

RIO GRANDE CANALIZATION PROJECT

WATER BUDGET STUDY

Final Report

Appendix G3 - Water Budget Analysis Summary

2012 Baseline Analysis

(Based on FLO-2D Model Results)

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Table G3-1: RGCP Channel Water Budget Equation Analysis Segment 1

Baseline 2012

(Units = Acre-Feet)

	Segment 1 - Caballo Dam to Leasburg Dam (Upper Reach)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrfl	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	River Below Caballo Dam	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (none in Segment 1)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, below Leasburg Cable	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
3/31/2012	0.0	0.1	5.0	0.0	1.0	28.8	6.0	0.0	6.3	6.2	33.7	0.0	0.0	-17.4
4/1/2012	868.8	0.1	0.0	0.0	1.0	28.8	0.0	103.7	6.3	2.4	33.7	0.0	0.0	752.5
4/2/2012	2320.7	0.7	0.0	0.0	1.0	28.8	0.0	433.6	6.3	13.0	33.7	0.0	0.0	1864.6
4/3/2012	2320.7	0.6	0.0	0.0	1.0	28.8	885.2	701.5	6.3	23.0	33.7	0.0	0.0	701.4
4/4/2012	2538.8	0.8	0.0	0.0	1.0	28.8	1718.4	581.9	6.3	23.2	33.7	0.0	0.0	206.0
4/5/2012	2895.9	1.2	0.0	0.0	1.0	28.8	2030.3	486.1	6.3	23.2	33.7	0.0	0.0	347.3
4/6/2012	2856.2	0.7	0.0	0.0	1.0	28.8	2433.0	364.6	6.3	23.2	33.7	0.0	0.0	25.9
4/7/2012	2757.0	1.3	0.0	0.0	1.0	28.8	2552.4	245.9	6.3	23.2	33.7	0.0	0.0	-73.3
4/8/2012	2757.0	0.6	0.0	0.0	1.0	28.8	2525.4	211.1	6.3	23.2	33.7	0.0	0.0	-12.2
4/9/2012	2737.2	0.1	0.0	0.0	1.0	28.8	2525.2	202.5	6.3	23.2	33.7	0.0	0.0	-23.8
4/10/2012	2717.4	0.2	0.0	0.0	1.0	28.8	2510.7	199.0	6.3	23.2	33.7	0.0	0.0	-25.6
4/11/2012	2717.4	1.3	0.0	0.0	1.0	28.8	2497.8	196.7	6.3	23.2	33.7	0.0	0.0	-9.2
4/12/2012	2717.4	1.7	0.0	0.0	1.0	28.8	2498.3	194.8	6.3	23.2	33.7	0.0	0.0	-7.4
4/13/2012	2320.7	0.1	96.5	0.0	1.0	28.8	2418.1	189.6	6.3	23.2	33.7	0.0	0.0	-223.9
4/14/2012	1904.1	0.3	168.5	0.0	1.0	28.8	2073.6	181.1	6.3	23.2	33.7	0.0	0.0	-215.2
4/15/2012	1884.3	1.0	0.0	0.0	1.0	28.8	1749.3	176.2	6.3	23.2	33.7	0.0	0.0	-73.6
4/16/2012	1884.3	0.4	0.0	0.0	1.0	28.8	1688.2	175.0	6.3	23.2	33.7	0.0	0.0	-11.9
4/17/2012	1884.3	2.6	0.0	0.0	1.0	28.8	1686.5	174.2	6.3	23.2	33.7	0.0	0.0	-7.1
4/18/2012	1884.3	0.3	0.0	0.0	1.0	28.8	1687.3	173.4	6.3	23.2	33.7	0.0	0.0	-9.4
4/19/2012	1810.9	0.3	0.0	0.0	1.0	28.8	1678.7	171.9	6.3	23.2	33.7	0.0	0.0	-72.7
4/20/2012	1640.3	0.9	0.0	0.0	1.0	28.8	1606.6	168.6	6.3	23.2	33.7	0.0	0.0	-167.3
4/21/2012	1578.8	0.1	0.0	0.0	1.0	28.8	1468.3	165.8	6.3	23.2	33.7	0.0	0.0	-88.5
4/22/2012	1578.8	0.3	0.0	0.0	1.0	28.8	1400.2	164.6	6.3	23.2	33.7	0.0	0.0	-19.0
4/23/2012	1586.8	2.6	0.0	0.0	1.0	28.8	1392.1	164.2	6.3	23.2	33.7	0.0	0.0	-0.3
4/24/2012	1604.6	1.0	0.0	0.0	1.0	28.8	1400.2	164.1	6.3	23.2	33.7	0.0	0.0	8.0
4/25/2012	1729.6	0.2	0.0	0.0	1.0	28.8	1428.4	165.2	6.3	23.2	33.7	0.0	0.0	102.8
4/26/2012	1828.8	1.9	0.0	0.0	1.0	28.8	1534.7	167.0	6.3	23.2	33.7	0.0	0.0	95.6
4/27/2012	2009.3	1.5	0.0	0.0	1.0	28.8	1631.6	168.4	6.3	23.2	33.7	99.2	1.0	77.2
4/28/2012	1826.8	0.8	39.1	0.0	1.0	28.8	1666.6	166.0	6.3	23.2	33.7	200.3	2.0	-201.6
4/29/2012	1602.6	1.2	48.8	0.0	1.0	28.8	1454.2	161.0	6.3	23.2	33.7	198.3	2.0	-196.2
4/30/2012	1600.7	1.5	0.0	0.0	1.0	28.8	1261.1	158.4	6.3	23.2	33.7	200.3	2.0	-53.1
5/1/2012	1612.6	0.4	0.0	0.0	1.0	28.8	1220.7	158.1	6.3	23.2	33.7	200.3	2.0	-1.5
5/2/2012	1646.3	1.2	0.0	0.0	1.0	28.8	1222.4	157.6	6.3	28.8	33.7	261.6	2.6	-35.7
5/3/2012	1660.2	2.5	0.0	0.0	1.0	28.8	1198.9	156.6	6.3	28.8	33.7	297.9	3.0	-32.7
5/4/2012	912.4	1.4	521.0	0.0	1.0	28.8	1136.5	146.9	6.3	28.8	33.7	297.9	3.0	-188.5
5/5/2012	317.4	1.0	713.8	0.0	1.0	28.8	734.3	121.2	6.3	28.8	33.7	297.9	3.0	-163.2
5/6/2012	307.4	0.8	359.5	0.0	1.0	28.8	359.7	75.9	6.3	28.6	33.7	308.2	3.1	-118.0
5/7/2012	299.5	1.6	157.4	0.0	1.0	28.8	149.7	36.2	6.3	27.6	33.7	308.2	3.1	-76.5
5/8/2012	188.4	0.3	0.0	0.0	1.0	28.8	31.5	21.6	6.3	24.7	33.7	144.8	1.4	-45.5
5/9/2012	0.0	0.9	0.4	0.0	1.0	28.8	1.4	20.3	6.3	16.5	33.7	0.0	0.0	-47.1
5/10/2012	0.0	0.3	0.0	0.0	1.0	28.8	0.0	18.6	6.3	11.8	33.7	0.0	0.0	-40.2
5/11/2012	0.0	1.1	0.0	0.0	1.0	28.8	0.0	12.5	6.3	13.0	33.7	0.0	0.0	-34.6
5/12/2012	0.0	0.4	0.0	0.0	1.0	28.8	0.0	5.4	6.3	6.9	33.7	0.0	0.0	-22.1
5/13/2012	0.0	0.7	0.0	0.0	1.0	28.8	0.0	3.2	6.3	2.3	33.7	0.0	0.0	-15.0
5/14/2012	0.0	1.4	0.0	0.0	1.0	28.8	0.0	1.9	6.3	1.8	33.7	0.0	0.0	-12.5
5/15/2012	0.0	0.6	0.0	0.0	1.0	28.8	0.0	2.5	6.3	1.5	33.7	0.0	0.0	-13.6
5/16/2012	216.2	1.6	0.0	0.0	1.0	28.8	0.0	8.7	6.3	3.9	33.7	152.7	1.5	40.8
5/17/2012	448.3	1.8	0.0	0.0	1.0	28.8	0.0	18.6	6.3	5.5	33.7	299.5	3.0	113.3
5/18/2012	303.5	2.6	0.0	0.0	1.0	28.8	0.0	33.4	6.3	10.5	33.7	295.3	3.0	-46.3
5/19/2012	287.6	0.7	6.9	0.0	1.0	28.8	0.0	32.7	6.3	16.3	33.7	295.5	3.0	-62.4
5/20/2012	285.6	1.1	8.9	0.0	1.0	28.8	0.0	23.0	6.3	21.2	33.7	295.5	3.0	-57.2

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	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrfl	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	River Below Caballo Dam	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (none in Segment 1)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, below Leasburg Cable	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo- transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
5/21/2012	317.4	0.5	0.0	0.0	1.0	28.8	0.0	15.1	6.3	19.9	33.7	291.6	2.9	-21.8
5/22/2012	440.3	1.5	0.0	0.0	1.0	28.8	0.0	15.1	6.3	9.4	33.7	378.8	3.8	24.5
5/23/2012	442.3	1.7	0.0	0.0	1.0	28.8	0.0	18.5	6.3	6.8	33.7	418.5	4.2	-14.2
5/24/2012	448.3	1.6	0.0	0.0	1.0	28.8	0.0	20.6	6.3	9.8	33.7	432.4	4.3	-27.4
5/25/2012	438.3	2.1	0.0	0.0	1.0	28.8	0.0	15.8	6.3	10.8	33.7	432.4	4.3	-33.1
5/26/2012	426.4	0.5	4.9	0.0	1.0	28.8	0.0	11.5	6.3	4.4	33.7	432.4	4.3	-30.9
5/27/2012	426.4	3.0	4.9	0.0	1.0	28.8	0.0	10.5	6.3	3.0	33.7	432.4	4.3	-26.1
5/28/2012	426.4	1.8	4.9	0.0	1.0	28.8	0.0	11.8	6.3	3.2	33.7	432.4	4.3	-28.7
5/29/2012	2070.7	0.8	0.0	0.0	1.0	28.8	0.0	63.2	6.3	10.5	33.7	442.3	4.4	1540.9
5/30/2012	2525.0	1.1	0.0	0.0	1.0	28.8	468.6	152.7	6.3	26.6	33.7	442.3	4.4	1421.2
5/31/2012	2271.1	0.8	0.0	0.0	1.0	28.8	1805.4	167.1	6.3	28.8	33.7	380.8	3.8	-124.2
6/1/2012	2584.5	1.3	0.0	0.0	1.0	28.8	1742.2	167.7	6.3	28.8	33.7	380.8	3.8	252.2
6/2/2012	2993.1	1.3	0.0	0.0	1.0	28.8	1838.3	172.7	6.3	34.2	33.7	618.8	6.2	314.0
6/3/2012	2989.1	2.4	0.0	0.0	1.0	28.8	2068.8	175.0	6.3	34.2	33.7	700.8	7.0	-4.5
6/4/2012	3026.8	2.1	0.0	0.0	1.0	28.8	2150.0	176.9	6.3	34.2	33.7	503.2	5.0	149.3
6/5/2012	3383.8	0.1	0.0	0.0	1.0	28.8	2383.3	179.5	6.3	34.2	33.7	515.7	5.2	255.8
6/6/2012	3645.6	0.8	0.0	0.0	1.0	28.8	2654.9	181.3	6.3	34.2	33.7	670.3	6.7	88.9
6/7/2012	3665.5	3.7	0.0	0.0	1.0	28.8	2730.2	181.4	6.3	34.2	33.7	689.0	6.9	17.2
6/8/2012	3961.0	0.6	0.0	0.0	1.0	28.8	2689.9	183.3	6.3	34.2	33.7	842.1	8.4	193.5
6/9/2012	4153.4	0.9	0.0	0.0	1.0	28.8	2882.9	185.2	6.3	34.2	33.7	940.7	9.4	91.7
6/10/2012	4143.5	0.7	0.0	0.0	1.0	28.8	3110.2	185.8	6.3	34.2	33.7	793.2	7.9	2.7
6/11/2012	3984.8	2.2	0.0	0.0	1.0	28.8	3185.4	184.9	6.3	34.2	33.7	673.4	6.7	-107.8
6/12/2012	3887.6	1.6	0.0	0.0	1.0	28.8	3057.6	183.5	6.3	34.2	33.7	706.5	7.1	-109.9
6/13/2012	3689.3	0.8	0.0	0.0	1.0	28.8	2862.0	181.3	6.3	34.2	33.7	816.6	8.2	-222.3
6/14/2012	3391.7	1.0	0.0	0.0	1.0	28.8	2620.0	178.5	6.3	34.2	33.7	771.9	7.7	-229.7
6/15/2012	3369.9	0.6	0.0	0.0	1.0	28.8	2436.4	178.2	6.3	34.2	33.7	622.2	6.2	83.1
6/16/2012	3459.2	1.6	0.0	0.0	1.0	28.8	2536.1	178.8	6.3	34.2	33.7	655.6	6.6	39.3
6/17/2012	3465.1	2.4	0.0	0.0	1.0	28.8	2554.5	179.5	6.3	34.2	33.7	663.2	6.6	19.3
6/18/2012	3292.6	5.0	0.0	0.0	1.0	28.8	2567.7	178.4	6.3	34.2	33.7	632.9	6.3	-132.2
6/19/2012	3272.7	0.8	0.0	0.0	1.0	28.8	2479.4	177.6	6.3	34.2	33.7	598.4	6.0	-32.2
6/20/2012	3312.4	4.4	0.0	0.0	1.0	28.8	2450.6	176.8	6.3	34.2	33.7	689.4	6.9	-51.3
6/21/2012	3362.0	1.7	0.0	0.0	1.0	28.8	2437.3	176.5	6.3	34.2	33.7	705.8	7.1	-7.4
6/22/2012	3371.9	2.8	0.0	0.0	1.0	28.8	2429.7	176.6	6.3	34.2	33.7	734.4	7.3	-17.7
6/23/2012	3350.1	3.3	0.0	0.0	1.0	28.8	2427.7	176.0	6.3	34.2	33.7	728.1	7.3	-30.2
6/24/2012	3354.0	3.0	0.0	0.0	1.0	28.8	2355.7	175.8	6.3	34.2	33.7	791.2	7.9	-17.9
6/25/2012	3437.4	1.9	0.0	0.0	1.0	28.8	2336.3	175.9	6.3	34.2	33.7	827.2	8.3	47.3
6/26/2012	3504.8	3.1	0.0	0.0	1.0	28.8	2460.0	176.5	6.3	34.2	33.7	783.3	7.8	35.9
6/27/2012	3340.2	3.9	0.0	0.0	1.0	28.8	2492.7	175.7	6.3	34.2	33.7	758.6	7.6	-134.9
6/28/2012	3159.7	3.7	0.0	0.0	1.0	28.8	2345.2	173.9	6.3	34.2	33.7	752.8	7.5	-160.5
6/29/2012	3221.2	8.5	0.0	0.0	1.0	28.8	2228.2	173.1	6.3	34.2	33.7	747.3	7.5	29.2
6/30/2012	3276.7	3.1	0.0	0.0	1.0	28.8	2272.0	173.7	6.3	34.2	33.7	746.6	7.5	35.8
7/1/2012	3290.6	5.6	0.0	0.0	1.0	28.8	2323.6	174.0	6.3	34.2	33.7	727.4	7.3	19.5
7/2/2012	3296.5	6.7	0.0	0.0	1.0	28.8	2352.9	173.7	6.3	30.0	33.7	744.9	7.4	-15.8
7/3/2012	3106.1	4.3	0.0	0.0	1.0	28.8	2336.7	172.7	6.3	30.0	33.7	651.6	6.5	-97.4
7/4/2012	2989.1	4.8	0.0	0.0	1.0	28.8	2285.4	171.4	6.3	30.0	33.7	541.4	5.4	-49.9
7/5/2012	2802.6	9.3	0.0	0.0	1.0	28.8	2211.5	169.9	6.3	30.0	33.7	533.5	5.3	-148.5
7/6/2012	2651.9	5.1	0.0	0.0	1.0	28.8	2007.8	168.2	6.3	30.0	33.7	580.5	5.8	-145.4
7/7/2012	2441.7	7.8	0.0	0.0	1.0	28.8	1810.3	167.2	6.3	30.0	33.7	621.1	6.2	-195.5
7/8/2012	2217.5	6.5	0.0	0.0	1.0	28.8	1639.9	165.8	6.3	30.0	33.7	416.0	4.2	-42.0
7/9/2012	2231.4	5.8	0.0	0.0	1.0	28.8	1645.4	165.6	6.3	30.0	33.7	379.7	3.8	2.4
7/10/2012	1933.9	4.6	54.6	0.0	1.0	28.8	1621.9	165.1	6.3	30.0	33.7	367.6	3.7	-205.4

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	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrfl	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	River Below Caballo Dam	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (none in Segment 1)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, below Leasburg Cable	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
7/11/2012	1691.9	4.9	47.8	0.0	1.0	28.8	1416.8	159.9	6.3	30.0	33.7	323.9	3.2	-199.4
7/12/2012	1763.3	5.3	0.0	0.0	1.0	28.8	1235.1	158.7	6.3	30.0	33.7	319.6	3.2	11.7
7/13/2012	1892.2	6.7	0.0	0.0	1.0	28.8	1247.0	161.2	6.3	30.0	33.7	333.5	3.3	113.8
7/14/2012	2001.3	4.4	0.0	0.0	1.0	28.8	1331.3	163.1	6.3	30.0	33.7	359.6	3.6	108.0
7/15/2012	2086.6	13.7	0.0	0.0	1.0	28.8	1446.6	163.5	6.3	30.0	33.7	358.0	3.6	88.4
7/16/2012	2804.6	3.4	0.0	0.0	1.0	28.8	1566.3	164.2	6.3	30.0	33.7	763.2	7.6	266.6
7/17/2012	3481.0	3.8	0.0	0.0	1.0	28.8	1958.7	171.4	6.3	30.0	33.7	747.5	7.5	559.6
7/18/2012	3770.6	6.5	0.0	0.0	1.0	28.8	2551.5	177.8	6.3	30.0	33.7	764.9	7.6	235.1
7/19/2012	3873.7	6.3	0.0	0.0	1.0	28.8	2806.9	180.0	6.3	30.0	33.7	759.0	7.6	86.3
7/20/2012	3865.8	7.0	0.0	0.0	1.0	28.8	2858.1	180.5	6.3	30.0	33.7	774.0	7.7	12.3
7/21/2012	3834.0	8.3	0.0	0.0	1.0	28.8	2793.8	180.2	6.3	30.0	33.7	874.7	8.7	-55.2
7/22/2012	3814.2	7.8	0.0	0.0	1.0	28.8	2752.1	180.1	6.3	30.0	33.7	861.0	8.6	-20.0
7/23/2012	3849.9	6.4	0.0	0.0	1.0	28.8	2751.9	180.3	6.3	30.0	33.7	867.2	8.7	8.0
7/24/2012	3891.6	7.6	0.0	0.0	1.0	28.8	2779.5	180.7	6.3	30.0	33.7	867.2	8.7	22.9
7/25/2012	3814.2	6.2	0.0	0.0	1.0	28.8	2795.1	179.7	6.3	30.0	33.7	875.3	8.8	-78.6
7/26/2012	3683.3	6.5	0.0	0.0	1.0	28.8	2666.7	177.1	6.3	30.0	33.7	1004.5	10.0	-208.7
7/27/2012	3627.8	5.7	0.0	0.0	1.0	28.8	2471.2	175.5	6.3	30.0	33.7	1001.7	10.0	-65.2
7/28/2012	3536.5	6.0	0.0	0.0	1.0	28.8	2413.5	175.0	6.3	30.0	33.7	953.7	9.5	-49.5
7/29/2012	3465.1	7.6	0.0	0.0	1.0	28.8	2385.1	174.9	6.3	30.0	33.7	865.9	8.7	-2.1
7/30/2012	3562.3	8.7	0.0	0.0	1.0	28.8	2404.1	175.5	6.3	30.0	33.7	905.9	9.1	36.3
7/31/2012	3750.7	6.7	0.0	0.0	1.0	28.8	2472.3	177.0	6.3	30.0	33.7	962.5	9.6	95.9
8/1/2012	3768.6	7.2	0.0	0.0	1.0	28.8	2599.1	177.8	6.3	30.0	33.7	911.1	9.1	38.5
8/2/2012	3554.4	8.7	0.0	0.0	1.0	28.8	2572.5	176.1	6.3	29.4	33.7	942.4	9.4	-176.8
8/3/2012	3377.9	8.8	0.0	0.0	1.0	28.8	2379.8	173.5	6.3	29.4	33.7	946.2	9.5	-161.9
8/4/2012	3322.3	6.8	0.0	0.0	1.0	28.8	2265.4	172.0	6.3	29.4	33.7	896.9	9.0	-53.7
8/5/2012	3302.5	6.6	0.0	0.0	1.0	28.8	2254.4	171.4	6.3	29.4	33.7	856.5	8.6	-21.4
8/6/2012	3385.8	5.4	0.0	0.0	1.0	28.8	2266.1	172.2	6.3	29.4	33.7	857.4	8.6	47.4
8/7/2012	3564.3	6.8	0.0	0.0	1.0	28.8	2367.2	174.3	6.3	29.4	33.7	846.6	8.5	134.9
8/8/2012	3697.2	5.6	0.0	0.0	1.0	28.8	2523.7	175.9	6.3	29.4	33.7	862.8	8.6	92.3
8/9/2012	3744.8	7.8	0.0	0.0	1.0	28.8	2571.0	176.6	6.3	29.4	33.7	923.1	9.2	33.1
8/10/2012	3875.7	7.3	0.0	0.0	1.0	28.8	2588.4	177.7	6.3	29.4	33.7	994.2	9.9	73.2
8/11/2012	4036.4	8.8	0.0	0.0	1.0	28.8	2738.5	179.0	6.3	29.4	33.7	956.2	9.6	122.3
8/12/2012	3994.7	8.6	0.0	0.0	1.0	28.8	2883.8	179.8	6.3	29.4	33.7	842.4	8.4	49.3
8/13/2012	3978.8	10.2	0.0	0.0	1.0	28.8	2923.0	178.6	6.3	29.4	33.7	881.2	8.8	-42.1
8/14/2012	2703.5	7.5	544.3	0.0	1.0	28.8	2690.2	174.0	6.3	29.4	33.7	558.5	5.6	-212.7
8/15/2012	1967.6	7.5	432.0	0.0	1.0	28.8	2135.7	164.2	6.3	29.4	33.7	264.9	2.6	-199.9
8/16/2012	1884.3	9.4	0.0	0.0	1.0	28.8	1800.0	159.9	6.3	29.4	33.7	11.5	0.1	-117.3
8/17/2012	1884.3	3.3	0.0	0.0	1.0	28.8	1706.0	159.8	6.3	29.4	33.7	11.5	0.1	-29.3
8/18/2012	1884.3	8.4	0.0	0.0	1.0	28.8	1694.9	159.8	6.3	29.4	33.7	11.5	0.1	-13.1
8/19/2012	1884.3	6.0	0.0	0.0	1.0	28.8	1695.3	159.1	6.3	29.4	33.7	11.5	0.1	-15.3
8/20/2012	1874.4	7.0	0.0	0.0	1.0	28.8	1694.7	158.7	6.3	29.4	33.7	11.5	0.1	-23.2
8/21/2012	1874.4	11.8	0.0	0.0	1.0	28.8	1687.7	158.8	6.3	29.4	33.7	11.5	0.1	-11.5
8/22/2012	1866.4	5.7	0.0	0.0	1.0	28.8	1685.2	158.7	6.3	29.4	33.7	11.5	0.1	-22.9
8/23/2012	1691.9	15.0	0.0	0.0	1.0	28.8	1657.8	156.8	6.3	29.4	33.7	11.5	0.1	-158.8
8/24/2012	1467.8	10.0	49.3	0.0	1.0	28.8	1506.6	153.2	6.3	29.4	33.7	11.5	0.1	-183.9
8/25/2012	1477.7	5.1	0.0	0.0	1.0	28.8	1325.1	151.6	6.3	29.4	33.7	11.5	0.1	-45.1
8/26/2012	1477.7	5.5	0.0	0.0	1.0	28.8	1294.9	151.9	6.3	29.4	33.7	11.5	0.1	-14.8
8/27/2012	1477.7	4.6	0.0	0.0	1.0	28.8	1296.3	152.0	6.3	29.4	33.7	11.5	0.1	-17.2
8/28/2012	1418.2	2.1	0.0	0.0	1.0	28.8	1290.8	151.5	6.3	29.4	33.7	11.5	0.1	-73.1
8/29/2012	1378.5	6.6	0.0	0.0	1.0	28.8	1245.8	150.3	6.3	29.4	33.7	11.5	0.1	-62.1
8/30/2012	1394.4	7.3	0.0	0.0	1.0	28.8	1208.6	149.4	6.3	29.4	33.7	11.5	0.1	-7.5

Table G3-1: RGCP Channel Water Budget Equation Analysis Segment 1 Baseline 2012 (Units = Acre-Feet)

	Segment 1 - Caballo Dam to Leasburg Dam (Upper Reach)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	River Below Caballo Dam	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (none in Segment 1)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, below Leasburg Cable	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (Percha, Arrey, & Leasburg)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
8/31/2012	1402.3	5.1	0.0	0.0	1.0	28.8	1213.2	149.3	6.3	29.4	33.7	11.5	0.1	-6.2
9/1/2012	1410.2	5.2	0.0	0.0	1.0	28.8	1222.7	149.3	6.3	29.4	33.7	11.5	0.1	-7.6
9/2/2012	1418.2	5.6	0.0	0.0	1.0	28.8	1232.3	149.9	6.3	24.9	33.7	11.5	0.1	-5.1
9/3/2012	1243.6	3.9	0.0	0.0	1.0	28.8	1227.8	148.5	6.3	24.9	33.7	11.5	0.1	-175.5
9/4/2012	1108.8	4.4	3.2	0.0	1.0	28.8	1101.5	145.4	6.3	24.9	33.7	11.5	0.1	-177.2
9/5/2012	1108.8	8.2	0.0	0.0	1.0	28.8	976.0	144.4	6.3	24.9	33.7	11.5	0.1	-50.2
9/6/2012	1100.8	4.6	0.0	0.0	1.0	28.8	939.0	144.6	6.3	24.9	33.7	11.5	0.1	-24.8
9/7/2012	1092.9	5.9	0.0	0.0	1.0	28.8	933.5	144.6	6.3	24.9	33.7	11.5	0.1	-25.9
9/8/2012	1079.0	2.8	0.0	0.0	1.0	28.8	925.5	143.7	6.3	24.9	33.7	11.5	0.1	-34.1
9/9/2012	1065.1	4.3	0.0	0.0	1.0	28.8	914.6	142.6	6.3	24.9	33.7	11.5	0.1	-34.4
9/10/2012	1049.3	5.2	0.0	0.0	1.0	28.8	902.3	141.7	6.3	24.9	33.7	11.5	0.1	-36.2
9/11/2012	1035.4	4.7	0.0	0.0	1.0	28.8	887.3	141.4	6.3	24.9	33.7	11.5	0.1	-35.3
9/12/2012	1015.5	11.0	0.0	0.0	1.0	28.8	872.7	140.7	6.3	24.9	33.7	11.5	0.1	-33.5
9/13/2012	533.6	9.0	321.2	0.0	1.0	28.8	844.4	134.5	6.3	24.9	33.7	11.5	0.1	-161.7
9/14/2012	0.0	7.0	628.8	0.0	1.0	28.8	618.4	112.6	6.3	24.9	33.7	11.5	0.1	-141.9

RGCP - Project Scale Water Budget - Segment 1 (Caballo Dam to Leasburg Dam)

$$\Delta Sic = (Qus + Pc + Qcin + Qirf + Qgwrf) - (Qcds + Qcs + Qfpr + ET + Qda + Qdu)$$

- Sum of Inflow
- Sum of Outflow
- ΔSic - Change in Channel Storage

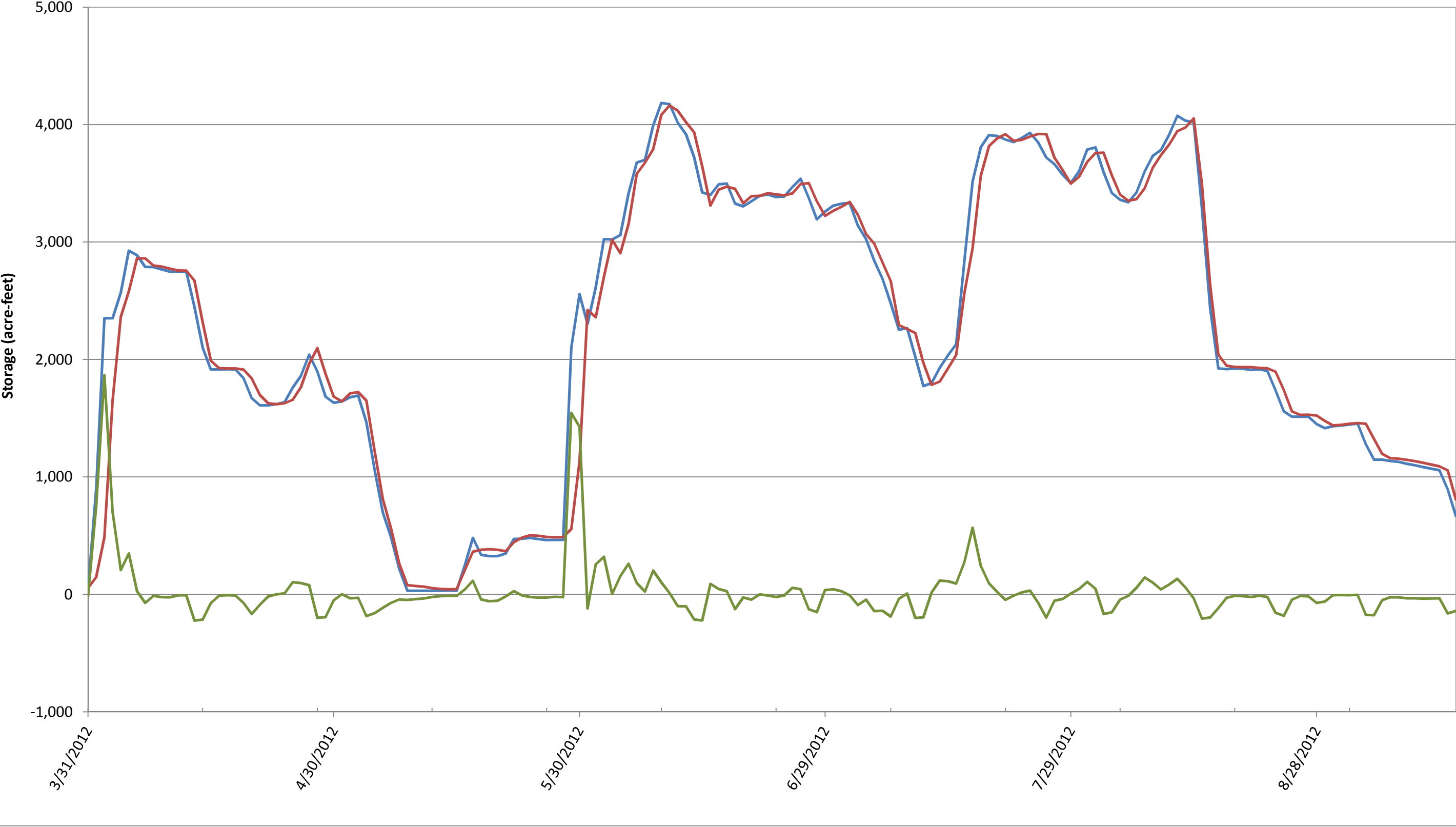


Table G3-2: RGCP Channel Water Budget Equation Analysis Segment 2 Baseline 2012 (Units = Acre-Feet)

	Segment 2 - Leasburg Dam to Mesilla Dam (Middle Reach)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, below Leasburg Cable	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (La Mesa Drain)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
3/31/2012	6.0	0.1	0.0	0.1	44.5	3.0	10.8	6.0	6.3	2.8	8.9	0.0	0.0	19.0
4/1/2012	0.0	0.1	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	32.6
4/2/2012	0.0	0.7	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	33.2
4/3/2012	885.2	0.6	0.0	0.1	44.5	3.0	0.0	286.0	6.3	2.9	8.9	0.0	0.0	629.4
4/4/2012	1718.4	0.7	0.0	0.1	44.5	3.0	262.8	1045.1	6.3	13.8	8.9	0.0	0.0	429.9
4/5/2012	2030.3	1.1	0.0	0.1	44.5	3.0	783.2	903.5	6.3	13.9	8.9	0.0	0.0	363.3
4/6/2012	2433.0	1.2	0.0	0.1	44.5	3.0	1593.1	625.7	6.3	13.9	8.9	0.0	0.0	233.9
4/7/2012	2552.4	0.2	0.0	0.1	44.5	3.0	2117.9	385.0	6.3	13.9	8.9	0.0	0.0	68.2
4/8/2012	2525.4	0.1	0.0	0.1	44.5	3.0	2248.3	269.3	6.3	13.9	8.9	0.0	0.0	26.4
4/9/2012	2525.2	0.0	0.0	0.1	44.5	3.0	2265.9	245.5	6.3	13.9	8.9	0.0	0.0	32.3
4/10/2012	2510.7	0.0	0.0	0.1	44.5	3.0	2262.4	240.2	6.3	13.9	8.9	0.0	0.0	26.7
4/11/2012	2497.8	0.9	0.0	0.1	44.5	3.0	2248.5	238.4	6.3	13.9	8.9	0.0	0.0	30.3
4/12/2012	2498.3	1.1	0.0	0.1	44.5	3.0	2220.8	237.4	6.3	13.9	8.9	214.2	2.1	-156.6
4/13/2012	2418.1	0.2	0.0	0.1	44.5	3.0	2042.4	236.3	6.3	13.9	8.9	257.1	2.6	-101.4
4/14/2012	2073.6	0.1	0.0	0.1	44.5	3.0	1727.3	232.8	6.3	13.9	8.9	220.6	2.2	-90.5
4/15/2012	1749.3	1.4	0.0	0.1	44.5	3.0	1400.0	227.0	6.3	13.9	8.9	236.8	2.4	-97.0
4/16/2012	1688.2	0.3	0.0	0.1	44.5	3.0	1227.5	223.6	6.3	13.9	8.9	201.7	2.0	52.3
4/17/2012	1686.5	0.2	0.0	0.1	44.5	3.0	1243.8	223.0	6.3	13.9	8.9	190.4	1.9	46.1
4/18/2012	1687.3	0.2	0.0	0.1	44.5	3.0	1252.8	222.5	6.3	13.9	8.9	238.0	2.4	-9.6
4/19/2012	1678.7	0.2	0.0	0.1	44.5	3.0	1217.0	222.1	6.3	13.9	8.9	257.9	2.6	-2.1
4/20/2012	1606.6	0.1	0.0	0.1	44.5	3.0	1162.9	220.7	6.3	13.9	8.9	236.0	2.4	3.2
4/21/2012	1468.3	0.1	0.0	0.1	44.5	3.0	1065.4	217.2	6.3	13.9	8.9	234.0	2.3	-32.1
4/22/2012	1400.2	1.0	0.0	0.1	44.5	3.0	964.1	213.9	6.3	13.9	8.9	234.0	2.3	5.3
4/23/2012	1392.1	0.7	0.0	0.1	44.5	3.0	930.7	212.8	6.3	13.9	8.9	236.0	2.4	29.5
4/24/2012	1400.2	0.7	0.0	0.1	44.5	3.0	932.6	212.6	6.3	13.9	8.9	234.0	2.3	37.8
4/25/2012	1428.4	0.4	0.0	0.1	44.5	3.0	941.4	212.6	6.3	13.9	8.9	281.7	2.8	8.9
4/26/2012	1534.7	0.3	0.0	0.1	44.5	3.0	966.4	215.0	6.3	13.9	8.9	311.4	3.1	57.6
4/27/2012	1631.6	0.7	0.0	0.1	44.5	3.0	1049.7	217.8	6.3	13.9	8.9	311.4	3.1	68.9
4/28/2012	1666.6	0.1	0.0	0.1	44.5	3.0	1128.4	218.8	6.3	13.9	8.9	311.4	3.1	23.4
4/29/2012	1454.2	0.1	0.0	0.1	44.5	3.0	1046.3	216.1	6.3	13.9	8.9	186.4	1.9	22.2
4/30/2012	1261.1	0.4	0.0	0.1	44.5	3.0	926.9	209.3	6.3	13.9	8.9	186.4	1.9	-44.4
5/1/2012	1220.7	0.1	0.0	0.1	44.5	3.0	839.7	205.1	6.3	13.9	8.9	0.0	0.0	194.5
5/2/2012	1222.4	1.8	0.0	0.1	44.5	3.0	972.7	205.6	6.3	17.4	8.9	0.0	0.0	60.9
5/3/2012	1198.9	1.4	0.0	0.1	44.5	3.0	991.2	204.7	6.3	17.4	8.9	0.0	0.0	19.4
5/4/2012	1136.5	0.3	0.0	0.1	44.5	3.0	968.9	203.1	6.3	17.4	8.9	0.0	0.0	-20.2
5/5/2012	734.3	0.5	44.0	0.1	44.5	3.0	822.8	187.4	6.3	17.4	8.9	0.0	0.0	-216.5
5/6/2012	359.7	0.4	81.4	0.1	44.5	3.0	485.8	135.2	6.3	17.4	8.9	0.0	0.0	-164.4
5/7/2012	149.7	1.2	36.9	0.1	44.5	3.0	231.1	78.6	6.3	17.4	8.9	0.0	0.0	-107.0
5/8/2012	31.5	0.0	17.2	0.1	44.5	3.0	93.3	35.6	6.3	17.4	8.9	0.0	0.0	-65.2
5/9/2012	1.4	0.0	0.0	0.1	44.5	3.0	12.1	14.3	6.3	18.0	8.9	0.0	0.0	-10.5
5/10/2012	0.0	0.0	0.0	0.1	44.5	3.0	0.0	0.4	6.3	2.6	8.9	0.0	0.0	29.5
5/11/2012	0.0	0.6	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	33.1
5/12/2012	0.0	0.0	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	32.5
5/13/2012	0.0	0.1	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	32.6
5/14/2012	0.0	1.0	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	33.5
5/15/2012	0.0	1.2	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	33.6

Table G3-2: RGCP Channel Water Budget Equation Analysis Segment 2

Baseline 2012

(Units = Acre-Feet)

	Segment 2 - Leasburg Dam to Mesilla Dam (Middle Reach)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, below Leasburg Cable	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (La Mesa Drain)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
5/16/2012	0.0	1.8	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	34.2
5/17/2012	0.0	0.4	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	32.9
5/18/2012	0.0	0.5	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	33.0
5/19/2012	0.0	0.0	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	32.5
5/20/2012	0.0	0.4	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	32.9
5/21/2012	0.0	1.6	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	34.0
5/22/2012	0.0	0.2	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	32.7
5/23/2012	0.0	1.3	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	33.7
5/24/2012	0.0	0.3	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	32.7
5/25/2012	0.0	1.6	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	34.1
5/26/2012	0.0	0.2	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	32.7
5/27/2012	0.0	0.9	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	33.3
5/28/2012	0.0	1.0	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	33.5
5/29/2012	0.0	0.5	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	32.9
5/30/2012	468.6	0.0	0.0	0.1	44.5	3.0	0.0	7.5	6.3	0.4	8.9	0.0	0.0	493.2
5/31/2012	1805.4	1.2	0.0	0.1	44.5	3.0	789.8	170.9	6.3	16.9	8.9	130.9	1.3	729.2
6/1/2012	1742.2	0.6	480.7	0.1	44.5	3.0	1336.3	218.6	6.3	17.4	8.9	931.2	9.3	-256.9
6/2/2012	1838.3	0.4	0.0	0.1	44.5	3.0	705.2	217.6	6.3	20.6	8.9	991.7	9.9	-73.8
6/3/2012	2068.8	1.0	0.0	0.1	44.5	3.0	748.5	221.5	6.3	20.6	8.9	1081.0	10.8	19.8
6/4/2012	2150.0	0.4	0.0	0.1	44.5	3.0	794.5	222.1	6.3	20.6	8.9	1023.5	10.2	112.0
6/5/2012	2383.3	0.3	0.0	0.1	44.5	3.0	967.6	224.1	6.3	20.6	8.9	1267.4	12.7	-76.4
6/6/2012	2654.9	1.1	0.0	0.1	44.5	3.0	1069.4	226.2	6.3	20.6	8.9	1392.4	13.9	-34.1
6/7/2012	2730.2	2.5	0.0	0.1	44.5	3.0	1064.4	227.0	6.3	20.6	8.9	1396.4	14.0	42.9
6/8/2012	2689.9	1.2	0.0	0.1	44.5	3.0	1034.5	226.5	6.3	20.6	8.9	1372.6	13.7	55.6
6/9/2012	2882.9	0.3	0.0	0.1	44.5	3.0	1182.1	227.3	6.3	20.6	8.9	1360.7	13.6	111.4
6/10/2012	3110.2	3.5	0.0	0.1	44.5	3.0	1432.5	228.2	6.3	20.6	8.9	1303.1	13.0	148.6
6/11/2012	3185.4	0.7	0.0	0.1	44.5	3.0	1629.0	228.5	6.3	20.6	8.9	1279.3	12.8	48.3
6/12/2012	3057.6	0.9	0.0	0.1	44.5	3.0	1614.7	228.0	6.3	20.6	8.9	977.9	9.8	240.1
6/13/2012	2862.0	0.2	0.0	0.1	44.5	3.0	1665.6	227.6	6.3	20.6	8.9	1077.0	10.8	-106.9
6/14/2012	2620.0	1.9	0.0	0.1	44.5	3.0	1399.0	226.7	6.3	20.6	8.9	1083.0	10.8	-85.7
6/15/2012	2436.4	3.2	0.0	0.1	44.5	3.0	1138.0	224.5	6.3	20.6	8.9	1085.0	10.8	-6.9
6/16/2012	2536.1	1.8	0.0	0.1	44.5	3.0	1158.2	224.8	6.3	20.6	8.9	1209.9	12.1	-55.2
6/17/2012	2554.5	2.5	0.0	0.1	44.5	3.0	1114.1	224.5	6.3	20.6	8.9	1209.9	12.1	8.2
6/18/2012	2567.7	4.5	0.0	0.1	44.5	3.0	1167.5	224.2	6.3	20.6	8.9	1160.3	11.6	20.5
6/19/2012	2479.4	1.4	0.0	0.1	44.5	3.0	1115.5	223.3	6.3	20.6	8.9	1033.4	10.3	110.0
6/20/2012	2450.6	1.5	0.0	0.1	44.5	3.0	1165.2	223.2	6.3	20.6	8.9	1055.2	10.6	9.8
6/21/2012	2437.3	0.7	0.0	0.1	44.5	3.0	1146.2	222.9	6.3	20.6	8.9	1025.5	10.3	45.0
6/22/2012	2429.7	0.4	0.0	0.1	44.5	3.0	1155.1	222.7	6.3	20.6	8.9	1065.1	10.7	-11.6
6/23/2012	2427.7	1.5	0.0	0.1	44.5	3.0	1124.1	222.6	6.3	20.6	8.9	1128.6	11.3	-45.5
6/24/2012	2355.7	1.8	0.0	0.1	44.5	3.0	1017.6	221.8	6.3	20.6	8.9	1181.2	11.8	-63.1
6/25/2012	2336.3	1.0	0.0	0.1	44.5	3.0	910.8	220.8	6.3	20.6	8.9	1190.1	11.9	15.5
6/26/2012	2460.0	0.9	0.0	0.1	44.5	3.0	969.9	221.6	6.3	20.6	8.9	1196.0	12.0	73.2
6/27/2012	2492.7	3.7	0.0	0.1	44.5	3.0	1023.2	222.3	6.3	20.6	8.9	1253.6	12.5	-3.3
6/28/2012	2345.2	2.6	0.0	0.1	44.5	3.0	921.2	222.2	6.3	20.6	8.9	1221.8	12.2	-17.8
6/29/2012	2228.2	4.7	0.0	0.1	44.5	3.0	785.3	220.1	6.3	20.6	8.9	1251.6	12.5	-24.6
6/30/2012	2272.0	2.8	0.0	0.1	44.5	3.0	759.8	219.7	6.3	20.6	8.9	1257.5	12.6	37.0
7/1/2012	2323.6	1.5	0.0	0.1	44.5	3.0	811.5	219.9	6.3	20.6	8.9	1213.9	12.1	79.5
7/2/2012	2352.9	4.9	0.0	0.1	44.5	3.0	892.3	220.4	6.3	18.0	8.9	1152.4	11.5	95.6
7/3/2012	2336.7	1.2	0.0	0.1	44.5	3.0	954.3	220.9	6.3	18.0	8.9	1114.7	11.1	51.4
7/4/2012	2285.4	2.1	0.0	0.1	44.5	3.0	954.4	220.7	6.3	18.0	8.9	1029.4	10.3	87.1
7/5/2012	2211.5	4.9	0.0	0.1	44.5	3.0	990.3	221.7	6.3	18.0	8.9	912.4	9.1	97.3

Table G3-2: RGCP Channel Water Budget Equation Analysis Segment 2 Baseline 2012 (Units = Acre-Feet)

	Segment 2 - Leasburg Dam to Mesilla Dam (Middle Reach)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, below Leasburg Cable	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (La Mesa Drain)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo- transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
7/6/2012	2007.8	1.3	0.0	0.1	44.5	3.0	943.2	220.5	6.3	18.0	8.9	823.1	8.2	28.5
7/7/2012	1810.3	1.8	0.0	4.5	44.5	3.0	841.5	217.7	6.3	18.0	8.9	726.0	7.3	38.5
7/8/2012	1639.9	2.2	0.0	9.3	44.5	3.0	746.3	212.9	6.3	18.0	8.9	638.7	6.4	61.4
7/9/2012	1645.4	6.2	0.0	10.1	44.5	3.0	801.2	212.3	6.3	18.0	8.9	521.7	5.2	135.8
7/10/2012	1621.9	4.8	0.0	9.8	44.5	3.0	890.3	213.0	6.3	18.0	8.9	527.6	5.3	14.7
7/11/2012	1416.8	3.0	0.0	3.9	44.5	3.0	778.2	209.5	6.3	18.0	8.9	509.8	5.1	-64.6
7/12/2012	1235.1	1.8	0.0	10.1	44.5	3.0	587.3	201.8	6.3	18.0	8.9	511.7	5.1	-44.7
7/13/2012	1247.0	2.1	0.0	10.5	44.5	3.0	490.2	198.8	6.3	18.0	8.9	529.6	5.3	50.0
7/14/2012	1331.3	1.6	0.0	10.9	44.5	3.0	532.6	202.2	6.3	18.0	8.9	531.6	5.3	86.4
7/15/2012	1446.6	3.5	0.0	11.4	44.5	3.0	617.1	206.1	6.3	18.0	8.9	646.6	6.5	-0.5
7/16/2012	1566.3	2.0	0.0	11.0	44.5	3.0	632.5	206.6	6.3	18.0	8.9	646.6	6.5	101.4
7/17/2012	1958.7	6.5	0.0	6.7	44.5	3.0	783.8	214.4	6.3	18.0	8.9	797.4	8.0	182.7
7/18/2012	2551.5	1.9	0.0	8.8	44.5	3.0	1288.9	224.1	6.3	18.0	8.9	1094.9	10.9	-42.3
7/19/2012	2806.9	2.7	0.0	10.3	44.5	3.0	1428.3	226.3	6.3	18.0	8.9	1207.9	12.1	-40.3
7/20/2012	2858.1	2.6	0.0	11.7	44.5	3.0	1390.5	226.3	6.3	18.0	8.9	1442.0	14.4	-186.5
7/21/2012	2793.8	5.0	0.0	12.3	44.5	3.0	1164.2	225.6	6.3	18.0	8.9	1475.7	14.8	-54.8
7/22/2012	2752.1	2.1	0.0	12.9	44.5	3.0	1038.1	225.9	6.3	18.0	8.9	1531.2	15.3	-29.1
7/23/2012	2751.9	4.7	0.0	13.5	44.5	3.0	983.8	225.8	6.3	18.0	8.9	1505.5	15.1	54.3
7/24/2012	2779.5	1.6	0.0	13.9	44.5	3.0	1030.9	225.8	6.3	18.0	8.9	1356.7	13.6	182.3
7/25/2012	2795.1	2.0	0.0	14.2	44.5	3.0	1191.8	225.6	6.3	18.0	8.9	1275.4	12.8	120.2
7/26/2012	2666.7	4.7	0.0	14.6	44.5	3.0	1204.7	225.2	6.3	18.0	8.9	1267.4	12.7	-9.6
7/27/2012	2471.2	2.0	0.0	14.8	44.5	3.0	1021.3	223.8	6.3	18.0	8.9	1231.7	12.3	13.2
7/28/2012	2413.5	3.3	0.0	15.2	44.5	3.0	953.5	222.1	6.3	18.0	8.9	1251.6	12.5	6.6
7/29/2012	2385.1	6.9	0.0	15.0	44.5	3.0	901.5	221.6	6.3	18.0	8.9	1261.5	12.6	24.2
7/30/2012	2404.1	2.9	0.0	15.1	44.5	3.0	893.0	222.0	6.3	18.0	8.9	1255.5	12.6	53.3
7/31/2012	2472.3	1.2	0.0	14.9	44.5	3.0	937.5	222.8	6.3	18.0	8.9	1247.6	12.5	82.3
8/1/2012	2599.1	6.9	0.0	13.8	44.5	3.0	1069.7	224.4	6.3	18.0	8.9	1309.3	13.1	17.7
8/2/2012	2572.5	6.6	0.0	14.3	44.5	3.0	1104.9	223.6	6.3	17.6	8.9	1278.5	12.8	-11.7
8/3/2012	2379.8	4.8	0.0	15.7	44.5	3.0	937.5	220.8	6.3	17.6	8.9	1304.6	13.0	-61.0
8/4/2012	2265.4	1.9	0.0	15.8	44.5	3.0	757.7	219.3	6.3	17.6	8.9	1318.2	13.2	-10.5
8/5/2012	2254.4	4.2	0.0	15.7	44.5	3.0	694.4	219.6	6.3	17.6	8.9	1355.4	13.6	6.1
8/6/2012	2266.1	3.7	0.0	15.8	44.5	3.0	647.7	219.7	6.3	17.6	8.9	1349.3	13.5	70.1
8/7/2012	2367.2	4.7	0.0	15.9	44.5	3.0	714.8	220.7	6.3	17.6	8.9	1294.4	12.9	159.8
8/8/2012	2523.7	1.4	0.0	16.1	44.5	3.0	931.0	222.3	6.3	17.6	8.9	1275.9	12.8	114.0
8/9/2012	2571.0	5.1	0.0	16.1	44.5	3.0	1074.0	223.3	6.3	17.6	8.9	1290.1	12.9	6.7
8/10/2012	2588.4	3.6	0.0	114.8	44.5	3.0	1031.6	223.9	6.3	17.6	8.9	1391.1	13.9	60.9
8/11/2012	2738.5	5.1	0.0	83.8	44.5	3.0	1038.8	225.0	6.3	17.6	8.9	1396.9	14.0	167.4
8/12/2012	2883.8	6.6	0.0	199.3	44.5	3.0	1221.5	225.1	6.3	17.6	8.9	1360.7	13.6	283.6
8/13/2012	2923.0	4.3	0.0	192.3	44.5	3.0	1311.5	223.3	6.3	17.7	8.9	1408.4	14.1	177.1
8/14/2012	2690.2	10.7	0.0	163.5	44.5	3.0	1185.6	223.2	6.3	17.6	8.9	1450.1	14.5	5.8
8/15/2012	2135.7	6.8	0.0	236.4	44.5	3.0	688.6	218.8	6.3	17.6	8.9	1131.2	11.3	343.7
8/16/2012	1800.0	2.6	0.0	18.1	44.5	3.0	604.1	215.0	6.3	17.6	8.9	402.1	4.0	610.2
8/17/2012	1706.0	4.5	0.0	18.5	44.5	3.0	1003.5	213.1	6.3	17.6	8.9	370.3	3.7	153.2
8/18/2012	1694.9	3.3	0.0	18.7	44.5	3.0	1090.2	210.7	6.3	17.6	8.9	380.3	3.8	46.6
8/19/2012	1695.3	3.4	0.0	18.4	44.5	3.0	1086.5	209.9	6.3	17.6	8.9	391.1	3.9	40.4
8/20/2012	1694.7	8.3	0.0	18.3	44.5	3.0	1077.2	210.8	6.3	17.7	8.9	397.4	4.0	46.5
8/21/2012	1687.7	1.8	0.0	18.4	44.5	3.0	1073.1	212.6	6.3	17.6	8.9	328.5	3.3	105.2
8/22/2012	1685.2	7.1	0.0	17.8	44.5	3.0	1121.5	215.5	6.3	17.6	8.9	279.8	2.8	105.2
8/23/2012	1657.8	4.9	0.0	17.1	44.5	3.0	1154.4	218.1	6.3	17.6	8.9	319.3	3.2	-0.4
8/24/2012	1506.6	3.7	0.0	16.3	44.5	3.0	1047.3	212.4	6.3	17.6	8.9	319.9	3.2	-41.4
8/25/2012	1325.1	5.8	0.0	17.3	44.5	3.0	872.1	206.6	6.3	17.6	8.9	320.2	3.2	-39.1

Table G3-2: RGCP Channel Water Budget Equation Analysis Segment 2 Baseline 2012 (Units = Acre-Feet)

	Segment 2 - Leasburg Dam to Mesilla Dam (Middle Reach)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, below Leasburg Cable	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (La Mesa Drain)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, below Mesilla Dam	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo- transpiration	Diversions Authorized (Del Rio, Eastside, & Westside)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
8/26/2012	1294.9	2.8	0.0	17.3	44.5	3.0	757.6	202.6	6.3	17.6	8.9	292.0	2.9	74.5
8/27/2012	1296.3	5.8	0.0	17.1	44.5	3.0	780.1	202.9	6.3	17.6	8.9	289.8	2.9	58.3
8/28/2012	1290.8	2.8	0.0	16.8	44.5	3.0	779.3	202.0	6.3	17.6	8.9	358.0	3.6	-17.6
8/29/2012	1245.8	1.2	0.0	16.7	44.5	3.0	708.7	199.2	6.3	17.6	8.9	373.8	3.7	-7.0
8/30/2012	1208.6	4.9	0.0	16.4	44.5	3.0	636.9	197.4	6.3	17.6	8.9	401.8	4.0	4.5
8/31/2012	1213.2	3.8	0.0	16.1	44.5	3.0	592.7	197.2	6.3	17.6	8.9	407.0	4.1	46.8
9/1/2012	1222.7	0.9	0.0	15.7	44.5	3.0	597.0	198.2	6.3	17.7	8.9	400.6	4.0	54.1
9/2/2012	1232.3	4.8	0.0	15.6	44.5	3.0	610.3	199.0	6.3	15.0	8.9	396.1	4.0	60.6
9/3/2012	1227.8	2.8	0.0	15.7	44.5	3.0	627.2	197.8	6.3	15.0	8.9	393.9	3.9	40.7
9/4/2012	1101.5	4.8	0.0	15.7	44.5	3.0	589.9	193.5	6.3	15.0	8.9	333.8	3.3	18.8
9/5/2012	976.0	4.1	0.0	15.5	44.5	3.0	529.0	187.7	6.3	15.0	8.9	105.2	1.1	190.0
9/6/2012	939.0	5.3	0.0	14.2	44.5	3.0	625.0	184.1	6.3	15.0	8.9	5.5	0.1	161.2
9/7/2012	933.5	5.6	0.0	13.2	44.5	3.0	717.5	182.4	6.3	15.0	8.9	24.0	0.2	45.6
9/8/2012	925.5	2.0	0.0	14.1	44.5	3.0	690.4	179.6	6.3	15.0	8.9	246.9	2.5	-160.4
9/9/2012	914.6	2.1	0.0	14.2	44.5	3.0	498.3	177.1	6.3	15.0	8.9	410.8	4.1	-142.0
9/10/2012	902.3	2.4	0.0	13.8	44.5	3.0	308.2	174.4	6.3	15.0	8.9	631.5	6.3	-184.5
9/11/2012	887.3	3.2	0.0	12.8	44.5	3.0	104.5	173.2	6.3	15.0	8.9	675.5	6.8	-39.4
9/12/2012	872.7	5.8	0.0	10.5	44.5	3.0	68.4	173.3	6.3	15.0	8.9	295.7	3.0	365.9
9/13/2012	844.4	3.0	0.0	8.5	44.5	3.0	363.6	174.2	6.3	15.0	8.9	0.0	0.0	335.5
9/14/2012	618.4	3.3	0.0	9.7	44.5	3.0	582.1	164.5	6.3	15.0	8.9	0.0	0.0	-97.9

RGCP - Project Scale Water Budget - Segment 2 (Leasburg Dam to Mesilla Dam)

$$\Delta Sic = (Qus + Pc + Qcin + Qirf + Qgwrf) - (Qcds + Qcs + Qfpr + ET + Qda + Qdu)$$

- Sum of Inflow
- Sum of Outflow
- ΔSic - Change in Channel Storage

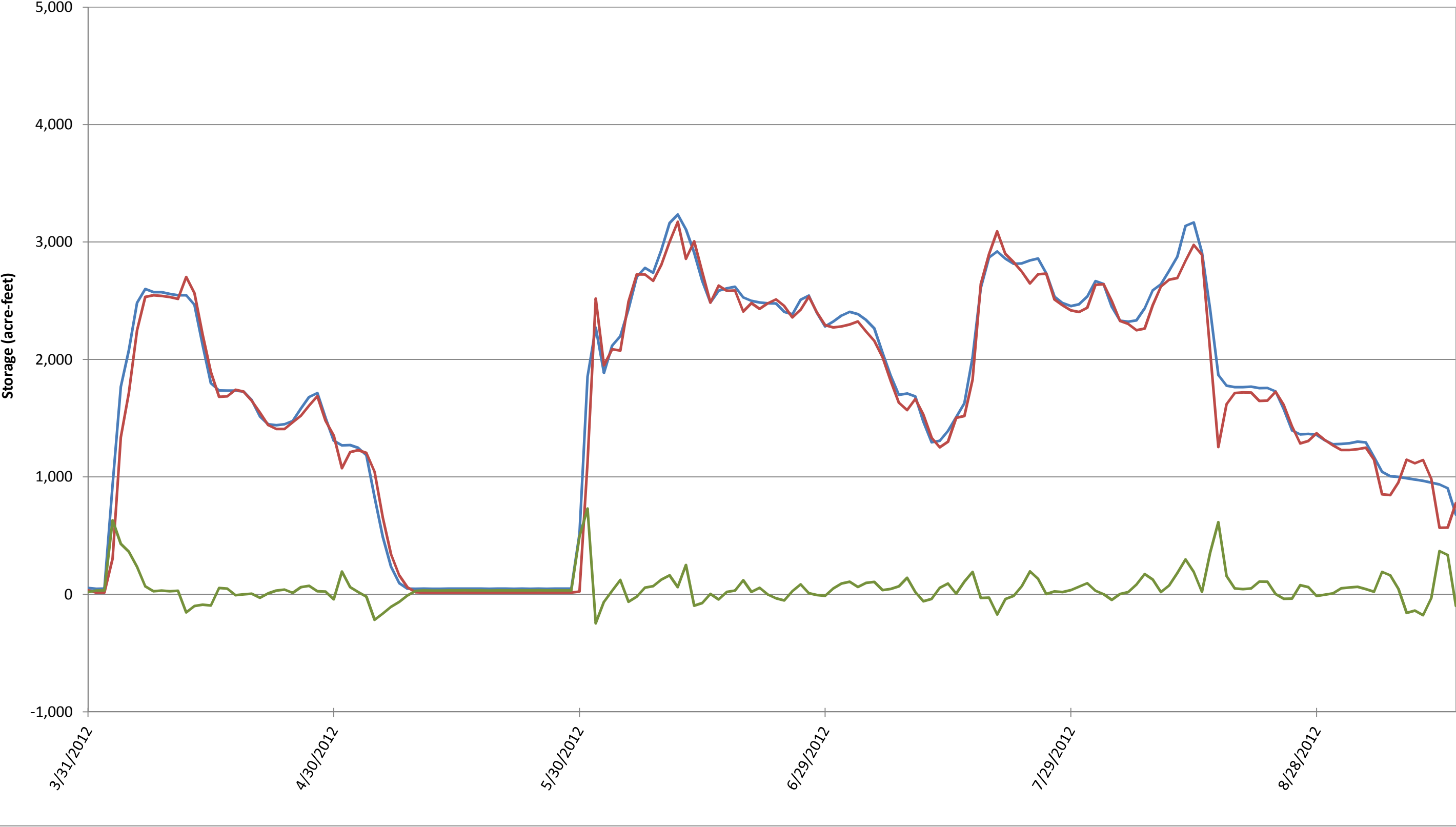


Table G3-3: RGCP Channel Water Budget Equation Analysis Segment 3 Baseline 2012 (Units = Acre-Feet)

	Segment 3 - Mesilla Dam to Anthony Metering Station (Lower Reach A)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, below Mesilla Dam	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (Del Rio Drain)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, below Anthony Station	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
3/31/2012	10.8	0.1	0.0	0.8	2.9	0.0	6.3	10.8	11.8	2.7	8.4	0.0	0.0	-25.3
4/1/2012	0.0	0.1	0.0	0.8	2.9	0.0	0.0	0.6	11.8	0.1	8.4	0.0	0.0	-17.0
4/2/2012	0.0	0.5	0.0	0.8	2.9	0.0	0.0	0.9	11.8	0.1	8.4	0.0	0.0	-16.9
4/3/2012	0.0	0.4	0.0	0.9	2.9	0.0	0.0	0.9	11.8	0.1	8.4	0.0	0.0	-17.0
4/4/2012	262.8	0.5	0.0	0.8	2.9	0.0	0.0	136.0	11.8	1.9	8.4	0.0	0.0	109.0
4/5/2012	783.2	0.7	0.0	4.4	2.9	0.0	11.3	546.0	11.8	8.6	8.4	0.0	0.0	205.1
4/6/2012	1593.1	0.8	0.0	61.8	2.9	0.0	250.3	941.1	11.8	9.3	8.4	0.0	0.0	437.8
4/7/2012	2117.9	0.1	0.0	85.5	2.9	0.0	1003.4	955.2	11.8	9.3	8.4	0.0	0.0	218.4
4/8/2012	2248.3	0.0	0.0	90.5	2.9	0.0	1634.8	632.5	11.8	9.3	8.4	0.0	0.0	45.0
4/9/2012	2265.9	0.0	0.0	101.5	2.9	0.0	1947.0	384.4	11.8	9.3	8.4	0.0	0.0	9.5
4/10/2012	2262.4	0.0	0.0	111.7	2.9	0.0	2029.9	325.1	11.8	9.3	8.4	0.0	0.0	-7.4
4/11/2012	2248.5	0.6	0.0	110.7	2.9	0.0	2038.7	313.8	11.8	9.3	8.4	0.0	0.0	-19.1
4/12/2012	2220.8	0.7	0.0	108.1	2.9	0.0	2031.8	311.0	11.8	9.3	8.4	0.0	0.0	-39.7
4/13/2012	2042.4	0.1	0.0	97.7	2.9	0.0	1893.7	308.7	11.8	9.3	8.4	0.0	0.0	-88.7
4/14/2012	1727.3	0.1	0.0	99.5	2.9	0.0	1627.3	305.3	11.8	9.3	8.4	0.0	0.0	-132.3
4/15/2012	1400.0	0.9	0.0	50.7	2.9	0.0	1299.4	300.0	11.8	9.3	8.4	0.0	0.0	-174.3
4/16/2012	1227.5	0.2	0.0	42.5	2.9	0.0	1014.0	292.8	11.8	9.3	8.4	0.0	0.0	-63.1
4/17/2012	1243.8	0.1	0.0	50.7	2.9	0.0	977.6	292.1	11.8	9.3	8.4	0.0	0.0	-1.6
4/18/2012	1252.8	0.1	0.0	51.0	2.9	0.0	1001.7	292.4	11.8	9.3	8.4	0.0	0.0	-16.8
4/19/2012	1217.0	0.1	0.0	48.7	2.9	0.0	983.1	291.1	11.8	9.3	8.4	0.0	0.0	-34.9
4/20/2012	1162.9	0.0	0.0	48.3	2.9	0.0	938.5	289.4	11.8	9.3	8.4	0.0	0.0	-43.2
4/21/2012	1065.4	0.0	0.0	42.2	2.9	0.0	867.2	285.7	11.8	9.3	8.4	0.0	0.0	-71.9
4/22/2012	964.1	0.6	0.0	33.3	2.9	0.0	752.9	278.7	11.8	9.3	8.4	0.0	0.0	-60.2
4/23/2012	930.7	0.5	0.0	29.6	2.9	0.0	690.7	274.5	11.8	9.3	8.4	0.0	0.0	-30.9
4/24/2012	932.6	0.4	0.0	29.5	2.9	0.0	678.3	273.5	11.8	9.3	8.4	0.0	0.0	-15.8
4/25/2012	941.4	0.3	0.0	27.1	2.9	0.0	686.1	272.7	11.8	9.3	8.4	0.0	0.0	-16.6
4/26/2012	966.4	0.2	0.0	25.8	2.9	0.0	690.1	274.0	11.8	9.3	8.4	0.0	0.0	1.7
4/27/2012	1049.7	0.5	0.0	34.6	2.9	0.0	751.9	280.0	11.8	9.3	8.4	0.0	0.0	26.3
4/28/2012	1128.4	0.0	0.0	36.6	2.9	0.0	836.5	283.8	11.8	9.3	8.4	0.0	0.0	18.3
4/29/2012	1046.3	0.1	0.0	29.3	2.9	0.0	853.8	282.4	11.8	9.3	8.4	0.0	0.0	-87.2
4/30/2012	926.9	0.3	0.0	33.7	2.9	0.0	719.9	273.3	11.8	9.3	8.4	0.0	0.0	-58.9
5/1/2012	839.7	0.0	0.0	30.2	2.9	0.0	619.8	263.4	11.8	9.3	8.4	0.0	0.0	-39.7
5/2/2012	972.7	1.1	0.0	28.0	2.9	0.0	654.3	271.1	11.8	11.6	8.4	0.0	0.0	47.6
5/3/2012	991.2	0.9	0.0	27.4	2.9	0.0	739.6	276.5	11.8	11.6	8.4	0.0	0.0	-25.5
5/4/2012	968.9	0.2	0.0	27.3	2.9	0.0	718.3	274.9	11.8	11.6	8.4	0.0	0.0	-25.6
5/5/2012	822.8	0.3	0.0	27.5	2.9	0.0	677.5	267.7	11.8	11.6	8.4	0.0	0.0	-123.4
5/6/2012	485.8	0.3	0.0	6.0	2.9	0.0	462.2	215.5	11.8	11.6	8.4	0.0	0.0	-214.6
5/7/2012	231.1	0.7	5.8	0.3	2.9	0.0	240.1	130.7	11.8	11.6	8.4	0.0	0.0	-161.7
5/8/2012	93.3	0.0	0.0	0.8	2.9	0.0	89.8	70.9	11.8	11.6	8.4	0.0	0.0	-95.4
5/9/2012	12.1	0.0	2.8	0.9	2.9	0.0	18.7	35.8	11.8	11.6	8.4	0.0	0.0	-67.5
5/10/2012	0.0	0.0	0.0	0.9	2.9	0.0	0.0	4.4	11.8	4.7	8.4	0.0	0.0	-25.5
5/11/2012	0.0	0.4	0.0	0.8	2.9	0.0	0.0	1.0	11.8	0.6	8.4	0.0	0.0	-17.6
5/12/2012	0.0	0.0	0.0	0.8	2.9	0.0	0.0	0.7	11.8	0.4	8.4	0.0	0.0	-17.5
5/13/2012	0.0	0.1	0.0	0.8	2.9	0.0	0.0	0.7	11.8	0.4	8.4	0.0	0.0	-17.4
5/14/2012	0.0	0.6	0.0	0.8	2.9	0.0	0.0	0.7	11.8	0.4	8.4	0.0	0.0	-16.9
5/15/2012	0.0	0.7	0.0	0.8	2.9	0.0	0.0	0.7	11.8	0.4	8.4	0.0	0.0	-16.8

Table G3-3: RGCP Channel Water Budget Equation Analysis Segment 3 Baseline 2012 (Units = Acre-Feet)

	Segment 3 - Mesilla Dam to Anthony Metering Station (Lower Reach A)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, below Mesilla Dam	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (Del Rio Drain)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, below Anthony Station	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo- transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
5/16/2012	0.0	1.1	0.0	0.8	2.9	0.0	0.0	0.7	11.8	0.4	8.4	0.0	0.0	-16.4
5/17/2012	0.0	0.3	0.0	0.8	2.9	0.0	0.0	0.7	11.8	0.4	8.4	0.0	0.0	-17.3
5/18/2012	0.0	0.3	0.0	0.8	2.9	0.0	0.0	0.7	11.8	0.4	8.4	0.0	0.0	-17.2
5/19/2012	0.0	0.0	0.0	0.8	2.9	0.0	0.0	0.7	11.8	0.4	8.4	0.0	0.0	-17.5
5/20/2012	0.0	0.3	0.0	0.8	2.9	0.0	0.0	0.7	11.8	0.4	8.4	0.0	0.0	-17.3
5/21/2012	0.0	1.0	0.0	0.8	2.9	0.0	0.0	0.7	11.8	0.4	8.4	0.0	0.0	-16.6
5/22/2012	0.0	0.1	0.0	0.8	2.9	0.0	0.0	0.7	11.8	0.4	8.4	0.0	0.0	-17.4
5/23/2012	0.0	0.8	0.0	0.8	2.9	0.0	0.0	0.7	11.8	0.4	8.4	0.0	0.0	-16.7
5/24/2012	0.0	0.2	0.0	0.7	2.9	0.0	0.0	0.7	11.8	0.4	8.4	0.0	0.0	-17.4
5/25/2012	0.0	1.0	0.0	0.8	2.9	0.0	0.0	0.7	11.8	0.3	8.4	0.0	0.0	-16.4
5/26/2012	0.0	0.1	0.0	0.8	2.9	0.0	0.0	0.7	11.8	0.4	8.4	0.0	0.0	-17.4
5/27/2012	0.0	0.6	0.0	0.8	2.9	0.0	0.0	0.7	11.8	0.3	8.4	0.0	0.0	-16.9
5/28/2012	0.0	0.6	0.0	0.8	2.9	0.0	0.0	0.7	11.8	0.4	8.4	0.0	0.0	-16.9
5/29/2012	0.0	0.3	0.0	0.8	2.9	0.0	0.0	0.7	11.8	0.4	8.4	0.0	0.0	-17.3
5/30/2012	0.0	0.0	0.0	0.8	2.9	0.0	0.0	0.7	11.8	0.3	8.4	0.0	0.0	-17.5
5/31/2012	789.8	0.7	0.0	0.8	2.9	0.0	0.0	70.5	11.8	2.9	8.4	0.0	0.0	700.6
6/1/2012	1336.3	0.4	0.0	0.8	2.9	0.0	1121.3	291.8	11.8	11.6	8.4	0.0	0.0	-104.5
6/2/2012	705.2	0.3	0.0	0.8	2.9	0.0	692.5	255.1	11.8	13.7	8.4	0.0	0.0	-272.4
6/3/2012	748.5	0.6	0.0	0.8	2.9	0.0	407.6	228.8	11.8	13.7	8.4	0.0	0.0	82.6
6/4/2012	794.5	0.3	0.0	0.8	2.9	0.0	530.3	252.2	11.8	13.7	8.4	0.0	0.0	-17.9
6/5/2012	967.6	0.2	0.0	0.8	2.9	0.0	590.6	264.1	11.8	13.7	8.4	0.0	0.0	82.9
6/6/2012	1069.4	0.7	0.0	1.2	2.9	0.0	745.0	276.9	11.8	13.7	8.4	0.0	0.0	18.5
6/7/2012	1064.4	1.6	0.0	14.5	2.9	0.0	781.6	278.9	11.8	13.7	8.4	0.0	0.0	-10.9
6/8/2012	1034.5	0.7	0.0	20.3	2.9	0.0	774.8	276.7	11.8	13.7	8.4	0.0	0.0	-26.8
6/9/2012	1182.1	0.2	0.0	11.1	2.9	0.0	816.9	279.4	11.8	13.7	8.4	0.0	0.0	66.2
6/10/2012	1432.5	2.2	0.0	38.4	2.9	0.0	1044.6	287.8	11.8	13.7	8.4	0.0	0.0	109.8
6/11/2012	1629.0	0.4	0.0	60.7	2.9	0.0	1308.9	294.1	11.8	13.7	8.4	0.0	0.0	56.1
6/12/2012	1614.7	0.6	0.0	69.1	2.9	0.0	1370.5	295.6	11.8	13.7	8.4	0.0	0.0	-12.7
6/13/2012	1665.6	0.1	0.0	74.9	2.9	0.0	1427.6	299.1	11.8	13.7	8.4	0.0	0.0	-17.0
6/14/2012	1399.0	1.2	0.0	74.0	2.9	0.0	1268.6	296.4	11.8	13.7	8.4	0.0	0.0	-121.7
6/15/2012	1138.0	2.0	0.0	47.9	2.9	0.0	1001.0	288.8	11.8	13.7	8.4	0.0	0.0	-132.7
6/16/2012	1158.2	1.2	0.0	34.4	2.9	0.0	874.6	286.1	11.8	13.7	8.4	0.0	0.0	2.2
6/17/2012	1114.1	1.6	0.0	42.5	2.9	0.0	881.0	285.0	11.8	13.7	8.4	0.0	0.0	-38.7
6/18/2012	1167.5	2.9	0.0	32.8	2.9	0.0	878.1	286.8	11.8	13.7	8.4	0.0	0.0	7.3
6/19/2012	1115.5	0.9	0.0	31.7	2.9	0.0	879.3	285.8	11.8	13.7	8.4	0.0	0.0	-48.0
6/20/2012	1165.2	1.0	0.0	30.3	2.9	0.0	872.8	286.6	11.8	13.7	8.4	0.0	0.0	6.1
6/21/2012	1146.2	0.4	0.0	34.1	2.9	0.0	886.0	286.6	11.8	13.7	8.4	0.0	0.0	-22.7
6/22/2012	1155.1	0.3	0.0	29.8	2.9	0.0	887.5	286.8	11.8	13.7	8.4	0.0	0.0	-20.1
6/23/2012	1124.1	1.0	0.0	32.5	2.9	0.0	870.6	285.8	11.8	13.7	8.4	0.0	0.0	-29.8
6/24/2012	1017.6	1.1	0.0	28.3	2.9	0.0	811.0	281.5	11.8	13.7	8.4	0.0	0.0	-76.4
6/25/2012	910.8	0.6	0.0	29.3	2.9	0.0	692.9	273.1	11.8	13.7	8.4	0.0	0.0	-56.1
6/26/2012	969.9	0.6	0.0	27.4	2.9	0.0	662.3	272.7	11.8	13.7	8.4	0.0	0.0	31.9
6/27/2012	1023.2	2.4	0.0	31.6	2.9	0.0	750.2	279.0	11.8	13.7	8.4	0.0	0.0	-3.0
6/28/2012	921.2	1.7	0.0	29.8	2.9	0.0	728.2	272.6	11.8	13.7	8.4	0.0	0.0	-79.0
6/29/2012	785.3	3.0	0.0	15.7	2.9	0.0	607.7	257.7	11.8	13.7	8.4	0.0	0.0	-92.4
6/30/2012	759.8	1.8	0.0	8.5	2.9	0.0	514.6	245.1	11.8	13.7	8.4	0.0	0.0	-20.5
7/1/2012	811.5	1.0	0.0	17.6	2.9	0.0	527.5	250.9	11.8	13.7	8.4	0.0	0.0	20.7
7/2/2012	892.3	3.1	0.0	20.1	2.9	0.0	591.1	261.8	11.8	12.0	8.4	0.0	0.0	33.4
7/3/2012	954.3	0.8	0.0	25.1	2.9	0.0	670.1	269.0	11.8	12.0	8.4	0.0	0.0	11.8
7/4/2012	954.4	1.3	0.0	32.9	2.9	0.0	699.9	270.6	11.8	12.0	8.4	0.0	0.0	-11.0
7/5/2012	990.3	3.2	0.0	36.4	2.9	0.0	716.6	273.0	11.8	12.0	8.4	0.0	0.0	11.1

Table G3-3: RGCP Channel Water Budget Equation Analysis Segment 3 Baseline 2012 (Units = Acre-Feet)

	Segment 3 - Mesilla Dam to Anthony Metering Station (Lower Reach A)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, below Mesilla Dam	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (Del Rio Drain)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, below Anthony Station	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo- transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
7/6/2012	943.2	0.8	0.0	44.2	2.9	0.0	733.7	272.8	11.8	12.0	8.4	0.0	0.0	-47.5
7/7/2012	841.5	1.2	0.0	34.3	2.9	0.0	652.2	263.9	11.8	12.0	8.4	0.0	0.0	-68.4
7/8/2012	746.3	1.4	0.0	67.6	2.9	0.0	571.9	251.7	11.8	12.0	8.4	0.0	0.0	-37.5
7/9/2012	801.2	4.0	0.0	53.5	2.9	0.0	549.7	252.5	11.8	12.0	8.4	0.0	0.0	27.2
7/10/2012	890.3	3.1	0.0	39.0	2.9	0.0	646.1	266.1	11.8	12.0	8.4	0.0	0.0	-9.2
7/11/2012	778.2	1.9	0.0	33.6	2.9	0.0	642.7	260.7	11.8	12.0	8.4	0.0	0.0	-118.9
7/12/2012	587.3	1.1	0.0	13.1	2.9	0.0	487.0	228.5	11.8	12.0	8.4	0.0	0.0	-143.2
7/13/2012	490.2	1.3	0.0	7.4	2.9	0.0	346.9	192.8	11.8	12.0	8.4	0.0	0.0	-70.0
7/14/2012	532.6	1.0	0.0	6.5	2.9	0.0	315.8	194.9	11.8	12.0	8.4	0.0	0.0	0.2
7/15/2012	617.1	2.2	0.0	3.1	2.9	0.0	361.3	211.7	11.8	12.0	8.4	0.0	0.0	20.2
7/16/2012	632.5	1.3	0.0	6.6	2.9	0.0	415.6	221.0	11.8	12.0	8.4	0.0	0.0	-25.5
7/17/2012	783.8	4.2	0.0	10.2	2.9	0.0	435.3	234.2	11.8	12.0	8.4	0.0	0.0	99.4
7/18/2012	1288.9	1.2	0.0	36.5	2.9	0.0	783.4	277.5	11.8	12.0	8.4	0.0	0.0	236.4
7/19/2012	1428.3	1.7	0.0	55.6	2.9	0.0	1158.8	289.6	11.8	12.0	8.4	0.0	0.0	8.0
7/20/2012	1390.5	1.6	0.0	43.7	2.9	0.0	1184.4	289.5	11.8	12.0	8.4	0.0	0.0	-67.3
7/21/2012	1164.2	3.2	0.0	36.5	2.9	0.0	1019.5	284.3	11.8	12.0	8.4	0.0	0.0	-129.2
7/22/2012	1038.1	1.3	0.0	34.9	2.9	0.0	835.0	277.3	11.8	12.0	8.4	0.0	0.0	-67.2
7/23/2012	983.8	3.0	0.0	35.9	2.9	0.0	764.0	272.5	11.8	12.0	8.4	0.0	0.0	-42.9
7/24/2012	1030.9	1.0	0.0	41.3	2.9	0.0	758.5	273.5	11.8	12.0	8.4	0.0	0.0	12.0
7/25/2012	1191.8	1.3	0.0	63.2	2.9	0.0	887.1	281.7	11.8	12.0	8.4	0.0	0.0	58.2
7/26/2012	1204.7	3.0	0.0	62.1	2.9	0.0	1000.9	286.1	11.8	12.0	8.4	0.0	0.0	-46.5
7/27/2012	1021.3	1.3	0.0	56.2	2.9	0.0	887.7	280.8	11.8	12.0	8.4	0.0	0.0	-119.0
7/28/2012	953.5	2.1	0.0	48.8	2.9	0.0	753.6	274.7	11.8	12.0	8.4	0.0	0.0	-53.2
7/29/2012	901.5	4.4	0.0	46.3	2.9	0.0	708.7	271.0	11.8	12.0	8.4	0.0	0.0	-56.7
7/30/2012	893.0	1.9	0.0	38.1	2.9	0.0	671.1	267.7	11.8	12.0	8.4	0.0	0.0	-35.0
7/31/2012	937.5	0.8	0.0	32.6	2.9	0.0	684.7	268.2	11.8	12.0	8.4	0.0	0.0	-11.3
8/1/2012	1069.7	4.4	0.0	38.1	2.9	0.0	768.2	272.3	11.8	12.0	8.4	0.0	0.0	42.4
8/2/2012	1104.9	4.2	0.0	50.1	2.9	0.0	879.9	272.3	11.8	11.7	8.4	0.0	0.0	-21.8
8/3/2012	937.5	3.1	0.0	35.5	2.9	0.0	811.3	266.4	11.8	11.7	8.4	0.0	0.0	-130.5
8/4/2012	757.7	1.2	0.0	18.0	2.9	0.0	623.3	255.7	11.8	11.7	8.4	0.0	0.0	-131.1
8/5/2012	694.4	2.7	0.0	14.8	2.9	0.0	503.8	240.8	11.8	11.7	8.4	0.0	0.0	-61.7
8/6/2012	647.7	2.4	0.0	12.9	2.9	0.0	464.8	228.1	11.8	11.7	8.4	0.0	0.0	-58.8
8/7/2012	714.8	3.0	0.0	13.0	2.9	0.0	447.1	227.9	11.8	11.7	8.4	0.0	0.0	26.8
8/8/2012	931.0	0.9	0.0	28.5	2.9	0.0	571.8	254.3	11.8	11.7	8.4	0.0	0.0	105.5
8/9/2012	1074.0	3.2	0.0	38.6	2.9	0.0	794.1	271.0	11.8	11.7	8.4	0.0	0.0	21.8
8/10/2012	1031.6	2.3	0.0	26.2	2.9	0.0	841.0	271.2	11.8	11.7	8.4	0.0	0.0	-81.1
8/11/2012	1038.8	3.2	0.0	19.3	2.9	0.0	851.0	270.7	11.8	11.7	8.4	0.0	0.0	-89.3
8/12/2012	1221.5	4.2	0.0	43.4	2.9	0.0	975.8	278.3	11.8	11.7	8.4	0.0	0.0	-14.0
8/13/2012	1311.5	2.8	0.0	43.0	2.9	0.0	1219.1	283.5	11.8	11.7	8.4	0.0	0.0	-174.3
8/14/2012	1185.6	6.8	0.0	41.5	2.9	0.0	1215.8	281.9	11.8	11.7	8.4	0.0	0.0	-292.7
8/15/2012	688.6	4.3	128.6	38.7	2.9	0.0	858.8	265.4	11.8	11.7	8.4	0.0	0.0	-292.9
8/16/2012	604.1	1.6	0.0	61.8	2.9	0.0	590.5	230.2	11.8	11.7	8.4	0.0	0.0	-182.2
8/17/2012	1003.5	2.9	0.0	68.0	2.9	0.0	624.7	264.0	11.8	11.7	8.4	0.0	0.0	156.7
8/18/2012	1090.2	2.1	0.0	61.3	2.9	0.0	876.8	283.4	11.8	11.7	8.4	0.0	0.0	-35.6
8/19/2012	1086.5	2.2	0.0	58.3	2.9	0.0	876.4	283.4	11.8	11.7	8.4	0.0	0.0	-41.8
8/20/2012	1077.2	5.3	0.0	61.7	2.9	0.0	864.1	282.7	11.8	11.7	8.4	0.0	0.0	-31.5
8/21/2012	1073.1	1.1	0.0	62.4	2.9	0.0	856.6	282.1	11.8	11.7	8.4	0.0	0.0	-31.0
8/22/2012	1121.5	4.5	0.0	65.1	2.9	0.0	883.3	283.1	11.8	11.7	8.4	0.0	0.0	-4.2
8/23/2012	1154.4	3.2	0.0	58.2	2.9	0.0	936.6	280.8	11.8	11.7	8.4	0.0	0.0	-30.6
8/24/2012	1047.3	2.3	0.0	64.9	2.9	0.0	901.1	274.3	11.8	11.7	8.4	0.0	0.0	-89.8
8/25/2012	872.1	3.7	0.0	49.6	2.9	0.0	753.5	264.8	11.8	11.7	8.4	0.0	0.0	-121.9

Table G3-3: RGCP Channel Water Budget Equation Analysis Segment 3 Baseline 2012 (Units = Acre-Feet)

	Segment 3 - Mesilla Dam to Anthony Metering Station (Lower Reach A)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, below Mesilla Dam	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (Del Rio Drain)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, below Anthony Station	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo- transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
8/26/2012	757.6	1.8	0.0	32.4	2.9	0.0	598.8	249.0	11.8	11.7	8.4	0.0	0.0	-84.9
8/27/2012	780.1	3.7	0.0	34.6	2.9	0.0	563.3	245.9	11.8	11.7	8.4	0.0	0.0	-19.8
8/28/2012	779.3	1.8	0.0	29.3	2.9	0.0	576.9	247.1	11.8	11.7	8.4	0.0	0.0	-42.6
8/29/2012	708.7	0.8	0.0	28.2	2.9	0.0	547.2	244.5	11.8	11.7	8.4	0.0	0.0	-82.9
8/30/2012	636.9	3.1	0.0	20.9	2.9	0.0	477.6	228.9	11.8	11.7	8.4	0.0	0.0	-74.6
8/31/2012	592.7	2.4	0.0	17.2	2.9	0.0	425.1	214.9	11.8	11.7	8.4	0.0	0.0	-56.6
9/1/2012	597.0	0.6	0.0	17.2	2.9	0.0	403.8	210.7	11.8	11.7	8.4	0.0	0.0	-28.6
9/2/2012	610.3	3.1	0.0	16.6	2.9	0.0	412.1	211.4	11.8	10.0	8.4	0.0	0.0	-20.8
9/3/2012	627.2	1.8	0.0	16.7	2.9	0.0	420.8	223.8	11.8	10.0	8.4	0.0	0.0	-26.2
9/4/2012	589.9	3.1	0.0	17.1	2.9	0.0	423.2	222.7	11.8	10.0	8.4	0.0	0.0	-63.0
9/5/2012	529.0	2.6	0.0	20.6	2.9	0.0	368.7	205.4	11.8	10.0	8.4	0.0	0.0	-49.2
9/6/2012	625.0	3.4	0.0	24.8	2.9	0.0	365.1	216.6	11.8	10.0	8.4	0.0	0.0	44.3
9/7/2012	717.5	3.6	0.0	23.6	2.9	0.0	460.7	240.8	11.8	10.0	8.4	0.0	0.0	15.9
9/8/2012	690.4	1.3	0.0	33.4	2.9	0.0	505.1	245.4	11.8	10.0	8.4	0.0	0.0	-52.6
9/9/2012	498.3	1.3	0.0	43.5	2.9	0.0	438.8	214.3	11.8	10.0	8.4	0.0	0.0	-137.3
9/10/2012	308.2	1.6	0.0	28.2	2.9	0.0	301.9	159.5	11.8	10.0	8.4	0.0	0.0	-150.6
9/11/2012	104.5	2.0	39.0	24.3	2.9	0.0	170.7	88.6	11.8	10.0	8.4	0.0	0.0	-116.7
9/12/2012	68.4	3.7	0.0	20.3	2.9	0.0	50.9	49.8	11.8	10.0	8.4	0.0	0.0	-35.5
9/13/2012	363.6	1.9	0.0	17.1	2.9	0.0	67.2	111.3	11.8	10.0	8.4	0.0	0.0	176.8
9/14/2012	582.1	2.1	0.0	16.4	2.9	0.0	297.1	199.4	11.8	10.0	8.4	0.0	0.0	76.8

RGCP - Project Scale Water Budget - Segment 3 (Mesilla Dam to Anthony Metering Station)

$$\Delta Sic = (Qus + Pc + Qcin + Qirf + Qgwrf) - (Qcds + Qcs + Qfpr + ET + Qda + Qdu)$$

- Sum of Inflow
- Sum of Outflow
- ΔSic - Change in Channel Storage

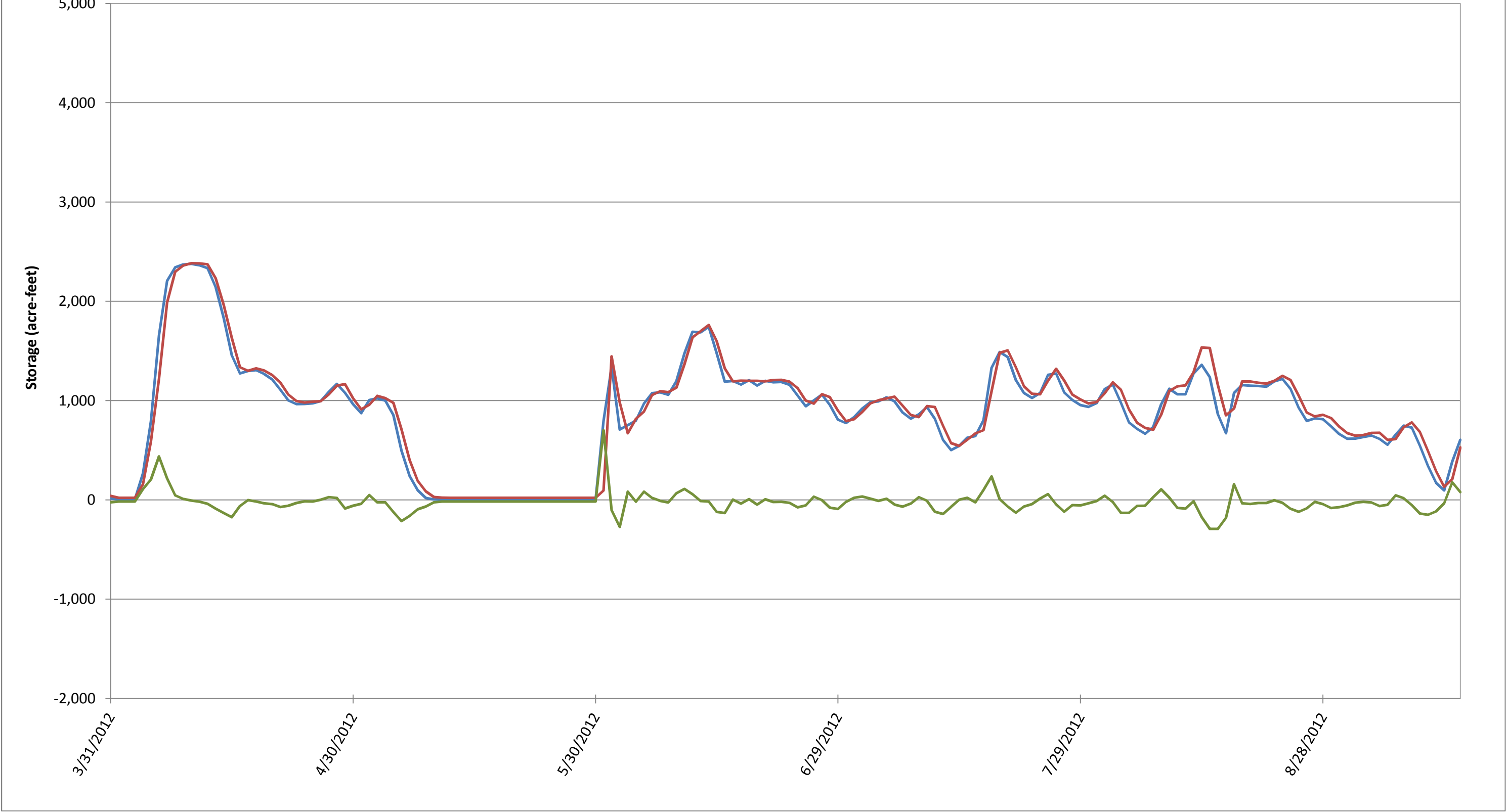


Table G3-4: RGCP Channel Water Budget Equation Analysis Segment 4 Baseline 2012 (Units = Acre-Feet)

	Segment 4 - Anthony Metering Station to American Dam (Lower Reach B)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, below Anthony Station	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (Nemexas Drain, East Drain, and West Drain)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, at American Dam	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
3/31/2012	6.3	0.1	0.0	17.6	33.0	0.0	34.5	6.3	6.4	2.6	7.2	0.0	0.0	0.0
4/1/2012	0.0	0.2	0.0	17.8	33.0	0.0	27.8	10.4	6.4	0.4	7.2	0.0	0.0	-1.1
4/2/2012	0.0	0.2	0.0	18.5	33.0	0.0	27.8	16.4	6.4	0.9	7.2	0.0	0.0	-6.9
4/3/2012	0.0	0.1	0.0	18.5	33.0	0.0	27.8	15.8	6.4	1.3	7.2	0.0	0.0	-6.9
4/4/2012	0.0	0.3	0.0	18.9	33.0	0.0	27.8	15.9	6.4	1.7	7.2	0.0	0.0	-6.8
4/5/2012	11.3	0.9	0.0	19.5	33.0	0.0	27.8	21.1	6.4	2.2	7.2	0.0	0.0	0.0
4/6/2012	250.3	0.6	0.0	19.6	33.0	0.0	27.8	148.8	6.4	5.5	7.2	0.0	0.0	107.7
4/7/2012	1003.4	0.3	0.0	19.9	33.0	0.0	118.9	606.2	6.4	8.1	7.2	0.0	0.0	309.8
4/8/2012	1634.8	0.0	0.0	20.2	33.0	0.0	648.7	681.0	6.4	8.1	7.2	0.0	0.0	336.5
4/9/2012	1947.0	0.0	0.0	18.7	33.0	0.0	1555.8	319.8	6.4	8.7	7.2	0.0	0.0	100.8
4/10/2012	2029.9	0.4	0.0	16.2	33.0	0.0	1914.8	132.3	6.4	8.7	7.2	0.0	0.0	10.1
4/11/2012	2038.7	1.0	0.0	16.3	33.0	0.0	2005.6	67.2	6.4	8.7	7.2	0.0	0.0	-6.1
4/12/2012	2031.8	0.3	0.0	16.1	33.0	0.0	2017.5	53.4	6.4	8.7	7.2	0.0	0.0	-11.9
4/13/2012	1893.7	0.2	0.0	16.3	33.0	0.0	1933.9	50.8	6.4	8.7	7.2	0.0	0.0	-63.8
4/14/2012	1627.3	0.7	33.5	16.5	33.0	0.0	1710.2	49.4	6.4	8.7	7.2	0.0	0.0	-71.1
4/15/2012	1299.4	0.2	37.1	15.9	33.0	0.0	1385.4	48.2	6.4	8.7	7.2	0.0	0.0	-70.3
4/16/2012	1014.0	0.1	26.6	15.9	33.0	0.0	1089.5	46.2	6.4	8.7	7.2	0.0	0.0	-68.5
4/17/2012	977.6	0.2	0.0	16.2	33.0	0.0	963.0	45.3	6.4	8.7	7.2	0.0	0.0	-3.6
4/18/2012	1001.7	0.1	0.0	16.4	33.0	0.0	982.6	45.6	6.4	8.7	7.2	0.0	0.0	0.6
4/19/2012	983.1	0.2	0.0	16.7	33.0	0.0	988.1	45.5	6.4	8.7	7.2	0.0	0.0	-22.9
4/20/2012	938.5	0.2	0.0	16.9	33.0	0.0	951.1	44.7	6.4	8.7	7.2	0.0	0.0	-29.5
4/21/2012	867.2	0.6	0.0	16.7	33.0	0.0	895.3	43.6	6.4	8.7	7.2	0.0	0.0	-43.7
4/22/2012	752.9	0.5	1.1	17.3	33.0	0.0	804.3	41.1	6.4	8.7	7.2	0.0	0.0	-62.9
4/23/2012	690.7	1.1	0.0	18.9	33.0	0.0	715.3	38.8	6.4	8.7	7.2	0.0	0.0	-32.7
4/24/2012	678.3	1.3	0.0	21.3	33.0	0.0	681.9	38.0	6.4	8.7	7.2	0.0	0.0	-8.3
4/25/2012	686.1	0.1	0.0	17.6	33.0	0.0	679.7	38.3	6.4	8.7	7.2	0.0	0.0	-3.5
4/26/2012	690.1	0.2	0.0	17.9	33.0	0.0	687.0	38.6	6.4	8.7	7.2	0.0	0.0	-6.8
4/27/2012	751.9	0.1	0.0	21.3	33.0	0.0	711.0	40.0	6.4	8.7	7.2	0.0	0.0	32.9
4/28/2012	836.5	0.4	0.0	24.1	33.0	0.0	793.1	41.8	6.4	8.7	7.2	0.0	0.0	36.6
4/29/2012	853.8	0.2	0.0	19.5	33.0	0.0	868.5	43.2	6.4	8.7	7.2	0.0	0.0	-27.4
4/30/2012	719.9	0.2	7.1	19.3	33.0	0.0	779.3	40.3	6.4	8.7	7.2	0.0	0.0	-62.4
5/1/2012	619.8	0.6	6.8	18.4	33.0	0.0	678.0	37.0	6.4	8.7	7.2	0.0	0.0	-58.7
5/2/2012	654.3	0.5	0.0	18.5	33.0	0.0	601.5	35.9	6.4	10.8	7.2	0.0	0.0	44.4
5/3/2012	739.6	0.2	0.0	18.9	33.0	0.0	712.8	39.8	6.4	10.8	7.2	0.0	0.0	14.6
5/4/2012	718.3	0.4	0.0	18.9	33.0	0.0	726.2	39.5	6.4	10.8	7.2	0.0	0.0	-19.4
5/5/2012	677.5	0.3	0.0	18.4	33.0	0.0	705.9	38.7	6.4	10.8	7.2	0.0	0.0	-39.8
5/6/2012	462.2	0.9	88.3	17.8	33.0	0.0	601.3	32.4	6.4	10.8	7.2	0.0	0.0	-55.9
5/7/2012	240.1	0.1	90.1	17.5	33.0	0.0	380.7	21.0	6.4	10.8	7.2	0.0	0.0	-45.3
5/8/2012	89.8	0.5	53.3	17.8	33.0	0.0	193.8	11.5	6.4	10.8	7.2	0.0	0.0	-35.4
5/9/2012	18.7	0.6	19.5	18.6	33.0	0.0	89.8	7.6	6.4	10.8	7.2	0.0	0.0	-31.4
5/10/2012	0.0	0.4	0.0	18.6	33.0	0.0	48.5	4.6	6.4	10.2	7.2	0.0	0.0	-24.9
5/11/2012	0.0	0.2	0.0	18.2	33.0	0.0	39.2	2.9	6.4	5.8	7.2	0.0	0.0	-10.2
5/12/2012	0.0	0.1	0.0	18.1	33.0	0.0	38.7	2.7	6.4	4.6	7.2	0.0	0.0	-8.4
5/13/2012	0.0	0.2	0.0	18.0	33.0	0.0	38.6	2.7	6.4	4.5	7.2	0.0	0.0	-8.3
5/14/2012	0.0	0.8	0.0	18.0	33.0	0.0	38.6	2.7	6.4	4.4	7.2	0.0	0.0	-7.6
5/15/2012	0.0	0.8	0.0	17.5	33.0	0.0	38.5	2.7	6.4	4.4	7.2	0.0	0.0	-7.8

Table G3-4: RGCP Channel Water Budget Equation Analysis Segment 4 Baseline 2012 (Units = Acre-Feet)

	Segment 4 - Anthony Metering Station to American Dam (Lower Reach B)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, below Anthony Station	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (Nemexas Drain, East Drain, and West Drain)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, at American Dam	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
5/16/2012	0.0	0.7	0.0	17.0	33.0	0.0	37.9	2.6	6.4	4.4	7.2	0.0	0.0	-7.8
5/17/2012	0.0	1.5	0.0	16.9	33.0	0.0	37.6	2.6	6.4	4.4	7.2	0.0	0.0	-6.8
5/18/2012	0.0	1.0	0.0	16.7	33.0	0.0	37.6	2.6	6.4	4.4	7.2	0.0	0.0	-7.5
5/19/2012	0.0	0.5	0.0	16.7	33.0	0.0	37.4	2.6	6.4	4.3	7.2	0.0	0.0	-7.7
5/20/2012	0.0	1.2	0.0	16.7	33.0	0.0	37.4	2.6	6.4	4.3	7.2	0.0	0.0	-7.0
5/21/2012	0.0	0.4	0.0	16.6	33.0	0.0	37.3	2.5	6.4	4.3	7.2	0.0	0.0	-7.7
5/22/2012	0.0	1.5	0.0	16.6	33.0	0.0	37.4	2.6	6.4	4.3	7.2	0.0	0.0	-6.8
5/23/2012	0.0	1.1	0.0	16.8	33.0	0.0	37.5	2.6	6.4	4.3	7.2	0.0	0.0	-7.1
5/24/2012	0.0	0.4	0.0	17.1	33.0	0.0	37.7	2.6	6.4	4.3	7.2	0.0	0.0	-7.8
5/25/2012	0.0	0.1	0.0	16.8	33.0	0.0	37.7	2.6	6.4	4.3	7.2	0.0	0.0	-8.3
5/26/2012	0.0	0.5	0.0	17.0	33.0	0.0	37.7	2.6	6.4	4.3	7.2	0.0	0.0	-7.7
5/27/2012	0.0	1.3	0.0	17.4	33.0	0.0	38.0	2.6	6.4	4.3	7.2	0.0	0.0	-6.8
5/28/2012	0.0	0.2	0.0	17.8	33.0	0.0	38.4	2.6	6.4	4.3	7.2	0.0	0.0	-7.9
5/29/2012	0.0	0.4	0.0	17.0	33.0	0.0	38.1	2.6	6.4	4.3	7.2	0.0	0.0	-8.2
5/30/2012	0.0	0.5	0.0	16.9	33.0	0.0	37.7	2.6	6.4	4.3	7.2	0.0	0.0	-7.8
5/31/2012	0.0	0.5	0.0	16.7	33.0	0.0	37.5	2.6	6.4	4.3	7.2	0.0	0.0	-7.8
6/1/2012	1121.3	1.2	0.0	16.6	33.0	0.0	510.2	32.7	6.4	10.2	7.2	0.0	0.0	605.3
6/2/2012	692.5	1.3	195.5	16.4	33.0	0.0	937.4	41.0	6.4	12.7	7.2	0.0	0.0	-66.0
6/3/2012	407.6	0.6	46.4	16.5	33.0	0.0	503.4	27.6	6.4	12.7	7.2	0.0	0.0	-53.3
6/4/2012	530.3	0.5	0.0	16.9	33.0	0.0	463.0	30.7	6.4	12.7	7.2	0.0	0.0	60.7
6/5/2012	590.6	0.4	0.0	16.6	33.0	0.0	528.8	33.1	6.4	12.7	7.2	0.0	0.0	52.4
6/6/2012	745.0	0.3	0.0	16.6	33.0	0.0	673.6	39.0	6.4	12.7	7.2	0.0	0.0	55.9
6/7/2012	781.6	0.8	0.0	19.3	33.0	0.0	772.3	40.9	6.4	12.7	7.2	0.0	0.0	-4.9
6/8/2012	774.8	0.9	0.0	20.7	33.0	0.0	771.9	40.5	6.4	12.7	7.2	0.0	0.0	-9.4
6/9/2012	816.9	0.6	0.0	19.1	33.0	0.0	757.9	40.4	6.4	12.7	7.2	0.0	0.0	45.0
6/10/2012	1044.6	1.7	0.0	17.1	33.0	0.0	927.4	44.4	6.4	12.7	7.2	0.0	0.0	98.2
6/11/2012	1308.9	0.7	0.0	19.0	33.0	0.0	1209.8	46.7	6.4	12.7	7.2	0.0	0.0	78.7
6/12/2012	1370.5	0.9	0.0	16.8	33.0	0.0	1366.0	47.1	6.4	12.7	7.2	0.0	0.0	-18.1
6/13/2012	1427.6	1.1	0.0	17.0	33.0	0.0	1374.1	47.2	6.4	12.7	7.2	0.0	0.0	31.0
6/14/2012	1268.6	1.0	33.4	17.6	33.0	0.0	1352.6	46.9	6.4	12.7	7.2	0.0	0.0	-72.2
6/15/2012	1001.0	1.1	35.2	17.8	33.0	0.0	1087.0	44.7	6.4	12.6	7.2	0.0	0.0	-69.8
6/16/2012	874.6	1.6	0.0	18.0	33.0	0.0	874.6	42.4	6.4	12.0	7.2	0.0	0.0	-15.5
6/17/2012	881.0	1.8	0.0	18.4	33.0	0.0	896.0	42.9	6.4	12.0	7.2	0.0	0.0	-30.5
6/18/2012	878.1	1.1	0.0	20.4	33.0	0.0	846.1	42.0	6.4	12.0	7.2	0.0	0.0	18.9
6/19/2012	879.3	0.9	0.0	18.1	33.0	0.0	898.1	42.7	6.4	11.9	7.2	0.0	0.0	-35.0
6/20/2012	872.8	1.8	0.0	16.8	33.0	0.0	839.6	42.0	6.4	12.7	7.2	0.0	0.0	16.4
6/21/2012	886.0	0.8	0.0	16.8	33.0	0.0	886.1	42.9	6.4	12.7	7.2	0.0	0.0	-18.8
6/22/2012	887.5	0.5	0.0	16.8	33.0	0.0	868.1	42.5	6.4	12.7	7.2	0.0	0.0	1.0
6/23/2012	870.6	1.1	0.0	16.7	33.0	0.0	873.7	42.6	6.4	12.7	7.2	0.0	0.0	-21.2
6/24/2012	811.0	0.8	0.0	16.7	33.0	0.0	840.2	41.6	6.4	12.7	7.2	0.0	0.0	-46.6
6/25/2012	692.9	1.5	0.7	16.6	33.0	0.0	743.2	38.6	6.4	12.7	7.2	0.0	0.0	-63.4
6/26/2012	662.3	1.4	0.0	16.4	33.0	0.0	651.3	36.4	6.4	12.6	7.2	0.0	0.0	-0.8
6/27/2012	750.2	2.7	0.0	16.7	33.0	0.0	704.7	38.6	6.4	12.2	7.2	0.0	0.0	33.4
6/28/2012	728.2	4.2	0.0	17.6	33.0	0.0	750.9	39.0	6.4	12.7	7.2	0.0	0.0	-33.3
6/29/2012	607.7	3.8	8.9	16.8	33.0	0.0	666.4	35.5	6.4	12.0	7.2	0.0	0.0	-57.3
6/30/2012	514.6	1.8	0.0	16.4	33.0	0.0	559.0	31.4	6.4	12.0	7.2	0.0	0.0	-50.2
7/1/2012	527.5	3.8	0.0	16.3	33.0	0.0	512.6	30.7	6.4	12.0	7.2	0.0	0.0	11.7
7/2/2012	591.1	2.0	0.0	16.0	33.0	0.0	549.3	33.0	6.4	10.5	7.2	0.0	0.0	35.6
7/3/2012	670.1	1.5	0.0	15.7	33.0	0.0	628.1	35.9	6.4	10.5	7.2	0.0	0.0	32.2
7/4/2012	699.9	4.4	0.0	15.9	33.0	0.0	689.7	37.3	6.4	10.5	7.2	0.0	0.0	2.1
7/5/2012	716.6	2.8	0.0	16.5	33.0	0.0	695.7	37.5	6.4	10.5	7.2	0.0	0.0	11.6

Table G3-4: RGCP Channel Water Budget Equation Analysis Segment 4 Baseline 2012 (Units = Acre-Feet)

	Segment 4 - Anthony Metering Station to American Dam (Lower Reach B)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
	Upstream Channel Inflow, below Anthony Station	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (Nemexas Drain, East Drain, and West Drain)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, at American Dam	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
Date														
7/6/2012	733.7	3.8	0.0	16.9	33.0	0.0	732.8	39.2	6.4	10.5	7.2	0.0	0.0	-8.7
7/7/2012	652.2	2.2	0.0	17.1	33.0	0.0	694.1	37.6	6.4	10.5	7.2	0.0	0.0	-51.2
7/8/2012	571.9	3.6	0.0	17.3	33.0	0.0	615.7	34.8	6.4	10.5	7.2	0.0	0.0	-48.8
7/9/2012	549.7	2.6	0.0	17.9	33.0	0.0	546.4	32.6	6.4	10.5	7.2	0.0	0.0	0.2
7/10/2012	646.1	2.4	0.0	17.4	33.0	0.0	592.1	35.7	6.4	10.5	7.2	0.0	0.0	47.0
7/11/2012	642.7	2.1	0.0	17.5	33.0	0.0	666.4	36.4	6.4	10.5	7.2	0.0	0.0	-31.5
7/12/2012	487.0	2.4	42.6	17.5	33.0	0.0	580.0	31.5	6.4	10.5	7.2	0.0	0.0	-53.2
7/13/2012	346.9	2.8	40.3	17.5	33.0	0.0	437.7	24.8	6.4	10.5	7.2	0.0	0.0	-46.1
7/14/2012	315.8	3.3	0.0	17.5	33.0	0.0	330.7	21.6	6.4	10.5	7.2	0.0	0.0	-6.8
7/15/2012	361.3	3.3	0.0	17.4	33.0	0.0	340.3	23.0	6.4	10.5	7.2	0.0	0.0	27.6
7/16/2012	415.6	1.9	0.0	17.4	33.0	0.0	400.9	25.7	6.4	10.5	7.2	0.0	0.0	17.3
7/17/2012	435.3	2.7	0.0	16.4	33.0	0.0	423.5	25.8	6.4	10.5	7.2	0.0	0.0	14.1
7/18/2012	783.4	2.2	0.0	15.7	33.0	0.0	515.0	34.0	6.4	10.5	7.2	0.0	0.0	261.2
7/19/2012	1158.8	1.8	0.0	15.6	33.0	0.0	1067.7	44.7	6.4	11.2	7.2	0.0	0.0	72.0
7/20/2012	1184.4	2.9	0.0	15.4	33.0	0.0	1170.4	44.7	6.4	11.2	7.2	0.0	0.0	-4.2
7/21/2012	1019.5	2.5	29.8	16.8	33.0	0.0	1099.1	43.5	6.4	11.2	7.2	0.0	0.0	-65.8
7/22/2012	835.0	2.8	2.3	17.5	33.0	0.0	887.8	40.7	6.4	11.2	7.2	0.0	0.0	-62.7
7/23/2012	764.0	3.0	0.0	17.1	33.0	0.0	789.8	38.6	6.4	11.1	7.2	0.0	0.0	-36.0
7/24/2012	758.5	3.1	0.0	17.3	33.0	0.0	745.1	38.0	6.4	10.6	7.2	0.0	0.0	4.6
7/25/2012	887.1	1.4	0.0	17.1	33.0	0.0	799.3	40.3	6.4	10.6	7.2	0.0	0.0	74.7
7/26/2012	1000.9	4.6	0.0	17.2	33.0	0.0	967.4	43.6	6.4	10.5	7.2	0.0	0.0	20.5
7/27/2012	887.7	3.2	16.5	17.0	33.0	0.0	954.2	43.1	6.4	10.6	7.2	0.0	0.0	-64.1
7/28/2012	753.6	3.4	0.0	17.3	33.0	0.0	790.3	39.9	6.4	10.5	7.2	0.0	0.0	-47.0
7/29/2012	708.7	3.2	0.0	16.8	33.0	0.0	731.5	38.4	6.4	10.5	7.2	0.0	0.0	-32.3
7/30/2012	671.1	2.8	0.0	17.9	33.0	0.0	680.9	36.8	6.4	10.5	7.2	0.0	0.0	-17.0
7/31/2012	684.7	2.1	0.0	17.3	33.0	0.0	670.9	36.5	6.4	10.5	7.2	0.0	0.0	5.7
8/1/2012	768.2	4.1	0.0	17.4	33.0	0.0	707.8	37.8	6.4	10.5	7.2	0.0	0.0	52.9
8/2/2012	879.9	3.3	0.0	17.3	33.0	0.0	835.6	40.7	6.4	10.3	7.2	0.0	0.0	33.3
8/3/2012	811.3	1.8	1.6	17.7	33.0	0.0	863.5	40.6	6.4	10.3	7.2	0.0	0.0	-62.8
8/4/2012	623.3	3.2	42.1	20.7	33.0	0.0	719.1	35.9	6.4	10.3	7.2	0.0	0.0	-56.6
8/5/2012	503.8	2.3	7.9	19.5	33.0	0.0	564.2	30.8	6.4	10.3	7.2	0.0	0.0	-52.4
8/6/2012	464.8	2.8	0.0	19.7	33.0	0.0	495.3	28.4	6.4	10.3	7.2	0.0	0.0	-27.3
8/7/2012	447.1	3.1	0.0	18.9	33.0	0.0	457.9	26.7	6.4	10.3	7.2	0.0	0.0	-6.5
8/8/2012	571.8	2.6	0.0	18.7	33.0	0.0	482.2	29.9	6.4	10.3	7.2	0.0	0.0	90.1
8/9/2012	794.1	2.0	0.0	18.2	33.0	0.0	685.5	37.8	6.4	10.3	7.2	0.0	0.0	100.0
8/10/2012	841.0	3.4	0.0	18.7	33.0	0.0	834.7	40.2	6.4	10.3	7.2	0.0	0.0	-2.7
8/11/2012	851.0	3.2	0.0	19.3	33.0	0.0	834.2	40.2	6.4	10.9	7.2	0.0	0.0	7.6
8/12/2012	975.8	5.4	0.0	22.9	33.0	0.0	893.7	41.8	6.4	11.0	7.2	0.0	0.0	76.9
8/13/2012	1219.1	3.9	0.0	18.7	33.0	0.0	1130.2	44.7	6.4	11.0	7.2	0.0	0.0	75.1
8/14/2012	1215.8	3.7	0.0	18.7	33.0	0.0	1237.3	46.4	6.4	11.0	7.2	0.0	0.0	-37.1
8/15/2012	858.8	2.1	128.5	18.5	33.0	0.0	1038.8	44.3	6.4	11.0	7.2	0.0	0.0	-66.8
8/16/2012	590.5	3.4	34.7	19.5	33.0	0.0	677.7	36.0	6.4	11.0	7.2	0.0	0.0	-57.2
8/17/2012	624.7	3.1	0.0	18.8	33.0	0.0	551.1	33.1	6.4	10.6	7.2	0.0	0.0	71.3
8/18/2012	876.8	2.7	0.0	21.8	33.0	0.0	791.0	42.0	6.4	10.4	7.2	0.0	0.0	77.4
8/19/2012	876.4	5.0	0.0	21.1	33.0	0.0	875.6	42.7	6.4	10.3	7.2	0.0	0.0	-6.8
8/20/2012	864.1	1.9	0.0	22.0	33.0	0.0	866.4	42.4	6.4	10.3	7.2	0.0	0.0	-11.7
8/21/2012	856.6	1.5	0.0	21.5	33.0	0.0	856.7	42.2	6.4	10.3	7.2	0.0	0.0	-10.3
8/22/2012	883.3	1.8	0.0	20.0	33.0	0.0	857.4	42.4	6.4	10.3	7.2	0.0	0.0	14.3
8/23/2012	936.6	3.8	0.0	19.4	33.0	0.0	909.7	42.8	6.4	10.3	7.2	0.0	0.0	16.4
8/24/2012	901.1	2.3	0.0	19.6	33.0	0.0	933.2	42.0	6.4	10.3	7.2	0.0	0.0	-43.2
8/25/2012	753.5	1.0	18.0	19.9	33.0	0.0	824.4	39.3	6.4	10.3	7.2	0.0	0.0	-62.2

Table G3-4: RGCP Channel Water Budget Equation Analysis Segment 4 Baseline 2012 (Units = Acre-Feet)

	Segment 4 - Anthony Metering Station to American Dam (Lower Reach B)													
	Qcus	Pc	Qcin	Qirf	Qeff	Qgwrf	Qcds	Qcs	Qfpr	ET	ET	Qda	Qdu	Δsic
Date	Upstream Channel Inflow, below Anthony Station	Precipitation Flows in River Channel	In-channel Stormwater/ Ungaged Return Inflow	Irrigation Return Flow (Nemexas Drain, East Drain, and West Drain)	Treated Effluent Return Flow	Groundwater Return Flow	Downstream Channel Outflow, at American Dam	Channel Seepage	Floodplain Recharge	Open Water Channel Evaporation	Riparian Evapo-transpiration	Diversions Authorized (None)	Diversions Unauthorized (1% of Authorized)	In-channel Change in Storage
8/26/2012	598.8	2.5	29.5	19.6	33.0	0.0	681.0	34.7	6.4	10.3	7.2	0.0	0.0	-56.1
8/27/2012	563.3	0.9	0.0	19.8	33.0	0.0	571.3	32.1	6.4	10.3	7.2	0.0	0.0	-10.3
8/28/2012	576.9	1.2	0.0	19.6	33.0	0.0	575.3	32.4	6.4	10.3	7.2	0.0	0.0	-1.0
8/29/2012	547.2	2.2	0.0	19.5	33.0	0.0	577.3	31.9	6.4	10.3	7.2	0.0	0.0	-31.2
8/30/2012	477.6	1.3	0.0	19.3	33.0	0.0	524.9	29.1	6.4	10.3	7.2	0.0	0.0	-46.7
8/31/2012	425.1	3.0	0.0	19.6	33.0	0.0	466.9	26.5	6.4	10.3	7.2	0.0	0.0	-36.7
9/1/2012	403.8	2.2	0.0	22.1	33.0	0.0	424.3	24.9	6.4	10.3	7.2	0.0	0.0	-12.0
9/2/2012	412.1	3.4	0.0	23.7	33.0	0.0	422.7	25.1	6.4	8.6	7.2	0.0	0.0	2.2
9/3/2012	420.8	2.1	0.0	22.1	33.0	0.0	432.8	25.5	6.4	8.6	7.2	0.0	0.0	-2.5
9/4/2012	423.2	2.5	0.0	22.8	33.0	0.0	438.0	25.9	6.4	8.6	7.2	0.0	0.0	-4.7
9/5/2012	368.7	5.3	0.5	25.1	33.0	0.0	427.3	24.3	6.4	8.6	7.2	0.0	0.0	-41.2
9/6/2012	365.1	3.6	0.0	23.3	33.0	0.0	369.7	22.9	6.4	8.6	7.2	0.0	0.0	10.2
9/7/2012	460.7	3.0	0.0	22.5	33.0	0.0	419.1	26.5	6.4	8.6	7.2	0.0	0.0	51.3
9/8/2012	505.1	2.5	0.0	25.5	33.0	0.0	503.0	29.9	6.4	8.6	7.2	0.0	0.0	11.1
9/9/2012	438.8	0.8	13.7	21.6	33.0	0.0	507.1	28.5	6.4	8.6	7.2	0.0	0.0	-49.9
9/10/2012	301.9	3.6	40.4	21.1	33.0	0.0	396.4	22.3	6.4	8.6	7.2	0.0	0.0	-40.9
9/11/2012	170.7	4.9	54.8	20.7	33.0	0.0	279.2	15.9	6.4	8.6	7.2	0.0	0.0	-33.2
9/12/2012	50.9	3.0	44.3	20.6	33.0	0.0	148.8	9.2	6.4	8.6	7.2	0.0	0.0	-28.5
9/13/2012	67.2	1.9	0.0	20.4	33.0	0.0	69.8	7.5	6.4	8.6	7.2	0.0	0.0	23.0
9/14/2012	297.1	2.2	0.0	20.3	33.0	0.0	163.0	15.9	6.4	8.6	7.2	0.0	0.0	151.5

RGCP - Project Scale Water Budget - Segment 4 (Anthony Metering Station to American Dam)

$$\Delta S_{ic} = (Q_{us} + P_c + Q_{cin} + Q_{irf} + Q_{gwrf}) - (Q_{cds} + Q_{cs} + Q_{fpr} + ET + Q_{da} + Q_{du})$$

- Sum of Inflow
- Sum of Outflow
- ΔS_{ic} - Change in Channel Storage

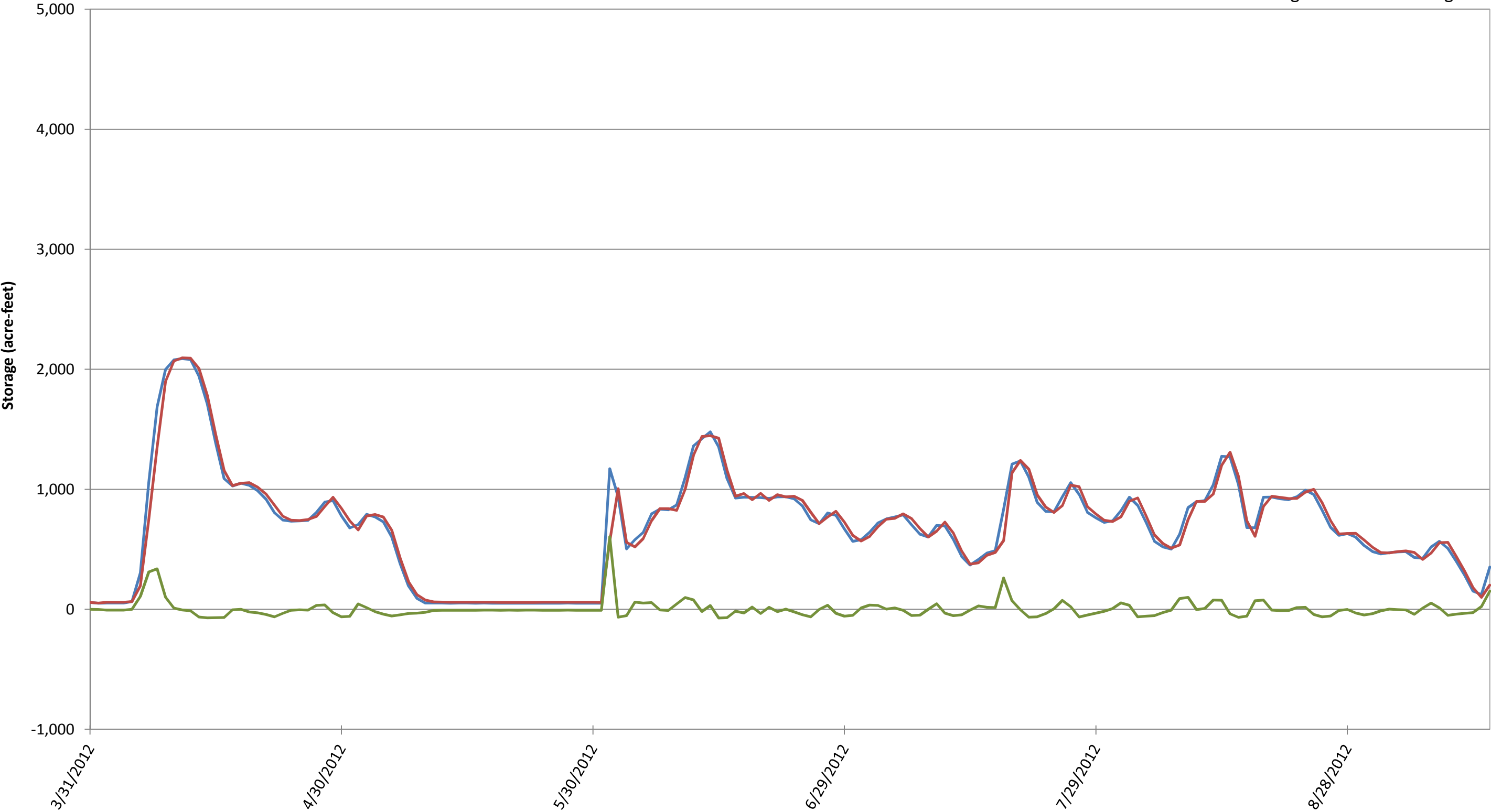


Table G3-5: Local Basin Scale Water Budget Equation

Baseline 2012

(Units = Acre-Feet)

	Surface Water Budget															Groundwater Budget					
	Qus	P	Qp			Qgwrf	Qds			Qgwr				ET	ΔSsw	Qgwus	Qgwr	Qp	Qgwrf	Qgwds	ΔSgw
Date	River Below Caballo Dam	Precipitation Flows in River Channel	Pumping	MODFLOW Groundwater Return Flow to Rio Grande	Measured Irrigation/ Drainage Return Flow	Groundwater Return Flow = Groundwater RF + Irrigation RRF	Downstream Channel Outflow, River above American Dam	Channel Seepage (Qcs)	MODFLOW Floodplain/ Irrigation Based Recharge	Groundwater Recharge = Seepage + Irrigation Based Recharge	Riparian Evapo- transpiration	Crop Evapo- transpiration	Open Water Evaporation	Total ET = Riparian + Crop + Open Water Evaporation	Changes in Surface Water Storage	Upstream Groundwater Inflow	Groundwater Recharge = Seepage + Irrigation Based Recharge	Pumping	Groundwater Return Flow = Groundwater RF + Irrigation RRF	Downstream Groundwater Outflow	Change in Vadose Zone and Groundwater Storage
3/31/2012	0.0	0.3	517.8	31.8	18.5	50.3	34.5	23.1	354.0	377.1	58.1	307.5	25.8	391.4	-234.5	40.6	377.1	517.8	50.3	0.0	-150.4
4/1/2012	868.8	0.5	598.8	31.8	18.7	50.6	27.8	114.7	354.0	468.7	58.1	307.5	5.3	370.9	651.3	40.6	468.7	598.8	50.6	0.0	-140.1
4/2/2012	2320.7	2.2	704.1	31.8	19.5	51.3	27.8	450.9	354.0	804.9	58.1	307.5	25.4	391.0	1854.6	40.6	804.9	704.1	51.3	0.0	90.1
4/3/2012	2320.7	1.7	747.3	31.8	19.5	51.3	27.8	1004.2	354.0	1358.2	58.1	307.5	49.5	415.1	1319.8	40.6	1358.2	747.3	51.3	0.0	600.3
4/4/2012	2538.8	2.4	742.3	31.8	19.8	51.7	27.8	1778.9	354.0	2132.9	58.1	307.5	73.6	439.2	735.3	40.6	2132.9	742.3	51.7	0.0	1379.6
4/5/2012	2895.9	3.9	750.9	31.8	23.9	55.8	27.8	1956.7	354.0	2310.7	58.1	307.5	86.8	452.4	915.6	40.6	2310.7	750.9	55.8	0.0	1544.7
4/6/2012	2856.2	3.3	785.4	31.8	81.5	113.3	27.8	2080.2	354.0	2434.2	58.1	307.5	94.1	459.7	836.5	40.6	2434.2	785.4	113.3	0.0	1576.2
4/7/2012	2757.0	2.0	781.9	31.8	105.6	137.4	118.9	2192.3	354.0	2546.3	58.1	307.5	98.8	464.4	548.7	40.6	2546.3	781.9	137.4	0.0	1667.6
4/8/2012	2757.0	0.7	786.4	31.8	110.8	142.6	648.7	1793.9	354.0	2147.9	58.1	307.5	98.8	464.4	425.7	40.6	2147.9	786.4	142.6	0.0	1259.5
4/9/2012	2737.2	0.1	795.0	31.8	120.3	152.1	1555.8	1152.2	354.0	1506.2	58.1	307.5	99.9	465.5	156.9	40.6	1506.2	795.0	152.1	0.0	599.7
4/10/2012	2717.4	0.6	845.0	31.8	128.0	159.8	1914.8	896.6	354.0	1250.6	58.1	307.5	99.9	465.5	91.8	40.6	1250.6	845.0	159.8	0.0	286.5
4/11/2012	2717.4	3.9	856.3	31.8	127.1	159.0	2005.6	816.1	354.0	1170.1	58.1	307.5	99.9	465.5	95.3	40.6	1170.1	856.3	159.0	0.0	195.4
4/12/2012	2717.4	3.8	832.7	31.8	124.4	156.2	2017.5	796.6	354.0	1150.6	58.1	307.5	99.9	465.5	76.5	40.6	1150.6	832.7	156.2	0.0	202.3
4/13/2012	2320.7	0.7	823.4	31.8	114.1	146.0	1933.9	785.4	354.0	1139.4	58.1	307.5	99.9	465.5	-248.2	40.6	1139.4	823.4	146.0	0.0	210.7
4/14/2012	1904.1	1.2	824.1	31.8	116.0	147.9	1710.2	768.6	354.0	1122.6	58.1	307.5	99.9	465.5	-421.0	40.6	1122.6	824.1	147.9	0.0	191.3
4/15/2012	1884.3	3.5	824.2	31.8	66.8	98.6	1385.4	751.4	354.0	1105.4	58.1	307.5	99.9	465.5	-145.8	40.6	1105.4	824.2	98.6	0.0	223.2
4/16/2012	1884.3	1.0	823.8	31.8	58.5	90.3	1089.5	737.6	354.0	1091.6	58.1	307.5	99.9	465.5	152.8	40.6	1091.6	823.8	90.3	0.0	218.2
4/17/2012	1884.3	3.1	829.2	31.8	67.0	98.8	963.0	734.6	354.0	1088.6	58.1	307.5	99.9	465.5	298.4	40.6	1088.6	829.2	98.8	0.0	201.2
4/18/2012	1884.3	0.7	830.6	31.8	67.5	99.3	982.6	733.9	354.0	1087.9	58.1	307.5	99.9	465.5	278.9	40.6	1087.9	830.6	99.3	0.0	198.6
4/19/2012	1810.9	0.8	837.4	31.8	65.5	97.4	988.1	730.6	354.0	1084.6	58.1	307.5	99.9	465.5	208.3	40.6	1084.6	837.4	97.4	0.0	190.5
4/20/2012	1640.3	1.2	838.3	31.8	65.3	97.1	951.1	723.4	354.0	1077.4	58.1	307.5	99.9	465.5	82.9	40.6	1077.4	838.3	97.1	0.0	182.6
4/21/2012	1578.8	0.8	854.9	31.8	59.0	90.8	895.3	712.3	354.0	1066.3	58.1	307.5	99.9	465.5	98.3	40.6	1066.3	854.9	90.8	0.0	161.2
4/22/2012	1578.8	2.5	854.9	31.8	50.7	82.5	804.3	698.3	354.0	1052.3	58.1	307.5	99.9	465.5	196.7	40.6	1052.3	854.9	82.5	0.0	155.5
4/23/2012	1586.8	4.9	854.9	31.8	48.6	80.4	715.3	690.3	354.0	1044.3	58.1	307.5	99.9	465.5	301.9	40.6	1044.3	854.9	80.4	0.0	149.6
4/24/2012	1604.6	3.4	855.1	31.8	50.9	82.7	681.9	688.2	354.0	1042.2	58.1	307.5	99.9	465.5	356.2	40.6	1042.2	855.1	82.7	0.0	145.1
4/25/2012	1729.6	0.9	858.1	31.8	44.8	76.7	679.7	688.8	354.0	1042.8	58.1	307.5	99.9	465.5	477.3	40.6	1042.8	858.1	76.7	0.0	148.7
4/26/2012	1828.8	2.7	856.6	31.8	43.7	75.6	687.0	694.6	354.0	1048.6	58.1	307.5	99.9	465.5	562.5	40.6	1048.6	856.6	75.6	0.0	157.1
4/27/2012	2009.3	2.7	848.4	31.8	56.0	87.8	711.0	706.2	354.0	1060.2	58.1	307.5	99.9	465.5	711.5	40.6	1060.2	848.4	87.8	0.0	164.6
4/28/2012	1826.8	1.3	848.2	31.8	60.8	92.6	793.1	710.4	354.0	1064.4	58.1	307.5	99.9	465.5	445.8	40.6	1064.4	848.2	92.6	0.0	164.2
4/29/2012	1602.6	1.6	848.4	31.8	48.9	80.7	868.5	702.7	354.0	1056.7	58.1	307.5	99.9	465.5	142.7	40.6	1056.7	848.4	80.7	0.0	168.2
4/30/2012	1600.7	2.3	848.6	31.8	53.1	84.9	779.3	681.3	354.0	1035.3	58.1	307.5	99.9	465.5	256.4	40.6	1035.3	848.6	84.9	0.0	142.4
5/1/2012	1612.6	1.2	855.0	31.8	48.7	80.5	678.0	663.6	354.0	1017.6	58.1	307.5	99.9	465.5	388.1	40.6	1017.6	855.0	80.5	0.0	122.8
5/2/2012	1646.3	4.6	855.5	31.8	46.5	78.4	601.5	670.2	354.0	1024.2	58.1	307.5	124.4	490.0	469.0	40.6	1024.2	855.5	78.4	0.0	131.0
5/3/2012	1660.2	4.9	854.6	31.8	46.4	78.2	712.8	677.6	354.0	1031.6	58.1	307.5	124.4	490.0	363.5	40.6	1031.6	854.6	78.2	0.0	139.5
5/4/2012	912.4	2.3	865.5	31.8	46.3	78.1	726.2	664.4	354.0	1018.4	58.1	307.5	124.4	490.0	-376.2	40.6	1018.4	865.5	78.1	0.0	115.4
5/5/2012	317.4	2.0	868.8	31.8	46.0	77.8	705.9	615.0	354.0	969.0	58.1	307.5	124.4	490.0	-898.9	40.6	969.0	868.8	77.8	0.0	63.0
5/6/2012	307.4	2.3	869.0	31.8	23.9	55.8	601.3	459.0	354.0	813.0	58.1	307.5	124.0	489.6	-669.5	40.6	813.0	869.0	55.8	0.0	-71.1
5/7/2012	299.5	3.6	870.2	31.8	17.9	49.7	380.7	266.5	354.0	620.5	58.1	307.5	122.2	487.8	-265.9	40.6	620.5	870.2	49.7	0.0	-258.8
5/8/2012	188.4	0.8	867.5	31.8	18.7	50.5	193.8	139.6	354.0	493.6	58.1	307.5	116.9	482.5	-62.7	40.6	493.6	867.5	50.5	0.0	-383.8
5/9/2012	0.0	1.5	868.2	31.8	19.6	51.4	89.8	78.0	354.0	432.0	58.1	307.5	103.2	468.8	-69.5	40.6	432.0	868.2	51.4	0.0	-447.0
5/10/2012	0.0	0.8	867.2	31.8	19.6	51.4	48.5	28.0	354.0	382.0	58.1	307.5	53.1	418.7	70.1	40.6	382.0	867.2	51.4	0.0	-495.9
5/11/2012	0.0	2.2	870.7	31.8	19.2	51.0	39.2	16.4	354.0	370.4	58.1	307.5	35.2	400.8	113.5	40.6	370.4	870.7	51.0	0.0	-510.6
5/12/2012	0.0	0.5	870.7	31.8	19.1	50.9	38.7	8.8	354.0	362.8	58.1	307.5	21.6	387.2	133.3	40.6	362.8	870.7	50.9	0.0	-518.1
5/13/2012	0.0	1.1	870.9	31.8	18.9	50.7	38.6	6.6	354.0	360.6	58.1	307.5	13.1	378.7	144.9	40.6	360.6	870.9	50.7	0.0	-520.4
5/14/2012	0.0	3.8	871.0	31.8	18.9	50.8	38.6	5.3	354.0	359.3	58.1	307.5	12.0	377.6	150.0	40.6	359.3	871.0	50.8	0.0	-521.8
5/15/2012	0.0	3.3	880.2	31.8	18.5	50.3	38.5	5.9	354.0	359.9	58.1	307.5	11.4	377.0	158.3	40.6	359.9	880.2	50.3	0.0	-529.9
5/16/2012	216.2	5.2	880.2	31.8	18.0	49.8	37.9	12.0	354.0	366.0	58.1	307.5	15.8	381.4	366.1	40.6	366.0	880.2	49.8	0.0	-523.3
5/17/2012	448.3	4.0	882.2	31.8	17.8	49.7	37.6	21.9	354.0	375.9	58.1	307.5	18.7	384.3	586.3	40.6	375.9	882.2	49.7	0.0	-515.3
5/18/2012	303.5	4.5	882.0	31.8	17.7	49.5	37.6	36.7	354.0	390.7	58.1	307.5	27.7	393.3	417.8	40.6	390.7	882.0	49.5	0.0	-500.2
5/19/2012	287.6	1.3	881.9	31.8	17.6	49.5	37.4	36.0	354.0	390.0	58.1	307.5	38.1	403.7	389.2	40.6	390.0	881.9	49.5	0.0	-500.8
5/20/2012	285.6	3.0	881.9	31.8	17.6	49.4	37.4	26.3	354.0	380.3	58.1	307.5	47.0	412.6	389.7	40.6	380.3	881.9	49.4	0.0	-510.4
5/21/2012	317.4	3.5	881.9	31.8	17.4	49.3	37.3	18.3	354.0	372.3	58.1	307.5	44.6	410.2	432.2	40.6	372.3	881.9	49.3	0.0	-518.2
5/22/2012	440.3	3.4	883.3	31.8	17.4	49.3	37.4	18.4	354.0	372.4	58.1	307.5	25.6	391.2	575.4	40.6	372.4	883.3	49.3	0.0	-519.6

Table G3-5: Local Basin Scale Water Budget Equation

Baseline 2012

(Units = Acre-Feet)

Caballo Reservoir to American Dam																					
Date	Surface Water Budget															Groundwater Budget					
	Qus	P	Qp			Qgwrf	Qds			Qgwr				ET	ΔSsw	Qgwus	Qgwr	Qp	Qgwrf	Qgwds	ΔSgw
	River Below Caballo Dam	Precipitation Flows In River Channel	Pumping	MODFLOW Groundwater Return Flow to Rio Grande	Measured Irrigation/ Drainage Return Flow	Groundwater Return Flow = Groundwater RF + Irrigation RRF	Downstream Channel Outflow, River above American Dam	Channel Seepage (Qcs)	MODFLOW Floodplain/ Irrigation Based Recharge	Groundwater Recharge = Seepage + Irrigation Based Recharge	Riparian Evapo-transpiration	Crop Evapo-transpiration	Open Water Evaporation	Total ET = Riparian + Crop + Open Water Evaporation	Changes in Surface Water Storage	Upstream Groundwater Inflow	Groundwater Recharge = Seepage + Irrigation Based Recharge	Pumping	Groundwater Return Flow = Groundwater RF + Irrigation RRF	Downstream Groundwater Outflow	Change in Vadose Zone and Groundwater Storage
6/10/2012	4143.5	8.1	916.7	31.8	55.6	87.5	927.4	746.2	354.0	1100.2	58.1	307.5	147.2	512.8	2615.2	40.6	1100.2	916.7	87.5	0.0	136.7
6/11/2012	3984.8	4.0	916.3	31.8	79.7	111.6	1209.8	754.2	354.0	1108.2	58.1	307.5	147.2	512.8	2185.9	40.6	1108.2	916.3	111.6	0.0	120.9
6/12/2012	3887.6	4.1	916.2	31.8	86.1	117.9	1366.0	754.2	354.0	1108.2	58.1	307.5	147.2	512.8	1938.7	40.6	1108.2	916.2	117.9	0.0	114.8
6/13/2012	3689.3	2.3	909.2	31.8	92.0	123.9	1374.1	755.2	354.0	1109.2	58.1	307.5	147.2	512.8	1728.4	40.6	1109.2	909.2	123.9	0.0	116.8
6/14/2012	3391.7	5.1	911.5	31.8	91.7	123.5	1352.6	748.5	354.0	1102.5	58.1	307.5	147.2	512.8	1463.9	40.6	1102.5	911.5	123.5	0.0	108.1
6/15/2012	3369.9	6.9	891.8	31.8	65.9	97.7	1087.0	736.2	354.0	1090.2	58.1	307.5	147.0	512.6	1676.5	40.6	1090.2	891.8	97.7	0.0	141.3
6/16/2012	3459.2	6.2	892.5	31.8	52.5	84.3	874.6	732.1	354.0	1086.1	58.1	307.5	145.9	511.5	1969.9	40.6	1086.1	892.5	84.3	0.0	149.9
6/17/2012	3465.1	8.2	892.5	31.8	61.0	92.8	896.0	731.9	354.0	1085.9	58.1	307.5	145.9	511.5	1965.2	40.6	1085.9	892.5	92.8	0.0	141.2
6/18/2012	3292.6	13.5	892.6	31.8	53.3	85.2	846.1	731.4	354.0	1085.4	58.1	307.5	145.9	511.5	1840.8	40.6	1085.4	892.6	85.2	0.0	148.3
6/19/2012	3272.7	3.9	892.7	31.8	49.9	81.8	898.1	729.4	354.0	1083.4	58.1	307.5	145.8	511.4	1758.2	40.6	1083.4	892.7	81.8	0.0	149.6
6/20/2012	3312.4	8.6	889.7	31.8	47.2	79.0	839.6	728.6	354.0	1082.6	58.1	307.5	147.2	512.8	1854.7	40.6	1082.6	889.7	79.0	0.0	154.5
6/21/2012	3362.0	3.6	888.6	31.8	51.0	82.9	886.1	728.9	354.0	1082.9	58.1	307.5	147.2	512.8	1855.2	40.6	1082.9	888.6	82.9	0.0	152.1
6/22/2012	3371.9	3.9	888.6	31.8	46.7	78.5	868.1	728.6	354.0	1082.6	58.1	307.5	147.2	512.8	1879.5	40.6	1082.6	888.6	78.5	0.0	156.1
6/23/2012	3350.1	6.8	888.5	31.8	49.4	81.2	873.7	727.0	354.0	1081.0	58.1	307.5	147.2	512.8	1859.1	40.6	1081.0	888.5	81.2	0.0	152.0
6/24/2012	3354.0	6.7	888.5	31.8	45.1	77.0	840.2	720.7	354.0	1074.7	58.1	307.5	147.2	512.8	1898.5	40.6	1074.7	888.5	77.0	0.0	149.9
6/25/2012	3437.4	5.1	888.5	31.8	46.1	77.9	743.2	708.4	354.0	1062.4	58.1	307.5	147.2	512.8	2090.4	40.6	1062.4	888.5	77.9	0.0	136.7
6/26/2012	3504.8	6.0	887.9	31.8	43.9	75.8	651.3	707.2	354.0	1061.2	58.1	307.5	147.0	512.6	2249.3	40.6	1061.2	887.9	75.8	0.0	138.1
6/27/2012	3340.2	12.7	879.9	31.8	48.4	80.2	704.7	715.6	354.0	1069.6	58.1	307.5	146.3	511.9	2026.7	40.6	1069.6	879.9	80.2	0.0	150.1
6/28/2012	3159.7	12.2	880.2	31.8	47.6	79.4	750.9	707.7	354.0	1061.7	58.1	307.5	147.2	512.8	1806.0	40.6	1061.7	880.2	79.4	0.0	142.8
6/29/2012	3221.2	20.1	877.0	31.8	32.6	64.4	666.4	686.4	354.0	1040.4	58.1	307.5	145.9	511.5	1964.3	40.6	1040.4	877.0	64.4	0.0	139.6
6/30/2012	3276.7	9.6	874.4	31.8	25.1	56.9	559.0	669.9	354.0	1023.9	58.1	307.5	145.9	511.5	2123.1	40.6	1023.9	874.4	56.9	0.0	133.3
7/1/2012	3290.6	11.8	849.4	31.8	34.0	65.9	512.6	675.5	354.0	1029.5	58.1	307.5	145.9	511.5	2164.0	40.6	1029.5	849.4	65.9	0.0	154.9
7/2/2012	3296.5	16.7	800.0	31.8	36.2	68.0	549.3	688.9	354.0	1042.9	58.1	307.5	127.8	493.4	2095.6	40.6	1042.9	800.0	68.0	0.0	215.5
7/3/2012	3106.1	7.7	782.5	31.8	40.9	72.7	628.1	698.5	354.0	1052.5	58.1	307.5	127.8	493.4	1795.1	40.6	1052.5	782.5	72.7	0.0	237.9
7/4/2012	2989.1	12.7	780.3	31.8	49.0	80.8	689.7	700.0	354.0	1054.0	58.1	307.5	127.8	493.4	1625.7	40.6	1054.0	780.3	80.8	0.0	233.6
7/5/2012	2802.6	20.2	779.0	31.8	53.0	84.9	695.7	702.1	354.0	1056.1	58.1	307.5	127.8	493.4	1441.5	40.6	1056.1	779.0	84.9	0.0	232.9
7/6/2012	2651.9	11.0	781.5	31.8	61.3	93.1	732.8	700.7	354.0	1054.7	58.1	307.5	127.8	493.4	1256.6	40.6	1054.7	781.5	93.1	0.0	220.7
7/7/2012	2441.7	13.1	766.3	31.8	56.0	87.8	694.1	686.4	354.0	1040.4	58.1	307.5	127.8	493.4	1080.8	40.6	1040.4	766.3	87.8	0.0	227.0
7/8/2012	2217.5	13.6	766.1	31.8	94.2	126.0	615.7	665.2	354.0	1019.2	58.1	307.5	127.8	493.4	995.0	40.6	1019.2	766.1	126.0	0.0	167.7
7/9/2012	2231.4	18.6	764.3	31.8	81.6	113.4	546.4	663.0	354.0	1017.0	58.1	307.5	127.8	493.4	1070.9	40.6	1017.0	764.3	113.4	0.0	180.0
7/10/2012	1933.9	14.9	766.2	31.8	66.1	97.9	592.1	679.9	354.0	1033.9	58.1	307.5	127.8	493.4	693.5	40.6	1033.9	766.2	97.9	0.0	210.4
7/11/2012	1691.9	12.0	758.4	31.8	55.0	86.8	666.4	666.5	354.0	1020.5	58.1	307.5	127.8	493.4	368.8	40.6	1020.5	758.4	86.8	0.0	215.9
7/12/2012	1763.3	10.6	757.9	31.8	40.6	72.5	580.0	620.5	354.0	974.5	58.1	307.5	127.8	493.4	556.3	40.6	974.5	757.9	72.5	0.0	184.8
7/13/2012	1892.2	12.9	758.0	31.8	35.4	67.2	437.7	577.6	354.0	931.6	58.1	307.5	127.8	493.4	867.7	40.6	931.6	758.0	67.2	0.0	147.0
7/14/2012	2001.3	10.4	750.6	31.8	34.9	66.7	330.7	581.8	354.0	935.8	58.1	307.5	127.8	493.4	1069.1	40.6	935.8	750.6	66.7	0.0	159.1
7/15/2012	2086.6	22.7	750.6	31.8	31.9	63.7	340.3	604.3	354.0	958.3	58.1	307.5	127.8	493.4	1131.6	40.6	958.3	750.6	63.7	0.0	184.7
7/16/2012	2804.6	8.5	746.8	31.8	35.0	66.8	400.9	617.5	354.0	971.5	58.1	307.5	127.8	493.4	1760.9	40.6	971.5	746.8	66.8	0.0	198.6
7/17/2012	3481.0	17.2	741.1	31.8	33.4	65.2	423.5	645.8	354.0	999.8	58.1	307.5	127.8	493.4	2387.8	40.6	999.8	741.1	65.2	0.0	234.1
7/18/2012	3770.6	11.8	729.3	31.8	61.0	92.8	515.0	713.4	354.0	1067.4	58.1	307.5	127.8	493.4	2528.7	40.6	1067.4	729.3	92.8	0.0	285.9
7/19/2012	3873.7	12.5	729.2	31.8	81.5	113.3	1067.7	740.6	354.0	1094.6	58.1	307.5	129.1	494.7	2071.8	40.6	1094.6	729.2	113.3	0.0	292.7
7/20/2012	3865.8	14.1	728.4	31.8	70.8	102.6	1170.4	741.0	354.0	1095.0	58.1	307.5	129.1	494.7	1950.8	40.6	1095.0	728.4	102.6	0.0	304.6
7/21/2012	3834.0	19.0	724.0	31.8	65.5	97.3	1099.1	733.6	354.0	1087.6	58.1	307.5	129.1	494.7	1993.0	40.6	1087.6	724.0	97.3	0.0	307.0
7/22/2012	3814.2	14.1	725.9	31.8	65.3	97.1	887.8	724.0	354.0	1078.0	58.1	307.5	129.1	494.7	2190.8	40.6	1078.0	725.9	97.1	0.0	295.6
7/23/2012	3849.9	17.1	725.9	31.8	66.5	98.4	789.8	717.2	354.0	1071.2	58.1	307.5	128.9	494.5	2335.8	40.6	1071.2	725.9	98.4	0.0	287.6
7/24/2012	3891.6	13.3	725.9	31.8	72.5	104.3	745.1	718.0	354.0	1072.0	58.1	307.5	128.0	493.6	2424.3	40.6	1072.0	725.9	104.3	0.0	282.5
7/25/2012	3814.2	10.9	727.8	31.8	94.5	126.4	799.3	727.3	354.0	1081.3	58.1	307.5	128.0	493.6	2305.0	40.6	1081.3	727.8	126.4	0.0	267.8
7/26/2012	3683.3	18.9	727.1	31.8	93.9	125.7	967.4	732.0	354.0	1086.0	58.1	307.5	127.8	493.4	2008.2	40.6	1086.0	727.1	125.7	0.0	273.8
7/27/2012	3627.8	12.1	726.2	31.8	88.0	119.9	954.2	723.2	354.0	1077.2	58.1	307.5	128.0	493.6	1960.9	40.6	1077.2	726.2	119.9	0.0	271.7
7/28/2012	3536.5	14.7	723.9	31.8	81.2	113.1	790.3	711.7	354.0	1065.7	58.1	307.5	127.8	493.4	2038.8	40.6	1065.7	723.9	113.1	0.0	269.4
7/29/2012	3465.1	22.1	723.9	31.8	78.1	109.9	731.5	705.9	354.0	1059.9	58.1	307.5	127.8	493.4	2036.3	40.6	1059.9	723.9	109.9	0.0	266.7
7/30/2012	3562.3	16.3	724.1	31.8	71.0	102.9	680.9	702.0	354.0	1056.0	58.1	307.5	127.8	493.4	2175.3	40.6	1056.0	724.1	102.9	0.0	2

Table G3-5: Local Basin Scale Water Budget Equation

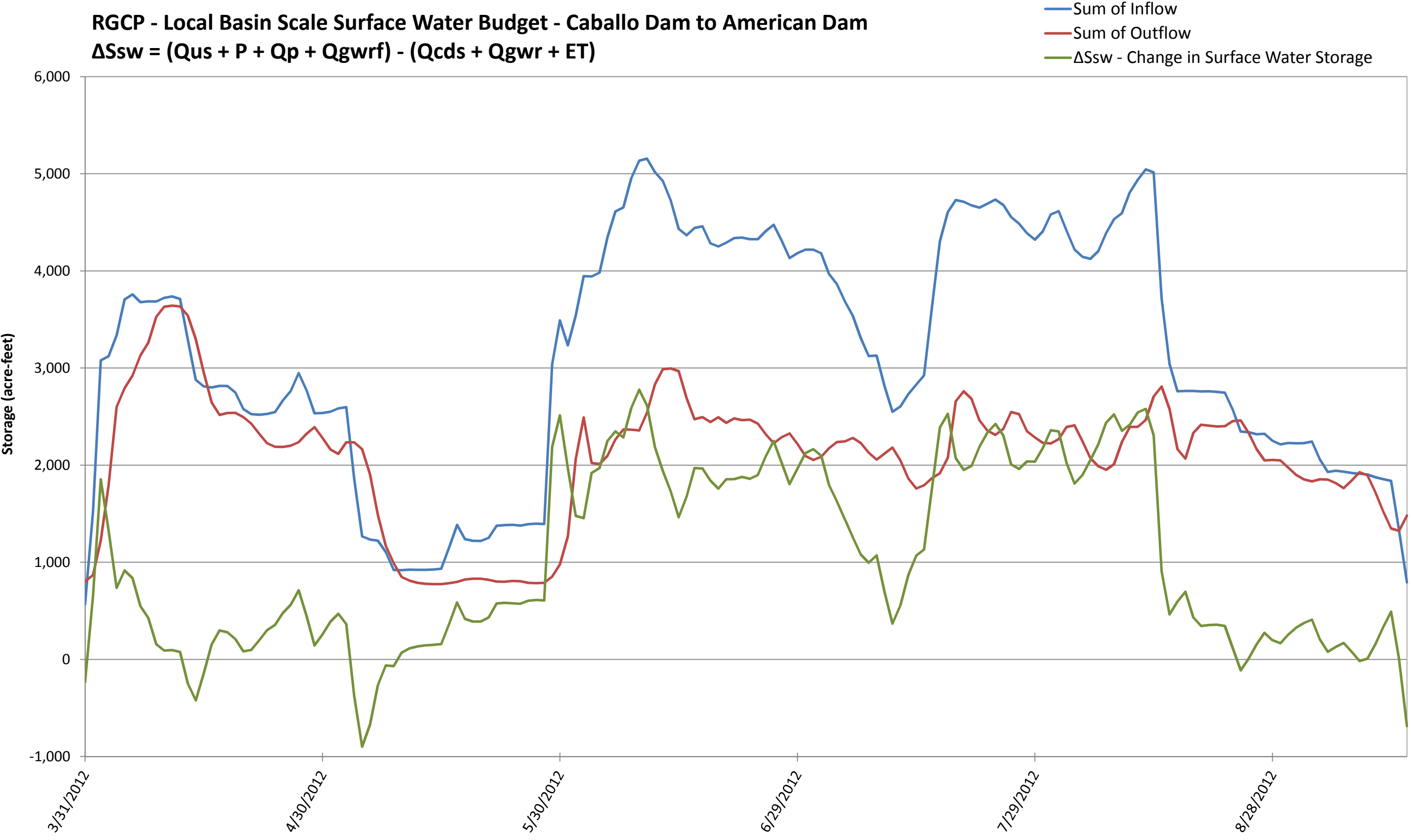
Baseline 2012

(Units = Acre-Feet)

	Surface Water Budget															Groundwater Budget					
	Qus	P	Qp			Qgwrf	Qds			Qgwrr				ET	ΔSsw	Qgwus	Qgwrr	Qp	Qgwrf	Qgwds	ΔSgw
	River Below Caballo Dam	Precipitation Flows in River Channel	Pumping	MODFLOW Groundwater Return Flow to Rio Grande	Measured Irrigation/ Drainage Return Flow	Groundwater Return Flow = Groundwater RF + Irrigation RRF	Downstream Channel Outflow, River above American Dam	Channel Seepage (Qcs)	MODFLOW Floodplain/ Irrigation Based Recharge	Groundwater Recharge = Seepage + Irrigation Based Recharge	Riparian Evapo- transpiration	Crop Evapo- transpiration	Open Water Evaporation	Total ET = Riparian + Crop + Open Water Evaporation	Changes in Surface Water Storage	Upstream Groundwater Inflow	Groundwater Recharge = Seepage + Irrigation Based Recharge	Pumping	Groundwater Return Flow = Groundwater RF + Irrigation RRF	Downstream Groundwater Outflow	Change in Vadose Zone and Groundwater Storage
8/25/2012	1477.7	15.7	727.4	31.8	86.8	118.6	824.4	662.3	354.0	1016.3	58.1	307.5	125.1	490.7	7.9	40.6	1016.3	727.4	118.6	0.0	211.0
8/26/2012	1477.7	12.5	727.3	31.8	69.3	101.1	681.0	638.2	354.0	992.2	58.1	307.5	125.1	490.7	154.8	40.6	992.2	727.3	101.1	0.0	204.4
8/27/2012	1477.7	15.1	727.2	31.8	71.4	103.3	571.3	632.9	354.0	986.9	58.1	307.5	125.1	490.7	274.3	40.6	986.9	727.2	103.3	0.0	197.1
8/28/2012	1418.2	8.0	727.1	31.8	65.7	97.5	575.3	633.0	354.0	987.0	58.1	307.5	125.1	490.7	197.7	40.6	987.0	727.1	97.5	0.0	203.1
8/29/2012	1378.5	10.9	728.1	31.8	64.4	96.2	577.3	625.9	354.0	979.9	58.1	307.5	125.1	490.7	165.8	40.6	979.9	728.1	96.2	0.0	196.2
8/30/2012	1394.4	16.6	729.4	31.8	56.6	88.4	524.9	604.8	354.0	958.8	58.1	307.5	125.1	490.7	254.4	40.6	958.8	729.4	88.4	0.0	181.6
8/31/2012	1402.3	14.3	723.8	31.8	52.9	84.7	466.9	587.9	354.0	941.9	58.1	307.5	125.1	490.7	325.6	40.6	941.9	723.8	84.7	0.0	174.0
9/1/2012	1410.2	8.9	721.1	31.8	55.0	86.8	424.3	583.1	354.0	937.1	58.1	307.5	125.3	490.9	374.8	40.6	937.1	721.1	86.8	0.0	169.8
9/2/2012	1418.2	16.9	719.8	31.8	55.9	87.7	422.7	585.4	354.0	939.4	58.1	307.5	106.1	471.7	408.8	40.6	939.4	719.8	87.7	0.0	172.6
9/3/2012	1243.6	10.6	718.6	31.8	54.5	86.3	432.8	595.6	354.0	949.6	58.1	307.5	106.1	471.7	205.0	40.6	949.6	718.6	86.3	0.0	185.3
9/4/2012	1108.8	14.7	718.6	31.8	55.6	87.4	438.0	587.5	354.0	941.5	58.1	307.5	106.1	471.7	78.3	40.6	941.5	718.6	87.4	0.0	176.2
9/5/2012	1108.8	20.1	721.1	31.8	61.1	93.0	427.3	561.8	354.0	915.8	58.1	307.5	106.1	471.7	128.1	40.6	915.8	721.1	93.0	0.0	142.4
9/6/2012	1100.8	16.9	721.2	31.8	62.3	94.1	369.7	568.2	354.0	922.2	58.1	307.5	106.1	471.7	169.4	40.6	922.2	721.2	94.1	0.0	147.6
9/7/2012	1092.9	18.1	717.2	31.8	59.3	91.1	419.1	594.3	354.0	948.3	58.1	307.5	106.1	471.7	80.2	40.6	948.3	717.2	91.1	0.0	180.7
9/8/2012	1079.0	8.6	718.1	31.8	73.1	105.0	503.0	598.6	354.0	952.6	58.1	307.5	106.1	471.7	-16.6	40.6	952.6	718.1	105.0	0.0	170.1
9/9/2012	1065.1	8.5	718.0	31.8	79.2	111.0	507.1	562.5	354.0	916.5	58.1	307.5	106.1	471.7	7.5	40.6	916.5	718.0	111.0	0.0	128.1
9/10/2012	1049.3	12.8	718.5	31.8	63.1	95.0	396.4	497.9	354.0	851.9	58.1	307.5	106.1	471.7	155.6	40.6	851.9	718.5	95.0	0.0	79.1
9/11/2012	1035.4	14.8	715.6	31.8	57.8	89.7	279.2	419.1	354.0	773.1	58.1	307.5	106.1	471.7	331.3	40.6	773.1	715.6	89.7	0.0	8.5
9/12/2012	1015.5	23.5	715.5	31.8	51.4	83.2	148.8	373.0	354.0	727.0	58.1	307.5	106.1	471.7	490.3	40.6	727.0	715.5	83.2	0.0	-31.1
9/13/2012	533.6	15.8	700.9	31.8	46.0	77.8	69.8	427.5	354.0	781.5	58.1	307.5	106.1	471.7	5.1	40.6	781.5	700.9	77.8	0.0	43.4
9/14/2012	0.0	14.6	700.8	31.8	46.4	78.2	163.0	492.4	354.0	846.4	58.1	307.5	106.1	471.7	-687.5	40.6	846.4	700.8	78.2	0.0	108.0

RGCP - Local Basin Scale Surface Water Budget - Caballo Dam to American Dam

$\Delta S_{sw} = (Q_{us} + P + Q_p + Q_{gwrf}) - (Q_{cds} + Q_{gwr} + ET)$



RGCP - Local Basin Scale Ground Water Budget - Caballo Dam to American Dam

$\Delta S_{gw} = (Q_{gwus} + Q_{gwr}) - (Q_p + Q_{gwr}f + Q_{gwds})$

- Sum of Inflow
- Sum of Outflow
- ΔS_{gw} - Change in Ground Water Storage

