RIO GRANDE CANALIZATION PROJECT
WATER BUDGET STUDY
Final Report

Appendix F3 - Water Budget Analysis Summary
Delayed Single Pulse Hydrograph, Scenario S1
(Based on HEC-RAS Model Results)

Table F3-1: RGCP Channel Water Budget Equation Analysis Segment 1 Delayed Single Pulse Hydrograph (S1) (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	Upstream Channel Inflow, 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	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-10.1
4/1/2012	0.0	0.1	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-10.1
4/2/2012	0.0	0.8	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.4
4/3/2012	0.0	0.6	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.5
4/4/2012	0.0	0.9	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.3
4/5/2012	0.0	1.3	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.9
4/6/2012	0.0	0.8	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.4
4/7/2012	0.0	1.4	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.8
4/8/2012	0.0	0.6	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.5
4/9/2012	0.0	0.1	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-10.1
4/10/2012	0.0	0.2	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-10.0
4/11/2012	0.0	1.3	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.8
4/12/2012	0.0	1.8	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.4
4/13/2012	0.0	0.1	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-10.1
4/14/2012	0.0	0.4	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.8
4/15/2012	0.0	1.1	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.1
4/16/2012	0.0	0.4	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.8
4/17/2012	0.0	2.8	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-7.4
4/18/2012	0.0	0.4	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.8
4/19/2012	0.0	0.3	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.9
4/20/2012	0.0	0.9	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.2
4/21/2012	0.0	0.1	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-10.1
4/22/2012	0.0	0.4	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.8
4/23/2012	0.0	2.7	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-7.5
4/24/2012	0.0	1.1	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.1
4/25/2012	0.0	0.2	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-10.0
4/26/2012	0.0	2.0	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.2
4/27/2012	0.0	1.5	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.7
4/28/2012	0.0	0.8	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.4
4/29/2012	0.0	1.2	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.9
4/30/2012	0.0	1.5	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.7
5/1/2012	0.0	0.5	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.7
5/2/2012	0.0	1.3	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.9
5/3/2012	0.0	2.6	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-7.5
5/4/2012	0.0	1.5	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.7
5/5/2012	0.0	1.0	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.2
5/6/2012	0.0	0.8	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.4
5/7/2012	0.0	1.7	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.5
5/8/2012	0.0	0.4	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.8
5/9/2012	0.0	0.9	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.2
5/10/2012	0.0	0.4	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.8
5/11/2012	0.0	1.1	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.1
5/12/2012	0.0	0.4	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.8
5/13/2012	0.0	0.7	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.5
5/14/2012	0.0	1.5	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.7
5/15/2012	0.0	0.6	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.6
5/16/2012	0.0	1.7	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.5
5/17/2012	0.0	1.9	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.3
5/18/2012	0.0	2.8	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-7.4
5/19/2012	0.0	0.8	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.4
5/20/2012	0.0	1.2	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.0

Table F3-1: RGCP Channel Water Budget Equation Analysis Segment 1 Delayed Single Pulse Hydrograph (S1) (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	Upstream Channel Inflow, 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	0.0	0.5	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.7
5/22/2012	0.0	1.6	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.6
5/23/2012	0.0	1.8	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.4
5/24/2012	0.0	1.7	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.5
5/25/2012	0.0	2.2	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.0
5/26/2012	0.0	0.5	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.7
5/27/2012	0.0	3.1	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-7.1
5/28/2012	0.0	1.9	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.3
5/29/2012	1983.5	0.8	0.0	0.0	1.0	28.8	0.0	45.2	6.3	21.5	33.7	0.0	0.0	1907.4
5/30/2012	2975.2	1.1	0.0	0.0	1.0	28.8	1923.2	99.6	6.3	21.5	33.7	0.0	0.0	921.8
5/31/2012	3966.9	0.8	0.0	0.0	1.0	28.8	2933.5	118.1	6.3	21.5	33.7	458.3	4.6	421.6
6/1/2012	4958.7	1.3	0.0	0.0	1.0	28.8	3605.2	137.0	6.3	22.1	33.7	458.3	4.6	722.7
6/2/2012	4958.7	1.4	0.0	0.0	1.0	28.8	4175.8	144.6	6.3	22.1	33.7	696.3	7.0	-95.9
6/3/2012	4958.7	2.5	0.0	0.0	1.0	28.8	4091.4	144.6	6.3	22.1	33.7	778.3	7.8	-93.1
6/4/2012	4958.7	2.2	0.0	0.0	1.0	28.8	4146.7	146.9	6.3	22.1	33.7	580.7	5.8	48.4
6/5/2012	4958.7	0.1	103.3	0.0	1.0	28.8	4284.7	147.8	6.3	22.1	33.7	593.2	5.9	-2.0
6/6/2012	4958.7	0.9	0.0	0.0	1.0	28.8	4233.8	145.8	6.3	22.1	33.7	747.8	7.5	-207.6
6/7/2012	4958.7	3.8	0.0	0.0	1.0	28.8	4107.4	144.6	6.3	22.1	33.7	766.5	7.7	-96.0
6/8/2012	4958.7	0.6	0.0	0.0	1.0	28.8	3938.9	144.9	6.3	22.1	33.7	919.5	9.2	-85.5
6/9/2012	4958.7	0.9	0.0	0.0	1.0	28.8	3868.0	144.7	6.3	22.1	33.7	1018.1	10.2	-113.7
6/10/2012	4958.7	0.8	0.0	0.0	1.0	28.8	3976.7	144.9	6.3	22.1	33.7	870.7	8.7	-73.9
6/11/2012	4958.7	2.3	169.9	0.0	1.0	28.8	4111.5	145.0	6.3	22.1	33.7	750.9	7.5	83.7
6/12/2012	4958.7	1.6	20.7	0.0	1.0	28.8	4109.7	144.6	6.3	22.1	33.7	784.0	7.8	-97.4
6/13/2012	4958.7	0.9	0.0	0.0	1.0	28.8	4027.8	143.5	6.3	22.1	33.7	894.0	8.9	-147.0
6/14/2012	4958.7	1.1	0.0	0.0	1.0	28.8	4004.5	143.2	6.3	22.1	33.7	849.3	8.5	-78.1
6/15/2012	4958.7	0.6	0.0	0.0	1.0	28.8	4021.3	145.8	6.3	22.1	33.7	699.7	7.0	53.2
6/16/2012	4958.7	1.6	48.7	0.0	1.0	28.8	4159.0	146.6	6.3	22.1	33.7	733.1	7.3	-69.4
6/17/2012	4958.7	2.5	0.0	0.0	1.0	28.8	4084.6	147.1	6.3	22.1	33.7	740.7	7.4	-51.0
6/18/2012	4958.7	5.2	0.0	0.0	1.0	28.8	4146.6	147.5	6.3	22.1	33.7	710.4	7.1	-80.0
6/19/2012	4958.7	0.8	0.0	0.0	1.0	28.8	4186.8	147.6	6.3	22.1	33.7	675.9	6.8	-89.8
6/20/2012	4958.7	4.6	0.0	0.0	1.0	28.8	4167.8	146.4	6.3	22.1	33.7	766.9	7.7	-157.7
6/21/2012	4958.7	1.8	0.0	0.0	1.0	28.8	4119.6	145.2	6.3	22.1	33.7	783.2	7.8	-127.7
6/22/2012	4958.7	2.9	0.0	0.0	1.0	28.8	4062.7	144.8	6.3	22.1	33.7	811.8	8.1	-98.1
6/23/2012	4958.7	3.4	0.0	0.0	1.0	28.8	4070.3	144.6	6.3	22.1	33.7	805.6	8.1	-98.7
6/24/2012	4958.7	3.2	0.0	0.0	1.0	28.8	4001.5	144.5	6.3	22.1	33.7	868.7	8.7	-93.7
6/25/2012	4958.7	2.0	0.0	0.0	1.0	28.8	3949.5	144.7	6.3	22.1	33.7	904.6	9.0	-79.5
6/26/2012	3966.9	3.3	728.8	0.0	1.0	28.8	3828.1	131.8	6.3	22.1	33.7	860.8	8.6	-162.6
6/27/2012	3966.9	4.0	10.6	0.0	1.0	28.8	3074.0	123.6	6.3	22.1	33.7	836.0	8.4	-92.7
6/28/2012	3966.9	3.8	0.0	0.0	1.0	28.8	3070.5	123.5	6.3	22.1	33.7	830.3	8.3	-94.2
6/29/2012	3966.9	8.9	0.0	0.0	1.0	28.8	3075.8	123.5	6.3	22.1	33.7	824.8	8.2	-88.9
6/30/2012	3966.9	3.3	0.0	0.0	1.0	28.8	3072.1	123.6	6.3	22.1	33.7	824.0	8.2	-90.0
7/1/2012	3966.9	5.8	0.0	0.0	1.0	28.8	3076.1	124.0	6.3	16.4	33.7	804.9	8.0	-66.9
7/2/2012	3966.9	7.0	0.0	0.0	1.0	28.8	3092.7	123.9	6.3	16.4	33.7	822.3	8.2	-99.8
7/3/2012	3966.9	4.5	0.0	0.0	1.0	28.8	3100.1	125.0	6.3	16.4	33.7	729.1	7.3	-16.7
7/4/2012	3966.9	5.0	73.5	0.0	1.0	28.8	3219.1	126.6	6.3	16.4	33.7	618.9	6.2	48.0
7/5/2012	3966.9	9.7	45.9	0.0	1.0	28.8	3284.8	127.2	6.3	16.4	33.7	611.0	6.1	-33.2
7/6/2012	3966.9	5.3	0.0	0.0	1.0	28.8	3240.2	127.2	6.3	16.4	33.7	657.9	6.6	-86.2
7/7/2012	3966.9	8.2	0.0	0.0	1.0	28.8	3199.6	127.2	6.3	16.4	33.7	698.5	7.0	-83.9
7/8/2012	3966.9	6.7	0.0	0.0	1.0	28.8	3223.1	130.2	6.3	16.4	33.7	493.5	4.9	95.4
7/9/2012	3966.9	6.0	162.3	0.0	1.0	28.8	3431.8	131.9	6.3	16.4	33.7	457.2	4.6	83.3
7/10/2012	3966.9	4.8	0.0	0.0	1.0	28.8	3445.4	131.9	6.3	16.4	33.7	445.1	4.5	-81.7

Table F3-1: RGCP Channel Water Budget Equation Analysis Segment 1 Delayed Single Pulse Hydrograph (S1) (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	Upstream Channel Inflow, 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	3966.9	5.2	0.0	0.0	1.0	28.8	3487.8	131.9	6.3	16.4	33.7	401.4	4.0	-79.7
7/12/2012	3966.9	5.5	0.0	0.0	1.0	28.8	3504.2	131.8	6.3	16.4	33.7	397.1	4.0	-91.1
7/13/2012	3966.9	7.0	0.0	0.0	1.0	28.8	3482.1	131.6	6.3	16.4	33.7	410.9	4.1	-81.4
7/14/2012	3966.9	4.6	0.0	0.0	1.0	28.8	3442.8	131.8	6.3	16.4	33.7	437.0	4.4	-71.1
7/15/2012	3966.9	14.3	0.0	0.0	1.0	28.8	3455.0	131.9	6.3	16.4	33.7	435.5	4.4	-72.2
7/16/2012	3966.9	3.5	0.0	0.0	1.0	28.8	3384.4	126.5	6.3	16.4	33.7	840.6	8.4	-416.1
7/17/2012	3966.9	4.0	0.0	0.0	1.0	28.8	3067.0	123.3	6.3	16.4	33.7	825.0	8.3	-79.2
7/18/2012	3966.9	6.8	0.0	0.0	1.0	28.8	3063.9	123.4	6.3	16.4	33.7	842.4	8.4	-91.0
7/19/2012	3966.9	6.6	0.0	0.0	1.0	28.8	3058.2	123.4	6.3	16.4	33.7	836.5	8.4	-79.6
7/20/2012	3966.9	7.3	0.0	0.0	1.0	28.8	3023.0	123.9	6.3	16.4	33.7	851.5	8.5	-59.3
7/21/2012	3966.9	8.7	0.0	0.0	1.0	28.8	2961.4	124.1	6.3	16.4	33.7	952.2	9.5	-98.1
7/22/2012	3966.9	8.2	0.0	0.0	1.0	28.8	2954.2	124.1	6.3	16.4	33.7	938.5	9.4	-77.6
7/23/2012	3966.9	6.6	0.0	0.0	1.0	28.8	2962.6	124.0	6.3	16.4	33.7	944.7	9.4	-93.8
7/24/2012	3966.9	8.0	0.0	0.0	1.0	28.8	2949.9	124.1	6.3	16.4	33.7	944.7	9.4	-79.9
7/25/2012	3966.9	6.5	0.0	0.0	1.0	28.8	2962.6	123.9	6.3	16.4	33.7	952.8	9.5	-102.1
7/26/2012	3966.9	6.8	0.0	0.0	1.0	28.8	2932.5	121.9	6.3	16.4	33.7	1082.0	10.8	-200.2
7/27/2012	3966.9	6.0	0.0	0.0	1.0	28.8	2824.4	120.8	6.3	16.4	33.7	1079.2	10.8	-88.9
7/28/2012	3966.9	6.2	0.0	0.0	1.0	28.8	2833.5	121.4	6.3	16.4	33.7	1031.2	10.3	-49.9
7/29/2012	3966.9	7.9	0.0	0.0	1.0	28.8	2884.7	123.1	6.3	16.4	33.7	943.4	9.4	-12.3
7/30/2012	3966.9	9.1	11.9	0.0	1.0	28.8	2948.7	123.4	6.3	16.4	33.7	983.4	9.8	-104.0
7/31/2012	3966.9	7.0	0.0	0.0	1.0	28.8	2897.9	122.5	6.3	16.4	33.7	1040.0	10.4	-123.4
8/1/2012	3966.9	7.5	0.0	0.0	1.0	28.8	2883.9	122.6	6.3	15.5	33.7	988.6	9.9	-56.2
8/2/2012	3966.9	9.1	0.0	0.0	1.0	28.8	2892.2	122.7	6.3	15.5	33.7	1019.8	10.2	-94.6
8/3/2012	3966.9	9.2	0.0	0.0	1.0	28.8	2885.6	122.6	6.3	15.5	33.7	1023.7	10.2	-91.6
8/4/2012	3966.9	7.1	0.0	0.0	1.0	28.8	2916.9	122.7	6.3	15.5	33.7	974.3	9.7	-75.2
8/5/2012	3966.9	6.9	18.2	0.0	1.0	28.8	2962.5	122.8	6.3	15.5	33.7	934.0	9.3	-62.2
8/6/2012	3966.9	5.6	0.0	0.0	1.0	28.8	2969.6	122.9	6.3	15.5	33.7	934.9	9.3	-89.8
8/7/2012	3966.9	7.1	0.0	0.0	1.0	28.8	2966.7	123.0	6.3	15.5	33.7	924.1	9.2	-74.6
8/8/2012	3966.9	5.9	0.0	0.0	1.0	28.8	2970.2	123.0	6.3	15.5	33.7	940.2	9.4	-95.7
8/9/2012	3966.9	8.2	0.0	0.0	1.0	28.8	2895.8	123.0	6.3	15.5	33.7	1000.6	10.0	-80.0
8/10/2012	3966.9	7.6	0.0	0.0	1.0	28.8	2831.6	123.1	6.3	15.5	33.7	1071.7	10.7	-88.2
8/11/2012	3966.9	9.2	0.0	0.0	1.0	28.8	2861.0	123.3	6.3	15.5	33.7	1033.7	10.3	-77.8
8/12/2012	3966.9	9.0	0.0	0.0	1.0	28.8	2880.0	125.0	6.3	15.5	33.7	919.8	9.2	16.3
8/13/2012	3966.9	10.7	32.6	0.0	1.0	28.8	2966.9	125.5	6.3	15.5	33.7	958.7	9.6	-76.1
8/14/2012	3102.1	7.9	690.1	0.0	1.0	28.8	2873.4	117.8	6.3	15.5	33.7	636.0	6.4	140.9
8/15/2012	1388.4	7.9	2029.4	0.0	1.0	28.8	2460.2	89.0	6.3	15.5	33.7	342.4	3.4	505.1
8/16/2012	1388.4	9.9	633.6	0.0	1.0	28.8	1387.0	69.3	6.3	15.5	33.7	88.9	0.9	460.0
8/17/2012	1388.4	3.5	249.5	0.0	1.0	28.8	1296.6	69.2	6.3	15.5	33.7	88.9	0.9	160.1
8/18/2012	1388.4	8.7	0.0	0.0	1.0	28.8	1296.6	69.2	6.3	15.5	33.7	88.9	0.9	-84.0
8/19/2012	1388.4	6.2	0.0	0.0	1.0	28.8	1296.6	69.2	6.3	15.5	33.7	88.9	0.9	-86.6
8/20/2012	1388.4	7.3	0.0	0.0	1.0	28.8	1296.6	69.2	6.3	15.5	33.7	88.9	0.9	-85.6
8/21/2012	1388.4	12.3	0.0	0.0	1.0	28.8	1296.5	69.2	6.3	15.5	33.7	88.9	0.9	-80.4
8/22/2012	1388.4	6.0	0.0	0.0	1.0	28.8	1296.4	69.2	6.3	15.5	33.7	88.9	0.9	-86.7
8/23/2012	1388.4	15.7	0.0	0.0	1.0	28.8	1296.5	69.2	6.3	15.5	33.7	88.9	0.9	-77.1
8/24/2012	1388.4	10.4	0.0	0.0	1.0	28.8	1296.6	69.2	6.3	15.5	33.7	88.9	0.9	-82.4
8/25/2012	1388.4	5.3	0.0	0.0	1.0	28.8	1296.6	69.2	6.3	15.5	33.7	88.9	0.9	-87.5
8/26/2012	1388.4	5.7	0.0	0.0	1.0	28.8	1296.4	69.2	6.3	15.5	33.7	88.9	0.9	-87.0
8/27/2012	1388.4	4.8	0.0	0.0	1.0	28.8	1296.5	69.2	6.3	15.5	33.7	88.9	0.9	-87.9
8/28/2012	1388.4	2.2	0.0	0.0	1.0	28.8	1296.4	69.2	6.3	15.5	33.7	88.9	0.9	-90.4
8/29/2012	1388.4	6.9	0.0	0.0	1.0	28.8	1296.4	69.2	6.3	15.5	33.7	88.9	0.9	-85.7
8/30/2012	1388.4	7.6	0.0	0.0	1.0	28.8	1296.6	69.2	6.3	15.5	33.7	88.9	0.9	-85.2

Table F3-1: RGCP Channel Water Budget Equation Analysis Segment 1 Delayed Single Pulse Hydrograph (S1) (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	Upstream Channel Inflow, 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	1388.4	5.3	0.0	0.0	1.0	28.8	1296.5	69.2	6.3	15.5	33.7	88.9	0.9	-87.4
9/1/2012	1388.4	5.5	0.0	0.0	1.0	28.8	1296.5	69.2	6.3	12.4	33.7	88.9	0.9	-84.3
9/2/2012	1388.4	5.9	0.0	0.0	1.0	28.8	1296.4	69.2	6.3	12.4	33.7	88.9	0.9	-83.8
9/3/2012	1388.4	4.0	0.0	0.0	1.0	28.8	1296.5	69.2	6.3	12.4	33.7	88.9	0.9	-85.7
9/4/2012	1388.4	4.6	0.0	0.0	1.0	28.8	1296.5	69.2	6.3	12.4	33.7	88.9	0.9	-85.1
9/5/2012	1388.4	8.5	0.0	0.0	1.0	28.8	1296.6	69.2	6.3	12.4	33.7	88.9	0.9	-81.3
9/6/2012	1388.4	4.8	0.0	0.0	1.0	28.8	1296.4	69.2	6.3	12.4	33.7	88.9	0.9	-84.8
9/7/2012	1388.4	6.2	0.0	0.0	1.0	28.8	1296.6	69.2	6.3	12.4	33.7	88.9	0.9	-83.7
9/8/2012	1388.4	2.9	0.0	0.0	1.0	28.8	1296.5	69.2	6.3	12.4	33.7	88.9	0.9	-86.9
9/9/2012	1388.4	4.5	0.0	0.0	1.0	28.8	1296.5	69.2	6.3	12.4	33.7	88.9	0.9	-85.3
9/10/2012	1388.4	5.4	0.0	0.0	1.0	28.8	1296.6	69.2	6.3	12.4	33.7	88.9	0.9	-84.5
9/11/2012	1388.4	4.9	0.0	0.0	1.0	28.8	1296.6	69.2	6.3	12.4	33.7	88.9	0.9	-85.0
9/12/2012	1388.4	11.4	0.0	0.0	1.0	28.8	1296.8	69.2	6.3	12.4	33.7	88.9	0.9	-78.6
9/13/2012	1388.4	9.4	0.0	0.0	1.0	28.8	1296.6	69.2	6.3	12.4	33.7	88.9	0.9	-80.4
9/14/2012	0.0	7.3	1367.3	0.0	1.0	28.8	1279.4	49.7	6.3	12.4	33.7	88.9	0.9	-67.0

RGCP - Project Scale Water Budget - Segment 1 (Caballo Dam to Leasburg Dam)
Release Scenario S1 (Delayed Single Pulse)
ΔSic = (Qus + Pc + Qcin + Qirf + Qgwrf) - (Qcds + Qcs + Qfpr + ET + Qda + Qdu)

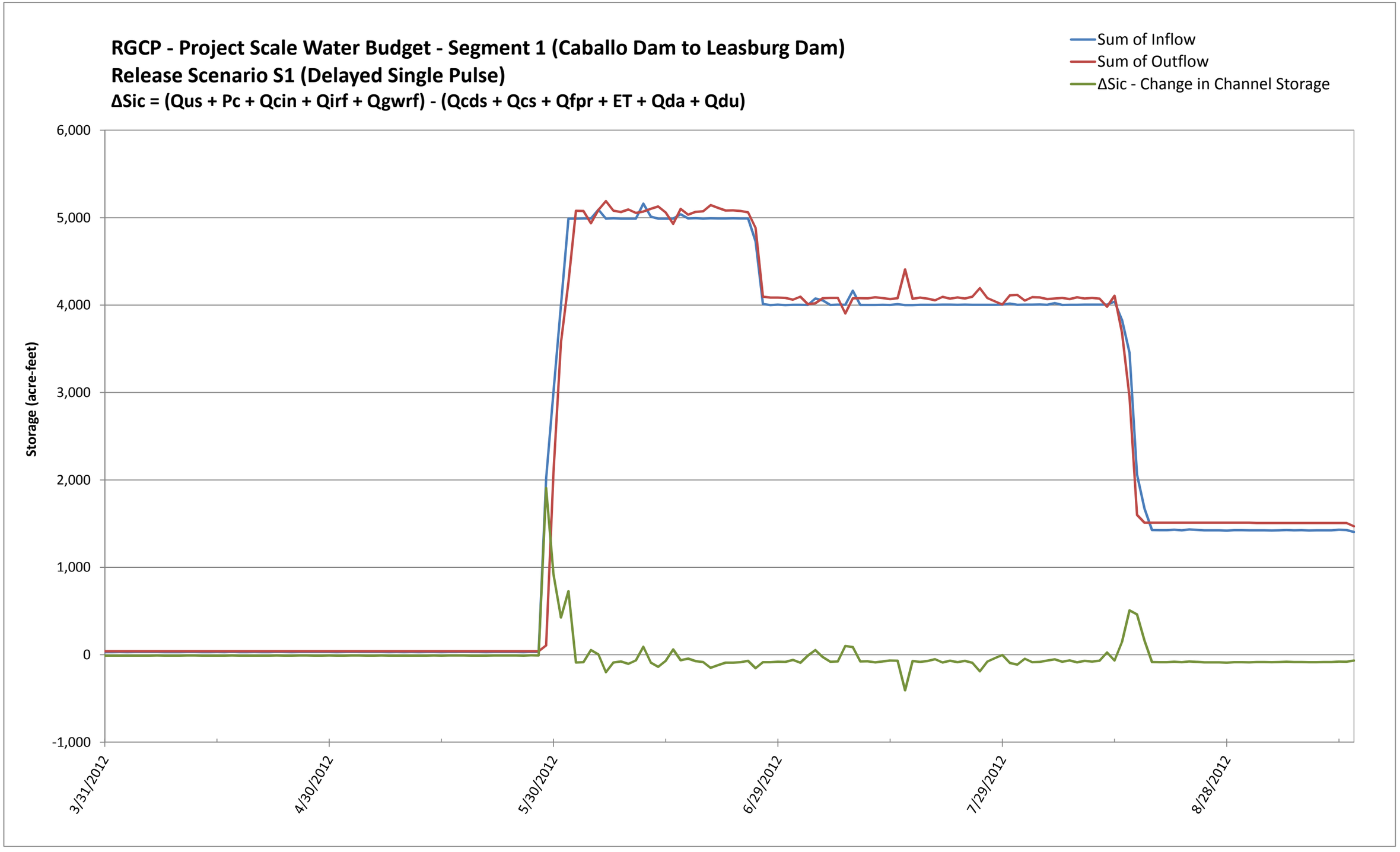

Table F3-2: RGCP Channel Water Budget Equation Analysis Segment 2 Delayed Single Pulse Hydrograph (S1) (Units = Acre-Feet)

	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 Outflow, 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	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
4/1/2012	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	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
4/4/2012	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
4/5/2012	0.0	1.1	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	33.5
4/6/2012	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	33.7
4/7/2012	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
4/8/2012	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	32.5
4/9/2012	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
4/10/2012	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
4/11/2012	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	33.4
4/12/2012	0.0	1.1	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	33.5
4/13/2012	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
4/14/2012	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
4/15/2012	0.0	1.4	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	33.8
4/16/2012	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	32.8
4/17/2012	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
4/18/2012	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
4/19/2012	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
4/20/2012	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	32.5
4/21/2012	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	32.5
4/22/2012	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
4/23/2012	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
4/24/2012	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	33.1
4/25/2012	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	32.8
4/26/2012	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	32.8
4/27/2012	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
4/28/2012	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	32.5
4/29/2012	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
4/30/2012	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
5/1/2012	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	32.5
5/2/2012	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
5/3/2012	0.0	1.4	0.0	0.1	44.5	3.0	0.0	0.0	6.3	0.0	8.9	0.0	0.0	33.8
5/4/2012	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
5/5/2012	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
5/6/2012	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	32.8
5/7/2012	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
5/8/2012	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
5/9/2012	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
5/10/2012	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
5/11/2012	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 F3-2: RGCP Channel Water Budget Equation Analysis Segment 2 — Delayed Single Pulse Hydrograph (S1) — (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 Outflow, 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	1923.2	0.0	0.0	0.1	44.5	3.0	425.3	105.6	6.3	9.6	8.9	0.0	0.0	1415.1
5/31/2012	2933.5	1.2	0.0	0.1	44.5	3.0	2185.2	240.5	6.3	9.6	8.9	173.7	1.7	356.4
6/1/2012	3605.2	0.6	0.0	0.1	44.5	3.0	2120.7	275.3	6.3	9.9	8.9	974.0	9.7	248.6
6/2/2012	4175.8	0.4	0.0	0.1	44.5	3.0	2786.7	310.1	6.3	9.9	8.9	1034.5	10.3	57.1
6/3/2012	4091.4	1.0	0.0	0.1	44.5	3.0	2743.1	307.1	6.3	9.9	8.9	1123.8	11.2	-70.2
6/4/2012	4146.7	0.4	0.0	0.1	44.5	3.0	2775.4	307.9	6.3	9.9	8.9	1066.3	10.7	9.5
6/5/2012	4284.7	0.3	0.0	0.1	44.5	3.0	2688.9	315.3	6.3	9.9	8.9	1310.2	13.1	-19.9
6/6/2012	4233.8	1.1	0.0	0.1	44.5	3.0	2573.9	314.0	6.3	9.9	8.9	1435.2	14.4	-80.0
6/7/2012	4107.4	2.5	0.0	0.1	44.5	3.0	2442.1	307.6	6.3	9.9	8.9	1439.2	14.4	-70.7
6/8/2012	3938.9	1.2	0.0	0.1	44.5	3.0	2335.4	300.3	6.3	9.9	8.9	1415.4	14.2	-102.6
6/9/2012	3868.0	0.3	0.0	0.1	44.5	3.0	2248.1	296.3	6.3	9.9	8.9	1403.5	14.0	-71.0
6/10/2012	3976.7	3.5	0.0	0.1	44.5	3.0	2329.1	299.9	6.3	9.9	8.9	1345.9	13.5	14.4
6/11/2012	4111.5	0.7	0.0	0.1	44.5	3.0	2482.4	306.4	6.3	9.9	8.9	1322.1	13.2	10.6
6/12/2012	4109.7	0.9	17.0	0.1	44.5	3.0	2825.3	307.5	6.3	9.9	8.9	1020.7	10.2	-13.4
6/13/2012	4027.8	0.2	0.0	0.1	44.5	3.0	2690.8	304.1	6.3	9.9	8.9	1119.8	11.2	-75.4
6/14/2012	4004.5	1.9	0.0	0.1	44.5	3.0	2623.8	302.1	6.3	9.9	8.9	1125.8	11.3	-34.0
6/15/2012	4021.3	3.2	0.0	0.1	44.5	3.0	2614.2	302.3	6.3	9.9	8.9	1127.8	11.3	-8.4
6/16/2012	4159.0	1.8	0.0	0.1	44.5	3.0	2625.2	309.5	6.3	9.9	8.9	1252.7	12.5	-16.4
6/17/2012	4084.6	2.5	0.0	0.1	44.5	3.0	2592.7	306.3	6.3	9.9	8.9	1252.7	12.5	-54.5
6/18/2012	4146.6	4.5	0.0	0.1	44.5	3.0	2662.7	308.7	6.3	9.9	8.9	1203.1	12.0	-12.9
6/19/2012	4186.8	1.4	0.0	0.1	44.5	3.0	2829.4	310.7	6.3	9.9	8.9	1076.2	10.8	-16.3
6/20/2012	4167.8	1.5	0.0	0.1	44.5	3.0	2826.4	310.5	6.3	9.9	8.9	1098.0	11.0	-54.1
6/21/2012	4119.6	0.7	0.0	0.1	44.5	3.0	2803.2	308.0	6.3	9.9	8.9	1068.3	10.7	-47.2
6/22/2012	4062.7	0.4	0.0	0.1	44.5	3.0	2716.3	305.3	6.3	9.9	8.9	1107.9	11.1	-54.9
6/23/2012	4070.3	1.5	0.0	0.1	44.5	3.0	2641.3	305.4	6.3	9.9	8.9	1171.4	11.7	-35.4
6/24/2012	4001.5	1.8	0.0	0.1	44.5	3.0	2551.5	302.6	6.3	9.9	8.9	1224.0	12.2	-64.5
6/25/2012	3949.5	1.0	0.0	0.1	44.5	3.0	2483.1	299.9	6.3	9.9	8.9	1232.9	12.3	-55.1
6/26/2012	3828.1	0.9	0.0	0.1	44.5	3.0	2498.9	298.6	6.3	9.9	8.9	1238.8	12.4	-197.1
6/27/2012	3074.0	3.7	0.0	0.1	44.5	3.0	1784.5	258.7	6.3	9.9	8.9	1296.4	13.0	-252.3
6/28/2012	3070.5	2.6	0.0	0.1	44.5	3.0	1597.4	255.5	6.3	9.9	8.9	1264.6	12.6	-34.5
6/29/2012	3075.8	4.7	0.0	0.1	44.5	3.0	1574.2	255.8	6.3	9.9	8.9	1294.4	12.9	-34.1
6/30/2012	3072.1	2.8	0.0	0.1	44.5	3.0	1567.1	255.6	6.3	9.9	8.9	1300.3	13.0	-38.5
7/1/2012	3076.1	1.5	0.0	0.1	44.5	3.0	1608.0	255.7	6.3	7.3	8.9	1256.7	12.6	-30.3
7/2/2012	3092.7	4.9	0.0	0.1	44.5	3.0	1684.3	256.7	6.3	7.3	8.9	1195.2	12.0	-25.5
7/3/2012	3100.1	1.2	0.0	0.1	44.5	3.0	1720.7	256.6	6.3	7.3	8.9	1157.5	11.6	-19.9
7/4/2012	3219.1	2.1	0.0	0.1	44.5	3.0	1882.8	262.3	6.3	7.3	8.9	1072.2	10.7	18.4
7/5/2012	3284.8	4.9	0.0	0.1	44.5	3.0	2088.1	266.4	6.3	7.3	8.9	955.2	9.6	-4.3

Table F3-2: RGCP Channel Water Budget Equation Analysis Segment 2 Delayed Single Pulse Hydrograph (S1) (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 Outflow, 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	3240.2	1.3	0.0	0.1	44.5	3.0	2172.1	264.8	6.3	7.3	8.9	865.9	8.7	-44.9
7/7/2012	3199.6	1.8	0.0	4.5	44.5	3.0	2227.7	262.7	6.3	7.3	8.9	768.8	7.7	-35.8
7/8/2012	3223.1	2.2	0.0	9.3	44.5	3.0	2289.9	262.4	6.3	7.3	8.9	681.5	6.8	19.0
7/9/2012	3431.8	6.2	0.0	10.1	44.5	3.0	2575.7	273.3	6.3	7.3	8.9	564.5	5.6	54.0
7/10/2012	3445.4	4.8	0.0	9.8	44.5	3.0	2641.6	274.8	6.3	7.3	8.9	570.4	5.7	-7.5
7/11/2012	3487.8	3.0	0.0	3.9	44.5	3.0	2686.7	276.6	6.3	7.3	8.9	552.6	5.5	-1.7
7/12/2012	3504.2	1.8	0.0	10.1	44.5	3.0	2713.1	277.7	6.3	7.3	8.9	554.5	5.5	-9.9
7/13/2012	3482.1	2.1	0.0	10.5	44.5	3.0	2687.3	276.9	6.3	7.3	8.9	572.4	5.7	-22.5
7/14/2012	3442.8	1.6	0.0	10.9	44.5	3.0	2653.2	275.0	6.3	7.3	8.9	574.4	5.7	-28.0
7/15/2012	3455.0	3.5	0.0	11.4	44.5	3.0	2537.1	275.3	6.3	7.3	8.9	689.4	6.9	-13.8
7/16/2012	3384.4	2.0	0.0	11.0	44.5	3.0	2537.3	273.9	6.3	7.3	8.9	689.4	6.9	-85.2
7/17/2012	3067.0	6.5	0.0	6.7	44.5	3.0	2109.0	256.6	6.3	7.3	8.9	840.2	8.4	-108.9
7/18/2012	3063.9	1.9	0.0	8.8	44.5	3.0	1733.7	255.3	6.3	7.3	8.9	1137.7	11.4	-38.4
7/19/2012	3058.2	2.7	0.0	10.3	44.5	3.0	1607.4	254.9	6.3	7.3	8.9	1250.7	12.5	-29.4
7/20/2012	3023.0	2.6	0.0	11.7	44.5	3.0	1358.8	253.3	6.3	7.3	8.9	1484.8	14.8	-49.4
7/21/2012	2961.4	5.0	0.0	12.3	44.5	3.0	1275.2	250.6	6.3	7.3	8.9	1518.5	15.2	-55.8
7/22/2012	2954.2	2.1	0.0	12.9	44.5	3.0	1184.4	249.4	6.3	7.3	8.9	1574.0	15.7	-29.4
7/23/2012	2962.6	4.7	0.0	13.5	44.5	3.0	1212.5	249.8	6.3	7.3	8.9	1548.3	15.5	-20.2
7/24/2012	2949.9	1.6	0.0	13.9	44.5	3.0	1349.0	249.2	6.3	7.3	8.9	1399.5	14.0	-21.4
7/25/2012	2962.6	2.0	0.0	14.2	44.5	3.0	1437.6	249.8	6.3	7.3	8.9	1318.2	13.2	-14.9
7/26/2012	2932.5	4.7	0.0	14.6	44.5	3.0	1445.6	249.0	6.3	7.3	8.9	1310.2	13.1	-41.0
7/27/2012	2824.4	2.0	0.0	14.8	44.5	3.0	1389.2	243.0	6.3	7.3	8.9	1274.5	12.7	-53.3
7/28/2012	2833.5	3.3	0.0	15.2	44.5	3.0	1339.0	242.7	6.3	7.3	8.9	1294.4	12.9	-12.1
7/29/2012	2884.7	6.9	0.0	15.0	44.5	3.0	1360.1	245.1	6.3	7.3	8.9	1304.3	13.0	9.1
7/30/2012	2948.7	2.9	0.0	15.1	44.5	3.0	1435.3	249.0	6.3	7.3	8.9	1298.3	13.0	-4.0
7/31/2012	2897.9	1.2	0.0	14.9	44.5	3.0	1432.1	246.9	6.3	7.3	8.9	1290.4	12.9	-43.3
8/1/2012	2883.9	6.9	0.0	13.8	44.5	3.0	1379.6	245.5	6.3	6.9	8.9	1307.9	13.1	-16.1
8/2/2012	2892.2	6.6	0.0	14.3	44.5	3.0	1378.1	246.2	6.3	6.9	8.9	1319.4	13.2	-18.4
8/3/2012	2885.6	4.8	0.0	15.7	44.5	3.0	1345.9	245.8	6.3	6.9	8.9	1347.4	13.5	-21.1
8/4/2012	2916.9	1.9	0.0	15.8	44.5	3.0	1343.9	247.0	6.3	6.9	8.9	1361.0	13.6	-5.5
8/5/2012	2962.5	4.2	0.0	15.7	44.5	3.0	1348.1	249.5	6.3	6.9	8.9	1398.2	14.0	-1.9
8/6/2012	2969.6	3.7	0.0	15.8	44.5	3.0	1397.2	250.2	6.3	6.9	8.9	1369.4	13.7	-15.9
8/7/2012	2966.7	4.7	0.0	15.9	44.5	3.0	1464.6	250.0	6.3	6.9	8.9	1298.5	13.0	-13.3
8/8/2012	2970.2	1.4	0.0	16.1	44.5	3.0	1489.9	250.3	6.3	6.9	8.9	1279.3	12.8	-19.2
8/9/2012	2895.8	5.1	0.0	16.1	44.5	3.0	1398.7	247.0	6.3	6.9	8.9	1332.9	13.3	-49.4
8/10/2012	2831.6	3.6	0.0	114.8	44.5	3.0	1237.3	243.5	6.3	6.9	8.9	1433.9	14.3	46.3
8/11/2012	2861.0	5.1	0.0	83.8	44.5	3.0	1235.9	244.1	6.3	6.9	8.9	1415.9	14.2	65.2
8/12/2012	2880.0	6.6	0.0	199.3	44.5	3.0	1263.9	244.8	6.3	6.9	8.9	1403.5	14.0	185.0
8/13/2012	2966.9	4.3	0.0	192.3	44.5	3.0	1298.1	249.9	6.3	6.9	8.9	1451.2	14.5	175.3
8/14/2012	2873.4	10.7	0.0	163.5	44.5	3.0	1280.2	247.9	6.3	6.9	8.9	1478.6	14.8	51.7
8/15/2012	2460.2	6.8	83.2	236.4	44.5	3.0	1373.1	230.5	6.3	6.9	8.9	1150.7	11.5	46.3
8/16/2012	1387.0	2.6	1297.3	18.1	44.5	3.0	1268.3	166.7	6.3	6.9	8.9	444.9	4.4	846.1
8/17/2012	1296.6	4.5	573.6	18.5	44.5	3.0	782.6	145.9	6.3	6.9	8.9	413.1	4.1	573.0
8/18/2012	1296.6	3.3	0.0	18.7	44.5	3.0	774.0	145.9	6.3	6.9	8.9	423.1	4.2	-3.2
8/19/2012	1296.6	3.4	0.0	18.4	44.5	3.0	763.4	145.9	6.3	6.9	8.9	433.9	4.3	-3.7
8/20/2012	1296.6	8.3	0.0	18.3	44.5	3.0	756.9	145.9	6.3	6.9	8.9	440.3	4.4	1.3
8/21/2012	1296.5	1.8	0.0	18.4	44.5	3.0	821.0	145.9	6.3	6.9	8.9	371.3	3.7	0.3
8/22/2012	1296.4	7.1	0.0	17.8	44.5	3.0	870.5	145.9	6.3	6.9	8.9	322.6	3.2	4.6
8/23/2012	1296.5	4.9	0.0	17.1	44.5	3.0	836.0	145.9	6.3	6.9	8.9	362.1	3.6	-3.7
8/24/2012	1296.6	3.7	0.0	16.3	44.5	3.0	833.4	145.9	6.3	6.9	8.9	362.7	3.6	-3.6
8/25/2012	1296.6	5.8	0.0	17.3	44.5	3.0	833.1	145.9	6.3	6.9	8.9	363.0	3.6	-0.4

Table F3-2: RGCP Channel Water Budget Equation Analysis Segment 2 Delayed Single Pulse Hydrograph (S1) (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 Outflow, 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	1296.4	2.8	0.0	17.3	44.5	3.0	859.7	145.9	6.3	6.9	8.9	334.8	3.3	-1.7
8/27/2012	1296.5	5.8	0.0	17.1	44.5	3.0	863.1	145.9	6.3	6.9	8.9	332.6	3.3	0.0
8/28/2012	1296.4	2.8	0.0	16.8	44.5	3.0	799.4	145.9	6.3	6.9	8.9	400.8	4.0	-8.5
8/29/2012	1296.4	1.2	0.0	16.7	44.5	3.0	780.8	145.9	6.3	6.9	8.9	416.6	4.2	-7.6
8/30/2012	1296.6	4.9	0.0	16.4	44.5	3.0	753.7	145.9	6.3	6.9	8.9	444.6	4.4	-5.4
8/31/2012	1296.5	3.8	0.0	16.1	44.5	3.0	747.3	145.9	6.3	6.9	8.9	449.8	4.5	-5.6
9/1/2012	1296.5	0.9	0.0	15.7	44.5	3.0	753.0	145.9	6.3	5.5	8.9	443.4	4.4	-6.8
9/2/2012	1296.4	4.8	0.0	15.6	44.5	3.0	757.4	145.9	6.3	5.5	8.9	438.9	4.4	-3.0
9/3/2012	1296.5	2.8	0.0	15.7	44.5	3.0	759.8	145.8	6.3	5.5	8.9	436.7	4.4	-5.0
9/4/2012	1296.5	4.8	0.0	15.7	44.5	3.0	816.2	145.9	6.3	5.5	8.9	376.6	3.8	1.3
9/5/2012	1296.6	4.1	116.0	15.5	44.5	3.0	1035.8	145.9	6.3	5.5	8.9	148.0	1.5	127.7
9/6/2012	1296.4	5.3	162.5	14.2	44.5	3.0	1140.9	145.9	6.3	5.5	8.9	48.3	0.5	169.6
9/7/2012	1296.6	5.6	0.0	13.2	44.5	3.0	1128.2	145.9	6.3	5.5	8.9	66.8	0.7	0.7
9/8/2012	1296.5	2.0	0.0	14.1	44.5	3.0	917.4	145.9	6.3	5.5	8.9	289.7	2.9	-16.4
9/9/2012	1296.5	2.1	0.0	14.2	44.5	3.0	752.9	145.9	6.3	5.5	8.9	453.6	4.5	-17.3
9/10/2012	1296.6	2.4	0.0	13.8	44.5	3.0	541.1	145.9	6.3	5.5	8.9	674.3	6.7	-28.3
9/11/2012	1296.6	3.2	0.0	12.8	44.5	3.0	484.2	145.9	6.3	5.5	8.9	718.3	7.2	-16.3
9/12/2012	1296.8	5.8	158.9	10.5	44.5	3.0	836.3	145.9	6.3	5.5	8.9	338.5	3.4	174.6
9/13/2012	1296.6	3.0	506.0	8.5	44.5	3.0	1137.2	145.9	6.3	5.5	8.9	42.8	0.4	514.5
9/14/2012	1279.4	3.3	156.2	9.7	44.5	3.0	1151.2	145.6	6.3	5.5	8.9	42.8	0.4	135.3

RGCP - Project Scale Water Budget - Segment 2 (Leasburg Dam to Mesilla Dam)
Release Scenario S1 (Delayed Single Pulse)
ΔSic = (Qus + Pc + Qcin + Qirf + Qgwrf) - (Qcds + Qcs + Qfpr + ET + Qda + Qdu)

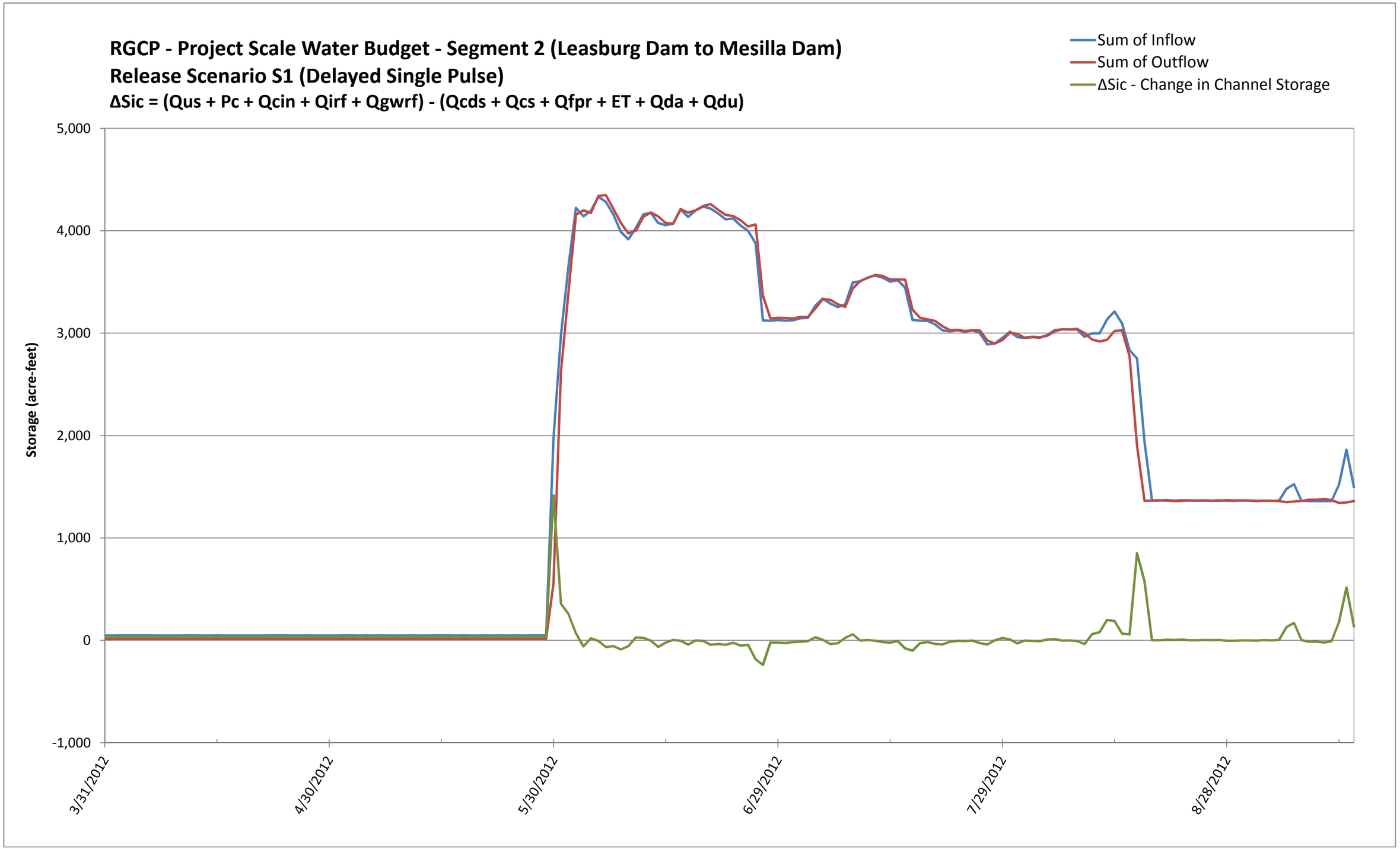

Table F3-3: RGCP Channel Water Budget Equation Analysis Segment 3 Delayed Single Pulse Hydrograph (S1) (Units = Acre-Feet)

	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	0.0	0.1	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-16.3
4/1/2012	0.0	0.1	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-16.3
4/2/2012	0.0	0.5	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-15.9
4/3/2012	0.0	0.4	0.0	0.9	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-16.0
4/4/2012	0.0	0.5	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-15.9
4/5/2012	0.0	0.7	0.0	4.4	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-12.2
4/6/2012	0.0	0.8	0.0	61.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	45.3
4/7/2012	0.0	0.1	0.0	85.5	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	68.4
4/8/2012	0.0	0.0	0.0	90.5	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	73.3
4/9/2012	0.0	0.0	0.0	101.5	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	84.3
4/10/2012	0.0	0.0	0.0	111.7	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	94.4
4/11/2012	0.0	0.6	0.0	110.7	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	94.1
4/12/2012	0.0	0.7	0.0	108.1	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	91.6
4/13/2012	0.0	0.1	0.0	97.7	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	80.6
4/14/2012	0.0	0.1	0.0	99.5	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	82.3
4/15/2012	0.0	0.9	0.0	50.7	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	34.3
4/16/2012	0.0	0.2	0.0	42.5	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	25.5
4/17/2012	0.0	0.1	0.0	50.7	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	33.6
4/18/2012	0.0	0.1	0.0	51.0	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	33.9
4/19/2012	0.0	0.1	0.0	48.7	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	31.6
4/20/2012	0.0	0.0	0.0	48.3	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	31.1
4/21/2012	0.0	0.0	0.0	42.2	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	25.0
4/22/2012	0.0	0.6	0.0	33.3	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	16.7
4/23/2012	0.0	0.5	0.0	29.6	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	12.9
4/24/2012	0.0	0.4	0.0	29.5	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	12.7
4/25/2012	0.0	0.3	0.0	27.1	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	10.1
4/26/2012	0.0	0.2	0.0	25.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	8.7
4/27/2012	0.0	0.5	0.0	34.6	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	17.8
4/28/2012	0.0	0.0	0.0	36.6	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	19.4
4/29/2012	0.0	0.1	0.0	29.3	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	12.1
4/30/2012	0.0	0.3	0.0	33.7	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	16.7
5/1/2012	0.0	0.0	0.0	30.2	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	13.0
5/2/2012	0.0	1.1	0.0	28.0	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	11.9
5/3/2012	0.0	0.9	0.0	27.4	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	11.0
5/4/2012	0.0	0.2	0.0	27.3	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	10.3
5/5/2012	0.0	0.3	0.0	27.5	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	10.5
5/6/2012	0.0	0.3	0.0	6.0	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-11.0
5/7/2012	0.0	0.7	0.0	0.3	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-16.2
5/8/2012	0.0	0.0	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-16.4
5/9/2012	0.0	0.0	0.0	0.9	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-16.4
5/10/2012	0.0	0.0	0.0	0.9	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-16.4
5/11/2012	0.0	0.4	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-16.0
5/12/2012	0.0	0.0	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-16.4
5/13/2012	0.0	0.1	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-16.3
5/14/2012	0.0	0.6	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-15.8
5/15/2012	0.0	0.7	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-15.7

Table F3-3: RGCP Channel Water Budget Equation Analysis Segment 3 Delayed Single Pulse Hydrograph (S1) (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	0.0	11.8	0.0	8.4	0.0	0.0	-15.3
5/17/2012	0.0	0.3	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-16.2
5/18/2012	0.0	0.3	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-16.1
5/19/2012	0.0	0.0	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-16.4
5/20/2012	0.0	0.3	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-16.2
5/21/2012	0.0	1.0	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-15.5
5/22/2012	0.0	0.1	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-16.3
5/23/2012	0.0	0.8	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-15.6
5/24/2012	0.0	0.2	0.0	0.7	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-16.3
5/25/2012	0.0	1.0	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-15.4
5/26/2012	0.0	0.1	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-16.3
5/27/2012	0.0	0.6	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-15.9
5/28/2012	0.0	0.6	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-15.8
5/29/2012	0.0	0.3	0.0	0.8	2.9	0.0	0.0	0.0	11.8	0.0	8.4	0.0	0.0	-16.2
5/30/2012	425.3	0.0	0.0	0.8	2.9	0.0	377.6	52.7	11.8	9.3	8.4	0.0	0.0	-30.7
5/31/2012	2185.2	0.7	0.0	0.8	2.9	0.0	644.0	156.7	11.8	9.3	8.4	0.0	0.0	1359.5
6/1/2012	2120.7	0.4	0.0	0.8	2.9	0.0	2043.6	165.4	11.8	9.5	8.4	0.0	0.0	-113.9
6/2/2012	2786.7	0.3	0.0	0.8	2.9	0.0	2411.1	190.1	11.8	9.5	8.4	0.0	0.0	159.7
6/3/2012	2743.1	0.6	0.0	0.8	2.9	0.0	2618.1	193.4	11.8	9.5	8.4	0.0	0.0	-93.8
6/4/2012	2775.4	0.3	0.0	0.8	2.9	0.0	2577.3	193.3	11.8	9.5	8.4	0.0	0.0	-20.9
6/5/2012	2688.9	0.2	0.0	0.8	2.9	0.0	2539.3	190.5	11.8	9.5	8.4	0.0	0.0	-66.8
6/6/2012	2573.9	0.7	0.0	1.2	2.9	0.0	2451.5	185.8	11.8	9.5	8.4	0.0	0.0	-88.2
6/7/2012	2442.1	1.6	0.0	14.5	2.9	0.0	2326.0	179.8	11.8	9.5	8.4	0.0	0.0	-74.4
6/8/2012	2335.4	0.7	0.0	20.3	2.9	0.0	2223.5	174.9	11.8	9.5	8.4	0.0	0.0	-68.7
6/9/2012	2248.1	0.2	0.0	11.1	2.9	0.0	2109.1	170.1	11.8	9.5	8.4	0.0	0.0	-46.5
6/10/2012	2329.1	2.2	0.0	38.4	2.9	0.0	2123.0	172.5	11.8	9.5	8.4	0.0	0.0	47.5
6/11/2012	2482.4	0.4	0.0	60.7	2.9	0.0	2272.5	179.7	11.8	9.5	8.4	0.0	0.0	64.6
6/12/2012	2825.3	0.6	0.0	69.1	2.9	0.0	2560.9	194.2	11.8	9.5	8.4	0.0	0.0	113.3
6/13/2012	2690.8	0.1	0.0	74.9	2.9	0.0	2570.1	191.1	11.8	9.5	8.4	0.0	0.0	-22.1
6/14/2012	2623.8	1.2	0.0	74.0	2.9	0.0	2467.4	187.3	11.8	9.5	8.4	0.0	0.0	17.5
6/15/2012	2614.2	2.0	0.0	47.9	2.9	0.0	2452.0	186.7	11.8	9.5	8.4	0.0	0.0	-1.3
6/16/2012	2625.2	1.2	0.0	34.4	2.9	0.0	2440.9	186.8	11.8	9.5	8.4	0.0	0.0	6.3
6/17/2012	2592.7	1.6	0.0	42.5	2.9	0.0	2452.4	186.2	11.8	9.5	8.4	0.0	0.0	-28.6
6/18/2012	2662.7	2.9	0.0	32.8	2.9	0.0	2456.7	188.1	11.8	9.5	8.4	0.0	0.0	26.9
6/19/2012	2829.4	0.9	0.0	31.7	2.9	0.0	2604.5	195.1	11.8	9.5	8.4	0.0	0.0	35.6
6/20/2012	2826.4	1.0	0.0	30.3	2.9	0.0	2657.0	196.1	11.8	9.5	8.4	0.0	0.0	-22.3
6/21/2012	2803.2	0.4	0.0	34.1	2.9	0.0	2634.0	195.1	11.8	9.5	8.4	0.0	0.0	-18.1
6/22/2012	2716.3	0.3	0.0	29.8	2.9	0.0	2574.3	191.8	11.8	9.5	8.4	0.0	0.0	-46.5
6/23/2012	2641.3	1.0	0.0	32.5	2.9	0.0	2487.9	188.2	11.8	9.5	8.4	0.0	0.0	-28.0
6/24/2012	2551.5	1.1	0.0	28.3	2.9	0.0	2422.5	184.6	11.8	9.5	8.4	0.0	0.0	-52.8
6/25/2012	2483.1	0.6	0.0	29.3	2.9	0.0	2339.1	181.1	11.8	9.5	8.4	0.0	0.0	-33.8
6/26/2012	2498.9	0.6	0.0	27.4	2.9	0.0	2316.9	181.1	11.8	9.5	8.4	0.0	0.0	2.2
6/27/2012	1784.5	2.4	119.0	31.6	2.9	0.0	1938.0	153.9	11.8	9.5	8.4	0.0	0.0	-181.2
6/28/2012	1597.4	1.7	0.0	29.8	2.9	0.0	1463.1	136.8	11.8	9.5	8.4	0.0	0.0	2.2
6/29/2012	1574.2	3.0	0.0	15.7	2.9	0.0	1460.5	136.1	11.8	9.5	8.4	0.0	0.0	-30.4
6/30/2012	1567.1	1.8	0.0	8.5	2.9	0.0	1448.6	135.6	11.8	9.5	8.4	0.0	0.0	-33.5
7/1/2012	1608.0	1.0	0.0	17.6	2.9	0.0	1467.5	137.3	11.8	7.1	8.4	0.0	0.0	-2.6
7/2/2012	1684.3	3.1	0.0	20.1	2.9	0.0	1526.7	141.0	11.8	7.1	8.4	0.0	0.0	15.5
7/3/2012	1720.7	0.8	0.0	25.1	2.9	0.0	1581.1	143.5	11.8	7.1	8.4	0.0	0.0	-2.3
7/4/2012	1882.8	1.3	0.0	32.9	2.9	0.0	1676.2	150.4	11.8	7.1	8.4	0.0	0.0	66.2
7/5/2012	2088.1	3.2	0.0	36.4	2.9	0.0	1880.1	160.7	11.8	7.1	8.4	0.0	0.0	62.5

Table F3-3: RGCP Channel Water Budget Equation Analysis Segment 3 Delayed Single Pulse Hydrograph (S1) (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	2172.1	0.8	0.0	44.2	2.9	0.0	2008.1	165.9	11.8	7.1	8.4	0.0	0.0	18.9
7/7/2012	2227.7	1.2	0.0	34.3	2.9	0.0	2057.1	168.4	11.8	7.1	8.4	0.0	0.0	13.3
7/8/2012	2289.9	1.4	0.0	67.6	2.9	0.0	2112.2	171.3	11.8	7.1	8.4	0.0	0.0	51.2
7/9/2012	2575.7	4.0	0.0	53.5	2.9	0.0	2300.2	182.6	11.8	7.1	8.4	0.0	0.0	126.2
7/10/2012	2641.6	3.1	0.0	39.0	2.9	0.0	2470.9	187.9	11.8	7.1	8.4	0.0	0.0	0.6
7/11/2012	2686.7	1.9	0.0	33.6	2.9	0.0	2498.1	189.5	11.8	7.1	8.4	0.0	0.0	10.3
7/12/2012	2713.1	1.1	0.0	13.1	2.9	0.0	2536.7	190.9	11.8	7.1	8.4	0.0	0.0	-24.6
7/13/2012	2687.3	1.3	0.0	7.4	2.9	0.0	2528.3	190.1	11.8	7.1	8.4	0.0	0.0	-46.7
7/14/2012	2653.2	1.0	0.0	6.5	2.9	0.0	2496.7	188.6	11.8	7.1	8.4	0.0	0.0	-48.8
7/15/2012	2537.1	2.2	0.0	3.1	2.9	0.0	2401.6	183.8	11.8	7.1	8.4	0.0	0.0	-67.2
7/16/2012	2537.3	1.3	0.0	6.6	2.9	0.0	2372.3	183.2	11.8	7.1	8.4	0.0	0.0	-34.6
7/17/2012	2109.0	4.2	1.2	10.2	2.9	0.0	2123.2	166.8	11.8	7.1	8.4	0.0	0.0	-189.8
7/18/2012	1733.7	1.2	0.0	36.5	2.9	0.0	1702.4	146.8	11.8	7.1	8.4	0.0	0.0	-102.2
7/19/2012	1607.4	1.7	0.0	55.6	2.9	0.0	1525.9	138.8	11.8	7.1	8.4	0.0	0.0	-24.3
7/20/2012	1358.8	1.6	0.0	43.7	2.9	0.0	1347.2	126.5	11.8	7.1	8.4	0.0	0.0	-94.0
7/21/2012	1275.2	3.2	0.0	36.5	2.9	0.0	1200.5	119.9	11.8	7.1	8.4	0.0	0.0	-29.9
7/22/2012	1184.4	1.3	0.0	34.9	2.9	0.0	1107.2	114.3	11.8	7.1	8.4	0.0	0.0	-25.1
7/23/2012	1212.5	3.0	0.0	35.9	2.9	0.0	1094.0	114.8	11.8	7.1	8.4	0.0	0.0	18.3
7/24/2012	1349.0	1.0	0.0	41.3	2.9	0.0	1186.4	121.9	11.8	7.1	8.4	0.0	0.0	58.8
7/25/2012	1437.6	1.3	0.0	63.2	2.9	0.0	1285.2	127.3	11.8	7.1	8.4	0.0	0.0	65.3
7/26/2012	1445.6	3.0	0.0	62.1	2.9	0.0	1330.6	128.8	11.8	7.1	8.4	0.0	0.0	27.0
7/27/2012	1389.2	1.3	0.0	56.2	2.9	0.0	1308.3	126.4	11.8	7.1	8.4	0.0	0.0	-12.4
7/28/2012	1339.0	2.1	0.0	48.8	2.9	0.0	1235.1	122.9	11.8	7.1	8.4	0.0	0.0	7.6
7/29/2012	1360.1	4.4	0.0	46.3	2.9	0.0	1236.1	123.6	11.8	7.1	8.4	0.0	0.0	26.8
7/30/2012	1435.3	1.9	0.0	38.1	2.9	0.0	1287.5	127.3	11.8	7.1	8.4	0.0	0.0	36.2
7/31/2012	1432.1	0.8	0.0	32.6	2.9	0.0	1331.8	128.4	11.8	7.1	8.4	0.0	0.0	-19.0
8/1/2012	1379.6	4.4	0.0	38.1	2.9	0.0	1282.6	125.5	11.8	6.7	8.4	0.0	0.0	-9.9
8/2/2012	1378.1	4.2	0.0	50.1	2.9	0.0	1264.5	124.9	11.8	6.7	8.4	0.0	0.0	19.2
8/3/2012	1345.9	3.1	0.0	35.5	2.9	0.0	1248.0	123.5	11.8	6.7	8.4	0.0	0.0	-10.9
8/4/2012	1343.9	1.2	0.0	18.0	2.9	0.0	1227.7	122.8	11.8	6.7	8.4	0.0	0.0	-11.4
8/5/2012	1348.1	2.7	0.0	14.8	2.9	0.0	1234.0	123.1	11.8	6.7	8.4	0.0	0.0	-15.4
8/6/2012	1397.2	2.4	0.0	12.9	2.9	0.0	1270.1	125.7	11.8	6.7	8.4	0.0	0.0	-7.1
8/7/2012	1464.6	3.0	0.0	13.0	2.9	0.0	1323.5	129.2	11.8	6.7	8.4	0.0	0.0	4.1
8/8/2012	1489.9	0.9	0.0	28.5	2.9	0.0	1362.3	131.0	11.8	6.7	8.4	0.0	0.0	2.2
8/9/2012	1398.7	3.2	0.0	38.6	2.9	0.0	1332.4	127.4	11.8	6.7	8.4	0.0	0.0	-43.1
8/10/2012	1237.3	2.3	0.0	26.2	2.9	0.0	1193.1	118.4	11.8	6.7	8.4	0.0	0.0	-69.6
8/11/2012	1235.9	3.2	0.0	19.3	2.9	0.0	1112.2	116.1	11.8	6.7	8.4	0.0	0.0	6.2
8/12/2012	1263.9	4.2	0.0	43.4	2.9	0.0	1152.4	118.2	11.8	6.7	8.4	0.0	0.0	17.1
8/13/2012	1298.1	2.8	0.0	43.0	2.9	0.0	1164.9	119.6	11.8	6.7	8.4	0.0	0.0	35.5
8/14/2012	1280.2	6.8	0.0	41.5	2.9	0.0	1189.6	119.7	11.8	6.7	8.4	0.0	0.0	-4.7
8/15/2012	1373.1	4.3	0.0	38.7	2.9	0.0	1227.6	123.7	11.8	6.7	8.4	0.0	0.0	40.9
8/16/2012	1268.3	1.6	0.0	61.8	2.9	0.0	1269.7	121.4	11.8	6.7	8.4	0.0	0.0	-83.3
8/17/2012	782.6	2.9	0.0	68.0	2.9	0.0	823.3	88.8	11.8	6.7	8.4	0.0	0.0	-82.5
8/18/2012	774.0	2.1	0.0	61.3	2.9	0.0	702.0	85.6	11.8	6.7	8.4	0.0	0.0	25.9
8/19/2012	763.4	2.2	0.0	58.3	2.9	0.0	692.6	84.7	11.8	6.7	8.4	0.0	0.0	22.6
8/20/2012	756.9	5.3	0.0	61.7	2.9	0.0	684.5	84.1	11.8	6.7	8.4	0.0	0.0	31.4
8/21/2012	821.0	1.1	0.0	62.4	2.9	0.0	706.3	87.7	11.8	6.7	8.4	0.0	0.0	66.6
8/22/2012	870.5	4.5	0.0	65.1	2.9	0.0	762.9	91.8	11.8	6.7	8.4	0.0	0.0	61.5
8/23/2012	836.0	3.2	0.0	58.2	2.9	0.0	774.1	90.8	11.8	6.7	8.4	0.0	0.0	8.6
8/24/2012	833.4	2.3	0.0	64.9	2.9	0.0	752.8	89.9	11.8	6.7	8.4	0.0	0.0	34.0
8/25/2012	833.1	3.7	0.0	49.6	2.9	0.0	752.1	89.9	11.8	6.7	8.4	0.0	0.0	20.5

Table F3-3: RGCP Channel Water Budget Equation Analysis Segment 3 Delayed Single Pulse Hydrograph (S1) (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	859.7	1.8	0.0	32.4	2.9	0.0	762.7	91.4	11.8	6.7	8.4	0.0	0.0	15.9
8/27/2012	863.1	3.7	0.0	34.6	2.9	0.0	778.8	92.1	11.8	6.7	8.4	0.0	0.0	6.6
8/28/2012	799.4	1.8	0.0	29.3	2.9	0.0	754.4	88.5	11.8	6.7	8.4	0.0	0.0	-36.3
8/29/2012	780.8	0.8	0.0	28.2	2.9	0.0	711.1	86.2	11.8	6.7	8.4	0.0	0.0	-11.4
8/30/2012	753.7	3.1	0.0	20.9	2.9	0.0	692.5	84.3	11.8	6.7	8.4	0.0	0.0	-23.0
8/31/2012	747.3	2.4	0.0	17.2	2.9	0.0	674.8	83.3	11.8	6.7	8.4	0.0	0.0	-15.2
9/1/2012	753.0	0.6	0.0	17.2	2.9	0.0	674.1	83.6	11.8	5.4	8.4	0.0	0.0	-9.5
9/2/2012	757.4	3.1	0.0	16.6	2.9	0.0	679.4	84.0	11.8	5.4	8.4	0.0	0.0	-8.9
9/3/2012	759.8	1.8	0.0	16.7	2.9	0.0	682.6	84.2	11.8	5.4	8.4	0.0	0.0	-11.0
9/4/2012	816.2	3.1	0.0	17.1	2.9	0.0	706.2	87.5	11.8	5.4	8.4	0.0	0.0	20.1
9/5/2012	1035.8	2.6	0.0	20.6	2.9	0.0	835.3	100.8	11.8	5.4	8.4	0.0	0.0	100.3
9/6/2012	1140.9	3.4	0.0	24.8	2.9	0.0	998.8	109.6	11.8	5.4	8.4	0.0	0.0	38.1
9/7/2012	1128.2	3.6	0.0	23.6	2.9	0.0	1036.5	110.3	11.8	5.4	8.4	0.0	0.0	-14.0
9/8/2012	917.4	1.3	0.0	33.4	2.9	0.0	925.6	99.3	11.8	5.4	8.4	0.0	0.0	-95.3
9/9/2012	752.9	1.3	0.0	43.5	2.9	0.0	757.7	86.7	11.8	5.4	8.4	0.0	0.0	-69.3
9/10/2012	541.1	1.6	27.4	28.2	2.9	0.0	599.5	70.7	11.8	5.4	8.4	0.0	0.0	-94.6
9/11/2012	484.2	2.0	0.0	24.3	2.9	0.0	460.5	61.1	11.8	5.4	8.4	0.0	0.0	-33.5
9/12/2012	836.3	3.7	0.0	20.3	2.9	0.0	520.2	82.0	11.8	5.4	8.4	0.0	0.0	235.6
9/13/2012	1137.2	1.9	0.0	17.1	2.9	0.0	907.4	106.7	11.8	5.4	8.4	0.0	0.0	119.5
9/14/2012	1151.2	2.1	0.0	16.4	2.9	0.0	1050.6	111.5	11.8	5.4	8.4	0.0	0.0	-15.0

RGCP - Project Scale Water Budget - Segment 3 (Mesilla Dam to Anthony Metering Station)
Release Scenario S1 (Delayed Single Pulse)
ΔSic = (Qus + Pc + Qcin + Qirf + Qgwrf) - (Qcds + Qcs + Qfpr + ET + Qda + Qdu)

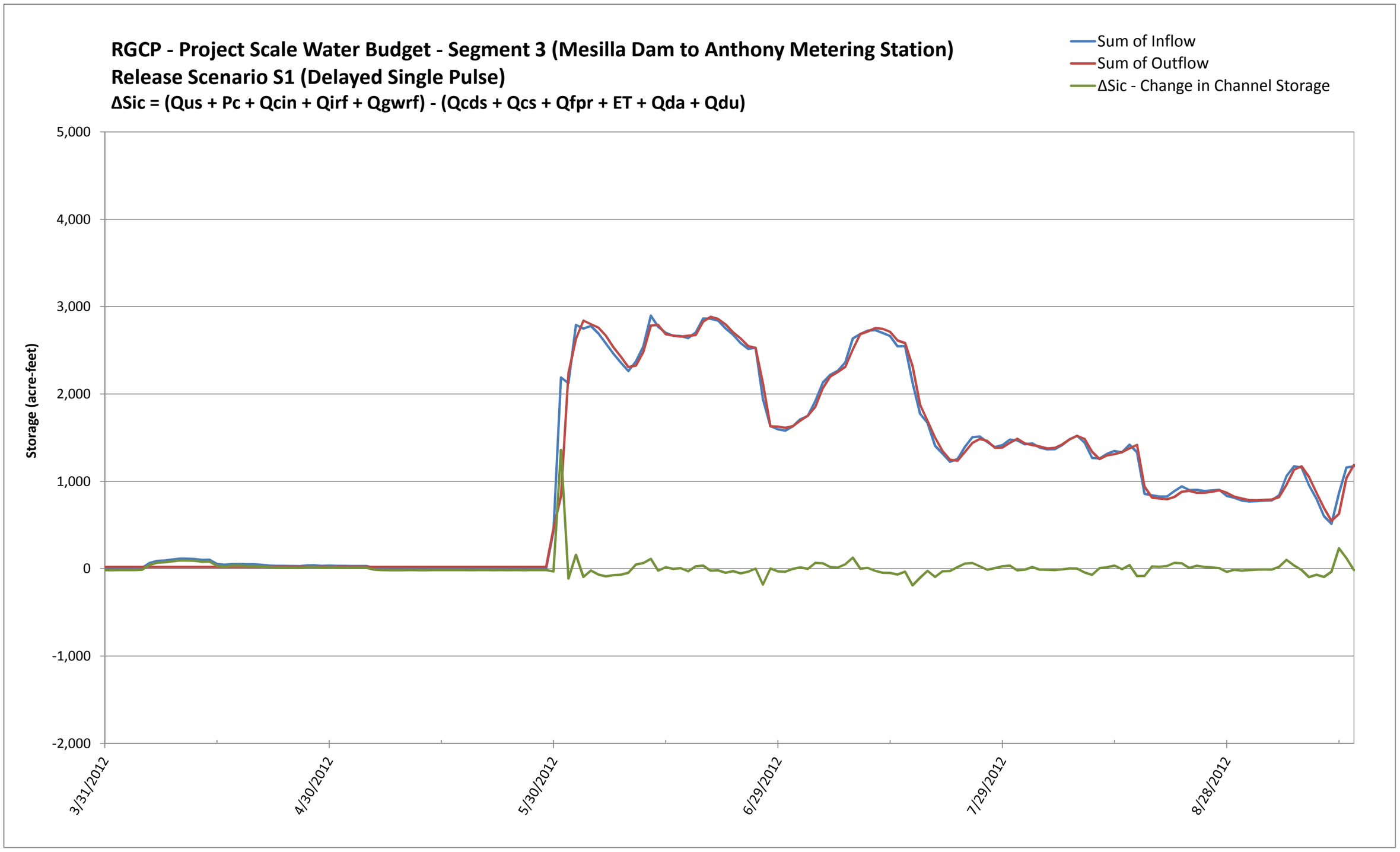

Table F3-4: RGCP Channel Water Budget Equation Analysis Segment 4 Delayed Single Pulse Hydrograph (S1) (Units = Acre-Feet)

	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	0.0	0.1	0.0	17.6	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	37.0
4/1/2012	0.0	0.2	0.0	17.8	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	37.4
4/2/2012	0.0	0.2	0.0	18.5	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	38.1
4/3/2012	0.0	0.1	0.0	18.5	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	37.9
4/4/2012	0.0	0.3	0.0	18.9	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	38.6
4/5/2012	0.0	0.9	0.0	19.5	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	39.8
4/6/2012	0.0	0.6	0.0	19.6	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	39.6
4/7/2012	0.0	0.3	0.0	19.9	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	39.6
4/8/2012	0.0	0.0	0.0	20.2	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	39.6
4/9/2012	0.0	0.0	0.0	18.7	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	38.0
4/10/2012	0.0	0.4	0.0	16.2	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	36.0
4/11/2012	0.0	1.0	0.0	16.3	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	36.7
4/12/2012	0.0	0.3	0.0	16.1	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	35.8
4/13/2012	0.0	0.2	0.0	16.3	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	35.9
4/14/2012	0.0	0.7	0.0	16.5	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	36.5
4/15/2012	0.0	0.2	0.0	15.9	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	35.5
4/16/2012	0.0	0.1	0.0	15.9	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	35.3
4/17/2012	0.0	0.2	0.0	16.2	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	35.7
4/18/2012	0.0	0.1	0.0	16.4	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	35.8
4/19/2012	0.0	0.2	0.0	16.7	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	36.3
4/20/2012	0.0	0.2	0.0	16.9	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	36.5
4/21/2012	0.0	0.6	0.0	16.7	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	36.7
4/22/2012	0.0	0.5	0.0	17.3	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	37.2
4/23/2012	0.0	1.1	0.0	18.9	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	39.4
4/24/2012	0.0	1.3	0.0	21.3	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	41.9
4/25/2012	0.0	0.1	0.0	17.6	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	37.1
4/26/2012	0.0	0.2	0.0	17.9	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	37.5
4/27/2012	0.0	0.1	0.0	21.3	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	40.7
4/28/2012	0.0	0.4	0.0	24.1	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	43.8
4/29/2012	0.0	0.2	0.0	19.5	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	39.1
4/30/2012	0.0	0.2	0.0	19.3	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	38.9
5/1/2012	0.0	0.6	0.0	18.4	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	38.4
5/2/2012	0.0	0.5	0.0	18.5	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	38.3
5/3/2012	0.0	0.2	0.0	18.9	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	38.4
5/4/2012	0.0	0.4	0.0	18.9	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	38.7
5/5/2012	0.0	0.3	0.0	18.4	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	38.1
5/6/2012	0.0	0.9	0.0	17.8	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	38.1
5/7/2012	0.0	0.1	0.0	17.5	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	37.0
5/8/2012	0.0	0.5	0.0	17.8	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	37.6
5/9/2012	0.0	0.6	0.0	18.6	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	38.6
5/10/2012	0.0	0.4	0.0	18.6	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	38.4
5/11/2012	0.0	0.2	0.0	18.2	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	37.7
5/12/2012	0.0	0.1	0.0	18.1	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	37.6
5/13/2012	0.0	0.2	0.0	18.0	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	37.6
5/14/2012	0.0	0.8	0.0	18.0	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	38.1
5/15/2012	0.0	0.8	0.0	17.5	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	37.7

Table F3-4: RGCP Channel Water Budget Equation Analysis Segment 4 — Delayed Single Pulse Hydrograph (S1) — (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	0.0	0.0	6.4	0.0	7.2	0.0	0.0	37.1
5/17/2012	0.0	1.5	0.0	16.9	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	37.8
5/18/2012	0.0	1.0	0.0	16.7	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	37.1
5/19/2012	0.0	0.5	0.0	16.7	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	36.6
5/20/2012	0.0	1.2	0.0	16.7	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	37.3
5/21/2012	0.0	0.4	0.0	16.6	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	36.4
5/22/2012	0.0	1.5	0.0	16.6	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	37.5
5/23/2012	0.0	1.1	0.0	16.8	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	37.3
5/24/2012	0.0	0.4	0.0	17.1	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	36.9
5/25/2012	0.0	0.1	0.0	16.8	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	36.3
5/26/2012	0.0	0.5	0.0	17.0	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	36.9
5/27/2012	0.0	1.3	0.0	17.4	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	38.1
5/28/2012	0.0	0.2	0.0	17.8	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	37.3
5/29/2012	0.0	0.4	0.0	17.0	33.0	0.0	0.0	0.0	6.4	0.0	7.2	0.0	0.0	36.8
5/30/2012	377.6	0.5	0.0	16.9	33.0	0.0	0.0	23.3	6.4	4.4	7.2	0.0	0.0	386.7
5/31/2012	644.0	0.5	0.0	16.7	33.0	0.0	332.0	46.6	6.4	8.8	7.2	0.0	0.0	293.2
6/1/2012	2043.6	1.2	0.0	16.6	33.0	0.0	1933.4	163.3	6.4	9.1	7.2	0.0	0.0	-25.1
6/2/2012	2411.1	1.3	0.0	16.4	33.0	0.0	1944.4	172.1	6.4	9.1	7.2	0.0	0.0	322.6
6/3/2012	2618.1	0.6	0.0	16.5	33.0	0.0	2486.7	190.7	6.4	9.1	7.2	0.0	0.0	-31.8
6/4/2012	2577.3	0.5	0.0	16.9	33.0	0.0	2374.3	186.5	6.4	9.1	7.2	0.0	0.0	44.2
6/5/2012	2539.3	0.4	0.0	16.6	33.0	0.0	2385.8	186.1	6.4	9.1	7.2	0.0	0.0	-5.3
6/6/2012	2451.5	0.3	0.0	16.6	33.0	0.0	2322.2	182.6	6.4	9.1	7.2	0.0	0.0	-26.2
6/7/2012	2326.0	0.8	0.0	19.3	33.0	0.0	2206.4	176.7	6.4	9.1	7.2	0.0	0.0	-26.8
6/8/2012	2223.5	0.9	0.0	20.7	33.0	0.0	2089.6	171.5	6.4	9.1	7.2	0.0	0.0	-5.8
6/9/2012	2109.1	0.6	0.0	19.1	33.0	0.0	1974.7	165.4	6.4	9.1	7.2	0.0	0.0	-1.0
6/10/2012	2123.0	1.7	0.0	17.1	33.0	0.0	1926.7	164.3	6.4	9.1	7.2	0.0	0.0	61.1
6/11/2012	2272.5	0.7	0.0	19.0	33.0	0.0	2040.3	171.1	6.4	9.1	7.2	0.0	0.0	91.0
6/12/2012	2560.9	0.9	0.0	16.8	33.0	0.0	2237.0	183.1	6.4	9.1	7.2	0.0	0.0	168.8
6/13/2012	2570.1	1.1	0.0	17.0	33.0	0.0	2444.5	188.4	6.4	9.1	7.2	0.0	0.0	-34.4
6/14/2012	2467.4	1.0	0.0	17.6	33.0	0.0	2311.1	182.5	6.4	9.1	7.2	0.0	0.0	2.7
6/15/2012	2452.0	1.1	0.0	17.8	33.0	0.0	2271.9	181.3	6.4	9.1	7.2	0.0	0.0	27.9
6/16/2012	2440.9	1.6	0.0	18.0	33.0	0.0	2249.8	180.3	6.4	9.1	7.2	0.0	0.0	40.6
6/17/2012	2452.4	1.8	0.0	18.4	33.0	0.0	2292.3	182.0	6.4	9.1	7.2	0.0	0.0	8.5
6/18/2012	2456.7	1.1	0.0	20.4	33.0	0.0	2242.9	180.5	6.4	9.1	7.2	0.0	0.0	65.1
6/19/2012	2604.5	0.9	0.0	18.1	33.0	0.0	2349.9	186.7	6.4	9.1	7.2	0.0	0.0	97.1
6/20/2012	2657.0	1.8	0.0	16.8	33.0	0.0	2469.9	191.0	6.4	9.1	7.2	0.0	0.0	24.9
6/21/2012	2634.0	0.8	0.0	16.8	33.0	0.0	2456.6	190.1	6.4	9.1	7.2	0.0	0.0	15.1
6/22/2012	2574.3	0.5	0.0	16.8	33.0	0.0	2422.3	188.0	6.4	9.1	7.2	0.0	0.0	-8.3
6/23/2012	2487.9	1.1	0.0	16.7	33.0	0.0	2332.8	183.6	6.4	9.1	7.2	0.0	0.0	-0.4
6/24/2012	2422.5	0.8	0.0	16.7	33.0	0.0	2279.3	180.9	6.4	9.1	7.2	0.0	0.0	-9.9
6/25/2012	2339.1	1.5	0.0	16.6	33.0	0.0	2189.0	176.5	6.4	9.1	7.2	0.0	0.0	2.0
6/26/2012	2316.9	1.4	0.0	16.4	33.0	0.0	2133.2	174.4	6.4	9.1	7.2	0.0	0.0	37.3
6/27/2012	1938.0	2.7	97.0	16.7	33.0	0.0	2084.6	164.6	6.4	9.1	7.2	0.0	0.0	-184.6
6/28/2012	1463.1	4.2	0.0	17.6	33.0	0.0	1393.3	131.9	6.4	9.1	7.2	0.0	0.0	-29.9
6/29/2012	1460.5	3.8	0.0	16.8	33.0	0.0	1339.8	131.3	6.4	9.1	7.2	0.0	0.0	20.3
6/30/2012	1448.6	1.8	0.0	16.4	33.0	0.0	1320.5	130.4	6.4	9.1	7.2	0.0	0.0	26.3
7/1/2012	1467.5	3.8	0.0	16.3	33.0	0.0	1319.4	130.8	6.4	6.8	7.2	0.0	0.0	50.1
7/2/2012	1526.7	2.0	0.0	16.0	33.0	0.0	1361.5	133.7	6.4	6.8	7.2	0.0	0.0	62.1
7/3/2012	1581.1	1.5	0.0	15.7	33.0	0.0	1430.3	137.3	6.4	6.8	7.2	0.0	0.0	43.3
7/4/2012	1676.2	4.4	0.0	15.9	33.0	0.0	1468.4	140.7	6.4	6.8	7.2	0.0	0.0	99.9
7/5/2012	1880.1	2.8	0.0	16.5	33.0	0.0	1648.8	151.3	6.4	6.8	7.2	0.0	0.0	112.0

Table F3-4: RGCP Channel Water Budget Equation Analysis Segment 4 Delayed Single Pulse Hydrograph (S1) (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
7/6/2012	2008.1	3.8	0.0	16.9	33.0	0.0	1820.2	159.2	6.4	6.8	7.2	0.0	0.0	62.0
7/7/2012	2057.1	2.2	0.0	17.1	33.0	0.0	1874.5	161.7	6.4	6.8	7.2	0.0	0.0	53.0
7/8/2012	2112.2	3.6	0.0	17.3	33.0	0.0	1924.6	164.3	6.4	6.8	7.2	0.0	0.0	56.7
7/9/2012	2300.2	2.6	0.0	17.9	33.0	0.0	2007.9	170.7	6.4	6.8	7.2	0.0	0.0	154.7
7/10/2012	2470.9	2.4	0.0	17.4	33.0	0.0	2274.4	181.9	6.4	6.8	7.2	0.0	0.0	47.0
7/11/2012	2498.1	2.1	0.0	17.5	33.0	0.0	2296.6	182.9	6.4	6.8	7.2	0.0	0.0	50.8
7/12/2012	2536.7	2.4	0.0	17.5	33.0	0.0	2341.9	185.0	6.4	6.8	7.2	0.0	0.0	42.3
7/13/2012	2528.3	2.8	0.0	17.5	33.0	0.0	2355.1	185.2	6.4	6.8	7.2	0.0	0.0	20.9
7/14/2012	2496.7	3.3	0.0	17.5	33.0	0.0	2326.2	183.7	6.4	6.8	7.2	0.0	0.0	20.2
7/15/2012	2401.6	3.3	0.0	17.4	33.0	0.0	2268.9	179.9	6.4	6.8	7.2	0.0	0.0	-13.9
7/16/2012	2372.3	1.9	0.0	17.4	33.0	0.0	2194.1	177.4	6.4	6.8	7.2	0.0	0.0	32.7
7/17/2012	2123.2	2.7	0.0	16.4	33.0	0.0	2136.6	170.3	6.4	6.8	7.2	0.0	0.0	-151.9
7/18/2012	1702.4	2.2	0.0	15.7	33.0	0.0	1684.9	147.5	6.4	6.8	7.2	0.0	0.0	-99.4
7/19/2012	1525.9	1.8	0.0	15.6	33.0	0.0	1438.7	136.0	6.4	6.8	7.2	0.0	0.0	-18.8
7/20/2012	1347.2	2.9	0.0	15.4	33.0	0.0	1319.0	127.5	6.4	6.8	7.2	0.0	0.0	-68.4
7/21/2012	1200.5	2.5	0.0	16.8	33.0	0.0	1115.8	116.6	6.4	6.8	7.2	0.0	0.0	0.0
7/22/2012	1107.2	2.8	0.0	17.5	33.0	0.0	1046.8	111.3	6.4	6.8	7.2	0.0	0.0	-17.9
7/23/2012	1094.0	3.0	0.0	17.1	33.0	0.0	974.2	108.2	6.4	6.8	7.2	0.0	0.0	44.3
7/24/2012	1186.4	3.1	0.0	17.3	33.0	0.0	1006.6	112.4	6.4	6.8	7.2	0.0	0.0	100.3
7/25/2012	1285.2	1.4	0.0	17.1	33.0	0.0	1129.2	119.5	6.4	6.8	7.2	0.0	0.0	67.6
7/26/2012	1330.6	4.6	0.0	17.2	33.0	0.0	1204.3	123.4	6.4	6.8	7.2	0.0	0.0	37.3
7/27/2012	1308.3	3.2	0.0	17.0	33.0	0.0	1207.2	123.0	6.4	6.8	7.2	0.0	0.0	11.0
7/28/2012	1235.1	3.4	0.0	17.3	33.0	0.0	1142.8	118.3	6.4	6.8	7.2	0.0	0.0	7.3
7/29/2012	1236.1	3.2	0.0	16.8	33.0	0.0	1110.6	117.4	6.4	6.8	7.2	0.0	0.0	40.8
7/30/2012	1287.5	2.8	0.0	17.9	33.0	0.0	1135.0	119.8	6.4	6.8	7.2	0.0	0.0	66.0
7/31/2012	1331.8	2.1	0.0	17.3	33.0	0.0	1206.5	123.7	6.4	6.8	7.2	0.0	0.0	33.6
8/1/2012	1282.6	4.1	0.0	17.4	33.0	0.0	1186.8	121.3	6.4	6.4	7.2	0.0	0.0	9.0
8/2/2012	1264.5	3.3	0.0	17.3	33.0	0.0	1144.0	119.4	6.4	6.4	7.2	0.0	0.0	34.7
8/3/2012	1248.0	1.8	0.0	17.7	33.0	0.0	1144.4	119.0	6.4	6.4	7.2	0.0	0.0	17.0
8/4/2012	1227.7	3.2	0.0	20.7	33.0	0.0	1114.8	117.3	6.4	6.4	7.2	0.0	0.0	32.5
8/5/2012	1234.0	2.3	0.0	19.5	33.0	0.0	1115.5	117.6	6.4	6.4	7.2	0.0	0.0	35.7
8/6/2012	1270.1	2.8	0.0	19.7	33.0	0.0	1125.2	119.1	6.4	6.4	7.2	0.0	0.0	61.4
8/7/2012	1323.5	3.1	0.0	18.9	33.0	0.0	1171.1	122.1	6.4	6.4	7.2	0.0	0.0	65.3
8/8/2012	1362.3	2.6	0.0	18.7	33.0	0.0	1227.0	124.9	6.4	6.4	7.2	0.0	0.0	44.7
8/9/2012	1332.4	2.0	0.0	18.2	33.0	0.0	1241.7	124.8	6.4	6.4	7.2	0.0	0.0	-0.9
8/10/2012	1193.1	3.4	0.0	18.7	33.0	0.0	1146.3	117.4	6.4	6.4	7.2	0.0	0.0	-35.4
8/11/2012	1112.2	3.2	0.0	19.3	33.0	0.0	1016.2	110.1	6.4	6.4	7.2	0.0	0.0	21.4
8/12/2012	1152.4	5.4	0.0	22.9	33.0	0.0	1022.7	112.0	6.4	6.4	7.2	0.0	0.0	58.9
8/13/2012	1164.9	3.9	0.0	18.7	33.0	0.0	1042.8	112.8	6.4	6.4	7.2	0.0	0.0	44.9
8/14/2012	1189.6	3.7	0.0	18.7	33.0	0.0	1079.8	115.3	6.4	6.4	7.2	0.0	0.0	29.8
8/15/2012	1227.6	2.1	0.0	18.5	33.0	0.0	1073.8	116.4	6.4	6.4	7.2	0.0	0.0	71.0
8/16/2012	1269.7	3.4	0.0	19.5	33.0	0.0	1179.4	122.3	6.4	6.4	7.2	0.0	0.0	3.9
8/17/2012	823.3	3.1	130.2	18.8	33.0	0.0	1005.3	100.2	6.4	6.4	7.2	0.0	0.0	-117.1
8/18/2012	702.0	2.7	0.0	21.8	33.0	0.0	653.9	79.0	6.4	6.4	7.2	0.0	0.0	6.7
8/19/2012	692.6	5.0	0.0	21.1	33.0	0.0	621.8	77.8	6.4	6.4	7.2	0.0	0.0	32.1
8/20/2012	684.5	1.9	0.0	22.0	33.0	0.0	613.1	76.8	6.4	6.4	7.2	0.0	0.0	31.5
8/21/2012	706.3	1.5	0.0	21.5	33.0	0.0	606.6	77.0	6.4	6.4	7.2	0.0	0.0	58.7
8/22/2012	762.9	1.8	0.0	20.0	33.0	0.0	642.2	82.2	6.4	6.4	7.2	0.0	0.0	73.1
8/23/2012	774.1	3.8	0.0	19.4	33.0	0.0	692.5	85.5	6.4	6.4	7.2	0.0	0.0	32.4
8/24/2012	752.8	2.3	0.0	19.6	33.0	0.0	679.2	83.2	6.4	6.4	7.2	0.0	0.0	25.3
8/25/2012	752.1	1.0	0.0	19.9	33.0	0.0	669.6	83.0	6.4	6.4	7.2	0.0	0.0	33.4

Table F3-4: RGCP Channel Water Budget Equation Analysis Segment 4 Delayed Single Pulse Hydrograph (S1) (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	762.7	2.5	0.0	19.6	33.0	0.0	669.2	83.2	6.4	6.4	7.2	0.0	0.0	45.4
8/27/2012	778.8	0.9	0.0	19.8	33.0	0.0	686.4	85.1	6.4	6.4	7.2	0.0	0.0	41.0
8/28/2012	754.4	1.2	0.0	19.6	33.0	0.0	694.3	84.7	6.4	6.4	7.2	0.0	0.0	9.2
8/29/2012	711.1	2.2	0.0	19.5	33.0	0.0	655.7	80.1	6.4	6.4	7.2	0.0	0.0	10.1
8/30/2012	692.5	1.3	0.0	19.3	33.0	0.0	628.9	78.2	6.4	6.4	7.2	0.0	0.0	19.1
8/31/2012	674.8	3.0	0.0	19.6	33.0	0.0	609.7	76.1	6.4	6.4	7.2	0.0	0.0	24.7
9/1/2012	674.1	2.2	0.0	22.1	33.0	0.0	598.2	75.5	6.4	5.1	7.2	0.0	0.0	38.9
9/2/2012	679.4	3.4	0.0	23.7	33.0	0.0	599.8	76.0	6.4	5.1	7.2	0.0	0.0	45.1
9/3/2012	682.6	2.1	0.0	22.1	33.0	0.0	604.1	76.3	6.4	5.1	7.2	0.0	0.0	40.7
9/4/2012	706.2	2.5	0.0	22.8	33.0	0.0	606.7	77.1	6.4	5.1	7.2	0.0	0.0	61.9
9/5/2012	835.3	5.3	0.0	25.1	33.0	0.0	640.2	83.9	6.4	5.1	7.2	0.0	0.0	155.8
9/6/2012	998.8	3.6	0.0	23.3	33.0	0.0	832.7	100.1	6.4	5.1	7.2	0.0	0.0	107.2
9/7/2012	1036.5	3.0	0.0	22.5	33.0	0.0	933.6	105.2	6.4	5.1	7.2	0.0	0.0	37.4
9/8/2012	925.6	2.5	0.0	25.5	33.0	0.0	921.1	101.0	6.4	5.1	7.2	0.0	0.0	-54.2
9/9/2012	757.7	0.8	0.0	21.6	33.0	0.0	764.2	87.5	6.4	5.1	7.2	0.0	0.0	-57.4
9/10/2012	599.5	3.6	0.0	21.1	33.0	0.0	639.9	74.8	6.4	5.1	7.2	0.0	0.0	-76.2
9/11/2012	460.5	4.9	0.0	20.7	33.0	0.0	494.6	58.6	6.4	5.1	7.2	0.0	0.0	-52.9
9/12/2012	520.2	3.0	0.0	20.6	33.0	0.0	401.2	53.3	6.4	5.1	7.2	0.0	0.0	103.6
9/13/2012	907.4	1.9	0.0	20.4	33.0	0.0	553.0	85.3	6.4	5.1	7.2	0.0	0.0	305.7
9/14/2012	1050.6	2.2	0.0	20.3	33.0	0.0	926.8	105.7	6.4	5.1	7.2	0.0	0.0	54.9

RGCP - Project Scale Water Budget - Segment 4 (Anthony Metering Station to American Dam)
Release Scenario S1 (Delayed Single Pulse)
ΔSic = (Qus + Pc + Qcin + Qirf + Qgwrf) - (Qcds + Qcs + Qfpr + ET + Qda + Qdu)

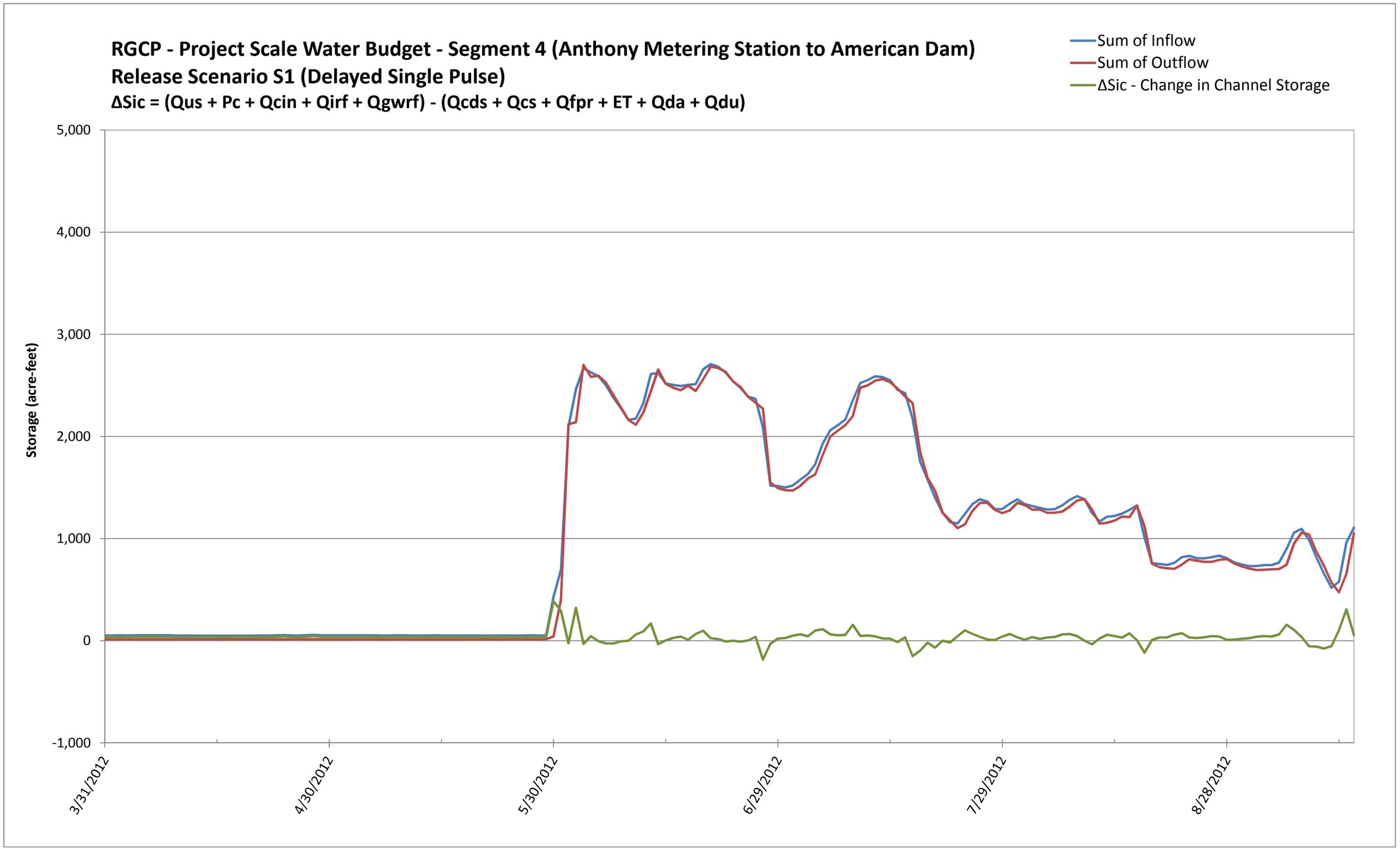

Table F3-5 - Local Basin Scale Water Budget Equation

Delayed Single Pulse Hydrograph (S1)
Caballo Reservoir to Downstream of American Dam

(Units = Acre-Feet)

	Surface Water Budget															Groundwater Budget					
	Qus	P	Qp			Qgwrf	Qds			Qgwr				ET	ΔSsw	Qgwus	Qgwr	Qp	Qgwrf	Qgwds	ΔSgw
Date	Upstream Channel Inflow, 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	0.0	517.8	31.8	18.5	50.3	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	-151.5	40.6	354.0	517.8	50.3	0.0	-173.5
4/1/2012	0.0	0.0	598.8	31.8	18.7	50.6	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	-70.2	40.6	354.0	598.8	50.6	0.0	-254.8
4/2/2012	0.0	0.0	704.1	31.8	19.5	51.3	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	35.8	40.6	354.0	704.1	51.3	0.0	-360.8
4/3/2012	0.0	0.0	747.3	31.8	19.5	51.3	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	78.9	40.6	354.0	747.3	51.3	0.0	-403.9
4/4/2012	0.0	0.0	742.3	31.8	19.8	51.7	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	74.4	40.6	354.0	742.3	51.7	0.0	-399.3
4/5/2012	0.0	0.0	750.9	31.8	23.9	55.8	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	87.1	40.6	354.0	750.9	55.8	0.0	-412.0
4/6/2012	0.0	0.0	785.4	31.8	81.5	113.3	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	179.1	40.6	354.0	785.4	113.3	0.0	-504.0
4/7/2012	0.0	0.0	781.9	31.8	105.6	137.4	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	199.7	40.6	354.0	781.9	137.4	0.0	-524.7
4/8/2012	0.0	0.0	786.4	31.8	110.8	142.6	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	209.4	40.6	354.0	786.4	142.6	0.0	-534.4
4/9/2012	0.0	0.0	795.0	31.8	120.3	152.1	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	227.5	40.6	354.0	795.0	152.1	0.0	-552.5
4/10/2012	0.0	0.0	845.0	31.8	128.0	159.8	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	285.1	40.6	354.0	845.0	159.8	0.0	-610.1
4/11/2012	0.0	0.0	856.3	31.8	127.1	159.0	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	295.7	40.6	354.0	856.3	159.0	0.0	-620.7
4/12/2012	0.0	0.0	832.7	31.8	124.4	156.2	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	269.3	40.6	354.0	832.7	156.2	0.0	-594.3
4/13/2012	0.0	0.0	823.4	31.8	114.1	146.0	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	249.7	40.6	354.0	823.4	146.0	0.0	-574.7
4/14/2012	0.0	0.0	824.1	31.8	116.0	147.9	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	252.3	40.6	354.0	824.1	147.9	0.0	-577.3
4/15/2012	0.0	0.0	824.2	31.8	66.8	98.6	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	203.2	40.6	354.0	824.2	98.6	0.0	-528.2
4/16/2012	0.0	0.0	823.8	31.8	58.5	90.3	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	194.5	40.6	354.0	823.8	90.3	0.0	-519.4
4/17/2012	0.0	0.0	829.2	31.8	67.0	98.8	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	208.5	40.6	354.0	829.2	98.8	0.0	-533.4
4/18/2012	0.0	0.0	830.6	31.8	67.5	99.3	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	210.3	40.6	354.0	830.6	99.3	0.0	-535.3
4/19/2012	0.0	0.0	837.4	31.8	65.5	97.4	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	215.1	40.6	354.0	837.4	97.4	0.0	-540.1
4/20/2012	0.0	0.0	838.3	31.8	65.3	97.1	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	215.8	40.6	354.0	838.3	97.1	0.0	-540.8
4/21/2012	0.0	0.0	854.9	31.8	59.0	90.8	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	226.1	40.6	354.0	854.9	90.8	0.0	-551.1
4/22/2012	0.0	0.0	854.9	31.8	50.7	82.5	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	217.8	40.6	354.0	854.9	82.5	0.0	-542.8
4/23/2012	0.0	0.0	854.9	31.8	48.6	80.4	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	215.7	40.6	354.0	854.9	80.4	0.0	-540.7
4/24/2012	0.0	0.0	855.1	31.8	50.9	82.7	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	218.2	40.6	354.0	855.1	82.7	0.0	-543.1
4/25/2012	0.0	0.0	858.1	31.8	44.8	76.7	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	215.2	40.6	354.0	858.1	76.7	0.0	-540.1
4/26/2012	0.0	0.0	856.6	31.8	43.7	75.6	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	212.5	40.6	354.0	856.6	75.6	0.0	-537.5
4/27/2012	0.0	0.0	848.4	31.8	56.0	87.8	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	216.6	40.6	354.0	848.4	87.8	0.0	-541.6
4/28/2012	0.0	0.0	848.2	31.8	60.8	92.6	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	221.2	40.6	354.0	848.2	92.6	0.0	-546.2
4/29/2012	0.0	0.0	848.4	31.8	48.9	80.7	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	209.5	40.6	354.0	848.4	80.7	0.0	-534.5
4/30/2012	0.0	0.0	848.6	31.8	53.1	84.9	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	213.9	40.6	354.0	848.6	84.9	0.0	-538.9
5/1/2012	0.0	0.0	855.0	31.8	48.7	80.5	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	215.9	40.6	354.0	855.0	80.5	0.0	-540.8
5/2/2012	0.0	0.0	855.5	31.8	46.5	78.4	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	214.2	40.6	354.0	855.5	78.4	0.0	-539.2
5/3/2012	0.0	0.0	854.6	31.8	46.4	78.2	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	213.2	40.6	354.0	854.6	78.2	0.0	-538.1
5/4/2012	0.0	0.0	865.5	31.8	46.3	78.1	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	224.0	40.6	354.0	865.5	78.1	0.0	-549.0
5/5/2012	0.0	0.0	868.8	31.8	46.0	77.8	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	227.0	40.6	354.0	868.8	77.8	0.0	-552.0
5/6/2012	0.0	0.0	869.0	31.8	23.9	55.8	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	205.1	40.6	354.0	869.0	55.8	0.0	-530.1
5/7/2012	0.0	0.0	870.2	31.8	17.9	49.7	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	200.3	40.6	354.0	870.2	49.7	0.0	-525.3
5/8/2012	0.0	0.0	867.5	31.8	18.7	50.5	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	198.4	40.6	354.0	867.5	50.5	0.0	-523.4
5/9/2012	0.0	0.0	868.2	31.8	19.6	51.4	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	200.0	40.6	354.0	868.2	51.4	0.0	-525.0
5/10/2012	0.0	0.0	867.2	31.8	19.6	51.4	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	199.0	40.6	354.0	867.2	51.4	0.0	-523.9
5/11/2012	0.0	0.0	870.7	31.8	19.2	51.0	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	202.0	40.6	354.0	870.7	51.0	0.0	-527.0
5/12/2012	0.0	0.0	870.7	31.8	19.1	50.9	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	202.0	40.6	354.0	870.7	50.9	0.0	-526.9
5/13/2012	0.0	0.0	870.9	31.8	18.9	50.7	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	202.0	40.6	354.0	870.9	50.7	0.0	-527.0
5/14/2012	0.0	0.0	871.0	31.8	18.9	50.8	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	202.1	40.6	354.0	871.0	50.8	0.0	-527.1
5/15/2012	0.0	0.0	880.2	31.8	18.5	50.3	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	210.8	40.6	354.0	880.2	50.3	0.0	-535.8
5/16/2012	0.0	0.0	880.2	31.8	18.0	49.8	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	210.4	40.6	354.0	880.2	49.8	0.0	-535.3
5/17/2012	0.0	0.0	882.2	31.8	17.8	49.7	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	212.3	40.6	354.0	882.2	49.7	0.0	-537.2
5/18/2012	0.0	0.0	882.0	31.8	17.7	49.5	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	211.9	40.6	354.0	882.0	49.5	0.0	-536.9
5/19/2012	0.0	0.0	881.9	31.8	17.6	49.5	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	211.8	40.6	354.0	881.9	49.5	0.0	-536.8
5/20/2012	0.0	0.0	881.9	31.8	17.6	49.4	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	211.7	40.6	354.0	881.9	49.4	0.0	-536.7
5/21/2012	0.0	0.0	881.9	31.8	17.4	49.3	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	211.6	40.6	354.0	881.9	49.3	0.0	-536.5
5/22/2012	0.0	0.0	883.3	31.8	17.4	49.3	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	213.0	40.6	354.0	883.3	49.3	0.0	-538.0
5/23/2012	0.0	0.0	884.9	31.8	17.7	49.5	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	214.8	40.6	354.0	884.9	49.5	0.0	-539.8
5/24/2012	0.0	0.0	884.9	31.8	18.0	49.8	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	215.1	40.6	354.0	884.9	49.8	0.0	-540.0
5/25/2012	0.0	0.0	884.5	31.8	17.7	49.5	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	214.4	40.6	354.0	884.5	49.5	0.0	-539.4
5/26/2012	0.0	0.0	914.0	31.8	17.9	49.7	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	244.1	40.6	354.0	914.0	49.7	0.0	-569.0
5/27/2012	0.0	0.0	914.0	31.8	18.3	50.1	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	244.5	40.6	354.0	914.0	50.1	0.0	-569.5
5/28/2012	0.0	0.0	914.0	31.8	18.7	50.6	0.0	0.0	354.0	354.0	58.1	307.5	0.0	365.6	245.0	40.6	354.0	914.0	50.6	0.0	-569.9
5/29/2012	1983.5	2.0	914.5	31.8	17.9	49.8	0.0	45.2	354.0	399.2	58.1	307.5	39.0	404.6	2145.9	40.6	399.2	914.5	49.8	0.0	-524.4
5/30/2012	2975.2	1.6	914.5	31.8	17.8	49.7	0.0	281.3	354.0	635.3	58.1	307.5	81.2	446.8	2858.9	40.6	635.3	914.5	49.7	0.0	-288.2
5/31/2012	3966.9	3.2	909.7	31.8	17.6	49.4	332.0	561.9	354.0	915.9	58.1	307.5	89.2	454.8	3226.6	40.6	915.9	909.7	49.4	0.0	-2.6
6/1/2012	4958.7	3.6	903.6	31.8	17.5	49.3	1933.4	741.1	354.0	1095.1	58.1	307.5	91.7	457.3	2429.3	40.6	1095.1	903.6	49.3	0.0	182.8
6/2/2012	4958.7	3.3	900.2	31.8	17.3	49.1	1944.4	816.9	354.0	1170.9	58.1	307.5	91.7	457.3	2338.7	40.6	1170.9	900.2	49.1	0.0	262.3
6/3/2012	4958.7	4.8	900.2	31.8	17.4	49.2	2486.7	835.7	354.0	1189.7	58.1	307.5	91.7	457.3	1779.1	40.6	1189.7	900.2	49.2	0.0	281.0
6/4/2012	4958.7	3.4	901.4	31.8	17.8	49.6	2374.3	834.6	354.0	1188.6	58.1	307.5	91.7	457.3	1892.9	40.6	1188.6	901.4	49.6	0.0	278.2
6/5/2012	4958.7	0.9	911.7	31.8	17.5	49.3	2385.8	839.7	354.0	1193.7	58.1	307.5	91.7	457.3	1883.8	40.6	1193.7	911.7	49.3	0.0	273.3
6/6/2012	4958.7	3.0	912.9	31.8	17.9	49.7	2322.2	828.2	354.0	1182.3	58.1	307.5	91.7	457.3	1962.5	40.6	1182.3	912.9	49.7	0.0	260.3
6/7/2012	4958.7	8.7	913.7	31.8	33.9	65.7	2206.4	808.8	354.0	1162.8	58.1	307.5	91.7	457.3	2120.3	40.6	1162.8	913.7	65.7	0.0	224.1
6/8/2012	4958.7	3.4	916.1	31.8	41.1	72.9	2089.6	791.6	354.0	1145.6	58.1	307.5	91.7	457.3	2258.6	40.6	1145.6	916.1	72.9	0.0	197.1
6/9/2012	4958.7	2.1	916.9	31.8	30.3	62.1	1974.7	776.6	354.0	1130.6	58.1	307.5	91.7	457.3	2377.2	40.6	1130.6	916.9	62.1	0.0	192.2

Table F3-5 - Local Basin Scale Water Budget Equation

Delayed Single Pulse Hydrograph (S1) (Units = Acre-Feet)

Caballo Reservoir to Downstream of American Dam

	Surface Water Budget															Groundwater Budget					
	Qus	P	Qp			Qgwrf	Qds			Qgwr				ET	ΔSsw	Qgwus	Qgwr	Qp	Qgwrf	Qgwds	ΔSgw
Date	Upstream Channel Inflow, 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	4958.7	8.1	916.7	31.8	55.6	87.5	1926.7	781.5	354.0	1135.6	58.1	307.5	91.7	457.3	2451.4	40.6	1135.6	916.7	87.5	0.0	172.1
6/11/2012	4958.7	4.1	916.3	31.8	79.7	111.6	2040.3	802.2	354.0	1156.2	58.1	307.5	91.7	457.3	2336.8	40.6	1156.2	916.3	111.6	0.0	169.0
6/12/2012	4958.7	4.1	916.2	31.8	86.1	117.9	2237.0	829.3	354.0	1183.3	58.1	307.5	91.7	457.3	2119.3	40.6	1183.3	916.2	117.9	0.0	189.9
6/13/2012	4958.7	2.4	909.2	31.8	92.0	123.9	2444.5	827.2	354.0	1181.2	58.1	307.5	91.7	457.3	1911.1	40.6	1181.2	909.2	123.9	0.0	188.8
6/14/2012	4958.7	5.2	911.5	31.8	91.7	123.5	2311.1	815.2	354.0	1169.2	58.1	307.5	91.7	457.3	2061.2	40.6	1169.2	911.5	123.5	0.0	174.8
6/15/2012	4958.7	6.9	891.8	31.8	65.9	97.7	2271.9	816.1	354.0	1170.2	58.1	307.5	91.7	457.3	2055.7	40.6	1170.2	891.8	97.7	0.0	221.3
6/16/2012	4958.7	6.2	892.5	31.8	52.5	84.3	2249.8	823.2	354.0	1177.2	58.1	307.5	91.7	457.3	2057.4	40.6	1177.2	892.5	84.3	0.0	241.0
6/17/2012	4958.7	8.3	892.5	31.8	61.0	92.8	2292.3	821.6	354.0	1175.6	58.1	307.5	91.7	457.3	2027.1	40.6	1175.6	892.5	92.8	0.0	230.9
6/18/2012	4958.7	13.8	892.6	31.8	53.3	85.2	2242.9	824.8	354.0	1178.8	58.1	307.5	91.7	457.3	2071.2	40.6	1178.8	892.6	85.2	0.0	241.7
6/19/2012	4958.7	3.9	892.7	31.8	49.9	81.8	2349.9	840.1	354.0	1194.1	58.1	307.5	91.7	457.3	1935.7	40.6	1194.1	892.7	81.8	0.0	260.3
6/20/2012	4958.7	8.8	889.7	31.8	47.2	79.0	2469.9	844.1	354.0	1198.1	58.1	307.5	91.7	457.3	1810.9	40.6	1198.1	889.7	79.0	0.0	270.0
6/21/2012	4958.7	3.6	888.6	31.8	51.0	82.9	2456.6	838.4	354.0	1192.4	58.1	307.5	91.7	457.3	1827.5	40.6	1192.4	888.6	82.9	0.0	261.5
6/22/2012	4958.7	4.0	888.6	31.8	46.7	78.5	2422.3	829.8	354.0	1183.8	58.1	307.5	91.7	457.3	1866.5	40.6	1183.8	888.6	78.5	0.0	257.3
6/23/2012	4958.7	6.9	888.5	31.8	49.4	81.2	2332.8	821.7	354.0	1175.7	58.1	307.5	91.7	457.3	1969.5	40.6	1175.7	888.5	81.2	0.0	246.6
6/24/2012	4958.7	6.9	888.5	31.8	45.1	77.0	2279.3	812.6	354.0	1166.6	58.1	307.5	91.7	457.3	2027.8	40.6	1166.6	888.5	77.0	0.0	241.8
6/25/2012	4958.7	5.2	888.5	31.8	46.1	77.9	2189.0	802.3	354.0	1156.3	58.1	307.5	91.7	457.3	2127.7	40.6	1156.3	888.5	77.9	0.0	230.5
6/26/2012	3966.9	6.1	887.9	31.8	43.9	75.8	2133.2	785.9	354.0	1139.9	58.1	307.5	91.7	457.3	1206.3	40.6	1139.9	887.9	75.8	0.0	216.8
6/27/2012	3966.9	12.8	879.9	31.8	48.4	80.2	2084.6	700.9	354.0	1054.9	58.1	307.5	91.7	457.3	1343.1	40.6	1054.9	879.9	80.2	0.0	135.3
6/28/2012	3966.9	12.4	880.2	31.8	47.6	79.4	1393.3	647.8	354.0	1001.8	58.1	307.5	91.7	457.3	2086.5	40.6	1001.8	880.2	79.4	0.0	82.9
6/29/2012	3966.9	20.5	877.0	31.8	32.6	64.4	1339.8	646.7	354.0	1000.7	58.1	307.5	91.7	457.3	2131.0	40.6	1000.7	877.0	64.4	0.0	99.9
6/30/2012	3966.9	9.8	874.4	31.8	25.1	56.9	1320.5	645.2	354.0	999.3	58.1	307.5	91.7	457.3	2130.9	40.6	999.3	874.4	56.9	0.0	108.6
7/1/2012	3966.9	12.1	849.4	31.8	34.0	65.9	1319.4	647.8	354.0	1001.8	58.1	307.5	68.1	433.7	2139.4	40.6	1001.8	849.4	65.9	0.0	127.2
7/2/2012	3966.9	17.0	800.0	31.8	36.2	68.0	1361.5	655.4	354.0	1009.4	58.1	307.5	68.1	433.7	2047.3	40.6	1009.4	800.0	68.0	0.0	182.0
7/3/2012	3966.9	7.9	782.5	31.8	40.9	72.7	1430.3	662.4	354.0	1016.4	58.1	307.5	68.1	433.7	1949.6	40.6	1016.4	782.5	72.7	0.0	201.8
7/4/2012	3966.9	12.9	780.3	31.8	49.0	80.8	1468.4	680.1	354.0	1034.1	58.1	307.5	68.1	433.7	1904.6	40.6	1034.1	780.3	80.8	0.0	213.6
7/5/2012	3966.9	20.6	779.0	31.8	53.0	84.9	1648.8	705.6	354.0	1059.6	58.1	307.5	68.1	433.7	1709.3	40.6	1059.6	779.0	84.9	0.0	236.4
7/6/2012	3966.9	11.2	781.5	31.8	61.3	93.1	1820.2	717.1	354.0	1071.1	58.1	307.5	68.1	433.7	1527.8	40.6	1071.1	781.5	93.1	0.0	237.1
7/7/2012	3966.9	13.4	766.3	31.8	56.0	87.8	1874.5	720.0	354.0	1074.0	58.1	307.5	68.1	433.7	1452.2	40.6	1074.0	766.3	87.8	0.0	260.5
7/8/2012	3966.9	13.9	766.1	31.8	94.2	126.0	1924.6	728.1	354.0	1082.1	58.1	307.5	68.1	433.7	1432.5	40.6	1082.1	766.1	126.0	0.0	230.6
7/9/2012	3966.9	18.9	764.3	31.8	81.6	113.4	2007.9	758.5	354.0	1112.5	58.1	307.5	68.1	433.7	1309.3	40.6	1112.5	764.3	113.4	0.0	275.5
7/10/2012	3966.9	15.1	766.2	31.8	66.1	97.9	2274.4	776.5	354.0	1130.5	58.1	307.5	68.1	433.7	1007.6	40.6	1130.5	766.2	97.9	0.0	307.0
7/11/2012	3966.9	12.2	758.4	31.8	55.0	86.8	2296.6	781.0	354.0	1135.0	58.1	307.5	68.1	433.7	959.0	40.6	1135.0	758.4	86.8	0.0	330.4
7/12/2012	3966.9	10.8	757.9	31.8	40.6	72.5	2341.9	785.5	354.0	1139.5	58.1	307.5	68.1	433.7	893.0	40.6	1139.5	757.9	72.5	0.0	349.7
7/13/2012	3966.9	13.2	758.0	31.8	35.4	67.2	2355.1	783.8	354.0	1137.8	58.1	307.5	68.1	433.7	878.7	40.6	1137.8	758.0	67.2	0.0	353.2
7/14/2012	3966.9	10.6	750.6	31.8	34.9	66.7	2326.2	779.1	354.0	1133.1	58.1	307.5	68.1	433.7	901.8	40.6	1133.1	750.6	66.7	0.0	356.4
7/15/2012	3966.9	23.3	750.6	31.8	31.9	63.7	2268.9	770.9	354.0	1125.0	58.1	307.5	68.1	433.7	977.0	40.6	1125.0	750.6	63.7	0.0	351.3
7/16/2012	3966.9	8.7	746.8	31.8	35.0	66.8	2194.1	761.1	354.0	1115.1	58.1	307.5	68.1	433.7	1046.2	40.6	1115.1	746.8	66.8	0.0	342.2
7/17/2012	3966.9	17.4	741.1	31.8	33.4	65.2	2136.6	717.0	354.0	1071.0	58.1	307.5	68.1	433.7	1149.3	40.6	1071.0	741.1	65.2	0.0	305.3
7/18/2012	3966.9	12.1	729.3	31.8	61.0	92.8	1684.9	672.9	354.0	1026.9	58.1	307.5	68.1	433.7	1655.6	40.6	1026.9	729.3	92.8	0.0	245.5
7/19/2012	3966.9	12.8	729.2	31.8	81.5	113.3	1438.7	653.2	354.0	1007.2	58.1	307.5	68.1	433.7	1942.6	40.6	1007.2	729.2	113.3	0.0	205.3
7/20/2012	3966.9	14.4	728.4	31.8	70.8	102.6	1319.0	631.3	354.0	985.3	58.1	307.5	68.1	433.7	2074.3	40.6	985.3	728.4	102.6	0.0	194.9
7/21/2012	3966.9	19.4	724.0	31.8	65.5	97.3	1115.8	611.1	354.0	965.1	58.1	307.5	68.1	433.7	2292.9	40.6	965.1	724.0	97.3	0.0	184.5
7/22/2012	3966.9	14.4	725.9	31.8	65.3	97.1	1046.8	599.0	354.0	953.0	58.1	307.5	68.1	433.7	2370.8	40.6	953.0	725.9	97.1	0.0	170.6
7/23/2012	3966.9	17.4	725.9	31.8	66.5	98.4	974.2	597.0	354.0	951.0	58.1	307.5	68.1	433.7	2449.6	40.6	951.0	725.9	98.4	0.0	167.3
7/24/2012	3966.9	13.7	725.9	31.8	72.5	104.3	1006.6	607.7	354.0	961.7	58.1	307.5	68.1	433.7	2408.6	40.6	961.7	725.9	104.3	0.0	172.2
7/25/2012	3966.9	11.2	727.8	31.8	94.5	126.4	1129.2	620.7	354.0	974.7	58.1	307.5	68.1	433.7	2294.6	40.6	974.7	727.8	126.4	0.0	161.2
7/26/2012	3966.9	19.2	727.1	31.8	93.9	125.7	1204.3	623.1	354.0	977.1	58.1	307.5	68.1	433.7	2223.8	40.6	977.1	727.1	125.7	0.0	164.9
7/27/2012	3966.9	12.4	726.2	31.8	88.0	119.9	1207.2	613.2	354.0	967.2	58.1	307.5	68.1	433.7	2217.3	40.6	967.2	726.2	119.9	0.0	161.7
7/28/2012	3966.9	15.0	723.9	31.8	81.2	113.1	1142.8	605.3	354.0	959.3	58.1	307.5	68.1	433.7	2283.0	40.6	959.3	723.9	113.1	0.0	163.0
7/29/2012	3966.9	22.5	723.9	31.8	78.1	109.9	1110.6	609.1	354.0	963.1	58.1	307.5	68.1	433.7	2315.8	40.6	963.1	723.9	109.9	0.0	169.9
7/30/2012	3966.9	16.7	724.1	31.8	71.0	102.9	1135.0	619.5	354.0	973.5	58.1	307.5	68.1	433.7	2268.4	40.6	973.5	724.1	102.9	0.0	187.1
7/31/2012	3966.9	11.2	722.6	31.8	64.7	96.5	1206.5	621.5	354.0	975.5	58.1	307.5	68.1	433.7	2181.5	40.6	975.5	722.6	96.5	0.0	196.9
8/1/2012	3966.9	22.9	722.7	31.8	69.2	101.0	1186.8	614.9	354.0	968.9	58.1	307.5	64.1	429.7	2228.1	40.6	968.9	722.7	101.0	0.0	185.8
8/2/2012	3966.9	23.3	722.2	31.8	81.7	113.6	1144.0	613.2	354.0	967.2	58.1	307.5	64.1	429.7	2284.9	40.6	967.2	722.2	113.6	0.0	172.2
8/3/2012	3966.9	18.8	722.7	31.8	68.8	100.7	1144.4	610.9	354.0	964.9	58.1	307.5	64.1	429.7	2270.0	40.6	964.9	722.7	100.7	0.0	182.2
8/4/2012	3966.9	13.4	723.1	31.8	54.5	86.3	1114.8	609.9	354.0	963.9	58.1	307.5	64.1	429.7	2281.3	40.6	963.9	723.1	86.3	0.0	195.1
8/5/2012	3966.9	16.0	723.1	31.8	50.0	81.8	1115.5	613.1	354.0	967.1	58.1	307.5	64.1	429.7	2275.6	40.6	967.1	723.1	81.8	0.0	202.8
8/6/2012	3966.9	14.6	723.0	31.8	48.4	80.2	1125.2	617.8	354.0	971.8	58.1	307.5	64.1	429.7	2258.0	40.6	971.8	723.0	80.2	0.0	209.2
8/7/2012	3966.9	17.9	726.2	31.8	47.8	79.6	1171.1	624.3	354.0	978.3	58.1	307.5	64.1	429.7	2211.6	40.6	978.3	726.2	79.6	0.0	213.1
8/8/2012	3966.9	10.8	728.2	31.8	63.3	95.1	1227.0	629.2	354.0	983.2	58.1	307.5	64.1	429.7	2161.1	40.6	983.2	728.2	95.1	0.0	200.5
8/9/2012	3966.9	18.5	725.6	31.8	72.9	104.7	1241.7	622.1	354.0	976.2	58.1	307.5	64.1	429.7	2168.2	40.6	976.2	725.6	104.7	0.0	186.4
8/10/2012	3966.9	17.0	725.8	31.8	159.6	191.5	1146.3	602.4	354.0	956.4	58.1	307.5	64.1	429.7	2368.7	40.6	956.4	725.8	191.5	0.0	79.8
8/11/2012	3966.9	20.7	727.6	31.8	122.3	154.1	1016.2	593.6	354.0	947.6	58.1	307.5	64.1	429.7	2475.8	40.6	947.6	727.6	154.1	0.0	106.6
8/12/2012	3966.9	25.1	727.6	31.8	265.6	297.4	1022.7	600.0	354.0	954.0	58.1	307.5	64.1	429.7	2610.6	40.6	954.0	727.6	297.4	0.0	-30.3
8/13/2012	3966.9	21.7	727.6	31.8	254.0	285.9	1042.8	607.8	354.0	961.9	58.1	307.5	64.1	429.7	2567.6	40.6	961.9	727.6	285.9	0.0	-11.0
8/14/2012	3102.1	29.1	727.6	31.8	223.7	255.5	1079.8	600.7	354.0	954.7	58.1	307.5	64.1	429.7	1650.1	40.6	954.7	727.6	255.5	0.0	12.3
8/15/2012	1388.4	21.1	727.6	31.8	293.6	325.4	1073.8	559.7	354.0	913.7	58.1	307.5	64.1	429.7	45.3	40.6	913.7	727.6	325.4	0.0	-98.6
8/16/2012	1388.4	17.5	727.4	31.8	99.3	131.1	1179.4	479.6	354.0	833.7	58.1	307.5	64.1	429.7	-178.4	40.6	833.7	727.4	131.1	0.0	15.7
8/17/2012	1388.4	13.9	728.2	31.8	105.4	137.2	1005.3	404.1	354.0	758.1	58.1	307.5	64.1	429.7	74.5	40.6	758.1	728.2	137.2	0.0	-66.6
8/18/2012	1388.4	16.8	728.9	31.8	101.8	133.7	653.9	379.7	354.0	733.7	58.1	307.5	64.1	429.7	450.6	40.6	733.7	728.9	133.7	0.0	-88.3
8/19/2012	1388.4	16.8	728.9	31.8	97.7	129.5	621.8	377.5	354.0	731.5	58.1	307.5	64.1	429.7	480.6	40.6	731.5	728.9	129.5	0.0	-86.3
8/20/2012	1388.4	22.7	728.9	31.8	102.1	133.9	613.1	376.0	354.0	730.0	58.1	307.5	64.1	429.7	501.2	40.6	730.0	728.9	133.9	0.0	-92.2
8/21/2012	1388.4	16.7	729.1	31.8	102.4	134.2	606.6	379.8	354.0	733.8	58.1	307.5	64.1	429.7	498.3	40.6	733.8	729.1	134.2	0.0	-88.9
8/22/2012	1388.4	19.3	725.7	31.8	102.9	134.8	642.2	389.1	354.0	743.1	58.1	307.5	64.1	429.7	453.1	40.6	743.1	725.7	134.8	0.0	-76.7
8/23/2012	1388.4	27.6	723.7	31.8	94.7	126.5	692.5	391.4	354.0	745.4	58.1	307.5	64.1	429.7	398.6	40.6	745.4	723.7	126.5	0.0	-64.1
8/24/2012	1388.4	18.7	727.7	31.8	100.8	132.6	679.2	388.2	354.0	742.2	58.1	307.5	64.1	429.7	416.4	40.6	742.2	727.7	132.6	0.0	-77.5

Table F3-5 - Local Basin Scale Water Budget Equation

Delayed Single Pulse Hydrograph (S1) (Units = Acre-Feet)

Caballo Reservoir to Downstream of American Dam

	Surface Water Budget															Groundwater Budget					
	Qus	P	Qp			Qgwrf	Qds			Qgwr				ET	ΔSsw	Qgwus	Qgwr	Qp	Qgwrf	Qgwds	ΔSgw
Date	Upstream Channel Inflow, 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	1388.4	15.9	727.4	31.8	86.8	118.6	669.6	387.9	354.0	741.9	58.1	307.5	64.1	429.7	409.1	40.6	741.9	727.4	118.6	0.0	-63.4
8/26/2012	1388.4	12.8	727.3	31.8	69.3	101.1	669.2	389.7	354.0	743.7	58.1	307.5	64.1	429.7	387.0	40.6	743.7	727.3	101.1	0.0	-44.1
8/27/2012	1388.4	15.3	727.2	31.8	71.4	103.3	686.4	392.3	354.0	746.3	58.1	307.5	64.1	429.7	371.7	40.6	746.3	727.2	103.3	0.0	-43.6
8/28/2012	1388.4	8.1	727.1	31.8	65.7	97.5	694.3	388.3	354.0	742.3	58.1	307.5	64.1	429.7	354.8	40.6	742.3	727.1	97.5	0.0	-41.7
8/29/2012	1388.4	11.2	728.1	31.8	64.4	96.2	655.7	381.3	354.0	735.4	58.1	307.5	64.1	429.7	403.1	40.6	735.4	728.1	96.2	0.0	-48.3
8/30/2012	1388.4	16.9	729.4	31.8	56.6	88.4	628.9	377.6	354.0	731.6	58.1	307.5	64.1	429.7	432.9	40.6	731.6	729.4	88.4	0.0	-45.6
8/31/2012	1388.4	14.5	723.8	31.8	52.9	84.7	609.7	374.5	354.0	728.6	58.1	307.5	64.1	429.7	443.6	40.6	728.6	723.8	84.7	0.0	-39.4
9/1/2012	1388.4	9.1	721.1	31.8	55.0	86.8	598.2	374.1	354.0	728.2	58.1	307.5	51.6	417.2	461.9	40.6	728.2	721.1	86.8	0.0	-39.1
9/2/2012	1388.4	17.1	719.8	31.8	55.9	87.7	599.8	375.0	354.0	729.1	58.1	307.5	51.6	417.2	467.0	40.6	729.1	719.8	87.7	0.0	-37.8
9/3/2012	1388.4	10.7	718.6	31.8	54.5	86.3	604.1	375.6	354.0	729.6	58.1	307.5	51.6	417.2	453.2	40.6	729.6	718.6	86.3	0.0	-34.7
9/4/2012	1388.4	14.9	718.6	31.8	55.6	87.4	606.7	379.7	354.0	733.7	58.1	307.5	51.6	417.2	451.7	40.6	733.7	718.6	87.4	0.0	-31.6
9/5/2012	1388.4	20.5	721.1	31.8	61.1	93.0	640.2	399.8	354.0	753.8	58.1	307.5	51.6	417.2	411.7	40.6	753.8	721.1	93.0	0.0	-19.6
9/6/2012	1388.4	17.1	721.2	31.8	62.3	94.1	832.7	424.8	354.0	778.8	58.1	307.5	51.6	417.2	192.1	40.6	778.8	721.2	94.1	0.0	4.2
9/7/2012	1388.4	18.3	717.2	31.8	59.3	91.1	933.6	430.5	354.0	784.5	58.1	307.5	51.6	417.2	79.7	40.6	784.5	717.2	91.1	0.0	16.9
9/8/2012	1388.4	8.7	718.1	31.8	73.1	105.0	921.1	415.4	354.0	769.4	58.1	307.5	51.6	417.2	112.6	40.6	769.4	718.1	105.0	0.0	-13.1
9/9/2012	1388.4	8.7	718.0	31.8	79.2	111.0	764.2	389.3	354.0	743.3	58.1	307.5	51.6	417.2	301.5	40.6	743.3	718.0	111.0	0.0	-45.1
9/10/2012	1388.4	13.0	718.5	31.8	63.1	95.0	639.9	360.5	354.0	714.6	58.1	307.5	51.6	417.2	443.2	40.6	714.6	718.5	95.0	0.0	-58.3
9/11/2012	1388.4	15.0	715.6	31.8	57.8	89.7	494.6	334.8	354.0	688.8	58.1	307.5	51.6	417.2	608.0	40.6	688.8	715.6	89.7	0.0	-75.8
9/12/2012	1388.4	23.9	715.5	31.8	51.4	83.2	401.2	350.4	354.0	704.4	58.1	307.5	51.6	417.2	688.4	40.6	704.4	715.5	83.2	0.0	-53.7
9/13/2012	1388.4	16.2	700.9	31.8	46.0	77.8	553.0	407.1	354.0	761.1	58.1	307.5	51.6	417.2	452.0	40.6	761.1	700.9	77.8	0.0	23.0
9/14/2012	0.0	14.9	700.8	31.8	46.4	78.2	926.8	412.5	354.0	766.5	58.1	307.5	51.6	417.2	-1316.7	40.6	766.5	700.8	78.2	0.0	28.2

RGCP - Local Basin Scale Surface Water Budget - Caballo Dam to American Dam
Release Scenario S1 (Delayed Single Pulse)
ΔSsw = (Qus + P + Qp + Qgwrf) - (Qcds + Qgwr + ET)

Sum of Inflow
Sum of Outflow
ΔSsw - Change in Surface Water Storage

Storage (acre-feet)

6,000
5,000
4,000
3,000
2,000
1,000
0
-1,000

3/31/2012
4/30/2012
5/30/2012
6/29/2012
7/29/2012
8/28/2012

RGCP - Local Basin Scale Ground Water Budget - Caballo Dam to American Dam
Release Scenario S1 (Delayed Single Pulse)
ΔSgw = (Qgwus + Qgwr) - (Qp + Qgwrf + Qgwds)