0.0	0.0	104.3	94.3	10.0	10.0
Las Flores Water Company	249.0		24.9	0.0	85.9	(16.4)	0.0	0.0	0.0	343.4	318.5	24.9	24.9
Lincoln Avenue Water Company	567.0		56.7	0.0	197.2	(510.3)	0.0	0.0	2,018.0	2,328.6	2,272.0	56.7	56.7
Pasadena, City of	4,464.0		446.4	(455.0)	1,519.0	0.0	0.0	(3,873.2)	2,942.0	5,043.2	4,907.5	135.7	135.7
Pasadena Cemetery Association	91.0		9.1	0.0	0.0	0.0	0.0	0.0	0.0	100.1	97.8	2.3	2.3
Rubio Canon Land & Water Assn.	1,221.0		122.1	430.0	237.3	0.0	0.0	0.0	0.0	2,010.4	2,007.3	3.1	3.1
Valley Water Company	797.0		79.7	25.0	0.0	57.3	126.6	0.0	0.0	1,085.6	1,085.6	0.0	0.0
Subtotal	**7,489.0**		**748.9**	**0.0**	**2,039.4**	**(475.1)**	**126.6**	**(3,873.2)**	**4,960.0**	**11,015.6**	**10,783.0**	**232.5**	**232.7**
Pasadena Subarea		24% Reduction											
Alhambra, City of	1,031.0	(247.44)	103.1	(124.0)	0.0	(36.0)	0.0	0.0	N/A	726.7	0.0	726.7	103.1
Arcadia, City of	2,118.0	(508.32)	211.8	(150.0)	0.0	258.6	0.0	0.0	N/A	1,930.1	1,930.1	0.0	0.0
California-American Water Company	2,299.0	(551.76)	229.9	105.0	0.0	0.0	0.0	0.0	N/A	2,082.1	1,950.7	131.4	131.4
East Pasadena Water Company	515.0	(123.60)	51.5	0.0	0.0	0.0	0.0	0.0	N/A	442.9	394.0	48.9	48.9
H.E. Huntington Library & Art Gallery	372.0	(89.28)	(63.7)	150.0	0.0	89.7	0.0	0.0	N/A	458.7	458.7	0.0	0.0
Kinneloa Irrigation District	516.0	(123.84)	51.6	124.0	133.6	(7.9)	0.0	0.0	N/A	693.5	641.9	51.6	51.6
Pasadena, City of	8,343.0	(2,002.32)	0.0	0.0	415.2	0.0	0.0	2,943.6 *	N/A	9,699.5	9,699.5	0.0	0.0
San Gabriel County Water District	1,091.0	(261.84)	109.1	(105.0)	0.0	(8.2)	0.0	0.0	N/A	825.1	716.0	109.1	109.1
Sunny Slope Water Company	1,558.0	(373.92)	155.8	0.0	0.0	(34.4)	0.0	0.0	N/A	1,305.5	707.5	598.0	155.8
Subtotal	**17,843.0**	**(4,282.3)**	**849.1**	**0.0**	**548.8**	**261.8**	**0.0**	**2,943.6**	**0.0**	**18,164.0**	**16,498.4**	**1,665.7**	**599.9**
Western Unit total	**25,332.0**	**(4,282.3)**	**1,598.0**	**0.0**	**2,588.2**	**(213.3)**	**126.6**	**(929.6)**	**4,960.0**	**29,179.6**	**27,281.4**	**1,898.2**	**832.6**
Recapitulation for City of Pasadena	12,807.0	(2,002.3)	446.4	(455.0)	1,934.2	0.0	0.0	0.0		14,742.7	14,607.0	135.7	135.7
Santa Anita Subarea		500' Limitation											
Arcadia, City of	3,526.0	(1,205.0)	334.7	0.0	0.0	N/A	0.0	0.0	N/A	2,655.7	1,982.7	673.0	232.1
Sierra Madre, City of	1,764.0	(824.0)	0.0	0.0	6,259.1	N/A	0.0	0.0	N/A	7,199.1	2,691.4	4,507.7	4,507.7
Subtotal	**5,290.0**		**334.7**	**0.0**	**6,259.1**	**0.0**	**0.0**	**0.0**	**0.0**	**9,854.8**	**4,674.1**	**5,180.7**	**4,739.8**
RAYMOND BASIN TOTAL	**30,622.0**		**1,932.7**	**0.0**	**8,847.3**	**(213.3)**	**126.6**	**(929.6)**	**4,960.0**	**39,034.4**	**31,955.5**	**7,078.9**	**5,572.4**

1/ See Table 10 for details concerning leases and sales
2/ See Table 4 for Long Term Storage accounting

*Includes 24% reduction of 3873.2 AF of the adjustment from Monk Hill

TABLE 3. OVEREXTRACTIONS IN 2012-13
(acre feet)

Party	"Decreed Right 1955" (1)	Allowable Carryover from 2010-11 (2)	Net Leases and Prior Year Spreading Credit (3)	Long Term Storage Program (4)	Allowable Extractions +(1 thru 4) (5)	Amount Extracted (6)	Overextraction[1/]		
							Amount (6)-(5) (7)	Allowable 10% of (1) (8)	In Percent (7) / (1) (9)
Monk Hill Subarea									
None									
Pasadena Subarea									
None									
Santa Anita Subarea									
None									

1/ Based on modification of Judgment dated March 26, 1984

TABLE 4 A. LONG TERM STORAGE ACCOUNTS - MONK HILL SUBAREA
(acre feet)

Party Name	Storage @ 6/30/12	Added @ 6/30/13	Loss @ 6/30/13	Storage @ 6/30/13	Maximum Storage	Exchanges	Adjusted Maximum Storage	Percentage of Storage Used
Monk Hill Subarea								
La Canada ID	639.8	5.7	(6.4)	639.1	2,300.0	(1,400.0)	900.0	71.0%
Las Flores WC	425.6	16.4	(4.2)	437.8	900.0		900.0	48.6%
Lincoln Avenue WC	510.3	510.3	(5.1)	1,015.5	2,200.0		2,200.0	46.2%
Pasadena Cemetery	162.1	0.0	(1.6)	160.5	300.0		300.0	53.5%
Pasadena, City	17,300.0 1/	0.0	(173.0)	17,127.0	13,400.0	3,900.0	17,300.0	99.0%
Rubio Canon LW	126.5	0.0	(1.2)	125.3	3,700.0	(2,500.0)	1,200.0	10.4%
Valley WC	1,023.7	(57.3)	(9.5)	956.9	3,400.0		3,400.0	28.1%
Monk Hill Total	***20,188.0***	***475.1***	***(201.0)***	***20,462.1***	***26,200.0***	***0.0***	**26,200.0**	***78.1%***

1/ Pasadena, City - CSP water included in Long Term Storage Totals

Subarea	CSP @ 6/30/12	1% Loss	CSP @ 6/30/13
Monk Hill	2,505.4	(25.1)	**2,480.3**

TABLE 4 B. LONG TERM STORAGE ACCOUNTS - PASADENA SUBAREA
(acre feet)

Party Name	Capped Storage @ 6/30/12	Added @ 6/30/13	Loss @ 6/30/13	Storage @ 6/30/13	6/30/13 Capped Storage	Percentage of Storage Used
Pasadena Subarea						
Alhambra, City	3,600.0	36.0	(36.0)	3,600.0	3,600.0	100.0%
Arcadia, City	1,591.2	(258.6)	(13.3)	1,319.3	1,319.3	82.9%
Cal American WC	1,951.9	0.0	(19.5)	1,932.4	1,932.4	99.0%
E. Pasadena WC	323.8	0.0	(32.0)	291.8	291.8	90.1%
Huntington LAG	451.9	(89.7)	(3.6)	358.6	358.6	79.4%
Kinneloa ID	790.0	7.9	(7.9)	790.0	790.0	100.0%
Pasadena, City [1/]	11,219.4	0.0	(112.2)	11,107.2	11,107.2	99.0%
San Gabriel CWD	3,300.0	8.2	(33.0)	3,275.2	3,275.2	99.2%
Sunny Slope	3,437.0	34.3	(34.3)	3,437.0	3,437.0	100.0%
Pasadena Total	***26,665.2***	***(261.9)***	***(291.8)***	***26,111.5***	***26,111.5***	***96.2%***

1/ Pasadena, City - CSP water excluded in Long Term Storage Totals

Subarea	CSP @ 6/30/12	1% Loss	CSP @ 6/30/12
Pasadena	16,768.5	(167.7)	**16,600.8**

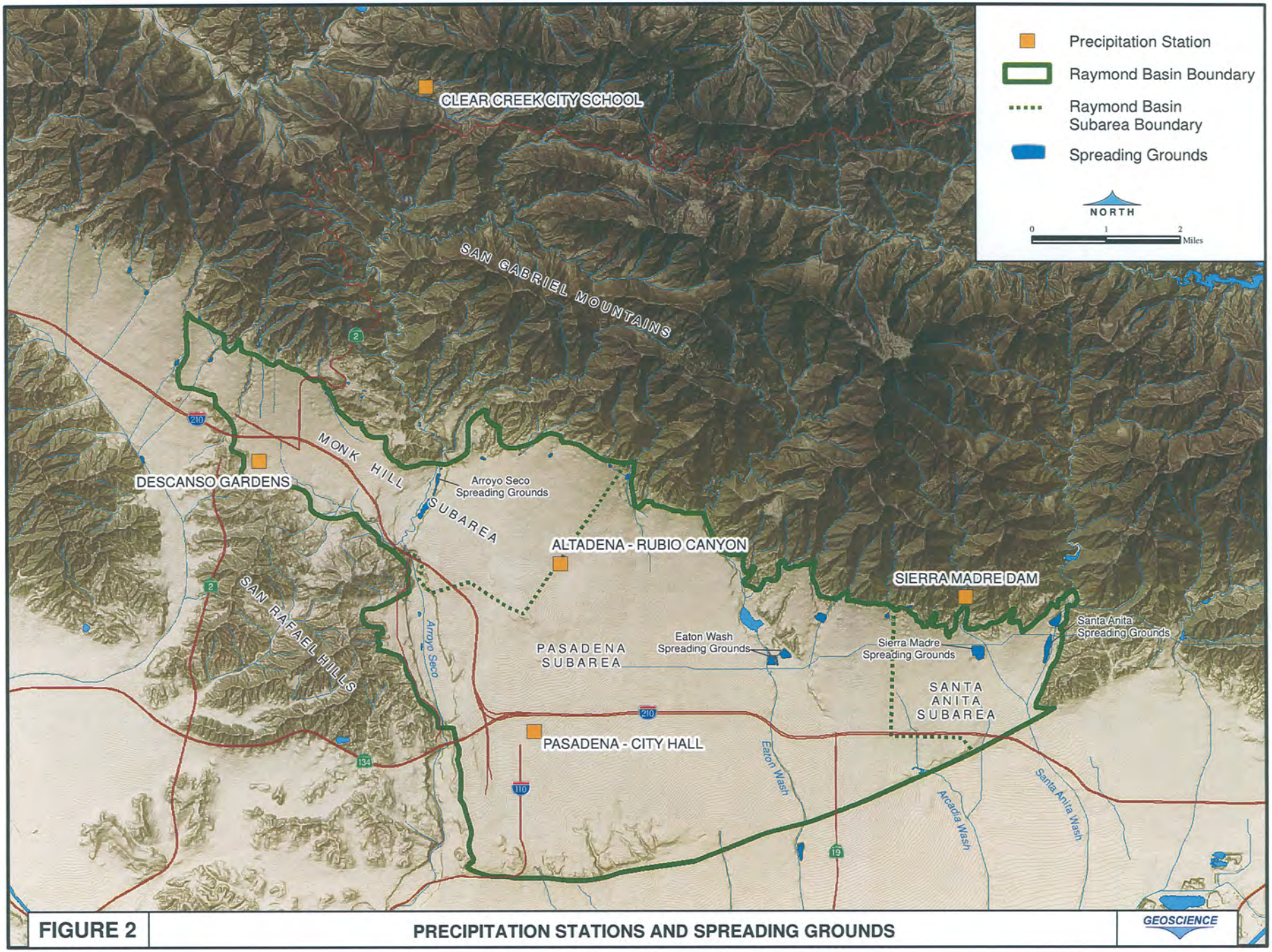


FIGURE 2 PRECIPITATION STATIONS AND SPREADING GROUNDS

GEOSCIENCE

TABLE 5. PRECIPITATION
(inches)

Station 1/	Station Location	Period of Record in Years	Precipitation 2011-12	Precipitation 2012-13	Precipitation 50-year Mean 2/
Altadena-Rubio Canyon (Station 176)	Monk Hill/Pasadena	108	12.45	11.85	23.08
Descanso Gardens (Station 1071B)	Monk Hill	93	14.44	10.72	23.18
Pasadena City Hall (Station 610B)	Pasadena	N/A	13.38	9.61	N/A
Sierra Madre Dam (Station 144) 3/	Santa Anita	110	13.71	13.53	25.01
Arithmetic Mean			13.50	11.43	23.76

1/ Obtained from LACDPW. Station locations shown on Figure 2.
2/ 1896-97 to 1945-46
3/ Data was not available from Station 144 during March 2013 through June 2013. Therefore, Station 63C (Santa Anita Dam) was used for the months of March 2013 through June 2013.

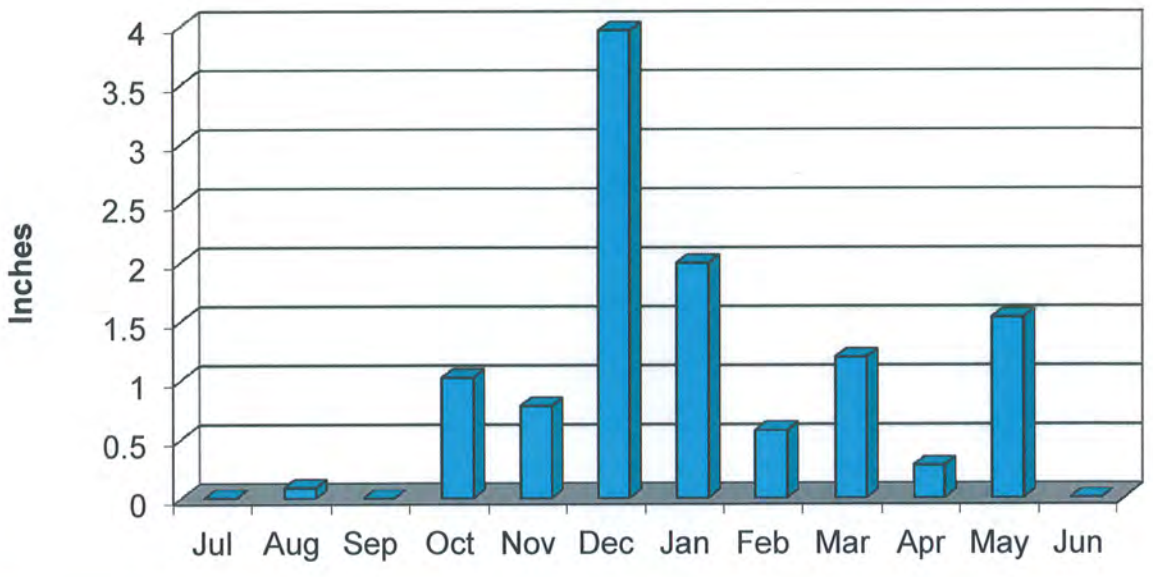


FIGURE 3 - AVERAGE RAINFALL 4/

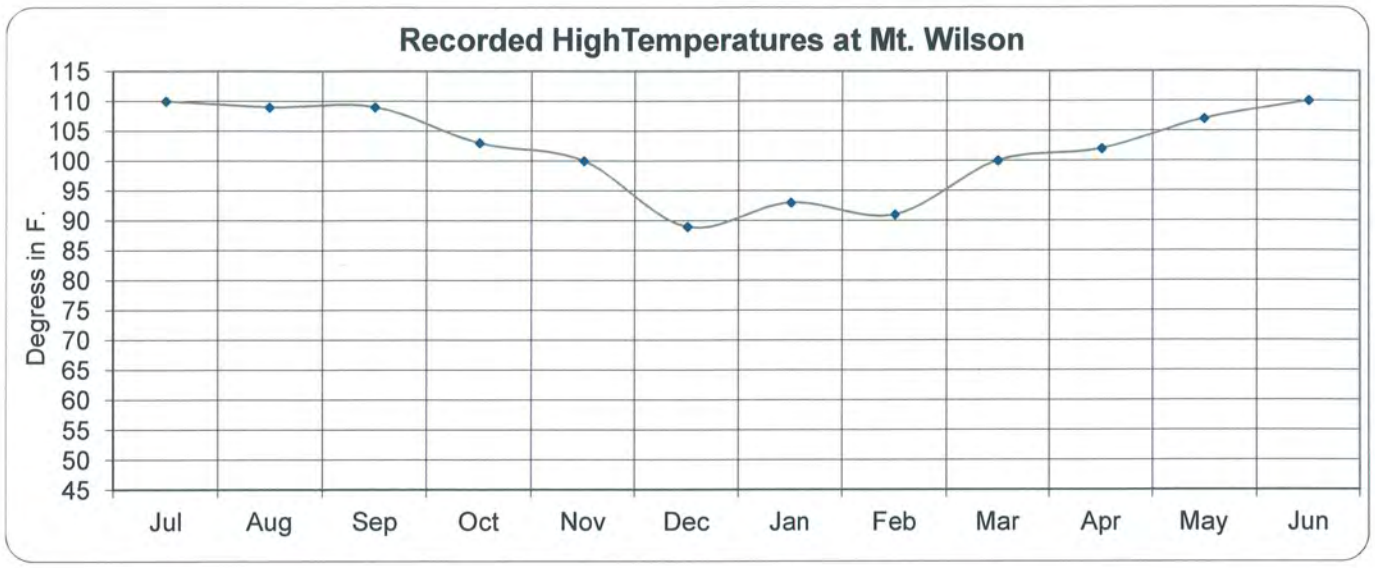
4/ Average of Stations 176, 1071B, 610B, and 144.

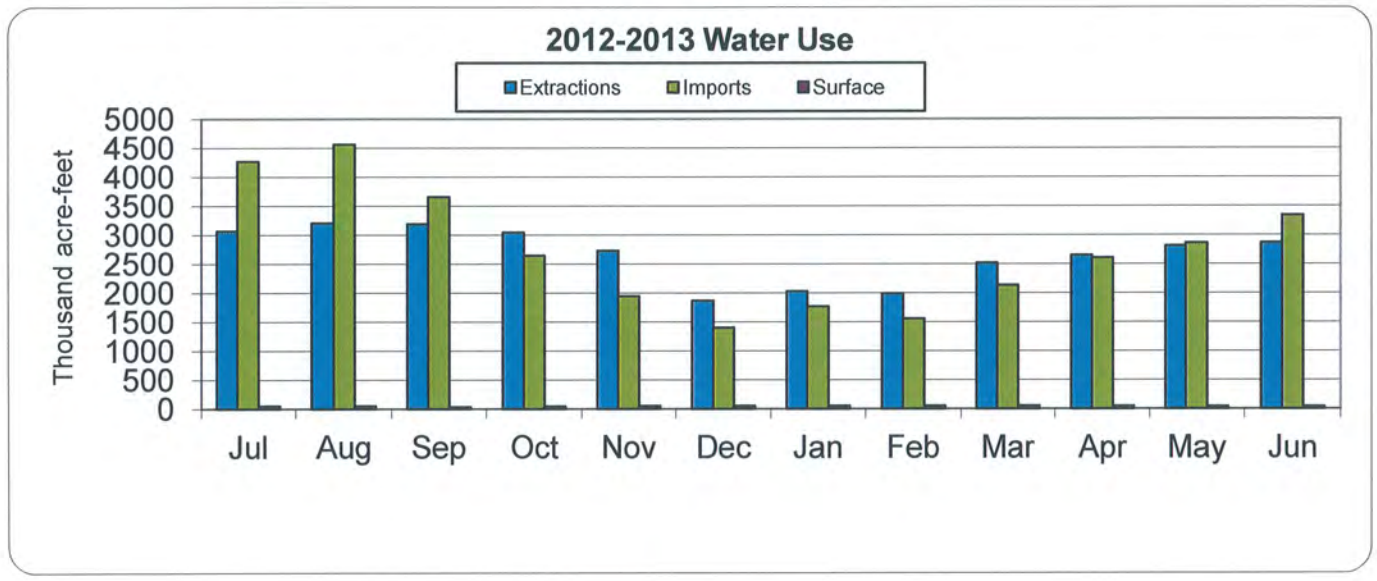
TABLE 6. WATER USE IN 2012-13
(acre feet)

Party	Ground Water Extractions (1)	Water Diversions To System[1/] (2)	Imported MWD/other Water (3)	Water Exported from Basin (4)	Water Imported (Exported) within Basin (5)	Total Water Use Within Basin +(1 thru 5)
Alhambra, City of	0.0		4,068.3			4,068.3
Arcadia, City of	3,912.8		0.0			3,912.8
California-American Water Company	1,950.7		794.0			2,744.7
East Pasadena Water Company	394.0		327.3 [2/]	(11.1)		710.2
H.E. Huntington Library & Art Gallery	458.7					458.7
Kinneloa Irrigation District	641.9	165.2				807.0
La Canada Irrigation District	94.3	81.9	2,473.6			2,649.8
Las Flores Water Company	318.5		470.2			788.7
Lincoln Avenue Water Company	2,272.0	0.0	240.0			2,512.0
Pasadena Cemetery Association	97.8					97.8
Pasadena, City of	14,607.0		18,238.6	(45.0)	99.2	32,899.8
Rubio Canon Land & Water Association	2,007.3	147.5	0.0			2,154.8
San Gabriel County Water District	716.0					716.0
Sierra Madre, City of	2,691.4	153.2				2,844.6
Sunny Slope Water Company	707.5		3,353.7 [2/]	(626.2)		3,435.0
Valley Water Company	1,085.6		2,683.4			3,769.0
Total	**31,955.5**	**547.7**	**32,649.1**	**(682.3)**	**99.2**	**64,569.3**

1/ Does not include surface water diversions for spreading credit.
2/ San Gabriel Basin water.

FIGURE 4 - CLIMATIC CONDITIONS AND WATER USE





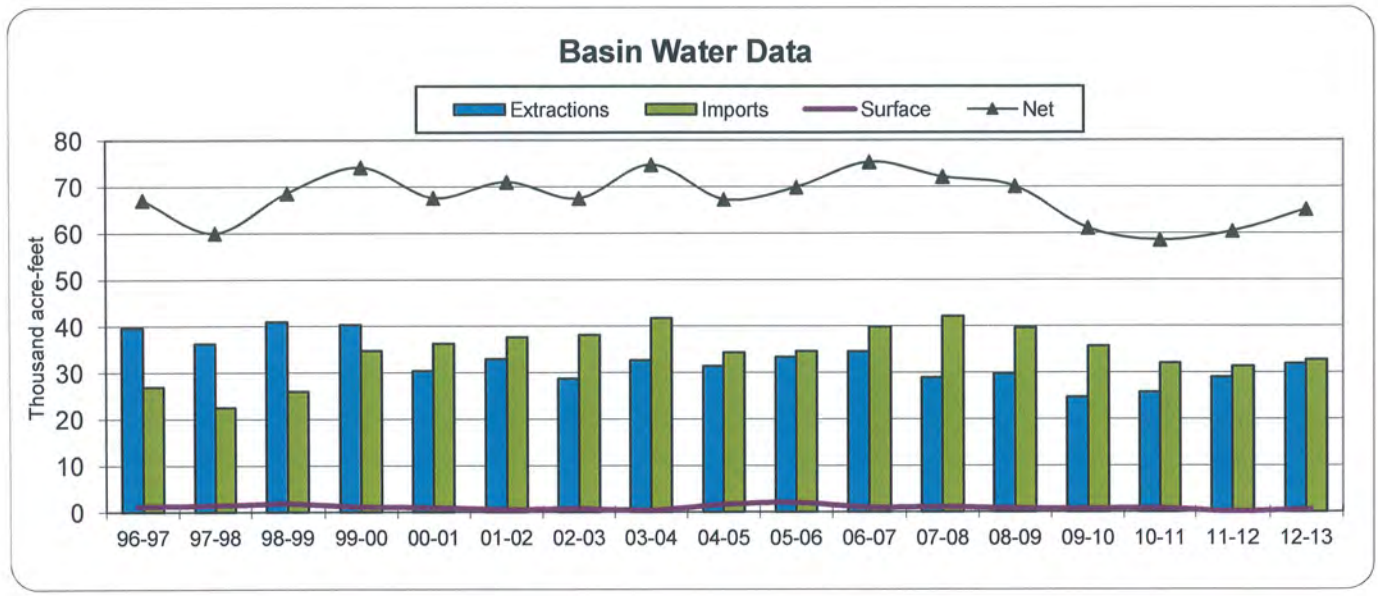


TABLE 7.
COMPARISON OF LONG-TERM AVERAGE ANNUAL EXTRACTIONS TO SAFE YIELD
(acre feet)

July 1 through June 30	Annual Extractions [1/]					
	Western Unit			Eastern Unit		
	Monk Hill Subarea (1)	Pasadena Subarea (2)	Subtotal (1)+(2) (3)	Gross Pumped	Eastern Unit (4)	Raymond Basin Area (3)+(4) (5)
1950-51	7,098	13,418	20,516	2,861	2,861	23,377
51-52	5,903	10,750	16,653	2,489	2,489	19,142
52-53	5,973	12,471	18,444	4,870	4,535	22,979
53-54	6,283	11,765	18,048	3,378	2,782	20,830
54-55	6,420	12,783	19,203	4,528	3,969	23,172
Average annual extractions	6,335	12,237	18,573	3,625	3,327	21,900
Safe yield 1938 [2/]	6,039	11,621	17,660	3,791	3,791	21,451
Average Over/(Under) extractions [3/]	296	616	913	(166)	(464)	449
1955-60	35,444	82,043	117,487	23,484	23,048	140,535
1960-65	37,356	89,193	126,549	20,483	17,532	144,081
1965-70	37,557	90,821	128,378	23,745	23,312	151,690
1970-75	41,206	87,783	128,990	28,539	27,228	156,218
1975-80	40,871	97,733	138,604	28,836	24,403	163,007
1980-85	45,697	96,417	142,114	31,553	25,478	167,592
1985-90	31,058	101,822	132,880	33,170	27,113	159,994
1990-95	37,155	72,509	109,663	31,732	26,980	136,643
95-2000	54,452	108,960	163,412	33,482	25,982	189,394
2000-05	29,375	97,030	126,405	29,516	25,293	151,698
2005-10	25,775	93,895	119,670	31,525	23,888	143,557
2010-11	4,338	15,623	19,961	5,733	5,308	25,269
11-12	9,006	14,086	23,092	5,934	5,290	28,382
12-13	10,783	16,498	27,281	4,674	4,030	31,311
Average annual extractions	7,587	18,352	25,939	6,121	5,077	31,016
Safe yield [4/]	7,489	17,843	25,332	5,290	5,290	30,622
Average Over/(Under) extractions [3/]	98	509	607	831	(213)	394

1/ Includes spreading water pumped in Western Unit and excludes salvage credit water pumped by City of Sierra Madre.
2/ Non-party pumping not included during the period 1944-45 through 1954-55
3/ Extractions greater than safe yield; positive; extractions less than safe yield: (negative).
4/ Effective 1955-56 through present and excludes non-party pumping.

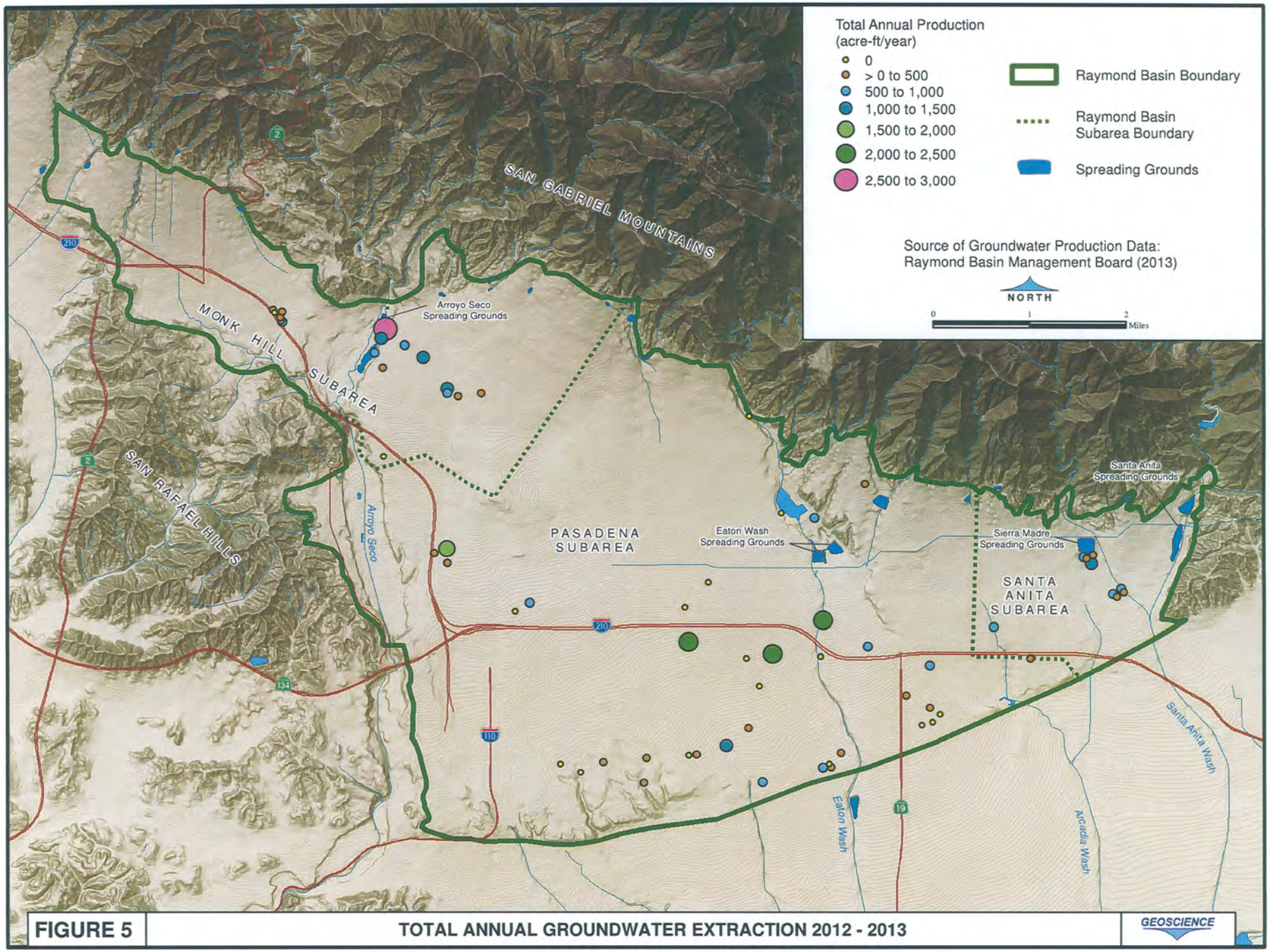


FIGURE 5 TOTAL ANNUAL GROUNDWATER EXTRACTION 2012 - 2013 GEOSCIENCE

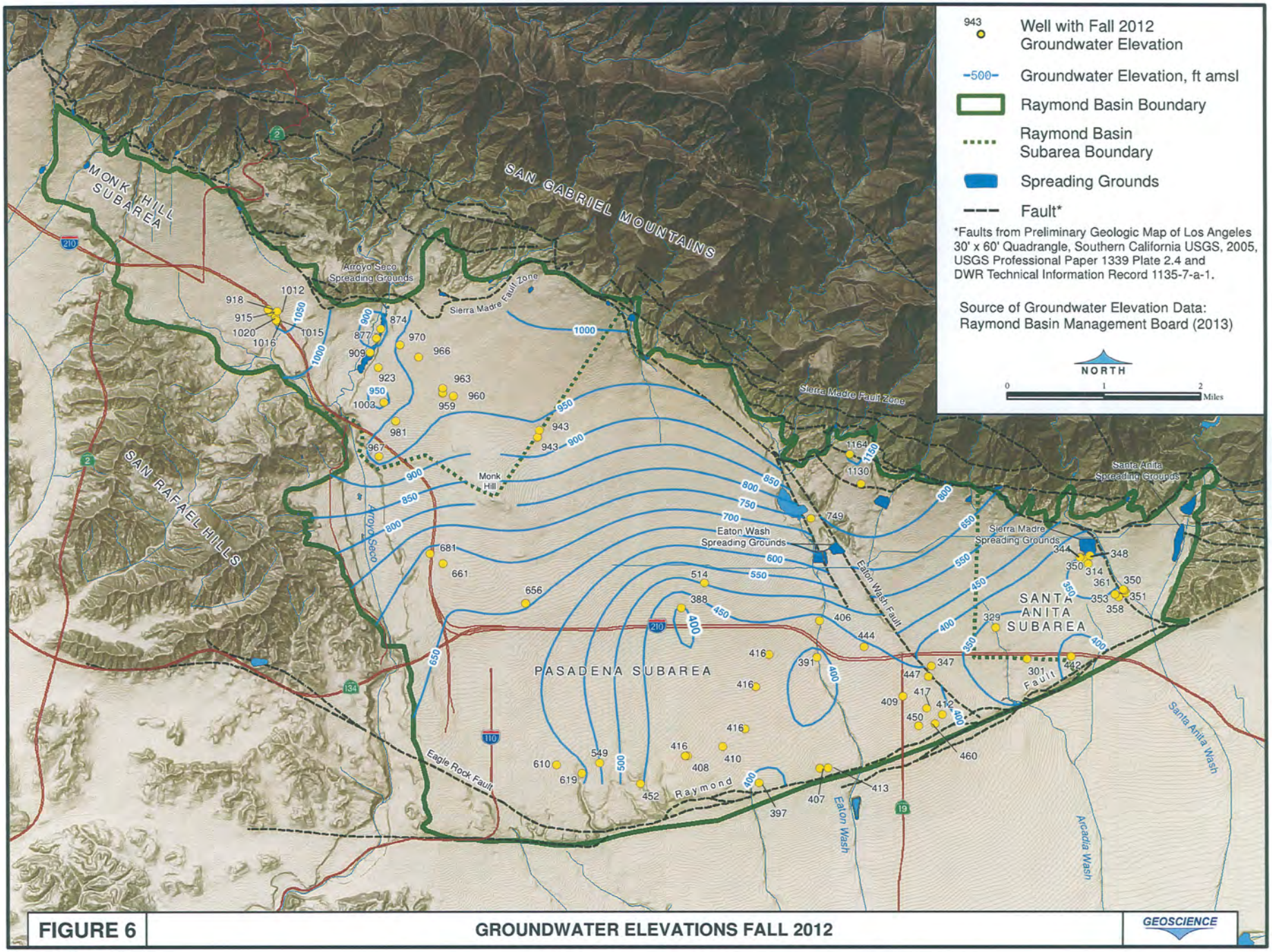


FIGURE 6 | **GROUNDWATER ELEVATIONS FALL 2012** | GEOSCIENCE

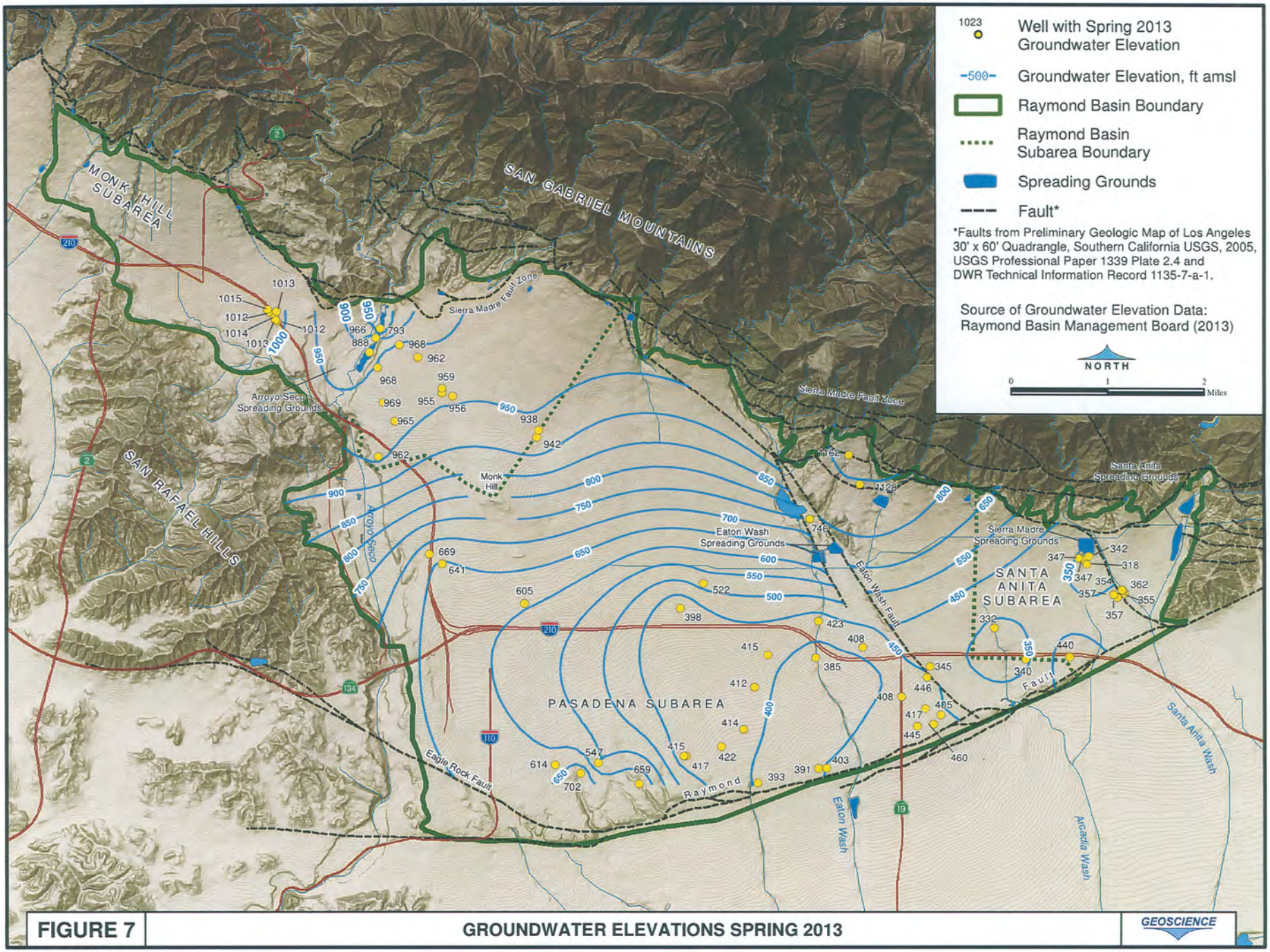


FIGURE 7 | **GROUNDWATER ELEVATIONS SPRING 2013** | GEOSCIENCE

TABLE 8. GROUNDWATER LEVEL ELEVATIONS AT REPRESENTATIVE WELLS
(feet)

Subarea	Owner Key Well Name	Groundwater Level Elevations in feet above sea level			
		October 2011	April 2012	October 2012	April 2013
Monk Hill					
	City of Pasadena Sheldon	983	973	967	962
Pasadena					
West Central	*City of Pasadena* Copelin 3	644	690	681	669
Northeast	*Kinneloa Irrigation District* Wilcox	n/a	n/a	424	416
East Central	*Cal-American Water Company* Winston	408	408	416	414
South Central	*City of Alhambra* No. 2	638	623	619	617
Southeast	*East Pasadena Water Company* Well No. 7	413	422	417	417
Santa Anita					
	City of Arcadia Orange Grove No. 1A	390	377	358	357

nm: no measurement

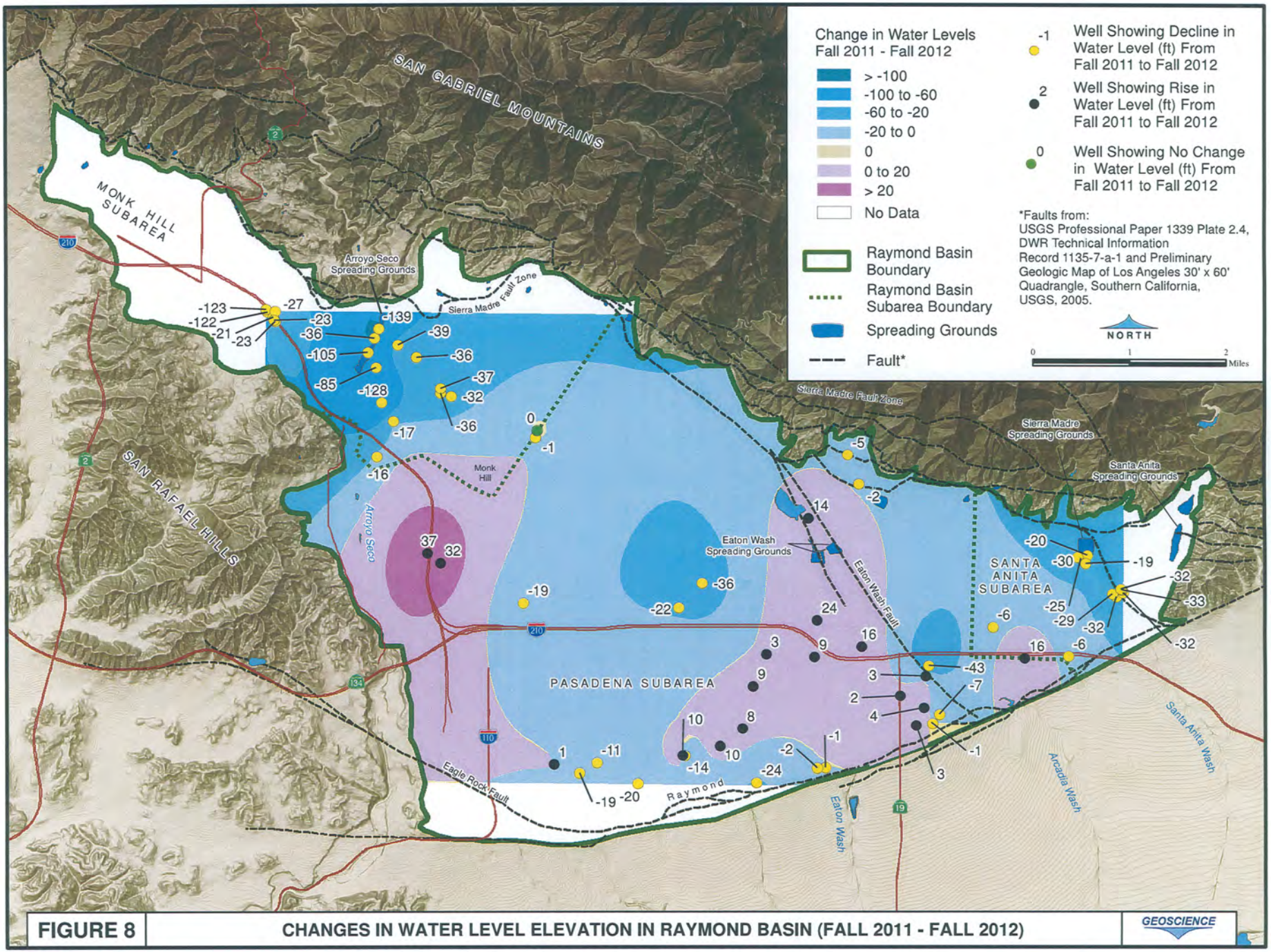


FIGURE 8 CHANGES IN WATER LEVEL ELEVATION IN RAYMOND BASIN (FALL 2011 - FALL 2012) GEOSCIENCE

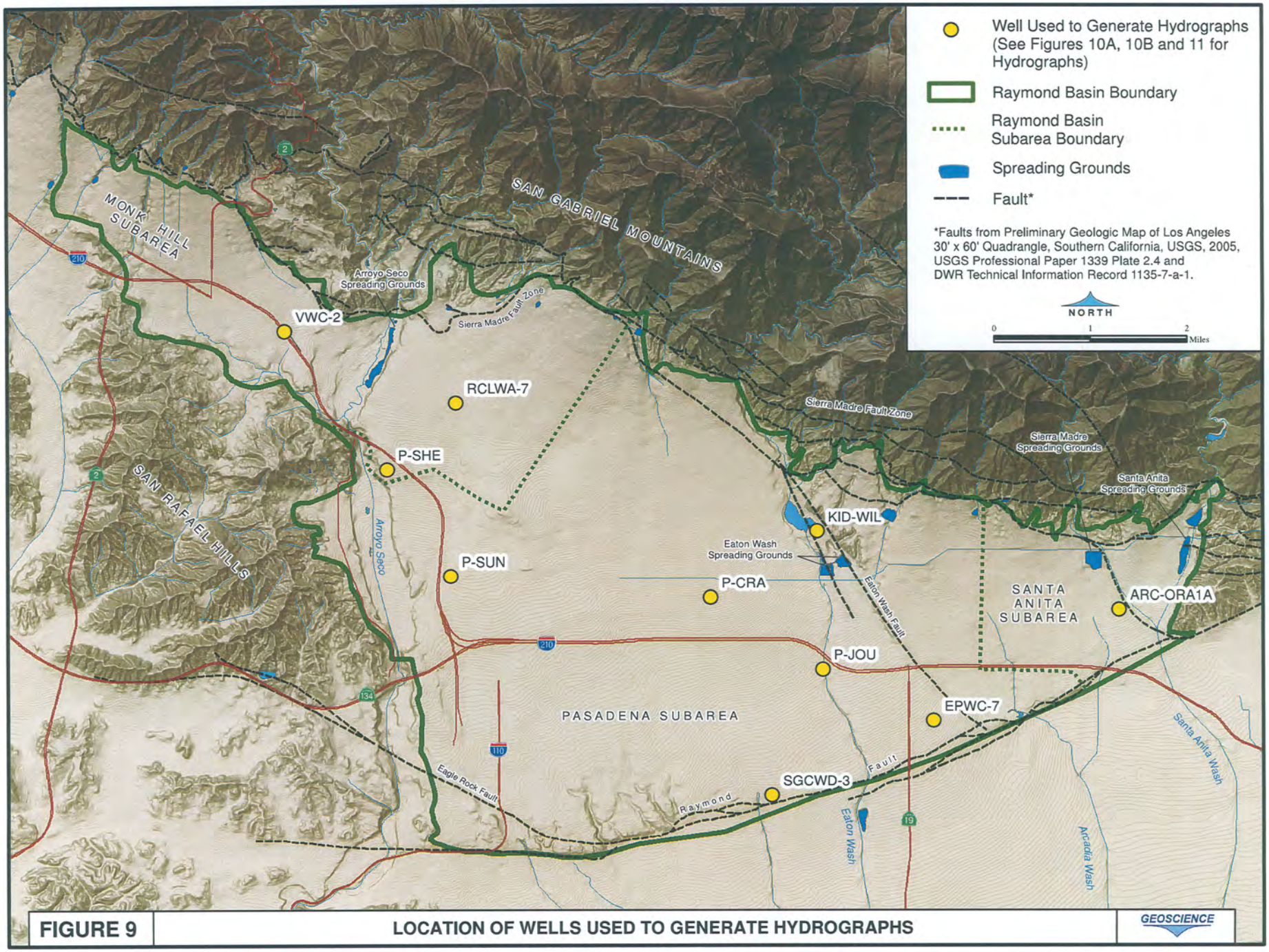


FIGURE 9 | **LOCATION OF WELLS USED TO GENERATE HYDROGRAPHS** | GEOSCIENCE

FIGURE 10a - FLUCTUATION OF WATER LEVELS AT WELLS IN THE PASADENA SUBAREA

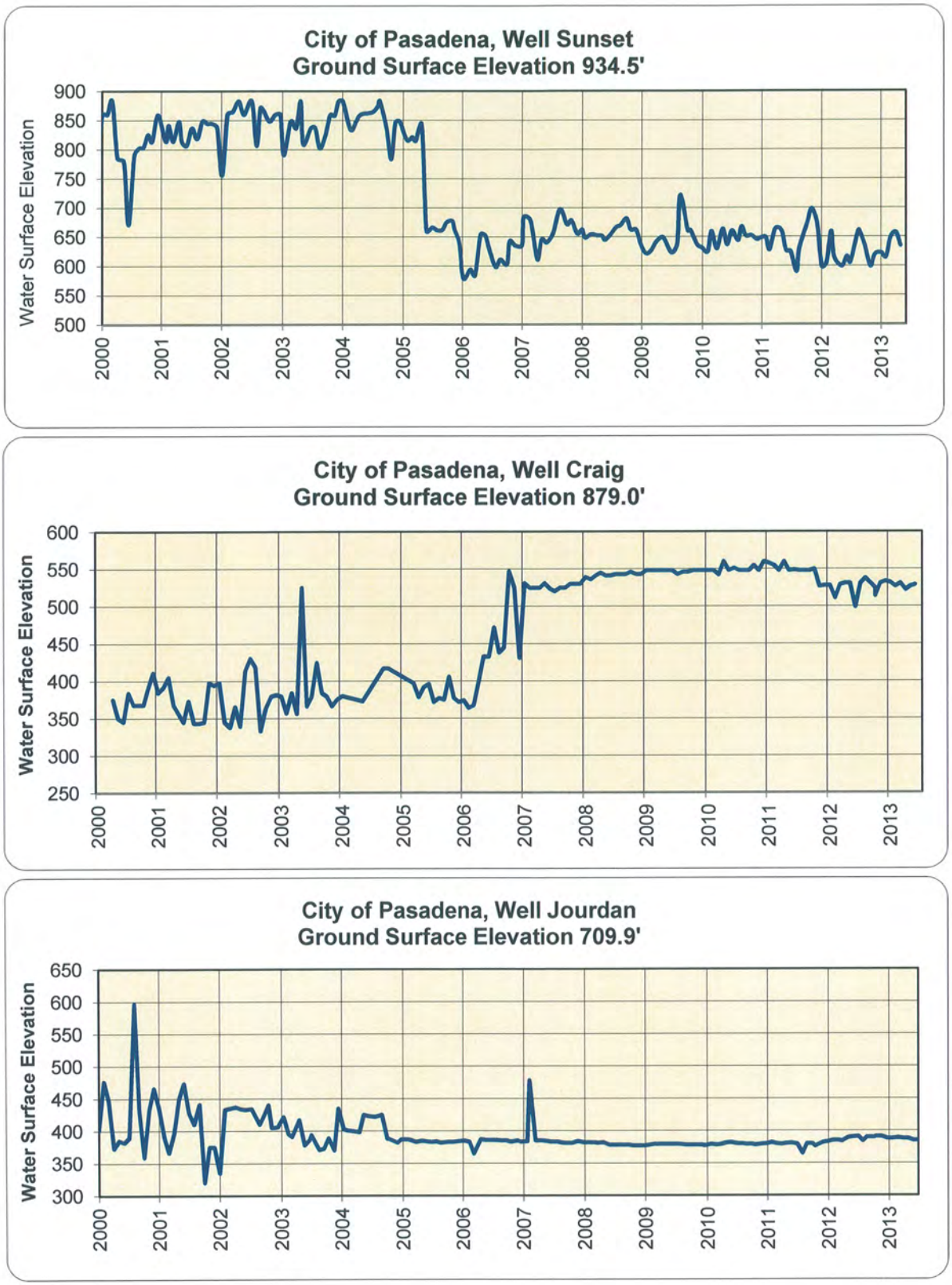
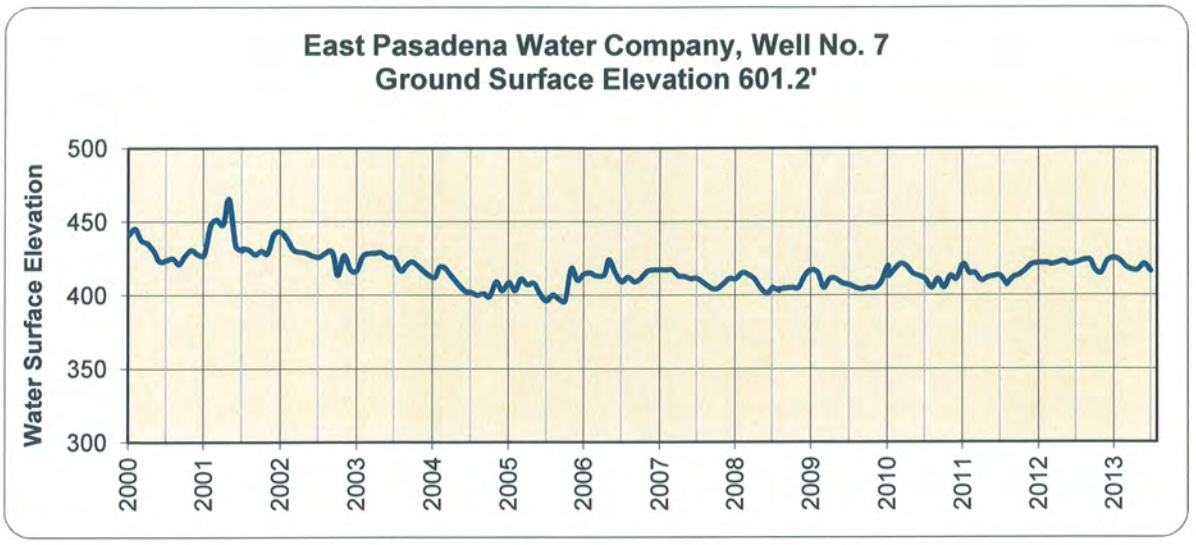
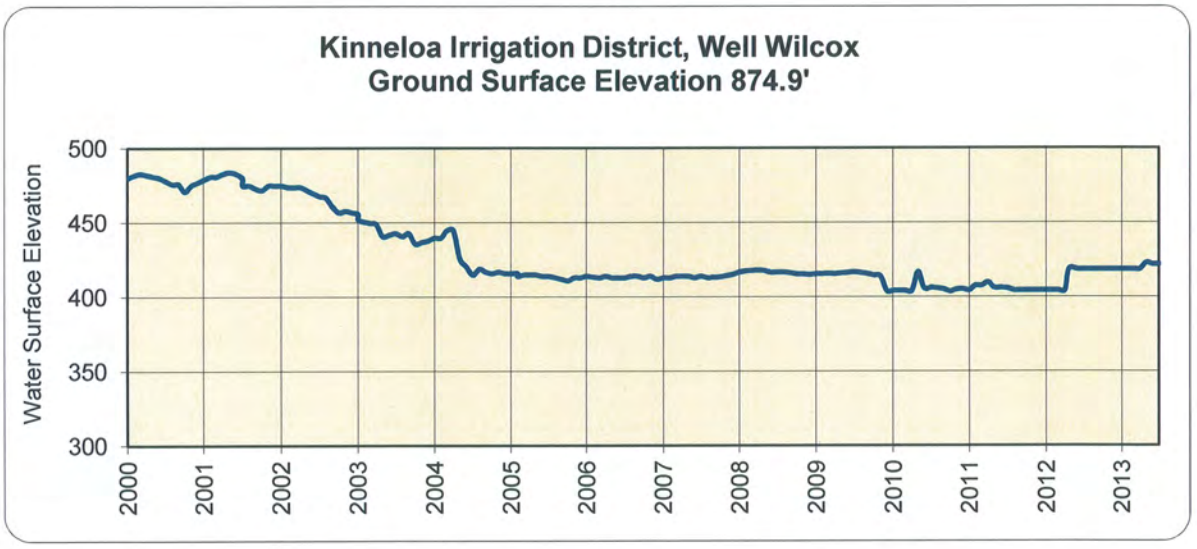


FIGURE 10b - FLUCTUATION OF WATER LEVELS AT WELLS IN THE PASADENA SUBAREA





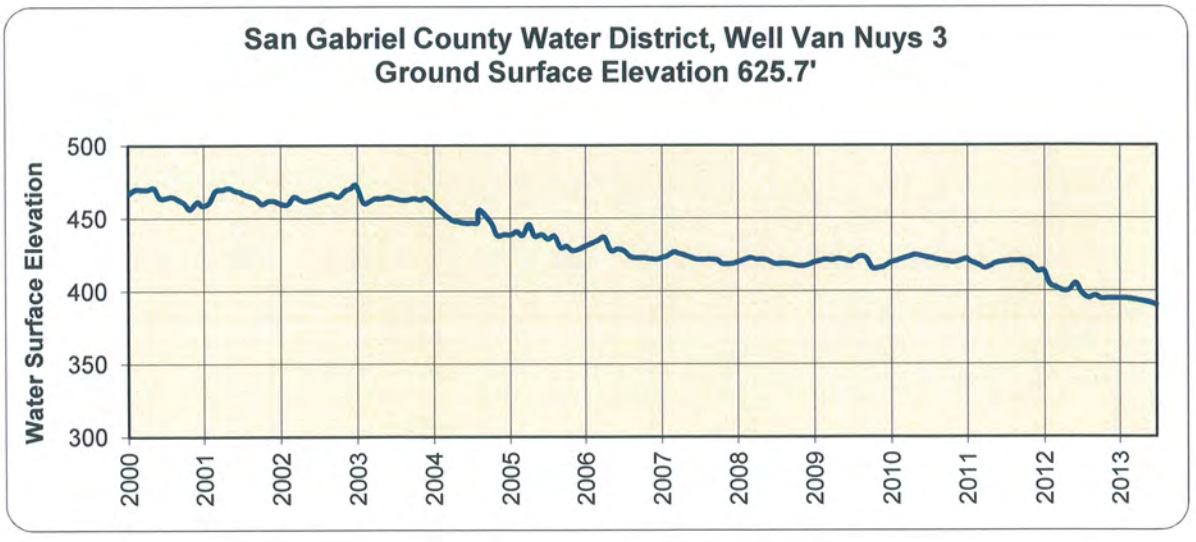


FIGURE 11 - FLUCTUATION OF WATER LEVELS AT WELLS IN THE SANTA ANITA SUBAREA

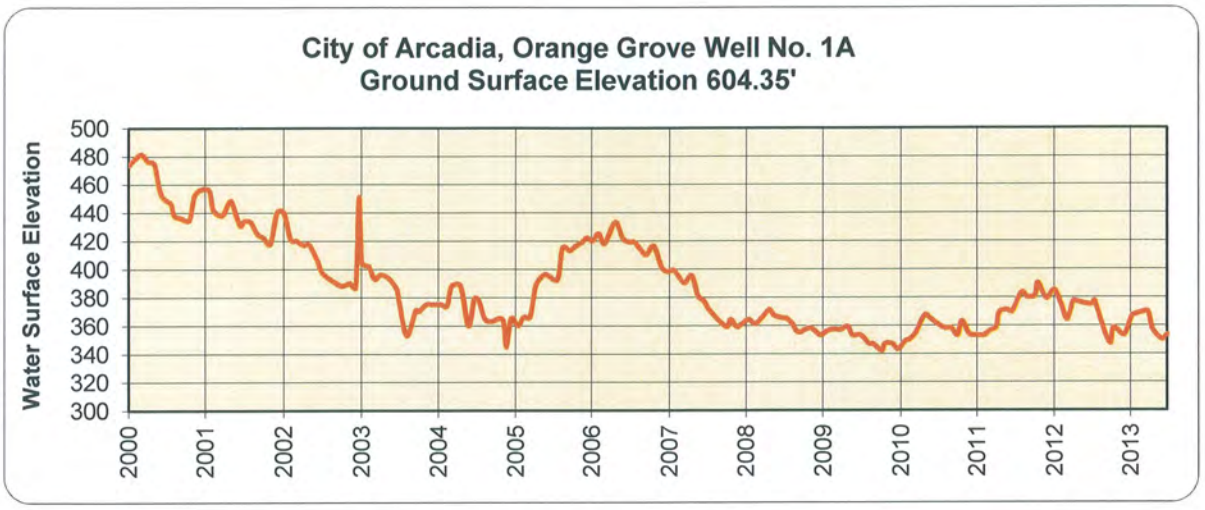


FIGURE 12 - FLUCTUATION OF WATER LEVELS AT WELLS IN THE MONK HILL SUBAREA

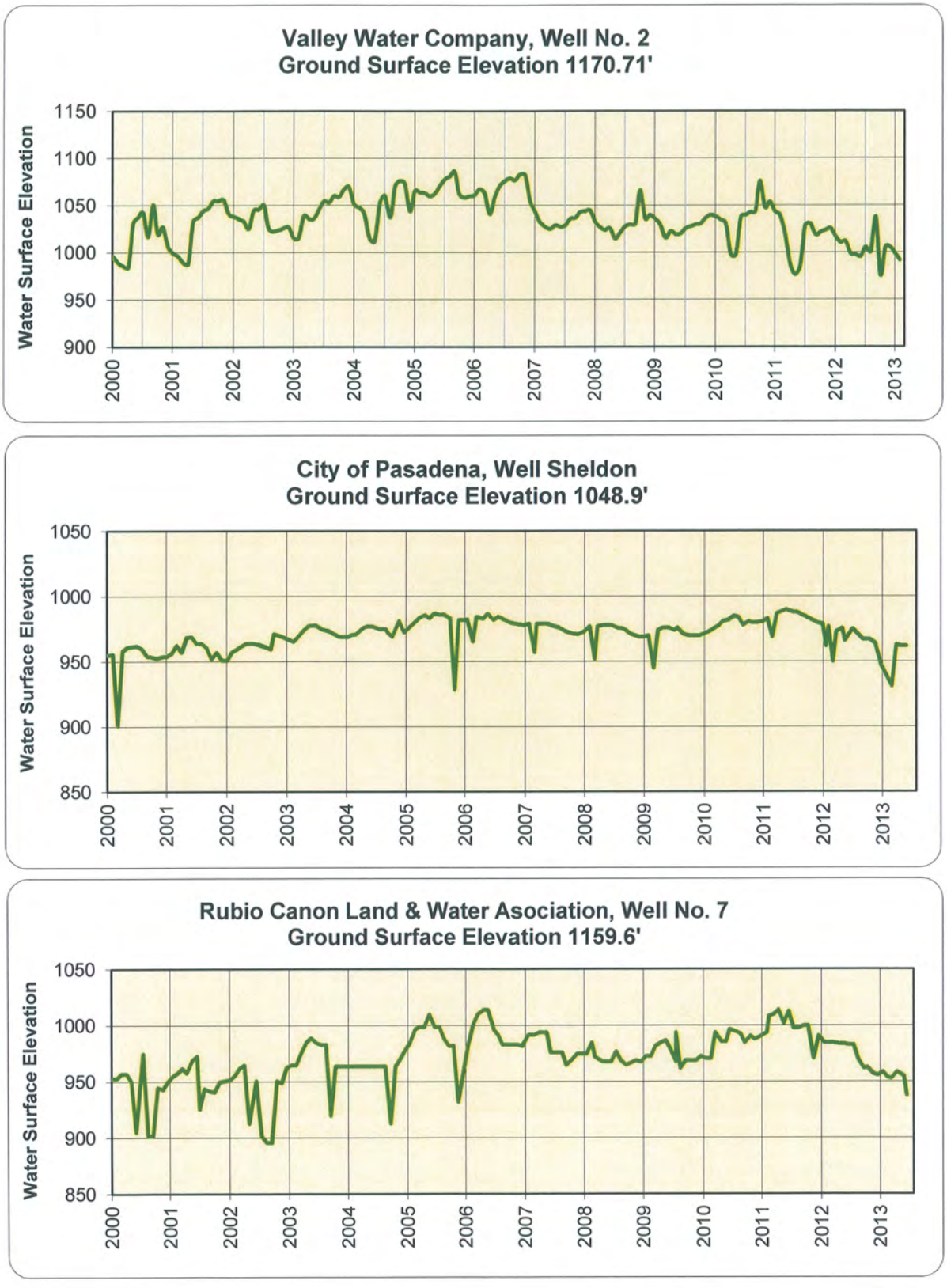


TABLE 9. CREDIT FOR WATER SPREAD CITY OF SIERRA MADRE
(acre feet)

Season	(1) Salvage Water at Beginning of Year	Water Spread for Salvage (2) Amount	(3) Lost Through Natural Percolation	(4) Water Stored (2)-(3)	(5) Salvage Water Lost to Subsurface Outflow	(6) Salvage Water Extracted	(7) Salvage Water at End of Year (1)+(4)-(5)-(6)
1952-53	836.3	258.0	94.6	163.4	243.1	334.9	421.7
53-54	421.7	580.0	4.6	575.4	115.4	596.1	285.6
54-55	285.6	341.0	21.5	319.5	15.1	559.1	30.9
55-56	30.9	429.0	90.9	338.1	9.6	128.0	231.4
56-57	231.4	331.0	167.1	163.9	42.1	62.0	291.2
57-58	291.2	3,409.0	811.9	2,597.1	278.8	0.0	2,609.5
58-59	2,609.5	1,308.0	521.0	787.0	945.1	37.5	2,413.9
59-60	2,413.9	45.0	10.4	34.6	705.6	208.2	1,534.7
1960-61	1,534.7	51.0	16.0	35.0	214.1	1,116.3	239.3
61-62	239.3	1,283.0	445.6	837.4	43.1	292.8	740.8
62-63	740.8	1,121.0	544.4	576.6	241.7	253.9	821.8
63-64	821.8	699.0	164.4	534.6	180.2	451.3	724.9
64-65	724.9	904.0	208.6	695.4	142.8	837.3	440.2
65-66	440.2	4,233.0	979.0	3,254.0	533.5	433.1	2,727.6
66-67	2,727.6	4,537.0	945.1	3,591.9	1,110.9	0.0	5,208.6
67-68	5,208.6	2,625.0	1,069.2	1,555.8	1,663.1	0.0	5,101.3
68-69	5,101.3	2,984.0	371.1	2,612.9	1,532.3	0.0	6,181.9
69-70	6,181.1	1,529.3	932.2	597.1	1,495.5	0.0	5,282.7
1970-71	5,282.7	1,145.3	369.7	775.6	1,285.7	0.0	4,772.6
71-72	4,772.6	1,014.4	311.5	702.9	1,518.3	0.0	3,957.2
72-73	3,957.2	3,204.0	824.5	2,379.5	815.1	84.7	5,436.9
73-74	5,436.9	3,029.1	891.9	2,137.2	1,603.7	64.7	5,905.7
74-75	5,905.7	2,244.0	927.8	1,316.2	1,744.1	1,161.0	4,316.8
75-76	4,316.8	1,029.8	387.3	642.5	1,299.5	784.0	2,875.8
76-77	2,875.8	1,106.6	427.4	679.2	863.9	124.6	2,566.5
77-78	2,566.5	3,974.7	463.8	3,510.9	937.3	1,033.1	4,107.0
78-79	4,107.0	4,473.0	1,475.7	2,997.3	1,541.7	894.7	4,667.9
79-80	4,667.9	3,636.3	717.7	2,918.6	971.8	1,597.2	5,017.5
1980-81	5,017.5	2,271.8	1,055.2	1,216.6	1,288.9	2,068.1	2,877.1
81-82	2,877.1	2,004.5	764.4	1,240.1	968.0	197.9	2,951.3
82-83	2,951.3	3,509.4	690.0	2,819.4	1,206.2	0.0	4,564.5
83-84	4,564.5	2,970.8	1,297.9	1,672.9	1,338.7	1,912.2	2,986.5
84-85	2,986.5	1,519.1	503.7	1,015.4	723.7	1,897.7	1,380.5
85-86	1,380.5	3,402.6	974.0	2,428.6	293.6	2,385.8	1,129.7
86-87	1,129.7	969.3	335.2	634.1	258.3	1,505.5	0.0
87-88	0.0	1,756.2	566.9	1,189.3	28.8	772.4	388.1
88-89	388.1	1,458.2	610.4	847.8	103.8	930.2	201.9
89-90	201.9	574.3	279.6	294.7	34.0	462.6	0.0
1990-91	0.0	1,542.1	575.0	967.1	0.0	755.4	211.7
91-92	211.7	3,100.7	680.1	2,420.6	0.0	247.6	2,384.7
92-93	2,384.7	3,150.6	487.9	2,662.7	473.0	129.3	4,445.1
93-94	4,445.1	2,113.2	747.2	1,366.0	1,262.7	1,919.1	2,629.3
94-95	2,629.3	4,221.4	706.6	3,514.8	532.2	1,700.3	3,911.6
95-96	3,911.6	3,697.8	1,252.2	2,445.6	1,482.8	505.0	4,369.4
96-97	4,369.4	2,371.7	735.9	1,635.8	1,010.1	2,489.2	2,505.9
97-98	2,505.9	3,424.0	435.1	2,988.9	214.3	984.3	4,296.2
98-99	4,296.2	2,874.9	922.5	1,952.4	590.5	2,038.1	3,620.0
99-00	3,620.0	1,195.0	304.7	890.3	740.6	1,483.1	2,286.6
2000-01	2,286.6	1,513.5	424.0	1,089.5	440.5	1,041.5	1,894.1
01-02	1,894.1	294.8	14.7	280.1	0.0	1,205.3	968.9
02-03	968.9	1,444.7	500.3	944.4	0.0	231.3	1,682.0
03-04 [1/]	1,682.0	751.7	124.1	627.6	0.0	1,465.6	844.0
04-05	844.0	5,612.7	1,070.2	4,542.5	282.2	279.1	4,825.2
05-06	4,825.2	2,932.7	603.1	2,329.6	385.7	1,637.8	5,131.3
06-07	5,131.3	745.5	211.0	534.4	0.0	2,653.8	3,011.9
07-08	3,011.9	1,761.1	260.6	1,500.5	0.0	1,395.9	3,116.5
08-09	3,116.5	1,585.2	217.7	1,367.5	0.0	1,189.6	3,294.5
09-10	3,294.5	2,535.1	696.4	1,838.7	0.0	760.4	4,372.8
2010-11	4,372.8	3,086.9	771.4	2,315.5	0.0	424.6	6,263.7
11-12	6,263.7	1,276.7	637.2	639.5	0.0	644.1	6,259.1
12-13	6,259.1	326.8	125.6	201.2	0.0	1,751.4	4,708.9

1/ Adjustment to 2003-04 End of Year Salvage

TABLE 10. TRANSFERS OR LEASES OF DECREED RIGHT
(acre-feet)

Lease No.	Lease Date	Leasor	Leasee	Acre feet
PASA-RCLW-13-01	10/2/2012	Pasadena, City of	Rubio Canon Land & Water	350.0
ARCA-HLAG-13-01	12/12/2012	Arcadia, City of	Huntington Library & Art Gallery	150.0
ALHA-KID-13-01	1/9/2013	Alhambra, City of	Kinneloa Irrigation District	124.0
PASA-RCLW-13-02	3/4/2013	Pasadena, City of	Rubio Canon Land & Water	80.0
SGVWD-CAWC- 13-01	6/14/2013	San Gabriel Valley Water	California American Water	105.0
PASA-VWC-13-01	8/2/2013	Pasadena, City of	Vally Water Company	25.0

LONG TERM STORAGE SPACE EXCHANGES
in acre feet

Lease No.	Leasor	Leasee	Lease Period	Acre Feet
Pasadena Subarea				
Monk Hill Subarea				
RCLW-PASA 01/13/LTS	Rubio Canon Land & Water	Pasadena, City of	7/1/12 thru 6/30/13	2,500
Allowable LTS	3,700	13,400		
Current Lease	(2,500)	2,500		
Adjusted Allowable LTS	1200	15,900		
LCID-PASA 01/13/LTS	La Canada Irrigation District	Pasadena, City of	7/1/12 thru 6/30/13	1,400
Allowable LTS	2,300	15,900		
Current Lease	(1,400)	1,400		
Adjusted Allowable LTS	900	17,300		

TABLE 11. APPORTIONMENT OF BUDGET AMONG PARTIES

FISCAL YEAR ENDING JUNE 30, 2012

Party	Part A			Part B			Part C	
	Acre Feet Decreed Right 1955 (1)	DWR Services Apportionment % (2)	DWR Services Apportionment $ (3)	Acre Feet Diversions 2009-10 (4)	Spreading Program Apportionment % (5)	Spreading Program Apportionment $ (6)	Other Administration $ (7)	Total Cost (3)+(6)+(7) (8)
Alhambra, City of	1,031	3.4%	$ 170				$ 20,483	$ 20,653
Arcadia, City of	5,644	18.4%	$ 920				$ 110,849	$ 111,769
California-American Water Co.	2,299	7.5%	$ 375				$ 45,183	$ 45,558
East Pasadena Water Co.	515	1.7%	$ 85				$ 10,242	$ 10,327
Huntington Libr. & Art Gallery	372	1.2%	$ 60				$ 7,229	$ 7,289
Kinneloa Irrigation District	516	1.7%	$ 85	102.2	4.4%	$ 220	$ 10,242	$ 10,547
La Canada Irrigation District	100	0.3%	$ 15				$ 1,807	$ 1,822
Las Flores Water Company	249	0.8%	$ 40	125.3	5.4%	$ 270	$ 4,819	$ 5,129
Lincoln Avenue Water Company	567	1.8%	$ 90	508.4	22.0%	$ 1,100	$ 10,844	$ 12,034
Pasadena Cemetery Assoc.	91	0.3%	$ 15				$ 1,807	$ 1,822
Pasadena, City of	12,807	41.8%	$ 2,090	1,438.1	62.2%	$ 3,110	$ 251,820	$ 257,020
Rubio Canon L&W Assoc.	1,221	4.0%	$ 200	138.8	6.0%	$ 300	$ 24,098	$ 24,598
San Gabriel County WD	1,091	3.6%	$ 180				$ 21,688	$ 21,868
Sierra Madre, City of	1,764	5.8%	$ 290				$ 34,941	$ 35,231
Sunny Slope Water Co.	1,558	5.1%	$ 255				$ 30,724	$ 30,979
Valley Water Co.	797	2.6%	$ 130				$ 15,664	$ 15,794
	30,622	**100.0%**	**$ 5,000**	**2,313**	**100%**	**$ 5,000**	**$ 602,440**	**$ 612,440**

TABLE 12. STATEMENT OF 2012-13 INCOME AND EXPENDITURES

	Budget	Actual	Variance
Revenue			
Cash--July 1, 2012	**$ 2,082,232**	**$ 2,169,787**	**$ 87,555**
Assessments:			
DWR Service Assess - Part A	5,000	5,000	-
Spreading Program - Part B	5,000	5,000	-
Administrative Assess - Part C	602,440	602,440	-
Long-Term Storage Program	100	5,809	5,709
Title 22 Program	22,000	18,983	(3,017)
Salvage Credit Reimbursement	3,000	1,801	(1,199)
Discharge Credit Calc. Reimb.	5,000	408	(4,592)
FWC - Project Income	10,000	298	(9,702)
Interest and Other Income	8,000	8,029	29
Total Revenue	**$ 660,540**	**$ 647,768**	**$ (12,772)**
Expense:			
DWR Administration	$ 5,000	$ -	$ 5,000
MSGBW Administration	147,192	147,192	-
Office Expense	6,000	791	5,209
Professional Services	10,000	50	9,950
General Engineering	40,000	32,348	7,652
FWC - Basin Contribution	2,000	298	1,702
Monk Hill Study	19,000	-	19,000
Federal Grant Match	150,000	5,521	144,479
Monitoring Well Design	10,000	-	10,000
Salt & Nutrient Mgmt Plan	50,000	29,091	20,909
GW Level Management Prgm	25,000	-	25,000
Pasadena Storage Program	5,000	-	5,000
Legal Fees	15,000	6,956	8,044
Legislative Advocacy	40,000	36,000	4,000
Grant Support	10,000	-	10,000
Meeting & Travel	12,000	1,882	10,118
Strategic Planning	5,000	-	5,000
Mapping/GIS/Data Management	7,500	-	7,500
Annual Report Expense	7,000	6,299	701
Audit Expense	5,000	3,300	1,700
Membership Dues	7,500	5,703	1,797
Title 22 Program Expense	32,000	21,983	10,017
Spreading Program	5,000	2,884	2,116
Sierra Madre Salvage Credit Expense	3,000	1,801	1,199
Discharge Credit Calc. Expense	5,000	408	4,592
FWC - Project Expense	10,000	298	9,702
Contingency	5,000	-	5,000
Total Expense	**$ 638,192**	**$ 302,805**	**$ 335,387**
Cash -- June 30, 2013	$ 2,104,580	$ 2,514,750	
Adjudicated Rights (in acre feet)	30,622	30,622	
Adjudicated Rights (cost per acre foot)	$ 20.84	$ 9.89	

TABLE 13. METER TESTING PROGRAM FOR 2012-13

PARTY	OWNER DESIGNATION	TEST DATE	METER ERROR[1/]		NOTES
Alhambra, City of	WELL NO. 2	-	-	-	Inactive
Arcadia, City of	ANOAKIA	1/22/2013	2.2%	Slow	
	CHAPMAN 6 A	-	-	-	Inactive
	CHAPMAN 6 B	-	-	-	Inactive
	CHAPMAN 7	1/31/2013	0.5%	Slow	
	COLORADO	1/22/2013	1.3%	Slow	
	HUGO REID	-	-	-	Inactive
	ORANGE GROVE 1A	1/31/2013	1.8%	Slow	
	ORANGE GROVE 2A	1/22/2013	3.8%	Fast	
	ORANGE GROVE 5A	1/31/2013	1.1%	Slow	
	ORANGE GROVE 6	1/31/2013	0.9%	Slow	
	RANCHO 6	-	-	-	Inactive
California-American Water Company	LAMANDA PARK	-	-	-	Inactive
	LOMBARDY	2/21/2013	1.6%	Fast	
	OAK KNOLL	-	-	-	Inactive
	OSWEGO	-	-	-	Inactive
	PATTON	2/21/2013	1.2%	Fast	
	WINSTON	2/21/2013	3.8%	Fast	
East Pasadena Water Company	WELL NO. 1	-	-	-	Inactive
	WELL NO. 7	5/30/2013	0.6%	Fast	
	WELL NO. 8	1/22/2013	3.0%	Fast	
H.E. Huntington Library & Art Gallery	CANYON	2/14/2013	2.6%	Fast	
	ORLANDO	-	-	-	Inactive
	ROSCOE MOSS	2/14/2013	3.1%	Fast	
	BUDDY MOSS	2/14/2013	3.9%	Fast	
Kinneloa Irrigation District	K-3	4/4/2013	1.4%	Slow	
	WAGNER	-	-	-	Inactive
	WILCOX	4/4/2013	0.9%	Fast	
La Canada Irrigation District	WELL NO. 1	-	-	-	Inactive
	WELL NO. 6	6/14/2013	0.1%	Slow	
Las Flores Water Company	WELL NO. 2	9/26/2012	1.5%	Slow	
Lincoln Avenue Water Company	WELL NO. 3	6/14/2013	0.4%	Fast	
	WELL NO. 5	6/14/2013	12.7%	Fast	
Pasadena	ARROYO	6/17/2013	1.0%	Slow	
	BANGHAM	6/17/2013	0.9%	Slow	
	COPELIN 3	6/18/2013	0.3%	Fast	
	CRAIG	-	-	-	inoperable
	EATON 51	-	-	-	Inactive
	GARFIELD	6/17/2013	0.8%	Slow	
	GROUNDS-INJECT.	-	-	-	inoperable

1/ Slow=Percent production meter is under recording
Fast=Percent production meter is over recording

TABLE 13. METER TESTING PROGRAM FOR 2012-13

PARTY	OWNER DESIGNATION	TEST DATE	METER ERROR[1/]		NOTES
Pasadena, City of (cont)	JOURDAN	-	-	-	Inactive
	MONTE VISTA	-	-	-	contamination
	NEW CHAPMAN	6/18/2013	0.3%	Slow	
	PASA 52	12/4/2012	0.3%	Slow	
	SHELDON 1	-	-	-	Inactive
	SUNSET	6/17/2013	0.2%	Slow	
	VENTURA	6/18/2013	0.0%	-	
	VILLA	-	-	-	inoperable
	WELL 58	6/18/2013	1.5%	Slow	
	WELL 59	6/25/2013	0.8%	Slow	
	WINDSOR	-	-	-	inoperable
	WOODBURY	6/25/2013	1.2%	Slow	
Pasadena Cemetery Association	WELL NO. 2-3	6/3/2013	998.5%	Fast	
	WELL NO. 4	-	-	-	Inactive
Rubio Canon Land and Water Assoc.	WELL NO. 4	5/30/2013	0.0%	-	
	WELL NO. 7	5/30/2013	1.8%	Fast	
San Gabriel County Water District	VAN NUYS 3	6/11/2013	2.1%	Fast	
Sierra Madre, City of	WELL NO. 3	6/27/2013	1.1%	Slow	
	WELL NO. 4	6/20/2013	0.9%	Slow	
	WELL NO. 5	6/20/2013	0.1%	Fast	
	WELL NO. 6	6/27/2013	0.7%	Slow	
Sunny Slope Water Company	WELL NO. 1	-	-	-	Inactive
	WELL NO. 6	-	-	-	Inactive
	WELL NO. 11	6/19/2013	0.3%	Fast	
	WELL NO. 12	6/19/2013	2.3%	Fast	
Valley Water Company	WELL NO. 1	1/4/2013	2.6%	Slow	
	WELL NO. 2	1/7/2013	2.1%	Fast	
	WELL NO. 3	1/18/2013	4.5%	Fast	
	WELL NO. 4	1/7/2013	0.1%	Fast	

1/ Slow=Percent production meter is under recording
Fast=Percent production meter is over recording

APPENDIX A

Significant Actions

by the

Raymond Basin Management Board

APPENDIX A
SIGNIFICANT ACTIONS BY RAYMOND BASIN MANAGEMENT BOARD
2012-13

July 18, 2012

- Authorized the Executive Officer to execute agreement with the Main San Gabriel Basin Watermaster for administrative services for fiscal year 2012-13.
- Adopted a Resolution of Appreciation and Commendation for Charles E. Shaw (Resolution No. 45-07-12).
- Adopted a Resolution Establishing a Reserve Policy (Resolution 44-0712)

October 17, 2012

- Adoption of the 2011-12 Financial Audits.
- Accepted and approved the Annual Report of Watermaster Service in the Raymond Basin for fiscal year 2011-12.

January 16, 2013

- Approved Cooperative Agreement for the Santa Anita Stormwater Flood Management and Seismic Strengthening Project
- Approved the renewal of the Board Investment Policy.

April 17, 2013

- Unanimously carried, upon recommendation by the Nominating Committee that the slate of officers for 2012-13 is as follows: Bob Hayward, Chair; Chris Cimino, Vice Chair; Tom Tait, Secretary; Shan Kwan, Treasurer; Anthony Zampiello, Assistant Secretary-Treasurer.
- Adopted fiscal budget and apportionment of annual assessments among the parties for fiscal 2013-14 along with the corresponding assessments for such year.
- Approved consultant selection to prepare the 2012-13 Financial Audit.
- Authorized and approved expenditure for financial audit for fiscal 2012-13.
- Determination that the Long Term Storage administrative fee should remain at $1.50 per acre foot for fiscal 2012-13; and a Long Term Storage loss factor of 1.0% remain in place for fiscal 2012-13.
- Authorized the Executive Officer to work with Bucknam & Associates, Geoscience, Stetson Engineers, and within the amounts budgeted for fiscal year 2013-14.

APPENDIX B

Chronology of the Raymond Basin

APPENDIX B
CHRONOLOGY OF THE RAYMOND BASIN

1880 Southern California land development boom begins.

1881 First wells drilled in Raymond Basin to supply water for irrigated agriculture and expanding municipalities.

1908 U.S. Geological Survey report on Raymond Basin published, showing 141 wells in operation.

1913 Overdraft of Raymond Basin begins.

1914 City of Pasadena Water Department initiates a program to replenish the basin by conserving and spreading storm runoff on gravel beds at the foot of the San Gabriel Mountains. Pasadena continued the spreading program until 1924, by which time it had replenished the basin by more than 20,000 AF, using water that otherwise would have made its way to the Los Angeles River.

1924 Pasadena terminates its spreading program partly because of the sharp decline in available runoff due to another dry cycle that began in 1922. Through the remainder of the 1920s, underground water levels dropped, some wells failed and longer pumping lifts raised operating costs in the others. The drop in water levels was not just seasonal; they no longer recovered in the spring.

Raymond Basin users continued to pump groundwater without fully understanding the effects of their actions on each other and on the basin. A full description of the basin's geology and underground water storage characteristics did not appear until 1934.

1928 In the meantime, Pasadena focused on acquiring a supplemental water supply. Consequently, Metropolitan Water District of Southern California was established to build and operate a Colorado River aqueduct, although this water would not be available for at least a decade.

California Division of Water Resources granted Pasadena permits to store and divert flood flows of the San Gabriel River and divert up to 4,000 AF of water per year.

1929 Pasadena voters approved a $10 million bond issue to finance the construction of Morris Dam on the San Gabriel River and a conduit to the

city.

1932 San Gabriel Valley Protective Association sued to prevent Pasadena from building the dam and diverting the water. MWD helped resolve the dispute by agreeing to purchase Morris Dam from Pasadena once Colorado River water became available.

1934 California Division of Water Resources published Bulletin 45, giving a full description of the basin's geology and storage characteristics. It was not until the early 1940s that users learned the basin had been in overdraft every year since 1913, and that the annual overdraft had averaged 7,000 acre feet, or roughly 33% of the average annual safe yield.

1935 Pasadena officials called together representatives of other known Raymond Basin producers, reviewed the published reports of DWR and attempted to negotiate a pumping reduction on a cooperative rather than an adversarial basis. These efforts failed and city officials contemplated legal action.

Pasadena officials had reached the limits of their willingness to act alone. The city reduced pumping somewhat when it began to receive additional supplies from the San Gabriel River. But in order to redress the overdraft on its own, Pasadena would have to cut its production by one-half and import the expensive Colorado River water when available, while other basin users continued to meet all their needs with groundwater. Pasadena was unwilling to do so.

1937 Pasadena chose instead to defend its right as a senior Raymond Basin appropriator. On September 23, 1937, Pasadena initiated proceedings in Superior Court against Alhambra and other major Raymond Basin water users. The action sought to adjudicate and quiet title to Pasadena's rights in the basin, and to enjoin the annual overdraft. The trial court required Pasadena to amend its complaint to name as defendants all entities in the basin pumping more than 100 acre feet annually. There were 30 defendants in all. The judge also ruled that the suit was not a simple action to quiet title but was a general adjudication of water rights in the basin.

City of Pasadena v City of Alhambra et al., was the first basinwide adjudication of groundwater rights in California and the first to use the Court Reference Procedure under the California Water Code. That procedure authorized the referral of cases involving the determination of water rights to the Division of Water Resources by the state Department

of Public Works for investigation of the physical facts.

1939 20 parties were involved in the court reference procedure and petitioned the court to refer the factual issues to DWR for investigation. The judge directed the referee to determine the "safe yield" of the basin and ascertain whether there was a surplus or an overdraft.

The investigation was expensive and time-consuming. Nevertheless, the referee's investigation avoided multiple concurrent investigations by several parties and provided the parties and court with a coherent, single view of the Raymond Basin and its problems.

1943 Referee's report filed in Raymond Basin litigation; this draft report described the basic geology of the Raymond Basin and specified the location of the Monk Hill Basin, and the Pasadena and Santa Anita subareas. The draft report stated the safe yield for Raymond Basin as a whole was 21,900 acre feet per year and recommended limiting withdrawals to the safe yield and using imported water to meet further demands.

As the referee's draft report circulated among the parties, most tried to work out a settlement. Litigation had changed the default condition of the negotiations. Before litigation, failure to negotiate a settlement simply continued the status quo--the pumping race. With litigation underway, if the parties failed to achieve a negotiated settlement, the case would go to trial and the court would decide the parties' water rights. Since Raymond Basin was the first groundwater basin to be adjudicated and California water rights law was very complex, the possible outcomes of a trial were highly uncertain. Waiting for the judge's decision was risky.

The parties had already spent four years and considerable sums of money on this dispute. A negotiated settlement offered the possibility of minimizing additional expenses. Negotiation was facilitated by the presence of shared counsel; one attorney was either counsel or special counsel for sixteen of the parties. This unusual communication link made it easier to reach a cooperative agreement.

1943 Most parties agreed to appoint a committee of seven attorneys and engineers to work out a stipulated agreement that could be presented to the court. All but two parties agreed to the stipulation which provided:

1) Admission that taking of the water was adverse to the claims other parties, thus satisfying the requirements of a superior prescriptive right;

2) Allocation of the basin's safe yield among the parties;
3) Declaration and protection of each party's right to a specified proportion of the safe yield; and
4) Arrangement for the exchange of pumping rights among parties

On April 5, 1944, Judge Collier designated the Division of Water Resources to serve as watermaster for the stipulation.

1944 Judge Collier signed the judgment on December 23, 1944, adopting the stipulation worked out by the parties. By mid 1944, all of the parties except the California-Michigan Land and Water Company had agreed to the stipulation. His decision is known as "mutual prescription". The judge accepted the determination of a "present unadjusted right" defined as the highest amount of water continuously produced during a five-year period prior to the filing of the lawsuit. Each party owned this right by prescription, and the rights were of equal priority. The judge then defined a "decreed right" for each party which was that party's present unadjusted right adjusted downward about one-third so that the sum of all parties' decreed rights matched the estimated safe yield.

The stipulation and judgment in *Pasadena v. Alhambra* completed the first phase of institution building in Raymond Basin. Water users had constituted a governance structure for the basin through the adjudication process. The stipulation and judgment also established a management program for the basin, within and subject to this basin governance system. The management program was a fairly simple fixed safe-yield operation. The provisions of the stipulation and judgment designated: (1) the set of authorized users of the basin and provided for their entry and exit; (2) assigned them rights to specific quantities of pumped water each year and provided for the exchange, lease or sale of those rights; and (3) limited them in the aggregate to the basin's estimated safe yield.

1945 California-Michigan Land and Water Company appealed the *Pasadena v. Alhambra* judgment and the basic governance structure and management program were quickly called into question. As the judge anticipated, his decision based on the stipulation's idea of mutual prescription was the basis for the California-Michigan Land and Water Company appeal.

1947 In response to California-Michigan's appeal, the District Court of Appeal reverses and remands *Pasadena v. Alhambra.*

1949 In response to an appeal filed to the District Court of Appeals decision,

the California Supreme Court affirmed *Pasadena v. Alhambra* overturning the Court of Appeal and affirming the judge's original judgment. The Supreme Court also considered the interests of the various publics served by Raymond Basin water producers. Proportionate reduction by each producer would be less disruptive of the local water economy than the complete elimination of rights for some. Without explicitly endorsing the judge's mutual-prescription reasoning, the Supreme Court sustained his result. This had the effect, intended or not, of adding a new doctrine to California water law.

Although a new doctrine had been added, the California law of water rights had not been overturned or revolutionized. *Pasadena v. Alhambra* had been decided and affirmed without overruling any previous water rights decisions. Mutual prescription was not substituted for the old scheme, but allowed to develop alongside it. *Pasadena v. Alhambra* provided an alternative capacity in which groundwater users could resolve overdraft problems. With the Supreme Court's approval of *Pasadena v. Alhambra*, a community of water users who had worked out their own settlement of an overdraft could approach a court with some assurance that the judge would recognize the settlement and place public authority behind it. *Pasadena v. Alhambra* allowed users of an overdrafted basin to constitute their own basin governance systems and management programs.

The advent of mutual prescription meant that pumpers in every nonadjudicated basin in the state faced the uncertain situation of not knowing when a basin could become overdrawn. Therefore, the decision in *Pasadena v. Alhambra* had the unintended effect of encouraging pumpers in other basins to increase pumping in order to enlarge and protect their right after a potential adjudication.

1950 City of Pasadena requested redetermination of Raymond Basin safe yield based on observed changes in basin conditions. The court granted the motion on November 17, 1950 and appointed DWR as referee to make the review.

1955 The DWR Report of Referee filed October 5, 1954 increased the estimated safe yield to a total of 30,622 acre feet. The Court issued a Modification of Judgment on April 29, 1955, increasing the decreed rights of the parties proportionally to a total of 30,622 acre feet, effective July 1, 1955.

1974 On January 17, 1974, the second modification of Raymond Basin

Judgment was signed allowing parties credit for spreading of canyon diversions in spreading grounds in the vicinity of the Arroyo Seco, Eaton Wash, and Santa Anita Creek Canyon.

Source of above information: "Dividing the Waters" by William Blomquist

1984 On March 26, 1984, the third modification of Raymond Basin Judgment was approved, reconstituting the basin governance system by assigning watermaster responsibilities to Raymond Basin Management Board, successor to the Raymond Basin Advisory Board. The Board's authority to manage storage water in the basin ushered in the era of conjunctive use and provided the mechanism for local management of the groundwater resource while retaining the safe yield concept of the original adjudication.

1992-1993 On October 7, 1992 and March 10, 1993: Long Term Storage policies were adopted and Basin storage capacity determined and allocated to parties for their use; an important step in allowing all parties to benefit from the storage potential of the Basin.

2001 In July of 2001, by way of a letter to the Chief Executive Officer of Metropolitan Water District, the Raymond Basin Board affirmed their support for conjunctive use in the Basin, once potential negative impacts are identified, evaluated, and resolved.

At the same meeting, the Board approved the proposed concept of the Foothill/Monk Hill Conjunctive Use Program under the following conditions:

1) Five Monk Hill producers that were also member agencies of Foothill Municipal Water District would participate.
2) Storage allotted to the program would be 7,500 acre feet, which was a number equal to 10% of the 75,000 acre feet of storage deemed at that time to be set aside for conjunctive use (CH2 M Hill determined that additional available storage in the Monk Hill was approximately 12,000 acre feet).
3) No imported MWD water could be used for injection unless the TDS is lower than 450 ppm.
4) Foothill and Monk Hill Producers submit the detailed final agreement

terms with MWD for the program for Board evaluation and approval prior to issuing the final approval of the program.

2002 On July 10, 2002, the Board took action to conceptually approve the MWD Lead Agency Agreement to enable preparation of environmental documentation for the Pasadena portion of the Raymond Basin Conjunctive Use Program. Additionally, the Board appointed a steering committee to draft a request for proposal to perform a baseline study of the Basin. The study was intended to be used to evaluate the impacts of ongoing and future storage programs in the Basin.

On August 10, 2002, the Board approved the Lead Agency Agreement for the Raymond Basin/MWD Conjunctive Use Program.

2003 The Board approved the proposed concept of the Foothill/Monk Hill Conjunctive Use Program under the following conditions:
1) Five Monk Hill producers that were also member agencies of Foothill Municipal Water District would participate and storage under the program.
2) Storage would be allotted equitably among those agencies.
3) Storage set aside for the program was increased from 7,500 acre feet to 9,000 acre feet with that amount being subtracted from the other conjunctive use program proposed by the City of Pasadena. This would leave 64, 000 acre feet of storage for future consideration as part of the Pasadena Program.
3) No imported MWD water could be used for injection unless the TDS is lower than 450 ppm.
4) Extraction of project water would only occur after Metropolitan placed a call on this stored water as set forth by the guidelines within the final agreement.

The Board engaged Geoscience to prepare the Baseline Groundwater Assessment of the Raymond Basin which included a ground water flow model of the study area.

The City of Pasadena requested that the Pumping and Storage Committee review the applied calculation for spreading credits in the Arroyo and Milliard Canyons. The City requested that the variable calculation in use at the time be replaced with a straight 80% credit for water spread. After extensive review, the Committee recommended that staff use the 80% calculation as an interim method until the impact on water spread for general benefit could be evaluated. The Board approved this approach on July 9, 2003.

During the summer of 2003, an observation well (the Bricker Well) used in calculating the City of Sierra Madre's Salvage Credit went completely dry. After inspection, it was determined that this condition was due to a combination of age and prolonged dry conditions in the Basin. In October of 2003 the Board made two determinations with regards to the Bricker Well:

1) Base calculations for Sierra Madre's Salvage Credit for that year on the assumption that there was zero outflow from the Basin.
2) Direct the City of Sierra Madre to construct a new observation well.

On December 8, 2003, Raymond Basin submitted its first application for $30 million to the Corps of Engineers Section 219 Environmental Infrastructure Program for a raw water supply pipeline, recharge enhancement and additional monitoring wells.

2004 Recognizing conditions highlighted by the ongoing Baseline Groundwater Assessment; the Board authorized staff to assemble a consulting team to seek Federal Grant funding to implement needed water resource enhancement projects for future supply reliability.

In February of 2004, the Baseline Groundwater Assessment of the Raymond Basin was completed. After initial review of the groundwater modeling for the Baseline Groundwater Assessment Geoscience was authorized to prepare partial tracking and capture zone modeling for the same scenarios used in the study. It was also determined that future additional modeling would be required to fully characterize contamination migration.

Baseline Assessment findings indicated that although proposed storage programs would have minimal impact on Basin water levels, the ability for the Basin to sustain production rates in the long-term may not be feasible without increased replenishment. The basin management strategies outlined in the assessment were used to develop projects and concepts meant to eventually stabilized groundwater levels in the Basin.

In July of 2004 the Board of Directors vote to accept a proposal by the Main San Gabriel Basin Watermaster to provide for Anthony Zampiello's continued service as Executive Officer utilizing Watermaster's staff to provide support. The Raymond Basin Management Board's offices officially move to Azusa, CA.

At their September 2004 strategic planning workshop the Board set a goal

to obtain $50 Million in outside funding in matching funds for much needed water resource projects in the Basin. After a series of meetings with other local basin managers and water agencies it is determined that a local coalition should be formed to seek Federal funding.

In October of 2004 Raymond Basin Staff and Board members began to actively participate in Regional Technical meetings hosted by the Main San Gabriel Basin Watermaster. These meetings were designed to identify regional water supply issues and possible solutions. The study area included Foothill and Valley Communities stretching from Rancho Cucamonga to La Canada/Flintridge.

Raymond Basin along with other water agencies and municipalities collaborate to develop water supply enhancement projects which are packaged together and called the Southern California Foothill Communities Water Supply Reliability Program (WSRP).
Study projects include:
1) A 14 mile imported replenishment water pipeline from Azusa into the Raymond Basin eventually terminating in northern Pasadena.
2) An inter-connection from the Metropolitan Water District Foothill Feeder to the San Gabriel Valley Municipal Water District's (SGVMWD) pipeline in the San Dimas/La Verne area.
3) Emergency interconnections from the SGVMWD pipeline to the Water Facilities Authority, Three Valleys Municipal Water District and Inland Empire Utilities Agency treatment plants in the eastern San Gabriel Valley and Inland Empire.
4) The extension of the SGVMWD water delivery system south to the Alhambra, San Gabriel and Monterey Park area to mitigate groundwater production impacts in the area of the Main San Gabriel Basin commonly referred to as the Alhambra Pumping Hole.
5) An area-wide reconnaissance and feasibility study of natural groundwater recharge enhancement opportunities using new and existing facilities within the combined watersheds. The study area includes portions of the Raymond Basin, Main San Gabriel Basin, Six Basins and Chino Basin.

2005 January 12, 2005, Raymond Basin holds a community meeting for State and local elected officials to unveil the Southern California Foothill Communities Water Supply Reliability Program (WSRP).

February 2005, the Board is informed that the Foothill Conjunctive Use Program and City of Pasadena's storage proposal will not include a State Water Project Pipeline extension from the Glendale area. MWD also

informs the Board that it will no longer be the lead agency for CEQA purposes on the 64,000 acre foot Pasadena Storage Program.

In October 2005, construction on the Chelsea Well (the Bricker Well replacement) is completed.

2006 Draft Supplemental Water Quality Criteria for Raymond Basin is published in March and distributed to the all parties to the judgment.

May 17, 2006, the MWD Board approves $480,000 to reimburse the City of Pasadena for CEQA review and preliminary design work to develop a 64, 000 acre foot storage program within the Raymond Basin.

July 2006, the Board entered into an Agreement to provide in-kind services as a partner in the Arroyo Watershed Feasibility Study to identify and evaluate potential habitat an water supply restoration projects along the Arroyo Seco Corridor.

October 2006, the Board adopted criteria for supplemental water paving the way for development of replenishment and supplemental water to be stored.

2007 Raymond Basin Management Board and Main San Gabriel Basin Watermaster formed the Foothill Water Coalition (FWC). The main focus of the Coalition is to cooperatively seek Federal and State funding for regional water supply reliability projects. The charter members include the Raymond Basin Management Board, Main San Gabriel Basin Watermaster, San Gabriel Valley Municipal Water District, Upper San Gabriel Valley Municipal Water District, Three Valleys Municipal Water District, Inland Empire Utilities Agency, Six Basins and Chino Basin Watermaster.

January 2007, Monk Hill Task Force or working group is formed to review and resolve issues unique to the Monk Hill producers and their region.

April 2007, Raymond Basin staff is authorized to act as lead administrative agency for The Water Supply Reliability Coalition, which would eventually become the Foothill Water Coalition.

October 2007, as planned, the Board authorizes work to begin on (Phase I) of comprehensive Ground Water Monitoring and Management Plan,

mainly focused on groundwater level and extraction management strategies in the Pasadena Subarea, of the Western Unit.

November 2007, HR 1495- The Water Resources Development Act became United States Law 110-114 on November 9, 2007. Section 5050 of that law authorizes $5 million for Raymond Basin and FWC projects.

2008 January 2008, Recognizing declining water levels and impacts on supply the Board adopted resolution 42-0109. Resolution 42-0109 puts in place self imposed pumping reductions of 30% implemented over five years in the Pasadena Subarea. This resolution was adopted with the goal of a reduction of water produced below 1955 Decreed Rights from 17,843 Acre Feet to 12,493 Acre Feet, dissolution of remaining Long-Term Storage accounts and increased groundwater levels. In order to meet this goal, water production reductions were implemented incrementally at a rate of 1,070 Acre Feet per year for five years until a 30% reduction is achieved. Implementation set to begin July 1, 2009.

July 2008, as Lead Agency for the Foothill Water Coalition, the Raymond Basin Management Board enters into a planning agreement with the Army Corps of Engineers to prepare the project implementation plan for the feasibility and implementation of the Coalition and Raymond Basin suite of water reliability projects.

2009 January 2009, the Board approved Resolution 43-0409 creating the Monk Hill Perchlorate Pool. The Resolution established a temporary storage pool for clean-up of un-produced water in the area of the Raymond Basin, Western Unit, known as the Monk Hill Subarea. The goal is to help mitigate Perchlorate contamination in the Monk Hill Subarea and retaining water production historically transferred to the area of the Raymond Basin, Western Unit, known as the Pasadena Subarea as Long Term Storage. By establishing the Clean-up Pool (Clean-up Pool) this Resolution is intended as a means to improve water quality and supply conditions in order to avoid disputes between impacted parties.

2010 July 2010, the Board adopted a Joint Prosecution Agreement and Cost-Sharing Agreement regarding a Proposed Rule of the United States Fish and Wildlife Service regarding the designation of a Critical Habitat for the Santa Ana Sucker. The adoption does not bind RBMB with any financial obligation, rather allows participation in a confidential working group.

2011 January 2011, the Board approved membership in the California

Groundwater Coalition. The Coalition's mission is to educate policy makers, represent groundwater interests in legislative and other policy areas, and to promote a fair share of funding for statewide programs.

April 2011, the Board adopted revisions to the Rules and Regulations pertaining to discharge credit.

July 2011, the Board approved a contract extension with the Army Corps of Engineers for funding and "in-kind" services match. The extension was based on matching funds whereby the Corps would provide $125,000 toward additional groundwater modeling and basin study, provided RBMB approved an equal amount.

2012 January 2012, the Board adopted revisions to the Rules and Regulations pertaining to annual report distribution consistent with the Judgement.

2013 January 2013, the Board approved the Cooperative Agreement for the Santa Anita Stormwater Flood Management and Seismic Strengthening Project. Participants in this agreement are Los Angeles County, City of Arcadia, City of Sierra Madre, and the Raymond Basin Management Board. The project involves improvements to Santa Anita Dam and existing facilities to better capture stormwater and maximize conservation for the Eastern Raymond Basin.

APPENDIX C

Program for Spreading

Credit Certification

by
Los Angeles County Department of Public Works
and
Raymond Basin Management Board

PRELIMINARY

SUMMARY OF WATER DIVERSIONS, SPREAD AND PUMPING CREDIT [1/]

(acre feet)

	Eaton Canyon Area																			
	Kinneloa Irrigation District																			
	Eaton Wash		Pasadena Glen			Brown Reservoir			Total			Las Flores Water Company			City of Pasadena Eaton Wash			Rubio Canon Land & Water Association		
Month/Year	Diverted	Spread	Diverted	Outflow	Spread	Diverted	Outflow	Spread	Diverted	Spread	**Credit [2/]**	Diverted	Spread	**Credit [2/]**	Diverted	Spread	**Credit [2/]**	Diverted	Spread	**Credit [2/]**
Jul-12	2.9	2.9	11.0	0.0	11.0	0.0	0.0	0.0	13.9	13.9	**11.1**	6.9	6.9	**5.5**	21.0	21.0	**16.8**	3.4	3.4	**2.7**
Aug-12	2.8	2.8	10.8	0.0	10.8	0.0	0.0	0.0	13.6	13.6	**10.9**	7.1	7.1	**5.7**	16.9	16.9	**13.5**	4.5	4.5	**3.6**
Sep-12	2.5	2.5	11.2	0.0	11.2	0.0	0.0	0.0	13.7	13.7	**11.0**	1.0	1.0	**0.8**	11.9	11.9	**9.5**	5.7	5.7	**4.6**
Oct-12	3.8	3.7	11.5	0.0	11.5	0.0	0.0	0.0	15.3	15.2	**12.2**	6.7	6.6	**5.3**	16.8	16.5	**13.2**	3.3	3.2	**2.6**
Nov-12	3.9	3.9	9.8	0.0	9.8	0.0	0.0	0.0	13.7	13.7	**11.0**	11.5	11.4	**9.1**	10.4	10.3	**8.2**	3.2	3.2	**2.6**
Dec-12	2.8	2.8	9.8	0.0	9.8	0.0	0.0	0.0	12.6	12.6	**10.1**	13.4	13.0	**10.4**	43.0	41.9	**33.5**	4.1	4.1	**3.3**
Jan-13	3.1	2.8	11.1	0.0	11.1	0.0	0.0	0.0	14.2	13.9	**11.1**	6.6	6.0	**4.8**	78.9	72.1	**57.7**	3.9	3.7	**3.0**
Feb-13	2.6	2.5	9.8	0.0	9.8	0.0	0.0	0.0	12.4	12.3	**9.8**	6.4	6.1	**4.9**	15.3	14.5	**11.6**	3.5	3.4	**2.7**
Mar-13	2.8	2.4	10.6	0.0	10.6	0.0	0.0	0.0	13.4	13.0	**10.4**	7.8	6.8	**5.4**	23.1	20.0	**16.0**	3.9	3.1	**2.5**
Apr-13	2.6	2.6	9.6	0.0	9.6	0.0	0.0	0.0	12.2	12.2	**9.8**	6.5	6.5	**5.2**	26.6	26.6	**21.3**	3.7	3.7	**3.0**
May-13	3.0	2.8	10.7	0.0	10.7	0.0	0.0	0.0	13.7	13.5	**10.8**	6.0	5.7	**4.6**	11.1	10.4	**8.3**	2.4	2.4	**1.9**
Jun-13	2.8	2.8	10.0	0.0	10.0	0.0	0.0	0.0	12.8	12.8	**10.2**	6.7	6.7	**5.4**	5.1	5.1	**4.1**	3.3	3.3	**2.6**
	35.6	34.5	125.9	0.0	125.9	0.0	0.0	0.0	161.5	160.4	**128.4**	86.6	83.8	**67.1**	280.1	267.2	**213.7**	44.9	43.7	**35.1**

1/ Raymond Basin Management Board computed the diversions and pumping credit; Los Angeles County Department of Public Works determined the spreading amounts.
2/ Based on 80% times amount Spread for all Parties

PRELIMINARY

SUMMARY OF WATER DIVERSIONS, SPREAD AND PUMPING CREDIT [3/]

(acre feet)

	Arroyo Seco Area															TOTAL EATON CANYON AND ARROYO SECO		
	Lincoln Avenue Water Company[4/]			City of Pasadena[5/]														
				Arroyo Seco			Millard Canyon			PWP Ponds			Total					
Month/Year	Diverted	Spread	Credit [6/]	Diverted	Spread	Credit [6/]	Diverted	Spread	Credit [6/]	Diverted	Spread	Credit [7/]	Diverted	Spread	Credit	Diverted	Spread	Credit
Jul-12	12.7	12.7	**7.6**	72.6	72.6	**43.6**	0.0	0.0	**0.0**	70.2	70.2	**56.2**	142.8	142.8	**99.8**	200.7	200.7	**143.5**
Aug-12	8.5	8.5	**5.1**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	43.8	43.8	**35.0**	43.8	43.8	**35.0**	94.4	94.4	**73.8**
Sep-12	7.5	7.5	**4.5**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	38.2	38.2	**30.6**	38.2	38.2	**30.6**	78.0	78.0	**61.0**
Oct-12	9.7	9.7	**5.8**	3.2	3.2	**1.9**	0.0	0.0	**0.0**	46.0	46.0	**36.8**	49.2	49.2	**38.7**	101.0	100.4	**77.8**
Nov-12	14.8	14.8	**8.9**	12.1	12.1	**7.3**	0.0	0.0	**0.0**	37.1	37.1	**29.7**	49.2	49.2	**37.0**	102.8	102.6	**76.8**
Dec-12	38.5	38.5	**23.1**	28.3	28.3	**17.0**	0.0	0.0	**0.0**	19.4	19.4	**15.5**	47.7	47.7	**32.5**	159.3	157.8	**112.9**
Jan-13	32.4	32.4	**19.4**	84.3	84.3	**50.6**	0.0	0.0	**0.0**	42.3	42.3	**33.8**	126.6	126.6	**84.4**	262.6	254.7	**180.4**
Feb-13	23.0	23.0	**13.8**	64.4	64.4	**38.6**	0.0	0.0	**0.0**	34.9	34.9	**27.9**	99.3	99.3	**66.5**	159.9	158.6	**109.3**
Mar-13	17.3	17.3	**10.4**	78.8	78.8	**47.3**	0.0	0.0	**0.0**	29.4	29.4	**23.5**	108.2	108.2	**70.8**	173.7	168.4	**115.5**
Apr-13	12.7	12.7	**7.6**	67.0	67.0	**40.2**	0.0	0.0	**0.0**	24.1	24.1	**19.3**	91.1	91.1	**59.5**	152.8	152.8	**106.4**
May-13	11.9	11.9	**7.1**	14.4	14.4	**8.6**	0.0	0.0	**0.0**	40.8	40.8	**32.6**	55.2	55.2	**41.2**	100.3	99.1	**73.9**
Jun-13	8.3	8.3	**5.0**	11.0	11.0	**6.6**	0.0	0.0	**0.0**	42.2	42.2	**33.8**	53.2	53.2	**40.4**	89.4	89.4	**67.7**
	197.3	197.3	**118.3**	436.1	436.1	261.7	0.0	0.0	0.0	468.4	468.4	374.7	904.5	904.5	**636.4**	1,674.9	1,656.9	**1,199.0**

3/ Arroyo Seco and Millard Canyon spreading calculated in accordance with procedures in Attachment A to July 9, 2003 meeting minutes and Raymond Basin Area Spreading Methodology.
4/ Includes La Vina Canyon weir spreading.
5/ All Pasadena diverted and spread data to Arroyo Seco, Millard Canyon and PWP ponds are preliminary and subject to revision.
6/ Based on 60% times amount diverted and spread for Lincoln Avenue Water Company and City of Pasadena (Arroyo Seco & Millard Canyon). Remaining 40% spread for general benefit of basin, as shown on page C-3.
7/ Based on 80% times amount spread for City of Pasadena (PWP Ponds)

SUMMARY OF WATER DIVERSIONS, SPREAD AND PUMPING CREDIT [8/]
(acre feet)

Month/Year	Other Spread				Total Raymond Basin Spread
	Los Angeles County Department of Public Works		Lincoln Avenue Water Company and City of Pasadena	City of Sierra Madre	
	Eaton Grounds	Santa Anita	Arroyo Seco Area General Benefit [9/]	Little Santa Anita Canyon and street runoff	
Jul-12	0.0	3.0	34.1	36.3	274.1
Aug-12	0.0	0.0	3.4	15.1	112.9
Sep-12	0.0	0.0	3.0	15.0	96.0
Oct-12	0.0	0.0	5.2	15.5	121.1
Nov-12	0.0	0.0	10.8	15.0	128.4
Dec-12	0.0	0.0	26.7	15.5	200.0
Jan-13	0.0	28.0	46.7	15.5	344.9
Feb-13	0.0	66.0	35.0	5.1	264.7
Mar-13	0.0	9.0	38.4	13.5	229.3
Apr-13	0.0	11.0	31.9	98.4	294.1
May-13	0.0	0.0	10.5	66.5	176.1
Jun-13	0.0	0.0	7.7	15.4	112.5
	0.0	117.0	253.4	326.8	2,354.1

8/ Raymond Basin Management Board computed the diversions and pumping credit.
9/ Based on 40% times amount Lincoln Avenue Water Company and City of Pasadena diverted in Arroyo Seco Area, as shown on page C-2.

APPENDIX D

Groundwater Extraction Data

APPENDIX D

RAYMOND BASIN GROUNDWATER PRODUCTION SUMMARY
JULY 2012-JUNE 2013
(in acre-feet)

PARTY NAME	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	YTD AF TOTALS	ANNUAL [1/] ALLOWABLE	BALANCE	YTD % PUMPED
Monk Hill Basin																
La Canada Irrigation District	0.00	55.34	1.95	0.00	0.00	0.44	0.28	17.96	2.36	0.00	0.00	15.98	94.31	110.00	15.69	85.7%
Las Flores Water Company	53.07	43.24	33.37	28.93	26.12	16.32	18.21	14.36	15.42	18.13	20.10	31.26	318.53	359.80	41.27	88.5%
Lincoln Avenue Water Company	228.65	234.96	226.04	194.65	169.99	129.00	134.62	134.92	178.32	193.70	231.59	215.51	2,271.95	820.90	-1,451.05	276.8%
Pasadena, City of	481.79	474.03	477.82	478.82	464.74	427.65	428.65	409.99	436.87	345.67	251.78	229.69	4,907.50	6,429.40	1,521.90	76.3%
Pasadena Cemetery Association	10.00	10.00	10.00	4.42	15.40	4.42	4.42	0.37	8.33	8.18	7.28	14.96	97.78	100.10	2.32	97.7%
Rubio Canon Land & Water Assoc.	226.64	245.02	245.38	175.85	140.80	95.21	103.16	102.40	133.01	167.07	162.42	210.35	2,007.31	1,580.40	-426.91	127.0%
Valley Water Company	192.74	209.56	195.34	118.40	59.79	0.22	0.37	30.91	1.61	0.36	84.15	192.19	1,085.64	876.70	-208.94	123.8%
Subtotals	**1,192.89**	**1,272.15**	**1,189.90**	**1,001.07**	**876.84**	**673.26**	**689.71**	**710.91**	**775.92**	**733.11**	**757.32**	**909.94**	**10,783.02**	10,277.30	-505.72	104.9%
Prior Year	*828.90*	*967.98*	*828.13*	*826.28*	*686.03*	*737.55*	*800.14*	*727.05*	*796.50*	*310.33*	*497.46*	*999.95*	*9,006.30*			
Pasadena Subarea with 24% Reduction																
Alhambra, City of	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	886.66	886.66	0.0%
Arcadia, City of	122.77	119.17	186.38	199.90	128.46	103.59	190.57	174.55	181.85	174.88	174.06	173.91	1,930.09	1,821.48	-108.61	106.0%
California-American Water Co.	133.64	148.12	141.84	118.53	134.39	120.69	148.01	143.30	173.86	213.92	268.59	205.83	1,950.72	1,977.14	26.42	98.7%
East Pasadena Water Company	35.23	22.61	24.89	26.63	27.12	21.93	25.00	25.94	33.88	44.66	52.56	53.55	394.00	412.80	18.80	95.4%
Huntington Library & Art Gallery	74.38	78.08	54.96	38.71	23.17	5.48	7.25	9.74	15.87	42.75	45.31	63.03	458.73	241.34	-217.39	190.1%
Kinneloa Irrigation District	73.21	82.54	74.51	56.67	44.24	14.59	19.19	55.08	52.72	48.02	51.24	69.84	641.85	577.36	-64.49	111.2%
Pasadena, City of	759.31	799.58	884.67	1,021.75	1,015.40	672.36	721.86	659.08	722.92	752.81	861.76	828.01	9,699.51	6,755.88	-2,943.63	143.6%
San Gabriel County Water Dist.	65.63	64.37	63.40	63.73	62.56	62.65	64.21	57.56	62.05	51.67	52.21	45.92	715.96	938.26	222.30	76.3%
Sunny Slope Water Company	35.22	32.23	32.22	34.53	29.50	15.39	15.98	3.72	83.87	135.89	141.40	147.56	707.51	1,339.88	632.37	52.8%
Subtotals	**1,299.39**	**1,346.70**	**1,462.87**	**1,560.45**	**1,464.84**	**1,016.68**	**1,192.07**	**1,128.97**	**1,327.02**	**1,464.60**	**1,647.13**	**1,587.65**	**16,498.37**	14,950.80	-1,547.57	110.4%
Prior Year	*1,399.56*	*1,435.95*	*1,249.13*	*1,163.84*	*1,054.51*	*1,041.83*	*1,126.98*	*951.29*	*1,015.99*	*1,099.83*	*1,342.13*	*1,204.92*	*14,085.96*			
Western Unit Totals	**2,492.28**	**2,618.85**	**2,652.77**	**2,561.52**	**2,341.68**	**1,689.94**	**1,881.78**	**1,839.88**	**2,102.94**	**2,197.71**	**2,404.45**	**2,497.59**	**27,281.39**			
Prior Year	*2,228.46*	*2,403.93*	*2,077.26*	*1,990.12*	*1,740.54*	*1,779.38*	*1,927.12*	*1,678.34*	*1,812.49*	*1,410.16*	*1,839.59*	*2,204.87*	*23,092.26*			
Santa Anita Subarea*																
Arcadia, City of	274.46	265.02	236.13	233.87	177.88	46.89	0.11	0.00	222.41	236.80	164.10	125.01	1,982.68	2,655.70	673.02	74.7%
Sierra Madre, City of	297.61	320.60	299.15	251.21	208.29	128.32	144.25	148.06	193.63	215.81	240.52	243.99	2,691.44	7,199.10	4,507.66	37.4%
Subtotals	**572.07**	**585.62**	**535.28**	**485.08**	**386.17**	**175.21**	**144.36**	**148.06**	**416.04**	**452.61**	**404.62**	**369.00**	**4,674.12**	9,854.80	5,180.68	47.4%
Prior Year	*551.81*	*595.45*	*566.62*	*530.97*	*450.59*	*390.57*	*482.76*	*438.37*	*467.41*	*430.63*	*494.58*	*534.11*	*5,933.87*			
RAYMOND BASIN TOTALS	**3,064.35**	**3,204.47**	**3,188.05**	**3,046.60**	**2,727.85**	**1,865.15**	**2,026.14**	**1,987.94**	**2,518.98**	**2,650.32**	**2,809.07**	**2,866.59**	**31,955.51**	35,082.90	3,127.39	91.1%
Prior Year	*2,780.27*	*2,999.38*	*2,643.88*	*2,521.09*	*2,191.13*	*2,169.95*	*2,409.88*	*2,116.71*	*2,279.90*	*1,840.79*	*2,334.17*	*2,738.98*	*29,026.13*			

[1/] Annual Allowable: Decreed Right, Carryover Right, Prior year spreading credit, and 24% Reduction in the Pasadena Subarea. Does not reflect any Leased amounts
* 1/16/13 Board reinstated the 500' level limitation

** **FHCUP STORAGE EXTRACTIONS (July '12 to June '13) certified by Foothill Municipal Water District**

JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**

APPENDIX E

Change in Well Status

APPENDIX E

2012-13 CHANGE IN WELL STATUS

Party	Owner Designation
New Wells	
NONE	
Destroyed Wells	
NONE	

APPENDIX F

Foothill Conjunctive Use Program

APPENDIX F

FOOTHILL CONJUNCTIVE USE PROGRAM
Fiscal Year 2012-13

Party	Storage* @ 6/30/2012 1/	Added 2/ Transferred	Loss (1%)	Extracted	Storage* @ 6/30/2012
Alhambra, City of	0	0.0	0.0	0.0	0
Arcadia, City of	0	0.0	0.0	0.0	0
Cal-American Water Co.	0	0.0	0.0	0.0	0
East Pasadena Water Co.	0	0.0	0.0	0.0	0
Huntington Library	0	0.0	0.0	0.0	0
Kinneloa Irrigation District	0	0.0	0.0	0.0	0
La Canada Irrigation District	0	0.0	0.0	0.0	0
Las Flores Water Co.	0	0.0	0.0	0.0	0
Lincoln Avenue Water Co.	0	0.0	0.0	0.0	0
Pasadena Cemetery	0	0.0	0.0	0.0	0
Rubio Canon Land & Water	48	0.0	(0.5)	0.0	47
San Gabriel County Water District	0	0.0	0.0	0.0	0
Sierra Madre, City of	0	0.0	0.0	0.0	0
Sunny Slope Water Co.	0	0.0	0.0	0.0	0
Valley Water Co.	464	0.0	(4.6)	0.0	460
TOTAL	**512**	**0.0**	**(5.1)**	**0.0**	**507**

* Rounding to the nearest acre foot

1/ 1,971 AF of CSP was converted into FHCUP as of July 1, 2005.

2/ FHCUP Storage Amounts based on individual agreements with FMWD.
FHCUP Storage may vary according to Annual Operating Plan.

Fiscal Year 2012-13
Annual Report for the Foothill Area Conjunctive Use Program Operating Committee

The following presents the Annual Report for the Foothill Area Conjunctive Use Program (Foothill CUP) Operating Committee for period July 1, 2012 to June 30, 2013. This document is submitted in accordance with the Operating Committee provisions outlined in Section VI.4 of "Agreement No. 49961 Groundwater Storage Program Funding Agreement by and between Metropolitan and Foothill Municipal Water District" dated February 11, 2003.

Operating Committee Members

In accordance with Section VI.A.1 of the Foothill CUP Agreement, the operating committee consists of two members selected by Foothill MWD and the Raymond Basin Management Board and two members selected by Metropolitan. The members for the reporting period were:

- Nina Jazmadarian, Foothill MWD
- Tony Zampiello, Raymond Basin Management Board
- Matthew Hacker, Metropolitan
- Barbara Witt, Metropolitan

Activities during the Reporting Period

- The Operating Committee did not meet during this fiscal year.

Amounts of Water Stored and Extracted during Fiscal Year 2012/13

No water was stored or extracted during this period. In accordance with the agreement, the 1 percent program losses of 5.1 acre-ft were assessed on June 30, 2013 as shown in **Table 1**. As of June 30, 2013, the program balance was 506.7 acre-ft.

Table 1
Summary Water Stored and Extracted During Report Period

Category	Actual (AF)
Balance (7/1/2012)	511.8
Storage	
In-lieu	0.0
Injection	0.0
Total Storage	**0.0**
Extraction	-0.0
Losses	**-5.1**
Balance (6/30/2013)	**506.7**

Annual Operating Plan for Fiscal Year 2012-13

Because of water quality issues in the Monk Hill subbasin, the potential for storage in the Foothill CUP is limited at this time. Therefore, a formal operating plan has not been prepared. In the event that conditions change, a formal operating plan will be prepared.

APPENDIX G

Jet Propulsion Laboratories
OU-1 System

APPENDIX G

Jet Propulsion Laboratories OU-1 System Operational Summary FY 2012-13

STATE WELL NO./ OWNER DESIGNATION	DATE MONTH/YR	ACRE-FEET	METER READING	UNITS/ NOTES
	Jun-12	-BEGINNING-	45024408	GALLONS
EXTRACTION WELL NO. 1	Jul-12	0.00	45024408	
	Aug-12	0.09	45054461	
RECORDATION NO:	Sep-12	0.01	45059125	
	Oct-12	0.00	45059125	
	Nov-12	0.00	45059317	
ESTIMATED FLOW:	Dec-12	0.01	45063153	
X GPM OR X CFS	Jan-13	0.00	45063153	
	Feb-13	0.00	45063153	
REFERENCE ELEV.:	Mar-13	0.00	45071030	
X FEET	Apr-13	0.00	45071030	
	May-13	0.00	45071030	
FLOW CAPAC.: X GPM	Jun-13	0.00	45079105	
	TOTAL ACRE FEET	0.11		

STATE WELL NO./ OWNER DESIGNATION	DATE MONTH/YR	ACRE-FEET	METER READING	UNITS/ NOTES
	Jun-12	-BEGINNING-	237047683	GALLONS
INJECTION WELL NO. 1	Jul-12	11.50	240794170	
	Aug-12	8.61	243599740	
RECORDATION NO:	Sep-12	11.21	247253921	
	Oct-12	5.16	248934860	
	Nov-12	11.09	252549544	
ESTIMATED FLOW:	Dec-12	10.72	256044255	
X GPM OR X CFS	Jan-13	11.46	259777065	
	Feb-13	5.32	261509050	
REFERENCE ELEV.:	Mar-13	6.62	263665980	
X FEET	Apr-13	7.66	266161672	
	May-13	8.47	268920607	
FLOW CAPAC.: X GPM	Jun-13	11.29	272598420	
	TOTAL ACRE FEET	109.11		

STATE WELL NO./ OWNER DESIGNATION	DATE MONTH/YR	ACRE-FEET	METER READING	UNITS/ NOTES
	Jun-12	-BEGINNING-	257131925	GALLONS
EXTRACTION WELL NO. 2	Jul-12	2.93	258085357	
	Aug-12	8.49	260850955	
RECORDATION NO:	Sep-12	9.26	263869755	
	Oct-12	8.79	266734890	
	Nov-12	9.40	269798450	
ESTIMATED FLOW:	Dec-12	9.80	272991230	
X GPM OR X CFS	Jan-13	8.25	275678054	
	Feb-13	8.66	278499363	
REFERENCE ELEV.:	Mar-13	9.18	281491227	
X FEET	Apr-13	9.92	284722621	
	May-13	9.27	287741963	
FLOW CAPAC.: X GPM	Jun-13	9.46	290823122	
	TOTAL ACRE FEET	103.41		

STATE WELL NO./ OWNER DESIGNATION	DATE MONTH/YR	ACRE-FEET	METER READING	UNITS/ NOTES
	Jun-12	-BEGINNING-	217720900	GALLONS
INJECTION WELL NO. 2	Jul-12	14.94	222587920	
	Aug-12	12.19	226560992	
RECORDATION NO:	Sep-12	9.59	229685200	
	Oct-12	9.50	232782159	
	Nov-12	12.87	236977104	
ESTIMATED FLOW:	Dec-12	14.61	241736880	
X GPM OR X CFS	Jan-13	17.78	247530230	
	Feb-13	12.29	251536300	
REFERENCE ELEV.:	Mar-13	12.99	255770650	
X FEET	Apr-13	14.68	260552526	
	May-13	11.90	264430490	
FLOW CAPAC.: X GPM	Jun-13	12.15	268390934	
	TOTAL ACRE FEET	155.49		

STATE WELL NO./ OWNER DESIGNATION	DATE MONTH/YR	ACRE-FEET	METER READING	UNITS/ NOTES
	Jun-12	-BEGINNING-	474697662	GALLONS
EXTRACTION WELL NO.3	Jul-12	31.89	485089299	
	Aug-12	29.23	494615001	
RECORDATION NO:	Sep-12	28.97	504055074	
	Oct-12	27.46	513004387	
	Nov-12	29.50	522618277	
ESTIMATED FLOW:	Dec-12	30.52	532561661	
X GPM OR X CFS	Jan-13	30.11	542374480	
	Feb-13	26.58	551036633	
REFERENCE ELEV.:	Mar-13	28.26	560246584	
X FEET	Apr-13	30.61	570220213	
	May-13	29.16	579722020	
FLOW CAPAC.: X GPM	Jun-13	29.93	589476262	
	TOTAL ACRE FEET	352.22		

STATE WELL NO./ OWNER DESIGNATION	DATE MONTH/YR	ACRE-FEET	METER READING	UNITS/ NOTES
	Jun-12	-BEGINNING-	325510282	GALLONS
INJECTION WELL NO. 3	Jul-12	8.79	328375525	
	Aug-12	17.49	334075887	
RECORDATION NO:	Sep-12	17.40	339744445	
	Oct-12	21.83	346856870	
	Nov-12	15.54	351919901	
ESTIMATED FLOW:	Dec-12	14.56	356665772	
X GPM OR X CFS	Jan-13	10.49	360083308	
	Feb-13	17.68	365845040	
REFERENCE ELEV.:	Mar-13	18.05	371726608	
X FEET	Apr-13	17.99	377589366	
	May-13	17.91	383426836	
FLOW CAPAC.: X GPM	Jun-13	14.79	388246560	
	TOTAL ACRE FEET	192.52		

NOTES:

1

2

3

IW-3* Discharge to Sewer Sys:

Meter Reading: Jun 11 = 2563216	Acre Feet	Date:	Gallons:	Acre Feet
2591960	0.12	Jul-12	12,000	0.04
2591960	0.00	Aug-12	12,000	0.04
2616107	0.07	Sep-12	12,000	0.04
2640428	0.07	Oct-12	12,000	0.04
2665443	0.08	Nov-12	12,000	0.04
2690410	0.08	Dec-12	12,000	0.04
2716321	0.08	Jan-13	12,000	0.04
2739000	0.07	Feb-13	12000	0.04
2764587	0.08	Mar-13	0	0.00
2786358	0.07	Apr-13	12,000	0.04
2844812	0.18	May-13	12,000	0.04
2895508	0.16	Jun-13	12,000	0.04
	0.94		132,000	0.41

*Water removed for well maintenance

Extractions and Injection Summary FY 2012-13					
Parameter	**Units**	**EW/IW-1**	**EW/IW-2**	**EW/IW-3**	**Total**
Total Volume of Groundwater Extracted	Acre Feet	0.11	103.41	352.22	455.74
Total Volume of Groundwater Sent to Sewer	Acre Feet	-	-	-	0.41
Total Volume of Groundwater Reinjected	Acre Feet	109.11	155.49	192.52	457.12
Mass of Perchlorate Removed	lbs.	0.04	5.7	49.9	55.64
Mass of Carbon Tetrachloride (CCl4) Removed	lbs.	0	0.12	0.99	1.11
Mass of Trichloroethene (TCE) Removed	lbs.	0	0.01	0.27	0.28

All Numbers provided by JPL.

APPENDIX H

Monk Hill Subarea Perchlorate Treatment Pool

APPENDIX H - MONK HILL SUBAREA PERCHLORATE TREATMENT POOL
(acre feet)

Party Name	Storage @ 6/30/12	Leases/ Exchanges	Added @ 6/30/13	Loss @ 6/30/13	Storage @ 6/30/13	12,000 AF Maximum Pool	Available Pool Storage (July 1, 2010 - July 1, 2014)
Monk Hill Subarea						**12,000.0**	**8,489.3**
La Canada Irrigation District	0.0		0.0	0.0	0.0	0.0	
Las Flores Water Company	0.0		0.0	0.0	0.0	0.0	
Lincoln Avenue Water Company 2/	2,609.4	0.0	(2,018.0)	(5.9)	585.5	(585.5)	
Pasadena Cemetery	0.0		0.0	0.0	0.0	0.0	
Pasadena, City 1/	5,896.7	0.0	(2,942.0)	(29.5)	2,925.2	(2,925.2)	
Rubio Canon Land & Water	0.0		0.0	0.0	0.0	0.0	
Valley Water Company	0.0		0.0	0.0	0.0	0.0	
Monk Hill Total	***8,506.1***		***(4,960.0)***	***(35.4)***	***3,510.7***	***8,489.3***	***8,489.3***

*adjustment

1/ Note (6/30/09): Consists of under production of 2292.5 AF and excess non-CSP water (1,795.0 AF) above maximum adjusted storage.
Note (6/30/10): Consists of under production of 2686.43 AF and excess non-CSP water (1,015.0 AF) above maximum adjusted storage.
* Note (6/30/11): Consists of under production of 1263.5 AF and excess non-CSP water (0 AF) above maximum adjusted storage.
Note (6/30/12): Leased -4000 AF, pumped -1824.5 AF, added of under production of 2818.2 AF and excess non-CSP water (0 AF) above maximum adjusted storage.
(8934.1 AF - 4000 AF -1824.5 AF= 3109.6 AF; therefore, - 1% Loss = 31.1 AF)

2/ Note (6/30/12): Leased +4000 AF and pumped -1364.2 AF = 2635.8 AF; therefore, - 1% Loss = 26.4 AF