Exhibit "J"

BALLEAU GROUNDWATER, INC.
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ALBUQUERQUE, NEW MEXICO 87104

04/0258

W. PETER BALLEAU
DAVE M. ROMERO
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May 7, 2004

Charles T. DuMars, Esq.
Law & Resource Planning Associates
201 Third Street NW, Suite 1370
Albuquerque, NM 87102

Subject: Impact of City Drinking Water Project on Middle Rio Grande Conservancy District

Dear Mr. DuMars:

Two copies of a technical memorandum are attached as we discussed. It is derived from a February 20, 2003 document by editing out the description of two model scenarios showing effects of increased or decreased City wellfield pumping schedules. The attached technical memorandum discusses only the CH2M Hill scenarios of the Drinking Water Project and effects on Middle Rio Grande Conservancy District (MRGCD) drains and diversions, without alternative pumping schedules that alter effects on MRGCD.

Please call to discuss any of this or if you find that further revisions are needed.

Very truly yours,

BALLEAU GROUNDWATER, INC.

Peter Balleau

W. Peter Balleau, CPG
President

WPB/sl

Attachment: Technical Memorandum

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TECHNICAL MEMORANDUM

To File LRPA/MRGCD

May 7, 2004

From ~~D. M. Romero~~, J. M. Kernodle and W. P. Balleau

Subject IMPACTS TO MIDDLE RIO GRANDE CONSERVANCY DISTRICT FROM CITY OF ALBUQUERQUE PLANNED DRINKING WATER PROJECT

At the request of the Middle Rio Grande Conservancy District (MRGCD), Balleau Groundwater, Inc. (BGW) has evaluated the impacts on MRGCD of the proposed City of Albuquerque (City) direct use of San Juan Chama (SJC) water. The direct use of SJC water by the City is referred to as the "Drinking Water Project" (DWP)[1]. Implementation of the DWP would provide a direct surface-water source to supply City demand, thereby reducing the quantity of water diverted from the City wellfield. The discussion herein describes effects on MRGCD associated with historical and future City wellfield operations both with and without the DWP, and isolates impacts from DWP operations. As requested, the results quantify the "net native water that would be lost on an annual basis that, but for the scheduled DWP, would be available".

The DWP proposed by the City is based on release of SJC water from upstream storage with diversion in the Albuquerque area by any of three means: use of the existing Angostura diversion dam, a new surface diversion dam just north of Paseo del Norte bridge, or a new shallow subsurface diversion north and south of Paseo del Norte bridge. We have evaluated the surface diversion north of Paseo del Norte bridge as the primary DWP site. Figure 1 shows the general layout and major features of the Middle Rio Grande Basin, the City wells and potential sites for diversion of SJC and native Rio Grande water as proposed by the City.

[1] CH2MHILL, 2002. Hydrologic Effects of the Proposed City of Albuquerque Drinking Water Project on the Rio Grande and Rio Chama Systems. City of Albuquerque Resources Strategy Implementation. Final Report dated May 2002

The evaluation includes model simulations with the administrative groundwater flow model prepared by the New Mexico Office of the State Engineer (OSE)[2] For comparison, future City operations include two scenarios, one without the DWP (referred to by the City as "no-action") and one with the DWP The model scenarios are with input files as provided by CH2MHILL[3] with the exception of adapting the Rio Grande stage in the DWP scenario. The model simulation is separated by CH2MHILL into an historical period (1901 to 1993) and a future period (1993 to 2060) Although the future period includes a decade of recent past years, it is referred to as the future period for evaluation. City operations of the DWP begin in year 2006 The model scenarios are:

1) The null case (no City wellfield use) run through the historical and future periods,
2) The null case modified with historical City wellfield withdrawals;
3) The null case modified for the future without the DWP (continued wellfield use);
4) The null case modified for the future with the City scheduled implementation of the DWP

Technical Approach

The first two model scenarios are produced from model files as distributed by the OSE.[4] Scenarios 3 and 4 are produced from model files as distributed from CH2MHILL with one exception in Scenario 4, the stage of the Rio Grande is lowered 0.1 feet to account for the City's direct diversion of SJC water.[5] The model simulations provided by CH2MHILL do not account for the impacts associated with the stage change. BGW applied the stage change to inspect the associated impacts.

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[2] Barroll, P., 1999. Documentation of the Administrative Groundwater Model for the Middle Rio Grande Basin. Office of the State Engineer, Technical Division, Hydrology Bureau Report 99-3, April 1999

[3] Data CD provided to BGW from Law & Resource Planning Associates, July 16, 2002

[4] As Footnote 2

[5] As Footnote 1 CH2MHILL reports that the change in Rio Grande water depth caused by the DWP is on the order of 0.1 foot during a mean low monthly flow condition

The OSE model includes groundwater withdrawals within the Middle Rio Grande Basin. For Scenarios 2, 3 and 4, BGW isolated the hydrologic effects of City groundwater withdrawals to the Rio Grande and to the MRGCD system of canals and drains. The baseline City effect is based on a difference between simulations with and without City groundwater withdrawals. The null case (Scenario 1) is a historical and future simulation without City water operations. For the historical period, the difference between Scenario 1 and Scenario 2 produces the hydrologic effects that result from City groundwater withdrawals. For the future period, City hydrologic impacts are isolated for two cases, a future with no DWP (the difference between Scenario 3 and Scenario 1) and a future with the DWP (the difference between Scenario 4 and Scenario 1).

The net native water that would be lost on an annual basis that, but for the project, would be available to MRGCD is derived by isolating the surface-water impacts caused by the DWP. The effect caused by the DWP is the difference between model simulations with the DWP (Scenario 4) and without the DWP (Scenario 3). The effect of the DWP is presented in two ways, the overall impact felt at San Acacia over the period of DWP operation and the downstream impact from Cochiti Lake to San Acacia at year 2010.

Evaluation of impacts from the DWP involves assessing hydrologic changes associated with the City's plans of wellfield curtailment and diversion of SJC and native Rio Grande water to meet future scheduled demand. The evaluation does not include an assessment of effects from the City's non-potable water use project or effects from planned aquifer storage and recovery.

The City wellfield depletes surface flows in the mainstem Rio Grande and in the MRGCD canals and drains. The hydrologic effects to the mainstem Rio Grande are evaluated separately from effects to MRGCD canals and drains. BGW categorized hydrologic impacts into effects upstream of Angostura diversion, effects between Angostura and Isleta diversions and effects downstream of Isleta diversion; in the future simulations, about 97 percent of effects to the Rio Grande from the City wellfield occur between Angostura and Isleta.

Historical Model Simulations

The historical impact of City groundwater withdrawals is the difference between simulations with and without City groundwater withdrawals from 1901 to 1992. The depletion components during this time period are shown on Figure 2 and listed in Table 1. MRGCD drains are depleted just as the river is depleted, but are quantified in a separate account on Figure 2 and Table 1.

By the end of 1992, approximately 34,000 acre feet per year (AFY) of City wellfield production was induced from the mainstem Rio Grande and 30,000 AFY was flow captured directly from MRGCD drain structures totaling 64,000 AFY. Another 51,000 AFY of City water was produced by depletion of aquifer storage. Depletion to the Jemez River is listed on Table 1, but is not visible on Figure 2. The OSE model indicates that the MRGCD drains are a major source of total surface water induced by the City wells (47 percent in 1992). The MRGCD canals are minimal in comparison. Although the simulated canals add water to the groundwater basin, the OSE model represents the canals as a feature that is not in hydrologic connection with the water table. Many canals are considered by BGW to be misrepresented by the OSE model in that respect. If simulated as connected to the local water table, canals would add to the impact caused by the City wellfield.

Future Effects without DWP (No Action)

A baseline of future effects is calculated in the model to meet future City water demand without the DWP. The future without the DWP is produced from the difference between Scenario 3 (City well withdrawal without the DWP) and Scenario 1 (no City well withdrawal). The two simulations are compared during the future period from 1993 to 2060 with a baseline City wellfield pumping schedule as projected by CH2MHILL[3]. Pumping grows beyond the current City authorized pumping rate of 132,000 AFY to reach 195,000 AFY by year 2060.

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[3] As Footnote 1

The source water supplying the City wellfield is shown graphically on Figure 3. The solid red line is the City wellfield diversion and the color-filled portions beneath the red line indicate the accounts that lose water captured by the wellfield. The largest components are mainstem Rio Grande, MRGCD drains and aquifer storage. Effects on MRGCD supply grow to 134,000 AFY (185 cubic feet per second (cfs)) by year 2060. Salvage of evapotranspiration (ET) (a few thousand AFY) and depletion to the Jemez River (hundreds of AFY) occupy narrow areas on Figure 3. The blue dashed line stacked on the red line represents City scheduled release of SJC water (2,968 AFY) for the planned non-potable use project. The City puts the non-potable water project in the baseline of the DWP.

Table 2 lists the future sources of water for City demand without the DWP. The sources are through wellfield diversion and release of SJC water for the non-potable use project. Also listed are the average annual losses of water to the Rio Grande, MRGCD canals and drains, the Jemez River and aquifer storage caused by the City wellfield. Total water depleted directly from MRGCD drains ranges from about 33,000 AFY in year 2002 to 48,000 AFY in year 2060. Table 2 lists a gain in flow (negative numbers) for MRGCD canals. The negative numbers are a modeling artifact that results from the model simulation of dewatering shallow model layers. City wellfield withdrawals do not actually add water to MRGCD canals.

On the mainstem Rio Grande from 1993 to 2060, 97 percent of the basin-wide effect occurs between the Angostura and Isleta diversion locations. About half of the City total groundwater diversion is returned to the Rio Grande at the wastewater treatment plant outfall and is available at Isleta for offset of wellfield impacts. The Albuquerque Division of MRGCD, where the largest City impact occurs, has no return flow available to offset the 134,000 AFY (185 cfs) depletion that occurs by year 2060.

Future Effects with DWP

Hydrologic effects with the DWP occur from changes in direct diversion of native Rio Grande water in addition to altered wellfield use to meet future City demand. Effects of future groundwater use with the DWP are calculated from the difference between Scenario 4

(City well withdrawal with the DWP) and Scenario 1 (no City well withdrawal). The City's planned schedule of demand is that of CH2MHILL from 1993 to 2060. The BGW analysis accounts for a stage reduction of 0.1 feet below the City's surface-water diversion (assumed at Paseo del Norte bridge).

The source water supplying the City wellfield in the DWP scenario is graphically shown on Figure 4. In year 2006, the wellfield diversion drops from over 100,000 AFY to about 20,000 AFY and then continues along a linear growth schedule interrupted with spikes during drought conditions. The spikes represent increased wellfield use during potential drought years that may or may not occur in the future. The blue dashed line stacked on the red line represents City scheduled release of SJC water (2,968 + 47,000 = 49,968 AFY) for diversion by the non-potable use project and by the DWP. The City reports future scheduled releases of SJC water from upstream storage on an annual basis.[7] The remaining 47,000 AFY of surface water made available for future City demand in lieu of full wellfield exercise comes from native Rio Grande flows that impact MRGCD to the extent they are not offset by additional SJC project releases.

Also shown on Figure 4 is the accretion of aquifer storage supplied by residual surface-water impacts. The residual depletion occurs continuously from years 2006 to 2029 and in year 2029. During about a 20-year period, water levels are rising. The rise in water levels that would result from the scheduled reduction in City wellfield pumping over the next 20 years (years 2002 to 2022) is shown on Figure 5. Water levels rise up to 30 feet in the MRGCD service area due to reducing wellfield pumping by about 94,000 AFY. Net drawdown persists in Rio Rancho. From years 2002 to 2022, about 252,000 (AF) is placed into aquifer storage by the DWP. This amount is a new demand by the City water-management strategy. It depletes the supply for MRGCD to the extent it is not offset by wet water. The City proposes to apply offset water rights not applied in the baseline, rather than releasing water.

Table 3 lists the breakdown by source of water to City wellfield withdrawals and release of SJC water with the DWP. Under the DWP scenario the source of City water direct from

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[7] As Footnote 1, Appendix E

MRGCD drains ranges from approximately 33,000 (year 2002) to a low of about 22,000 (year 2021) and back to 31,000 AFY by year 2060. The current total surface-water impact due to City withdrawals is about 74,000 AFY and about 68,000 AFY in year 2060 with the DWP. Again, the majority of all surface-water impacts occur in the reach between the Angostura and Isleta diversions.

The impacts described thus far for future impacts with the DWP (Scenario 4) include those from the aforementioned reduction to the Rio Grande stage (0.1 feet) below Paseo del Norte bridge. The isolated effect of changing the stage of the Rio Grande is listed on Table 4. The effect of lowering the Rio Grande stage causes water to be captured from MRGCD canals and drains (2,497 AFY) and salvages about 427 AFY from Bosque ET and shallow aquifer storage.

Future Impact of DWP (Net Impact to Native Rio Grande Flow)

The City future without the DWP provides a baseline of impacts for comparison with hydrologic effects caused by the DWP project. Impacts of the DWP are derived from the difference between a future simulation with the DWP (Scenario 4) and a simulation without the DWP (Scenario 3). The change to the hydrologic system from the DWP can be inspected graphically on Figure 6. Figure 6 displays the net difference that the DWP causes on Rio Grande at San Acacia.

Figure 6 shows the numerical difference between Figure 4 and Figure 3. The City's planned quantity of surface water added to the Rio Grande flow from wellfield reduction and from release of SJC water is plotted on the upper half of Figure 6; the average annual flows that make up the surface water flow increase are listed on Table 5. Figures 3 and 4 both include scheduled release of SJC water for the non-potable project; the difference between the two cancels any impact caused by non-potable diversions. The lower half of Figure 6 shows the total surface-water diversion planned by the City (Table 5)[8]. The net between the total surface-water

[8] As Footnote 1, Appendix F

diversion and the water added by the City gives the net impact to native Rio Grande water (orange curve on Figure 6). The net impact is negative (below baseline) from years 2006 to 2021 indicating net native water will be lost on an annual basis that, but for the project, would be available to MRGCD.

The City plan of releasing SJC water includes "additional" releases from storage whenever necessary to provide additional offset to surface-water depletion effects caused by the DWP. Table 6 lists the average annual and cumulative net impacts to native Rio Grande flow both with and without the additional release of SJC water; the cumulative net impact is shown on Figure 7. By year 2020, MRGCD losses reach a volume of 124,000 AF if the City follows its plan, and 215,000 AF if additional SJC water is not available for release.

The net impact to native Rio Grande flow caused by the DWP has thus far been shown as though all measurements of impacts through time occurred at San Acacia. The impact that occurs downstream from Cochiti Lake to San Acacia at a single time should also be inspected. Figure 8 shows the downstream net impact to native Rio Grande flow at year 2010; the analogous curves are colored the same as those on Figure 6 for comparison. The City's release of SJC water adds about 62,000 AF of water, including additional SJC release, as scheduled in year 2010 (Table 7).

Figure 8 and Table 7 show that the City's release of SJC water combined with the flow increase from reducing wellfield use provides net surplus flows upstream of the City's diversion location at Paseo del Norte bridge. Diversion of 94,000 AF causes an immediate loss to net surface-water flows ranging from about 41,700 AF to 27,500 AF depending on the amount of additional SJC release. This net loss then shows the greatest rate of improvement in the reach down to Isleta diversion (41,700 AF loss improves to about 25,000 AF) with less improvement in the reach from Isleta to San Acacia (25,000 AF loss improves to 24,200 AF). The improvement to the net loss is attributed to the surface water flow increase from the reduced use of the City wellfield. The net impacts both with and without additional SJC releases are mapped on Figure 9.

The surface water flow increase from reduced wellfield use is a reduction in depletion that otherwise would occur if the City wellfield operated fully to meet future demand; depletion to surface water available to the MRGCD still occurs with the DWP. During low-flow periods with the DWP, MRGCD operation will require a larger portion of the City's SJC water to offset larger impacts than required without the City DWP

City implementation of the DWP also causes less water-level drawdown than if the wellfield is operated fully to meet future demand Figure 10 shows the reduction to water-level drawdown associated with the City's scheduled implementation of the DWP in year 2022 The contours are calculated as the difference between water levels in Scenario 3 (continued wellfield use) and Scenario 4 (implementation of DWP) at year 2022. Drawdown is reduced by as much as 90 feet below the City

DWP Diversion and Return Flow as a Fraction of Native Flow

The City planned schedule of operation for the DWP is shown on Figure 11. The DWP is not planned to operate if native Rio Grande flow at the diversion is less than 70 cfs. Full operation of the DWP (diversion of 130 cfs) would require native Rio Grande flow to be at least 135 cfs at the diversion. At typical flows in the Rio Grande, the DWP will divert mostly native flow, not 50 percent native flow

The City states[*] (p. ES-3) that "The 65 cfs of native water will be returned to the river ..." Table 8 is attached to show that Surface Water Reclamation Plant (SWRP) return flow does not offset the DWP diversions of baseline native water in any case. The change in river operations in illustrative year 2010 with the DWP involve a large (61,200 AF) increase in SJC releases, practically no change in SWRP return flow, a major reduction (23,552 AF) in river depletion by City wells, and a 94,000 AF increase in surface diversions. According to data in the City's Appendix E, the net change in year 2010 is a loss of 9,301 AF from the river supply. There is no

[*] As Footnote 1

offset of the 47,000 AF of new native Rio Grande diversions by any corresponding amount of new return flow.

Conclusions and Recommendations

1. The Drinking Water Project, as planned, causes a net loss to native Rio Grande water that, but for the project, would be available to the Middle Rio Grande Conservancy District. The loss occurs over the first 16 years of the project with about 10,000 to 11,500 acre feet per year lost in the first decade and a total volume of 124,000 acre feet by year 2020. The net native water lost is about 16 cubic feet per second, equivalent to the duty of water on 1,120 Middle Rio Grande Conservancy District acres. Depending on the amount of additional San Juan Chama water available to Albuquerque for release from upstream storage, the total impact may reach a volume of 215,000 acre feet.

2. The City intends to use part of their vested rights of 23,347 acre feet per year to cover the new impacts on Rio Grande flow. There is no water added to the river by assigning vested rights. Hydrologically, the new Drinking Water Project impacts constitute water lost to Middle Rio Grande Conservancy District irrigators that, but for the project, would be available.

3. A stage change to the Rio Grande from the Drinking Water Project causes a net 427 acre feet per year salvage in year 2010 from shallow groundwater levels and Bosque evapotranspiration, and an associated loss of 2,497 acre feet per year from Middle Rio Grande Conservancy District drains. Rio Grande stage reduction depletes water from the riparian system below Paseo del Norte bridge.

4. Residual surface-water depletion from wellfield curtailment produces a new Drinking Water Project demand of 252,000 acre feet (during years 2002 to 2022) to the Middle Rio Grande Basin.

5 The Drinking Water Project typically will divert a major fraction as native waters and a minor fraction as San Juan Chama Project waters. Return flow is the same ratio as diversions. Return flow of 65 cubic feet per second at the City surface water reclamation plant is included in both the City's No Action and Drinking Water Project scenarios, thereby not providing offset for new Drinking Water Project diversions of 65 cfs (47,000 acre feet per year) of native water

Attachments: Tables (8)
Figures (11)

MIDDLE RIO GRANDE CONSERVANCY DISTRICT

TABLE 1. AVERAGE HISTORICAL DEPLETIONS DUE TO CITY WITHDRAWALS

Ending Year*	Rio Grande Mainstem	Jemez River	MRGCD Canals	MRGCD Drains	Aquifer Storage	Total
1906	106.7	0.1	0.0	0.0	182.5	289.3
1911	250.8	0.2	0.0	0.0	280.9	531.9
1916	410.3	0.3	0.0	0.0	361.8	772.4
1921	577.7	0.4	0.0	0.0	429.2	1,007.2
1926	755.9	0.5	0.0	0.0	480.2	1,236.6
1931	943.6	0.7	0.0	0.0	521.7	1,466.0
1936	706.6	1.1	16.5	564.5	244.5	1,533.3
1941	1,117.9	1.4	5.4	873.3	1,100.8	3,098.8
1946	1,908.0	1.9	88.9	1,635.6	1,932.0	5,566.4
1951	3,319.4	3.5	184.6	3,432.4	4,376.5	11,316.4
1956	8,624.3	6.0	32.5	6,113.1	7,701.2	22,477.2
1961	12,142.8	11.3	21.6	8,494.4	13,274.2	33,944.3
1964	15,758.6	20.0	16.0	10,190.8	20,345.9	46,331.4
1966	16,568.1	26.7	9.6	10,711.7	23,278.5	50,594.4
1968	18,474.5	31.0	6.6	11,637.7	25,325.3	55,475.1
1970	18,788.9	36.3	6.1	11,901.7	26,099.1	56,832.1
1972	20,265.9	42.0	6.2	12,611.8	28,286.6	61,212.5
1974	21,403.6	49.5	6.6	13,151.5	32,737.6	67,348.8
1976	21,712.0	54.5	7.9	14,482.3	40,635.4	76,892.1
1978	23,617.2	64.3	27.5	15,522.1	48,243.8	87,475.0
1980	24,593.5	72.8	45.0	15,955.1	46,470.8	87,137.2
1982	26,895.3	98.4	51.9	16,764.6	45,562.7	89,373.0
1984	29,049.6	99.4	57.5	17,732.6	46,265.2	93,204.3
1986	30,694.3	110.5	33.3	18,485.2	49,670.2	98,993.5
1988	32,972.9	126.5	15.9	19,370.9	53,881.2	106,367.5
1990	36,321.5	140.6	-16.8	20,598.1	60,226.0	117,269.3
1992	33,962.1	164.9	-105.4	30,214.9	51,333.0	115,569.4

* From 1906 to 1961, reported depletion is average over five-year period. Depletion reported in 1964 is average over a three year period. From 1966 to 1992, reported depletion is average over a two-year period.

MIDDLE RIO GRANDE CONSERVANCY DISTRICT

TABLE 2. SOURCES OF WATER TO CITY WITHOUT DWP

Year	Water Captured by City Wellfield						Water Source	
	Rio Grande Mainstem (AFY)	MRGCD Drains (AFY)	MRGCD Canals (AFY)	Jemez River (AFY)	ET Salvage (AFY)	Aquifer Storage (AFY)	Wellfield Diversion[1] (AFY)	Release of SJC Water[2] (AFY)
1993	35,523.1	30,286.1	-161.2	189.9	1,178.8	55,885.0	122,898.9	0.0
1994	36,702.0	31,024.5	-227.1	203.5	1,211.7	54,600.0	123,512.3	0.0
1995	37,283.8	31,459.9	-308.7	214.6	1,234.2	54,073.1	123,958.9	0.0
1996	38,193.9	31,885.2	-327.9	223.9	1,256.1	48,324.4	119,552.9	0.0
1997	38,305.6	31,982.1	-327.5	229.5	1,262.7	38,506.3	109,959.5	0.0
1998	38,566.6	32,090.2	-334.5	236.3	1,270.4	41,236.5	113,068.0	0.0
1999	39,034.3	32,315.9	-354.2	243.9	1,282.9	37,468.3	109,994.8	0.0
2000	39,556.2	32,639.7	-367.1	251.0	1,298.4	40,935.9	114,314.5	0.0
2001	40,186.5	33,002.1	-376.1	259.5	1,316.0	36,176.3	110,566.1	0.0
2002	40,639.8	33,284.9	-378.1	266.4	1,331.4	35,188.1	110,335.1	0.0
2003	41,030.3	33,519.5	-377.8	272.7	1,344.9	34,246.0	110,032.1	0.0
2004	41,310.7	33,689.0	-377.5	280.9	1,355.6	32,209.1	108,468.8	1,117.4
2005	41,272.7	33,690.6	-377.2	288.1	1,359.0	26,557.0	102,786.7	2,968.0
2006	41,521.6	33,793.7	-376.8	294.6	1,366.3	28,299.2	104,899.6	2,627.0
2007	42,003.7	34,025.8	-376.5	300.5	1,380.2	31,175.1	108,503.4	829.6
2008	42,340.6	34,202.0	-376.3	309.1	1,392.9	30,212.1	108,078.6	2,968.0
2009	42,777.7	34,400.4	-392.6	316.8	1,407.3	31,682.4	110,191.5	2,627.0
2010	43,112.1	34,562.4	-427.5	321.7	1,420.3	30,525.4	109,510.2	2,968.0
2011	43,540.8	34,750.7	-452.5	327.7	1,434.9	31,839.4	111,437.4	2,806.7
2012	44,040.7	34,970.7	-464.9	335.6	1,451.9	33,198.3	113,531.6	2,482.1
2013	44,537.7	35,190.6	-478.7	341.8	1,469.5	33,737.3	114,796.3	2,968.0
2014	45,071.5	35,419.9	-494.3	350.3	1,488.2	34,721.2	116,558.3	2,968.0
2015	45,636.5	35,658.8	-494.0	358.0	1,507.9	35,650.7	118,320.3	2,968.0
2016	46,205.5	35,896.0	-493.7	364.4	1,528.1	36,573.1	120,082.3	2,968.0
2017	46,779.2	36,130.5	-507.4	373.0	1,548.8	37,519.4	121,844.3	2,968.0
2018	47,378.1	36,374.3	-534.1	380.5	1,570.2	38,438.8	123,606.3	2,968.0
2019	47,991.7	36,626.3	-546.6	387.1	1,592.2	39,319.0	125,368.3	2,968.0
2020	48,670.8	36,903.6	-550.6	394.5	1,615.3	40,096.5	127,130.3	2,968.0
2021	49,389.9	37,186.1	-555.1	401.9	1,639.6	40,821.9	128,882.2	2,968.0
2022	50,127.1	37,475.6	-554.8	410.0	1,665.0	41,515.6	130,634.1	2,968.0
2023	50,872.9	37,771.4	-554.5	418.7	1,691.1	42,196.1	132,386.0	2,968.0
2024	51,780.4	38,125.3	-554.2	425.0	1,721.0	44,840.3	136,326.7	829.6
2025	52,574.5	38,455.0	-553.8	435.3	1,749.9	45,424.4	138,078.6	829.6
2026	53,327.6	38,757.0	-553.5	442.2	1,777.4	46,086.6	139,830.5	829.6
2027	53,880.5	38,976.1	-554.2	452.6	1,799.9	44,850.5	139,393.7	2,968.0
2028	54,523.0	39,207.3	-555.1	461.6	1,822.9	45,700.9	141,145.6	2,968.0
2029	55,204.0	39,461.2	-554.8	470.1	1,847.8	46,475.1	142,897.5	2,968.0
2030	55,917.9	39,732.8	-554.4	477.3	1,873.8	47,206.0	144,649.3	2,968.0
2031	56,624.2	40,000.9	-562.2	486.4	1,899.8	47,936.9	146,381.4	2,968.0
2032	57,357.7	40,267.8	-564.1	494.0	1,926.1	48,632.3	148,113.3	2,968.0
2033	58,096.0	40,531.8	-563.7	503.7	1,952.8	49,328.2	149,845.3	2,968.0
2034	58,871.4	40,797.4	-563.3	515.9	1,980.7	50,331.7	151,926.2	2,627.0
2035	59,780.7	41,095.5	-562.9	525.3	2,012.2	52,663.0	155,498.0	829.6

TABLE 2. SOURCES OF WATER TO CITY WITHOUT DWP

Year	Water Captured by City Wellfield						Water Source	
	Rio Grande Mainstem (AFY)	MRGCD Drains (AFY)	MRGCD Canals (AFY)	Jemez River (AFY)	ET Salvage (AFY)	Aquifer Storage (AFY)	Wellfield Diversion[1] (AFY)	Release of SJC Water[2] (AFY)
2036	60,409.7	41,305.7	-562.6	533.4	2,038.1	51,329.9	155,041.2	2,968.0
2037	61,195.9	41,552.0	-562.1	541.6	2,065.2	52,340.5	157,122.1	2,627.0
2038	61,997.1	41,804.8	-561.7	548.9	2,093.1	52,627.5	158,505.1	2,968.0
2039	62,857.0	42,069.6	-561.3	559.1	2,121.7	53,356.7	160,402.1	2,806.7
2040	63,755.7	42,349.8	-560.9	567.8	2,151.2	54,210.9	162,466.4	2,482.1
2041	64,604.8	42,617.8	-560.6	576.7	2,179.9	54,226.0	163,641.0	2,968.0
2042	65,493.7	42,894.8	-560.1	591.0	2,209.1	54,687.8	165,313.0	2,968.0
2043	66,460.0	43,189.7	-559.6	604.2	2,239.1	55,053.7	166,985.2	2,968.0
2044	67,485.1	43,480.9	-559.2	616.1	2,269.5	55,369.9	168,657.1	2,968.0
2045	68,469.7	43,754.1	-558.8	626.9	2,299.8	55,733.3	170,329.2	2,968.0
2046	69,519.8	44,073.2	-565.3	637.3	2,333.5	56,008.7	172,001.3	2,968.0
2047	70,639.0	44,436.6	-566.6	646.8	2,370.9	56,154.9	173,673.3	2,968.0
2048	71,804.6	44,801.1	-566.2	657.5	2,409.4	56,246.6	175,345.3	2,968.0
2049	72,859.6	45,123.9	-565.7	667.7	2,444.5	56,492.6	177,017.4	2,968.0
2050	73,905.8	45,443.5	-565.3	681.2	2,478.0	56,749.6	178,689.4	2,968.0
2051	74,936.3	45,727.7	-564.8	691.7	2,510.3	57,028.2	180,321.5	2,968.0
2052	75,924.8	45,965.7	-564.2	703.5	2,540.7	57,376.3	181,953.5	2,968.0
2053	77,088.8	46,215.8	-563.7	718.6	2,572.9	57,561.5	183,585.5	2,968.0
2054	78,312.3	46,481.3	-566.0	733.0	2,606.4	57,663.2	185,217.6	2,968.0
2055	79,583.9	46,783.3	-565.4	746.5	2,641.3	57,663.3	186,849.7	2,968.0
2056	80,776.6	47,080.4	-564.9	761.4	2,675.2	57,754.7	188,481.7	2,968.0
2057	81,952.0	47,367.9	-564.3	776.4	2,707.6	57,875.5	190,113.9	2,968.0
2058	83,163.6	47,627.2	-563.7	790.2	2,738.7	57,996.3	191,745.8	2,968.0
2059	84,390.1	47,904.2	-563.2	804.2	2,769.6	58,078.3	193,377.9	2,968.0
2060	85,620.2	48,192.7	-562.6	819.9	2,800.8	58,141.5	195,010.0	2,968.0

[1] Wellfield diversion is as specified in model files provided by CH2MHILL (data CD provided to BGW from Law & Resource Planning Associates, July 16, 2002).

[2] Release of SJC water is as reported by CH2MHILL, 2002, Hydrologic Effects of the Proposed City of Albuquerque Drinking Water Project on the Rio Grande and Rio Chama Systems: City of Albuquerque Public Works Department Water Resources Strategy Implementation, Final Report dated May 2002.

MIDDLE RIO GRANDE CONSERVANCY DISTRICT

TABLE 3. SOURCES OF WATER TO CITY WITH DWP

Year	Water Captured by City Wellfield						Water Source	
	Rio Grande Mainstem (AFY)	MRGCD Drains (AFY)	MRGCD Canals (AFY)	Jemez River (AFY)	ET Salvage (AFY)	Aquifer Storage (AFY)	Wellfield Diversion[1] (AFY)	Release of SJC Water[2] (AFY)
1993	35,523.1	30,286.0	-161.2	189.9	1,178.8	55,885.0	122,898.9	0.0
1994	36,702.0	31,024.5	-227.1	203.5	1,211.7	54,600.0	123,512.3	0.0
1995	37,283.8	31,459.9	-308.7	214.6	1,234.2	54,073.1	123,958.9	0.0
1996	38,193.9	31,885.2	-327.9	223.9	1,256.1	48,324.4	119,552.9	0.0
1997	38,305.6	31,982.0	-327.5	229.5	1,262.7	38,506.3	109,959.5	0.0
1998	38,566.6	32,090.2	-334.5	236.3	1,270.4	41,236.5	113,068.0	0.0
1999	39,034.4	32,315.9	-354.2	243.9	1,282.9	37,468.3	109,994.8	0.0
2000	39,556.2	32,639.6	-367.0	251.0	1,298.4	40,935.9	114,314.5	0.0
2001	40,186.5	33,002.1	-376.1	259.5	1,316.0	36,176.3	110,566.1	0.0
2002	40,639.8	33,284.9	-378.1	266.4	1,331.4	35,188.1	110,335.1	0.0
2003	41,030.3	33,519.5	-377.8	272.7	1,344.9	34,246.0	110,032.1	0.0
2004	41,310.7	33,689.0	-377.5	280.9	1,355.6	32,209.1	108,468.8	1,117.4
2005	41,272.7	33,690.6	-377.2	288.1	1,359.0	26,557.0	102,786.7	2,968.0
2006	32,419.8	33,470.1	-336.7	287.3	1,484.0	-45,995.5	21,328.7	66,635.3
2007	32,223.3	32,566.3	-332.4	283.4	1,456.9	-20,464.2	45,727.7	42,340.9
2008	29,453.3	31,008.5	-331.5	282.1	1,399.4	-47,896.9	13,915.0	69,350.6
2009	28,051.4	29,912.5	-331.1	280.8	1,357.5	-35,395.3	23,874.9	58,234.4
2010	26,141.2	28,727.2	-330.9	277.6	1,311.9	-40,774.7	15,346.7	64,167.7
2011	25,083.0	27,911.0	-330.8	276.2	1,280.1	-29,093.4	25,120.7	53,660.8
2012	25,095.5	27,763.1	-330.6	276.5	1,274.6	-13,063.9	41,010.3	41,482.1
2013	23,575.3	26,916.8	-330.4	277.1	1,244.6	-24,915.3	26,763.4	50,973.5
2014	21,808.6	25,714.5	-330.4	275.2	1,200.3	-26,271.4	22,394.7	52,989.4
2015	20,373.4	24,606.5	-330.5	272.6	1,158.5	-21,927.9	24,156.7	49,968.0
2016	19,316.5	23,731.6	-330.5	269.6	1,123.9	-17,893.2	26,221.3	51,276.7
2017	18,568.7	23,079.8	-330.7	268.1	1,096.5	-14,995.0	27,680.7	49,968.0
2018	18,112.4	22,644.2	-330.7	267.0	1,078.9	-12,323.6	29,442.7	49,968.0
2019	17,886.4	22,380.5	-330.7	267.3	1,069.4	-10,060.0	31,204.7	49,968.0
2020	17,836.6	22,242.0	-330.6	266.7	1,065.9	-8,102.5	32,966.8	49,968.0
2021	17,901.3	22,197.6	-330.7	266.6	1,066.6	-6,377.6	34,718.6	49,968.0
2022	18,061.2	22,224.8	-330.7	269.5	1,070.7	-4,819.8	36,470.6	49,968.0
2023	18,286.1	22,304.7	-330.7	270.4	1,077.1	-3,381.6	38,222.5	49,968.0
2024	21,622.1	24,150.6	-330.5	276.4	1,151.4	26,686.8	73,551.0	31,829.6
2025	23,741.6	25,677.6	-330.2	284.8	1,214.5	24,718.5	75,302.9	31,829.6
2026	25,090.2	26,560.9	-330.0	290.6	1,253.1	24,188.5	77,054.8	31,829.6
2027	23,749.1	25,954.0	-329.8	294.5	1,233.8	-5,670.8	45,230.1	49,968.0
2028	23,153.0	25,409.5	-329.7	295.7	1,214.5	-2,752.8	46,982.0	49,968.0
2029	22,973.5	25,192.4	-329.8	295.2	1,207.6	-602.8	48,733.9	49,968.0
2030	22,951.7	25,105.6	-329.7	295.8	1,205.8	1,253.7	50,485.7	49,968.0
2031	23,034.8	25,100.2	-329.6	296.8	1,207.2	2,906.2	52,217.8	49,968.0
2032	23,229.0	25,166.5	-329.6	299.9	1,211.4	4,369.5	53,949.7	49,968.0
2033	23,484.9	25,270.0	-329.5	302.8	1,217.1	5,734.2	55,681.7	49,968.0
2034	24,582.9	25,812.4	-329.3	308.1	1,240.2	16,745.2	68,355.3	45,627.0
2035	26,952.7	27,069.5	-329.2	316.5	1,294.6	37,422.9	92,722.3	31,829.6

MIDDLE RIO GRANDE CONSERVANCY DISTRICT

TABLE 3. SOURCES OF WATER TO CITY WITH DWP

Year	Water Captured by City Wellfield						Water Source	
	Rio Grande Mainstem (AFY)	MRGCD Drains (AFY)	MRGCD Canals (AFY)	Jemez River (AFY)	ET Salvage (AFY)	Aquifer Storage (AFY)	Wellfield Diversion[1] (AFY)	Release of SJC Water[2] (AFY)
2036	26,244.4	26,919.1	-328.9	319.9	1,294.1	6,436.6	60,877.6	49,968.0
2037	26,662.2	26,976.6	-328.7	320.5	1,299.2	15,879.4	70,805.5	45,627.0
2038	26,638.0	26,956.5	-328.6	322.5	1,301.5	9,454.6	64,341.5	49,968.0
2039	27,354.2	27,236.9	-328.5	326.1	1,316.1	18,184.1	74,085.5	45,806.7
2040	28,891.7	27,998.0	-328.3	331.8	1,352.1	31,695.0	89,945.1	41,482.1
2041	28,925.8	28,116.6	-328.1	336.5	1,363.1	17,189.5	75,608.2	49,968.0
2042	28,804.4	28,001.6	-328.0	338.8	1,362.2	12,960.3	71,149.5	49,968.0
2043	29,019.7	28,020.1	-327.9	342.9	1,366.8	14,391.6	72,821.6	49,968.0
2044	29,405.5	28,137.7	-327.7	350.3	1,376.5	15,852.8	74,796.2	49,968.0
2045	29,764.2	28,269.4	-327.6	354.0	1,387.4	16,710.6	76,165.6	49,968.0
2046	30,132.8	28,404.6	-327.5	355.8	1,399.1	17,876.9	77,837.7	49,968.0
2047	30,539.9	28,553.9	-327.2	356.9	1,412.0	18,974.3	79,509.7	49,968.0
2048	30,970.0	28,710.2	-327.1	361.3	1,425.7	20,036.4	81,181.7	49,968.0
2049	31,420.6	28,864.0	-326.9	364.4	1,440.4	21,091.1	82,853.8	49,968.0
2050	31,901.8	29,035.7	-326.7	369.2	1,456.6	22,095.5	84,525.8	49,745.8
2051	32,392.1	29,234.4	-326.5	373.2	1,474.3	23,007.7	86,157.9	49,325.1
2052	32,987.3	29,440.3	-326.2	377.6	1,493.2	26,121.3	90,095.7	49,003.0
2053	33,406.7	29,576.2	-326.1	382.0	1,509.1	24,874.0	89,422.0	48,378.8
2054	33,894.7	29,728.0	-337.4	387.0	1,525.7	25,861.2	91,054.1	47,748.9
2055	34,411.0	29,893.3	-349.9	392.3	1,543.4	26,797.5	92,686.1	47,004.9
2056	34,961.3	30,078.4	-360.8	396.2	1,562.8	27,687.0	94,318.2	46,389.1
2057	35,519.3	30,266.2	-416.0	401.5	1,582.8	28,595.1	95,950.3	45,818.4
2058	36,103.1	30,442.7	-439.1	406.2	1,602.5	29,473.3	97,582.3	45,213.8
2059	36,699.6	30,626.2	-453.2	412.2	1,622.9	30,306.4	99,214.3	44,553.4
2060	37,308.5	30,815.1	-468.9	418.1	1,643.2	31,125.9	100,846.5	43,880.6

[1] Wellfield diversion is as specified in model files provided by CH2MHILL (data CD provided to BGW from Law & Resource Planning Associates, July 16, 2002).

[2] Release of SJC water is as reported by CH2MHILL, 2002, Hydrologic Effects of the Proposed City of Albuquerque Drinking Water Project on the Rio Grande and Rio Chama Systems: City of Albuquerque Public Works Department Water Resources Strategy Implementation, Final Report dated May 2002.

MIDDLE RIO GRANDE CONSERVANCY DISTRICT

TABLE 4. IMPACT FROM RIO GRANDE STAGE REDUCTION BY CITY DWP

Year	Rio Grande Mainstem & Jemez River (AFY)	MRGCD Drains & Canals (AFY)	Bosque ET (AFY)	Aquifer Storage (AFY)
1993	0.0	0.0	0.0	0.0
1994	0.0	0.0	0.0	0.0
1995	0.0	0.0	0.0	0.0
1996	0.0	0.0	0.0	0.0
1997	0.0	0.0	0.0	0.0
1998	0.0	0.0	0.0	0.0
1999	0.0	0.0	0.0	0.0
2000	0.0	0.0	0.0	0.0
2001	0.0	0.0	0.0	0.0
2002	0.0	0.0	0.0	0.0
2003	0.0	0.0	0.0	0.0
2004	0.0	0.0	0.0	0.0
2005	0.0	0.0	0.0	0.0
2006	3,940.5	-2,182.7	-222.3	-1,534.7
2007	3,041.9	-2,413.9	-243.7	-387.7
2008	2,977.9	-2,463.7	-248.5	-261.5
2009	2,944.8	-2,484.0	-250.7	-207.7
2010	2,921.1	-2,496.8	-251.9	-174.8
2011	2,899.5	-2,503.0	-252.6	-145.8
2012	2,888.5	-2,505.6	-253.1	-133.8
2013	2,879.2	-2,510.7	-253.4	-115.5
2014	2,877.0	-2,518.3	-253.8	-107.7
2015	2,868.9	-2,524.4	-254.2	-94.6
2016	2,866.1	-2,528.1	-254.5	-89.1
2017	2,852.6	-2,525.4	-254.6	-80.9
2018	2,850.2	-2,523.0	-254.6	-78.1
2019	2,852.0	-2,523.2	-254.7	-77.8
2020	2,846.6	-2,523.9	-254.8	-77.4
2021	2,854.8	2,525.5	-254.9	-78.4
2022	2,861.6	-2,529.0	-255.1	76.8
2023	2,864.6	-2,532.2	-255.2	-73.1
2024	2,862.0	2,528.1	-255.1	-79.2
2025	2,865.6	-2,527.1	-255.2	-85.1
2026	2,874.5	-2,530.7	-255.5	-84.5
2027	2,870.6	-2,533.9	-255.6	-78.8
2028	2,866.6	-2,535.2	-255.6	-71.9
2029	2,864.5	-2,534.6	-255.6	-67.1
2030	2,860.7	-2,535.3	-255.7	-63.8
2031	2,864.8	2,536.8	-255.8	-62.8
2032	2,866.0	-2,539.1	-255.8	-64.7
2033	2,862.8	-2,538.4	-255.9	-64.1
2034	2,860.3	-2,536.9	-256.0	-69.0
2035	2,867.6	-2,535.1	-256.1	-66.3

MIDDLE RIO GRANDE CONSERVANCY DISTRICT

TABLE 4. IMPACT FROM RIO GRANDE STAGE REDUCTION BY CITY DWP[1]

Year	Rio Grande Mainstem & Jemez River (AFY)	MRGCD Drains & Canals (AFY)	Bosque ET (AFY)	Aquifer Storage (AFY)
2036	2,866.4	-2,536.2	-256.2	- 66.1
2037	2,864.1	-2,537.3	-256.2	- 62.0
2038	2,861.7	-2,538.5	-256.3	- 59.7
2039	2,853.8	-2,535.9	-256.4	- 63.3
2040	2,854.5	-2,532.9	-256.5	- 62.1
2041	2,853.4	-2,530.5	-256.6	- 62.5
2042	2,852.9	-2,530.0	-256.7	- 59.6
2043	2,853.0	-2,529.1	-256.7	- 63.7
2044	2,851.3	-2,528.5	-256.9	- 61.9
2045	2,849.4	-2,528.6	-257.0	- 56.6
2046	2,848.3	-2,529.2	-257.1	- 60.0
2047	2,851.8	-2,528.9	-257.2	- 59.6
2048	2,849.1	-2,527.5	-257.3	- 58.8
2049	2,845.7	-2,527.1	-257.5	- 60.5
2050	2,849.2	-2,530.8	-257.8	- 63.5
2051	2,854.6	-2,534.9	-258.1	- 60.3
2052	2,857.5	-2,537.1	-258.3	- 61.2
2053	2,857.0	-2,535.5	-258.5	- 60.1
2054	2,855.6	-2,533.9	-258.6	- 55.9
2055	2,849.9	-2,531.5	-258.6	- 60.7
2056	2,848.1	-2,531.7	-258.7	- 61.0
2057	2,850.4	-2,528.5	-258.8	- 57.5
2058	2,848.1	-2,527.9	-258.9	- 61.3
2059	2,847.3	-2,528.8	-259.0	- 55.5
2060	2,841.3	-2,528.1	-259.1	- 58.1

[1] A stage reduction of 0.1 feet is simulated in the Rio Grande at model cells downstream of Paseo del Norte bridge. Positive numbers indicate flow gain. Negative numbers indicate flow loss.

MIDDLE RIO GRANDE CONSERVANCY DISTRICT

TABLE 5. TREND OF EFFECT AT SAN ACACIA FROM FUTURE CITY DWP

Year	Surface Water Flow Increase				Surface Water Flow Reduction	Net Effect with Additional Release of SJC Water[3]	
	From Well Field Reduction[1] (AFY)	From Scheduled SJC Release[2] (AFY)	From Elective Additional SJC Release[2] (AFY)	Total Gain (AFY)	Scheduled Direct Diversion[2] (AFY)	BGW Calculation (AFY)	Derived from CH2MHill Appendix E (AFY)
1993	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2003	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	9,392.6	43,000.0	21,008.3	73,400.9	84,000.0	-10,599.1	- 9,985.6
2007	11,213.0	31,000.0	10,511.3	52,724.3	63,000.0	-10,275.7	-10,148.5
2008	16,062.9	47,000.0	19,382.6	82,445.5	94,000.0	-11,554.5	-10,587.2
2009	19,188.7	43,000.0	12,607.4	74,796.1	86,000.0	-11,203.9	-10,877.6
2010	22,753.5	47,000.0	14,199.7	83,953.3	94,000.0	-10,046.7	- 9,301.0
2011	25,227.4	43,000.0	7,854.1	76,081.5	86,000.0	- 9,918.5	- 9,596.9
2012	26,077.6	39,000.0	0.0	65,077.6	72,000.0	- 6,922.4	- 7,127.0
2013	29,152.6	47,000.0	1,005.5	77,158.0	88,000.0	-10,842.0	-10,027.2
2014	32,879.6	47,000.0	3,021.4	82,901.0	94,000.0	-11,099.0	-10,180.2
2015	36,237.4	47,000.0	0.0	83,237.4	94,000.0	-10,762.6	- 9,955.9
2016	38,985.1	47,000.0	1,308.7	87,293.8	94,000.0	- 6,706.2	- 5,978.2
2017	41,189.4	47,000.0	0.0	88,189.4	94,000.0	- 5,810.6	- 5,452.3
2018	42,905.9	47,000.0	0.0	89,905.9	94,000.0	- 4,094.1	- 3,914.3
2019	44,255.0	47,000.0	0.0	91,255.0	94,000.0	- 2,745.0	- 2,692.6
2020	45,403.6	47,000.0	0.0	92,403.6	94,000.0	- 1,596.4	- 1,626.7
2021	46,387.9	47,000.0	0.0	93,387.9	94,000.0	- 612.1	- 713.0
2022	47,233.1	47,000.0	0.0	94,233.1	94,000.0	233.1	92.0
2023	47,977.9	47,000.0	0.0	94,977.9	94,000.0	977.9	787.0
2024	44,057.8	31,000.0	0.0	75,057.8	63,000.0	12,057.8	10,682.9
2025	41,537.3	31,000.0	0.0	72,537.3	63,000.0	9,537.3	8,821.0
2026	40,361.7	31,000.0	0.0	71,361.7	63,000.0	8,361.7	7,862.7
2027	43,087.3	47,000.0	0.0	90,087.3	94,000.0	- 3,912.7	- 3,496.4
2028	45,108.2	47,000.0	0.0	92,108.2	94,000.0	- 1,891.8	- 1,845.9
2029	46,449.0	47,000.0	0.0	93,449.0	94,000.0	- 551.0	- 580.8
2030	47,550.3	47,000.0	0.0	94,550.3	94,000.0	550.3	451.8
2031	48,447.0	47,000.0	0.0	95,447.0	94,000.0	1,447.0	1,275.2

TABLE 5. TREND OF EFFECT AT SAN ACACIA FROM FUTURE CITY DWP

Year	Surface Water Flow Increase				Surface Water Flow Reduction	Net Effect with Additional Release of SJC Water[3]	
	From Well Field Reduction[1] (AFY)	From Scheduled SJC Release[2] (AFY)	From Elective Additional SJC Release[2] (AFY)	Total Gain (AFY)	Scheduled Direct Diversion[2] (AFY)	BGW Calculation (AFY)	Derived from CH2MHill Appendix E (AFY)
2032	49,189.7	47,000.0	0.0	96,189.7	94,000.0	2,189.7	1,992.9
2033	49,839.5	47,000.0	0.0	96,839.5	94,000.0	2,839.5	2,618.6
2034	49,247.3	43,000.0	0.0	92,247.3	84,000.0	8,247.3	7,982.7
2035	46,829.1	31,000.0	0.0	77,829.1	63,000.0	14,829.1	13,981.9
2036	48,531.6	47,000.0	0.0	95,531.6	94,000.0	1,531.6	1,708.9
2037	49,096.7	43,000.0	0.0	92,096.7	86,000.0	6,096.7	5,664.1
2038	50,200.7	47,000.0	0.0	97,200.7	94,000.0	3,200.7	3,132.4
2039	50,335.7	43,000.0	0.0	93,335.7	86,000.0	7,335.7	6,865.9
2040	49,219.2	39,000.0	0.0	88,219.2	72,000.0	16,219.2	15,335.0
2041	50,188.0	47,000.0	0.0	97,188.0	88,000.0	9,188.0	9,180.3
2042	51,602.6	47,000.0	0.0	98,602.6	94,000.0	4,602.6	4,541.5
2043	52,639.5	47,000.0	0.0	99,639.5	94,000.0	5,639.5	5,512.5
2044	53,457.1	47,000.0	0.0	100,457.1	94,000.0	6,457.1	6,440.4
2045	54,231.9	47,000.0	0.0	101,231.9	94,000.0	7,231.9	7,050.1
2046	55,099.3	47,000.0	0.0	102,099.3	94,000.0	8,099.3	7,952.3
2047	56,032.3	47,000.0	0.0	103,032.3	94,000.0	9,032.3	8,877.9
2048	56,982.7	47,000.0	0.0	103,982.7	94,000.0	9,982.7	9,829.9
2049	57,763.4	47,000.0	0.0	104,763.4	94,000.0	10,763.4	10,598.5
2050	58,485.4	47,000.0	- 222.2	105,263.2	94,000.0	11,263.2	11,040.3
2051	59,117.8	47,000.0	- 642.9	105,474.9	94,000.0	11,474.9	11,243.7
2052	59,550.8	47,000.0	- 965.0	105,585.9	92,000.0	13,585.9	13,448.2
2053	60,420.8	47,000.0	- 1,589.2	105,831.6	94,000.0	11,831.6	11,654.8
2054	61,288.2	47,000.0	- 2,219.1	106,069.1	94,000.0	12,069.1	11,884.3
2055	62,201.5	47,000.0	- 2,963.1	106,238.4	94,000.0	12,238.4	12,066.7
2056	62,978.4	47,000.0	- 3,578.9	106,399.5	94,000.0	12,399.5	12,203.2
2057	63,761.1	47,000.0	- 4,149.6	106,611.5	94,000.0	12,611.5	12,391.8
2058	64,504.3	47,000.0	- 4,754.2	106,750.1	94,000.0	12,750.1	12,520.4
2059	65,250.4	47,000.0	- 5,414.6	106,835.9	94,000.0	12,835.9	12,640.3
2060	65,997.4	47,000.0	- 6,087.4	106,910.0	94,000.0	12,910.0	12,708.3

[1] The contribution to surface water is calculated with the OSE model as reported by Barroll, Peggy, 1999, Documentation of the Administrative Groundwater Model for the Middle Rio Grande Basin, Office of the State Engineer Technical Division, Hydrology Bureau Report 99-3, Dated April 1999.

[2] Schedules for release of SJC water and diversion for City use are calculated as the difference between Tables E1 and E2 in Appendix E of CH2MHILL, 2002, Hydrologic Effects of the Proposed City of Albuquerque Drinking Water Project on the Rio Grande and Rio Chama Systems: City of Albuquerque Public Works Department Water Resources Strategy Implementation, Final Report dated May 2002.

[3] The BGW calculation of net effect to surface water is arrived at from total gain less the City's scheduled direct diversion. The comparable amount derived from CH2MHILL's Appendix E is arrived at from the difference between the "Net Effect" columns (Column 17) reported in Tables E1 and E2 of Appendix E in the May 2002 report (as Footnote 2).

MIDDLE RIO GRANDE CONSERVANCY DISTRICT

TABLE 6. NET SURFACE WATER IMPACT FROM SCHEDULED DWP

Year	Gain or Loss Without Elective Additional SJC (AFY)	Cumulative Gain or Loss Without Elective Additional SJC (AFY)	Scheduled Elective Additional SJC Release (AFY)	Gain or Loss With Elective Additional SJC (AFY)	Cumulative Total of Surface Gains or Losses Including Elective Additional SJC (AFY)
2000	0.0	0.0	0.0	0.0	0.0
2001	0.0	0.0	0.0	0.0	0.0
2002	0.0	0.0	0.0	0.0	0.0
2003	0.0	0.0	0.0	0.0	0.0
2004	0.0	0.0	0.0	0.0	0.0
2005	0.0	0.0	0.0	0.0	0.0
2006	-31,607.4	-31,607.4	21,008.3	-10,599.1	-10,599.1
2007	-20,787.0	-52,394.5	10,511.3	-10,275.7	-20,874.8
2008	-30,937.1	-83,331.6	19,382.6	-11,554.5	-32,429.3
2009	-23,811.3	-107,142.9	12,607.4	-11,203.9	-43,633.3
2010	-24,246.5	-131,389.4	14,199.7	-10,046.7	-53,680.0
2011	-17,772.6	-149,162.0	7,854.1	-9,918.5	-63,598.5
2012	-6,922.4	-156,084.4	0.0	-6,922.4	-70,520.9
2013	-11,847.4	-167,931.8	1,005.5	-10,842.0	-81,362.8
2014	-14,120.4	-182,052.2	3,021.4	-11,099.0	-92,461.9
2015	-10,762.6	-192,814.8	0.0	-10,762.6	-103,224.5
2016	-8,014.9	-200,829.7	1,308.7	-6,706.2	-109,930.7
2017	-5,810.6	-206,640.3	0.0	-5,810.6	-115,741.3
2018	-4,094.1	-210,734.4	0.0	-4,094.1	-119,835.4
2019	-2,745.0	-213,479.4	0.0	-2,745.0	-122,580.4
2020	-1,596.4	-215,075.9	0.0	-1,596.4	-124,176.8
2021	-612.1	-215,687.9	0.0	-612.1	-124,788.9
2022	233.1	-215,454.8	0.0	233.1	-124,555.8
2023	977.9	-214,476.9	0.0	977.9	-123,577.8
2024	12,057.8	-202,419.0	0.0	12,057.8	-111,520.0
2025	9,537.3	-192,881.7	0.0	9,537.3	-101,982.7
2026	8,361.7	-184,520.1	0.0	8,361.7	-93,621.0
2027	-3,912.7	-188,432.8	0.0	-3,912.7	-97,533.7
2028	-1,891.8	-190,324.6	0.0	-1,891.8	-99,425.5
2029	-551.0	-190,875.5	0.0	-551.0	-99,976.5
2030	550.3	-190,325.2	0.0	550.3	-99,426.2
2031	1,447.0	-188,878.3	0.0	1,447.0	-97,979.2
2032	2,189.7	-186,688.6	0.0	2,189.7	-95,789.5
2033	2,839.5	-183,849.1	0.0	2,839.5	-92,950.0
2034	8,247.3	-175,601.8	0.0	8,247.3	-84,702.7
2035	14,829.1	-160,772.7	0.0	14,829.1	-69,873.7
2036	1,531.6	-159,241.1	0.0	1,531.6	-68,342.0
2037	6,096.7	-153,144.4	0.0	6,096.7	-62,245.3
2038	3,200.7	-149,943.7	0.0	3,200.7	-59,044.6
2039	7,335.7	-142,608.0	0.0	7,335.7	-51,708.9
2040	16,219.2	-126,388.7	0.0	16,219.2	-35,489.7

MIDDLE RIO GRANDE CONSERVANCY DISTRICT

TABLE 6. NET SURFACE WATER IMPACT FROM SCHEDULED DWP

Year	Gain or Loss Without Elective Additional SJC (AFY)	Cumulative Gain or Loss Without Elective Additional SJC (AFY)	Scheduled Elective Additional SJC Release (AFY)	Gain or Loss With Elective Additional SJC (AFY)	Cumulative Total of Surface Gains or Losses Including Elective Additional SJC (AFY)
2041	9,188.0	-117,200.7	0.0	9,188.0	-26,301.7
2042	4,602.6	-112,598.1	0.0	4,602.6	-21,699.1
2043	5,639.5	-106,958.6	0.0	5,639.5	-16,059.6
2044	6,457.1	-100,501.5	0.0	6,457.1	-9,602.5
2045	7,231.9	-93,269.7	0.0	7,231.9	-2,370.6
2046	8,099.3	-85,170.3	0.0	8,099.3	5,728.7
2047	9,032.3	-76,138.1	0.0	9,032.3	14,761.0
2048	9,982.7	-66,155.4	0.0	9,982.7	24,743.6
2049	10,763.4	-55,392.0	0.0	10,763.4	35,507.0
2050	11,485.4	-43,906.6	-222.2	11,263.2	46,770.2
2051	12,117.8	-31,788.9	-642.9	11,474.9	58,245.0
2052	14,550.8	-17,238.0	-965.0	13,585.9	71,830.9
2053	13,420.8	-3,817.2	-1,589.2	11,831.6	83,662.5
2054	14,288.2	10,471.0	-2,219.1	12,069.1	95,731.6
2055	15,201.5	25,672.5	-2,963.1	12,238.4	107,970.0
2056	15,978.4	41,650.9	-3,578.9	12,399.5	120,369.4
2057	16,761.1	58,412.0	-4,149.6	12,611.5	132,980.9
2058	17,504.3	75,916.3	-4,754.2	12,750.1	145,731.0
2059	18,250.4	94,166.8	-5,414.6	12,835.9	158,566.9
2060	18,997.4	113,164.2	-6,087.4	12,910.0	171,476.9

MIDDLE RIO GRANDE CONSERVANCY DISTRICT

TABLE 7. DOWNSTREAM EFFECT AT YEAR 2010 FROM FUTURE CITY DWP

Model Miles Downstream from Cochiti Lake		Surface Water Flow Increase: From Well Field Reduction (AF)[1]	Surface Water Flow Increase: From Scheduled SJC Release (AF)[2]	Surface Water Flow Increase: From Elective Additional SJC Release (AF)[2]	Surface Water Flow Increase: Total Gain (AF)	Surface Water Flow Reduction: Scheduled Direct Diversion (AF)[2]	Net Effect: without Additional SJC (AF)	Net Effect: with Additional SJC (AF)
0.0		0.0	47,000.0	14,199.7	61,199.8	0.0	47,000.0	61,199.8
3.1		0.1	47,000.0	14,199.7	61,199.9	0.0	47,000.1	61,199.9
6.2		0.2	47,000.0	14,199.7	61,200.0	0.0	47,000.2	61,200.0
9.3		2.5	47,000.0	14,199.7	61,202.2	0.0	47,002.5	61,202.2
12.3		3.2	47,000.0	14,199.7	61,202.9	0.0	47,003.2	61,202.9
15.1		4.9	47,000.0	14,199.7	61,204.6	0.0	47,004.9	61,204.6
17.8		10.9	47,000.0	14,199.7	61,[illegible]10.7	0.0	47,010.9	61,210.7
20.1	Angostura Diversion	22.0	47,000.0	14,199.7	61,221.8	0.0	47,022.0	61,221.8
21.7		76.4	47,000.0	14,199.7	61,276.1	0.0	47,076.4	61,276.1
22.8		97.1	47,000.0	14,199.7	61,296.8	0.0	47,097.1	61,296.8
23.6		115.1	47,000.0	14,199.7	61,314.9	0.0	47,115.1	61,314.9
24.2		135.5	47,000.0	14,199.7	61,335.3	0.0	47,135.5	61,335.3
24.9		157.5	47,000.0	14,199.7	61,357.3	0.0	47,157.5	61,357.3
25.5		184.8	47,000.0	14,199.7	61,384.5	0.0	47,184.8	61,384.5
26.1		209.7	47,000.0	14,199.7	61,409.4	0.0	47,209.7	61,409.4
26.7		250.3	47,000.0	14,199.7	61,450.0	0.0	47,250.3	61,450.0
27.3		307.8	47,000.0	14,199.7	61,507.5	0.0	47,307.8	61,507.5
28.0		388.5	47,000.0	14,199.7	61,588.2	0.0	47,388.5	61,588.2
28.6		501.0	47,000.0	14,199.7	61,700.7	0.0	47,501.0	61,700.7
29.2		613.0	47,000.0	14,199.7	61,812.7	0.0	47,613.0	61,812.7
29.8		712.3	47,000.0	14,199.7	61,912.0	0.0	47,712.3	61,912.0
30.4		866.6	47,000.0	14,199.7	62,066.3	0.0	47,866.6	62,066.3
31.1		1,121.1	47,000.0	14,199.7	62,320.8	0.0	48,121.1	62,320.8
31.7		1,461.5	47,000.0	14,199.7	62,661.3	0.0	48,461.5	62,661.3
32.3		1,825.9	47,000.0	14,199.7	63,025.6	0.0	48,825.9	63,025.6
32.9		2,309.0	47,000.0	14,199.7	63,508.8	0.0	49,309.0	63,508.8
33.5		2,764.5	47,000.0	14,199.7	63,964.2	0.0	49,764.5	63,964.2
33.9		3,135.2	47,000.0	14,199.7	64,335.0	0.0	50,135.2	64,335.0
34.4		3,574.5	47,000.0	14,199.7	64,774.2	0.0	50,574.5	64,774.2
34.9		3,992.1	47,000.0	14,199.7	65,191.8	0.0	50,992.1	65,191.8
35.3		4,389.7	47,000.0	14,199.7	65,589.4	0.0	51,389.7	65,589.4
35.8		4,690.6	47,000.0	14,199.7	65,890.4	0.0	51,690.6	65,890.4
36.3	Paseo del Norte	4,975.8	47,000.0	14,199.7	66,175.5	0.0	51,975.8	66,175.5
36.7		5,322.7	47,000.0	14,199.7	66,522.5	94,000.0	-41,677.3	-27,477.5
37.2		5,640.3	47,000.0	14,199.7	66,840.0	94,000.0	-41,359.7	-27,160.0
37.7		6,201.7	47,000.0	14,199.7	67,401.4	94,000.0	-40,798.3	-26,598.6
38.1		6,616.1	47,000.0	14,199.7	67,815.8	94,000.0	-40,383.9	-26,184.2
38.6		7,014.9	47,000.0	14,199.7	68,214.6	94,000.0	-39,985.1	-25,785.4
39.1		7,494.5	47,000.0	14,199.7	68,694.3	94,000.0	-39,505.5	-25,305.7
39.5		8,265.1	47,000.0	14,199.7	69,464.8	94,000.0	-38,734.9	-24,535.2
40.0		8,785.7	47,000.0	14,199.7	69,985.4	94,000.0	-38,214.3	-24,014.6

TABLE 7. DOWNSTREAM EFFECT AT YEAR 2010 FROM FUTURE CITY DWP

Model Miles Downstream from Cochiti Lake	Surface Water Flow Increase				Surface Water Flow Reduction	Net Effect	
	From Well Field Reduction (AF)[1]	From Scheduled SJC Release (AF)[2]	From Elective Additional SJC Release (AF)[2]	Total Gain (AF)	Scheduled Direct Diversion (AF)[2]	without Additional SJC (AF)	with Additional SJC (AF)
40.5	9,273.8	47,000.0	14,199.7	70,473.6	94,000.0	-37,726.2	-23,526.4
40.9	9,785.5	47,000.0	14,199.7	70,985.3	94,000.0	-37,214.5	-23,014.7
41.4	10,375.1	47,000.0	14,199.7	71,574.9	94,000.0	-36,624.9	-22,425.1
41.9	11,092.9	47,000.0	14,199.7	72,292.7	94,000.0	-35,907.1	-21,707.3
42.3	11,811.6	47,000.0	14,199.7	73,011.3	94,000.0	-35,188.4	-20,938.7
42.8	12,709.5	47,000.0	14,199.7	73,909.2	94,000.0	-34,290.5	-20,090.8
43.3	13,824.4	47,000.0	14,199.7	75,024.1	94,000.0	-33,175.6	-18,975.9
43.7	15,090.1	47,000.0	14,199.7	76,289.8	94,000.0	-31,909.9	-17,710.2
44.2	16,018.7	47,000.0	14,199.7	77,218.5	94,000.0	-30,981.3	-16,781.5
44.7	16,859.6	47,000.0	14,199.7	78,059.3	94,000.0	-30,140.4	-15,940.7
45.1	17,596.7	47,000.0	14,199.7	78,796.5	94,000.0	-29,403.3	-15,203.5
45.6	18,197.6	47,000.0	14,199.7	79,397.3	94,000.0	-28,802.4	-14,602.7
46.1	18,632.9	47,000.0	14,199.7	79,832.6	94,000.0	-28,367.1	-14,167.4
46.5	19,089.1	47,000.0	14,199.7	80,288.9	94,000.0	-27,910.9	-13,711.1
47.0	19,462.0	47,000.0	14,199.7	80,661.7	94,000.0	-27,538.0	-13,338.3
47.5	19,928.1	47,000.0	14,199.7	81,127.8	94,000.0	-27,071.9	-12,872.2
47.9	20,212.2	47,000.0	14,199.7	81,411.9	94,000.0	-26,787.8	-12,588.1
48.4	20,497.0	47,000.0	14,199.7	81,696.7	94,000.0	-26,503.0	-12,303.3
48.9	20,716.9	47,000.0	14,199.7	81,916.7	94,000.0	-26,283.1	-12,083.3
49.3	20,917.8	47,000.0	14,199.7	82,117.5	94,000.0	-26,082.2	-11,882.5
49.8	21,101.2	47,000.0	14,199.7	82,301.0	94,000.0	-25,898.8	-11,699.0
50.3	21,330.9	47,000.0	14,199.7	82,530.6	94,000.0	-25,669.1	-11,469.4
51.0	21,506.1	47,000.0	14,199.7	82,705.8	94,000.0	-25,493.9	-11,294.2
51.6	21,662.5	47,000.0	14,199.7	82,862.2	94,000.0	-25,337.5	-11,137.8
52.2	21,787.7	47,000.0	14,199.7	82,987.4	94,000.0	-25,212.3	-11,012.6
52.8	21,869.8	47,000.0	14,199.7	83,069.5	94,000.0	-25,130.2	-10,930.5
53.4	21,938.0	47,000.0	14,199.7	83,137.7	94,000.0	-25,062.0	-10,862.3
54.1	21,993.3	47,000.0	14,199.7	83,193.0	94,000.0	-25,006.7	-10,807.0
54.7 Isleta Diversion	22,045.8	47,000.0	14,199.7	83,245.5	94,000.0	-24,954.2	-10,754.5
55.3	22,081.9	47,000.0	14,199.7	83,281.7	94,000.0	-24,918.1	-10,718.3
55.9	22,129.2	47,000.0	14,199.7	83,329.0	94,000.0	-24,870.8	-10,671.0
56.5	22,159.9	47,000.0	14,199.7	83,359.7	94,000.0	-24,840.1	-10,640.3
57.2	22,199.2	47,000.0	14,199.7	83,398.9	94,000.0	-24,800.8	-10,601.1
57.8	22,227.4	47,000.0	14,199.7	83,427.1	94,000.0	-24,772.6	-10,572.9
58.4	22,252.3	47,000.0	14,199.7	83,452.0	94,000.0	-24,747.7	-10,548.0
59.0	22,278.0	47,000.0	14,199.7	83,477.7	94,000.0	-24,722.0	-10,522.3
59.7	22,302.0	47,000.0	14,199.7	83,501.7	94,000.0	-24,698.0	-10,498.3
60.3	22,332.4	47,000.0	14,199.7	83,532.1	94,000.0	-24,667.6	-10,467.9
60.9	22,347.4	47,000.0	14,199.7	83,547.1	94,000.0	-24,652.6	-10,452.9
61.5	22,372.8	47,000.0	14,199.7	83,572.5	94,000.0	-24,627.2	-10,427.5
62.1	22,384.3	47,000.0	14,199.7	83,584.0	94,000.0	-24,615.7	-10,416.0

MIDDLE RIO GRANDE CONSERVANCY DISTRICT

TABLE 7. DOWNSTREAM EFFECT AT YEAR 2010 FROM FUTURE CITY DWP

Model Miles Downstream from Cochiti Lake	Surface Water Flow Increase				Surface Water Flow Reduction	Net Effect	
	From Well Field Reduction (AF)[1]	From Scheduled SJC Release (AF)[2]	From Elective Additional SJC Release (AF)[2]	Total Gain (AF)	Scheduled Direct Diversion (AF)[2]	without Additional SJC (AF)	with Additional SJC (AF)
62.8	22,408.0	47,000.0	14,199.7	83,607.8	94,000.0	-24,592.0	-10,392.2
63.4	22,419.6	47,000.0	14,199.7	83,619.3	94,000.0	-24,580.4	-10,380.7
64.0	22,432.5	47,000.0	14,199.7	83,632.3	94,000.0	-24,567.5	-10,367.7
64.6	22,442.1	47,000.0	14,199.7	83,641.8	94,000.0	-24,557.9	-10,358.2
65.2	22,456.4	47,000.0	14,199.7	83,656.1	94,000.0	-24,543.6	-10,343.9
65.9	22,464.3	47,000.0	14,199.7	83,664.0	94,000.0	-24,535.7	-10,336.0
66.5	22,467.1	47,000.0	14,199.7	83,666.8	94,000.0	-24,532.9	-10,333.2
67.1	22,479.6	47,000.0	14,199.7	83,679.3	94,000.0	-24,520.4	-10,320.7
67.7	22,486.3	47,000.0	14,199.7	83,686.0	94,000.0	-24,513.7	-10,314.0
68.4	22,495.3	47,000.0	14,199.7	83,695.0	94,000.0	-24,504.7	-10,305.0
69.0	22,494.9	47,000.0	14,199.7	83,694.6	94,000.0	-24,505.1	-10,305.4
69.6	22,502.7	47,000.0	14,199.7	83,702.4	94,000.0	-24,497.3	-10,297.6
70.2	22,509.9	47,000.0	14,199.7	83,709.7	94,000.0	-24,490.1	-10,290.3
70.8	22,510.6	47,000.0	14,199.7	83,710.3	94,000.0	-24,489.4	-10,289.7
71.5	22,514.3	47,000.0	14,199.7	83,714.0	94,000.0	-24,485.7	-10,286.0
72.1	22,524.6	47,000.0	14,199.7	83,724.4	94,000.0	-24,475.4	-10,275.6
72.7	22,532.9	47,000.0	14,199.7	83,732.6	94,000.0	-24,467.1	-10,267.4
73.3	22,533.5	47,000.0	14,199.7	83,733.2	94,000.0	-24,466.5	-10,266.8
73.9	22,535.6	47,000.0	14,199.7	83,735.4	94,000.0	-24,464.4	-10,264.6
74.6	22,539.6	47,000.0	14,199.7	83,739.3	94,000.0	-24,460.4	-10,260.7
75.2	22,545.6	47,000.0	14,199.7	83,745.3	94,000.0	-24,454.4	-10,254.7
76.0	22,556.2	47,000.0	14,199.7	83,755.9	94,000.0	-24,443.8	-10,244.1
77.1	22,571.1	47,000.0	14,199.7	83,770.9	94,000.0	-24,428.9	-10,229.1
78.7	22,577.1	47,000.0	14,199.7	83,776.9	94,000.0	-24,422.9	-10,223.1
81.0	22,602.4	47,000.0	14,199.7	83,802.1	94,000.0	-24,397.6	-10,197.9
83.7	22,620.8	47,000.0	14,199.7	83,820.5	94,000.0	-24,379.2	-10,179.5
86.5	22,639.7	47,000.0	14,199.7	83,839.4	94,000.0	-24,360.3	-10,160.6
89.5	22,677.0	47,000.0	14,199.7	83,876.7	94,000.0	-24,323.0	-10,123.3
92.6	22,709.4	47,000.0	14,199.7	83,909.1	94,000.0	-24,290.6	-10,090.9
95.7 San	22,744.5	47,000.0	14,199.7	83,944.3	94,000.0	-24,255.5	-10,055.7
98.8 Acacia	22,753.5	47,000.0	14,199.7	83,953.3	94,000.0	-24,246.5	-10,046.7

[1] The contribution to surface water is calculated with the OSE model as reported by Barroll, Peggy, 1999. Documentation of the Administrative Groundwater Model for the Middle Rio Grande Basin. Office of the State Engineer Technical Division, Hydrology Bureau Report 99-3. Dated April 1999.

[2] Schedules for release of SJC water and diversion for City use are calculated as the difference between Tables E1 and E2 in Appendix E of CH2MHILL, 2002. Hydrologic Effects of the Proposed City of Albuquerque Drinking Water Project on the Rio Grande and Rio Chama Systems: City of Albuquerque Public Works Department Water Resources Strategy Implementation, Final Report dated May 2002.

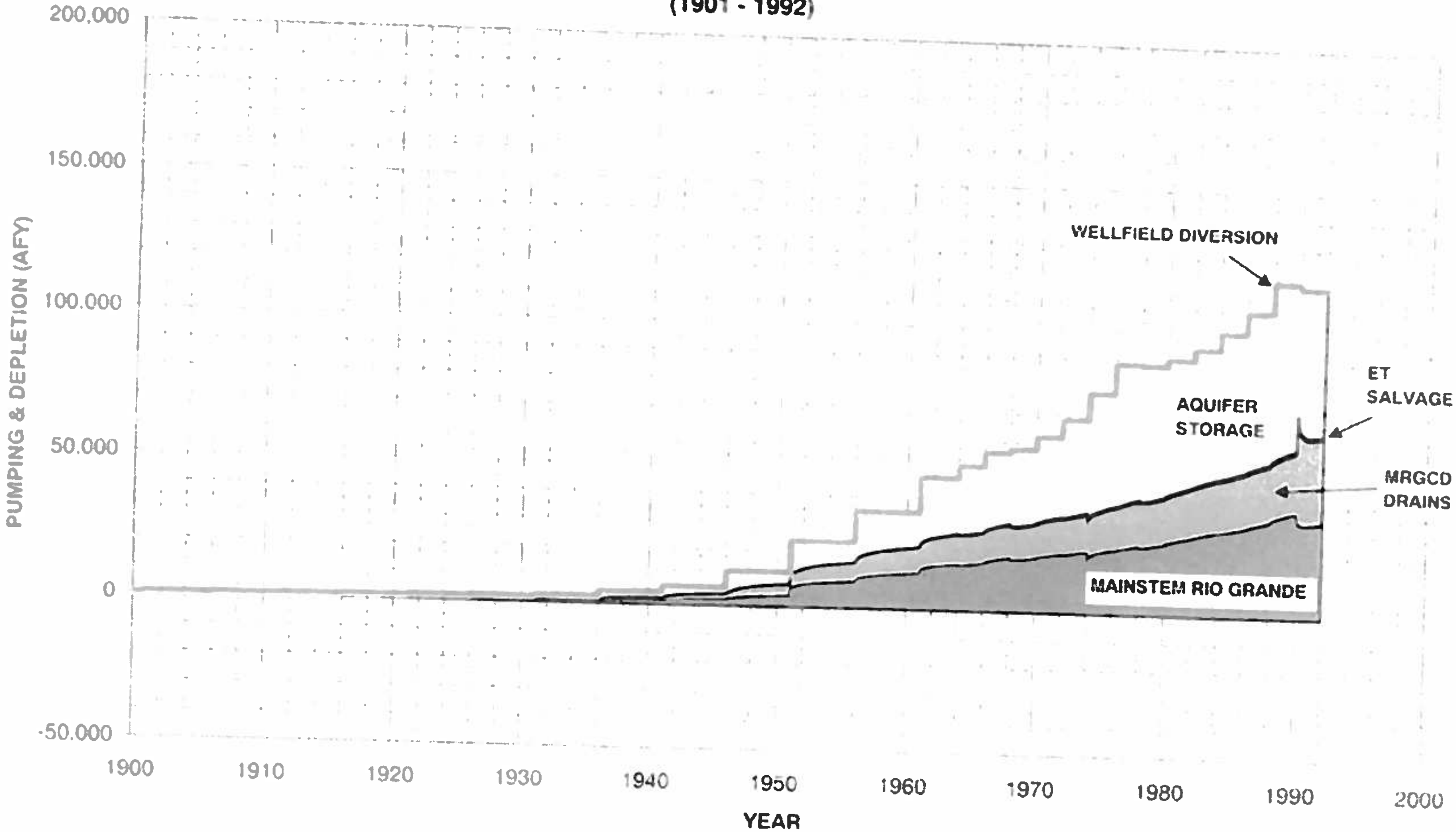
TABLE 8. RIO GRANDE WATER ACCOUNT (AFY) FOR YEAR 2010 WITH AND WITHOUT DWP OPERATIONS

	Baseline Without DWP	Future With DWP	Net Change
RIVER IN:			
SJCP Release[1]	+ 7418	+ 68,618	+ 61,200
Return Flow[2]	+ 58,732	+ 58,679	- 53
RIVER OUT:			
Model Depletion[3]	- 77,228	- 53,676	+ 23,552
Surface Diversion[4]	- 2,968	- 96,968	- 94,000
Sum = Loss to River	- 14,046	- 23,347	- 9,301 = net change in loss to river

[1] CH2MHill (2002) Appendix E, Column 19 + 20 + 4450
[2] CH2MHill (2002) Appendix E, Column 14
[3] CH2MHill (2002) Appendix E, Column 16
[4] CH2MHill (2002) Appendix E, Column 15

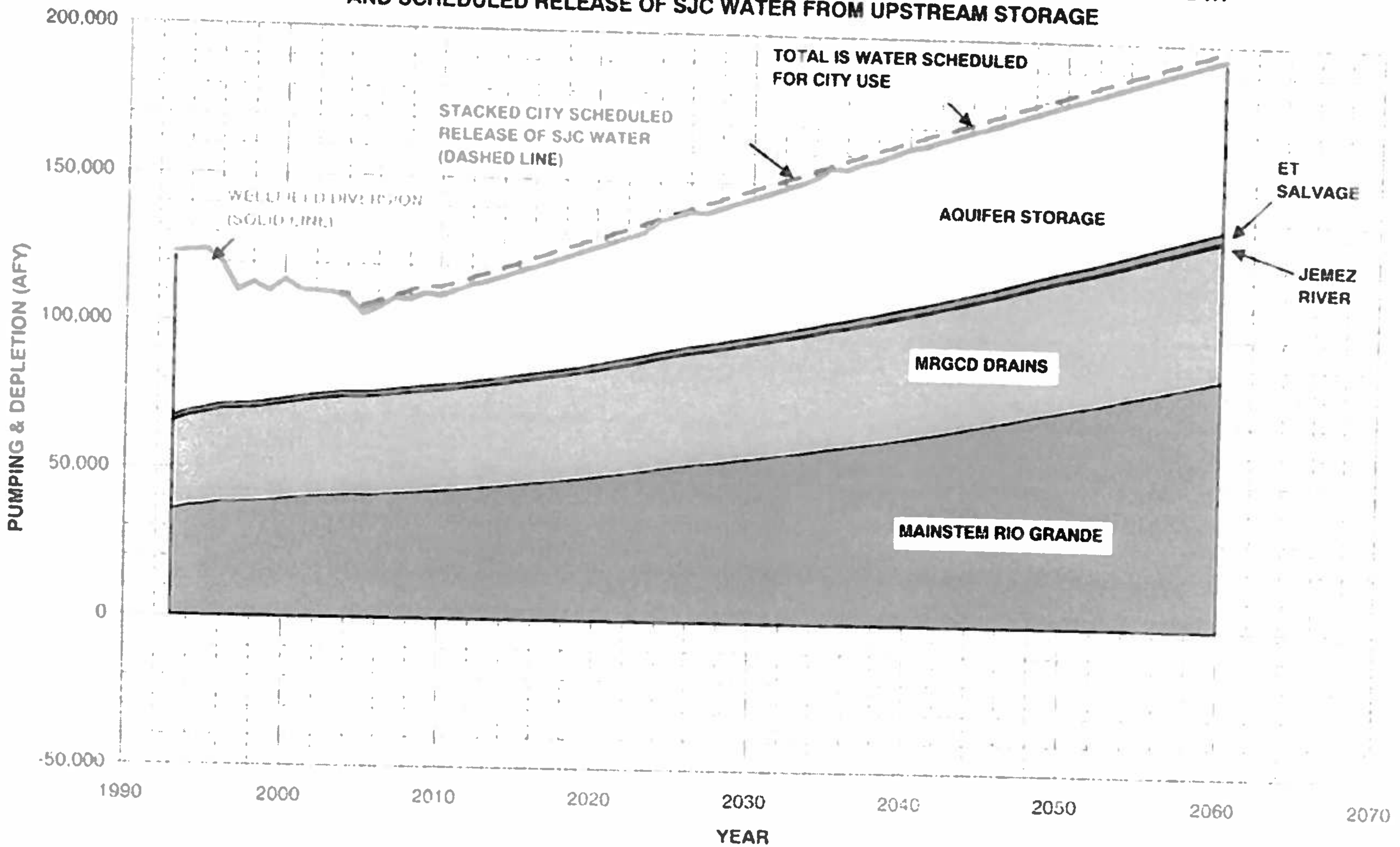
MIDDLE RIO GRANDE CONSERVANCY DISTRICT

FIGURE 2
DEPLETION COMPONENTS CONTRIBUTING TO CITY OF ALBUQUERQUE WELLFIELD
(1901 - 1992)



MIDDLE RIO GRANDE CONSERVANCY DISTRICT

FIGURE 3
DEPLETION COMPONENTS CONTRIBUTING TO CITY OF ALBUQUERQUE WELLFIELD WITHOUT DWP AND SCHEDULED RELEASE OF SJC WATER FROM UPSTREAM STORAGE



MIDDLE RIO GRANDE CONSERVANCY DISTRICT

FIGURE 4
DEPLETION COMPONENTS CONTRIBUTING TO CITY OF ALBUQUERQUE WELLFIELD WITH DWP AND SCHEDULED RELEASE OF SJC WATER FROM UPSTREAM STORAGE

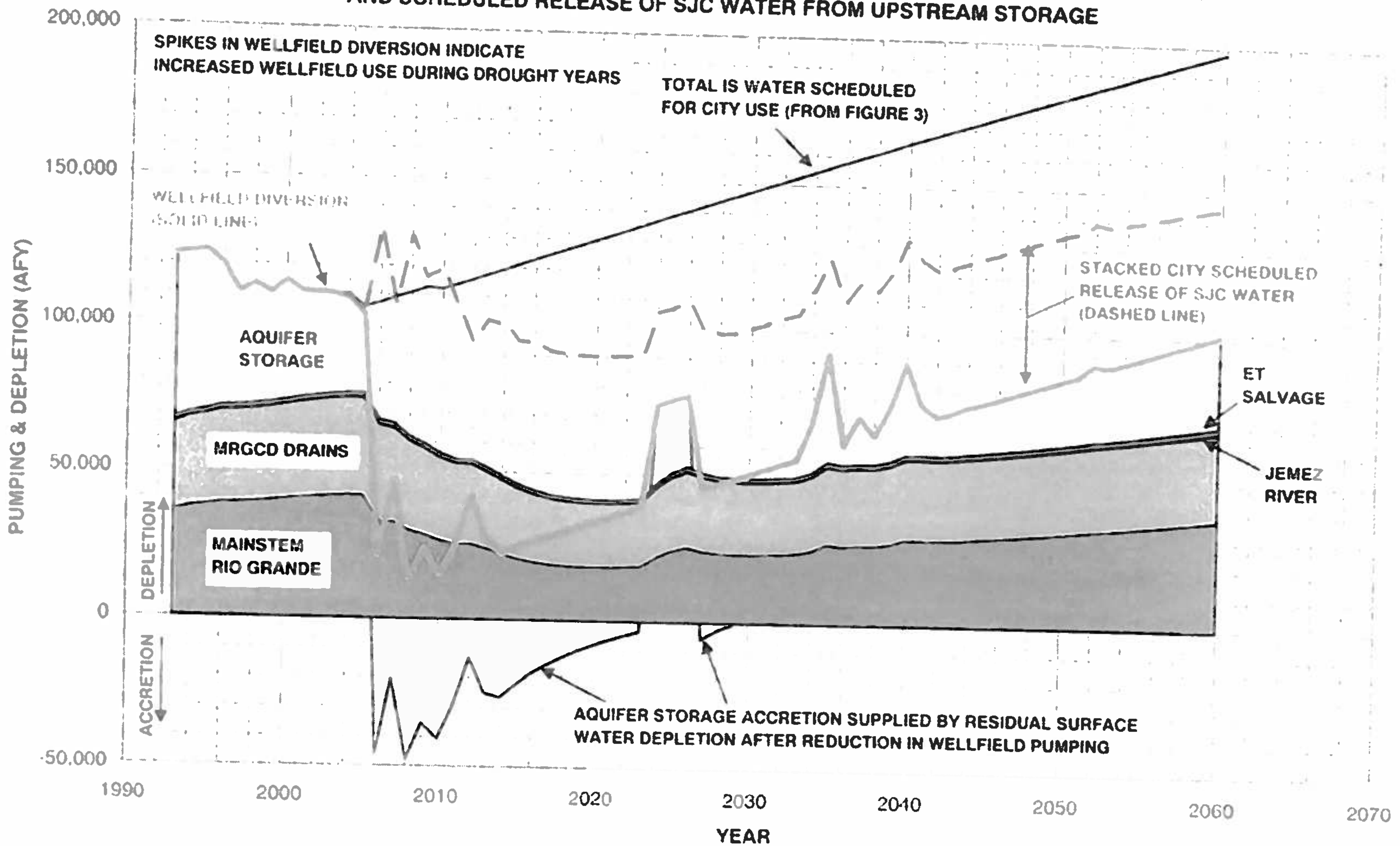
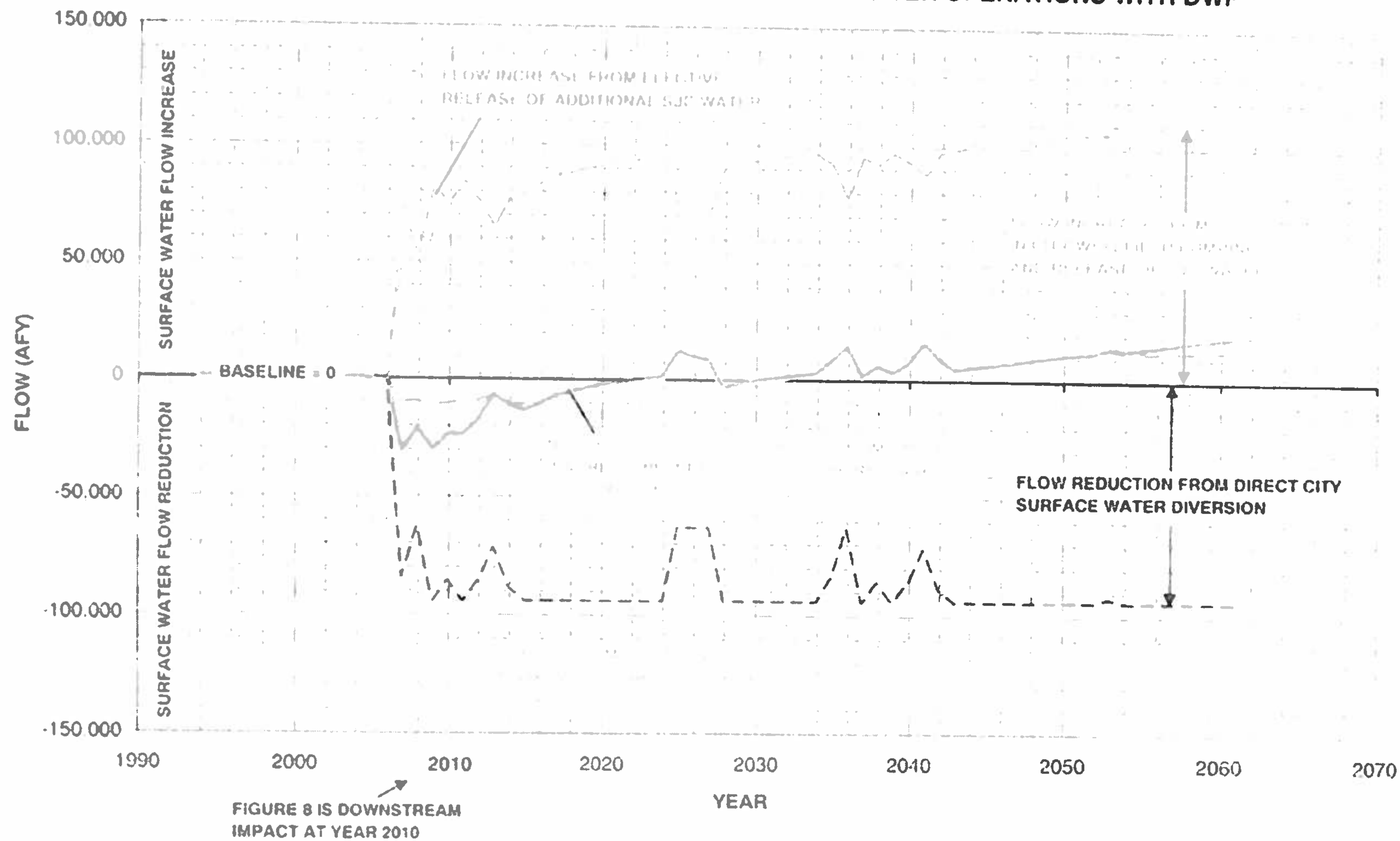
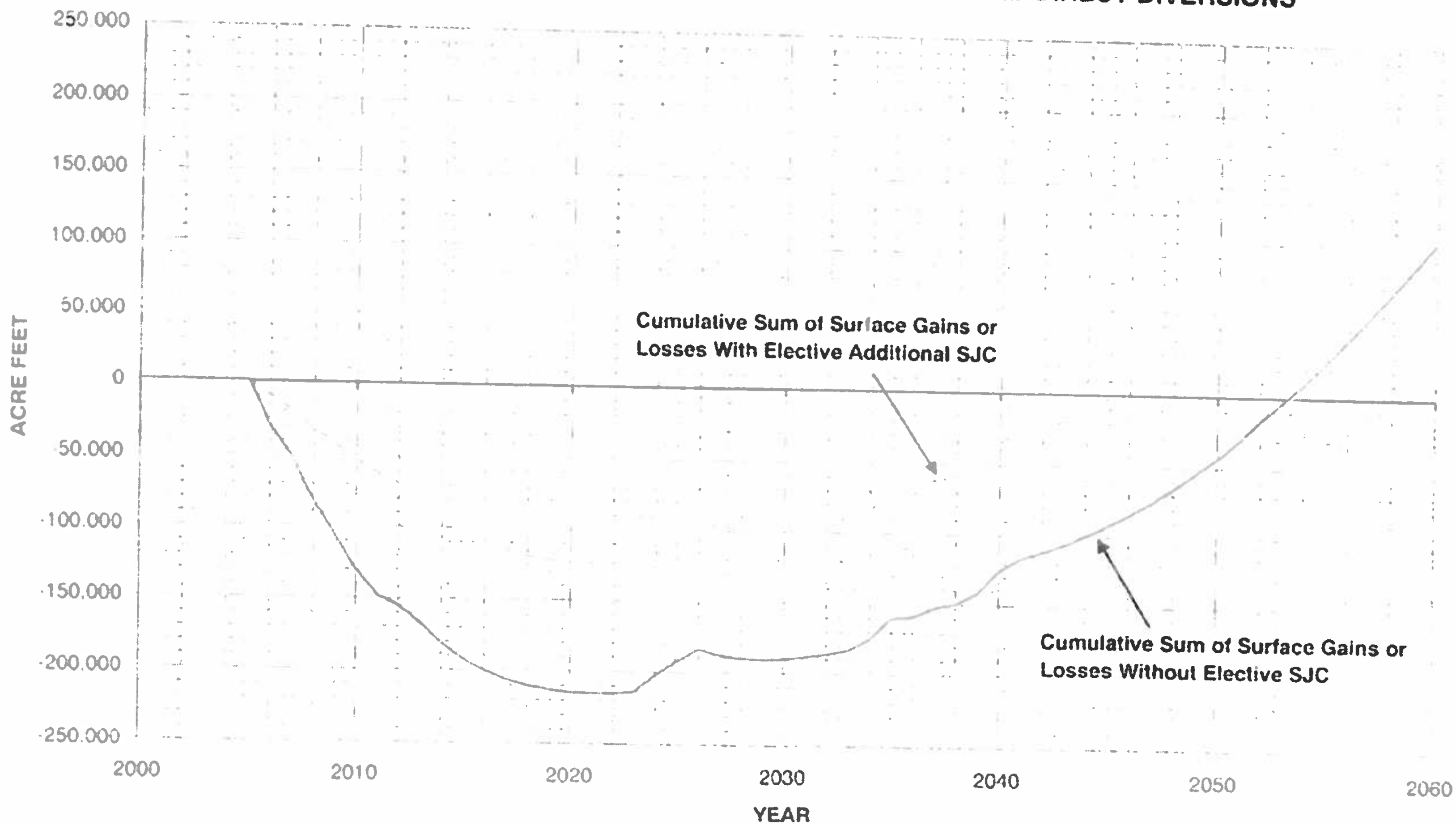


FIGURE 6
TREND OF EFFECT AT SAN ACACIA FROM FUTURE CITY WATER OPERATIONS WITH DWP



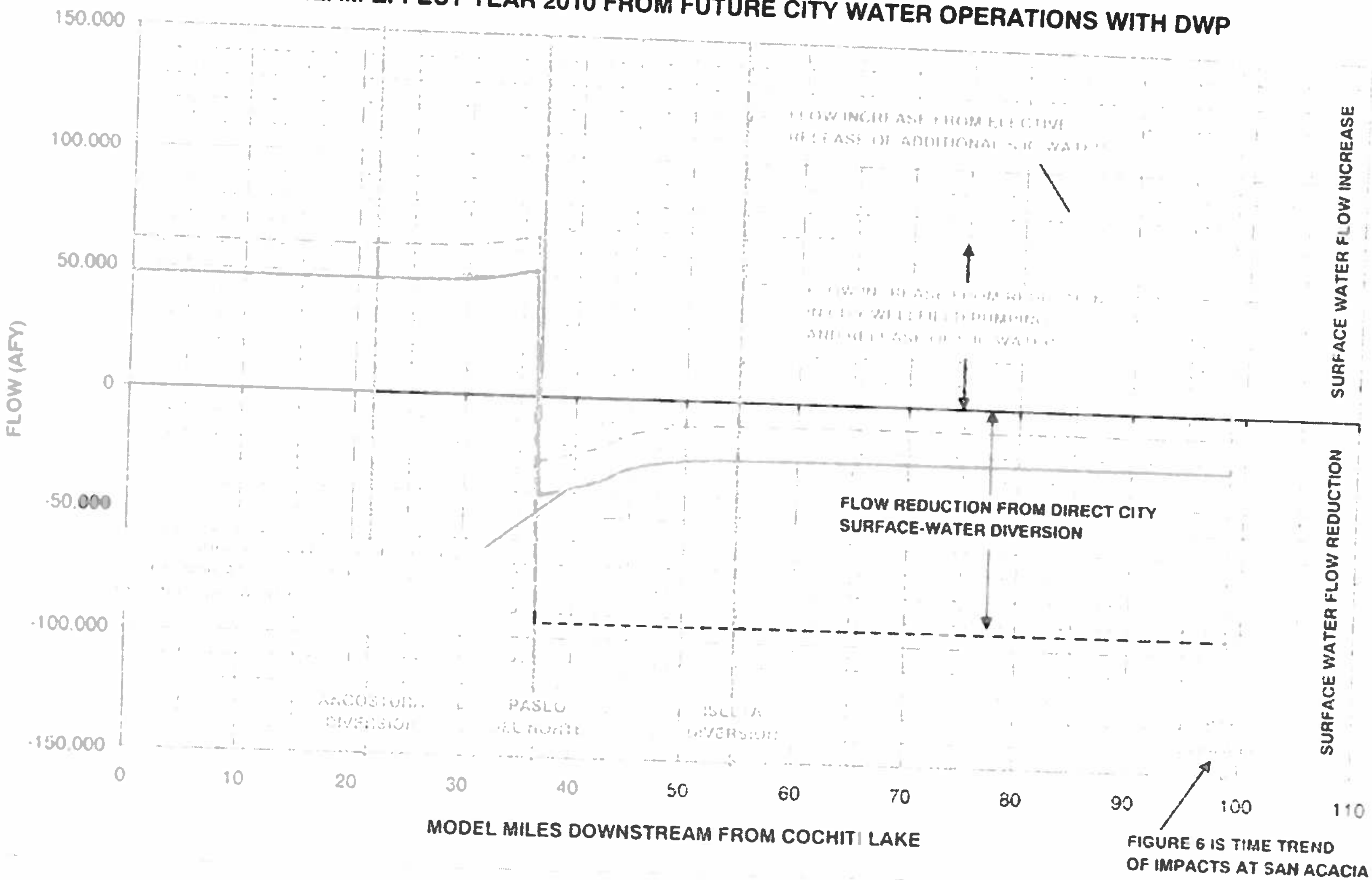
MIDDLE RIO GRANDE CONSERVANCY DISTRICT

FIGURE 7
CUMULATIVE EFFECT OF CITY DWP WITH FUTURE SCHEDULED DIRECT DIVERSIONS



MIDDLE RIO GRANDE CONSERVANCY DISTRICT

FIGURE 8
DOWNSTREAM EFFECT YEAR 2010 FROM FUTURE CITY WATER OPERATIONS WITH DWP



MIDDLE RIO GRANDE CONSERVANCY DISTRICT

FIGURE 11
DRINKING WATER PROJECT SCHEDULE OF OPERATION