RIO GRANDE CANALIZATION PROJECT
WATER BUDGET STUDY
Final Report

Appendix G4 - Water Budget Analysis Summary
Delayed Single Pulse Hydrograph, Scenario S1
(Based on FLO-2D Model Results)

Table G4-1: RGCP Channel Water Budget Equation Analysis Segment 1 — Delayed Single Pulse Hydrograph, Scenario 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	0.7	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	-9.6
4/4/2012	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	-9.3
4/5/2012	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
4/6/2012	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	-9.4
4/7/2012	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
4/8/2012	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	-9.6
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	-8.9
4/12/2012	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	-8.4
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	0.3	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	1.0	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-9.2
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	2.6	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-7.5
4/18/2012	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	-9.8
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	-9.3
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	0.3	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	2.6	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-7.6
4/24/2012	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
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	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
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	-9.0
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	0.4	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	1.2	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.9
5/3/2012	0.0	2.5	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-7.7
5/4/2012	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
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	1.6	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.6
5/8/2012	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	-9.8
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	-9.3
5/10/2012	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	-9.8
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	1.4	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.8
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	1.6	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.6
5/17/2012	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
5/18/2012	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
5/19/2012	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	-9.4
5/20/2012	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

Table G4-1: RGCP Channel Water Budget Equation Analysis Segment 1 — Delayed Single Pulse Hydrograph, Scenario 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	1.5	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.7
5/23/2012	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
5/24/2012	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
5/25/2012	0.0	2.1	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-8.1
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	3.0	0.0	0.0	1.0	28.8	0.0	0.0	6.3	0.0	33.7	0.0	0.0	-7.2
5/28/2012	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
5/29/2012	1983.5	0.8	0.0	0.0	1.0	28.8	0.0	116.4	6.3	4.6	33.7	0.0	0.0	1853.1
5/30/2012	2975.2	1.1	0.0	0.0	1.0	28.8	0.0	494.8	6.3	18.6	33.7	0.0	0.0	2452.7
5/31/2012	3966.9	0.8	0.0	0.0	1.0	28.8	1363.3	746.8	6.3	28.8	33.7	458.3	4.6	1355.8
6/1/2012	4958.7	1.3	0.0	0.0	1.0	28.8	2660.3	634.8	6.3	34.2	33.7	458.3	4.6	1157.6
6/2/2012	4958.7	1.3	0.0	0.0	1.0	28.8	3492.2	530.9	6.3	34.2	33.7	696.3	7.0	189.3
6/3/2012	4958.7	2.4	0.0	0.0	1.0	28.8	3773.6	376.6	6.3	34.2	33.7	778.3	7.8	-19.5
6/4/2012	4958.7	2.1	0.0	0.0	1.0	28.8	3894.0	262.6	6.3	34.2	33.7	580.7	5.8	173.2
6/5/2012	4958.7	0.1	0.0	0.0	1.0	28.8	4067.7	234.9	6.3	34.2	33.7	593.2	5.9	12.6
6/6/2012	4958.7	0.8	0.0	0.0	1.0	28.8	4095.9	226.6	6.3	34.2	33.7	747.8	7.5	-162.6
6/7/2012	4958.7	3.7	0.0	0.0	1.0	28.8	3983.0	221.8	6.3	34.2	33.7	766.5	7.7	-61.0
6/8/2012	4958.7	0.6	0.0	0.0	1.0	28.8	3857.2	219.1	6.3	34.2	33.7	919.5	9.2	-90.2
6/9/2012	4958.7	0.9	0.0	0.0	1.0	28.8	3743.1	217.0	6.3	34.2	33.7	1018.1	10.2	-73.2
6/10/2012	4958.7	0.7	0.0	0.0	1.0	28.8	3758.6	215.0	6.3	34.2	33.7	870.7	8.7	62.1
6/11/2012	4958.7	2.2	0.0	0.0	1.0	28.8	3892.6	213.4	6.3	34.2	33.7	750.9	7.5	52.2
6/12/2012	4958.7	1.6	0.0	0.0	1.0	28.8	3959.4	211.8	6.3	34.2	33.7	784.0	7.8	-47.2
6/13/2012	4958.7	0.8	0.0	0.0	1.0	28.8	3912.6	210.0	6.3	34.2	33.7	894.0	8.9	-110.4
6/14/2012	4958.7	1.0	0.0	0.0	1.0	28.8	3851.0	208.4	6.3	34.2	33.7	849.3	8.5	-2.0
6/15/2012	4958.7	0.6	0.0	0.0	1.0	28.8	3855.3	207.7	6.3	34.2	33.7	699.7	7.0	145.1
6/16/2012	4958.7	1.6	0.0	0.0	1.0	28.8	3971.9	207.7	6.3	34.2	33.7	733.1	7.3	-4.1
6/17/2012	4958.7	2.4	0.0	0.0	1.0	28.8	3966.1	206.6	6.3	34.2	33.7	740.7	7.4	-4.2
6/18/2012	4958.7	5.0	0.0	0.0	1.0	28.8	3976.5	206.1	6.3	34.2	33.7	710.4	7.1	19.2
6/19/2012	4958.7	0.8	0.0	0.0	1.0	28.8	4023.2	205.3	6.3	34.2	33.7	675.9	6.8	4.0
6/20/2012	4958.7	4.4	0.0	0.0	1.0	28.8	4037.2	204.3	6.3	34.2	33.7	766.9	7.7	-97.3
6/21/2012	4958.7	1.7	0.0	0.0	1.0	28.8	3986.8	203.0	6.3	34.2	33.7	783.2	7.8	-64.9
6/22/2012	4958.7	2.8	0.0	0.0	1.0	28.8	3939.8	201.9	6.3	34.2	33.7	811.8	8.1	-44.6
6/23/2012	4958.7	3.3	0.0	0.0	1.0	28.8	3921.6	201.3	6.3	34.2	33.7	805.6	8.1	-19.0
6/24/2012	4958.7	3.0	0.0	0.0	1.0	28.8	3890.5	200.5	6.3	34.2	33.7	868.7	8.7	-51.0
6/25/2012	4958.7	1.9	0.0	0.0	1.0	28.8	3829.8	200.0	6.3	34.2	33.7	904.6	9.0	-27.3
6/26/2012	3966.9	3.1	691.5	0.0	1.0	28.8	3798.6	197.6	6.3	34.2	33.7	860.8	8.6	-248.5
6/27/2012	3966.9	3.9	40.7	0.0	1.0	28.8	3172.6	190.7	6.3	34.2	33.7	836.0	8.4	-240.6
6/28/2012	3966.9	3.7	0.0	0.0	1.0	28.8	2911.6	189.5	6.3	34.2	33.7	830.3	8.3	-13.4
6/29/2012	3966.9	8.5	0.0	0.0	1.0	28.8	2915.3	189.0	6.3	34.2	33.7	824.8	8.2	-6.3
6/30/2012	3966.9	3.1	0.0	0.0	1.0	28.8	2917.3	188.3	6.3	34.2	33.7	824.0	8.2	-12.2
7/1/2012	3966.9	5.6	0.0	0.0	1.0	28.8	2920.9	187.9	6.3	30.0	33.7	804.9	8.0	10.6
7/2/2012	3966.9	6.7	0.0	0.0	1.0	28.8	2936.8	187.6	6.3	30.0	33.7	822.3	8.2	-21.4
7/3/2012	3966.9	4.3	0.0	0.0	1.0	28.8	2938.6	187.4	6.3	30.0	33.7	729.1	7.3	68.6
7/4/2012	3966.9	4.8	0.0	0.0	1.0	28.8	3019.0	188.0	6.3	30.0	33.7	618.9	6.2	99.5
7/5/2012	3966.9	9.3	0.0	0.0	1.0	28.8	3115.5	188.2	6.3	30.0	33.7	611.0	6.1	15.2
7/6/2012	3966.9	5.1	0.0	0.0	1.0	28.8	3114.8	188.1	6.3	30.0	33.7	657.9	6.6	-35.5
7/7/2012	3966.9	7.8	0.0	0.0	1.0	28.8	3071.1	188.0	6.3	30.0	33.7	698.5	7.0	-30.1
7/8/2012	3966.9	6.5	0.0	0.0	1.0	28.8	3053.3	188.4	6.3	30.0	33.7	493.5	4.9	193.2
7/9/2012	3966.9	5.8	0.0	0.0	1.0	28.8	3215.5	189.6	6.3	30.0	33.7	457.2	4.6	65.6

Table G4-1: RGCP Channel Water Budget Equation Analysis Segment 1 — Delayed Single Pulse Hydrograph, Scenario 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
7/10/2012	3966.9	4.6	0.0	0.0	1.0	28.8	3296.9	189.5	6.3	30.0	33.7	445.1	4.5	-4.5
7/11/2012	3966.9	4.9	0.0	0.0	1.0	28.8	3324.4	189.2	6.3	30.0	33.7	401.4	4.0	12.7
7/12/2012	3966.9	5.3	0.0	0.0	1.0	28.8	3355.1	188.9	6.3	30.0	33.7	397.1	4.0	-13.0
7/13/2012	3966.9	6.7	0.0	0.0	1.0	28.8	3349.2	188.6	6.3	30.0	33.7	410.9	4.1	-19.3
7/14/2012	3966.9	4.4	0.0	0.0	1.0	28.8	3319.0	188.3	6.3	30.0	33.7	437.0	4.4	-17.6
7/15/2012	3966.9	13.7	0.0	0.0	1.0	28.8	3308.4	187.9	6.3	30.0	33.7	435.5	4.4	4.3
7/16/2012	3966.9	3.4	167.5	0.0	1.0	28.8	3294.8	187.2	6.3	30.0	33.7	840.6	8.4	-233.4
7/17/2012	3966.9	3.8	0.0	0.0	1.0	28.8	3018.1	184.5	6.3	30.0	33.7	825.0	8.3	-105.3
7/18/2012	3966.9	6.5	0.0	0.0	1.0	28.8	2918.0	183.7	6.3	30.0	33.7	842.4	8.4	-19.3
7/19/2012	3966.9	6.3	0.0	0.0	1.0	28.8	2911.6	183.3	6.3	30.0	33.7	836.5	8.4	-6.6
7/20/2012	3966.9	7.0	0.0	0.0	1.0	28.8	2893.0	183.5	6.3	30.0	33.7	851.5	8.5	-2.7
7/21/2012	3966.9	8.3	0.0	0.0	1.0	28.8	2850.2	183.4	6.3	30.0	33.7	952.2	9.5	-60.3
7/22/2012	3966.9	7.8	0.0	0.0	1.0	28.8	2807.0	183.5	6.3	30.0	33.7	938.5	9.4	-3.7
7/23/2012	3966.9	6.4	0.0	0.0	1.0	28.8	2813.5	183.1	6.3	30.0	33.7	944.7	9.4	-17.6
7/24/2012	3966.9	7.6	0.0	0.0	1.0	28.8	2808.3	183.2	6.3	30.0	33.7	944.7	9.4	-11.2
7/25/2012	3966.9	6.2	0.0	0.0	1.0	28.8	2811.5	182.9	6.3	30.0	33.7	952.8	9.5	-23.7
7/26/2012	3966.9	6.5	0.0	0.0	1.0	28.8	2804.0	182.5	6.3	30.0	33.7	1082.0	10.8	-146.1
7/27/2012	3966.9	5.7	0.0	0.0	1.0	28.8	2711.5	181.6	6.3	30.0	33.7	1079.2	10.8	-50.7
7/28/2012	3966.9	6.0	0.0	0.0	1.0	28.8	2677.5	181.2	6.3	30.0	33.7	1031.2	10.3	32.5
7/29/2012	3966.9	7.6	0.0	0.0	1.0	28.8	2713.6	182.0	6.3	30.0	33.7	943.4	9.4	85.9
7/30/2012	3966.9	8.7	0.0	0.0	1.0	28.8	2783.7	182.3	6.3	30.0	33.7	983.4	9.8	-23.8
7/31/2012	3966.9	6.7	0.0	0.0	1.0	28.8	2772.7	182.1	6.3	30.0	33.7	1040.0	10.4	-71.7
8/1/2012	3966.9	7.2	0.0	0.0	1.0	28.8	2735.8	181.5	6.3	29.4	33.7	988.6	9.9	18.8
8/2/2012	3966.9	8.7	0.0	0.0	1.0	28.8	2746.5	181.7	6.3	29.4	33.7	1019.8	10.2	-22.1
8/3/2012	3966.9	8.8	0.0	0.0	1.0	28.8	2740.9	181.4	6.3	29.4	33.7	1023.7	10.2	-20.1
8/4/2012	3966.9	6.8	0.0	0.0	1.0	28.8	2752.2	181.4	6.3	29.4	33.7	974.3	9.7	16.5
8/5/2012	3966.9	6.6	0.0	0.0	1.0	28.8	2795.7	181.4	6.3	29.4	33.7	934.0	9.3	13.5
8/6/2012	3966.9	5.4	0.0	0.0	1.0	28.8	2821.9	181.3	6.3	29.4	33.7	934.9	9.3	-14.6
8/7/2012	3966.9	6.8	0.0	0.0	1.0	28.8	2822.3	181.0	6.3	29.4	33.7	924.1	9.2	-2.4
8/8/2012	3966.9	5.6	0.0	0.0	1.0	28.8	2826.0	180.6	6.3	29.4	33.7	940.2	9.4	-23.3
8/9/2012	3966.9	7.8	0.0	0.0	1.0	28.8	2785.8	180.2	6.3	29.4	33.7	1000.6	10.0	-41.4
8/10/2012	3966.9	7.3	0.0	0.0	1.0	28.8	2718.3	179.8	6.3	29.4	33.7	1071.7	10.7	-45.8
8/11/2012	3966.9	8.8	0.0	0.0	1.0	28.8	2699.9	179.4	6.3	29.4	33.7	1033.7	10.3	12.7
8/12/2012	3966.9	8.6	0.0	0.0	1.0	28.8	2724.1	179.2	6.3	29.4	33.7	919.8	9.2	103.7
8/13/2012	3966.9	10.2	0.0	0.0	1.0	28.8	2801.9	178.9	6.3	29.4	33.7	958.7	9.6	-11.5
8/14/2012	3102.1	7.5	332.4	0.0	1.0	28.8	2799.6	177.9	6.3	29.4	33.7	636.0	6.4	-217.3
8/15/2012	1388.4	7.5	1505.5	0.0	1.0	28.8	2552.6	171.5	6.3	29.4	33.7	342.4	3.4	-208.0
8/16/2012	1388.4	9.4	459.6	0.0	1.0	28.8	1760.1	154.0	6.3	29.4	33.7	88.9	0.9	-186.1
8/17/2012	1388.4	3.3	0.0	0.0	1.0	28.8	1138.4	149.5	6.3	29.4	33.7	88.9	0.9	-25.5
8/18/2012	1388.4	8.4	0.0	0.0	1.0	28.8	1120.0	150.3	6.3	29.4	33.7	88.9	0.9	-2.9
8/19/2012	1388.4	6.0	0.0	0.0	1.0	28.8	1119.5	150.0	6.3	29.4	33.7	88.9	0.9	-4.5
8/20/2012	1388.4	7.0	0.0	0.0	1.0	28.8	1120.1	149.2	6.3	29.4	33.7	88.9	0.9	-3.3
8/21/2012	1388.4	11.8	0.0	0.0	1.0	28.8	1120.9	149.0	6.3	29.4	33.7	88.9	0.9	0.9
8/22/2012	1388.4	5.7	0.0	0.0	1.0	28.8	1120.6	149.8	6.3	29.4	33.7	88.9	0.9	-5.6
8/23/2012	1388.4	15.0	0.0	0.0	1.0	28.8	1119.9	149.6	6.3	29.4	33.7	88.9	0.9	4.5
8/24/2012	1388.4	10.0	0.0	0.0	1.0	28.8	1120.4	148.8	6.3	29.4	33.7	88.9	0.9	-0.2
8/25/2012	1388.4	5.1	0.0	0.0	1.0	28.8	1121.2	148.5	6.3	29.4	33.7	88.9	0.9	-5.6
8/26/2012	1388.4	5.5	0.0	0.0	1.0	28.8	1121.1	149.3	6.3	29.4	33.7	88.9	0.9	-5.9
8/27/2012	1388.4	4.6	0.0	0.0	1.0	28.8	1120.3	149.4	6.3	29.4	33.7	88.9	0.9	-6.1
8/28/2012	1388.4	2.1	0.0	0.0	1.0	28.8	1120.6	148.6	6.3	29.4	33.7	88.9	0.9	-8.1

Table G4-1: RGCP Channel Water Budget Equation Analysis Segment 1 — Delayed Single Pulse Hydrograph, Scenario 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
8/29/2012	1388.4	6.6	0.0	0.0	1.0	28.8	1121.4	148.1	6.3	29.4	33.7	88.9	0.9	-3.9
8/30/2012	1388.4	7.3	0.0	0.0	1.0	28.8	1121.6	148.6	6.3	29.4	33.7	88.9	0.9	-3.9
8/31/2012	1388.4	5.1	0.0	0.0	1.0	28.8	1120.9	149.1	6.3	29.4	33.7	88.9	0.9	-5.8
9/1/2012	1388.4	5.2	0.0	0.0	1.0	28.8	1122.6	148.5	6.3	24.9	33.7	88.9	0.9	-2.3
9/2/2012	1388.4	5.6	0.0	0.0	1.0	28.8	1125.9	147.9	6.3	24.9	33.7	88.9	0.9	-4.7
9/3/2012	1388.4	3.9	0.0	0.0	1.0	28.8	1126.4	148.0	6.3	24.9	33.7	88.9	0.9	-7.0
9/4/2012	1388.4	4.4	0.0	0.0	1.0	28.8	1126.0	148.6	6.3	24.9	33.7	88.9	0.9	-6.7
9/5/2012	1388.4	8.2	0.0	0.0	1.0	28.8	1125.7	148.3	6.3	24.9	33.7	88.9	0.9	-2.3
9/6/2012	1388.4	4.6	0.0	0.0	1.0	28.8	1126.2	147.7	6.3	24.9	33.7	88.9	0.9	-5.7
9/7/2012	1388.4	5.9	0.0	0.0	1.0	28.8	1126.6	147.5	6.3	24.9	33.7	88.9	0.9	-4.7
9/8/2012	1388.4	2.8	0.0	0.0	1.0	28.8	1126.6	148.1	6.3	24.9	33.7	88.9	0.9	-8.4
9/9/2012	1388.4	4.3	0.0	0.0	1.0	28.8	1126.0	148.1	6.3	24.9	33.7	88.9	0.9	-6.3
9/10/2012	1388.4	5.2	0.0	0.0	1.0	28.8	1126.3	147.6	6.3	24.9	33.7	88.9	0.9	-5.2
9/11/2012	1388.4	4.7	0.0	0.0	1.0	28.8	1126.8	147.1	6.3	24.9	33.7	88.9	0.9	-5.7
9/12/2012	1388.4	11.0	0.0	0.0	1.0	28.8	1127.1	147.5	6.3	24.9	33.7	88.9	0.9	-0.2
9/13/2012	1388.4	9.0	0.0	0.0	1.0	28.8	1126.6	147.7	6.3	24.9	33.7	88.9	0.9	-1.8
9/14/2012	0.0	7.0	1212.5	0.0	1.0	28.8	1124.6	123.7	6.3	24.8	33.7	88.9	0.9	-153.6

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

ΔSic = (Qus + Pc + Qcin + Qirf + Qgwrf) - (Qcds + Qcs + Qfpr + ET + Qda + Qdu)

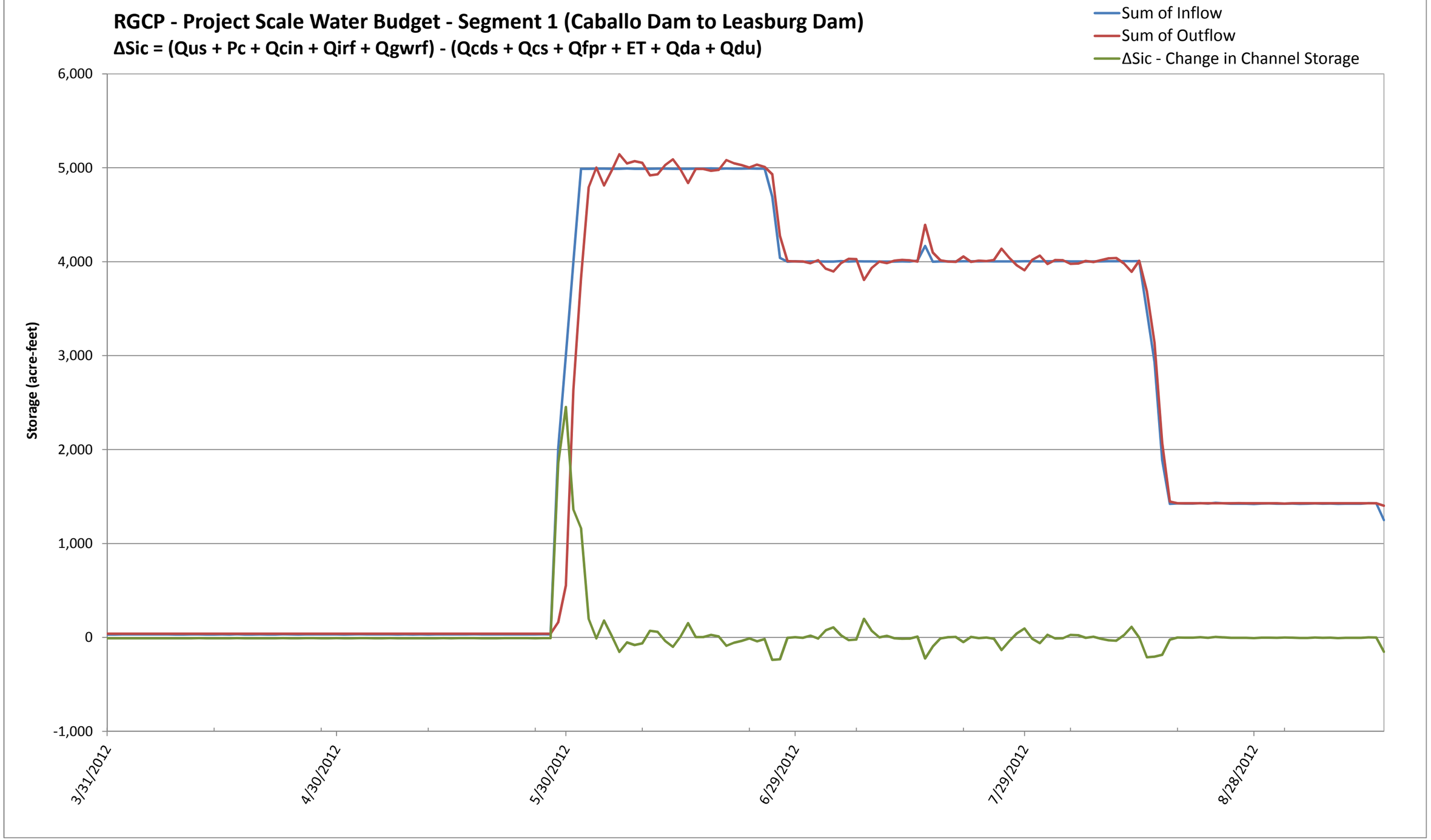


Table G4-2: RGCP Channel Water Budget Equation Analysis Segment 2 — Delayed Single Pulse Hydrograph, Scenario S1 (Units = Acre-Feet)

	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 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	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

Table G4-2: RGCP Channel Water Budget Equation Analysis Segment 2 — Delayed Single Pulse Hydrograph, Scenario 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 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
5/15/2012	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
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	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
5/31/2012	1363.3	1.2	0.0	0.1	44.5	3.0	0.0	436.7	6.3	9.1	8.9	173.7	1.7	775.6
6/1/2012	2660.3	0.6	0.0	0.1	44.5	3.0	283.7	1260.7	6.3	20.6	8.9	974.0	9.7	144.6
6/2/2012	3492.2	0.4	0.0	0.1	44.5	3.0	1107.2	932.3	6.3	20.6	8.9	1034.5	10.3	420.0
6/3/2012	3773.6	1.0	0.0	0.1	44.5	3.0	2080.6	521.4	6.3	20.6	8.9	1123.8	11.2	49.4
6/4/2012	3894.0	0.4	0.0	0.1	44.5	3.0	2424.8	305.6	6.3	20.6	8.9	1066.3	10.7	98.9
6/5/2012	4067.7	0.3	0.0	0.1	44.5	3.0	2547.9	259.4	6.3	20.6	8.9	1310.2	13.1	-50.8
6/6/2012	4095.9	1.1	0.0	0.1	44.5	3.0	2464.4	250.1	6.3	20.6	8.9	1435.2	14.4	-55.2
6/7/2012	3983.0	2.5	0.0	0.1	44.5	3.0	2316.9	246.8	6.3	20.6	8.9	1439.2	14.4	-19.9
6/8/2012	3857.2	1.2	0.0	0.1	44.5	3.0	2209.3	244.9	6.3	20.6	8.9	1415.4	14.2	-13.5
6/9/2012	3743.1	0.3	0.0	0.1	44.5	3.0	2093.7	243.5	6.3	20.6	8.9	1403.5	14.0	0.5
6/10/2012	3758.6	3.5	0.0	0.1	44.5	3.0	2093.8	242.5	6.3	20.6	8.9	1345.9	13.5	78.2
6/11/2012	3892.6	0.7	0.0	0.1	44.5	3.0	2251.4	242.0	6.3	20.6	8.9	1322.1	13.2	76.3
6/12/2012	3959.4	0.9	0.0	0.1	44.5	3.0	2515.9	241.4	6.3	20.6	8.9	1020.7	10.2	184.0
6/13/2012	3912.6	0.2	0.0	0.1	44.5	3.0	2604.5	240.7	6.3	20.6	8.9	1119.8	11.2	-51.6
6/14/2012	3851.0	1.9	0.0	0.1	44.5	3.0	2477.7	239.9	6.3	20.6	8.9	1125.8	11.3	10.1
6/15/2012	3855.3	3.2	0.0	0.1	44.5	3.0	2462.1	239.2	6.3	20.6	8.9	1127.8	11.3	30.0
6/16/2012	3971.9	1.8	0.0	0.1	44.5	3.0	2478.0	238.9	6.3	20.6	8.9	1252.7	12.5	3.3
6/17/2012	3966.1	2.5	0.0	0.1	44.5	3.0	2473.9	238.5	6.3	20.6	8.9	1252.7	12.5	2.8
6/18/2012	3976.5	4.5	0.0	0.1	44.5	3.0	2472.3	237.9	6.3	20.6	8.9	1203.1	12.0	67.6
6/19/2012	4023.2	1.4	0.0	0.1	44.5	3.0	2611.0	237.6	6.3	20.6	8.9	1076.2	10.8	100.8
6/20/2012	4037.2	1.5	0.0	0.1	44.5	3.0	2694.8	237.2	6.3	20.6	8.9	1098.0	11.0	9.5
6/21/2012	3986.8	0.7	0.0	0.1	44.5	3.0	2661.5	236.7	6.3	20.6	8.9	1068.3	10.7	22.2
6/22/2012	3939.8	0.4	0.0	0.1	44.5	3.0	2610.3	236.3	6.3	20.6	8.9	1107.9	11.1	-13.5
6/23/2012	3921.6	1.5	0.0	0.1	44.5	3.0	2524.7	235.5	6.3	20.6	8.9	1171.4	11.7	-8.4
6/24/2012	3890.5	1.8	0.0	0.1	44.5	3.0	2455.7	235.0	6.3	20.6	8.9	1224.0	12.2	-22.8
6/25/2012	3829.8	1.0	0.0	0.1	44.5	3.0	2362.9	234.3	6.3	20.6	8.9	1232.9	12.3	0.2
6/26/2012	3798.6	0.9	0.0	0.1	44.5	3.0	2333.3	234.5	6.3	20.6	8.9	1238.8	12.4	-7.7
6/27/2012	3172.6	3.7	0.0	0.1	44.5	3.0	1918.5	232.5	6.3	20.6	8.9	1296.4	13.0	-272.1
6/28/2012	2911.6	2.6	0.0	0.1	44.5	3.0	1387.9	230.6	6.3	20.6	8.9	1264.6	12.6	30.3
6/29/2012	2915.3	4.7	0.0	0.1	44.5	3.0	1382.4	230.4	6.3	20.6	8.9	1294.4	12.9	11.8
6/30/2012	2917.3	2.8	0.0	0.1	44.5	3.0	1368.8	230.1	6.3	20.6	8.9	1300.3	13.0	19.8
7/1/2012	2920.9	1.5	0.0	0.1	44.5	3.0	1389.9	230.0	6.3	18.0	8.9	1256.7	12.6	47.7
7/2/2012	2936.8	4.9	0.0	0.1	44.5	3.0	1455.0	229.8	6.3	18.0	8.9	1195.2	12.0	64.2
7/3/2012	2938.6	1.2	0.0	0.1	44.5	3.0	1512.5	229.8	6.3	18.0	8.9	1157.5	11.6	42.9

Table G4-2: RGCP Channel Water Budget Equation Analysis Segment 2 — Delayed Single Pulse Hydrograph, Scenario 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 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
7/4/2012	3019.0	2.1	0.0	0.1	44.5	3.0	1613.1	230.2	6.3	18.0	8.9	1072.2	10.7	109.3
7/5/2012	3115.5	4.9	0.0	0.1	44.5	3.0	1824.0	230.6	6.3	18.0	8.9	955.2	9.6	115.6
7/6/2012	3114.8	1.3	0.0	0.1	44.5	3.0	1966.2	230.3	6.3	18.0	8.9	865.9	8.7	59.5
7/7/2012	3071.1	1.8	0.0	4.5	44.5	3.0	2018.1	229.9	6.3	18.0	8.9	768.8	7.7	67.4
7/8/2012	3053.3	2.2	0.0	9.3	44.5	3.0	2076.0	229.4	6.3	18.0	8.9	681.5	6.8	85.3
7/9/2012	3215.5	6.2	0.0	10.1	44.5	3.0	2269.2	229.5	6.3	18.0	8.9	564.5	5.6	177.4
7/10/2012	3296.9	4.8	0.0	9.8	44.5	3.0	2473.9	229.6	6.3	18.0	8.9	570.4	5.7	46.2
7/11/2012	3324.4	3.0	0.0	3.9	44.5	3.0	2501.5	229.5	6.3	18.0	8.9	552.6	5.5	56.5
7/12/2012	3355.1	1.8	0.0	10.1	44.5	3.0	2546.0	229.6	6.3	18.0	8.9	554.5	5.5	45.6
7/13/2012	3349.2	2.1	0.0	10.5	44.5	3.0	2543.3	229.9	6.3	18.0	8.9	572.4	5.7	24.7
7/14/2012	3319.0	1.6	0.0	10.9	44.5	3.0	2508.8	229.9	6.3	18.0	8.9	574.4	5.7	27.1
7/15/2012	3308.4	3.5	0.0	11.4	44.5	3.0	2427.1	229.8	6.3	18.0	8.9	689.4	6.9	-15.7
7/16/2012	3294.8	2.0	0.0	11.0	44.5	3.0	2375.1	229.5	6.3	18.0	8.9	689.4	6.9	21.2
7/17/2012	3018.1	6.5	0.0	6.7	44.5	3.0	2124.8	228.2	6.3	18.0	8.9	840.2	8.4	-155.9
7/18/2012	2918.0	1.9	0.0	8.8	44.5	3.0	1688.7	227.6	6.3	18.0	8.9	1137.7	11.4	-122.2
7/19/2012	2911.6	2.7	0.0	10.3	44.5	3.0	1475.4	227.2	6.3	18.0	8.9	1250.7	12.5	-26.9
7/20/2012	2893.0	2.6	0.0	11.7	44.5	3.0	1292.7	227.2	6.3	18.0	8.9	1484.8	14.8	-98.0
7/21/2012	2850.2	5.0	0.0	12.3	44.5	3.0	1122.6	226.6	6.3	18.0	8.9	1518.5	15.2	-1.0
7/22/2012	2807.0	2.1	0.0	12.9	44.5	3.0	1025.1	226.2	6.3	18.0	8.9	1574.0	15.7	-4.8
7/23/2012	2813.5	4.7	0.0	13.5	44.5	3.0	1003.1	226.2	6.3	18.0	8.9	1548.3	15.5	52.9
7/24/2012	2808.3	1.6	0.0	13.9	44.5	3.0	1091.2	226.4	6.3	18.0	8.9	1399.5	14.0	106.9
7/25/2012	2811.5	2.0	0.0	14.2	44.5	3.0	1203.1	225.5	6.3	18.0	8.9	1318.2	13.2	82.1
7/26/2012	2804.0	4.7	0.0	14.6	44.5	3.0	1251.8	227.4	6.3	18.0	8.9	1310.2	13.1	35.2
7/27/2012	2711.5	2.0	0.0	14.8	44.5	3.0	1215.2	225.6	6.3	18.0	8.9	1274.5	12.7	14.7
7/28/2012	2677.5	3.3	0.0	15.2	44.5	3.0	1147.1	227.0	6.3	18.0	8.9	1294.4	12.9	28.9
7/29/2012	2713.6	6.9	0.0	15.0	44.5	3.0	1151.3	226.0	6.3	18.0	8.9	1304.3	13.0	55.2
7/30/2012	2783.7	2.9	0.0	15.1	44.5	3.0	1212.7	224.5	6.3	18.0	8.9	1298.3	13.0	67.5
7/31/2012	2772.7	1.2	0.0	14.9	44.5	3.0	1249.0	227.2	6.3	18.0	8.9	1290.4	12.9	23.6
8/1/2012	2735.8	6.9	0.0	13.8	44.5	3.0	1203.1	224.3	6.3	17.7	8.9	1307.9	13.1	22.8
8/2/2012	2746.5	6.6	0.0	14.3	44.5	3.0	1185.0	225.5	6.3	17.6	8.9	1319.4	13.2	39.0
8/3/2012	2740.9	4.8	0.0	15.7	44.5	3.0	1167.8	226.0	6.3	17.6	8.9	1347.4	13.5	21.4
8/4/2012	2752.2	1.9	0.0	15.8	44.5	3.0	1148.8	223.9	6.3	17.6	8.9	1361.0	13.6	37.3
8/5/2012	2795.7	4.2	0.0	15.7	44.5	3.0	1154.9	226.7	6.3	17.6	8.9	1398.2	14.0	36.5
8/6/2012	2821.9	3.7	0.0	15.8	44.5	3.0	1191.4	224.1	6.3	17.6	8.9	1369.4	13.7	57.5
8/7/2012	2822.3	4.7	0.0	15.9	44.5	3.0	1246.0	224.4	6.3	17.6	8.9	1298.5	13.0	75.9
8/8/2012	2826.0	1.4	0.0	16.1	44.5	3.0	1291.8	225.3	6.3	17.6	8.9	1279.3	12.8	49.1
8/9/2012	2785.8	5.1	0.0	16.1	44.5	3.0	1263.5	222.6	6.3	17.6	8.9	1332.9	13.3	-10.6
8/10/2012	2718.3	3.6	0.0	114.8	44.5	3.0	1118.0	224.4	6.3	17.6	8.9	1433.9	14.3	60.8
8/11/2012	2699.9	5.1	0.0	83.8	44.5	3.0	1029.0	222.9	6.3	17.6	8.9	1415.9	14.2	121.5
8/12/2012	2724.1	6.6	0.0	199.3	44.5	3.0	1066.6	221.6	6.3	17.6	8.9	1403.5	14.0	238.9
8/13/2012	2801.9	4.3	0.0	192.3	44.5	3.0	1099.1	223.5	6.3	17.6	8.9	1451.2	14.5	225.1
8/14/2012	2799.6	10.7	0.0	163.5	44.5	3.0	1113.9	224.1	6.3	17.6	8.9	1478.6	14.8	157.1
8/15/2012	2552.6	6.8	0.0	236.4	44.5	3.0	1112.7	223.8	6.3	17.6	8.9	1150.7	11.5	311.9
8/16/2012	1760.1	2.6	0.0	18.1	44.5	3.0	1121.0	218.5	6.3	17.6	8.9	444.9	4.4	6.6
8/17/2012	1138.4	4.5	0.0	18.5	44.5	3.0	700.6	198.5	6.3	17.7	8.9	413.1	4.1	-140.3
8/18/2012	1120.0	3.3	0.0	18.7	44.5	3.0	494.3	191.8	6.3	17.6	8.9	423.1	4.2	43.2
8/19/2012	1119.5	3.4	0.0	18.4	44.5	3.0	481.7	192.5	6.3	17.6	8.9	433.9	4.3	43.5
8/20/2012	1120.1	8.3	0.0	18.3	44.5	3.0	472.0	192.8	6.3	17.6	8.9	440.3	4.4	52.0
8/21/2012	1120.9	1.8	0.0	18.4	44.5	3.0	501.4	193.7	6.3	17.6	8.9	371.3	3.7	85.7
8/22/2012	1120.6	7.1	0.0	17.8	44.5	3.0	560.6	194.0	6.3	17.6	8.9	322.6	3.2	79.7

Table G4-2: RGCP Channel Water Budget Equation Analysis Segment 2 — Delayed Single Pulse Hydrograph, Scenario 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 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
8/23/2012	1119.9	4.9	0.0	17.1	44.5	3.0	567.0	193.7	6.3	17.6	8.9	362.1	3.6	30.3
8/24/2012	1120.4	3.7	0.0	16.3	44.5	3.0	546.0	193.4	6.3	17.6	8.9	362.7	3.6	49.4
8/25/2012	1121.2	5.8	0.0	17.3	44.5	3.0	546.5	193.5	6.3	17.6	8.9	363.0	3.6	52.4
8/26/2012	1121.1	2.8	0.0	17.3	44.5	3.0	559.8	194.0	6.3	17.6	8.9	334.8	3.3	63.9
8/27/2012	1120.3	5.8	0.0	17.1	44.5	3.0	575.2	193.5	6.3	17.6	8.9	332.6	3.3	53.4
8/28/2012	1120.6	2.8	0.0	16.8	44.5	3.0	544.8	193.0	6.3	17.6	8.9	400.8	4.0	12.5
8/29/2012	1121.4	1.2	0.0	16.7	44.5	3.0	502.3	192.9	6.3	17.6	8.9	416.6	4.2	38.1
8/30/2012	1121.6	4.9	0.0	16.4	44.5	3.0	481.8	192.7	6.3	17.6	8.9	444.6	4.4	34.1
8/31/2012	1120.9	3.8	0.0	16.1	44.5	3.0	464.0	192.8	6.3	17.6	8.9	449.8	4.5	44.4
9/1/2012	1122.6	0.9	0.0	15.7	44.5	3.0	465.5	191.8	6.3	15.0	8.9	443.4	4.4	51.4
9/2/2012	1125.9	4.8	0.0	15.6	44.5	3.0	475.4	192.6	6.3	15.0	8.9	438.9	4.4	52.4
9/3/2012	1126.4	2.8	0.0	15.7	44.5	3.0	481.2	192.5	6.3	15.0	8.9	436.7	4.4	47.4
9/4/2012	1126.0	4.8	0.0	15.7	44.5	3.0	509.3	193.8	6.3	15.0	8.9	376.6	3.8	80.4
9/5/2012	1125.7	4.1	0.0	15.5	44.5	3.0	646.5	193.6	6.3	15.0	8.9	148.0	1.5	173.0
9/6/2012	1126.2	5.3	0.0	14.2	44.5	3.0	813.0	194.7	6.3	15.0	8.9	48.3	0.5	106.5
9/7/2012	1126.6	5.6	0.0	13.2	44.5	3.0	859.6	194.9	6.3	15.0	8.9	66.8	0.7	40.9
9/8/2012	1126.6	2.0	0.0	14.1	44.5	3.0	747.9	194.6	6.3	15.0	8.9	289.7	2.9	-75.1
9/9/2012	1126.0	2.1	0.0	14.2	44.5	3.0	551.5	193.1	6.3	15.0	8.9	453.6	4.5	-43.1
9/10/2012	1126.3	2.4	0.0	13.8	44.5	3.0	363.2	189.8	6.3	15.0	8.9	674.3	6.7	-74.1
9/11/2012	1126.8	3.2	0.0	12.8	44.5	3.0	227.2	189.1	6.3	15.0	8.9	718.3	7.2	18.3
9/12/2012	1127.1	5.8	0.0	10.5	44.5	3.0	382.3	191.1	6.3	15.0	8.9	338.5	3.4	245.4
9/13/2012	1126.6	3.0	0.0	8.5	44.5	3.0	713.8	195.5	6.3	15.0	8.9	42.8	0.4	203.0
9/14/2012	1124.6	3.3	0.0	9.7	44.5	3.0	871.3	196.3	6.3	15.0	8.9	42.8	0.4	44.1

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

ΔSic = (Qus + Pc + Qcin + Qirf + Qgwrf) - (Qcds + Qcs + Qfpr + ET + Qda + Qdu)

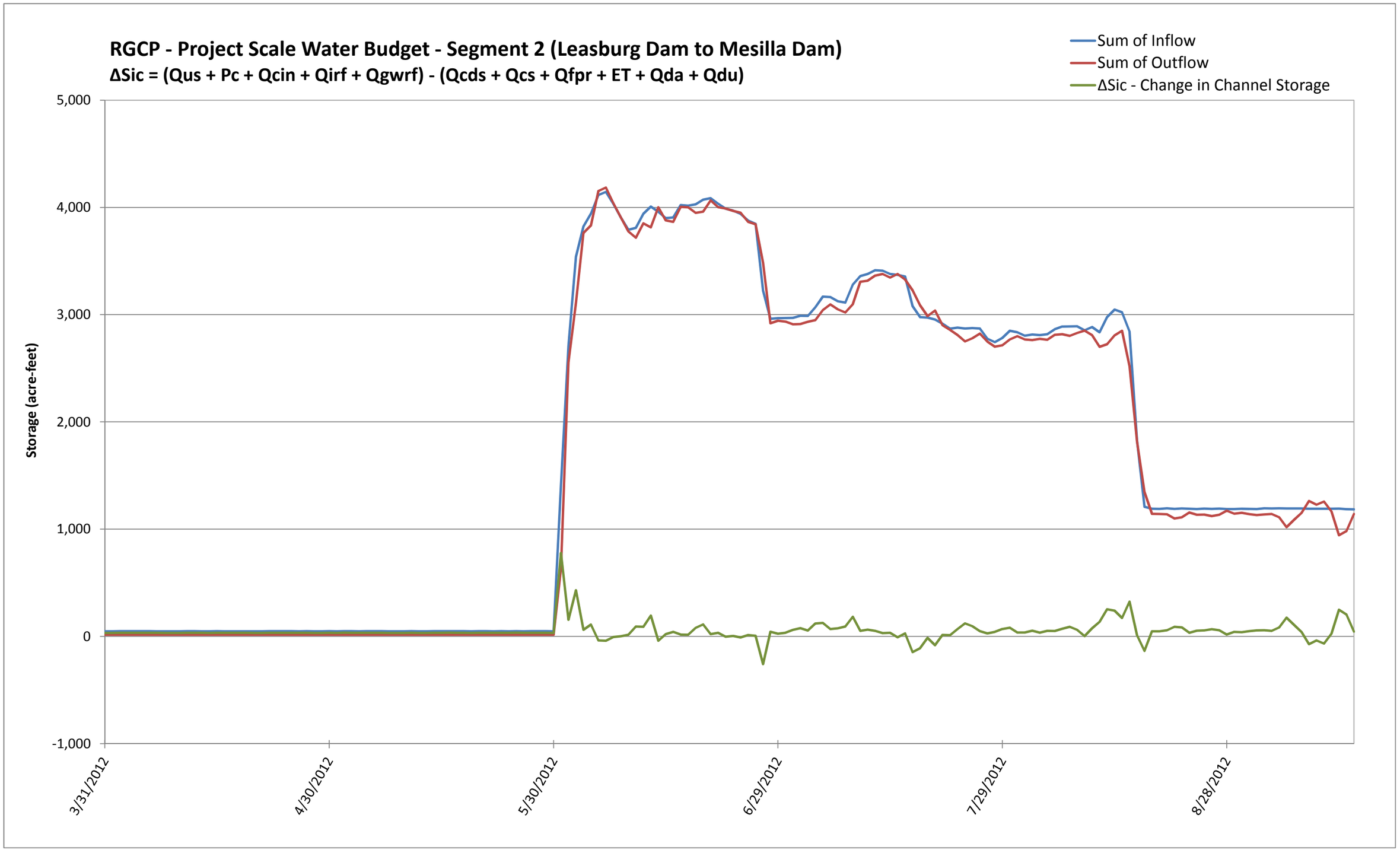


Table G4-3: RGCP Channel Water Budget Equation Analysis Segment 3 — Delayed Single Pulse Hydrograph, Scenario S1 (Units = Acre-Feet)

	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

Table G4-3: RGCP Channel Water Budget Equation Analysis Segment 3 — Delayed Single Pulse Hydrograph, Scenario 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
5/15/2012	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
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	3.7	8.4	0.0	0.0	-19.9
5/30/2012	0.0	0.0	0.0	0.8	2.9	0.0	0.0	0.0	11.8	4.9	8.4	0.0	0.0	-21.4
5/31/2012	0.0	0.7	0.0	0.8	2.9	0.0	0.0	0.0	11.8	4.8	8.4	0.0	0.0	-20.5
6/1/2012	283.7	0.4	0.0	0.8	2.9	0.0	0.0	159.5	11.8	13.6	8.4	0.0	0.0	94.5
6/2/2012	1107.2	0.3	0.0	0.8	2.9	0.0	10.1	621.9	11.8	13.7	8.4	0.0	0.0	445.3
6/3/2012	2080.6	0.6	0.0	0.8	2.9	0.0	630.2	1143.3	11.8	13.7	8.4	0.0	0.0	277.6
6/4/2012	2424.8	0.3	0.0	0.8	2.9	0.0	1313.6	928.8	11.8	13.7	8.4	0.0	0.0	152.6
6/5/2012	2547.9	0.2	0.0	0.8	2.9	0.0	1976.4	518.7	11.8	13.7	8.4	0.0	0.0	22.8
6/6/2012	2464.4	0.7	0.0	1.2	2.9	0.0	2127.5	352.1	11.8	13.7	8.4	0.0	0.0	-44.2
6/7/2012	2316.9	1.6	0.0	14.5	2.9	0.0	2026.1	319.6	11.8	13.7	8.4	0.0	0.0	-43.6
6/8/2012	2209.3	0.7	0.0	20.3	2.9	0.0	1912.7	312.4	11.8	13.7	8.4	0.0	0.0	-25.7
6/9/2012	2093.7	0.2	0.0	11.1	2.9	0.0	1797.3	309.8	11.8	13.7	8.4	0.0	0.0	-33.0
6/10/2012	2093.8	2.2	0.0	38.4	2.9	0.0	1751.3	308.5	11.8	13.7	8.4	0.0	0.0	43.6
6/11/2012	2251.4	0.4	0.0	60.7	2.9	0.0	1878.9	308.9	11.8	13.7	8.4	0.0	0.0	93.8
6/12/2012	2515.9	0.6	0.0	69.1	2.9	0.0	2100.7	310.0	11.8	13.7	8.4	0.0	0.0	144.1
6/13/2012	2604.5	0.1	0.0	74.9	2.9	0.0	2304.7	310.4	11.8	13.7	8.4	0.0	0.0	33.5
6/14/2012	2477.7	1.2	0.0	74.0	2.9	0.0	2178.5	309.1	11.8	13.7	8.4	0.0	0.0	34.4
6/15/2012	2462.1	2.0	0.0	47.9	2.9	0.0	2139.9	308.4	11.8	13.7	8.4	0.0	0.0	32.8
6/16/2012	2478.0	1.2	0.0	34.4	2.9	0.0	2145.6	308.1	11.8	13.7	8.4	0.0	0.0	29.1
6/17/2012	2473.9	1.6	0.0	42.5	2.9	0.0	2167.2	307.8	11.8	13.7	8.4	0.0	0.0	12.1
6/18/2012	2472.3	2.9	0.0	32.8	2.9	0.0	2132.0	307.7	11.8	13.7	8.4	0.0	0.0	37.4
6/19/2012	2611.0	0.9	0.0	31.7	2.9	0.0	2244.6	308.4	11.8	13.7	8.4	0.0	0.0	59.6
6/20/2012	2694.8	1.0	0.0	30.3	2.9	0.0	2368.0	308.6	11.8	13.7	8.4	0.0	0.0	18.5
6/21/2012	2661.5	0.4	0.0	34.1	2.9	0.0	2350.0	307.9	11.8	13.7	8.4	0.0	0.0	7.3
6/22/2012	2610.3	0.3	0.0	29.8	2.9	0.0	2310.4	307.3	11.8	13.7	8.4	0.0	0.0	-8.2
6/23/2012	2524.7	1.0	0.0	32.5	2.9	0.0	2224.2	306.7	11.8	13.7	8.4	0.0	0.0	-3.6
6/24/2012	2455.7	1.1	0.0	28.3	2.9	0.0	2160.7	306.3	11.8	13.7	8.4	0.0	0.0	-12.8
6/25/2012	2362.9	0.6	0.0	29.3	2.9	0.0	2065.4	305.9	11.8	13.7	8.4	0.0	0.0	-9.4
6/26/2012	2333.3	0.6	0.0	27.4	2.9	0.0	2013.1	304.4	11.8	13.7	8.4	0.0	0.0	12.8
6/27/2012	1918.5	2.4	0.0	31.6	2.9	0.0	1831.6	300.9	11.8	13.7	8.4	0.0	0.0	-211.0
6/28/2012	1387.9	1.7	0.0	29.8	2.9	0.0	1161.2	293.2	11.8	13.7	8.4	0.0	0.0	-65.9
6/29/2012	1382.4	3.0	0.0	15.7	2.9	0.0	1081.4	292.2	11.8	13.7	8.4	0.0	0.0	-3.4
6/30/2012	1368.8	1.8	0.0	8.5	2.9	0.0	1066.5	291.6	11.8	13.7	8.4	0.0	0.0	-9.9
7/1/2012	1389.9	1.0	0.0	17.6	2.9	0.0	1071.5	291.7	11.8	12.0	8.4	0.0	0.0	16.1
7/2/2012	1455.0	3.1	0.0	20.1	2.9	0.0	1122.3	293.1	11.8	12.0	8.4	0.0	0.0	33.6
7/3/2012	1512.5	0.8	0.0	25.1	2.9	0.0	1192.0	294.5	11.8	12.0	8.4	0.0	0.0	22.6

Table G4-3: RGCP Channel Water Budget Equation Analysis Segment 3 — Delayed Single Pulse Hydrograph, Scenario 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
7/4/2012	1613.1	1.3	0.0	32.9	2.9	0.0	1250.9	295.9	11.8	12.0	8.4	0.0	0.0	71.4
7/5/2012	1824.0	3.2	0.0	36.4	2.9	0.0	1444.5	298.6	11.8	12.0	8.4	0.0	0.0	91.2
7/6/2012	1966.2	0.8	0.0	44.2	2.9	0.0	1625.0	300.3	11.8	12.0	8.4	0.0	0.0	56.7
7/7/2012	2018.1	1.2	0.0	34.3	2.9	0.0	1689.1	300.8	11.8	12.0	8.4	0.0	0.0	34.4
7/8/2012	2076.0	1.4	0.0	67.6	2.9	0.0	1744.0	301.0	11.8	12.0	8.4	0.0	0.0	70.8
7/9/2012	2269.2	4.0	0.0	53.5	2.9	0.0	1868.6	301.6	11.8	12.0	8.4	0.0	0.0	127.3
7/10/2012	2473.9	3.1	0.0	39.0	2.9	0.0	2135.6	302.9	11.8	12.0	8.4	0.0	0.0	48.2
7/11/2012	2501.5	1.9	0.0	33.6	2.9	0.0	2174.6	303.0	11.8	12.0	8.4	0.0	0.0	30.2
7/12/2012	2546.0	1.1	0.0	13.1	2.9	0.0	2221.8	303.3	11.8	12.0	8.4	0.0	0.0	5.9
7/13/2012	2543.3	1.3	0.0	7.4	2.9	0.0	2234.1	303.9	11.8	12.0	8.4	0.0	0.0	-15.2
7/14/2012	2508.8	1.0	0.0	6.5	2.9	0.0	2201.7	305.3	11.8	12.0	8.4	0.0	0.0	-19.8
7/15/2012	2427.1	2.2	0.0	3.1	2.9	0.0	2140.3	304.9	11.8	12.0	8.4	0.0	0.0	-42.0
7/16/2012	2375.1	1.3	0.0	6.6	2.9	0.0	2063.1	304.1	11.8	12.0	8.4	0.0	0.0	-13.5
7/17/2012	2124.8	4.2	0.0	10.2	2.9	0.0	1939.5	301.1	11.8	12.0	8.4	0.0	0.0	-130.6
7/18/2012	1688.7	1.2	0.0	36.5	2.9	0.0	1494.3	297.6	11.8	12.0	8.4	0.0	0.0	-94.8
7/19/2012	1475.4	1.7	0.0	55.6	2.9	0.0	1223.3	294.2	11.8	12.0	8.4	0.0	0.0	-14.0
7/20/2012	1292.7	1.6	0.0	43.7	2.9	0.0	1074.8	290.6	11.8	12.0	8.4	0.0	0.0	-56.6
7/21/2012	1122.6	3.2	0.0	36.5	2.9	0.0	872.8	283.8	11.8	12.0	8.4	0.0	0.0	-23.6
7/22/2012	1025.1	1.3	0.0	34.9	2.9	0.0	777.2	278.5	11.8	12.0	8.4	0.0	0.0	-23.6
7/23/2012	1003.1	3.0	0.0	35.9	2.9	0.0	710.7	275.2	11.8	12.0	8.4	0.0	0.0	27.0
7/24/2012	1091.2	1.0	0.0	41.3	2.9	0.0	750.5	278.8	11.8	12.0	8.4	0.0	0.0	75.0
7/25/2012	1203.1	1.3	0.0	63.2	2.9	0.0	865.7	285.0	11.8	12.0	8.4	0.0	0.0	87.6
7/26/2012	1251.8	3.0	0.0	62.1	2.9	0.0	944.8	286.7	11.8	12.0	8.4	0.0	0.0	56.2
7/27/2012	1215.2	1.3	0.0	56.2	2.9	0.0	942.7	285.2	11.8	12.0	8.4	0.0	0.0	15.5
7/28/2012	1147.1	2.1	0.0	48.8	2.9	0.0	872.3	282.6	11.8	12.0	8.4	0.0	0.0	13.7
7/29/2012	1151.3	4.4	0.0	46.3	2.9	0.0	847.2	282.9	11.8	12.0	8.4	0.0	0.0	42.6
7/30/2012	1212.7	1.9	0.0	38.1	2.9	0.0	884.6	285.4	11.8	12.0	8.4	0.0	0.0	53.5
7/31/2012	1249.0	0.8	0.0	32.6	2.9	0.0	950.6	287.1	11.8	12.0	8.4	0.0	0.0	15.4
8/1/2012	1203.1	4.4	0.0	38.1	2.9	0.0	924.7	285.7	11.8	11.7	8.4	0.0	0.0	6.2
8/2/2012	1185.0	4.2	0.0	50.1	2.9	0.0	889.7	284.7	11.8	11.7	8.4	0.0	0.0	36.1
8/3/2012	1167.8	3.1	0.0	35.5	2.9	0.0	883.5	284.0	11.8	11.7	8.4	0.0	0.0	9.9
8/4/2012	1148.8	1.2	0.0	18.0	2.9	0.0	858.1	281.9	11.8	11.7	8.4	0.0	0.0	-0.9
8/5/2012	1154.9	2.7	0.0	14.8	2.9	0.0	859.9	279.9	11.8	11.7	8.4	0.0	0.0	3.6
8/6/2012	1191.4	2.4	0.0	12.9	2.9	0.0	878.3	282.4	11.8	11.7	8.4	0.0	0.0	17.1
8/7/2012	1246.0	3.0	0.0	13.0	2.9	0.0	925.6	285.4	11.8	11.7	8.4	0.0	0.0	22.0
8/8/2012	1291.8	0.9	0.0	28.5	2.9	0.0	979.7	286.6	11.8	11.7	8.4	0.0	0.0	26.0
8/9/2012	1263.5	3.2	0.0	38.6	2.9	0.0	994.5	284.9	11.8	11.7	8.4	0.0	0.0	-3.1
8/10/2012	1118.0	2.3	0.0	26.2	2.9	0.0	888.8	281.9	11.8	11.7	8.4	0.0	0.0	-53.1
8/11/2012	1029.0	3.2	0.0	19.3	2.9	0.0	756.2	276.0	11.8	11.7	8.4	0.0	0.0	-9.5
8/12/2012	1066.6	4.2	0.0	43.4	2.9	0.0	762.7	276.1	11.8	11.7	8.4	0.0	0.0	46.5
8/13/2012	1099.1	2.8	0.0	43.0	2.9	0.0	793.2	275.7	11.8	11.7	8.4	0.0	0.0	47.0
8/14/2012	1113.9	6.8	0.0	41.5	2.9	0.0	829.7	279.7	11.8	11.7	8.4	0.0	0.0	23.9
8/15/2012	1112.7	4.3	0.0	38.7	2.9	0.0	810.7	280.1	11.8	11.7	8.4	0.0	0.0	35.9
8/16/2012	1121.0	1.6	0.0	61.8	2.9	0.0	854.5	280.9	11.8	11.7	8.4	0.0	0.0	20.1
8/17/2012	700.6	2.9	0.0	68.0	2.9	0.0	677.7	254.9	11.8	11.7	8.4	0.0	0.0	-190.1
8/18/2012	494.3	2.1	0.0	61.3	2.9	0.0	336.8	192.3	11.8	11.7	8.4	0.0	0.0	-0.4
8/19/2012	481.7	2.2	0.0	58.3	2.9	0.0	292.1	185.4	11.8	11.7	8.4	0.0	0.0	35.7
8/20/2012	472.0	5.3	0.0	61.7	2.9	0.0	283.1	182.0	11.8	11.7	8.4	0.0	0.0	45.0
8/21/2012	501.4	1.1	0.0	62.4	2.9	0.0	280.0	184.9	11.8	11.7	8.4	0.0	0.0	71.2
8/22/2012	560.6	4.5	0.0	65.1	2.9	0.0	317.7	199.3	11.8	11.7	8.4	0.0	0.0	84.3

Table G4-3: RGCP Channel Water Budget Equation Analysis Segment 3 — Delayed Single Pulse Hydrograph, Scenario 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
8/23/2012	567.0	3.2	0.0	58.2	2.9	0.0	354.3	206.5	11.8	11.7	8.4	0.0	0.0	38.6
8/24/2012	546.0	2.3	0.0	64.9	2.9	0.0	340.9	201.2	11.8	11.7	8.4	0.0	0.0	42.2
8/25/2012	546.5	3.7	0.0	49.6	2.9	0.0	334.1	200.3	11.8	11.7	8.4	0.0	0.0	36.5
8/26/2012	559.8	1.8	0.0	32.4	2.9	0.0	336.0	201.7	11.8	11.7	8.4	0.0	0.0	27.4
8/27/2012	575.2	3.7	0.0	34.6	2.9	0.0	350.8	206.4	11.8	11.7	8.4	0.0	0.0	27.3
8/28/2012	544.8	1.8	0.0	29.3	2.9	0.0	354.0	204.0	11.8	11.7	8.4	0.0	0.0	-11.0
8/29/2012	502.3	0.8	0.0	28.2	2.9	0.0	317.0	192.1	11.8	11.7	8.4	0.0	0.0	-6.8
8/30/2012	481.8	3.1	0.0	20.9	2.9	0.0	296.9	186.4	11.8	11.7	8.4	0.0	0.0	-6.5
8/31/2012	464.0	2.4	0.0	17.2	2.9	0.0	280.4	180.0	11.8	11.7	8.4	0.0	0.0	-5.7
9/1/2012	465.5	0.6	0.0	17.2	2.9	0.0	273.4	178.8	11.8	10.0	8.4	0.0	0.0	3.8
9/2/2012	475.4	3.1	0.0	16.6	2.9	0.0	278.3	181.5	11.8	10.0	8.4	0.0	0.0	7.9
9/3/2012	481.2	1.8	0.0	16.7	2.9	0.0	284.9	183.6	11.8	10.0	8.4	0.0	0.0	4.0
9/4/2012	509.3	3.1	0.0	17.1	2.9	0.0	289.8	186.9	11.8	10.0	8.4	0.0	0.0	25.5
9/5/2012	646.5	2.6	0.0	20.6	2.9	0.0	332.9	205.5	11.8	10.0	8.4	0.0	0.0	104.0
9/6/2012	813.0	3.4	0.0	24.8	2.9	0.0	485.5	240.2	11.8	10.0	8.4	0.0	0.0	88.3
9/7/2012	859.6	3.6	0.0	23.6	2.9	0.0	583.7	258.2	11.8	10.0	8.4	0.0	0.0	17.6
9/8/2012	747.9	1.3	0.0	33.4	2.9	0.0	564.3	257.3	11.8	10.0	8.4	0.0	0.0	-66.1
9/9/2012	551.5	1.3	0.0	43.5	2.9	0.0	422.2	220.8	11.8	10.0	8.4	0.0	0.0	-73.9
9/10/2012	363.2	1.6	0.0	28.2	2.9	0.0	293.8	172.5	11.8	10.0	8.4	0.0	0.0	-100.6
9/11/2012	227.2	2.0	0.0	24.3	2.9	0.0	166.7	112.0	11.8	10.0	8.4	0.0	0.0	-52.3
9/12/2012	382.3	3.7	0.0	20.3	2.9	0.0	118.5	120.9	11.8	10.0	8.4	0.0	0.0	139.8
9/13/2012	713.8	1.9	0.0	17.1	2.9	0.0	309.6	208.8	11.8	10.0	8.4	0.0	0.0	187.1
9/14/2012	871.3	2.1	0.0	16.4	2.9	0.0	550.9	259.5	11.8	10.0	8.4	0.0	0.0	52.2

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

ΔSic = (Qus + Pc + Qcin + Qirf + Qgwrf) - (Qcds + Qcs + Qfpr + ET + Qda + Qdu)

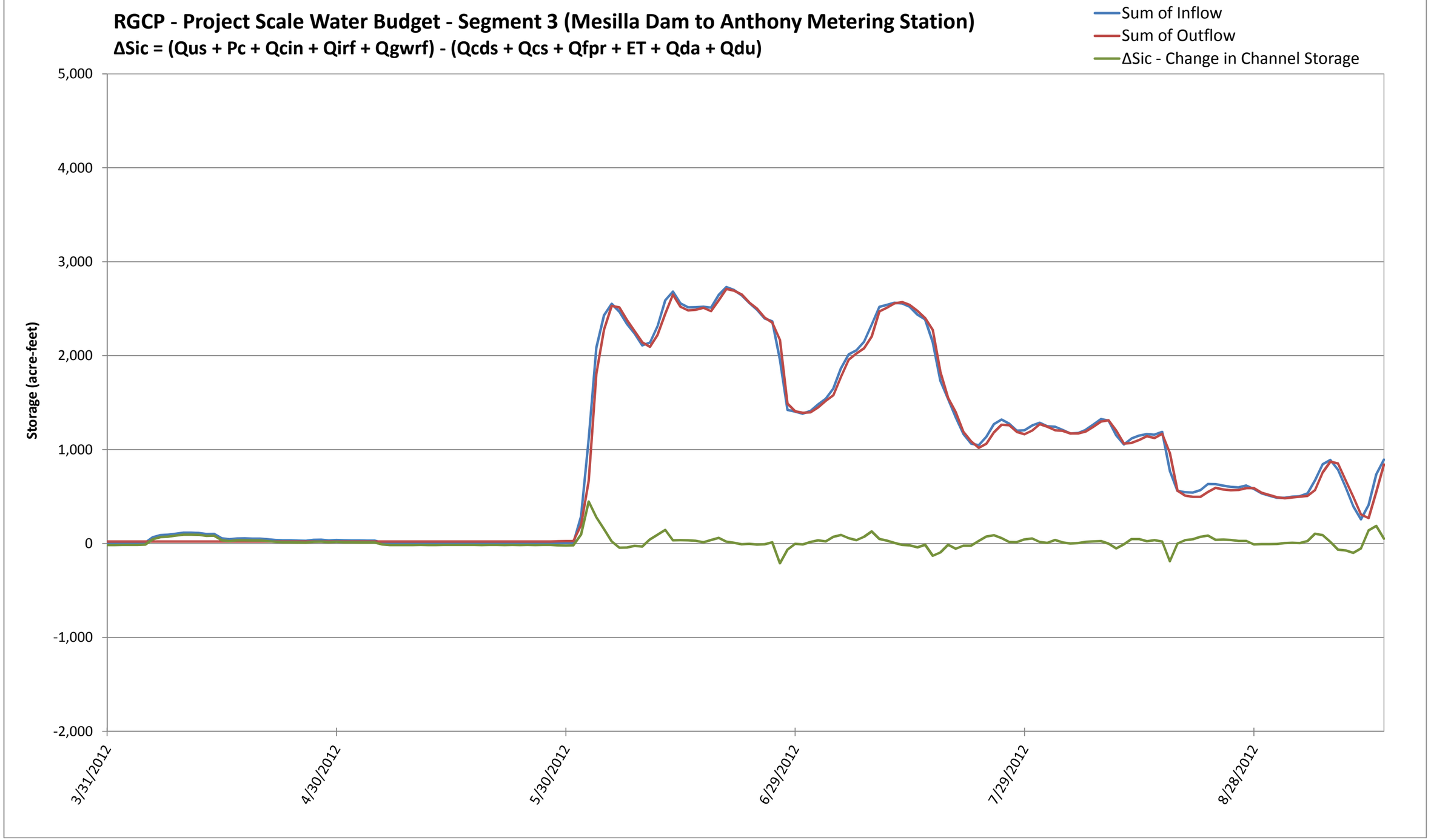


Table G4-4: RGCP Channel Water Budget Equation Analysis Segment 4 — Delayed Single Pulse Hydrograph, Scenario S1 (Units = Acre-Feet)

	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

Table G4-4: RGCP Channel Water Budget Equation Analysis Segment 4 — Delayed Single Pulse Hydrograph, Scenario 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
5/15/2012	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
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	27.8	0.0	6.4	0.0	7.2	0.0	0.0	9.6
5/29/2012	0.0	0.4	0.0	17.0	33.0	0.0	27.8	0.0	6.4	0.4	7.2	0.0	0.0	8.6
5/30/2012	0.0	0.5	0.0	16.9	33.0	0.0	27.8	0.0	6.4	5.5	7.2	0.0	0.0	3.5
5/31/2012	0.0	0.5	0.0	16.7	33.0	0.0	27.8	0.0	6.4	9.4	7.2	0.0	0.0	-0.6
6/1/2012	0.0	1.2	0.0	16.6	33.0	0.0	27.8	0.0	6.4	11.9	7.2	0.0	0.0	-2.5
6/2/2012	10.1	1.3	0.0	16.4	33.0	0.0	27.8	2.9	6.4	12.7	7.2	0.0	0.0	3.7
6/3/2012	630.2	0.6	0.0	16.5	33.0	0.0	27.8	370.4	6.4	12.7	7.2	0.0	0.0	255.8
6/4/2012	1313.6	0.5	0.0	16.9	33.0	0.0	156.4	854.1	6.4	12.7	7.2	0.0	0.0	327.2
6/5/2012	1976.4	0.4	0.0	16.6	33.0	0.0	873.7	805.1	6.4	12.7	7.2	0.0	0.0	321.4
6/6/2012	2127.5	0.3	0.0	16.6	33.0	0.0	1807.4	298.3	6.4	12.7	7.2	0.0	0.0	45.4
6/7/2012	2026.1	0.8	0.0	19.3	33.0	0.0	1977.5	94.0	6.4	12.7	7.2	0.0	0.0	-18.7
6/8/2012	1912.7	0.9	0.0	20.7	33.0	0.0	1896.6	57.1	6.4	12.7	7.2	0.0	0.0	-12.8
6/9/2012	1797.3	0.6	0.0	19.1	33.0	0.0	1797.4	50.2	6.4	12.7	7.2	0.0	0.0	-23.9
6/10/2012	1751.3	1.7	0.0	17.1	33.0	0.0	1716.6	48.9	6.4	12.7	7.2	0.0	0.0	11.4
6/11/2012	1878.9	0.7	0.0	19.0	33.0	0.0	1797.1	48.9	6.4	12.7	7.2	0.0	0.0	59.2
6/12/2012	2100.7	0.9	0.0	16.8	33.0	0.0	1989.3	49.2	6.4	12.7	7.2	0.0	0.0	86.6
6/13/2012	2304.7	1.1	0.0	17.0	33.0	0.0	2259.1	49.4	6.4	12.7	7.2	0.0	0.0	21.0
6/14/2012	2178.5	1.0	0.0	17.6	33.0	0.0	2177.5	49.2	6.4	12.7	7.2	0.0	0.0	-22.9
6/15/2012	2139.9	1.1	0.0	17.8	33.0	0.0	2108.2	49.2	6.4	12.7	7.2	0.0	0.0	8.1
6/16/2012	2145.6	1.6	0.0	18.0	33.0	0.0	2106.9	49.4	6.4	12.7	7.2	0.0	0.0	15.5
6/17/2012	2167.2	1.8	0.0	18.4	33.0	0.0	2136.3	49.4	6.4	12.7	7.2	0.0	0.0	8.2
6/18/2012	2132.0	1.1	0.0	20.4	33.0	0.0	2096.6	49.4	6.4	12.7	7.2	0.0	0.0	14.2
6/19/2012	2244.6	0.9	0.0	18.1	33.0	0.0	2171.6	49.5	6.4	12.7	7.2	0.0	0.0	49.2
6/20/2012	2368.0	1.8	0.0	16.8	33.0	0.0	2315.4	49.6	6.4	12.7	7.2	0.0	0.0	28.2
6/21/2012	2350.0	0.8	0.0	16.8	33.0	0.0	2326.0	49.5	6.4	12.7	7.2	0.0	0.0	-1.3
6/22/2012	2310.4	0.5	0.0	16.8	33.0	0.0	2291.1	49.4	6.4	12.7	7.2	0.0	0.0	-6.1
6/23/2012	2224.2	1.1	0.0	16.7	33.0	0.0	2213.6	49.3	6.4	12.7	7.2	0.0	0.0	-14.2
6/24/2012	2160.7	0.8	0.0	16.7	33.0	0.0	2145.5	49.2	6.4	12.7	7.2	0.0	0.0	-9.9
6/25/2012	2065.4	1.5	0.0	16.6	33.0	0.0	2057.2	49.1	6.4	12.7	7.2	0.0	0.0	-16.1
6/26/2012	2013.1	1.4	0.0	16.4	33.0	0.0	1987.0	48.4	6.4	12.7	7.2	0.0	0.0	2.2
6/27/2012	1831.6	2.7	43.6	16.7	33.0	0.0	1924.9	48.0	6.4	12.7	7.2	0.0	0.0	-71.6
6/28/2012	1161.2	4.2	94.4	17.6	33.0	0.0	1306.2	45.8	6.4	12.7	7.2	0.0	0.0	-67.9
6/29/2012	1081.4	3.8	0.0	16.8	33.0	0.0	1050.3	44.8	6.4	12.7	7.2	0.0	0.0	13.6
6/30/2012	1066.5	1.8	0.0	16.4	33.0	0.0	1042.8	44.7	6.4	12.7	7.2	0.0	0.0	3.9
7/1/2012	1071.5	3.8	0.0	16.3	33.0	0.0	1036.8	44.7	6.4	11.2	7.2	0.0	0.0	18.3
7/2/2012	1122.3	2.0	0.0	16.0	33.0	0.0	1071.3	45.1	6.4	11.2	7.2	0.0	0.0	32.1
7/3/2012	1192.0	1.5	0.0	15.7	33.0	0.0	1141.6	45.7	6.4	11.2	7.2	0.0	0.0	30.1

Table G4-4: RGCP Channel Water Budget Equation Analysis Segment 4 — Delayed Single Pulse Hydrograph, Scenario 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
7/4/2012	1250.9	4.4	0.0	15.9	33.0	0.0	1189.5	46.0	6.4	11.2	7.2	0.0	0.0	43.8
7/5/2012	1444.5	2.8	0.0	16.5	33.0	0.0	1342.1	46.8	6.4	11.2	7.2	0.0	0.0	83.1
7/6/2012	1625.0	3.8	0.0	16.9	33.0	0.0	1552.3	47.2	6.4	11.2	7.2	0.0	0.0	54.5
7/7/2012	1689.1	2.2	0.0	17.1	33.0	0.0	1644.7	47.4	6.4	11.2	7.2	0.0	0.0	24.6
7/8/2012	1744.0	3.6	0.0	17.3	33.0	0.0	1697.1	47.6	6.4	11.2	7.2	0.0	0.0	28.4
7/9/2012	1868.6	2.6	0.0	17.9	33.0	0.0	1778.7	47.9	6.4	11.2	7.2	0.0	0.0	70.7
7/10/2012	2135.6	2.4	0.0	17.4	33.0	0.0	2052.5	48.3	6.4	11.2	7.2	0.0	0.0	62.8
7/11/2012	2174.6	2.1	0.0	17.5	33.0	0.0	2136.2	48.4	6.4	11.2	7.2	0.0	0.0	17.8
7/12/2012	2221.8	2.4	0.0	17.5	33.0	0.0	2179.0	48.4	6.4	11.2	7.2	0.0	0.0	22.4
7/13/2012	2234.1	2.8	0.0	17.5	33.0	0.0	2205.1	48.5	6.4	11.2	7.2	0.0	0.0	9.0
7/14/2012	2201.7	3.3	0.0	17.5	33.0	0.0	2180.2	48.5	6.4	11.2	7.2	0.0	0.0	2.0
7/15/2012	2140.3	3.3	0.0	17.4	33.0	0.0	2133.1	48.4	6.4	11.2	7.2	0.0	0.0	-12.3
7/16/2012	2063.1	1.9	0.0	17.4	33.0	0.0	2043.3	48.2	6.4	11.2	7.2	0.0	0.0	-0.9
7/17/2012	1939.5	2.7	0.0	16.4	33.0	0.0	1986.8	48.0	6.4	11.2	7.2	0.0	0.0	-68.0
7/18/2012	1494.3	2.2	46.8	15.7	33.0	0.0	1589.8	47.2	6.4	11.2	7.2	0.0	0.0	-69.8
7/19/2012	1223.3	1.8	0.0	15.6	33.0	0.0	1265.2	46.1	6.4	11.2	7.2	0.0	0.0	-62.4
7/20/2012	1074.8	2.9	0.0	15.4	33.0	0.0	1107.7	45.1	6.4	11.2	7.2	0.0	0.0	-51.6
7/21/2012	872.8	2.5	1.8	16.8	33.0	0.0	924.4	42.7	6.4	11.2	7.2	0.0	0.0	-65.0
7/22/2012	777.2	2.8	0.0	17.5	33.0	0.0	798.1	40.4	6.4	11.2	7.2	0.0	0.0	-32.7
7/23/2012	710.7	3.0	0.0	17.1	33.0	0.0	711.8	38.2	6.4	11.2	7.2	0.0	0.0	-11.1
7/24/2012	750.5	3.1	0.0	17.3	33.0	0.0	696.8	38.5	6.4	11.2	7.2	0.0	0.0	43.8
7/25/2012	865.7	1.4	0.0	17.1	33.0	0.0	784.5	41.1	6.4	11.2	7.2	0.0	0.0	66.7
7/26/2012	944.8	4.6	0.0	17.2	33.0	0.0	891.4	43.0	6.4	11.2	7.2	0.0	0.0	40.4
7/27/2012	942.7	3.2	0.0	17.0	33.0	0.0	926.5	43.3	6.4	11.2	7.2	0.0	0.0	1.2
7/28/2012	872.3	3.4	0.0	17.3	33.0	0.0	881.6	42.2	6.4	11.2	7.2	0.0	0.0	-22.5
7/29/2012	847.2	3.2	0.0	16.8	33.0	0.0	826.1	41.3	6.4	11.2	7.2	0.0	0.0	8.1
7/30/2012	884.6	2.8	0.0	17.9	33.0	0.0	835.8	41.8	6.4	11.2	7.2	0.0	0.0	35.8
7/31/2012	950.6	2.1	0.0	17.3	33.0	0.0	901.0	43.1	6.4	11.2	7.2	0.0	0.0	34.0
8/1/2012	924.7	4.1	0.0	17.4	33.0	0.0	918.4	42.9	6.4	11.0	7.2	0.0	0.0	-6.8
8/2/2012	889.7	3.3	0.0	17.3	33.0	0.0	875.7	42.1	6.4	11.0	7.2	0.0	0.0	0.9
8/3/2012	883.5	1.8	0.0	17.7	33.0	0.0	864.4	42.0	6.4	11.0	7.2	0.0	0.0	5.0
8/4/2012	858.1	3.2	0.0	20.7	33.0	0.0	844.6	41.5	6.4	11.0	7.2	0.0	0.0	4.3
8/5/2012	859.9	2.3	0.0	19.5	33.0	0.0	832.2	41.4	6.4	11.0	7.2	0.0	0.0	16.6
8/6/2012	878.3	2.8	0.0	19.7	33.0	0.0	840.7	41.6	6.4	11.0	7.2	0.0	0.0	26.9
8/7/2012	925.6	3.1	0.0	18.9	33.0	0.0	878.2	42.3	6.4	11.0	7.2	0.0	0.0	35.5
8/8/2012	979.7	2.6	0.0	18.7	33.0	0.0	933.0	43.1	6.4	11.0	7.2	0.0	0.0	33.2
8/9/2012	994.5	2.0	0.0	18.2	33.0	0.0	972.2	43.5	6.4	11.0	7.2	0.0	0.0	7.4
8/10/2012	888.8	3.4	0.0	18.7	33.0	0.0	922.6	42.4	6.4	11.0	7.2	0.0	0.0	-45.8
8/11/2012	756.2	3.2	0.0	19.3	33.0	0.0	790.9	39.5	6.4	11.0	7.2	0.0	0.0	-43.4
8/12/2012	762.7	5.4	0.0	22.9	33.0	0.0	722.4	38.6	6.4	11.0	7.2	0.0	0.0	38.3
8/13/2012	793.2	3.9	0.0	18.7	33.0	0.0	758.4	39.6	6.4	11.0	7.2	0.0	0.0	26.2
8/14/2012	829.7	3.7	0.0	18.7	33.0	0.0	790.7	40.8	6.4	11.0	7.2	0.0	0.0	28.9
8/15/2012	810.7	2.1	0.0	18.5	33.0	0.0	796.9	40.8	6.4	11.0	7.2	0.0	0.0	2.0
8/16/2012	854.5	3.4	0.0	19.5	33.0	0.0	803.5	41.1	6.4	11.0	7.2	0.0	0.0	41.2
8/17/2012	677.7	3.1	60.7	18.8	33.0	0.0	790.2	38.9	6.4	11.0	7.2	0.0	0.0	-60.4
8/18/2012	336.8	2.7	113.4	21.8	33.0	0.0	505.0	25.7	6.4	10.5	7.2	0.0	0.0	-47.1
8/19/2012	292.1	5.0	0.0	21.1	33.0	0.0	297.5	19.8	6.4	10.3	7.2	0.0	0.0	10.0
8/20/2012	283.1	1.9	0.0	22.0	33.0	0.0	286.7	19.3	6.4	10.3	7.2	0.0	0.0	10.1
8/21/2012	280.0	1.5	0.0	21.5	33.0	0.0	279.2	18.9	6.4	10.3	7.2	0.0	0.0	13.9
8/22/2012	317.7	1.8	0.0	20.0	33.0	0.0	287.1	19.9	6.4	10.3	7.2	0.0	0.0	41.5

Table G4-4: RGCP Channel Water Budget Equation Analysis Segment 4 — Delayed Single Pulse Hydrograph, Scenario 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
8/23/2012	354.3	3.8	0.0	19.4	33.0	0.0	331.5	22.2	6.4	10.3	7.2	0.0	0.0	32.9
8/24/2012	340.9	2.3	0.0	19.6	33.0	0.0	349.3	22.2	6.4	10.3	7.2	0.0	0.0	0.4
8/25/2012	334.1	1.0	0.0	19.9	33.0	0.0	331.1	21.5	6.4	10.3	7.2	0.0	0.0	11.5
8/26/2012	336.0	2.5	0.0	19.6	33.0	0.0	330.4	21.5	6.4	10.3	7.2	0.0	0.0	15.2
8/27/2012	350.8	0.9	0.0	19.8	33.0	0.0	336.5	22.0	6.4	10.3	7.2	0.0	0.0	22.1
8/28/2012	354.0	1.2	0.0	19.6	33.0	0.0	350.1	22.4	6.4	10.3	7.2	0.0	0.0	11.2
8/29/2012	317.0	2.2	0.0	19.5	33.0	0.0	338.7	21.2	6.4	10.3	7.2	0.0	0.0	-12.1
8/30/2012	296.9	1.3	0.0	19.3	33.0	0.0	303.4	19.7	6.4	10.3	7.2	0.0	0.0	3.5
8/31/2012	280.4	3.0	0.0	19.6	33.0	0.0	289.5	18.9	6.4	10.3	7.2	0.0	0.0	3.6
9/1/2012	273.4	2.2	0.0	22.1	33.0	0.0	276.3	18.3	6.4	8.6	7.2	0.0	0.0	14.0
9/2/2012	278.3	3.4	0.0	23.7	33.0	0.0	275.0	18.4	6.4	8.6	7.2	0.0	0.0	22.9
9/3/2012	284.9	2.1	0.0	22.1	33.0	0.0	281.1	18.8	6.4	8.6	7.2	0.0	0.0	20.1
9/4/2012	289.8	2.5	0.0	22.8	33.0	0.0	286.7	19.0	6.4	8.6	7.2	0.0	0.0	20.2
9/5/2012	332.9	5.3	0.0	25.1	33.0	0.0	298.6	20.2	6.4	8.6	7.2	0.0	0.0	55.3
9/6/2012	485.5	3.6	0.0	23.3	33.0	0.0	379.0	25.8	6.4	8.6	7.2	0.0	0.0	118.3
9/7/2012	583.7	3.0	0.0	22.5	33.0	0.0	527.0	31.6	6.4	9.2	7.2	0.0	0.0	60.7
9/8/2012	564.3	2.5	0.0	25.5	33.0	0.0	575.6	32.5	6.4	9.3	7.2	0.0	0.0	-5.7
9/9/2012	422.2	0.8	31.0	21.6	33.0	0.0	507.8	27.5	6.4	9.0	7.2	0.0	0.0	-49.3
9/10/2012	293.8	3.6	13.3	21.1	33.0	0.0	361.2	21.0	6.4	8.7	7.2	0.0	0.0	-39.7
9/11/2012	166.7	4.9	31.7	20.7	33.0	0.0	252.1	14.4	6.4	8.7	7.2	0.0	0.0	-31.8
9/12/2012	118.5	3.0	0.0	20.6	33.0	0.0	143.8	9.9	6.4	8.7	7.2	0.0	0.0	-1.0
9/13/2012	309.6	1.9	0.0	20.4	33.0	0.0	162.3	15.2	6.4	8.7	7.2	0.0	0.0	165.1
9/14/2012	550.9	2.2	0.0	20.3	33.0	0.0	409.3	28.7	6.4	8.7	7.2	0.0	0.0	146.1

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

ΔSic = (Qus + Pc + Qcin + Qirf + Qgwrf) - (Qcds + Qcs + Qfpr + ET + Qda + Qdu)

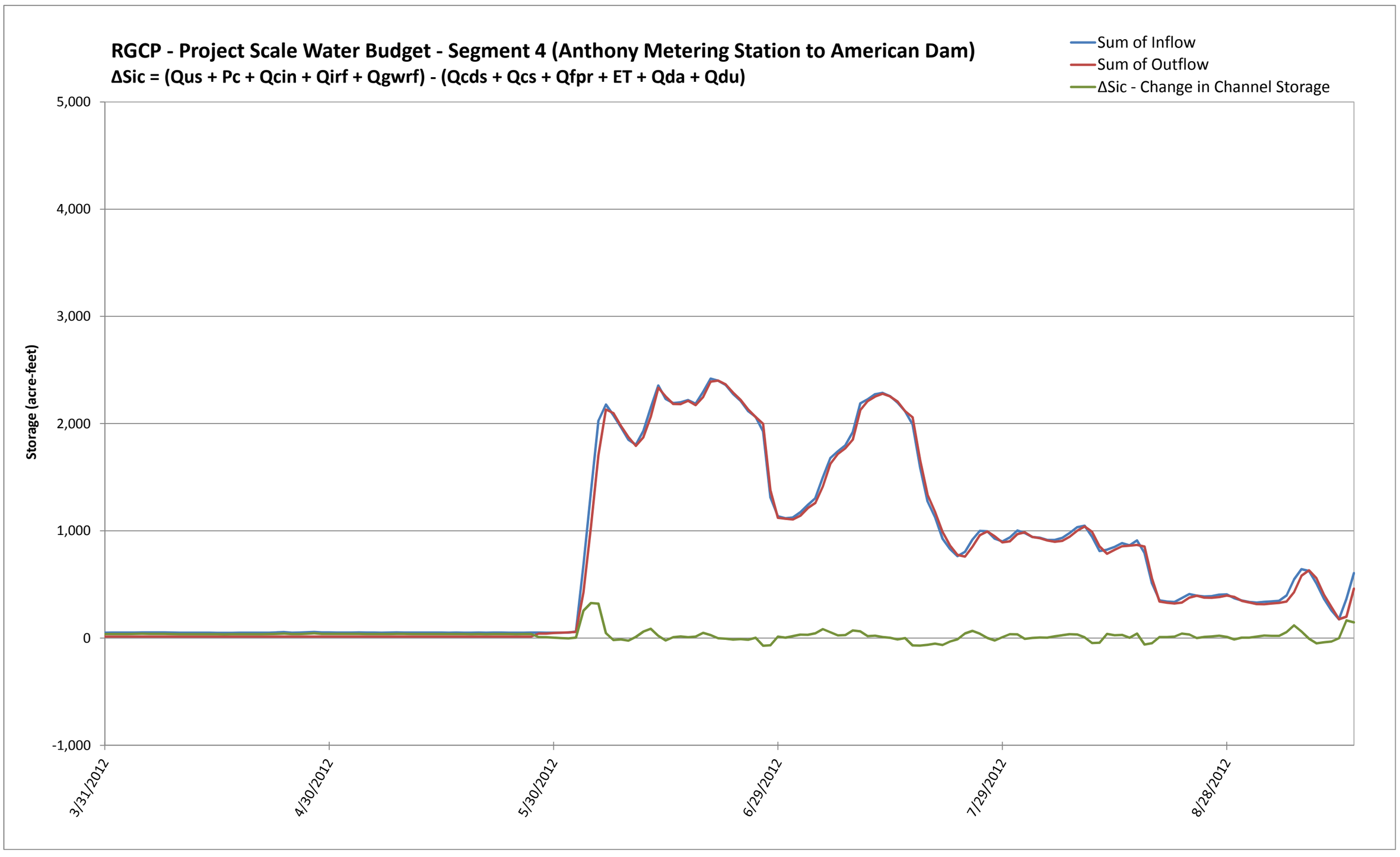


Table G4-5: Local Basin Scale Water Budget Equation

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

Caballo Reservoir to American Dam

	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	0.0	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	27.8	0.0	354.0	354.0	58.1	307.5	0.0	365.6	217.2	40.6	354.0	914.0	50.6	0.0	-569.9
5/29/2012	1983.5	1.9	914.5	31.8	17.9	49.8	27.8	116.4	354.0	470.4	58.1	307.5	15.8	381.4	2070.1	40.6	470.4	914.5	49.8	0.0	-453.2
5/30/2012	2975.2	1.6	914.5	31.8	17.8	49.7	27.8	494.8	354.0	848.8	58.1	307.5	52.6	418.2	2646.2	40.6	848.8	914.5	49.7	0.0	-74.7
5/31/2012	3966.9	3.2	909.7	31.8	17.6	49.4	27.8	1183.5	354.0	1537.5	58.1	307.5	94.5	460.1	2903.9	40.6	1537.5	909.7	49.4	0.0	619.0
6/1/2012	4958.7	3.5	903.6	31.8	17.5	49.3	27.8	2055.0	354.0	2409.0	58.1	307.5	145.6	511.2	2967.1	40.6	2409.0	903.6	49.3	0.0	1496.7
6/2/2012	4958.7	3.3	900.2	31.8	17.3	49.1	27.8	2088.0	354.0	2442.0	58.1	307.5	147.2	512.8	2928.6	40.6	2442.0	900.2	49.1	0.0	1533.4
6/3/2012	4958.7	4.7	900.2	31.8	17.4	49.2	27.8	2411.7	354.0	2765.7	58.1	307.5	147.2	512.8	2606.4	40.6	2765.7	900.2	49.2	0.0	1857.0
6/4/2012	4958.7	3.3	901.4	31.8	17.8	49.6	156.4	2351.1	354.0	2705.1	58.1	307.5	147.2	512.8	2538.7	40.6	2705.1	901.4	49.6	0.0	1794.7
6/5/2012	4958.7	0.9	911.7	31.8	17.5	49.3	873.7	1818.1	354.0	2172.1	58.1	307.5	147.2	512.8	2362.1	40.6	2172.1	911.7	49.3	0.0	1251.7
6/6/2012	4958.7	2.9	912.9	31.8	17.9	49.7	1807.4	1127.1	354.0	1481.1	58.1	307.5	147.2	512.8	2122.9	40.6	1481.1	912.9	49.7	0.0	559.1
6/7/2012	4958.7	8.5	913.7	31.8	33.9	65.7	1977.5	882.2	354.0	1236.2	58.1	307.5	147.2	512.8	2220.0	40.6	1236.2	913.7	65.7	0.0	297.5
6/8/2012	4958.7	3.4	916.1	31.8	41.1	72.9	1896.6	833.5	354.0	1187.5	58.1	307.5	147.2	512.8	2354.1	40.6	1187.5	916.1	72.9	0.0	239.1
6/9/2012	4958.7	2.1	916.9	31.8	30.3	62.1	1797.4	820.5	354.0	1174.5	58.1	307.5	147.2	512.8	2455.0	40.6	1174.5	916.9	62.1	0.0	236.1

Table G4-5: Local Basin Scale Water Budget Equation

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

Caballo Reservoir to American Dam

	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
6/10/2012	4958.7	8.1	916.7	31.8	55.6	87.5	1716.6	814.9	354.0	1168.9	58.1	307.5	147.2	512.8	2572.6	40.6	1168.9	916.7	87.5	0.0	205.4
6/11/2012	4958.7	4.0	916.3	31.8	79.7	111.6	1797.1	813.2	354.0	1167.2	58.1	307.5	147.2	512.8	2513.4	40.6	1167.2	916.3	111.6	0.0	179.9
6/12/2012	4958.7	4.1	916.2	31.8	86.1	117.9	1989.3	812.4	354.0	1166.4	58.1	307.5	147.2	512.8	2328.3	40.6	1166.4	916.2	117.9	0.0	173.0
6/13/2012	4958.7	2.3	909.2	31.8	92.0	123.9	2259.1	810.5	354.0	1164.5	58.1	307.5	147.2	512.8	2057.6	40.6	1164.5	909.2	123.9	0.0	172.1
6/14/2012	4958.7	5.1	911.5	31.8	91.7	123.5	2177.5	806.6	354.0	1160.6	58.1	307.5	147.2	512.8	2147.9	40.6	1160.6	911.5	123.5	0.0	166.2
6/15/2012	4958.7	6.9	891.8	31.8	65.9	97.7	2108.2	804.5	354.0	1158.5	58.1	307.5	147.2	512.8	2175.5	40.6	1158.5	891.8	97.7	0.0	209.6
6/16/2012	4958.7	6.2	892.5	31.8	52.5	84.3	2106.9	804.1	354.0	1158.1	58.1	307.5	147.2	512.8	2163.8	40.6	1158.1	892.5	84.3	0.0	221.9
6/17/2012	4958.7	8.2	892.5	31.8	61.0	92.8	2136.3	802.3	354.0	1156.3	58.1	307.5	147.2	512.8	2146.8	40.6	1156.3	892.5	92.8	0.0	211.6
6/18/2012	4958.7	13.5	892.6	31.8	53.3	85.2	2096.6	801.1	354.0	1155.1	58.1	307.5	147.2	512.8	2185.4	40.6	1155.1	892.6	85.2	0.0	218.0
6/19/2012	4958.7	3.9	892.7	31.8	49.9	81.8	2171.6	800.8	354.0	1154.8	58.1	307.5	147.2	512.8	2097.8	40.6	1154.8	892.7	81.8	0.0	221.0
6/20/2012	4958.7	8.6	889.7	31.8	47.2	79.0	2315.4	799.7	354.0	1153.7	58.1	307.5	147.2	512.8	1954.1	40.6	1153.7	889.7	79.0	0.0	225.6
6/21/2012	4958.7	3.6	888.6	31.8	51.0	82.9	2326.0	797.1	354.0	1151.1	58.1	307.5	147.2	512.8	1943.8	40.6	1151.1	888.6	82.9	0.0	220.3
6/22/2012	4958.7	3.9	888.6	31.8	46.7	78.5	2291.1	794.9	354.0	1148.9	58.1	307.5	147.2	512.8	1977.0	40.6	1148.9	888.6	78.5	0.0	222.4
6/23/2012	4958.7	6.8	888.5	31.8	49.4	81.2	2213.6	792.8	354.0	1146.8	58.1	307.5	147.2	512.8	2061.9	40.6	1146.8	888.5	81.2	0.0	217.8
6/24/2012	4958.7	6.7	888.5	31.8	45.1	77.0	2145.5	791.0	354.0	1145.0	58.1	307.5	147.2	512.8	2127.5	40.6	1145.0	888.5	77.0	0.0	220.2
6/25/2012	4958.7	5.1	888.5	31.8	46.1	77.9	2057.2	789.3	354.0	1143.3	58.1	307.5	147.2	512.8	2216.8	40.6	1143.3	888.5	77.9	0.0	217.6
6/26/2012	3966.9	6.0	887.9	31.8	43.9	75.8	1987.0	784.9	354.0	1138.9	58.1	307.5	147.2	512.8	1297.9	40.6	1138.9	887.9	75.8	0.0	215.8
6/27/2012	3966.9	12.7	879.9	31.8	48.4	80.2	1924.9	772.1	354.0	1126.1	58.1	307.5	147.2	512.8	1376.0	40.6	1126.1	879.9	80.2	0.0	206.6
6/28/2012	3966.9	12.2	880.2	31.8	47.6	79.4	1306.2	759.1	354.0	1113.1	58.1	307.5	147.2	512.8	2006.6	40.6	1113.1	880.2	79.4	0.0	194.2
6/29/2012	3966.9	20.1	877.0	31.8	32.6	64.4	1050.3	756.4	354.0	1110.4	58.1	307.5	147.2	512.8	2254.9	40.6	1110.4	877.0	64.4	0.0	209.6
6/30/2012	3966.9	9.6	874.4	31.8	25.1	56.9	1042.8	754.7	354.0	1108.7	58.1	307.5	147.2	512.8	2243.5	40.6	1108.7	874.4	56.9	0.0	218.1
7/1/2012	3966.9	11.8	849.4	31.8	34.0	65.9	1036.8	754.3	354.0	1108.3	58.1	307.5	129.1	494.7	2254.3	40.6	1108.3	849.4	65.9	0.0	233.7
7/2/2012	3966.9	16.7	800.0	31.8	36.2	68.0	1071.3	755.6	354.0	1109.6	58.1	307.5	129.1	494.7	2176.1	40.6	1109.6	800.0	68.0	0.0	282.2
7/3/2012	3966.9	7.7	782.5	31.8	40.9	72.7	1141.6	757.4	354.0	1111.4	58.1	307.5	129.1	494.7	2082.2	40.6	1111.4	782.5	72.7	0.0	296.8
7/4/2012	3966.9	12.7	780.3	31.8	49.0	80.8	1189.5	760.1	354.0	1114.1	58.1	307.5	129.1	494.7	2042.3	40.6	1114.1	780.3	80.8	0.0	293.7
7/5/2012	3966.9	20.2	779.0	31.8	53.0	84.9	1342.1	764.2	354.0	1118.2	58.1	307.5	129.1	494.7	1896.0	40.6	1118.2	779.0	84.9	0.0	295.0
7/6/2012	3966.9	11.0	781.5	31.8	61.3	93.1	1552.3	765.9	354.0	1119.9	58.1	307.5	129.1	494.7	1685.8	40.6	1119.9	781.5	93.1	0.0	285.9
7/7/2012	3966.9	13.1	766.3	31.8	56.0	87.8	1644.7	766.1	354.0	1120.1	58.1	307.5	129.1	494.7	1574.6	40.6	1120.1	766.3	87.8	0.0	306.7
7/8/2012	3966.9	13.6	766.1	31.8	94.2	126.0	1697.1	766.4	354.0	1120.4	58.1	307.5	129.1	494.7	1560.5	40.6	1120.4	766.1	126.0	0.0	268.9
7/9/2012	3966.9	18.6	764.3	31.8	81.6	113.4	1778.7	768.6	354.0	1122.6	58.1	307.5	129.1	494.7	1467.2	40.6	1122.6	764.3	113.4	0.0	285.6
7/10/2012	3966.9	14.9	766.2	31.8	66.1	97.9	2052.5	770.3	354.0	1124.3	58.1	307.5	129.1	494.7	1174.5	40.6	1124.3	766.2	97.9	0.0	300.8
7/11/2012	3966.9	12.0	758.4	31.8	55.0	86.8	2136.2	770.1	354.0	1124.1	58.1	307.5	129.1	494.7	1069.1	40.6	1124.1	758.4	86.8	0.0	319.5
7/12/2012	3966.9	10.6	757.9	31.8	40.6	72.5	2179.0	770.2	354.0	1124.2	58.1	307.5	129.1	494.7	1010.0	40.6	1124.2	757.9	72.5	0.0	334.5
7/13/2012	3966.9	12.9	758.0	31.8	35.4	67.2	2205.1	770.9	354.0	1124.9	58.1	307.5	129.1	494.7	980.4	40.6	1124.9	758.0	67.2	0.0	340.3
7/14/2012	3966.9	10.4	750.6	31.8	34.9	66.7	2180.2	772.0	354.0	1126.0	58.1	307.5	129.1	494.7	993.8	40.6	1126.0	750.6	66.7	0.0	349.3
7/15/2012	3966.9	22.7	750.6	31.8	31.9	63.7	2133.1	771.0	354.0	1125.0	58.1	307.5	129.1	494.7	1051.2	40.6	1125.0	750.6	63.7	0.0	351.4
7/16/2012	3966.9	8.5	746.8	31.8	35.0	66.8	2043.3	769.0	354.0	1123.0	58.1	307.5	129.1	494.7	1128.0	40.6	1123.0	746.8	66.8	0.0	350.1
7/17/2012	3966.9	17.2	741.1	31.8	33.4	65.2	1986.8	761.8	354.0	1115.8	58.1	307.5	129.1	494.7	1193.2	40.6	1115.8	741.1	65.2	0.0	350.1
7/18/2012	3966.9	11.8	729.3	31.8	61.0	92.8	1589.8	756.1	354.0	1110.1	58.1	307.5	129.1	494.7	1606.3	40.6	1110.1	729.3	92.8	0.0	328.6
7/19/2012	3966.9	12.5	729.2	31.8	81.5	113.3	1265.2	750.8	354.0	1104.8	58.1	307.5	129.1	494.7	1957.3	40.6	1104.8	729.2	113.3	0.0	302.9
7/20/2012	3966.9	14.1	728.4	31.8	70.8	102.6	1107.7	746.4	354.0	1100.4	58.1	307.5	129.1	494.7	2109.2	40.6	1100.4	728.4	102.6	0.0	310.0
7/21/2012	3966.9	19.0	724.0	31.8	65.5	97.3	924.4	736.5	354.0	1090.5	58.1	307.5	129.1	494.7	2297.6	40.6	1090.5	724.0	97.3	0.0	309.9
7/22/2012	3966.9	14.1	725.9	31.8	65.3	97.1	798.1	728.6	354.0	1082.6	58.1	307.5	129.1	494.7	2428.6	40.6	1082.6	725.9	97.1	0.0	300.2
7/23/2012	3966.9	17.1	725.9	31.8	66.5	98.4	711.8	722.7	354.0	1076.7	58.1	307.5	129.1	494.7	2525.1	40.6	1076.7	725.9	98.4	0.0	293.1
7/24/2012	3966.9	13.3	725.9	31.8	72.5	104.3	696.8	726.9	354.0	1080.9	58.1	307.5	129.1	494.7	2538.0	40.6	1080.9	725.9	104.3	0.0	291.4
7/25/2012	3966.9	10.9	727.8	31.8	94.5	126.4	784.5	734.5	354.0	1088.5	58.1	307.5	129.1	494.7	2464.2	40.6	1088.5	727.8	126.4	0.0	275.0
7/26/2012	3966.9	18.9	727.1	31.8	93.9	125.7	891.4	739.6	354.0	1093.6	58.1	307.5	129.1	494.7	2359.0	40.6	1093.6	727.1	125.7	0.0	281.4
7/27/2012	3966.9	12.1	726.2	31.8	88.0	119.9	926.5	735.7	354.0	1089.7	58.1	307.5	129.1	494.7	2314.3	40.6	1089.7	726.2	119.9	0.0	284.2
7/28/2012	3966.9	14.7	723.9	31.8	81.2	113.1	881.6	733.0	354.0	1087.0	58.1	307.5	129.1	494.7	2355.4	40.6	1087.0	723.9	113.1	0.0	290.7
7/29/2012	3966.9	22.1	723.9	31.8	78.1	109.9	826.1	732.2	354.0	1086.2	58.1	307.5	129.1	494.7	2415.9	40.6	1086.2	723.9	109.9	0.0	293.0
7/30/2012	3966.9	16.3	724.1	31.8	71.0	102.9	835.8	734.0	354.0	1088.0	58.1	307.5	129.1	494.7	2391.7	40.6	1088.0	724.1	102.9	0.0	301.7
7/31/2012	3966.9	10.9	722.6	31.8	64.7	96.5	901.0	739.5	354.0	1093.5	58.1	307.5	129.1	494.7	2307.7	40.6	1093.5	722.6	96.5	0.0	315.0
8/1/2012	3966.9	22.6	722.7	31.8	69.2	101.0	918.4	734.4	354.0	1088.4	58.1	307.5	126.5	492.1	2314.3	40.6	1088.4	722.7	101.0	0.0	305.3
8/2/2012	3966.9	22.9	722.2	31.8	81.7	113.6	875.7	734.0	354.0	1088.0	58.1	307.5	126.4	492.0	2369.9	40.6	1088.0	722.2	113.6	0.0	292.9
8/3/2012	3966.9	18.5	722.7	31.8	68.8	100.7	864.4	733.4	354.0	1087.4	58.1	307.5	126.4	492.0	2365.0	40.6	1087.4	722.7	100.7	0.0	304.7
8/4/2012	3966.9	13.1	723.1	31.8	54.5	86.3	844.6	728.7	354.0	1082.7	58.1	307.5	126.4	492.0	2370.2	40.6	1082.7	723.1	86.3	0.0	313.9
8/5/2012	3966.9	15.8	723.1	31.8	50.0	81.8	832.2	729.4	354.0	1083.4	58.1	307.5	126.4	492.0	2380.0	40.6	1083.4	723.1	81.8	0.0	319.1
8/6/2012	3966.9	14.4	723.0	31.8	48.4	80.2	840.7	729.4	354.0	1083.4	58.1	307.5	126.4	492.0	2368.4	40.6	1083.4	723.0	80.2	0.0	320.8
8/7/2012	3966.9	17.6	726.2	31.8	47.8	79.6	878.2	733.1	354.0	1087.1	58.1	307.5	126.4	492.0	2333.1	40.6	1087.1	726.2	79.6	0.0	322.0
8/8/2012	3966.9	10.5	728.2	31.8	63.3	95.1	933.0	735.6	354.0	1089.6	58.1	307.5	126.4	492.0	2286.2	40.6	1089.6	728.2	95.1	0.0	306.9
8/9/2012	3966.9	18.1	725.6	31.8	72.9	104.7	972.2	731.2	354.0	1085.2	58.1	307.5	126.4	492.0	2266.1	40.6	1085.2	725.6	104.7	0.0	295.5
8/10/2012	3966.9	16.6	725.8	31.8	159.6	191.5	922.6	728.5	354.0	1082.5	58.1	307.5	126.4	492.0	2403.7	40.6	1082.5	725.8	191.5	0.0	205.9
8/11/2012	3966.9	20.3	727.6	31.8	122.3	154.1	790.9	717.8	354.0	1071.8	58.1	307.5	126.4	492.0	2514.3	40.6	1071.8	727.6	154.1	0.0	230.8
8/12/2012	3966.9	24.7	727.6	31.8	265.6	297.4	722.4	715.5	354.0	1069.5	58.1	307.5	126.4	492.0	2732.7	40.6	1069.5	727.6	297.4	0.0	85.2
8/13/2012	3966.9	21.2	727.6	31.8	254.0	285.9	758.4	717.7	354.0	1071.7	58.1	307.5	126.4	492.0	2679.5	40.6	1071.7	727.6	285.9	0.0	98.9
8/14/2012	3102.1	28.8	727.6	31.8	223.7	255.5	790.7	722.5	354.0	1076.5	58.1	307.5	126.4	492.0	1754.8	40.6	1076.5	727.6	255.5	0.0	134.1
8/15/2012	1388.4	20.8	727.6	31.8	293.6	325.4	796.9	716.2	354.0	1070.2	58.1	307.5	126.4	492.0	103.1	40.6	1070.2	727.6	325.4	0.0	57.9
8/16/2012	1388.4	17.1	727.4	31.8	99.3	131.1	803.5	694.5	354.0	1048.5	58.1	307.5	126.4	492.0	-79.9	40.6	1048.5	727.4	131.1	0.0	230.6
8/17/2012	1388.4	13.8	728.2	31.8	105.4	137.2	790.2	641.8	354.0	995.8	58.1	307.5	126.5	492.1	-10.6	40.6	995.8	728.2	137.2	0.0	171.1
8/18/2012	1388.4	16.4	728.9	31.8	101.8	133.7	505.0	560.1	354.0	914.1	58.1	307.5	125.5	491.1	357.3	40.6	914.1	728.9	133.7	0.0	92.1
8/19/2012	1388.4	16.5	728.9	31.8	97.7	129.5	297.5	547.7	354.0	901.7	58.1	307.5	125.1	490.7	573.5	40.6	901.7	728.9	129.5	0.0	83.9
8/20/2012	1388.4	22.4	728.9	31.8	102.1	133.9	286.7	543.3	354.0	897.3	58.1	307.5	125.1	490.7	599.0	40.6	897.3	728.9	133.9	0.0	75.1
8/21/2012	1388.4	16.2	729.1	31.8	102.4	134.2	279.2	546.5	354.0	900.5	58.1	307.5	125.1	490.7	597.5	40.6	900.5	729.1	134.2	0.0	77.8
8/22/2012	1388.4	19.0	725.7	31.8	102.9	134.8	287.1	563.0	354.0	917.0	58.1	307.5	125.1	490.7	573.2	40.6	917.0	725.7	134.8	0.0	97.1
8/23/2012	1388.4	27.0	723.7	31.8	94.7	126.5	331.5	572.0	354.0	926.0	58.1	307.5	125.1	490.7	517.3	40.6	926.0	723.7	126.5	0.0	116.5
8/24/2012	1388.4	18.3	727.7	31.8	100.8	132.6	349.3	565.6	354.0	919.6	58.1	307.5	125.1	490.7	507.5	40.6	919.6	727.7	132.6	0.0	99.9

Table G4-5: Local Basin Scale Water Budget Equation

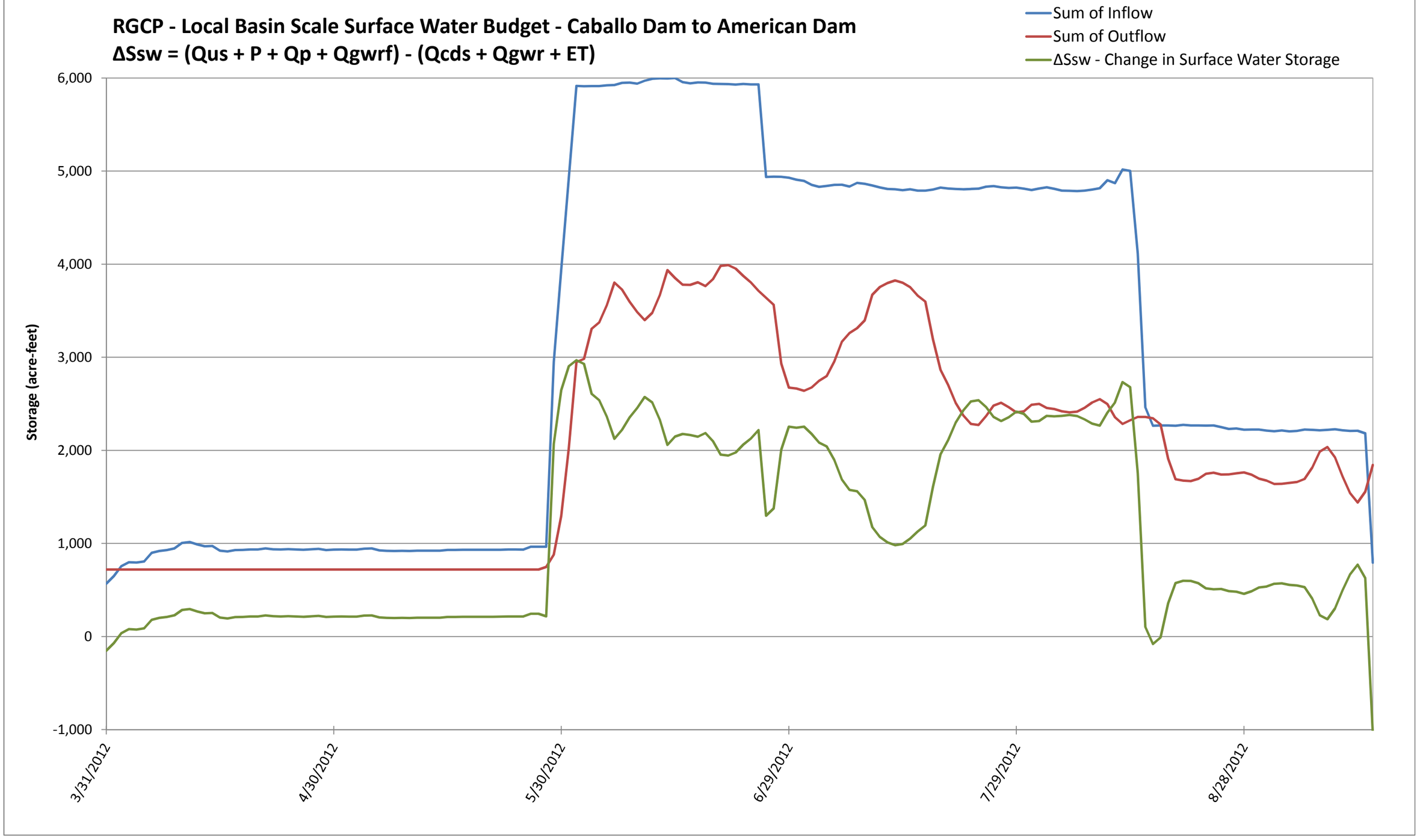
Delayed Single Pulse Hydrograph, Scenario S1 (Units = Acre-Feet)

Caballo Reservoir to American Dam

	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
8/25/2012	1388.4	15.7	727.4	31.8	86.8	118.6	331.1	563.8	354.0	917.8	58.1	307.5	125.1	490.7	510.5	40.6	917.8	727.4	118.6	0.0	112.5
8/26/2012	1388.4	12.5	727.3	31.8	69.3	101.1	330.4	566.5	354.0	920.5	58.1	307.5	125.1	490.7	487.7	40.6	920.5	727.3	101.1	0.0	132.7
8/27/2012	1388.4	15.1	727.2	31.8	71.4	103.3	336.5	571.3	354.0	925.3	58.1	307.5	125.1	490.7	481.5	40.6	925.3	727.2	103.3	0.0	135.5
8/28/2012	1388.4	8.0	727.1	31.8	65.7	97.5	350.1	568.0	354.0	922.0	58.1	307.5	125.1	490.7	458.1	40.6	922.0	727.1	97.5	0.0	138.1
8/29/2012	1388.4	10.9	728.1	31.8	64.4	96.2	338.7	554.3	354.0	908.3	58.1	307.5	125.1	490.7	485.9	40.6	908.3	728.1	96.2	0.0	124.6
8/30/2012	1388.4	16.6	729.4	31.8	56.6	88.4	303.4	547.4	354.0	901.4	58.1	307.5	125.1	490.7	527.4	40.6	901.4	729.4	88.4	0.0	124.2
8/31/2012	1388.4	14.3	723.8	31.8	52.9	84.7	289.5	540.8	354.0	894.8	58.1	307.5	125.1	490.7	536.3	40.6	894.8	723.8	84.7	0.0	126.9
9/1/2012	1388.4	8.9	721.1	31.8	55.0	86.8	276.3	537.4	354.0	891.4	58.1	307.5	106.1	471.7	565.9	40.6	891.4	721.1	86.8	0.0	124.1
9/2/2012	1388.4	16.9	719.8	31.8	55.9	87.7	275.0	540.4	354.0	894.4	58.1	307.5	106.1	471.7	571.8	40.6	894.4	719.8	87.7	0.0	127.6
9/3/2012	1388.4	10.6	718.6	31.8	54.5	86.3	281.1	542.9	354.0	896.9	58.1	307.5	106.1	471.7	554.3	40.6	896.9	718.6	86.3	0.0	132.6
9/4/2012	1388.4	14.7	718.6	31.8	55.6	87.4	286.7	548.3	354.0	902.3	58.1	307.5	106.1	471.7	548.5	40.6	902.3	718.6	87.4	0.0	137.0
9/5/2012	1388.4	20.1	721.1	31.8	61.1	93.0	298.6	567.6	354.0	921.6	58.1	307.5	106.1	471.7	530.7	40.6	921.6	721.1	93.0	0.0	148.2
9/6/2012	1388.4	16.9	721.2	31.8	62.3	94.1	379.0	608.4	354.0	962.4	58.1	307.5	106.1	471.7	407.5	40.6	962.4	721.2	94.1	0.0	187.8
9/7/2012	1388.4	18.1	717.2	31.8	59.3	91.1	527.0	632.2	354.0	986.2	58.1	307.5	107.1	472.7	228.8	40.6	986.2	717.2	91.1	0.0	218.6
9/8/2012	1388.4	8.6	718.1	31.8	73.1	105.0	575.6	632.5	354.0	986.5	58.1	307.5	107.3	472.9	185.1	40.6	986.5	718.1	105.0	0.0	204.0
9/9/2012	1388.4	8.5	718.0	31.8	79.2	111.0	507.8	589.5	354.0	943.5	58.1	307.5	106.8	472.4	302.3	40.6	943.5	718.0	111.0	0.0	155.1
9/10/2012	1388.4	12.8	718.5	31.8	63.1	95.0	361.2	530.9	354.0	884.9	58.1	307.5	106.2	471.8	496.7	40.6	884.9	718.5	95.0	0.0	112.1
9/11/2012	1388.4	14.8	715.6	31.8	57.8	89.7	252.1	462.6	354.0	816.6	58.1	307.5	106.2	471.8	667.9	40.6	816.6	715.6	89.7	0.0	52.0
9/12/2012	1388.4	23.5	715.5	31.8	51.4	83.2	143.8	469.4	354.0	823.4	58.1	307.5	106.2	471.8	771.6	40.6	823.4	715.5	83.2	0.0	65.3
9/13/2012	1388.4	15.8	700.9	31.8	46.0	77.8	162.3	567.2	354.0	921.2	58.1	307.5	106.2	471.8	627.6	40.6	921.2	700.9	77.8	0.0	183.1
9/14/2012	0.0	14.6	700.8	31.8	46.4	78.2	409.3	608.2	354.0	962.2	58.1	307.5	106.1	471.7	-1049.6	40.6	962.2	700.8	78.2	0.0	223.8

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

ΔSsw = (Qus + P + Qp + Qgwrf) - (Qcds + Qgwr + ET)



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

ΔSgw = (Qgwus + Qgwr) - (Qp + Qgwrf + Qgwds)