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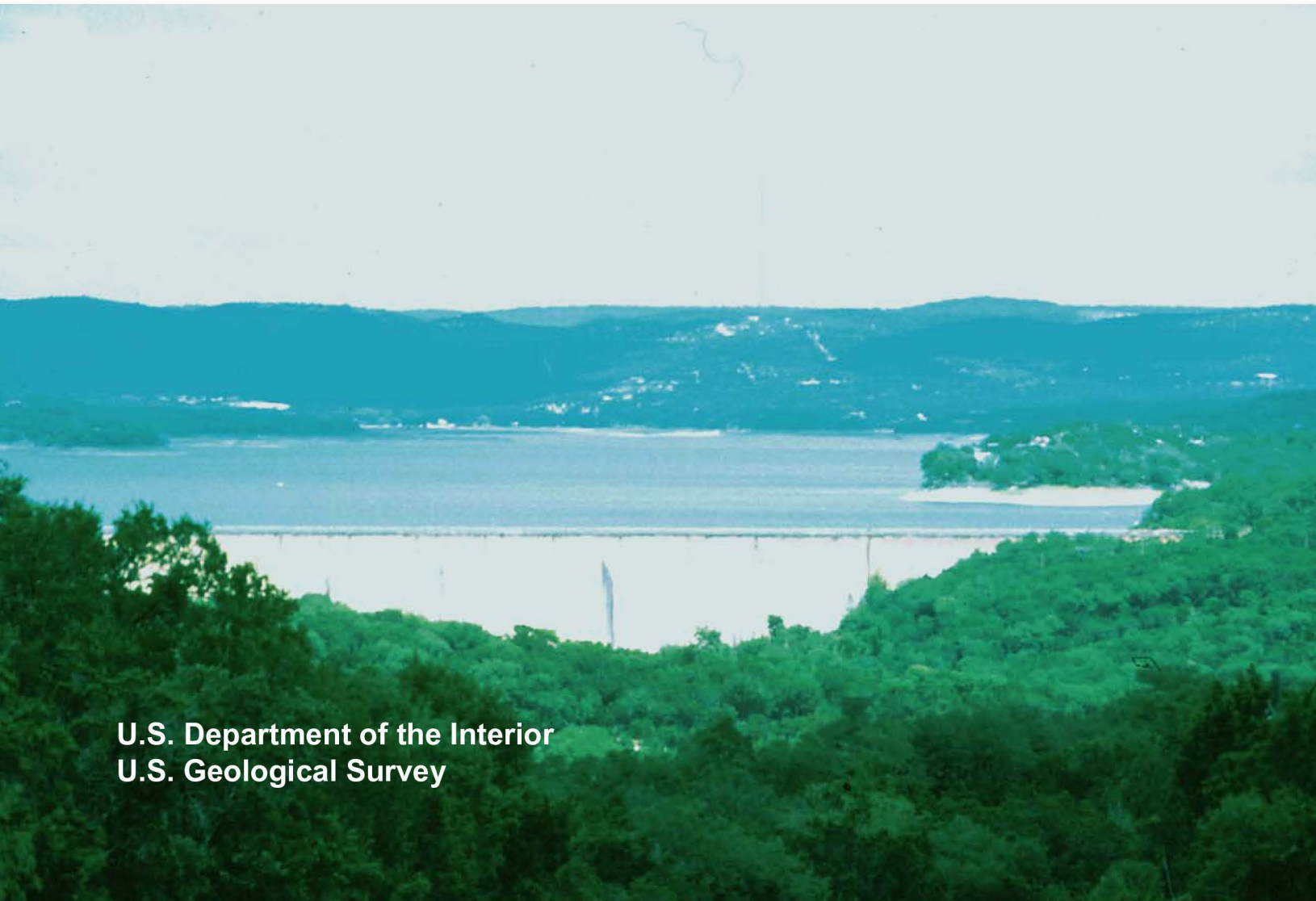
Hydrogeology, Hydrologic Budget, and Water Chemistry of the Medina Lake Area, Texas

Water-Resources Investigations Report 00–4148



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Cover:

Medina Dam and Medina Lake, August 1994. (Photograph by Ted A. Small, U.S. Geological Survey.)

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By Rebecca B. Lambert, Kenneth C. Grimm, and Roger W. Lee

U.S. GEOLOGICAL SURVEY
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VERTICAL DATUM AND ABBREVIATIONS

Sea level: In this report, "sea level" refers to the National Geodetic Vertical Datum of 1929—a geodetic datum derived from a general adjustment of the first-order level nets of the United States and Canada, formerly called Sea Level Datum of 1929.
Per mil: A unit expressing the ratio of stable-isotope abundances of an element in a sample to those of a standard material. Per mil units are equivalent to parts per thousand. Stable-isotope ratios are calculated as follows:

$$\delta X = \left(\frac{R(\text{sample})}{R(\text{standard})} - 1 \right) \times 1,000 ,$$

where X is the heavier isotope, and
R is the ratio of the heavier stable isotope to the lighter stable isotope in a sample or standard.

The δ values for stable-isotope ratios discussed in this report are referenced to the following standard materials:

Element	R	Standard identity and reference
hydrogen	hydrogen-2 (deuterium)/hydrogen-1 (δD)	Vienna Standard Mean Ocean Water (Fritz and Fontes, 1980)
oxygen	oxygen-18/oxygen-16 ($\delta^{18}O$)	Vienna Standard Mean Ocean Water (Fritz and Fontes, 1980)

The other isotope ratio used in this report is referenced as follows:

Element	R	Standard identity and reference
strontium	strontium-87/strontium-86 ($^{87}Sr/^{86}Sr$)	National Institute of Standards and Technology—Standard Reference Material-987 (Fritz and Fontes, 1980)

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Abstract

A three-phase study of the Medina Lake area in Texas was done to assess the hydrogeology and hydrology of Medina and Diversion Lakes combined (the lake system) and to determine what fraction of seepage losses from the lake system might enter the regional ground-water-flow system of the Edwards and (or) Trinity aquifers. Phase 1 consisted of revising the geologic framework for the Medina Lake area. Results of field mapping show that the upper member of the Glen Rose Limestone underlies Medina Lake and the intervening stream channel from the outflow of Medina Lake to the midpoint of Diversion Lake, where the Diversion Lake fault intersects Diversion Lake. A thin sequence of strata consisting primarily of the basal nodular and dolomitic members of the Kainer Formation of the Edwards Group, is present in the southern part of the study area. On the southern side of Medina Lake, the contact between the upper member of the Glen Rose Limestone and the basal nodular member is approximately 1,000 feet above mean sea level, and the contact between the basal nodular member and the dolomitic member is approximately 1,050 feet above mean sea level. The most porous and permeable part of the basal nodular member is about 1,045 feet above mean sea level. At these altitudes, Medina Lake is in hydrologic connection with rocks in the Edwards aquifer recharge zone, and Medina Lake appears to lose more water to the ground-water system along this bedding plane contact.

Hydrologic budgets calculated during phase 2 for Medina Lake, Diversion Lake, and Medina/Diversion Lakes combined indicate that: (1) losses from Medina and Diversion Lakes can be quantified; (2) a portion of those losses are entering the Edwards aquifer; and (3) losses to the Trinity aquifer in the Medina Lake area are minimal and within the error of the hydrologic budgets.

Hydrologic budgets based on streamflow, precipitation, evaporation, and change in lake storage were used to quantify losses (recharge) to the ground-water system from Medina Lake, Diversion Lake, and Medina/Diversion Lakes combined during October 1995–September 1996. Water losses from Medina Lake to the Edwards/Trinity aquifers ranged from -14.0 to 135 acre-feet per day; Diversion Lake ranged from -1.2 to 93.1 acre-feet per day; and Medina/Diversion Lakes combined ranged from 36.1 to 119 acre-feet per day.

Monthly average recharge during December 1995–July 1996 was estimated using an alternative method developed during this study (current study method) and compared to monthly average recharge during December 1995–July 1996 estimated using the existing USGS method and the Trans-Texas method. Recharge to the Edwards aquifer estimated using the current study method was about 69 and 73 percent of the recharge estimated using the USGS and Trans-Texas methods, respectively. The USGS and Trans-Texas methods overestimated recharge from Medina Lake compared to the recharge estimated with the current study method when Medina Lake stage was between about 1,027 and 1,032 feet above mean sea level and underestimated recharge from Medina Lake when lake stage was between about 1,036 and 1,045 feet above mean sea level. The USGS and Trans-Texas methods underestimated recharge from Diversion Lake compared to the

recharge estimated with the current study method when Diversion Lake stage was greater than 913 feet above mean sea level and overestimated recharge from Diversion Lake when lake stage was less than 913 feet above mean sea level.

The water quality of Medina Lake and Medina River and in selected wells and springs in the Edwards and Trinity aquifers was characterized during phase 3 of the study. Environmental isotope analyses and geochemical modeling also were used to determine where water losses from the lake system might be entering the ground-water-flow system. Isotopic ratios of deuterium, oxygen, and strontium were analyzed in selected surface-water, lake-water, and ground-water samples to trace the isotopic "signature" of the lake water as it mixes with the ground water and to determine the fraction of lake water and ground water in selected Edwards aquifer wells. Isotopic data and geochemical modeling were used to show that lake water is moving into the Edwards aquifer in two fault blocks in the eastern Medina storage unit. One fault block is bounded on the north by the Vandenburg School fault and on the south by the Haby Crossing fault, and the second fault block is bounded on the north by the Diversion Lake fault and on the south by the Haby Crossing fault. In selected Edwards aquifer wells located southwest of Medina Lake and west of Diversion Lake, the proportion of lake water ranged from about 10 to 45 percent. Geochemical modeling using NETPATH confirms the degree of mixing between lake water and aquifer water shown by the isotopes.

INTRODUCTION

Medina Lake and Diversion Lake (fig. 1) are located on the Medina River in northeastern Medina County and in southeastern Bandera County in south-central Texas. Medina Dam and Lake were constructed to supplement existing irrigation supplies. The Medina River is impounded by Medina Dam, and water released from Medina Lake is discharged through a canyon to a small impoundment (Diversion Lake), where part of the water is then diverted into the Medina irrigation canal (pl. 1). Medina Lake, which encompasses about 6,070 acres, has a storage capacity of about 254,850 acre-feet (acre-ft) (Texas Water Development Board, 1996a); Diversion Lake covers about 169 acres, with a storage capacity of about 2,555 acre-ft.

Although Medina Dam (fig. 1) was completed in 1912, water was not impounded until May 1913 (Texas Water Development Board, 1996a). Seepage losses from Medina Lake have been documented since May 1913, when it was suggested that the losses were contributing substantial recharge to the Edwards aquifer. The estimated average recharge to the Edwards aquifer from Medina and Diversion Lakes combined (hereafter referred to as the lake system) ranges from about 38,900 to about 61,000 acre-feet per year (acre-ft/yr) (Lowry, 1955; Espey, Huston and Associates, Inc., 1989; Choffel and Vaugh, 1993; U.S. Geological Survey, 1997). These estimated losses account for about 6 to 9 percent of the 668,700 acre-ft/yr estimated average annual (1934–96) recharge to the Edwards aquifer, thus representing a substantial source of water to the aquifer (U.S. Geological Survey, 1997). However, the methods used to estimate recharge to the Edwards aquifer from the lake system are adequate to assess long-term recharge only.

Monthly estimates of recharge have a large uncertainty during periods of high runoff and are not sufficiently accurate for current water-supply management purposes. To help reduce the uncertainty, a three-phase study was done for the Medina Lake area by the U.S. Geological Survey (USGS), in cooperation with the Bexar-Medina-Atascosa Counties Water Control and Improvement District No. 1 (BMA), Bexar Metropolitan Water District (BexarMet), Texas Water Development Board (TWDB), and Edwards Aquifer Authority (EAA).

Purpose and Scope

The purpose of this report is to summarize the hydrogeology, hydrologic budget, and water chemistry of the Medina Lake area in an attempt to better define short-term recharge from the lake system to the Edwards and Trinity aquifers compared to previous estimates. The study area includes Medina and Diversion Lakes (fig. 1) and several miles downgradient along ground-water flowpaths in the Edwards and Trinity aquifers to the south and west of the lakes.

The objectives of the study were to: (1) describe the hydrogeology in the Medina Lake area; (2) prepare hydrologic budgets of Medina Lake, Diversion Lake, and Medina/Diversion Lakes combined and attempt to quantify the losses from the lake system into the

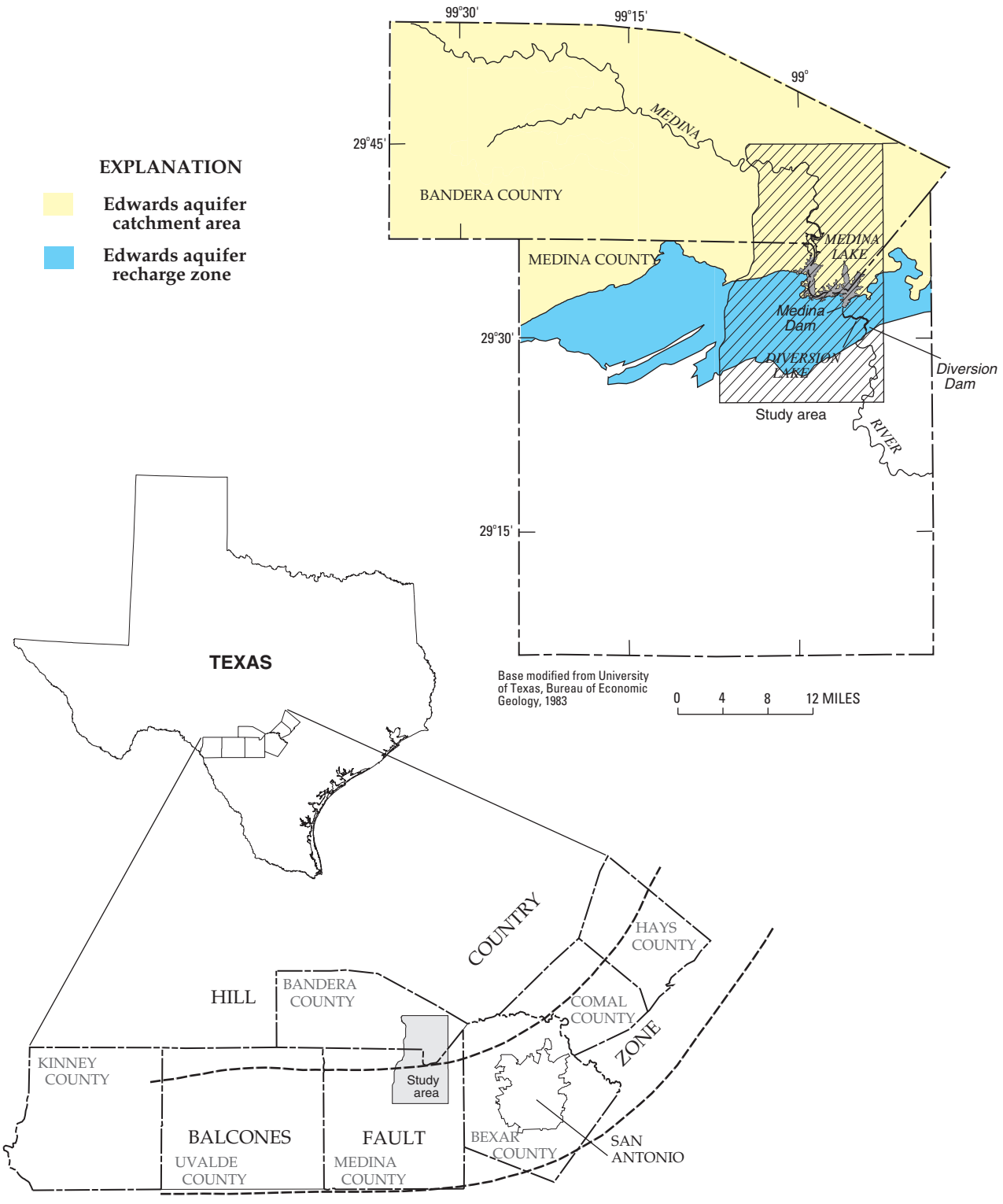

Figure 1. Location of the Medina lake area.

underlying aquifers; and (3) determine if those losses are entering the regional ground-water-flow systems of the Edwards or Trinity aquifers, or both. Geologic, hydrologic, and hydrochemical data were collected as part of the three-phase study. Phase 1 consisted of refining the geologic and hydrogeologic framework in the study area by subdividing the rocks composing the Edwards and Trinity aquifers into smaller hydrogeologic subdivisions. Wells were inventoried, and water levels were measured. Phase 2 quantified the losses from the lake system during October 1995–September 1996. Phase 3 characterized the quality of water in Medina Lake, Medina River, Koenig Creek, and in selected wells and springs in the Edwards and Trinity aquifers. Additionally, environmental isotope analyses and geochemical modeling were used during phase 3 to help determine where losses from the lake system might be entering the ground-water-flow system.

Previous Studies

Previous studies of the Medina Lake area subdivided the rocks into groups or formations only, separating the Edwards Group (rocks forming the Edwards aquifer) from the Glen Rose Limestone (rocks forming the upper Trinity aquifer) (table 1, at end of report). Sayre (1936) mapped the Edwards Limestone and Georgetown Limestone as a single unit in the Medina Lake area and mapped the Glen Rose Limestone in areas northwest and east of Medina Lake. Holt (1956, 1959) concluded that Medina Lake overlies the Glen Rose Limestone and that the distribution of the Edwards Limestone was not as widespread as had been previously mapped. More recent studies (Barnes and others, 1992; Collins, 1995) report that Medina Lake, the intervening canyon between Medina and Diversion Dams, and the upper end of Diversion Lake rests on the upper member of the Glen Rose Limestone, while the lower end of Diversion Lake rests on the lower part of the Kainer Formation of the Edwards Group (pl. 1).

Interpretation of cores bored at Medina Dam indicate that much of the Medina Lake spillway and the channel of the Medina River downstream from the dam are in the Glen Rose Limestone (U.S. Army Corps of Engineers, 1965) (pl. 1). Rose (1972) reported that the Glen Rose Limestone comprises a greater part of the outcrop in the Medina Lake area and that the Edwards Group outcrop appears to be more discontinuous and dissected than had been mapped by previous investigations.

Maclay and Small (1976, 1986) discussed the regional hydrogeology of the Edwards Group in the San Antonio region and subdivided the rocks of the Kainer and Person Formations of the Edwards Group into smaller, mappable hydrogeologic subdivisions. Their hydrogeologic sections constructed perpendicular to the Balcones fault zone show the heterogeneous nature of the Edwards aquifer and indicate an influence of faulting on ground-water flowpaths. Maclay (1995) and Groschen (1996) described the geologic history of the Edwards aquifer and the hydrogeologic factors, including those in the Medina Lake area, that influence the regional ground-water-flow system.

Ashworth (1983) discussed the hydrogeology and availability of water in the lower, middle, and upper Trinity aquifers in the Lower Cretaceous formations in the south-central Texas Hill Country (fig. 1). Ashworth (1983) reported that, in the Medina Lake area, the regional flow direction of the Trinity aquifer (including the Glen Rose Limestone) generally is to the south, southeast, and east. Bluntzer (1992) did additional work on the Trinity aquifer by evaluating the ground-water resources and projecting water demands for the Hill Country.

Although transmissivity of the Trinity aquifer in the Hill Country ranges from about 100 to about 58,000 feet squared per day (ft^2/d) (Kuniansky and Holligan, 1994), the transmissivity of the Edwards aquifer in the Balcones fault zone ranges from about 10,000 to more than 5,000,000 ft^2/d (Barker and Ardis, 1996). Differences between the transmissivity of the Edwards aquifer and the transmissivity of the Trinity aquifer can be attributed to the effects of rock fractures that close with depth, cementation, and recrystallization in the Trinity aquifer as opposed to the dominant effects of carbonate dissolution in the Edwards aquifer (Barker and Ardis, 1996, p. 41).

LBG-Guyton Associates (1995) attempted to estimate the amount of water moving from the Glen Rose Limestone (upper part of the Trinity aquifer) into the Edwards aquifer in the San Antonio region (including the Medina Lake area). Their study concluded that—under 1994 water-level conditions—the Glen Rose Limestone contributed an estimated 314 acre-ft/yr to the Edwards aquifer along 14 miles (mi) of the Haby Crossing fault located in northeastern Medina and northwestern Bexar Counties. They concluded that the transmissivity of the Glen Rose Limestone is the

limiting factor in the transmission of water between the Trinity and Edwards aquifers.

Previous studies of the lake system have explored, both qualitatively and quantitatively, the importance of water loss from the lakes. Kuehne (1966, p. 76) observed that there was considerable leakage from Medina Lake and reported that the greatest loss of water to the subsurface was in the 4-mi reach between Medina Dam and Diversion Dam (fig. 1). Quantitative estimates of recharge have indicated that substantial losses of water from the lake system have recharged primarily the Edwards aquifer. The Bureau of Reclamation estimated that seepage from Medina and Diversion Lakes and the connecting reach, combined, totaled almost 72,000 acre-ft/yr (Burleigh, 1949, p. 9–15). Streamflow measurements along 24 mi of the Medina irrigation canal (pl. 1) that predominantly traverse geologic formations of the upper confining unit (table 1) indicated that losses were 4 cubic feet per second (ft^3/s) or almost 2,900 acre-ft/yr, and that most of the decrease in flow could be attributed to evaporation and transpiration (Land, 1970).

Lowry (1953, p. 41) analyzed the hydrology of the Medina River and estimated that the average loss from Medina Lake owing to leakage, alone, was 41,000 acre-ft/yr during 1912–53. Lowry also determined that seepage was related to changes in reservoir stage. In a later report, Lowry (1955, p. 24) estimated that recharge from the lake system to the ground-water system averaged 46,900 acre-ft/yr during 1934–53.

William F. Guyton and Associates (1955, 1958) described the stratigraphy, structure, and hydrology of the Edwards aquifer in the San Antonio region and discussed the quantity and distribution of leakage from Medina Lake. William F. Guyton and Associates (1958) concluded that any leakage from Medina Lake returned to the Medina River below Medina Dam when the lake level was higher than about 960 feet (ft). Estimated recharge to the Edwards aquifer in 1962 and 1963 was 45,400 and 28,200 acre-ft, respectively (William F. Guyton and Associates, 1965).

Espey, Huston and Associates, Inc. (EH&A) (1989) did hydrologic and hydraulic analyses to determine the availability of surface water from the lake system under various operating scenarios. EH&A developed a computer model that simulated recharge to the underlying ground-water system for each of the operating scenarios. As part of their analysis, EH&A developed a set of rising and falling loss curves and estimated that during 1940–86 the average ground-water recharge from the lake system was 39,801 acre-ft/yr.

Water chemistry and geochemical analyses have been used to help define the hydrogeology of the Edwards and Trinity aquifers. Pearson and others (1975) analyzed tritium concentrations in water samples collected from 50 wells and springs in the Edwards aquifer in the San Antonio area. Analysis of the tritium data confirmed previous interpretations of ground-water movement near Medina Lake: recharge to the Edwards aquifer was occurring along the lower limit of the Edwards aquifer outcrop (recharge zone) (Pearson and others, 1975, p. 15). Pearson and Rettman (1976) used the results of water-quality analyses for selected ions and environmental isotopes to group Edwards aquifer water into five distinct water types on the basis of their chemical composition. For the USGS Edwards-Trinity Regional Aquifer-System Analysis (RASA) program, Bush and others (1994) described the spatial distribution of dissolved solids concentrations and hydrochemical facies in the Edwards-Trinity aquifer system. Water samples were collected from selected permeable zones of the Trinity aquifer and analyzed for general water quality and selected isotopes. Results from these analyses were used to determine rock-water interactions in the aquifer and to estimate travel time and ground-water velocities for selected flowpaths (Jones and others, 1997).

Methods of Analysis

The hydrogeologic subdivisions (table 1) of the Edwards aquifer modified from Maclay and Small (1976) and the stratigraphic nomenclature of Rose (1972) for the Edwards Group were used to map the Edwards aquifer outcrop in the Medina Lake area. The lower and upper members of the Glen Rose Limestone were mapped using the stratigraphic nomenclature of Stricklin and others (1971). Previous mapping in the Medina Lake area placed the rock units into groups and formations only and separated the Edwards Group (Edwards aquifer) from the Glen Rose Limestone (Trinity aquifer). Additionally, Small and Lambert (1998) mapped the thickness of Edwards strata in the study area and determined which hydrogeologic subdivisions might be hydraulically connected to the lake system. Wells and springs were inventoried and water-level

measurements were made where possible (Texas Water Development Board, 1996b).

Individual hydrologic budgets were developed for Medina Lake, Diversion Lake, and Medina/Diversion Lakes combined using data collected during August 1995–September 1996. Remote Operating Systems, Inc. (ROS) constructed an extensive monitoring network for BMA and EAA to measure stream discharge, lake stage, precipitation, and climatological properties useful for calculating evaporation losses. Discharge, lake stage, and precipitation were collected at continuous recording or peak stage sites by BMA and EAA, the data were reviewed by USGS, and feedback was provided to BMA and EAA for data quality control. Climatological data to estimate evaporation losses from Medina and Diversion Lakes were obtained from two weather stations. The Medina Dam weather station, located adjacent to the spillway on the dam was installed by ROS and operated by BMA. The Medina Lake weather station was installed on the lake and operated by USGS. Continuous readings of air and water temperature, relative humidity, and wind speed were collected by BMA and USGS and were reviewed by USGS.

Hydrologic data for the project were processed and reviewed following USGS protocol. Daily mean values were calculated for each hydrologic budget component. Evaporation from each reservoir was calculated using a mass-transfer method that is based on reservoir area. Hydrographic surveys of Medina and Diversion Lakes were done in July 1995 by the TWDB to revise existing area-capacity curves for each lake at the conservation pool and to establish baseline information for future surveys (Texas Water Development Board, 1996a).

Water-quality characteristics of the lake system were studied to determine, if possible, regions where lake water might enter the underlying Edwards and (or) Trinity aquifers. Water-quality samples were collected from Medina Lake, Medina River, Koenig Creek, and selected wells and springs during 1995–96 to characterize the water chemistry of the surface- and ground-water resources in the study area. The water samples were collected according to the methods described in Wells and others (1990). Specific conductance, pH, temperature, and dissolved oxygen were measured on-site at lake and surface-water data-collection sites by USGS personnel. Water-quality samples were analyzed for major cations and anions, nutrients, and trace elements by TWDB contract laboratories. Additional duplicate quality-control samples were collected and submitted to the USGS National Water Quality Laboratory, Arvada, Colo.

Environmental isotope data were collected from Medina Lake, Medina River, Koenig Creek, and selected wells and springs to determine the proportion of lake water that might have mixed with ground water in selected wells completed in the Edwards aquifer. The isotope samples were analyzed for ratios of deuterium/protium ($^{2}H/^{1}H$), oxygen ($^{18}O/^{16}O$), and strontium ($^{87}Sr/^{86}Sr$) by USGS research personnel in Reston, Va., and Menlo Park, Calif. Geochemical modeling to determine the amount of mixing between lake and ground water was done with NETPATH (Plummer and others, 1994).

Acknowledgments

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HYDROGEOLOGY

Medina Lake mostly overlies rocks of the Edwards and Trinity aquifers. The Edwards aquifer in the Balcones fault zone is one of the most permeable and productive carbonate aquifers in the Nation, consisting of extensively faulted, fractured, and cavernous limestone and dolomite (Maclay, 1995). The Edwards aquifer comprises the Kainer and Person Formations of the Edwards Group, plus the overlying Georgetown Formation (table 1). The Kainer and Person Formations were divided into seven informal members by Rose (1972). These members were modified by Maclay and Small (1976) into eight informal hydrogeologic subdivisions that include the overlying Georgetown Formation.

The Edwards aquifer has relatively large porosity and high permeability resulting, in part, from the development or redistribution of secondary porosity

(Small and Lambert, 1998). Lithology, stratigraphy, diagenesis, and selective dissolution (karstification) account for the effective porosity and permeability in the Edwards aquifer outcrop. The porosity of the rocks in the Edwards aquifer is related directly to depositional and diagenetic elements that exist along specific lithostratigraphic horizons (fabric selective) and to dissolution and structural elements that can exist in any lithostratigraphic horizon (not fabric selective). Permeability depends on the physical properties of the rock, particularly the size, shape, and distribution of the pores. The most porous and permeable hydrogeologic subdivisions of the Edwards aquifer outcrop appear to be subdivision VI, the Kirschberg evaporite member of the Kainer Formation, and subdivision III, the leached and collapsed members, undivided, of the Person Formation (table 1).

Rocks of the middle and upper Trinity aquifers are stratigraphically lower than rocks composing the Edwards aquifer (table 1). These aquifer units consist of fractured and cavernous limestone and dolomite interbedded with shale and evaporitic minerals (Ashworth, 1983). The middle Trinity aquifer consists of the Cow Creek Limestone, the Hensel Sand, and the lower member of the Glen Rose Limestone, while the upper Trinity aquifer consists of the upper member of the Glen Rose Limestone. Caverns formed in limestone and evaporite strata are common in the Glen Rose Limestone. The middle Trinity aquifer is a source of potable water in the region, but yields much smaller quantities of a more highly mineralized water than the Edwards aquifer (Ashworth, 1983). In the Medina Lake area, the upper Trinity aquifer yields only a limited quantity (0 to 20 gallons per minute [gal/min]) of highly mineralized water and functions locally as a confining unit between the middle Trinity aquifer and Edwards aquifer because of the large differences in transmissivity (table 1).

Movement of water in the Edwards aquifer, and to a lesser extent in the Trinity aquifer, is controlled by an extensive fault system known as the Balcones fault zone (fig. 1). The Balcones fault zone consists of a dense series of near parallel, primarily northeast-trending faults that commonly are normal, high-angle structures with the downthrown side to the southeast (Maclay, 1995). These faults can form barriers or conduits to flow. The degree of hydraulic connection between two adjacent fault blocks depends on the amount of vertical displacement (or throw) on the fault and the proportion of total thickness of porous, permeable units of the Edwards aquifer juxtaposed against porous, permeable units of the Trinity aquifer. Maclay and Small (1986) define flow-barrier faults as faults that have a vertical displacement of greater than 50 percent of the total thickness of the Edwards aquifer.

Geologic Framework

In the Medina Lake area, the Trinity aquifer outcrop consists of the lower and upper members of the Glen Rose Limestone and the Edwards aquifer outcrop primarily consists of the basal nodular and dolomitic members of the Kainer Formation (pl. 1). The Glen Rose Limestone and the Edwards Group are mostly consistent in thickness throughout the region and dip slightly southeastward. The Glen Rose Limestone crops out in the northern part of the study area, while the Edwards Group forms bluffs and hilltop caps in the southern part of the study area. The lower member of the Glen Rose Limestone crops out along the Medina River channel from the upper end of Medina Lake, northward to Bandera (pl. 1). Permeability in the lower member of the Glen Rose Limestone generally is low unless the zone is cavernous or is fractured (Ashworth, 1983).

The upper member of the Glen Rose Limestone underlies Medina Lake and also crops out in the channel from the outflow of Medina Lake to the midpoint of Diversion Lake where the Diversion Lake fault intersects Diversion Lake (pl. 1). The upper member is relatively impermeable, although lateral cave development is common at the contact between the upper member and the overlying basal nodular member of the Kainer Formation. The cave development probably results from dissolution associated with the perching of infiltrated meteoric water above the relatively impermeable upper member of the Glen Rose Limestone (Kastning, 1986).

On the southern side of Medina Lake, the Edwards Group crops out as limestone bluffs comprised primarily of the basal nodular and dolomitic members of the Kainer Formation. A thicker sequence of the Edwards aquifer (hydrogeologic subdivisions VIII through III) is exposed in an area adjacent to Diversion Lake downstream of the Diversion Lake fault (pl. 1). Hydrogeologic subdivision II (cyclic and marine members, undivided) and subdivision I (the overlying Georgetown Formation) have been eroded and are not exposed in the study area. A thin layer of the basal nodular member forms the floor of Diversion Lake from the midpoint of the reservoir downstream, past the dam, to Haby Crossing fault. Field observations and geophysi-

cal information from well TD–68–25–904 (pl. 1) confirm that the remnant of Edwards aquifer underlying the lower one-half of Diversion Lake is approximately 50 ft thick. Southwest of Medina Lake, the Edwards Group changes lithology and grades into the stratigraphically equivalent Devils River Formation (pl. 1).

Rocks in the southern part of the Medina Lake area are extensively faulted and fractured. Three major faults are present—Medina Lake, Diversion Lake, and Haby Crossing (pl. 1). The Medina Lake fault intersects Medina Lake upstream of Medina Dam. The vertical displacement of the Medina Lake fault is about 70 to 100 ft; the displacement of the Diversion Lake fault is about 50 to 60 ft. The Haby Crossing fault intersects the Medina River downstream of Diversion Dam, juxtaposing rocks of the Edwards Group/Devils River Formation against the much younger rocks of the upper confining unit (pl. 1). The Haby Crossing fault, with a vertical displacement of about 600 to 900 ft, is the only known flow-barrier fault in the Medina Lake area (Small and Lambert, 1998).

Generalized hydrogeologic section *A–A′* (pl. 1) shows the relative positions of rocks of the Edwards aquifer approximately parallel to Diversion Lake and southeastward across the Haby Crossing fault. The Edwards aquifer rocks in this area primarily consist of the basal nodular, dolomitic, Kirschberg evaporite, and grainstone members of the Kainer Formation, with caps of the regional dense member and the leached and collapsed members, undivided, of the Person Formation. The large vertical displacement on the Haby Crossing fault completely offsets the Kainer Formation on the upthrown side of the fault from the cyclic and marine members, undivided, of the Person Formation and the Georgetown Formation on the downthrown side. The Medina irrigation canal and the Medina River cut into the dolomitic member and parts of the upper basal nodular member of the Kainer Formation near the southeastern end of the hydrogeologic section (pl. 1).

Hydrogeologic section *B–B′* (pl. 1) shows the relative positions of the hydrogeologic subdivisions in each major fault block. The contact between the upper member of the Glen Rose Limestone and the basal nodular member of the Kainer Formation on the southern side of Medina Lake is at an altitude of about 1,000 ft above mean sea level (MSL). The Glen Rose Limestone/Edwards Group contact gradually decreases in altitude southeastward because of the regional structural dip of the rocks. The contact between the basal nodular member and the dolomitic member on the southern side of the lake is about 1,050 ft above MSL. The fault block bounded by the Medina Lake fault and the Diversion Lake fault (*B–B′*) contains additional faults and fractures with no substantial vertical displacement of the hydrogeologic subdivisions; thus the permeable rock units provide a potential pathway for movement of water from Medina Lake into the adjacent Edwards aquifer when the lake stage is greater than 1,000 ft above MSL. During the study, the lake stage was always greater than 1,000 ft above MSL, and field observations confirmed water seeping from the bluffs into the spillway channel adjacent to Medina Lake and from the hillsides downstream of both Medina and Diversion Dams.

Farther south on section *B–B′* (pl. 1), the Kainer Formation grades into the Devils River Formation, which is the stratigraphic equivalent of the Edwards Group in central and western Medina County. Data in USGS files for well TD–68–33–102 indicate that the top of the basal nodular member of the Kainer Formation (hydrogeologic subdivision VIII) is about 535 ft above MSL and that the top of the Glen Rose Limestone is about 475 ft above MSL. This fault block is bounded on the south by the Haby Crossing fault, where rocks of the Edwards aquifer on the upthrown side are completely offset from those on the downthrown side (pl. 1). The displacement of permeable rocks across the Haby Crossing fault is large enough that the fault forms a barrier to ground-water flow. The Haby Crossing fault diverts ground water into a southwesterly path parallel to the trend of the fault rather than following the regional dip of the rock units to the southeast, the direction of regional flowpaths in the Trinity aquifer (Maclay, 1995; Groschen, 1996).

Flow Systems

The Edwards aquifer and Trinity aquifer systems primarily depend on the amount of precipitation received in their respective recharge areas. Recharge to the Edwards aquifer in the San Antonio area results from the infiltration of precipitation on the aquifer outcrop and seepage from lakes and rivers in the recharge zone (fig. 1). Rivers and streams in the catchment area upstream of the recharge zone flow across exposed outcrops of the Edwards aquifer, losing much or all of their base flow to the unconfined part of the aquifer. The Edwards aquifer is anisotropic, with preferential flowpaths controlled by the distribution and displacement of joints and faults in the Balcones fault zone. Transmissivity in the Edwards aquifer varies from about 200,000

to more than 2 million ft^2/d (Maclay and Small, 1986), with the maximum transmissivity aligned with regional faults (Kuniansky and Holligan, 1994).

Similar to the way most recharge reaches the Edwards aquifer, most recharge to the Trinity aquifer results from the infiltration of precipitation on the outcrop and through seepage losses from lakes and rivers (Ashworth, 1983). The Hensel Sand and the lower and upper members of the Glen Rose Limestone (table 1) have the largest outcrop exposure and receive the largest amount of direct recharge. The Cow Creek Limestone primarily is recharged by vertical leakage from overlying strata. After entering the Trinity aquifer, the water moves downdip toward the southeast. Transmissivity in the Trinity aquifer in the Hill Country typically is at least one order of magnitude less than that in the Edwards aquifer, ranging from about 100 to about 58,000 ft^2/d (Kuniansky and Holligan, 1994).

Maclay and Land (1988) identified four generally independent regional ground-water-flow units in the Edwards aquifer that are delineated by downgradient major faults and aquifer discharge (fig. 2). Each flow unit is an area of the aquifer that includes a storage unit and a zone in which water is transmitted from a particular storage unit to a major point of discharge. Two of these flow units, the south-central and north-central, derive part of their flow from the Medina Lake area. Water infiltrates these storage units and moves downdip into the flow units and confined part of the Edwards aquifer, where most eventually discharges to area springs (primarily Comal and San Marcos Springs) or is withdrawn through wells in the San Antonio area.

HYDROLOGIC BUDGET

Individual hydrologic budgets for October 1995–September 1996 were calculated for Medina Lake, Diversion Lake, and Medina/Diversion Lakes combined to estimate water losses from these lakes to the local ground-water systems. Locations of the data-collection sites used for the hydrologic budget are shown in figure 3 and listed in table 2 (at end of report). Hydrologic data, budget estimates, and estimated errors associated with the individual budget components for Medina Lake, Diversion Lake, and Medina/Diversion Lakes combined are included in appendices A and B (at end of report). Error estimates indicate how well individual hydrologic fluxes are measured and understood and also provide a measure of the reliability and accuracy of the hydrologic budget as a predictive tool (Lee and Swancar, 1997). The general hydrologic budget equation for a lake is:

$$\begin{aligned}\Delta S \pm e_S = {} & P \pm e_P - E \pm e_E + SW_{in} \pm e_{SWi} \\ & - SW_{out} \pm e_{SWo} + GW_{in} \pm e_{GWi} \\ & - GW_{out} \pm e_{GWo}, \end{aligned} \quad (1)$$

where

ΔS is change in lake storage;

P is precipitation on the lake;

E is evaporation from the lake surface;

SW_{in} is surface-water inflow to the lake;

SW_{out} is surface-water outflow from the lake;

GW_{in} is subsurface inflow into the watershed from the Edwards or Trinity aquifers, or both;

GW_{out} is subsurface outflow from the lake (losses from lakes/recharge to the ground-water system); and

e_i is uncertainty or error in each term i.

All units are in acre-feet.

The hydrologic budget equation then can be rewritten to solve for the residual term, GW_{out}:

$$\begin{aligned} GW_{out} \pm e_{GWo} = {} & P \pm e_P - E \pm e_E \\ & + SW_{in} \pm e_{SWi} \\ & - SW_{out} \pm e_{SWo} \\ & + GW_{in} \pm e_{GWi} - \Delta S \pm e_S. \end{aligned} \quad (2)$$

Measured terms (for example, SW_{in}) have an associated error that depends on the method of measurement, precision of the instrumentation, and regionalization (interpretation) of the data that results from estimating quantities in a time/space continuum from point data (Winter, 1981). Hydrologic budget terms that are calculated from more than one measured variable might reflect an accumulation of errors in the measured terms (Lee and Swancar, 1997). If a term is derived as the sum or difference of other measured terms, then the potential error is the sum of the variances in the measured terms (Winter, 1981). For the hydrologic budget, each measured term used to calculate GW_{out} was assigned a percentage error to define the confidence limits around the measured values. The percentage error for each measured term was based on the accuracy rating assigned to an individual station record or on the error associated with using a specific method to esti-

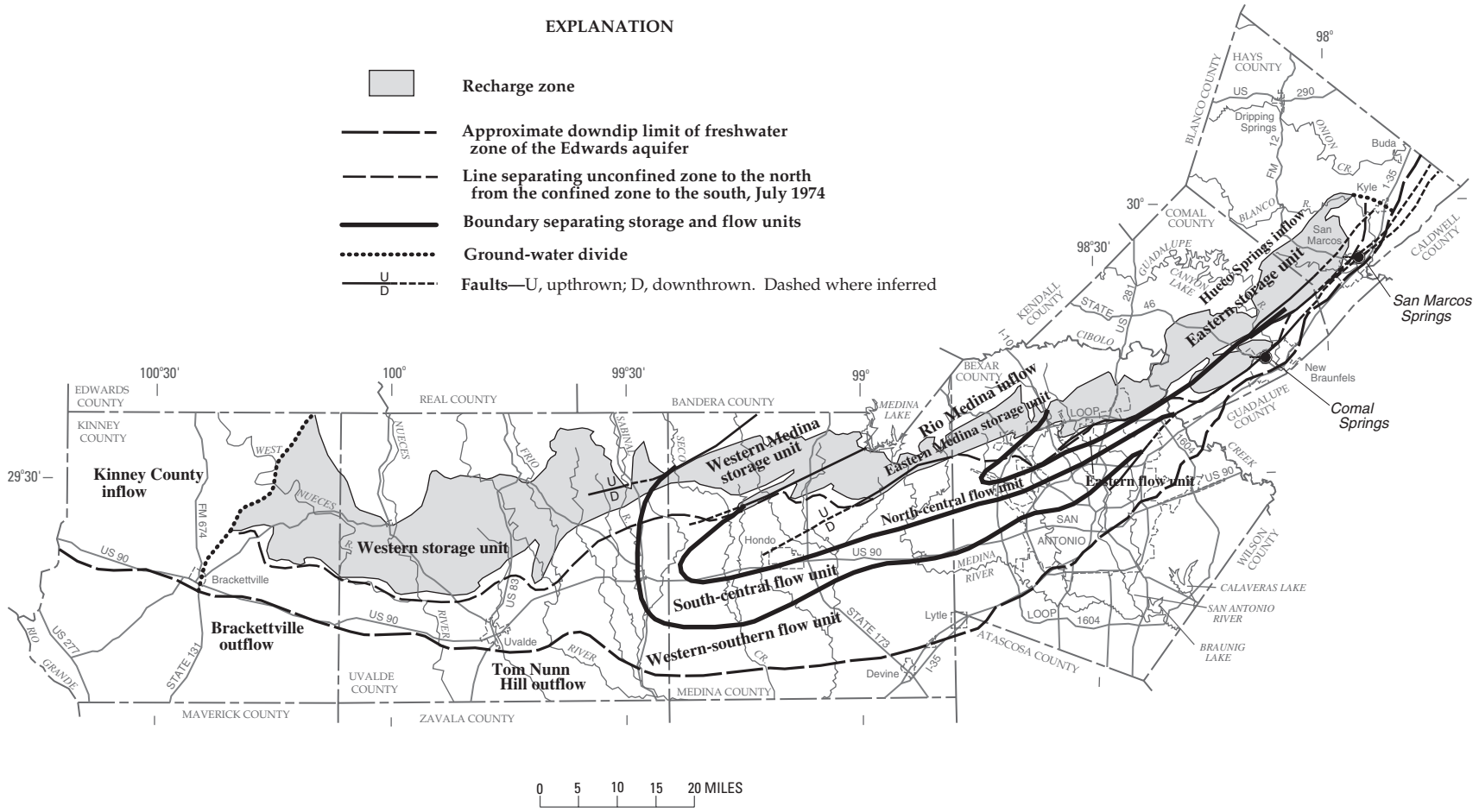

Figure 2. Regional ground-water-flow units of the Edwards aquifer, Texas (modified from Maclay, 1995, pl. 10).

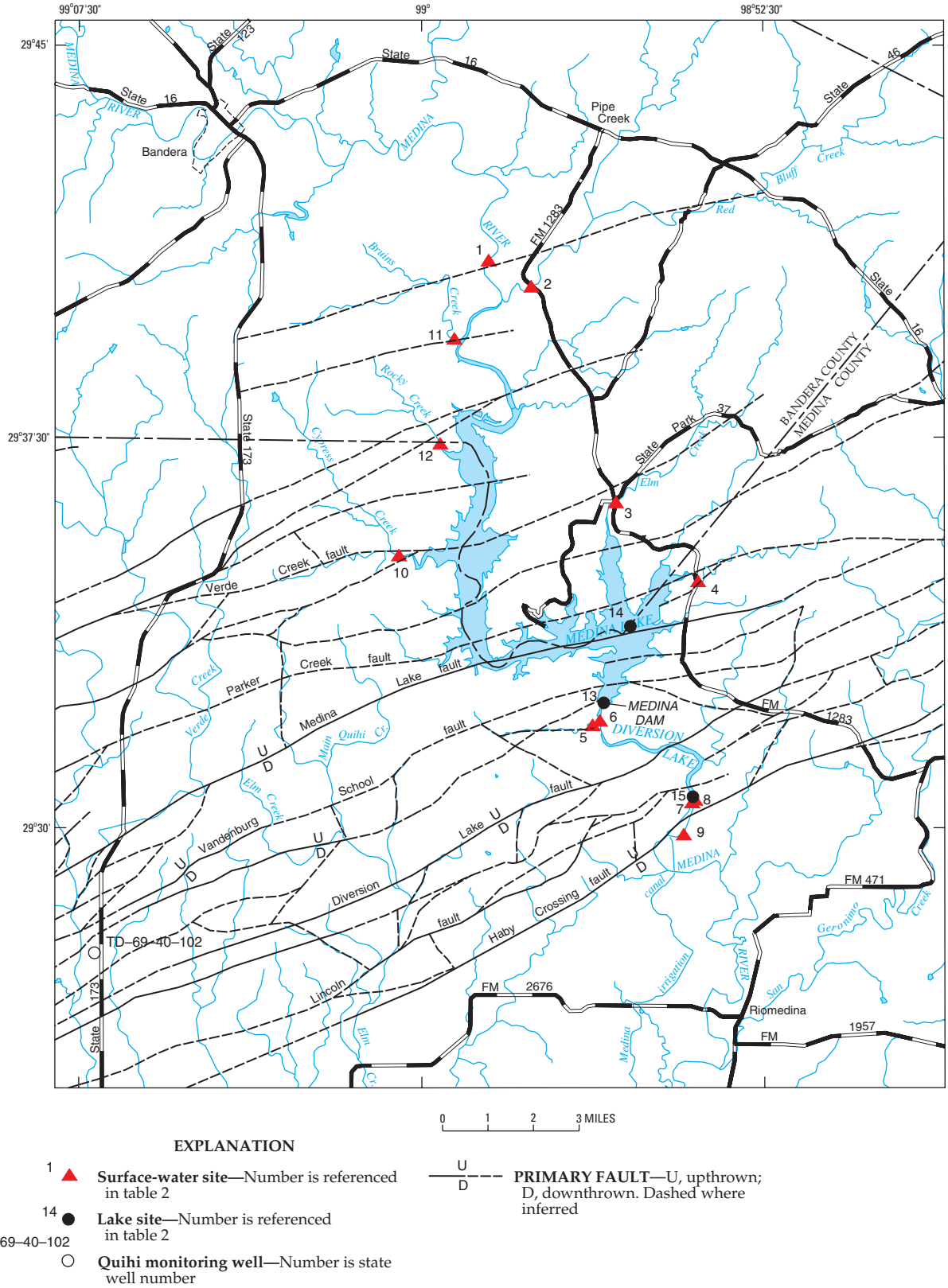

Figure 3. Location of hydrologic budget data-collection sites and Quihi monitoring well (TD–69–40–102), Medina Lake area, Texas.

mate a hydrologic variable (Novak, 1985, p. 65). Error estimates for each component of the budget are discussed in subsequent sections.

The equation used to calculate the error ($\pm e_{GWout}$) associated with the residual term (GW_{out}) is:

$$e_{GWout} = \sqrt{(\%e_P \cdot P)^2 + (\%e_E \cdot E)^2 + (\%e_{SWin} \cdot SW_{in})^2 + (\%e_{SWout} \cdot SW_{out})^2 + (\%e_{GWin} \cdot GW_{in})^2 + (\%e_{\Delta S} \cdot \Delta S)^2}, \quad (3)$$

where

$\%e_P$ is percentage error of precipitation data;

$\%e_E$ is percentage error of evaporation data;

$\%e_{SWin}$ is percentage error of SW_{in} data;

$\%e_{SWout}$ is percentage error of SW_{out} data;

$\%e_{GWin}$ is percentage error of subsurface inflow (GW_{in}) into the watershed; and

$\%e_{\Delta S}$ is percentage error of change in storage.

Daily values for each of the hydrologic budget components were measured during August 1995–September 1996, or calculated (appendix A). Once daily values were determined, hydrologic budgets for Medina Lake, Diversion Lake, and Medina/Diversion Lakes combined were calculated for selected budget periods of 5 or more days during November 1995–September 1996 (appendix B). A total of 21 budget periods were calculated for Medina Lake using data for 162 days, or about 44 percent of the dataset; 22 budget periods were calculated for Diversion Lake using data for 147 days, or about 40 percent; and 24 budget periods were calculated for Medina/Diversion Lakes combined using data for 194 days, or about 53 percent of the dataset (table 3, at end of report). These selected budget periods represent intervals when little or no data were missing for all budget components and when lake levels were assumed to be at steady state.

During the study, Medina Lake stage remained much lower than the normal pool altitude of 1,064.2 ft above MSL (1,072 ft above BMA datum) because of dry climatic conditions. Thus the hydrologic budget calculations are valid only for a range in Medina Lake stage between about 1,018 and 1,046 ft above MSL (1,026 and 1,054 ft above BMA datum).

Precipitation

During 1995–96, the Medina Lake area received below normal precipitation, and most of the smaller tributaries (inflow sites) remained dry or ceased to flow. During October 1995–September 1996, only 16.59 inches (in.) of precipitation were recorded at the National Weather Service station at Seaworld, which represents 53 percent of the average (1988–97) precipitation of 31.13 in. (Hydrosphere Data Products, 1998). Precipitation was a minor component in the hydrologic budgets (table 3).

Precipitation for Medina Lake was determined by averaging the daily precipitation measured by gages on Red Bluff Creek (site 2), Elm Creek (site 3), Cypress Creek (site 10), Bruins Creek (site 11), and Medina Dam (site 13) (fig. 3, table 2), and then multiplying the resulting value by the surface area of Medina Lake (appendix A. Evaporation). Precipitation for Diversion Lake was determined by multiplying the daily precipitation at Diversion Lake by the surface area (appendix A). Precipitation records were assigned a fair accuracy rating because of instrumentation problems, including transmission errors and equipment failure; the error associated with the fair rating was estimated to be about 15 percent (Novak, 1985, p. 65).

Evaporation

Evaporation can be a substantial component of the hydrologic budget in Texas (Larkin and Bomar, 1983). Data collected from the Medina Lake weather station (site 14), and Medina Lake near San Antonio (site 13) (fig. 3, table 2) were used to compute evaporation rates for the Medina Lake area. Daily mean evaporation from the lakes was computed by multiplying the evaporation rates calculated using the mass-transfer method by the surface area of the lakes (appendix A). The accuracy of the evaporation rates using the mass-transfer method was estimated to be 25 percent (Winter, 1981).

Mass-Transfer Theory

Mass-transfer theory treats evaporation as a function of vapor pressure gradient and wind speed above the surface of a lake (Rosenberg and others, 1983). Harbeck (1962) modified the equation during

previous studies (Marciano and Harbeck, 1954; Harbeck and others, 1958) by relating the mass-transfer coefficient (N) to lake-surface area. The resulting equation is:

$$E_{MT} = Nu_2(e_0 - e_a), \quad (4)$$

where

E_{MT} is evaporation by mass-transfer method, in centimeters per day;

N is mass-transfer coefficient, which can be related to lake-surface area;

u_2 is daily average wind speed at 2 meters (m) above the lake, in miles per hour;

e_0 is saturation vapor pressure at the water-surface temperature, in millibars; and

e_a is vapor pressure of the air at 2 m above the lake surface, in millibars.

Estimates of N for Medina and Diversion Lakes ranged from 0.00564 to 0.00583 and from 0.00670 to 0.00681, respectively (appendix A), using the empirical relation $N = 0.00859 / A^{0.05}$ developed by Harbeck (1962), where A is the lake-surface area, in acres. The saturation vapor pressure at the water-surface temperature (e_0) and saturation vapor pressure of the air 2 m above the lake surface (e_s) were calculated using:

$$e_{0,s} = 0.61078 \exp\left[\frac{17.269 \cdot T}{T + 237.30}\right], \quad (5)$$

where

T is water-surface temperature for e_0 and air temperature for e_s, in degrees Celsius (Rosenberg and others, 1983).

To calculate e_a, Rosenberg and others (1983) used the following equation:

$$e_a = \frac{RH \times e_S}{100}, \quad (6)$$

where

RH is relative humidity (ratio of actual to saturation vapor pressure at the same temperature), in percent.

Daily saturation vapor pressures for the lake surface and for the air above the lake were calculated using data from site 14 (fig. 3, table 2); where lake data were not available, data from site 13 were used to supplement the record. In some cases, the saturation vapor pressure of the air above the lake surface was greater than the saturation vapor pressure of the lake-surface air temperature, producing a negative vapor pressure difference ($e_0 - e_a$). This occurred primarily on days in winter and early spring when the relative humidity was high and might result from the instrumentation's inability to precisely measure small differences in the vapor pressures.

Evaporation Rates

Evaporation was one of the smaller components of the Medina Lake hydrologic budget, contributing between 1.4 and 11.8 percent to the total Medina Lake hydrologic budget for the selected budget periods. The evaporation component of the Diversion Lake hydrologic budget was even smaller, contributing between 0.09 and 1.7 percent to the Diversion Lake hydrologic budget for selected budget periods. Daily evaporation rates for Medina and Diversion Lakes are shown in figure 4 and listed in appendix A. Average evaporation from Medina Lake, Diversion Lake, and Medina/Diversion Lakes combined for the selected hydrologic budget periods are listed in table 3 and appendix B.

The largest average rate of evaporation from Medina Lake for the selected hydrologic budget periods was 0.269 in/d during July 19–23, 1996, for a total of 1.34 in. (appendix A); the smallest was 0.029 in/d during February 21–27, 1996, for a total of 0.205 in. The average volume of water evaporated from Medina Lake ranged from 10.2 to 62.2 acre-feet per day (acre-ft/d) for the selected hydrologic budget periods (table 3).

Although the daily rate of evaporation from Diversion Lake was slightly more than that from Medina Lake (fig. 4), the volume of evaporation was less because the surface area of Diversion Lake is substantially smaller than the surface area of Medina Lake. The equation used to calculate N is based on the reciprocal of the area to a power ($1/A^{0.05}$). The largest average rate of evaporation from Diversion Lake for the selected budget periods was 0.316 in/d during July 18–23, 1996, for a total of 1.90 in.; the smallest was 0.042 in/d for 6 days during February 21–26, 1996, for a total of 0.25 in. One of the smallest components of the Diversion Lake budget, the average volume of evaporation ranged from 0.4 to 3.4 acre-ft/d for the selected hydrologic budget periods (table 3).

Evaporation losses from Medina/Diversion Lakes combined were calculated by summing the evaporation from both lakes. The average volume of evaporation from the lakes combined for the selected budget periods

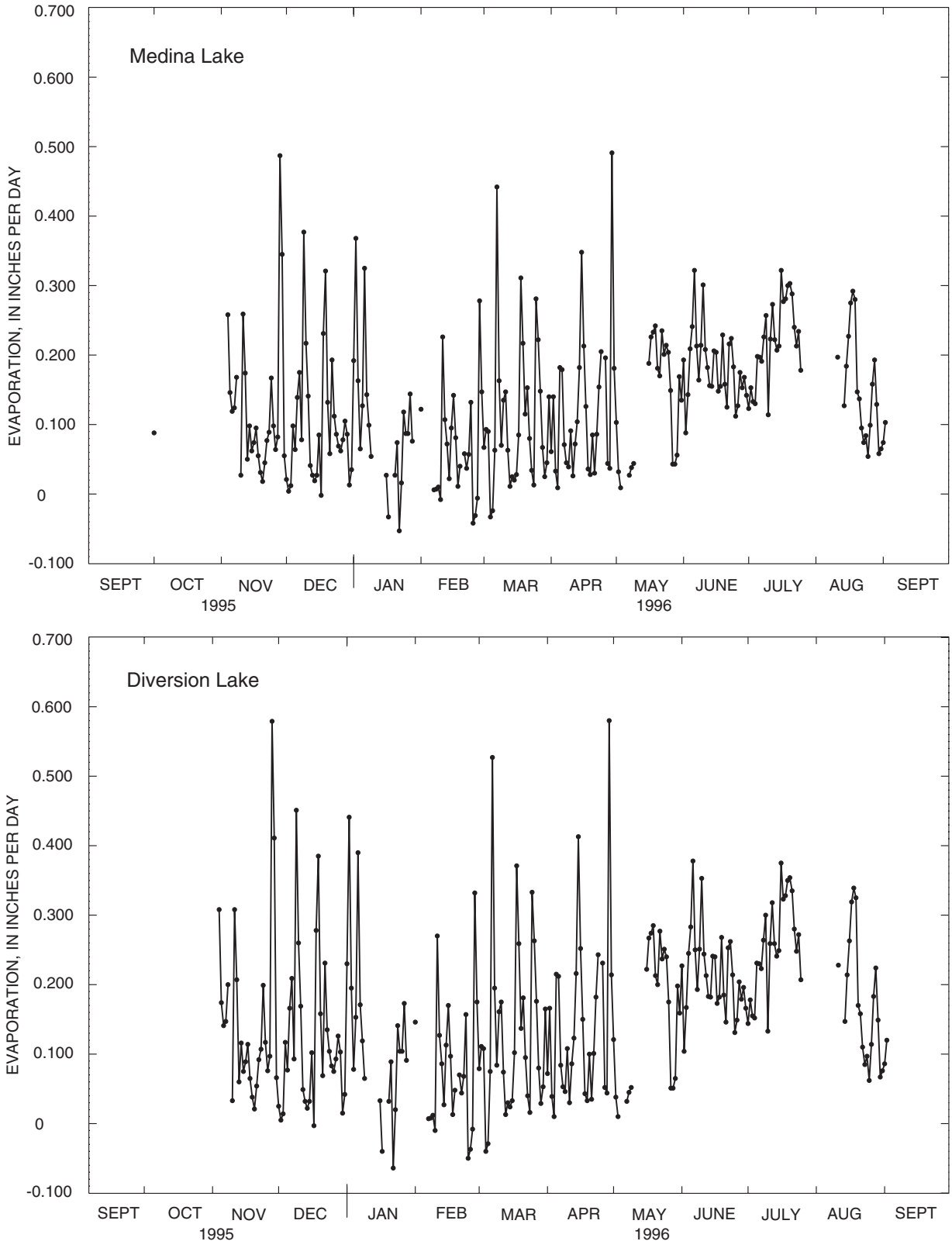

Figure 4. Daily evaporation rates for Medina and Diversion Lakes, Medina Lake area, Texas.

ranged from 10.5 to 63.6 acre-ft/d (table 3). Evaporation from the lakes combined also was one of the smaller components of the hydrologic budget during most of the study, except during summer 1996, when SW_{in} decreased.

Surface Water

Surface-water inflow (SW_{in}) to and surface-water outflow (SW_{out}) from Medina Lake are major components of the Medina Lake and Diversion Lake hydrologic budgets. The average values of SW_{in} to Medina Lake were calculated by summing the discharges from sites 1, 2, 3, and 10 (fig. 3, table 2). Sites 4, 11, and 12 were dry for most of the study and did not contribute to the SW_{in} component of the Medina Lake hydrologic budget. The station records for the SW_{in} sites were rated good to fair and were assigned an error rating ranging from 10 to 15 percent (Novak, 1985, p. 65).

During 1996, the primary contribution of SW_{in} to Medina Lake was from site 1, with minor contributions from sites 3 and 10. SW_{in} to Medina Lake ranged from 6.6 to 145.2 acre-ft/d for selected hydrologic budget periods, with the largest flows measured at the beginning of the data-collection period and generally decreasing throughout the remainder of the study (table 3). SW_{out} from Medina Lake was obtained from site 6 for stages of less than about 2.5 ft. A stage-discharge relation cannot be determined for stages greater than about 2.5 ft at site 6 because the river channel is not well defined and is filled with gravel and debris. The station record for SW_{out} was rated good and assigned an error of 10 percent (Novak, 1985, p. 65). Average SW_{out} from Medina Lake ranged from 57.5 to 372.9 acre-ft/d for the selected hydrologic budget periods (table 3).

Similar to Medina Lake, SW_{in} and SW_{out} are major components of the Diversion Lake hydrologic budget. SW_{in} to Diversion Lake was obtained by summing the discharges from sites 5 and 6 (fig. 3, table 2). Site 6 measured outflow and leakage from Medina Lake that was the primary source of inflow to Diversion Lake. Site 5 is a minor tributary that generally contributed less than 2 acre-ft/d to Diversion Lake during the study and ceased to flow in June 1996 (appendix A). Station records for the SW_{in} sites were rated good to fair, and assigned an error rating ranging from 10 to 15 percent (Novak, 1985, p. 65). Average SW_{in} to Diversion Lake for the selected hydrologic budget periods ranged from 30.7 to 366.6 acre-ft/d (table 3).

SW_{out} from Diversion Lake was calculated by summing the discharges from sites 7 and 8. SW_{out} from Diversion Lake primarily is flow released down the Medina irrigation canal system and measured at site 7. Site 8 adds a small amount to the SW_{out} component and is a measure of the seepage from Diversion Lake that is reentering the surface-water system immediately downstream of Diversion Dam. The SW_{out} component for Diversion Lake was calculated using data from sites 7 and 8 and from sites 7 and 9. The SW_{out} component was calculated both ways because flow in the Medina River increases between sites 8 and 9, where an additional 23 to 51 acre-ft/d reenters the surface-water system as seepage from the adjacent hillsides, most likely from Medina and Diversion Lakes. Site 8 was selected as the SW_{out} site for the Diversion Lake hydrologic budget because the estimated ground-water outflow (GW_{out}) from Diversion Lake was negative when site 9 was used in the hydrologic budget calculations. GW_{out} was negative in part because Medina Lake water that is included in hillside seepage returns as unaccountable ground-water inflow (GW_{in}) to Diversion Lake. These results indicate that part of the GW_{out} losses accounted for in the Medina Lake hydrologic budget are returning to the surface-water system near Diversion Lake and are not recharging the Edwards aquifer. Station records were rated as good and assigned an error of 10 percent (Novak, 1985, p. 65). Average SW_{out} for Diversion Lake ranged from 10.7 to 288.5 acre-ft/d for selected hydrologic budget periods (table 3).

SW_{in} to Medina/Diversion Lakes combined was calculated using the same sites as for Medina Lake (sites 1, 2, 3, and 10); SW_{out} was calculated using sites 7 and 9. Site 9 was selected as the downstream site because the gage provides a better estimate of the total losses from Medina and Diversion Lakes that are reentering the stream channel, and also because additional seepage that reentered the stream channel downstream of the outflow site used in the Diversion Lake budget could be accounted for as SW_{out}. Average SW_{in} to Medina/Diversion Lakes combined ranged from 5.1 to 142.3 acre-ft/d, and average SW_{out} ranged from 73.4 to 430.1 acre-ft/d for the selected hydrologic budget periods (table 3). The largest SW_{out} occurred during the summer months when large quantities of water were released down the Medina irrigation canal to meet irrigation demands.

Storage

The changes in storage (ΔS) in Medina and Diversion Lakes were calculated using stage-volume-area (area-capacity) tables from the 1995 volumetric survey (Texas Water Development Board, 1996a) and stage data from sites 13 and 15. Volumetric surveys of Medina and Diversion Lakes were done in July 1995 because the existing capacity curves for Medina Lake were based on a volumetric survey completed in 1912 and because the data available for Diversion Lake were insufficient. The volumetric survey was done when the stage at Medina Lake ranged from 1,048.57 to 1,048.60 ft above MSL (1,056.37 to 1,056.40 ft above BMA datum). Additional data were obtained from aerial surveys made during 1984–85 to complete the upper end of the stage-volume-area tables (above 1,048 ft above MSL) for Medina Lake. The Medina Lake volumetric survey results indicate that the stage-volume-area tables have not changed appreciably since 1912. The station records were rated good for Medina Lake and fair for Diversion Lake and were assigned an error of 10 and 15 percent, respectively (Novak, 1985, p. 65).

Similar to SW_{in} and SW_{out}, ΔS in Medina Lake also was a major component of the hydrologic budget. Total storage in Medina Lake ranged from about 69,000 to 155,000 acre-ft (appendix A) during the study, and stage ranged from about 1,019 to 1,045 ft above MSL (1,027 to 1,053 ft above BMA datum). The average ΔS for the selected hydrologic budget periods ranged from -443.6 to -48.5 acre-ft/d (table 3). A negative ΔS indicates a decrease in the amount of water stored in the lake from the previous day. A positive ΔS indicates an increase in water stored in the lake from the previous day. A zero ΔS indicates that there was neither an increase nor a decrease in the storage from the previous day. Throughout most of the study, precipitation was below average and total storage in Medina Lake decreased.

Diversion Lake has substantially less storage capacity than Medina Lake. Total storage in Diversion Lake ranged from 1,210 to 2,070 acre-ft (appendix A), and average ΔS ranged from -25.8 to 20.6 acre-ft/d (table 3). The ΔS in Diversion Lake is a relatively minor component of the Diversion Lake hydrologic budget because the lake generally is kept at a constant stage.

The average ΔS in Medina/Diversion Lakes combined was calculated by summing the ΔS for each lake. Similar to the Medina Lake budget, the average ΔS component for the lakes combined is substantial compared to other hydrologic budget components, ranging from -547.8 to -63.3 acre-ft/d (table 3). Overall storage in the lakes combined decreased as a result of providing water to local irrigators during the summer months.

Ground Water

Medina and Diversion Lakes lie atop outcrops of the Edwards aquifer and atop outcrops of the middle and upper Trinity aquifers, thus providing the potential for water to migrate between the lake system and the ground-water-flow system (pl. 1). In a hydrologic budget, GW_{in} represents the potential contribution of water from the Edwards and Trinity aquifers, while GW_{out} represents seepage loss from the lake system that enters the ground-water-flow system. In the case of Medina Lake, however, an unaccountable part of the GW_{out} returns to Diversion Lake and to the surface-water system downstream of Diversion Dam.

Ground-Water Inflow

Water-level altitudes from wells open to the middle and upper Trinity aquifers and from springs (pl. 2; table 4, at end of report) were used to determine if there is a GW_{in} component from the Trinity aquifer. Water-level altitudes in wells near Medina Lake that are open to the Trinity aquifer are influenced by Medina Lake, similar to the way wells open to the Edwards aquifer are influenced by the lake.

Most springs in the area originate from caps of the upper member of the Glen Rose Limestone (upper Trinity aquifer; table 1) that form hydrologically discrete, local flow systems that discharge along bedding planes or that occur at the contact between the lower and upper members of the Glen Rose Limestone (middle and upper Trinity aquifers). Rocks of the upper Trinity aquifer are relatively impermeable and probably did not contribute flow to the lake system that was not accounted for as part of SW_{in}.

Wells open to the middle Trinity aquifer are separated from the lake system by the upper member of the Glen Rose Limestone (upper Trinity aquifer), which forms a confining unit in the Medina lake area (pl. 1, table 1). LBG-Guyton Associates (1995) determined that transmissivity of the Glen Rose Limestone is the limiting factor in the exchange of water between the Edwards and Trinity aquifers and estimated that—under 1994 water-level conditions—the Glen Rose Limestone can contribute only 314 acre-ft/yr along 14 mi of the Haby Crossing fault in Medina and Bexar Counties near

the Medina Lake area, or about 22.4 acre-ft/yr per mile of stream reach. Thus, the GW_{in} component of the hydrologic budget was determined to be inconsequential and was removed from the overall equation. The resulting hydrologic budget equation is simplified as follows:

$$GW_{out} \pm e_{GWo} = P \pm e_P + SW_{in} \pm e_{SWi} - SW_{out} \pm e_{SWo} - E \pm e_E - \Delta S \pm e_S. \quad (7)$$

Ground-Water Outflow

GW_{out} was calculated as the residual term in the hydrologic budget equation and represents the water in the hydrologic system that was not accounted for by the other hydrologic components including the errors. The GW_{out} components for Medina Lake and Diversion Lake represent losses from the lakes that are assumed
to contribute recharge to the local ground-water-flow systems of the Edwards aquifer and the upper Trinity aquifer. Nonlinear polynomial functions were used to calculate a least-squares fit to data points from the selected hydrologic budget periods to develop computer-generated curves relating GW_{out} to lake stage for Medina and Diversion Lakes. No curve was developed for Medina/Diversion Lakes combined because of the influence of reservoir operations on the estimated GW_{out} from Diversion Lake and the inability to relate the total GW_{out} to a particular stage in either reservoir. Estimated average GW_{out} from Medina Lake ranged from about -14.0 to 135 acre-ft/d for the selected hydrologic budget periods (table 3). The cumulative error associated with the estimated average GW_{out} ranged from 19.9 to 60.1 acre-ft/d. The error was similar to the estimated GW_{out} for some budget periods during the summer of 1996. The negative GW_{out} of -14.0 acre-ft/d (hydrologic budget period July 12–18, 1996, table 3) is probably the result of large error associated with some of the hydrologic budget components, such as storage, and is not an indication of inflow to Medina Lake.

The relation between Medina Lake stage and Medina Lake loss to the ground-water system (fig. 5) shows that GW_{out} increases between elevations of about 1,025 and 1,045 ft above MSL (1,033 to 1,053 ft above BMA datum). The slope of the relation flattens toward 1,045 ft, resulting in smaller increases in GW_{out} for given increments of stage along the upper right segment of the curve. Along the lower left segment—between 1,025 and about 1,035 ft—few hydrologic budget periods are represented because SW_{out} could not be estimated at site 6 above a stage of about 2.5 ft owing to channel geometry, gravel, and debris. Between stages of 1,035 and 1,043 ft, the observed rates of GW_{out} are highly irregular, ranging up to 135 acre-ft/d at a stage of 1,042 ft. Above 1,043 ft, the observed rates are less variable and average less than 115 acre-ft/d. Nevertheless, the greatest losses from the lake to the ground-water system appear to result from lake stages that range from about 1,040 to 1,045 ft above MSL, which coincides with the altitude of one of the most porous and permeable parts of the basal nodular member of the Kainer Formation on the southern side of Medina Lake (pl. 1).

Localized recharge to the Edwards aquifer from Medina Lake also is indicated in water-level data collected from the Quihi monitoring well (TD–69–40–102), which taps the north-central flow unit (fig. 2) of the Edwards aquifer southwest of Medina Lake (fig. 3). Figure 6 shows monthly average water levels in the Quihi well plotted against monthly average lake stages during October 1993–February 1997. Characteristics of the resulting curve indicate that water levels in downgradient parts of the Edwards aquifer are related to Medina Lake stage in ways similar to the relation between GW_{out} and lake stage (fig. 5). The slope of the relation is very steep between stages of about 1,015 ft and about 1,020 ft, where there is a comparatively large increase in water-level altitude for a given increment of lake stage. Each curve shows moderate increases in GW_{out} (fig. 5) and in water level (fig. 6) with lake stages between about 1,025 ft and 1,045 ft above MSL (1,033 to 1,053 ft above BMA datum). Above 1,045 ft, the curve in figure 6 steepens sharply, indicating comparatively large increases in water-level altitude for given increments of lake stage. This abrupt change in slope occurs at about the same altitude, about 1,045 ft above MSL, as that of one of the most porous and permeable parts of the basal nodular member of the Kainer Formation on the southern side of Medina Lake (pl. 1).

The basal nodular member and the overlying dolomitic member of the Kainer Formation form bluffs on the southern sides of Medina and Diversion Lakes (pl. 1). Caves have developed along bedding planes between these hydrogeologic subdivisions (table 1). Hydrogeologic section *B–B′* shows that the basal nodular member and the dolomitic member are in hydrologic connection with Medina and Diversion

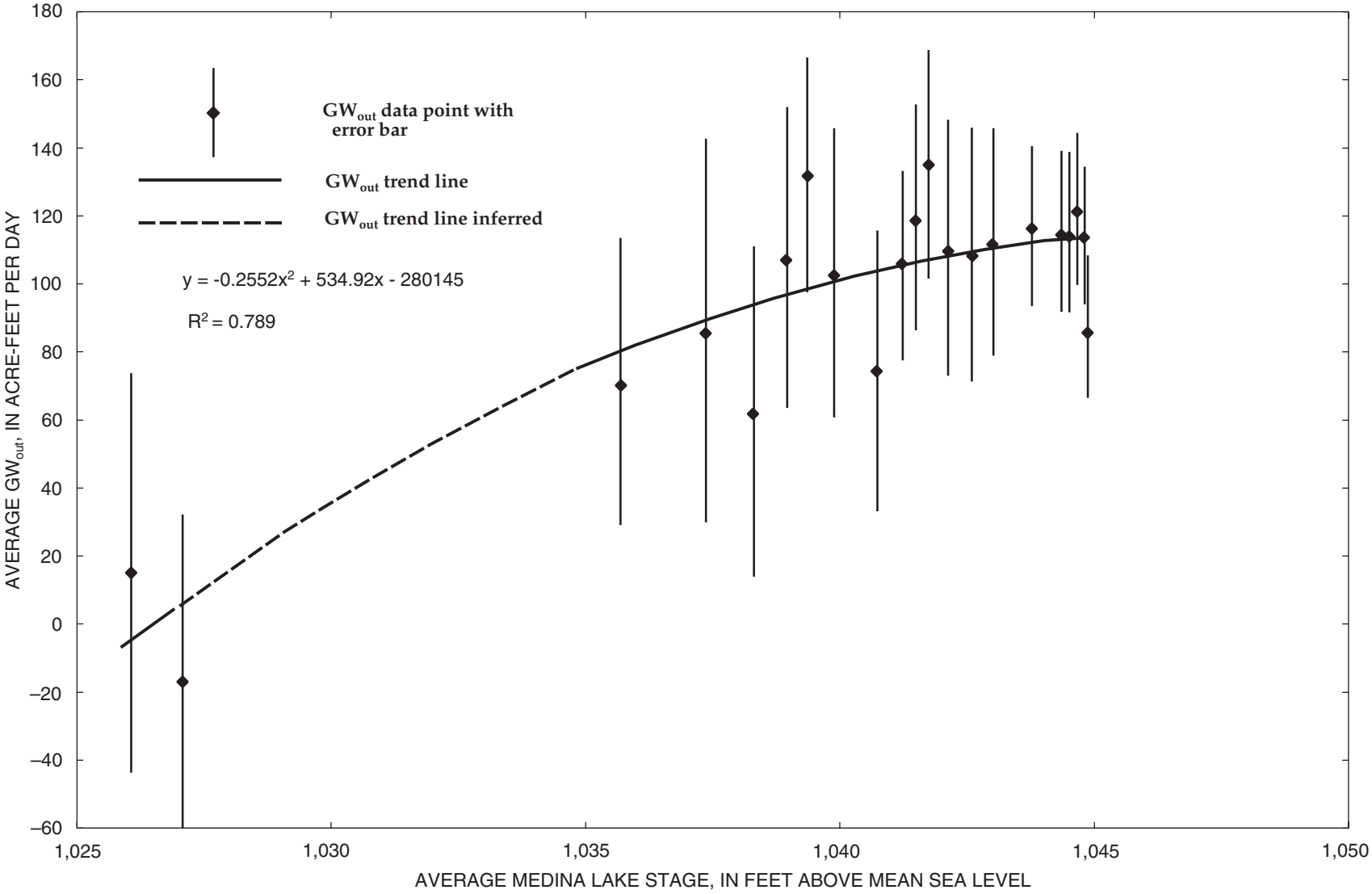

Figure 5. Relation of ground-water outflow (GW_{out}) to Medina Lake stage for selected hydrologic budget periods, Medina Lake area, Texas.

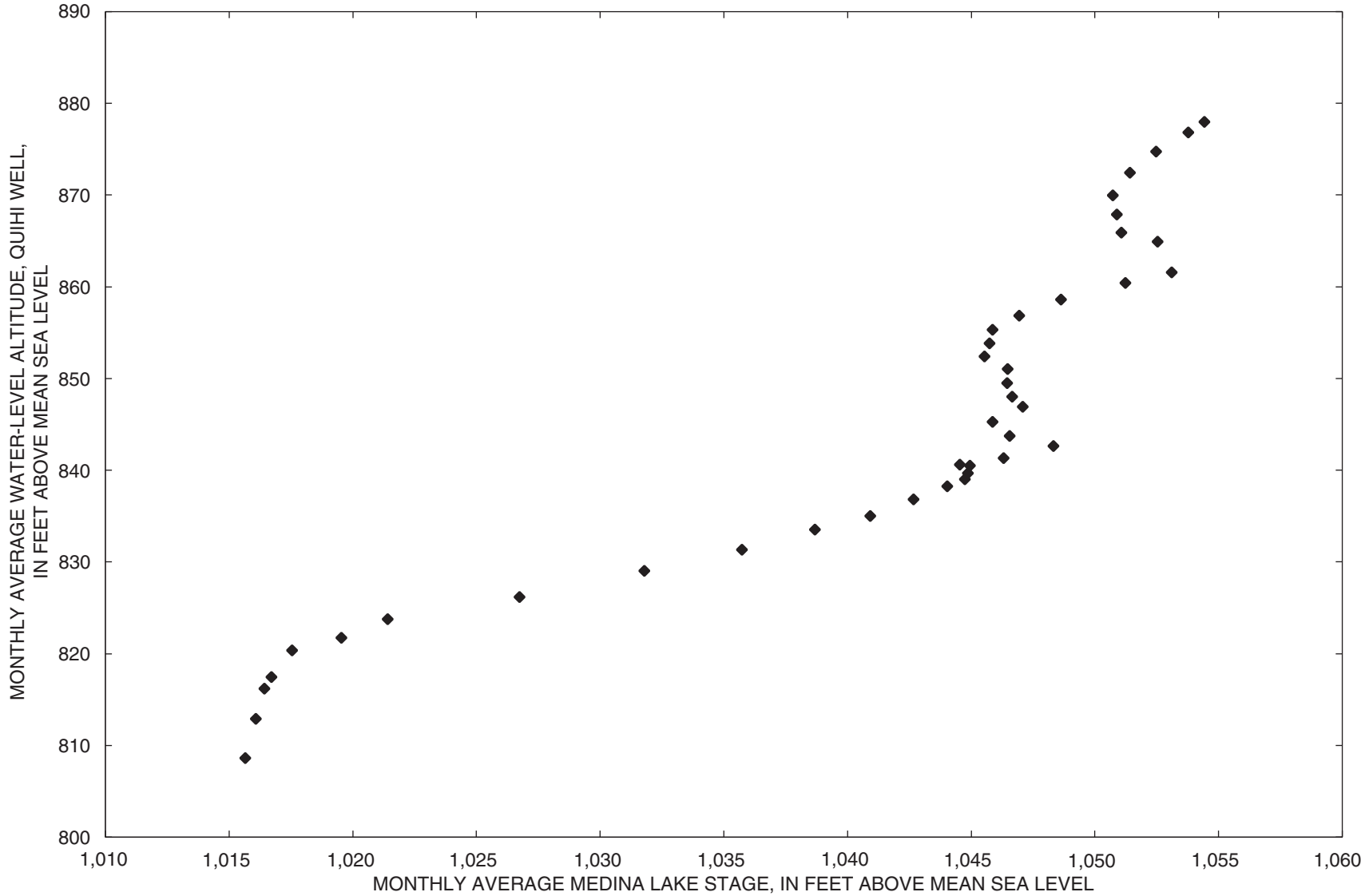

Figure 6. Relation of monthly average Quihi well water-level altitude to monthly average Medina Lake stage, Medina Lake area, Texas, October 1993–February 1997.

Lakes, thus providing a potential for water to move from the lakes into the surrounding Edwards aquifer. The contact between the upper member of the Glen Rose Limestone and the basal nodular member of the Kainer Formation (Edwards aquifer) occurs at about 1,000 ft above MSL on the southern side of Medina Lake near Medina Dam. Geophysical logs indicate a change in lithology about 20 to 25 ft above the base of the basal nodular member. Field observations indicate the likelihood of larger porosity and higher permeability in the middle and upper parts of the basal nodular member, compared to the lower part. These field observations, the geophysical logs, and the characteristics of the curves in figures 5 and 6 indicate that the local geology largely determines the rate of water loss from Medina Lake to the ground-water system. Such losses are apparently greater when Medina Lake stages are higher than the base of the basal nodular member, or higher than about 1,020 to 1,025 ft above MSL.

The average GW_{out} from Diversion Lake for the selected hydrologic budget periods ranged from -1.2 to 93.1 acre-ft/d (table 3), which is generally much less than the volumes associated with SW_{in} and SW_{out}. The error associated with GW_{out} from Diversion Lake ranged from 4.4 to 45.7 acre-ft/d. In most cases, the GW_{out} error was comparable to, or greatly exceeded, the value for GW_{out}. The high error results, in part, from the 10- to 15-percent error associated with large values of SW_{in} and the 10-percent error associated with SW_{out}. Although the negative GW_{out} values from Diversion Lake can be accounted for by the large errors associated with small GW_{out} values, they might also indicate inflow to Diversion Lake from Medina Lake. The hydrologic budget results indicate that, under steady-state conditions, GW_{out} from Diversion Lake is related to Diversion Lake stage (fig. 7). GW_{out} from Diversion Lake gradually increases as the stage in Diversion Lake increases, ranging from zero at 911.0 ft above MSL to about 70 acre-ft/d at 913.5 ft above MSL (918.8 to 921.3 ft above BMA datum). Similar to conditions at Medina Lake, the higher rates of GW_{out} from Diversion Lake occur at about the same altitude as the middle part of the basal nodular member of the Kainer Formation.

Average GW_{out} from Medina/Diversion Lakes combined ranged from 36.1 to 119 acre-ft/d (table 3) for the selected hydrologic budget periods. The GW_{out} error for the Medina/Diversion Lakes combined hydrologic budget ranged from 23.1 to 71.3 acre-ft/d. The magnitude of the GW_{out} error for the lakes combined hydrologic budget was similar to the GW_{out} error for the Medina Lake hydrologic budget for most of the study. GW_{out} for Medina/Diversion Lakes combined hydrologic budget periods are less than the sum of GW_{out} for similar Medina and Diversion Lakes hydrologic budget periods. As described previously, this decrease in the total GW_{out} results in part from the difference in calculating the SW_{out} using site 8 for the Diversion Lake hydrologic budget or site 9 for the Medina/Diversion Lakes combined hydrologic budget, and in part from unaccountable inflow to Diversion Lake from Medina Lake when Medina Lake stage is greater than about 1,025 ft above MSL. By using site 9, the additional seepage from Medina and Diversion Lakes that reenters the Medina River channel downstream of Diversion Dam (below site 8) is accounted for in the Medina/Diversion Lakes combined SW_{out} component and is not attributed to the overall GW_{out} component. The increase in streamflow between sites 8 and 9 during the study ranged from 22.4 to 51.0 acre-ft/d (8,180 to 18,610 acre-ft/yr) (appendix A).

Seeps and springs visible in the hillside adjacent to and downstream of Diversion Lake provide evidence to support the concept of discharge of water from Medina and Diversion Lakes into the Medina River. A comparison of GW_{out} from Medina/Diversion Lakes combined with Medina Lake stage (fig. 8) shows that GW_{out} for all but one hydrologic budget period ranges from 60 to 120 acre-ft/d when Medina Lake stage ranges from 1,021 to 1,045 ft above MSL. The distribution of data points is different than that shown for Medina Lake (fig. 5) because of the contribution of GW_{out} from Diversion Lake to the Medina/Diversion Lakes combined budget. The contribution of GW_{out} from Diversion Lake is dependent on the managed stage and the water needed for downstream users, which often are not the same conditions as those for Medina Lake.

The hydrologic budgets for Medina Lake and Medina/Diversion Lakes combined show an increase in GW_{out} for each corresponding increase in Medina Lake stage during the study; likewise the hydrologic budget for Diversion Lake shows an increase in GW_{out} for each corresponding increase in Diversion Lake stage. However, the GW_{out} in each hydrologic budget represents only a short term (less than 1 year). The increase in GW_{out} from Medina Lake and from Medina/Diversion Lakes combined is limited to a range in Medina Lake stage from about 1,025 to 1,045 ft above MSL (fig. 5) and from about 1,021 to 1,045 ft above MSL (fig. 8),

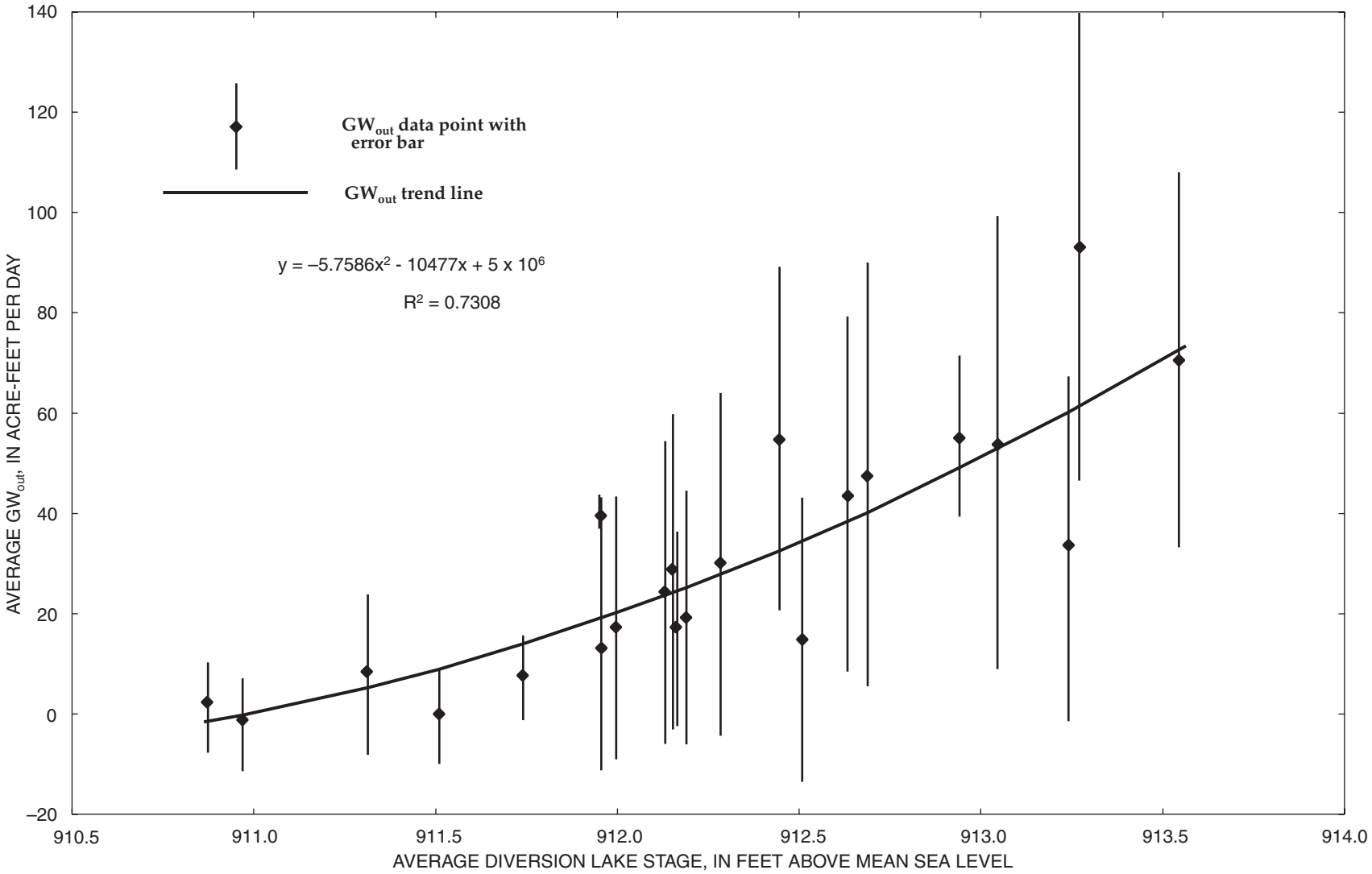

Figure 7. Relation of ground-water outflow (GW_{out}) to Diversion Lake stage for selected hydrologic budget periods, Medina Lake area, Texas.

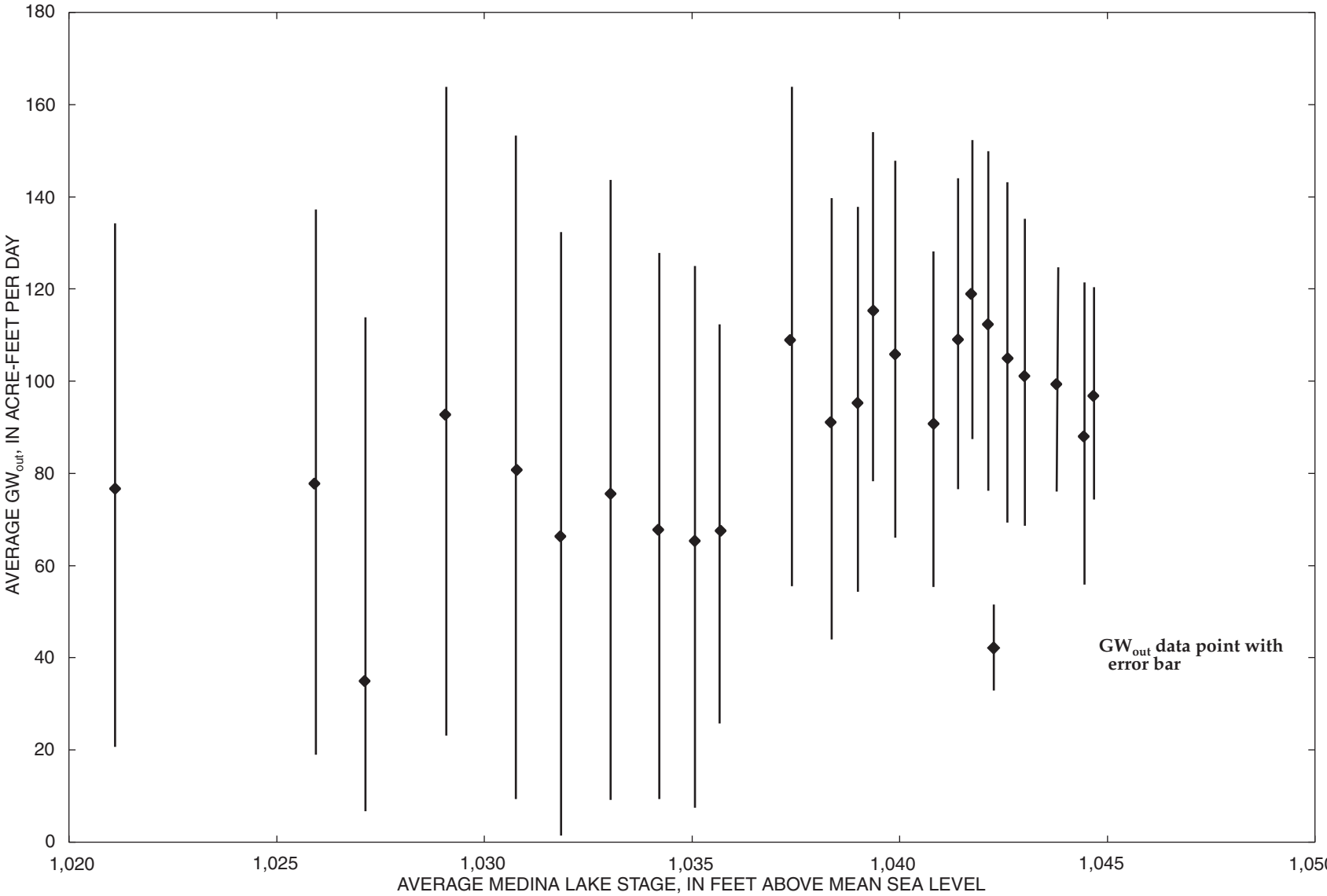

Figure 8. Relation of Medina/Diversion Lakes combined ground-water outflow (GW_{out}) to Medina Lake stage for selected budget periods, Medina Lake area, Texas.

respectively. Likewise, the increase in GW_{out} from Diversion Lake is limited to a range in Diversion Lake stage from 911.0 to 913.5 ft above MSL (fig. 7). The accuracy of the estimated GW_{out} for these hydrologic budgets is influenced by the estimated errors associated with individual budget components.

ESTIMATED GROUND-WATER RECHARGE METHODS

Historically, losses from Medina and Diversion Lakes have been assumed to recharge the Edwards aquifer either directly, or indirectly through the Trinity aquifer. The hydrologic budgets were used to compare the results of the current study with earlier methods used to estimate recharge to the Edwards aquifer. Recharge to the Edwards aquifer from Medina and Diversion Lakes ranges from about 6 to 9 percent of the estimated annual recharge to the entire Edwards aquifer (Lowry, 1955; Choffel and Vaugh, 1993; Raba-Kistner Consultants, Inc., 1993; U.S. Geological Survey, 1997; HDR Engineering, Inc., 1998).

Two methods are used to estimate recharge to the Edwards aquifer in the Medina Lake area. The first method (USGS method), developed by Lowry (1953, 1955), has been used by USGS and EAA to estimate annual recharge to the Edwards aquifer. The second method (Trans-Texas method), developed by Espey, Huston and Associates, Inc. (1989), is a modification of the U.S. Soil Conservation Service runoff curve number (CN) procedure to estimate potential runoff for the area over the recharge zone and includes stage-recharge curves for Medina and Diversion Lakes. The Trans-Texas method is currently (1999) being used by HDR Engineering, Inc. (HDR) to estimate recharge to the Edwards aquifer for the Trans-Texas Program (Texas Water Development Board, 1992), and has been proposed as an alternative to the USGS method for estimating recharge in the Medina Lake Basin (Choffel and Vaugh, 1993; HDR Engineering, Inc., 1998).

The USGS method used for the Medina Lake area differs from the USGS approach for other drainage basins in the region because the Medina River is regulated by reservoirs (Puente, 1978). The USGS method for estimating ground-water recharge in the area is based on correlations between reservoir stage and seepage losses into the aquifer. Lowry (1953) developed two correlation curves: one representing seepage losses during rising stages, and the other representing losses during falling stages. Lowry's correlation curves were developed using historical (1912–53) streamflow, pan evaporation, and reservoir stage data that reflect the water balance of the lake system (Puente, 1978). The correlation curves relate monthly average lake contents, in thousands of acre-feet, to seepage losses to the Edwards aquifer. The curves differ substantially; Lowry assumed that the difference was a reflection of bank-storage effects.

The USGS method also accounts for losses from Diversion Lake. Lowry (1953) estimated that, when Diversion Lake is full or nearly full, a constant seepage of 1,500 acre-ft/month recharges the Edwards aquifer. The TWDB volumetric survey (Texas Water Development Board, 1996a) determined that Diversion Lake is at capacity at 918.7 ft above MSL (926.5 ft above BMA datum). Continuous leakage around and below Medina Dam has maintained the level of Diversion Lake to near capacity, except during periods of extended droughts (Puente, 1978). During the current study, GW_{out} from Diversion Lake (at 913.5 ft above MSL) was determined to be about 70 acre-ft/d (fig. 7, table 3) or 2,100 acre-ft/month, which is greater than Diversion Lake losses estimated with the USGS method.

The USGS has used Lowry's curves to calculate monthly recharge to the ground-water system since 1934, assuming that all water lost from the lake system enters the Edwards aquifer. However, because of errors associated with components of the monthly estimates, the monthly values are summed and reported as annual totals. The relatively short-term, monthly errors are assumed to cancel over the course of an entire year (Puente, 1978).

Although the USGS method relies primarily on reservoir stage versus seepage loss correlation curves to estimate losses from Medina and Diversion Lakes (Choffel and Vaugh, 1993), the Trans-Texas method also uses correlation curves, in addition to attempting to account for differences in soil cover, precipitation, and historical diversions and return flows. Similar to the way monthly losses from Medina Lake (recharge to the Edwards aquifer) are calculated by the USGS method, the Trans-Texas method estimates these losses on a monthly basis, but reports them as annual rates of recharge.

The USGS estimated average annual (1934–96) recharge to the Edwards aquifer in the Medina River Basin is 61,000 acre-ft, or about 9 percent of the estimated average recharge of 668,700 acre-ft/yr to the entire Edwards aquifer during 1934–96 (U.S. Geological Survey, 1997). The USGS estimated recharge

ranged from 6,300 acre-ft during 1956 to 104,000 acre-ft during 1960, with the annual differences resulting mainly from different climatic conditions. The USGS estimated average recharge was 61,700 acre-ft during 1995 and 42,300 acre-ft during 1996 (U.S. Geological Survey, 1997).

Using the Trans-Texas method, HDR estimated that the average annual (1934–96) recharge to the Edwards aquifer in the Medina Lake area was 42,393 acre-ft (HDR Engineering, Inc., 1998). This estimate represents about 6.5 percent of the HDR estimated average recharge of 652,706 acre-ft/yr during 1934–96. The HDR estimated recharge in the Medina Lake area ranged from 10,256 acre-ft during 1951 to 53,275 acre-ft during 1936. HDR's estimated average recharge in the Medina Lake area was 47,498 acre-ft during 1995 and 42,397 acre-ft during 1996.

An alternative method to estimate monthly average loss (recharge to the ground-water system) was developed during this study. Monthly average recharge during December 1995–August 1996 estimated using this method was compared with monthly average loss (recharge) estimated using the USGS and Trans-Texas methods (table 5, at end of report). The alternative method (hereafter referred to as the current study method) (table 5) used monthly average stage data from the hydrologic budgets (appendix A) to develop plots of stage versus GW_{out}. The average rate of GW_{out} was determined from stage versus GW_{out} curves for Medina Lake (fig. 5) and for Diversion Lake (fig. 7). The rate of GW_{out} (loss) was then multiplied by 30 to obtain a monthly estimate (assuming 30 days in a month). The estimated monthly loss from Medina Lake and from Diversion Lake then were summed, and the monthly average ground-water loss that returns as increased surface-water flow to the Medina River between sites 8 and 9 was subtracted to obtain a total loss from Medina/Diversion Lakes combined (table 5). Results of the recharge analysis indicate that losses from Medina Lake and losses from Diversion Lake contribute recharge primarily to the Edwards aquifer and only minimally to the upper Trinity aquifer (mainly the upper member of the Glen Rose Limestone) in the Medina Lake area.

The estimated recharge to the Edwards aquifer from the lake system calculated by the USGS method was 31,860 acre-ft during December 1995–July 1996; monthly average recharge ranged from 3,600 acre-ft during July 1996 to 4,300 acre-ft during January 1996 (table 5). The estimated recharge using the Trans-Texas method was 30,056 acre-ft; monthly average recharge ranged from 3,510 acre-ft during July 1996 to 3,900 acre-ft during December 1995. The difference between estimated monthly average recharge from Medina Lake using the USGS method compared to that using the Trans-Texas method ranged from -0.5 to 10.7 percent; the greater differences coincide with higher stages in Medina Lake. The difference between estimated monthly average recharge from Diversion Lake using the USGS method and using the Trans-Texas method was similar, ranging from -3.4 to 11.5 percent.

The estimated average recharge to the Edwards aquifer using the current study method was much less than that using either the USGS method or the Trans-Texas method (table 5). The estimated recharge using the current study method was 22,004 acre-ft, or about 69 and 73 percent of the recharge estimated using the USGS and Trans-Texas methods, respectively. The monthly average recharge using the current study method ranged from 919 acre-ft during July 1996 to 3,285 acre-ft during April 1996. The greatest differences between the current study method and the USGS and Trans-Texas methods are shown by the estimated monthly average recharge from Medina Lake and from Diversion Lake. While the USGS and Trans-Texas methods estimate similar recharge from Medina Lake and from Diversion Lake, the current study method estimates recharge from each lake that can vary greatly depending on the lake stage. From December 1995 to April 1996, the current study method greatly overestimated recharge from Medina Lake compared to that estimated using the USGS and Trans-Texas methods, and from June to July 1996, the USGS and Trans-Texas methods overestimated recharge from Medina Lake compared to that estimated using the current study method. Over the study period, the USGS and Trans-Texas methods overestimated recharge from Medina Lake when the lake stage was between about 1,027 and 1,032 ft above MSL and underestimated recharge when the lake stage was between about 1,036 and 1,045 ft above MSL. Estimated recharge from Diversion Lake was similar to that from Medina Lake; the USGS and Trans-Texas methods underestimated recharge at Diversion Lake stages greater than 913 ft above MSL and overestimated recharge at stages less than 913 ft above MSL compared to recharge estimated using the current study method.

Over the study period, the USGS and Trans-Texas methods greatly overestimated recharge to the Edwards aquifer from the lake system compared to that estimated using the current study method (table 5). The USGS

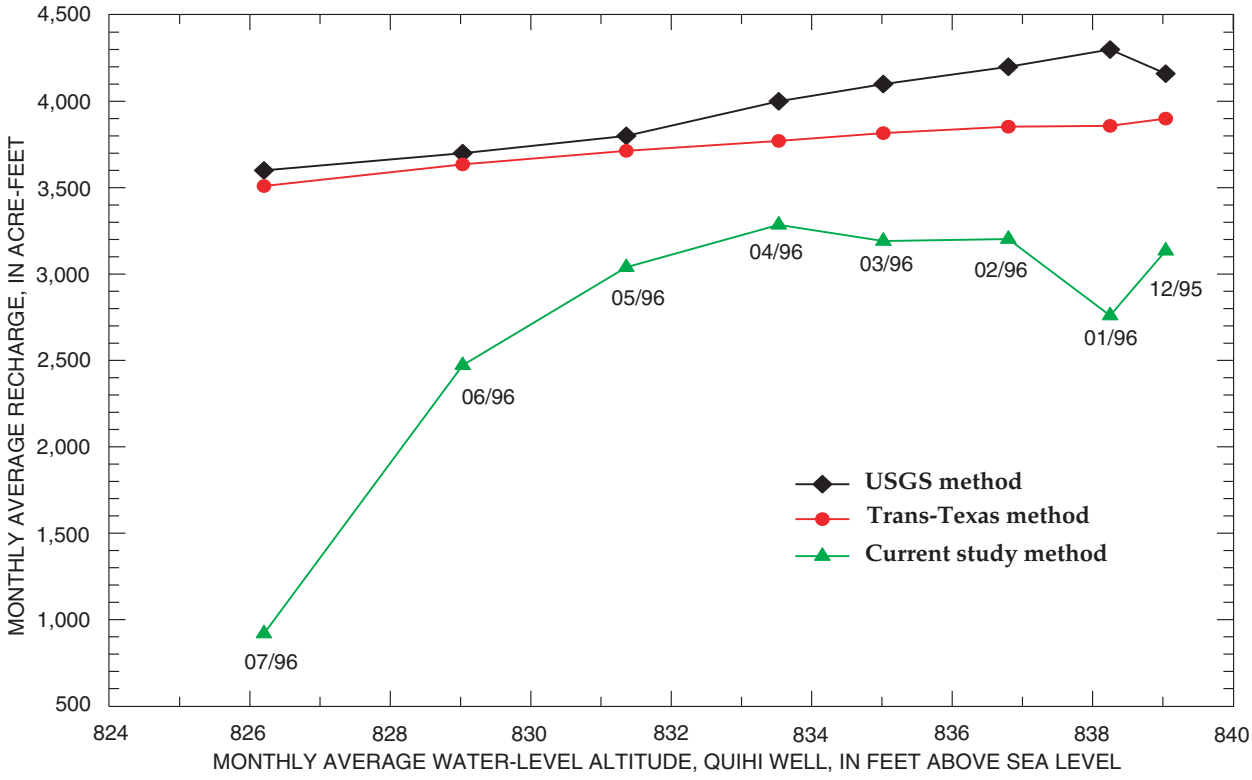

Figure 9. Relation of estimated monthly average recharge from Medina/Diversion Lakes using three methods to monthly average Quihi well water-level altitude, Medina Lake area, Texas, December 1995–July 1996.

estimates are higher, in part, because the USGS method does not account for the loss from Medina and Diversion Lakes that returns to the surface-water system downstream of Diversion Dam. The Trans-Texas method also might overestimate the recharge to the ground-water system by underestimating the water losses from Medina Lake that return as unaccountable ground-water inflow to Diversion Lake and as surface-water outflow to the Medina River downstream of Diversion Dam. The hydrogeology of the lake system also could account for the difference between recharge estimates determined using the current study method and those determined using the USGS and Trans-Texas methods. Similar to estimates of recharge from Medina Lake, estimates of recharge from Diversion Lake are related to lake stage and are likely nonlinear because of the effect of the hydrogeology on the flow system.

The hydrologic budgets and water-quality data from the current study indicate that losses from Medina and Diversion Lakes can be quantified and that those losses are entering the local ground-water-flow system of the Edwards aquifer. The losses primarily infiltrate the basal nodular member of the Kainer Formation (Edwards aquifer). The estimated losses (GW_{out}) from Medina and Diversion Lakes (figs. 5, 7) decrease (near zero for Diversion Lake) when lake stage is below the upper part of the basal nodular member of the Kainer Formation (Edwards aquifer) adjacent to the lakes, indicating that losses to the Trinity aquifer are within the error of the hydrologic budget and, therefore, are assumed to be minimal.

Losses from the lake system can be related to the Quihi monitoring well (fig. 6). Results of all methods used to estimate monthly average recharge to the Edwards aquifer were compared to the water-level altitudes recorded in this well during December 1995–July 1996 (fig. 9). The comparison shows that the USGS and Trans-Texas estimates are similar, but are much different from the current study method estimates when the average stage in Medina Lake is less than about 1,045 ft above MSL. The large difference in the USGS and Trans-Texas methods compared to the current study

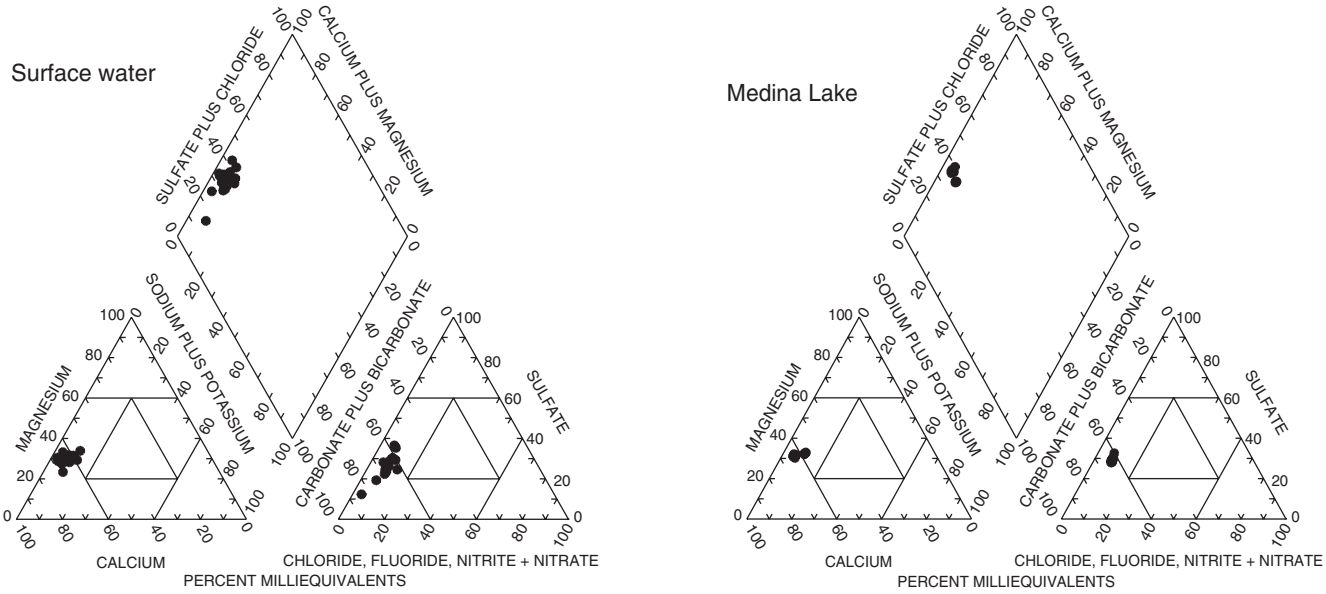

Figure 10. Trilinear diagrams of waters for surface-water and lake-water samples, Medina Lake, area, Texas.

method suggests that the former methods might overestimate recharge to the Edwards aquifer from the lake system when the stage in Medina Lake is less than about 1,045 ft above MSL (1,053 ft above BMA datum). However, the dataset used to develop the current study method curves was limited because the data were sparse at some stages in the lakes, were collected during a relatively dry year, and were short term. The current study shows that using a hydrologic budget approach to estimating recharge is feasible; however additional data are needed over a range in stage and climatic conditions to verify the results and better explain uncertainties and differences between all methods.

WATER CHEMISTRY

Water-quality samples were collected from selected surface-water, lake, and ground-water sites and were analyzed for ions, nutrients, trace elements, and selected environmental isotopes (table 4; appendix C, at end of report). Water types were determined by the relative contributions of cations and anions in a solution. For example, in a water where calcium accounts for 50 percent or more of the cations and where bicarbonate accounts for 50 percent or more of the anions, the water was classified as a calcium-bicarbonate ($Ca\text{-}HCO_3^{-2}$) water type.

Surface Water

Surface-water samples were collected from three sites on the Medina River (08178990, 08179520, and 08180500) and from one site on Koenig Creek (08179530) (sites 1–4; pl. 2, table 4). Analyses of the water samples from these sites showed some variability, with a general increase in the dissolved solids concentration over time for each site. All the surface-water samples can be classified as a calcium-bicarbonate water type (fig. 10), with dissolved solids concentrations ranging from 163 to 356 milligrams per liter (mg/L) (appendix C). The concentrations of major ions and trace elements in the surface-water samples generally are smaller than the concentrations in water samples from the Edwards and Trinity aquifers.

Lake-water samples were collected from six sites and selective depths on Medina Lake (sites 5–10; pl. 2, table 4). Results from the lake analyses indicate that, similar to the surface water, the lake water is a calcium-bicarbonate water type (fig. 10), with dissolved solids concentrations ranging from 146 to 269 mg/L (appendix C). Water-quality properties and constituents in samples collected from the surface-water and lake sites meet the U.S. Environmental Protection Agency (EPA) drinking water standards for a public water system (U.S. Environmental Protection Agency, 1996).

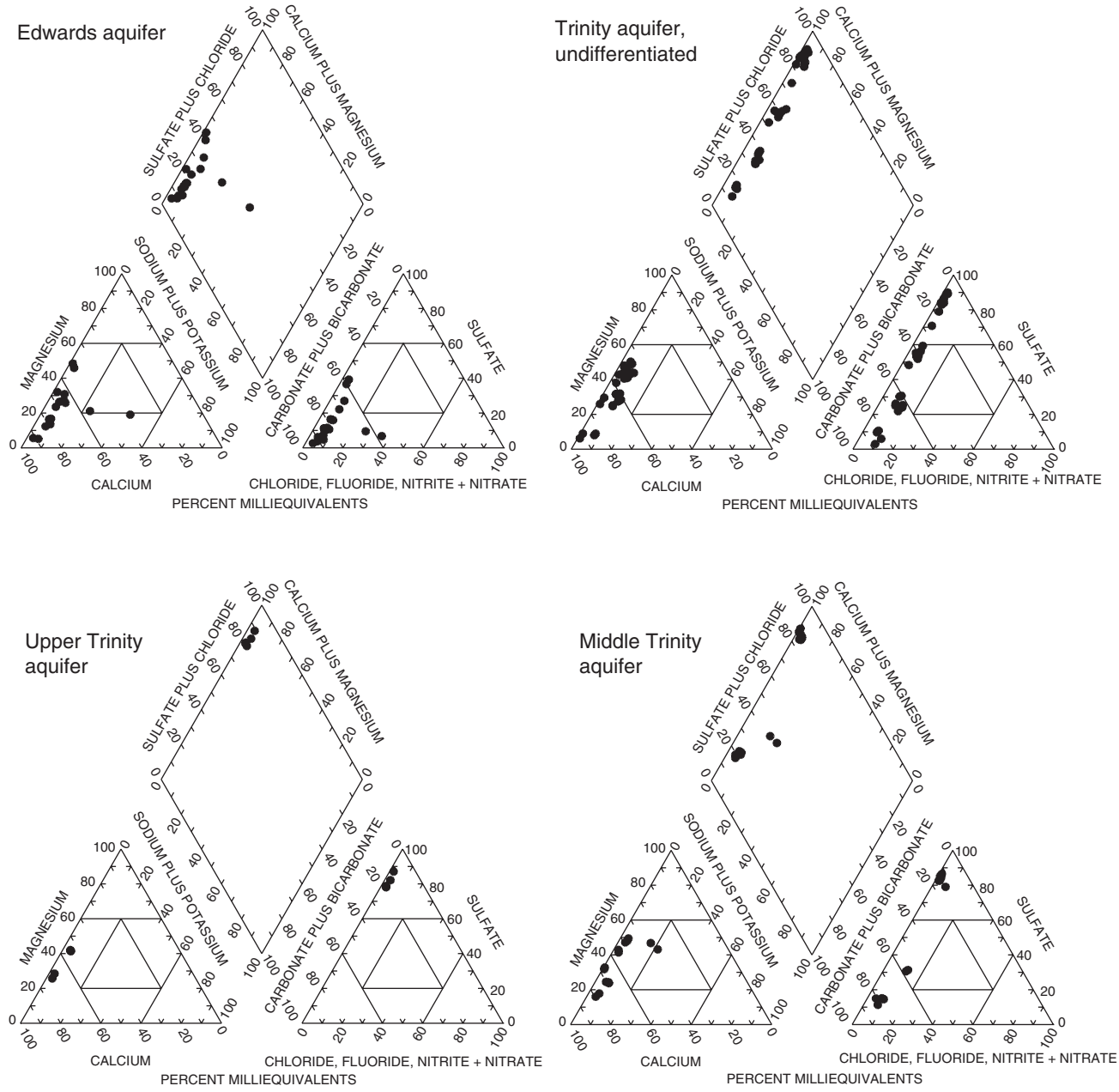

Figure 11. Trilinear diagrams of waters for ground-water samples in the Edwards and Trinity aquifers, Medina Lake area, Texas.

Ground Water

Ground-water samples were collected from wells and springs in the Edwards aquifer and in the middle and upper Trinity aquifers (sites 11–150; pl. 2, table 4). Similar to the surface- and lake-water samples, the water samples from the Edwards aquifer are predominantly a calcium-bicarbonate type (fig. 11), with dissolved solids concentrations ranging from 226 to 421 mg/L (appendix C). Bush and others (1994, p. 9) reported in a regional study that the median dissolved solids concentration in 600 water samples collected from wells completed in the Edwards aquifer is 297 mg/L. The dissolved solids concentration and water type of the Edwards aquifer are consistent with the

mineral composition of the rock (carbonate) and also are indicative of the source of the water, which is streamflow that originates as spring or base flow from carbonate rocks along the southern margin of the Edwards Plateau and in the interstream areas of the Hill Country. Water-quality properties and constituents in samples collected from the Edwards aquifer meet the EPA drinking water standards for a public water system (U.S. Environmental Protection Agency, 1996).

In the Medina Lake area, water samples collected from wells and springs in the middle and upper Trinity aquifers varied more in composition than those collected from the Edwards aquifer (pl. 2, table 4, appendix C). For purposes of this report, water chemistry is discussed for the middle and upper Trinity aquifers, and the Trinity aquifer, undifferentiated. Water samples from the middle Trinity aquifer are from wells in the lower member of the Glen Rose Limestone and in the Cow Creek Limestone; samples from the upper Trinity aquifer are from wells in the upper member of the Glen Rose Limestone; samples from the Trinity aquifer, undifferentiated, are from wells in the Glen Rose Limestone.

Water samples collected from wells in the middle Trinity aquifer varied from calcium-bicarbonate to magnesium-sulfate ($Mg\text{-}SO_4$) water types (fig. 11), with dissolved solids concentrations ranging from 315 to 2,800 mg/L (appendix C). In most cases, the dissolved solids concentrations of water from the middle Trinity aquifer in the Medina Lake area exceeded the secondary maximum contaminant level (SMCL) of 500 mg/L for drinking water designated by the U.S. Environmental Protection Agency (1996). The larger dissolved solids concentrations probably originated from evaporite dissolution typical of some limestone aquifers (Bush and others, 1994). The smaller dissolved solids concentrations are in water from wells near Medina Lake, and the chemical composition of water from those wells is similar to, and might be affected by, water flowing from the lake.

Most wells in the middle Trinity aquifer had dissolved sulfate and fluoride concentrations exceeding the EPA maximum contaminant levels (MCLs) and SMCLs. Sulfate concentrations exceeding the MCL of 500 mg/L ranged from 1,320 to 1,850 mg/L, and fluoride concentrations exceeding the MCL of 4.0 mg/L ranged from 4.3 to 4.8 mg/L (appendix C). In addition, all water samples from sites 136, 137, and 138 had iron concentrations exceeding the SMCL of 300 µg/L (1,320 to 12,640 µg/L).

Water samples collected from two wells in the upper Trinity aquifer (sites 104 and 112) are a calcium-sulfate ($Ca\text{-}SO_4$) water type and are classified as slightly saline according to Winslow and Kister (1956), with dissolved solids concentrations ranging from 1,160 to 2,020 mg/L (appendix C). Sulfate concentrations in the two wells ranged from 698 to 1,330 mg/L, exceeding the MCL of 500 mg/L (U.S. Environmental Protection Agency, 1996). The large dissolved solids and sulfate concentrations might result from sulfate minerals associated with evaporite beds that are common in the upper member of the Glen Rose Limestone. Such evaporite beds are common where the Trinity aquifer rocks have not been subjected to vigorously flowing freshwater through geologic time (Bush and others, 1994).

Water samples collected from wells in the Trinity aquifer, undifferentiated, varied from calcium-bicarbonate to magnesium-sulfate water types (fig. 11, appendix C). The water samples were fresh to moderately saline, with dissolved solids concentrations ranging from 237 to 3,320 mg/L. Dissolved solids concentrations in water samples from wells near Medina and Diversion Lakes (sites 74, 79, 82, and 107) (pl. 2) were generally less than the MCL of 500 mg/L. Dissolved solids concentrations in the remaining wells in the Trinity aquifer, undifferentiated, mostly exceeded the MCL. Similar to concentrations in the middle Trinity aquifer, the greater dissolved solids concentrations probably originated from evaporite dissolution of the aquifer rocks where ground-water flow is concentrated. Water samples from three wells in the Trinity aquifer, undifferentiated (sites 91, 143, and 147), exceeded the SMCL for fluoride of 2.0 mg/L (3.2 to 7.2 mg/L) (appendix C).

Environmental Isotopes

Isotopic ratios of deuterium (δD), oxygen ($\delta^{18}O$), and strontium ($^{87}Sr/^{86}Sr$) were analyzed in selected surface-water, lake-water, and ground-water samples to: (1) determine where water from the lake system might be entering the local ground-water-flow system by comparing the isotopic "signature" of lake water exposed to evaporative processes with the isotopic "signature" of subsurface waters; and (2) determine the mixing proportion of lake water relative to ground water. δD and $\delta^{18}O$ isotopes were selected because they can be used to indicate where Medina and Diversion

Lakes are contributing water to the ground-water flow system in the Medina Lake area. $^{87}Sr/^{86}Sr$ isotopic ratios also were analyzed in water to confirm the mixing results from the comparison of δD and $\delta^{18}O$ isotopic ratios.

The isotopic composition of surface water is distinctly different from that of most ground water in the Edwards and Trinity aquifers. For sites 1–4 (surface water), δD ranged from -18.7 to -6.00 per mil (‰), and $\delta^{18}O$ ranged from -3.52 to -0.80 ‰ (table 4). The isotopic composition for samples collected from Medina Lake (sites 5–10) were similar to samples collected from surface-water sites 2, 3, and 4, with δD and $\delta^{18}O$ values ranging from -8.20 to -3.60 ‰ and from -1.45 to -0.82 ‰, respectively. Lake and surface-water samples mostly plot below the global meteoric water line (Craig, 1961) (fig. 12), indicating that water from these samples has undergone isotopic fractionation and is enriched with the heavier isotopic fraction (^{18}O), relative to the lighter isotopic fraction (^{16}O) that has evaporated. The greater the distance below the meteoric water line that a sample plots, the greater the concentration of ^{18}O relative to ^{16}O in that water sample compared to globally averaged precipitation samples. Water samples from lakes tend to have a greater concentration of ^{18}O relative to ^{16}O because evaporation leaves the remaining lake water enriched in the heavier isotope. Because of the differences between isotopic composition of the surface water and the ground water, the data can be used to estimate the contribution of lake water to the ground-water-flow system.

Isotopic composition of water samples from the Edwards aquifer varies; some samples are indicative of water similar to the global meteoric water line, while others are representative of a line (mixing line) intersecting the lake and surface-water samples (fig. 12). Water samples represented by this line have been mixed with evaporated water. The δD and $\delta^{18}O$ composition in water samples from the Edwards aquifer ranged from -26.1 to -3.40 ‰ and from -4.31 to -0.41 ‰, respectively (table 4). The widespread, variable distribution of Edwards aquifer values indicates that some of the Edwards aquifer wells contain part of a water similar in composition to the lake and surface-water samples.

Water samples from the middle Trinity aquifer plot close to the global meteoric water line, with δD ranging from -29.9 to -21.4 ‰ and $\delta^{18}O$ ranging from -4.99 to -3.81 ‰ (table 4). The isotopic composition of δD and $\delta^{18}O$ in the upper Trinity aquifer ranged from -27.0 to -15.2 ‰ and from -4.46 to -2.35 ‰, respectively. Two samples from site 104 (TD–68–25–807) are close to the mixing line indicating a contribution of lake or surface water (fig. 12). Most δD and $\delta^{18}O$ values for the Trinity aquifer, undifferentiated, were similar to those for the middle and upper Trinity aquifers, ranging from -27.8 to -5.30 ‰ and from -4.79 to -0.88 ‰, respectively. Most samples from the Trinity aquifer, undifferentiated, are clustered close to the global meteoric water line, although a few samples are close to the mixing line in the same region as Edwards aquifer and surface-water samples (fig. 12).

δD and $\delta^{18}O$ can be used to determine mixing of endmember waters where the differences between the isotopic signatures are substantial. For the endmember Medina Lake water, the δD and $\delta^{18}O$ for the period of sampling averaged -6.57 and -1.01 ‰, respectively. These values indicate that Medina Lake water has undergone some evaporation compared to globally-averaged precipitation samples (Fritz and Fontes, 1980), with the average values to the right of the global meteoric water line (fig. 12). For deep ground water, such as water from the middle Trinity aquifer, δD and $\delta^{18}O$ averaged -26.6 and -4.69 ‰, respectively. These values are close to the meteoric water line and indicate that ground water is unaffected by evaporation prior to recharge.

For water samples collected from the Edwards aquifer south of Medina Lake, isotopic data indicate that the samples could contain mixes of water from the lake system and water from the Edwards aquifer. Average isotopic values of typical lake water and of typical Edwards aquifer water were calculated to determine the endmember values used to determine the isotopic ratios. The Medina Lake endmember isotope value was determined by calculating the average ratios of two bottom samples taken at Medina Lake sites AL and DC (table 4). The Edwards aquifer endmember isotopic ratio was determined by averaging the samples taken from site 103 (TD–68–25–806). Site 103, the farthest well from the surface-water samples, was used as the $\delta D/\delta^{18}O$ endmember in calculations of relative contribution of lake water and was assumed to yield primarily Edwards aquifer water with little or no contribution from the lakes. Using these endmember ratios, the relative proportions of mixing of the two endmembers was

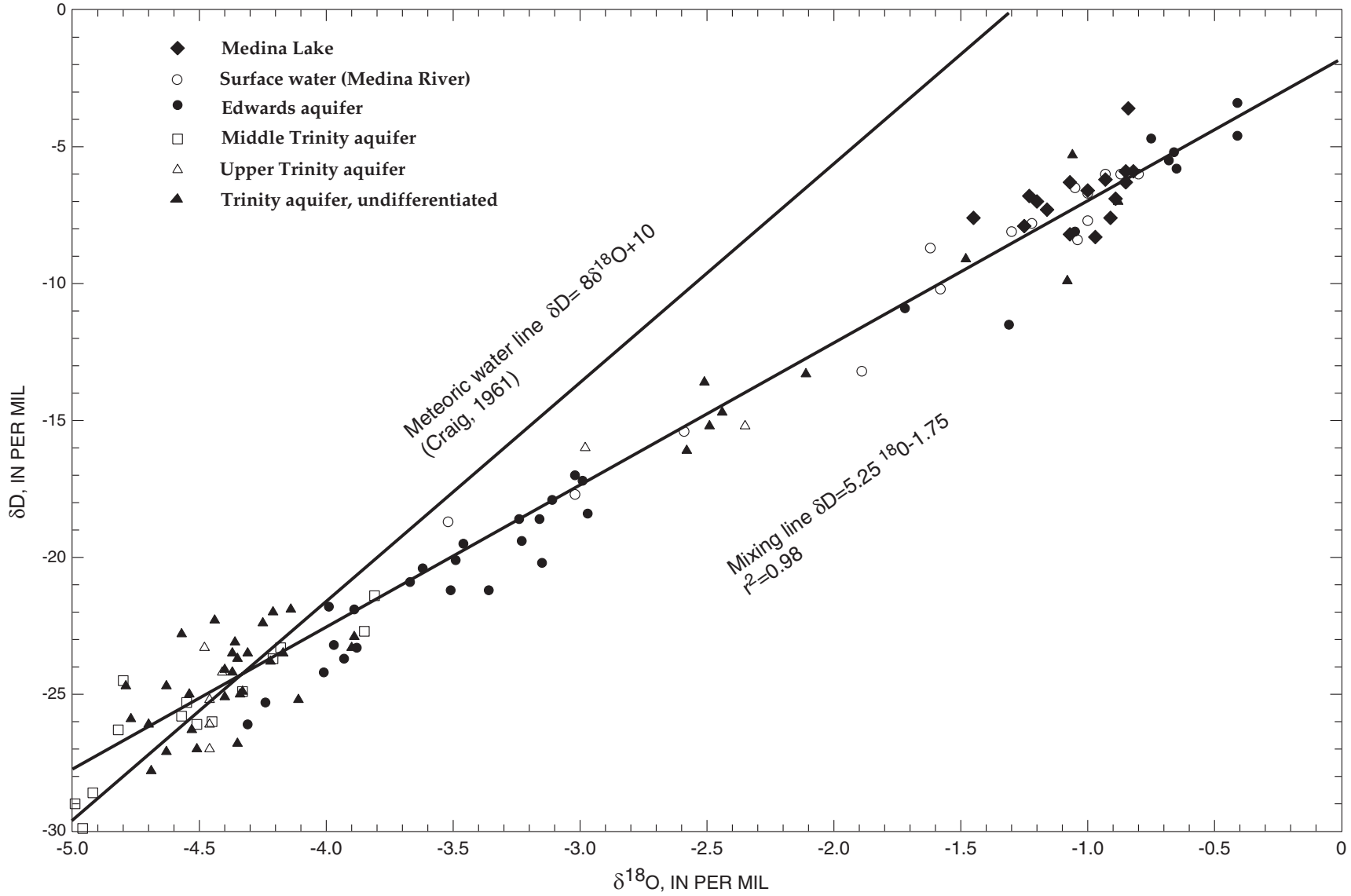

Figure 12. Relation between deuterium (δD) and del oxygen ($\delta^{18}O$) in water samples from Medina Lake, Medina River, and from selected wells and springs, Medina Lake area, Texas.

calculated from the isotopic data using the following formulas:

$$\%\ \text{Medina Lake water} = \frac{\delta D(\text{sample}) - \delta D(\text{ground water})}{\delta D(\text{lake water}) - \delta D(\text{ground water})} \times 100, \quad (8)$$

where

$\delta D(\text{sample})$ is deuterium ratio of Edwards aquifer sample, per mil;

$\delta D(\text{ground water})$ is deuterium ratio of average endmember Edwards aquifer sample, per mil; and

$\delta D(\text{lake water})$ is deuterium ratio of average endmember Medina Lake water sample, per mil;

and

$$\%\ \text{Medina Lake water} = \frac{\delta^{18}O(\text{sample}) - \delta^{18}O(\text{ground water})}{\delta^{18}O(\text{lake water}) - \delta^{18}O(\text{ground water})} \times 100, \quad (9)$$

where

$\delta^{18}O(\text{sample})$ is oxygen-18 ratio of Edwards aquifer sample, per mil;

$\delta^{18}O(\text{ground water})$ is oxygen-18 ratio of average endmember Edwards aquifer sample, per mil; and

$\delta^{18}O(\text{lake water})$ is oxygen-18 ratio of average endmember Medina Lake water sample, per mil.

The mixing fractions were calculated for water samples from 12 wells and springs in the Edwards aquifer (table 6, at end of report). Computations from both isotopes were within 20 percent for each site. Also, differences in the amount of mixing calculated at a single site for different time periods generally were within 15 percent, indicating that temporal changes were usually small during the study. However, samples from site 148 varied from 35.5 percent lake water on March 13, 1996, to 10.1 percent lake water on August 20, 1996. This change indicates a substantial lowering of the relative fraction of lake water in the Edwards aquifer at this location between these two samples.

$^{87}Sr/^{86}Sr$ isotopic ratios from selected surface- and ground-water samples (table 4) were used to verify the mixing relations derived from the δD and $\delta^{18}O$ values. The relation of the inverse of the strontium concentration to $^{87}Sr/^{86}Sr$ provides further evidence of the contribution of lake water to Edwards aquifer water (fig. 13). As the relative contribution of lake water to well water increases, the values for 1/strontium and $^{87}Sr/^{86}Sr$ in the Edwards aquifer water decrease, more closely approximating the values of the surface water. For example, the value of 1/strontium compared to $^{87}Sr/^{86}Sr$ at site 103 (TD–68–25–806), used as the $\delta D/\delta^{18}O$ endmember in calculations of relative contribution of lake water, plots farthest from the surface-water samples and was assumed to have little or no lake water. Site 148 (TD–69–40–202) had an average lake-water contribution of 10.1 percent, on the basis of δD and $\delta^{18}O$ calculations from the sample collected on August 20, 1996 (table 6). The average lake-water contribution calculated from the $\delta D/\delta^{18}O$ isotopes varies from 14.4 percent at site 149 (TD–69–40–301) to 30.9 percent at site 119 (TD–68–33–103) to 27.7 percent at site 120 (TD–68–33–204), and finally to 33.5 percent at site 150 (TD–69–40–604) (fig. 13).

Results of the isotopic analyses can be used with information on the hydrogeology and results from the hydrologic budget analysis to delineate flowpaths and determine where water from Medina and Diversion Lakes is moving into the ground-water system. The contribution of lake water from Medina Lake and from Diversion Lake is reflected in the isotopic ratios of water samples collected from Edwards aquifer wells south and southwest of Medina and Diversion Lakes. During the study, losses from Medina Lake decreased from 3,420 acre-ft during December 1995 to 60 acre-ft during July 1996 (table 5). Losses from Diversion Lake generally increased from December 1995 to July 1996, ranging from 120 acre-ft during January 1996 to 2,190 acre-ft during June 1996 (table 5).

Wells 93, 148, and 149 are located southwest of Medina Lake and west of Diversion Lake in a section of the Edwards aquifer that is bounded by the Diversion Lake fault to the south and the Vandenburg School fault to the north (pl. 2). This portion of the Edwards aquifer is part of the eastern Medina storage unit (fig. 2) that provides flow to the north-central flow unit. The lake water fraction from wells in this fault block ranged from 10.1 to 35.5 percent (table 6). The lake water fraction in well 93 decreased from 16.9 percent in November 1995 to 13.4 percent in July 1996, and the lake water fraction in well 148 decreased from 35.5 percent in March 1996

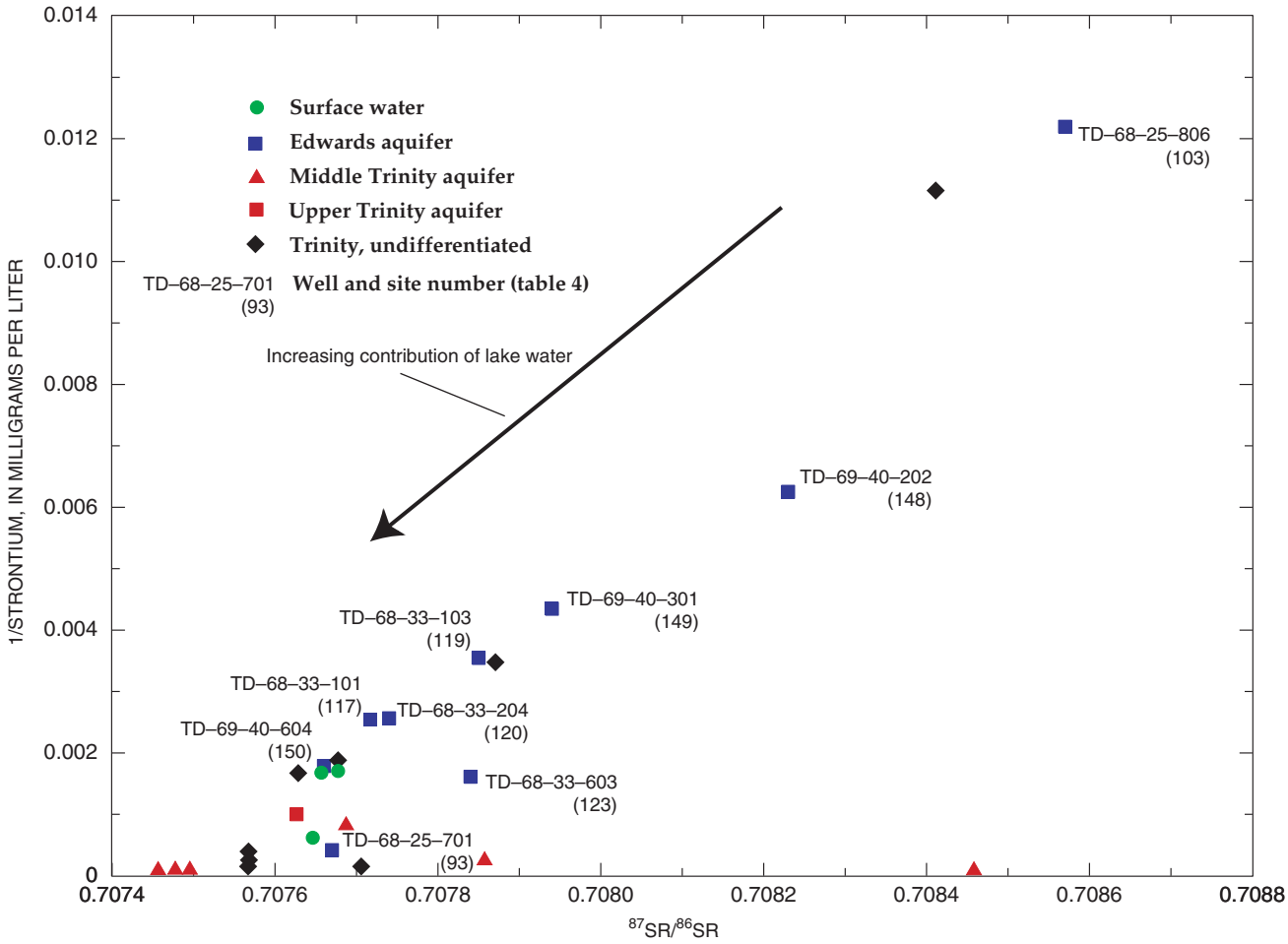

Figure 13. Relation of ^{1}/strontium to $^{87}Sr/^{86}Sr$ in aquifer and lake water, Medina Lake area, Texas.

to 10.1 percent in August 1996 (table 6). The lake water fraction in well 149 was fairly consistent, ranging from 14.0 in January 1996 to 14.4 percent in August 1996 (table 6). The hydrogeology and faulting in the area where these wells are located suggest that the wells possibly are receiving a portion of lake water from both Medina and Diversion Lakes. The decreasing percentage of the lake water fraction from the winter/spring samples to the summer samples in wells 93 and 148 is probably the result of the decreasing recharge from Medina Lake during the study. The remaining lake water fraction (less than 10-percent lake water) might be a combination of lake water from both Medina and Diversion Lakes that is moving into the ground-water flow system along this fault.

Wells 117 and 150 are located in a complexly faulted portion of the fault block bounded on the north by the Diversion Lake fault and on the south by Haby Crossing fault (pl. 2). Like wells 93, 148, and 149, these wells are in the eastern Medina storage unit (fig. 2). The lake water fraction for these two wells is similar, ranging from 33.5 to 44.2 percent (table 6). The wells are in the same fault block as the lower one-half of Diversion Lake and in an area where the saturated thickness of the Edwards aquifer is greatest. The source of lake water for these wells could be either Diversion Lake or Medina Lake.

Wells 119 and 120 are located southwest of Diversion Lake in the part of the eastern Medina storage unit (fig. 2) that is bounded on the north by Diversion Lake fault and on the south by Haby Crossing fault (pl. 2). Well 123 is located on the downthrown side of Haby Crossing fault in an area where flow in the north-central flow unit (fig. 2) wraps around Haby Crossing fault and moves toward northwestern Bexar County. Analysis of the isotopic data indicates that wells 119,

120, and 123 had similar lake water fractions that increased slightly from the winter/spring samples to the summer samples. The average lake water fraction for these wells ranged from 24.0 to 30.9 percent (table 6). The thickest part of the Edwards aquifer in the study area is located along this flowpath and is directly southwest of Diversion Lake. The lake water fraction in these wells was fairly consistent, about 25 percent of the total water sample. The increase in the lake water fraction through time in these samples is consistent with the increase in losses from Diversion Lake calculated from the hydrologic budget (table 5). This suggests that Diversion Lake probably is the primary source of lake water in this fault block, contributing about 25 percent of the water that was in these wells during the study.

Geochemistry

Geochemical modeling was used to simulate the mixing of lake water and Edwards aquifer water, and to determine the fraction of lake water in selected Edwards aquifer wells. As a first step in the modeling of rock-water interactions, a modified version of the aqueous speciation code WATEQF (Plummer and others, 1976) that is part of the NETPATH code (Plummer and others, 1994) was used with the water-chemistry analytical data to determine the saturation indices (SI) of minerals dissolved in area surface and ground water.

The second step in the modeling process was to simulate mixing between possible recharge water from the lake system and background water in the Edwards aquifer for selected Edwards aquifer sites that were sampled and found to contain mixed lake and ground water. Edwards aquifer sites most likely to contain mixed lake and ground water were selected from areas where the outcrop of the Edwards aquifer was determined to be in hydrologic connection with either Medina Lake or Diversion Lake, and were located in the eastern Medina storage unit (fig. 2) south and southwest of Medina and Diversion Lakes where recharge enters the north-central flow unit.

For the geochemical simulations, the average of near-bottom reservoir samples from Medina Lake was selected as the endmember value for lake water, and an endmember water from the Edwards aquifer was selected as most representative of resident ground water before infiltration of Medina Lake water. The samples selected were Medina Lake sites 5 and 9 (AL/bottom and DC/bottom) and site 103 for Edwards aquifer ground water (pl. 2, table 4). Field measurements of pH, temperature, and alkalinity; concentrations of dissolved chemical constituents; thermodynamic data from WATEQF; and a standard suite of geochemical phases typical of a carbonate aquifer (for example, CO_2 dissolution/outgassing, calcite dissolution/precipitation, and reverse cation exchange) were used as input for the mixing models (Jones and others, 1997). Mixing was simulated using the computer code in NETPATH (Plummer and others, 1994). The program computes SI (in millimoles per liter) for several solid phases using WATEQF code and mixing proportions of endmember waters in selected samples.

NETPATH simulations of mixing lake water with water from the Edwards aquifer were done for eight wells in the Edwards aquifer (table 7, at end of report). In addition to mixing, reactions modeled were: (1) calcite dissolution or precipitation; (2) dolomite, gypsum, and halite (sodium chloride) dissolution only; (3) CO_2 dissolution or outgassing; and (4) reverse cation (calcium for sodium) exchange (Jones and others, 1997). For all sites, NETPATH modeling produced more than one plausible model that usually had similar fractions of lake water. Results of the NETPATH modeling were compared to results from the isotopic analysis listed in table 6. In most cases, the mixing fractions of lake/ground water determined from NETPATH were comparable to the mixing fractions determined from the isotopic ratios.

The fraction of lake water in water samples collected from site 117 were computed to be 56.4, 52.3, and 57.7 percent (table 7). However, NETPATH produced three plausible models with lake-water proportions of 19.7, 35.4, and 11.0 percent for site 119, indicating that mixing might have occurred, but the proportions of the endmembers are uncertain. For site 148 sampled on March 13, 1996, NETPATH produced four plausible models, with lake-water proportions ranging from 25.4 to 36.3 percent. For a later sample collected on August 20, 1996, NETPATH produced two plausible models of 10.9 and 5.4 percent lake water, indicating that the water chemistry from this well was variable and dependent on the relative amount of recharge from Medina Lake, Diversion Lake, or other aquifer recharge that could occur over short time intervals.

The water chemistry of lake-, surface-, and ground-water sites in the Medina Lake area indicates that the chemical composition of the waters from these sites are distinctive. Additional environmental isotope data and geochemical modeling indicate that selected Edwards aquifer wells and springs south of Medina

Lake receive a contribution of water from the lake system (table 6). For example, the average lake-water contribution for two samples from site 110, located on the eastern side of Medina and Diversion Lakes, is 84 and 97 percent using the isotopic calculations (tables 4, 6). For this spring site, the NETPATH simulations indicate a lake-water contribution of 78.8 and 75 percent (table 7). On the southern and western sides of the lake system, mixing calculations indicate that lake water is in some of the water withdrawn from Edwards aquifer wells. Water from wells at sites 117, 119, 120, 148, and 150 contains about 10 to 45 percent lake water (tables 4, 6). These results indicate that water from the lake system is entering the local ground-water-flow system on the southern side of Medina Lake and on the western side of Diversion Lake, and might be contributing recharge to the regional Edwards aquifer ground-water-flow system.

SUMMARY AND CONCLUSIONS

Medina and Diversion Lakes are located on the Medina River in northeastern Medina and southeastern Bandera Counties. The Medina Lake study was done to assess the hydrogeology and hydrology of the lake system and to determine the influence that Medina and Diversion Lakes have on the regional ground-water-flow system of the Edwards aquifer or Trinity aquifers or both. Rocks of the upper member of the Glen Rose Limestone underlie most of Medina Lake and the channel between the spillway of Medina Dam and the midpoint of Diversion Lake, where Diversion Lake fault intersects Diversion Lake. Rocks of the Edwards Group, which form the Edwards aquifer, also are present in the southern part of the Medina Lake area.

On the southern side of Medina Lake, the contact between the upper member of the Glen Rose Limestone and the basal nodular member is about 1,000 ft above MSL, and the contact between the basal nodular member and the dolomitic member is about 1,050 ft above MSL. Between these altitudes, Medina Lake is in hydrologic connection with rocks in the Edwards aquifer recharge zone; losses from Medina Lake to the ground-water-flow system appear to occur mostly along the exposed bedding plane contacts.

Hydrologic budgets for October 1995–September 1996 were calculated for Medina Lake, Diversion Lake, and Medina/Diversion Lakes combined to estimate losses from the lake system. Streamflow, precipitation, evaporation, and change in storage were used to quantify the losses to the ground-water system from Medina and Diversion Lakes. The average GW_{out} from Medina Lake ranged from about -14.0 to 135 acre-ft/d for the selected hydrologic budget periods. The largest components of the Medina Lake hydrologic budget were SW_{out} and ΔS, and the smallest components generally were precipitation and evaporation.

Ground-water losses were much smaller for Diversion Lake than for Medina Lake because of the difference in size and depths of the lakes. Average GW_{out} from Diversion Lake ranged from -1.2 to 93.1 acre-ft/d for the selected hydrologic budget periods. SW_{in} and SW_{out} were the largest components of the Diversion Lake hydrologic budget, while precipitation, evaporation, and ΔS generally were the smallest components. The negative values for some of the budget periods can be accounted for within the error of measurements, and also might result through seepage from Medina Lake that is returning to Diversion Lake and the surface-water system and not entering the Edwards aquifer. Average GW_{out} from Medina/Diversion Lakes combined ranged from 36.1 to 119 acre-ft/d for the selected hydrologic budget periods.

Losses to the ground-water system from Medina and Diversion Lakes are related to the stage in each reservoir and are partially controlled by the hydrogeology. GW_{out} from Medina Lake was as much as 135 acre-ft/d between stages of 1,035 and 1,043 ft above MSL and averaged less than 115 acre-ft/d above 1,043 ft. The greatest losses from the lake to the ground-water system appear to result from lake stages that range from about 1,040 to 1,045 ft above MSL, which coincides with the altitude of one of the most porous and permeable parts of the basal nodular member of the Kainer Formation on the southern side of Medina Lake.

GW_{out} from Diversion Lake gradually increases as the stage in Diversion Lake increases, ranging from zero at 911 ft above MSL to about 70 acre-ft/d at an altitude of about 913.5 ft. Similar to conditions at Medina Lake, the greatest losses from Diversion Lake occur at about the same altitude as the most porous and permeable parts of the basal nodular member.

Monthly average recharge to the ground-water system during December 1995–July 1996 estimated by the current study method were compared to monthly average recharge estimated using the existing USGS and Trans-Texas methods. The current study method summed estimated monthly GW_{out} obtained from curves relating GW_{out} to the stages of Medina and Diversion Lakes, and from this sum subtracted the

monthly average ground-water loss that returns as surface-water flow to the Medina River between sites 8 and 9. Estimated recharge to the Edwards aquifer using the current study method was about 69 and 73 percent of the recharge estimated using the USGS and Trans-Texas methods, respectively. The USGS and Trans-Texas methods overestimated recharge from Medina Lake compared to the recharge estimated with the current study method when Medina Lake stage was between about 1,027 and 1,032 feet above mean sea level and underestimated recharge from Medina Lake when lake stage was between about 1,036 and 1,045 feet above mean sea level. The USGS and Trans-Texas methods underestimated recharge from Diversion Lake compared to the recharge estimated with the current study method when Diversion Lake stage was greater than 913 feet above mean sea level and overestimated recharge from Diversion Lake when lake stage was less than 913 feet above mean sea level.

Water samples collected from Medina Lake, Medina River, and Koenig Creek were classified as a calcium-bicarbonate water type, with dissolved solids concentrations ranging from 163 to 356 mg/L in the Medina River and Koenig Creek and ranging from 146 to 269 in Medina Lake. The concentrations of major ions and trace elements in the surface-water samples generally are smaller than the concentrations in water samples from the Edwards and Trinity aquifers and meet the EPA drinking water standards for a public water system.

Water samples collected from Edwards aquifer wells were predominantly a calcium-bicarbonate type, with dissolved solids concentrations ranging from 226 to 421 mg/L, meeting EPA drinking water standards for a public water system. Water samples from the middle and upper Trinity aquifers were a calcium-bicarbonate, magnesium-sulfate, or calcium-sulfate water type. Trinity aquifer, undifferentiated, water samples were fresh to moderately saline, with dissolved solids concentrations ranging from 237 to 3,320 mg/L. Most of the water samples from wells in the middle Trinity aquifer had concentrations of sulfate and fluoride that exceeded the EPA MCL and SMCL for those constituents.

Environmental isotopes and geochemical modeling also were used to determine where losses from the lake system might be entering the ground-water-flow system. Water chemistry and environmental isotopes indicate that Medina and Diversion Lakes contribute some water to some wells in the Edwards aquifer and in the upper Trinity aquifer in the study area. Water-quality data support the results of the hydrologic budgets that losses from the lake system are entering the ground-water-flow system of the Edwards aquifer. In selected Edwards aquifer wells located on the southern side of Medina Lake, the proportion of lake water compared to aquifer water ranged from about 10 to 45 percent. Geochemical modeling using NETPATH confirms the degree of mixing between lake water and aquifer water shown by isotopes.

Synthesizing information from the hydrogeology, the hydrologic budget analysis, and water chemistry portions of the Medina Lake study provide a more concise picture of the relation between the lake system and the Edwards and Trinity aquifers in northeastern Medina County. Regional mapping in the Medina Lake area showed that the distribution of contiguous Edwards aquifer rocks is not as widespread as earlier noted, thus reducing the effective recharge zone. Additionally, hydrogeologic mapping indicates that the Edwards aquifer in the Medina Lake area comprises two or three of the lowermost hydrogeologic subdivisions of the Edwards Group, and that the saturated thickness of Edwards aquifer near the lakes might limit how much of the water lost from either lake can move into the aquifer.

The hydrologic budget analysis of Medina Lake and Diversion Lake showed that losses from the lake can be quantified, although in some cases the error associated with the individual hydrologic budget variables exceeded the residual GW_{out} component. The hydrologic budget analysis also determined that a substantial amount of water that is lost from the lake system returns to the surface-water system downstream of Diversion Dam. The data also show that GW_{out} approaches zero when the stages in Medina Lake and Diversion Lake decreases to about the altitude of the contact between the Glen Rose Limestone and the basal nodular subdivision of the Edwards aquifer. This decrease indicates that losses from the lake system to the Trinity aquifer are minimal compared to the losses entering the Edwards aquifer and within the error of the hydrologic budgets.

Isotopic data and geochemical modeling were used to show that lake water is moving into the Edwards ground-water-flow system in two fault blocks. The first fault block, bounded on the north by the Vandenburg School fault and on the south by the Diversion Lake fault is probably recharged by both Medina Lake and Diversion Lake. The second fault block, bounded on the north by the Diversion Lake fault and on the south by the Haby Crossing fault, is probably recharged primarily from Diversion Lake.

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Table 1. Summary of lithologic and hydrologic properties of the hydrogeologic subdivisions of the Edwards and Trinity aquifers, Medina Lake area, Texas

[Hydrogeologic subdivisions modified from Maclay and Small (1976); groups, formations, members, and thicknesses modified from Holt (1956), Stricklin and others (1971), Rose (1972), Inden (1974), and Ashworth (1983); lithology modified from Dunham (1962); and porosity type modified from Choquette and Pray (1970). CU, confining unit; AQ, aquifer; *, not exposed in the study area; gal/min, gallons per minute]

Hydrogeologic subdivision			Group, formation, or member				Hydrologic function	Thickness (feet)	Lithology	Field identification	Cavern development	Porosity/permeability and well yields
Upper Cretaceous	Upper confining unit		Surficial deposits and upper confining unit (Escondido Formation, Anacacho Limestone, and Austin Group), undivided				CU, except for surficial deposits	665–1,200	Argillaceous, light-gray to buff, fossiliferous limestone; chalky, marly, and hard limestone; clay, silt, and sandstone	Chert and limestone cobbles; clay, silt, sand, shale, and soft, marly limestone	Rare to none	Low to high porosity/low to high permeability
			Eagle Ford Group				CU	30–50	Brown, flaggy shale and argillaceous limestone	Dark-brown shale; petroliferous odor	None	Low porosity/low permeability
			Buda Limestone				CU	40–50	Buff, light-gray, dense mudstone	White, dense limestone	None	Low porosity/low permeability
			Del Rio Clay				CU	40–50	Blue-green to yellow-brown clay	Blue-green to medium-brown shale; *Ilymatogyra arietina*	None	Low porosity/low permeability
Lower Cretaceous	I	Edwards aquifer	Georgetown Formation				Karst AQ; not karst CU	2–20	Reddish-brown, gray to light-tan, marly limestone	Red-brown to gray marly limestone; *Kingena wacoensis*	None	Low porosity/low permeability
	II		Devils River Formation	Edwards Group	Person Formation	Cyclic and marine members, undivided	AQ	0–10	Mudstone to packstone; *miliolid* grainstone; chert	*	Many subsurface; might be associated with earlier karst development	Laterally extensive; both fabric and not fabric/water-yielding
	III					Leached and collapsed members, undivided	AQ	70–90	Crystalline limestone; mudstone to grainstone; chert; collapsed breccia	Bioturbated iron-stained beds separated by massive limestone beds; stromatolitic limestone	Extensive lateral development; large rooms	Majority not fabric/one of the most porous and permeable
	IV					Regional dense member	CU	16–20	Dense, argillaceous mudstone	Wispy iron-oxide stains	Very few; only vertical fracture enlargement	Not fabric/low permeability; vertical barrier
	V				Kainer Formation	Grainstone member	AQ	50–60	*Miliolid* grainstone; mudstone to wackestone; chert	White crossbedded grainstone	Few caves	Not fabric/recrystallization reduces permeability
	VI					Kirschberg evaporite member	AQ	50–60	Highly altered crystalline limestone; chalky mudstone; chert	Boxwork voids, with neospar and travertine frame	Probably extensive cave development	Majority fabric/one of the most porous and permeable
	VII					Dolomitic member	AQ	110–140	Mudstone to grainstone; crystalline limestone; chert	Massively bedded, light gray; *Toucasia* abundant	Caves related to structure or bedding planes	Mostly not fabric; some bedding-plane fabric/water-yielding
	VIII					Basal nodular member	Karst AQ; not karst CU	50–60	Shaly, fossiliferous, nodular limestone; mudstone; *miliolid* grainstone	Massive, nodular, and mottled; abundant gastropods and *Exogyra texana*	Large lateral caves at surface; a few caves near Koenig Creek (see pl. 1)	Fabric; stratigraphically controlled/large conduit flow at surface; no permeability in subsurface
	Upper Trinity aquifer		Trinity Group		Glen Rose Limestone	Upper member	CU; evaporite beds AQ	350–500	Yellowish-tan, thinly bedded limestone and marl	Stair-step topography; alternating limestone and marl; *Orbitolina minuta*	Some surface cave development	Some water production at evaporite beds/relatively impermeable (0–20 gal/min)
	Middle Trinity aquifer					Lower member	AQ	300–320	Massive fossiliferous limestone; rudistid reefs and caves; few thin beds of marl and dolomitic limestone	Massive, reefal limestone; *Orbitolina texana* and *Corbula martinae*	Some cave development related to fractures and faults	Mostly fabric; small to moderate quantities (5–100 gal/min) of water from caves and reefs/low permeability
					Travis Peak Formation	Hensel Sand	AQ	25–80	Red to gray clay, silt, sand, conglomerate; thin limestone beds	*	None	Not fabric; small to moderate quantities (5–100 gal/min) of water
						Cow Creek Limestone	AQ	50–60	Massive, fossiliferous, white to gray, argillaceous to dolomitic limestone with local thinly bedded layers of limestone and sand	*	Honeycombed in the outcrop	Mostly fabric; small to moderate quantities (5–100 gal/min) of water

Table 2. Hydrologic budget data-collection sites in the Medina Lake area, Texas

Type of site: SW, surface water; LK, lake
Type of data: SC, stage/continuous; P, precipitation; Pe, peak; SI, stage/intermittent; E, evaporation

Site no. (fig. 3)	Station no.	Station name	Latitude	Longitude	Type of site	Type of data
1	08178990	Medina River at English Crossing	29°40'53"	98°58'32"	SW	SC
2	08179110	Red Bluff Creek at Farm Road 1283	29°40'23"	98°57'36"	SW	SC, P
3	08179300	Elm Creek near Pipe Creek	29°36'15"	98°55'45"	SW	SC, P
4	08179320	Unnamed tributary at Farm Road 1283	29°34'44"	98°53'57"	SW	Pe
5	08179530	Koenig Creek near Riomedina	29°31'57"	98°56'14"	SW	SI
6	08179520	Medina River below Medina Lake	29°32'02"	98°56'06"	SW	SC
7	08179990	Medina irrigation canal at Diversion Dam	29°30'30"	98°54'05"	SW	SC
8	08180015	Medina River below Diversion Lake	29°30'33"	98°54'01"	SW	SC
9	08180500	Medina River near Riomedina	29°29'52"	98°54'18"	SW	SC
10	08179280	Cypress Creek near Riomedina	29°35'14"	99°00'30"	SW	SC, P
11	08179240	Bruins Creek near Pipe Creek	29°39'23"	98°59'17"	SW	Pe, P
12	08179260	Rocky Creek near Pipe Creek	29°37'15"	98°59'57"	SW	Pe
13	08179505	Medina Lake near San Antonio	29°32'24"	98°56'01"	LK	SC, P, E
14	293352098552600	Medina Lake weather station	29°33'52"	98°55'26"	LK	E
15	08180010	Diversion Lake near Riomedina	29°30'36"	98°54'04"	LK	SC, P

Table 3. Summary of hydrologic budgets for Medina, Diversion, and Medina/Diversion Lakes (combined), Medina Lake area, Texas

[GW_{out}, ground-water outflow; acre-ft/d, acre-feet per day; ft, feet; MSL, mean sea level; SW_{in}, surface-water inflow; SW_{out}, surface water outflow; △S, change in storage]

Budget period	No. of days in budget period	Gw_{out}, average (acre-ft/d)	Gw_{out}, average "+\-error" (acre-ft/d)	Stage, average (ft above MSL)	Precipitation, average (acre-ft/d)	Sw_{in}, average (acre-ft/d)	SW_{out}, average (acre-ft/d)	Evaporation, average (acre-ft/d)	△S, average (acre-ft/d)
				Medina Lake					
11/12/95 to 11/16/95	5	113.56	19.89	1,044.79	0	145.16	59.50	34.10	-62.00
11/25/95 to 12/16/95	22	85.64	21.87	1,044.87	1.53	140.05	59.32	45.06	-48.45
12/17/95 to 12/28/95	12	121.13	22.30	1,044.66	10.26	142.30	57.52	44.66	-70.75
12/29/95 to 01/03/96	6	113.92	23.54	1,044.51	5.08	130.70	57.52	52.68	-88.33
01/04/96 to 01/09/96	6	114.34	22.59	1,044.36	0	109.08	57.52	49.89	-112.67
01/20/96 to 01/28/96	9	116.27	23.93	1,043.77	0	100.35	119.89	23.19	-159.00
02/07/96 to 02/13/96	7	111.60	32.97	1,043.00	0	97.58	190.13	21.28	-225.43
02/14/96 to 02/19/96	6	108.28	37.02	1,042.61	0	84.56	225.12	23.00	-271.83
02/21/96 to 02/27/96	7	109.66	37.38	1,042.12	0	85.59	236.03	10.18	-270.29
02/28/96 to 03/04/96	6	134.98	33.47	1,041.75	41.14	96.18	174.88	36.96	-209.50
03/05/96 to 03/09/96	5	118.50	33.04	1,041.49	0	95.60	142.81	48.88	-214.60
03/10/96 to 03/14/96	5	105.88	26.68	1,041.21	0	79.02	141.22	25.91	-194.00
03/15/96 to 03/25/96	11	74.25	40.60	1,040.72	0	71.95	243.07	40.45	-285.82
03/26/96 to 04/04/96	10	102.48	41.80	1,039.89	8.76	75.27	257.45	28.49	-304.40
04/05/96 to 04/10/96	6	131.75	34.82	1,039.37	33.02	116.81	189.09	31.82	-202.83
04/11/96 to 04/16/96	6	106.91	44.40	1,038.94	0	95.48	256.20	48.71	-316.33
04/17/96 to 04/24/96	8	61.73	48.68	1,038.29	3.70	59.83	321.57	28.48	-348.25
04/26/96 to 05/03/96	8	85.45	55.71	1,037.36	24.38	51.80	341.65	40.58	-391.50
05/16/96 to 05/20/96	5	70.08	41.99	1,035.69	0	40.79	223.34	60.77	-313.40
07/12/96 to 07/18/96	7	-13.98	47.37	1,026.95	0	9.71	294.69	60.29	-331.29
07/19/96 to 07/23/96	5	15.12	60.13	1,026.07	0	6.60	372.89	62.18	-443.60
				Diversion Lake					
12/18/95 to 12/23/95	6	2.34	8.83	910.87	.67	58.52	55.70	2.02	-.87
12/24/95 to 12/28/95	5	7.70	8.12	911.74	0	58.48	29.20	.96	20.62
12/29/95 to 01/03/96	6	.03	9.30	911.51	0	58.43	69.16	1.69	-12.45
01/04/96 to 01/09/96	6	-1.20	9.11	910.97	0	58.37	67.74	1.57	-9.73
01/20/96 to 01/28/96	9	8.43	16.19	911.31	0	120.60	107.15	.75	4.27
02/07/96 to 02/13/96	7	17.26	25.46	912.00	0	190.72	167.77	.73	4.96
02/14/96 to 02/19/96	6	24.34	30.16	912.13	0	225.67	199.64	.79	.90
02/21/96 to 02/26/96	6	28.82	31.05	912.15	0	234.88	202.58	.43	3.05
02/27/96 to 03/04/96	7	19.25	25.03	912.19	.90	185.49	166.38	1.11	-.36
03/05/96 to 03/11/96	7	17.34	18.83	912.16	0	140.97	124.42	1.74	-2.54
03/12/96 to 03/18/96	7	13.15	23.83	911.96	0	174.35	161.26	.94	-1.00
03/19/96 to 03/26/96	8	54.66	33.43	912.45	0	267.84	197.83	1.73	13.63

Table 3. Summary of hydrologic budgets for Medina, Diversion, and Medina/Diversion Lakes combined, Medina Lake area, Texas—Continued

Budget period	No. of days in budget period	Gw_{out}, average (acre-ft/d)	Gw_{out}, average "+\-error" (acre-ft/d)	Stage, average (ft above MSL)	Precipitation, average (acre-ft/d)	Sw_{in}, average (acre-ft/d)	SW_{out}, average (acre-ft/d)	Evaporation, average (acre-ft/d)	△S, average (acre-ft/d)
Diversion Lake—Continued									
03/27/96 to 04/04/96	9	33.65	33.94	913.24	0.24	258.77	218.64	0.95	5.77
04/05/96 to 04/10/96	6	14.88	27.84	912.51	1.37	189.30	199.01	1.26	-24.48
04/11/96 to 04/16/96	6	30.12	33.78	912.28	0	256.38	219.47	1.93	4.85
04/17/96 to 04/24/96	8	47.44	41.63	912.69	0	321.71	263.50	1.18	9.59
04/26/96 to 05/03/96	8	53.71	44.74	913.05	.71	341.76	288.45	1.73	-1.41
05/16/96 to 05/22/96	7	43.49	35.15	912.63	0	265.26	226.60	2.61	-7.43
07/12/96 to 07/17/96	6	70.53	37.47	913.55	0	287.93	234.64	3.21	-20.45
07/18/96 to 07/23/96	6	93.12	45.69	913.27	0	366.61	272.50	3.42	-2.42
08/23/96 to 08/27/96	5	55.01	15.96	912.94	3.01	116.63	89.30	1.15	-25.82
08/28/96 to 09/02/96	6	39.56	4.40	911.96	2.06	30.74	10.68	1.23	-18.67
Medina/Diversion Lakes, combined									
12/17/95 to 12/28/95	12	96.77	23.14	1,044.66	10.60	142.30	73.39	46.06	-63.33
12/29/95 to 01/09/96	12	88.05	32.81	1,044.43	2.54	119.89	93.06	52.91	-111.59
01/20/96 to 01/28/96	9	99.34	24.59	1,043.77	0	100.35	131.79	23.95	-154.73
02/07/96 to 02/13/96	7	101.10	33.32	1,043.00	0	97.58	194.95	22.00	-220.47
02/14/96 to 02/19/96	6	104.93	37.13	1,042.61	0	84.56	226.78	23.79	-270.93
02/21/96 to 02/27/96	7	112.37	37.02	1,042.12	0	85.59	230.08	10.54	-267.40
02/28/96 to 03/05/96	7	118.93	32.56	1,041.72	36.16	96.22	181.91	31.57	-200.03
03/06/96 to 03/11/96	6	109.09	33.91	1,041.41	0	89.05	148.76	60.20	-229.00
03/12/96 to 03/25/96	14	90.82	36.34	1,040.82	0	73.84	205.29	35.44	-257.71
03/26/96 to 04/04/96	10	105.88	41.20	1,039.89	8.97	75.27	246.15	29.63	-297.41
04/05/96 to 04/10/96	6	115.35	37.43	1,039.37	34.39	116.81	230.08	33.08	-227.32
04/11/96 to 04/15/96	5	95.26	41.58	1,038.99	0	98.74	242.38	47.16	-286.06
04/16/96 to 04/24/96	9	91.09	47.83	1,038.34	3.29	61.99	290.03	33.92	-349.77
04/26/96 to 05/03/96	8	108.90	54.31	1,037.36	25.09	51.80	318.59	42.31	-392.91
05/16/96 to 05/20/96	5	67.60	43.24	1,035.69	0	40.79	242.78	63.41	-333.00
05/21/96 to 05/26/96	6	65.32	58.80	1,035.06	0	28.80	339.50	57.07	-433.10
05/27/96 to 06/02/96	7	67.73	58.50	1,034.19	40.45	34.13	383.94	29.68	-406.77
06/04/96 to 06/12/96	9	75.58	66.84	1,033.04	0	23.08	396.25	63.61	-512.37
06/13/96 to 06/18/96	6	66.36	65.62	1,031.83	0	17.11	405.95	46.32	-501.52
06/19/96 to 06/24/96	6	80.72	71.27	1,030.78	0	13.25	430.08	50.29	-547.85
06/25/96 to 07/08/96	14	92.71	69.84	1,029.06	15.70	14.82	429.99	40.90	-533.08
07/09/96 to 07/18/96	10	36.11	51.71	1,027.12	36.38	10.04	304.07	59.39	-353.14
07/19/96 to 07/25/96	7	77.81	58.59	1,025.91	0	6.46	329.54	61.03	-461.93
08/14/96 to 08/19/96	6	76.73	56.61	1,021.12	0	5.13	327.27	50.59	-449.47

Table 4. Water-level and water-quality data-collection sites and isotopic data, Medina Lake area, Texas

Type of site: SW, surface water; LK, lake; GW, ground water; SPR, spring
Aquifer: M. Trinity, middle Trinity; L. Trinity, lower Trinity; U. Trinity, upper Trinity; Trinity undiff., undifferentiated (lower and upper members of the Glen Rose Limestone)

[Additional water-quality data listed in Appendix C; ft, feet; MSL, mean sea level; δD, deuterium; $\delta^{18}O$, del oxygen; ‰, per mil; --, not applicable or not measured]

Site no. (pl. 2)	Station or site identification no.	Station name/local identifier or state well no.	Latitude	Longitude	Type of site	Aquifer	Water-level altitude (ft above MSL)	Date measured	δD/$\delta^{18}O$ (‰)	$^{87}Sr/^{86}Sr$	Date sampled
1	08178990	Medina River at English Crossing/site 1	29°40'53"	98°58'32"	SW	--	--	--	–18.7/–3.52	--	12/01/95
							--	--	–17.7/–3.02	--	04/03/96
							--	--	–15.4/–2.59	--	05/31/96
							--	--	–13.2/–1.89	0.70765	08/06/96
2	08179530	Koenig Creek near Riomedina/site 5	29°31'57"	98°56'14"	SW	--	--	--	–8.70/–1.62	--	05/18/95
3	08179520	Medina River below Medina Lake/ site 6	29°32'02"	98°56'06"	SW	--	--	--	–7.80/–1.22	--	05/18/95
							--	--	–8.40/–1.04	--	11/30/95
							--	--	–6.50/–1.05	--	04/03/96
							--	--	–6.00/–.93	--	05/31/96
							--	--	–6.00/–.80	.70766	08/06/96
4	08180500	Medina River near Riomedina/site 9	29°29'53"	98°54'16"	SW	--	--	--	–8.10/–1.30	--	05/18/95
							--	--	–10.2/–1.58	--	12/01/95
							--	--	–7.70/–1.00	--	04/04/96
							--	--	–6.70/–1.00	--	06/03/96
							--	--	–6.00/–.87	.70768	08/06/96
5	293223098560000	Medina Lake site AL	29°32'23"	98°56'00"	LK	--	--	--	–3.60/–.84	--	04/02/96
							--	--	–6.60/–1.00	--	04/02/96
6	293225098560600	Medina Lake site AC	29°32'25"	98°56'06"	LK	--	--	--	–6.20/–.97	--	08/29/95
							--	--	–8.20/–1.07	--	05/22/95
7	293426098544300	Medina Lake site BC	29°34'26"	98°54'43"	LK	--	--	--	–7.60/–.91	--	08/29/95
8	293456098555500	Medina Lake site CC	29°34'56"	98°55'55"	LK	--	--	--	–5.90/–.82	--	08/29/95
9	293324098584200	Medina Lake site DC	29°33'24"	98°58'42"	LK	--	--	--	–7.30/–1.16	--	05/23/95
							--	--	–7.00/–1.20	--	05/23/95
							--	--	–5.90/–.85	--	08/29/95
							--	--	–6.90/–.89	--	04/02/96
							--	--	–6.30/–.85	--	04/02/96
10	293731098590300	Medina Lake site EC	29°37'31"	98°59'03"	LK	--	--	--	–7.60/–1.45	--	04/02/96
							--	--	–6.30/–1.07	--	04/02/96

Table 4. Water-level and water-quality data-collection sites and isotopic data, Medina Lake area, Texas—Continued

Site no. (pl. 2)	Station or site identification no.	Station name/local identifier or state well no.	Latitude	Longitude	Type of site	Aquifer	Water-level altitude (ft above MSL)	Date measured	$\delta D/\delta^{18}O$ (‰)	$^{87}Sr/^{86}Sr$	Date sampled
11	294344098591601	AS–68–17–103	29°43'44"	98°59'16"	GW	M. Trinity	1,051.45	09/08/94	--	--	--
12	294250098585101	AS–68–17–105	29°42'50"	98°58'51"	GW	L. Trinity	1,137.25	09/08/94	--	--	--
13	294257098583401	AS–68–17–107	29°42'57"	98°58'34"	GW	M. Trinity	1,099.65	09/12/94	--	--	--
14	294320098584701	AS–68–17–109	29°43'20"	98°58'47"	GW	M. Trinity	1,093.80	09/12/94	--	--	--
15	294320098584702	AS–68–17–110	29°43'20"	98°58'47"	GW	M. Trinity	1,096.30	09/12/94	--	--	--
16	294303098581501	AS–68–17–111	29°43'03"	98°58'15"	GW	M. Trinity	1,097.30	09/13/94	--	--	--
17	294402098565501	AS–68–17–202	29°44'02"	98°56'55"	GW	M. Trinity	1,175	09/13/94	--	--	--
18	294259098563001	AS–68–17–203	29°42'59"	98°56'30"	GW	M. Trinity	1,100.60	09/13/94	--	--	--
19	294259098561601	AS–68–17–210	29°42'59"	98°56'16"	GW	M. Trinity	1,141.10	09/14/94	--	--	--
20	294249098561701	AS–68–17–211	29°42'49"	98°56'17"	GW	M. Trinity	1,143.20	09/14/94	--	--	--
21	294341098550201	AS–68–17–212	29°43'41"	98°55'02"	GW	M. Trinity	1,173.45	09/14/94	--	--	--
22	294329098550601	AS–68–17–213	29°43'29"	98°55'06"	GW	M. Trinity	1,162.60	09/14/94	--	--	--
23	294140098581901	AS–68–17–404	29°41'40"	98°58'19"	GW	M. Trinity	1,099.65	09/15/94	--	--	--
24	294157098582201	AS–68–17–405	29°41'57"	98°58'22"	GW	M. Trinity	1,090.90	09/15/94	--	--	--
25	294214098575101	AS–68–17–406	29°42'14"	98°57'51"	GW	M. Trinity	1,101	09/15/94	--	--	--
26	294139098582001	AS–68–17–407	29°41'39"	98°58'20"	GW	M. Trinity	1,090.90	09/15/94	--	--	--
27	294144098580701	AS–68–17–408	29°41'44"	98°58'07"	GW	M. Trinity	1,105.30	09/15/94	--	--	--
28	294044098575201	AS–68–17–409	29°40'44"	98°57'52"	GW	L. Trinity	1,105.95	09/16/94	--	--	--
29	294044098574701	AS–68–17–410	29°40'44"	98°57'47"	GW	L. Trinity	1,104.75	09/16/94	--	--	--
30	294107098581601	AS–68–17–412	29°41'07"	98°58'16"	GW	M. Trinity	1098	09/16/94	--	--	--
31	294014098573701	AS–68–17–413	29°40'14"	98°57'37"	GW	M. Trinity	1038	10/03/94	--	--	--
32	294015098574501	AS–68–17–414	29°40'15"	98°57'45"	GW	L. Trinity	1,035.30	10/03/94	--	--	--
33	294056098570401	AS–68–17–506	29°40'56"	98°57'04"	GW	L. Trinity	1,102.70	10/04/94	--	--	--
34	294025098563701	AS–68–17–508	29°40'25"	98°56'37"	GW	M. Trinity	1,077.30	10/05/94	--	--	--
35	294131098562701	AS–68–17–510	29°41'31"	98°56'27"	GW	M. Trinity	1,106.25	10/05/94	--	--	--
36	294103098551901	AS–68–17–511	29°41'03"	98°55'19"	GW	M. Trinity	1,102.90	10/05/94	--	--	--
37	294110098551901	AS–68–17–512	29°41'10"	98°55'19"	GW	M. Trinity	1,063.60	10/05/94	--	--	--
38	294109098552301	AS–68–17–514	29°41'09"	98°55'23"	GW	M. Trinity	1,136.40	10/07/94	--	--	--
39	294058098555301	AS–68–17–516	29°40'58"	98°55'53"	GW	M. Trinity	1,089.70	10/10/94	--	--	--
40	294147098525501	AS–68–17–602	29°41'47"	98°52'55"	GW	M. Trinity	1,165.35	10/06/94	--	--	--

Table 4. Water-level and water-quality data-collection sites and isotopic data, Medina Lake area, Texas—Continued

Site no. (pl. 2)	Station or site identification no.	Station name/local identifier or state well no.	Latitude	Longitude	Type of site	Aquifer	Water-level altitude (ft above MSL)	Date measured	$\delta D/\delta^{18}O$ (‰)	$^{87}Sr/^{86}Sr$	Date sampled
41	294154098535301	AS–68–17–603	29°41'54"	98°53'53"	GW	M. Trinity	1,247.60	10/06/94	--	--	--
42	294108098543401	AS–68–17–605	29°41'08"	98°54'34"	GW	M. Trinity	1,232.60	10/07/94	--	--	--
43	294216098524001	Bridge Spring/AS–68–17–606	29°42'16"	98°52'40"	SPR	U. Trinity	1,330	07/11/96	--	--	--
44	293907098585601	AS–68–17–703	29°39'07"	98°58'56"	GW	L. Trinity	1,012	10/10/94	--	--	--
45	293945098582701	AS–68–17–704	29°39'45"	98°58'27"	GW	M. Trinity	1,013.85	10/11/94	--	--	--
46	293812098581701	AS–68–17–706	29°38'12"	98°58'17"	GW	M. Trinity	1,016	10/11/94	--	--	--
47	293839098575801	AS–68–17–707	29°38'39"	98°57'58"	GW	L. Trinity	1,015.30	10/12/94	--	--	--
48	293755098580501	AS–68–17–709	29°37'55"	98°58'05"	GW	M. Trinity	1,037.95	10/12/94	--	--	--
49	293849098584101	AS–68–17–711	29°38'49"	98°58'41"	GW	L. Trinity	1,034.50	10/13/94	--	--	--
50	293856098595101	AS–68–17–712	29°38'56"	98°59'51"	SPR	M. Trinity	1,065	10/13/94	--	--	--
51	293828098581401	AS–68–17–713	29°38'28"	98°58'14"	GW	L. Trinity	1,028.55	10/13/94	--	--	--
52	293930098572201	AS–68–17–803	29°39'30"	98°57'22"	GW	M. Trinity	1,000.90	09/08/94	--	--	--
53	293848098581101	AS–68–17–805	29°38'48"	98°58'11"	GW	M. Trinity	1,235.60	10/14/94	--	--	--
54	293900098563201	AS–68–17–807	29°39'00"	98°56'32"	SPR	U. Trinity	1,182	10/31/94	--	--	--
55	293857098563401	AS–68–17–810	29°38'57"	98°56'34"	GW	L. Trinity	1,010.10	10/31/94	--	--	--
56	293846098564901	AS–68–17–811	29°38'46"	98°56'49"	GW	M./L. Trinity	998.95	11/01/94	--	--	--
57	293844098563601	AS–68–17–814	29°38'44"	98°56'36"	GW	M. Trinity	1,016.35	11/02/94	--	--	--
58	293739098531001	AS–68–17–903	29°37'39"	98°53'10"	GW	M. Trinity	1,049	10/31/94	--	--	--
59	293909098524301	AS–68–17–904	29°39'09"	98°52'43"	GW	M. Trinity	1,294.70	11/01/94	--	--	--
60	293750098534601	AS–68–17–905	29°37'50"	98°53'46"	GW	M. Trinity	1,069.90	11/01/94	--	--	--
61	293740098531201	AS–68–17–908	29°37'40"	98°53'12"	SPR	Trinity undiff.	1,300	03/25/95	--	--	--
62	293839098523401	AS–68–17–910	29°38'39"	98°52'34"	GW	M. Trinity	1,284.57	03/25/95	--	--	--
63	293552098573001	AS–68–25–102	29°35'52"	98°57'30"	GW	Trinity undiff.	1,018.05	03/07/95	–23.8/–4.22	--	08/02/95
							--	--	–25.2/–4.11	--	01/22/96
							--	--	–23.5/–4.17	--	07/24/96
64	293516098595501	Campground Springs/TD–68–25–103	29°35'16"	98°59'55"	SPR	--	1,060	07/10/96	–15.2/–2.49	--	07/10/96
65	293529098574601	AS–68–25–104	29°35'29"	98°57'46"	GW	Trinity undiff.	1,023.58	03/15/95	--	--	--
66	293536098574701	AS–68–25–105	29°35'36'	98°57'47"	GW	Trinity undiff.	1,026.41	03/15/95	--	--	--
67	293502098582201	AS–68–25–108	29°35'02"	98°58'22"	GW	Trinity undiff.	1,050.57	03/15/95	--	--	--

Table 4. Water-level and water-quality data-collection sites and isotopic data, Medina Lake area, Texas—Continued

Site no. (pl. 2)	Station or site identification no.	Station name/local identifier or state well no.	Latitude	Longitude	Type of site	Aquifer	Water-level altitude (ft above MSL)	Date measured	$\delta D/\delta^{18}O$ (‰)	$^{87}Sr/^{86}Sr$	Date sampled
68	293627098553201	AS–68–25–204	29°36'27"	98°55'32"	SPR	Trinity undiff.	1,099	03/25/95	--	--	--
69	293616098571401	AS–68–25–205	29°36'16"	98°57'14"	GW	Trinity undiff.	1,027.90	03/18/95	--	--	--
70	293633098572302	AS–68–25–209	29°36'33"	98°57'23"	GW	Trinity undiff.	1,045.21	04/01/95	--	--	--
71	293546098564401	AS–68–25–208	29°35'46"	98°56'44"	GW	Trinity undiff.	1,033.01	03/18/95	--	--	--
72	293633098572401	AS–68–25–206	29°36'33"	98°57'24"	GW	Trinity undiff.	1,045.99	03/25/95	--	--	--
73	293621098572201	AS–68–25–207	29°36'21"	98°57'22"	GW	Trinity undiff.	1,035.10	03/18/95	--	--	--
74	293249098575101	TD–68–25–402	29°32'49"	98°57'51"	GW	Trinity undiff.	950.64	12/05/94	–9.9/–1.08	--	01/30/96
									–7.0/–.88	.70763	08/08/96
75	293318098573601	TD–68–25–403	29°33'18"	98°57'36"	GW	U. Trinity	1,046.74	12/06/94	--	--	--
76	293449098580101	AS–68–25–404	29°34'49"	98°58'01"	GW	U. Trinity	1,052.44	03/15/95	--	--	--
77	293420098552402	AS–68–25–503	29°34'20"	98°55'24"	GW	Trinity undiff.	1,040.55	10/13/95	--	--	--
78	293420098552401	AS–68–25–504	29°34'20"	98°55'24"	GW	Trinity undiff.	1,027.44	10/13/95	--	--	--
79	293420098552601	AS–68–25–505	29°34'20"	98°55'26"	GW	Trinity undiff.	1,022.27	10/13/95	–16.1/–2.58	--	12/15/95
									–14.7/–2.44	.70787	07/30/96
80	293353098572301	AS–68–25–507	29°33'53"	98°57'23"	GW	Trinity undiff.	--	08/02/95	–25.1/–4.40	--	08/02/95
							--	--	–26.8/–4.35	--	01/19/96
							--	--	–24.1/–4.40	--	07/24/96
81	293429098560601	AS–68–25–509	29°34'29"	98°56'06"	GW	Trinity undiff.	1,043.23	03/21/95	–9.10/–1.48	--	11/29/95
							--	--	–5.30/–1.06	.70768	08/08/96
82	293255098560401	TD–68–25–510	29°32'55"	98°56'04"	GW	Trinity undiff.	--	--	--	--	--
83	293457098565501	AS–68–25–511	29°34'57"	98°56'55"	GW	Trinity undiff.	1,043.27	09/29/94	–23.5/–4.37	--	08/02/95
							--	--	–24.2/–4.37	--	01/22/96
							--	--	–23.7/–4.35	--	07/24/96
84	293413098572701	AS–68–25–512	29°34'13"	98°57'27"	GW	U. Trinity	1,044.67	02/23/95	--	--	--
85	293300098563801	TD–68–25–515	29°33'00"	98°56'38"	GW	Edwards	1,032.71	--	--	--	--
86	293301098560701	TD–68–25–516	29°33'01"	98°56'07"	GW	Trinity undiff.	867.70	12/05/94	--	--	--

Table 4. Water-level and water-quality data-collection sites and isotopic data, Medina Lake area, Texas—Continued

Site no. (pl. 2)	Station or site identification no.	Station name/local identifier or state well no.	Latitude	Longitude	Type of site	Aquifer	Water-level altitude (ft above MSL)	Date measured	$\delta D/\delta^{18}O$ (‰)	$^{87}Sr/^{86}Sr$	Date sampled
87	293430098564601	AS–68–25–517	29°34'30"	98°56'46"	GW	U. Trinity	1,056.63	03/07/95	--	--	--
88	293441098564801	AS–68–25–518	29°34'41"	98°56'48"	GW	U. Trinity	1,063.08	02/28/95	--	--	--
89	293407098565901	AS–68–25–519	29°34'07"	98°56'59"	GW	M. Trinity	1,025.63	02/28/95	--	--	--
90	293458098565601	AS–68–25–520	29°34'58"	98°56'56"	GW	Trinity undiff.	1,067.70	09/29/95	--	--	--
91	293309098541901	TD–68–25–602	29°33'09"	98°54'19"	GW	Trinity undiff.	1,099.70	02/08/96	–26.1/–4.10	--	02/08/96
							--	--	–25.9/–4.77	.70757	07/30/96
92	293334098535401	TD–68–25–603	29°33'34"	98°53'54"	GW	Trinity undiff.	935.30	03/25/95	–22.3/–4.44	--	11/28.95
							--	--	–22.4/–4.25	.70757	07/29/96
93	293127098573701	TD–68–25–701	29°31'27"	98°57'37"	GW	Edwards	947	10/04/94	–21.8/–3.99	.70767	11/30/95
							--	--	–23.2/–3.97	--	07/29/96
94	293130098573801	TD–68–25–703	29°31'30"	98°57'38"	GW	Edwards	948.28	10/30/94	--	--	--
95	293116098575101	TD–68–25–704	29°31'16"	98°57'51"	GW	Edwards	937.94	12/08/94	--	--	--
96	293158098575001	TD–68–25–705	29°31'58"	98°57'50"	GW	Edwards	983.68	10/03/94	--	--	--
97	293231098561900	Spillway channel 2/TD–68–25–8S2	29°32'31"	98°56'19"	SPR	Edwards	--	--	–4.70/–0.75	--	06/06/96
98	293235098562400	Spillway channel 3/TD–68–25–8S3	29°32'35"	98°56'24"	SPR	Edwards	--	--	–5.50/–0.68	--	06/06/96
99	293226098561700	Spillway channel 5/TD–68–25–8S5	29°32'26"	98°56'17"	SPR	Edwards	--	--	–5.20/–0.66	--	06/06/96
100	293220098561600	Spillway channel 7/TD–68–25–8S7	29°32'20"	98°56'16"	SPR	Edwards	--	--	–5.80/–0.65	--	06/06/96
101	293228098561700	Spillway channel 8/TD–68–25–8S8	29°32'28"	98°56'17"	SPR	Edwards	--	--	–3.40/–0.41	--	07/26/96
102	293217098561300	Spillway channel 9/TD–68–25–8S9	29°32'17"	98°56'13"	SPR	Edwards	--	--	–4.60/–0.41	--	07/26/96
103	293033098571601	TD–68–25–806	29°30'33"	98°57'16"	GW	Edwards	910.17	12/13/94	–26.1/–4.31	--	12/05/95
							--	--	–25.3/–4.24	.70857	08/19/96
104	293158098560401	TD–68–25–807	29°31'58"	98°56'04"	GW	U. Trinity	918.61	12/02/94	–15.2/–2.35	--	01/25/96
							--	--	–16.0/–2.98		07/09/96
105	293118098562601	TD–68–25–808	29°31'18"	98°56'26"	GW	Trinity undiff.	928	07/19/95	--	--	--
106	293229098553402	TD–68–25–809	29°32'29"	98°55'34"	GW	Trinity undiff.	--	12/05/95	–22.9/–3.89	--	12/05/95
							--	--	–23.3/–3.90	--	07/26/96

Table 4. Water-level and water-quality data-collection sites and isotopic data, Medina Lake area, Texas—Continued

Site no. (pl. 2)	Station or site identification no.	Station name/local identifier or state well no.	Latitude	Longitude	Type of site	Aquifer	Water-level altitude (ft above MSL)	Date measured	$\delta D/\delta^{18}O$ (‰)	$^{87}Sr/^{86}Sr$	Date sampled
107	293117098560301	TD–68–25–810	29°31'17"	98°56'03"	GW	Trinity undiff.	--	03/06/96	–26.3/–4.53	--	03/06/96
							--	--	–25.0/–4.54	.70841	08/19/96
108	293139098555501	TD–68–25–811	29°31'39"	98°55'55"	GW	Edwards	925.80	06/06/95	--	--	--
109	293142098553401	TD–68–25–815	29°31'42"	98°55'34"	GW	U. Trinity	898.29	06/21/95	--	--	--
110	293220098544701	TD–68–25–901	29°32'20"	98°54'47"	SPR	Edwards	1,000	10/30/95	–11.5/–1.31	--	10/30/95
							--	--	–8.10/–1.05	--	07/09/96
111	293217098544601	TD–68–25–902	29°32'17"	98°54'46"	SPR	Edwards	985	10/30/95	–10.9/–1.72	--	10/30/95
112	293222098531201	TD–68–25–903	29°32'22"	98°53'12"	GW	U. Trinity	--	08/07/95	–27.0/–4.46	--	03/20/96
							--	--	–26.1/–4.46	--	03/20/96
							--	--	–24.2/–4.41	.70763	07/29/96
							--	--	–25.2/–4.46	.70763	07/29/96
113	293034098540901	TD–68–25–904	29°30'34"	98°54'09"	GW	Trinity undiff.	--	03/06/96	–21.9/–4.14	--	03/06/96
							--	--	–22.0/–4.21	.70768	07/26/96
114	293323098504101	Bear Spring/TD–68–26–401	29°33'23"	98°50'41"	SPR	Edwards	1,160	07/16/96	–21.9/–3.89	--	07/16/96
115	293302098484701	TD–68–26–502	29°33'02"	98°48'47"	GW	Edwards	1,041.67	10/30/95	--	--	--
116	293455098490201	Cedar Springs/TD–68–26–503	29°34'55"	98°49'02"	SPR	Edwards	1,260	07/19/96	–18.6/–3.16	--	07/19/96
117	292831098590201	TD–68–33–101	29°28'31"	98°59'02"	GW	Edwards	842.75	04/05/95	–17.2/–2.99	--	11/29/95
							--	--	–17.0/–3.02	.70772	08/21/96
							--	--	–18.4/–2.97	--	08/21/96
118	292820098574901	TD–68–33–102	29°28'20"	98°57'49"	GW	Edwards	898.84	04/05/95	--	--	--
119	292825098574501	TD–68–33–103	29°28'25"	98°57'45"	GW	Edwards	--	04/05/95	–20.9/–3.67	--	02/21/96
									–19.5/–3.46	.70785	08/06/96
120	292843098564601	TD–68–33–204	29°28'43"	98°56'46"	GW	Edwards	--	04/06/95	–21.2/–3.51	--	12/13/95
							--	--	–21.2/–3.36	.70774	08/21/96
121	292754098572401	TD–68–33–205	29°27'54"	98°57'24"	GW	Leona	919.43	04/03/95	--	--	--
122	292954098531901	TD–68–33–304	29°29'54"	98°53'19"	GW	Edwards	817.72	03/28/95	--	--	--
123	292525098534601	TD–68–33–603	29°25'25"	98°53'46"	GW	Edwards	708.63	03/29/95	–20.4/–3.62	--	03/07/96
							--	--	–20.1/–3.49	.70784	08/20/96

Table 4. Water-level and water-quality data-collection sites and isotopic data, Medina Lake area, Texas—Continued

Site no. (pl. 2)	Station or site identification no.	Station name/local identifier or state well no.	Latitude	Longitude	Type of site	Aquifer	Water-level altitude (ft above MSL)	Date measured	$\delta D/\delta^{18}O$ (‰)	$^{87}Sr/^{86}Sr$	Date sampled
124	292639098535801	Zinsmeyer Spring/TD–68–33–608	29°26'39"	98°53'58"	SPR	Leona	890	03/29/95	–11.4/–1.84	--	07/06/96
125	292707098534501	TD–68–33–609	29°27'07"	98°53'45"	SPR	Leona	911	03/31/95	--	--	--
126	292657098525701	Boehme Spring/TD–68–33–610	29°26'57"	98°52'57"	SPR	Leona	810	04/01/95	–20.7/–3.73	--	07/18/96
127	292654098534101	Haby 1 Spring/TD–68–33–611	29°26'54"	98°53'41"	SPR	Leona	825	04/03/95	–9.80/–1.53	--	07/06/96
128	292656098525801	Wurzbach Spring/TD–68–33–612	29°26'56"	98°52'58"	SPR	Leona	825	03/31/95	–21.4/–3.77	--	07/18/96
129	292530098534901	TD–68–33–613	29°25'30"	98°53'49"	SPR	Leona	788	03/29/95	--	--	--
130	292642098540301	TD–68–33–614	29°26'42"	98°54'03"	GW	Edwards	746	04/03/95	--	--	--
131	292650098525301	TD–68–33–615	29°26'50"	98°52'53"	GW	Edwards	704.28	04/01/95	--	--	--
132	294245099024701	AS–69–24–208	29°42'45"	99°02'47"	GW	M. Trinity	1,089	03/13/95	–29.9/–4.96	--	12/11/95
							--	--	–29.0/–4.99	.70846	08/06/96
							--	--	–28.6/–4.92	--	08/06/96
133	294249099043101	Dripping Springs/AS–69–24–217	29°42'49"	99°04'31"	SPR	Trinity undiff.	1,210	07/05/96	–13.3/–2.11	--	07/05/96
134	294015099000701	AS–69–24–602	29°40'15"	99°00'07"	GW	M. Trinity	--	11/30/95	–21.4/–3.81	--	11/30/95
							--	--	–22.7/–3.85	.70769	08/20/96
135	294005099013201	AS–69–24–603	29°40'05"	99°01'32"	GW	M. Trinity	--	07/11/95	–23.7/–4.21	--	02/05/96
							--	--	–23.3/–4.18	.70786	08/20/96
136	293736099034801	AS–69–24–802	29°37'36"	99°03'48"	GW	M. Trinity	--	07/10/95	–26.0/–4.45	--	01/31/96
							--	--	–25.8/–4.57	.70750	07/30/96
137	293856099040101	AS–69–24–803	29°38'56"	99°04'01"	GW	M. Trinity	--	07/10/95	–24.5/–4.80	--	01/25/96
							--	--	–26.3/–4.82	.70746	08/07/96
138	293812099031101	AS–69–24–804	29°38'12"	99°03'11"	GW	M. Trinity	1,199.16	03/23/95	–25.3/–4.55	--	03/20/96
							--	--	–26.1/–4.51	--	03/20/96
							--	--	–24.9/–4.33	.70748	08/15/96
139	293819099031901	Langford Lake Springs/AS–69–24–805	29°38'19"	99°03'19"	SPR	Trinity undiff.	1,420	03/24/95	–22.8/–4.57	--	07/16/96
140	293759099040201	AS–69–24–901	29°37'59"	99°04'02"	GW	Trinity undiff.	1,139.91	03/24/95	--	--	--
141	293710099032201	TD–69–32–201	29°37'10"	99°03'22"	GW	Trinity undiff.	--	07/10/95	–27.0/–4.51	--	01/31/96
									–23.5/–4.31	.70749	08/28/96

Table 4. Water-level and water-quality data-collection sites and isotopic data, Medina Lake area, Texas—Continued

Site no. (pl. 2)	Station or site identification no.	Station name/local identifier or state well no.	Latitude	Longitude	Type of site	Aquifer	Water-level altitude (ft above MSL)	Date measured	$\delta D/\delta^{18}O$ (‰)	$^{87}Sr/^{86}Sr$	Date sampled
142	293505099040201	Flying A Ranch Spring/TD–69–32–202	29°35'05"	99°04'02"	SPR	U. Trinity	1,300	03/23/95	–23.5/–4.31	--	07/16/96
143	293640099020001	TD–69–32–303	29°36'40"	99°02'00"	GW	Trinity undiff.	1,079.58	03/23/95	–27.1/–4.63	--	12/11/95
							--	--	–24.7/–4.63	.70771	08/15/95
144	293519099004201	Pecan Grove Spring/TD–69–32–304	29°35'19"	99°00'42"	SPR	Trinity undiff.	1,090	07/10/96	–25.0/–4.34	--	07/10/96
145	293548099011201	Sheep Spring/TD–69–32–305	29°35'48"	99°01'12"	SPR	Trinity undiff.	1,140	07/10/96	–23.1/–4.36	--	07/10/96
146	293553099010301	Cypress Creek Spring/TD–69–32–306	29°35'53"	99°01'03"	SPR	Trinity undiff.	1,120	07/10/96	–13.6/–2.51	--	07/10/96
147	293438099041201	AS–69–32–501	29°34'38"	99°04'12"	GW	Trinity undiff.	--	03/23/95	–27.8/–4.69	--	12/11/95
							--	--	–24.7/–4.79	--	08/15/96
148	292803099042601	TD–69–40–202	29°28'03"	99°04'26"	GW	Edwards	--	03/13/96	–19.4/–3.23	--	03/13/96
							--	--	–18.6/–3.24	--	03/13/96
							--	--	–24.2/–4.01	.70823	08/20/96
149	292841099012001	TD–69–40–301	29°28'41"	99°01'20"	GW	Edwards	895.89	07/07/95	–23.7/–3.93	--	01/24/96
							--	--	–23.3/–3.88	.70794	08/21/96
150	292727099003201	TD–69–40–604	29°27'27"	99°00'32"	GW	Edwards	--	04/06/95	–17.9/–3.11	--	12/05/95
							--	--	–20.2/–3.15	.70766	08/21/96

Table 5. Comparison of estimated average losses (recharge to the Edwards aquifer), Medina Lake area, Texas, December 1995–July 1996

[Normalized to each month = 30 days; units in acre-feet unless otherwise indicated; MSL, mean sea level; SW, surface water]

Date	Medina Lake average stage (feet above MSL)	Diversion Lake average stage (feet above MSL)	USGS method			Trans-Texas method			Current study method				
			Medina Lake average loss	Diversion Lake average loss	Medina/ Diversion Lakes total average loss	Medina Lake average loss	Diversion Lake average loss	Medina/ Diversion Lakes total average loss	Medina Lake average loss	+ Diversion Lake average loss	– Average SW gain (site 8 to 9)	= Medina/ Diversion Lakes total average loss
12/95	1,044.74	912.03	2,850	1,310	4,160	2,546	1,354	3,900	3,420	660	945	3,135
01/96	1,044.04	911.24	2,800	1,500	4,300	2,530	1,328	3,858	3,390	120	750	2,760
02/96	1,042.67	912.03	2,700	1,500	4,200	2,499	1,354	3,853	3,300	660	757	3,203
03/96	1,040.92	912.34	2,600	1,500	4,100	2,452	1,364	3,816	3,120	900	829	3,191
04/96	1,038.68	912.74	2,500	1,500	4,000	2,394	1,377	3,771	2,850	1,320	885	3,285
05/96	1,035.74	913.11	2,300	1,500	3,800	2,324	1,389	3,713	2,370	1,710	1,041	3,039
06/96	1,031.78	913.49	2,200	1,500	3,700	2,234	1,401	3,635	1,500	2,190	1,218	2,472
07/96	1,026.75	913.46	2,100	1,500	3,600	2,110	1,400	3,510	60	2,130	1,271	919
Total			20,050	11,810	31,860	19,089	10,967	30,056	20,010	9,690	7,696	22,004

Table 6. Comparison of mixing fractions of endmember Medina Lake water and endmember Edwards aquifer water calculated from deuterium and del oxygen data and from NETPATH mixing models in selected wells and springs, Medina Lake area, Texas

[δD, deuterium; ‰, per mil; $\delta^{18}O$, del oxygen; --, not determined; /, separates percent mixing fraction for NETPATH models]

Site no. (pl. 2)	Well or spring state well no.	Date of sample	δD (‰)	$\delta^{18}O$ (‰)	δD (percent lake water)	$\delta^{18}O$ (percent lake water)	Lake water (average percent)	NETPATH mixing models (percent lake water)
93	TD–68–25–701	11/30/95	–21.8	–3.99	17.9	16.0	16.9	--
93	TD–68–25–701	07/29/96	–23.2	–3.97	10.2	16.6	13.4	--
110	TD–68–25–901	10/30/95	–11.5	–1.31	74.3	93.9	84.1	78.8/75.0
110	TD–68–25–901	07/09/96	–8.1	–1.05	92.9	101.5	97.2	--
111	TD–68–25–902	10/30/95	–10.9	–1.72	77.5	82.0	79.8	--
114	TD–68–26–401/ Bear Spring	07/16/96	–21.9	–3.89	17.3	18.9	18.1	--
116	TD–68–26–503/ Cedar Springs	07/19/96	–18.6	–3.16	35.4	40.1	37.7	--
117	TD–68–33–101	11/29/95	–17.2	–2.99	43.0	45.1	44.1	56.4/52.3
117	TD–68–33–101	08/21/96	–17.0	–3.02	44.1	44.2	44.2	57.7
119	TD–68–33–103	02/21/96	–20.9	–3.67	22.8	25.3	24.0	19.7
119	TD–68–33–103	08/06/96	–19.5	–3.46	30.4	31.4	30.9	35.4/11.0
120	TD–68–33–204	12/13/95	–21.2	–3.51	21.1	29.9	25.5	26.2/32.2
120	TD–68–33–204	08/21/96	–21.2	–3.36	21.1	34.3	27.7	29.4/34.6/27.8
123	TD–68–33–603	03/07/96	–20.4	–3.62	25.5	26.7	26.1	28.8/15.4
123	TD–68–33–603	08/20/96	–20.1	–3.49	27.2	30.5	28.8	44.6
148	TD–69–40–202	03/13/96	–19.0	–3.24	33.2	37.8	35.5	36.3/26.8/36.3/25.4
148	TD–69–40–202	08/20/96	–24.2	–4.01	4.7	15.4	10.1	10.9/5.4
149	TD–69–40–301	01/24/96	–23.7	–3.93	7.4	20.6	14.0	15.9
149	TD–69–40–301	08/21/96	–23.3	–3.88	9.6	19.2	14.4	21.5
150	TD–69–40–604	12/05/95	–17.9	–3.11	39.2	41.6	40.4	32.2/58.2
150	TD–69–40–604	08/21/96	–20.2	–3.15	26.6	40.4	33.5	58.2

Table 7. Results of NETPATH simulations of mixing water from Medina Lake with water from the Edwards aquifer, Medina Lake area, Texas

[For calculated mass-transfer results, negative number indicates amount of mineral precipitating, positive number indicates amount of mineral dissolving. For exchange, negative number indicates milliequivalents calcium exchanged from solid to aqueous phase, positive number indicates milliequivalents sodium exchanged from aqueous to solid phase. For carbon dioxide gas, negative number indicates degassing, positive number indicates carbon dioxide gas being dissolved. Mineral mass transfers are in millimoles per liter; model 1, calcite dissolution or precipitation; model 2, dolomite, gypsum, and sodium chloride dissolution only; model 3, carbon dioxide dissolution or outgassing; model 4, reverse cation (calcium for sodium) exchange; --, not simulated]

Site no. (pl. 2)	State well or spring no.	Date sampled	Model no.	Mixing fraction (percent)		Mass transfer					Ion exchange
				Lake water	Ground water	Calcite	Dolomite	Gypsum	Sodium chloride	Carbon dioxide gas	
110	TD–68–25–901	10/30/95	1	78.8	21.2	0.068	0.032	--	0.031	–0.371	0.039
110	TD–68–25–901	10/30/95	2	75.0	25.0	--	.055	.022	.037	–.392	.040
117	TD–68–33–101	11/29/95	1	56.4	43.6	–.110	.182	--	.027	–.295	.031
117	TD–68–33–101	11/29/95	2	52.3	47.7	–.154	.264	.030	.067	.398	--
117	TD–68–33–101	08/21/96	3	57.7	42.3	–.060	.232	--	.058	.427	–.001
119	TD–68–33–103	02/21/96	1	19.7	80.3	.345	--	.038	.149	–.189	–.011
119	TD–68–33–103	08/06/96	2	35.4	64.6	.425	--	.015	.088	–.489	.007
119	TD–68–33–103	08/06/96	3	11.0	89.0	--	.141	.150	.126	–.621	.014
120	TD–68–33–204	12/13/95	1	26.2	73.8	–.056	.132	.033	.091	–.306	--
120	TD–68–33–204	12/13/95	2	32.2	67.8	.049	.098	--	.082	–.274	–.002
120	TD–68–33–204	08/21/96	3	29.4	70.6	.016	.114	--	.086	–.289	–.001
120	TD–68–33–204	08/21/96	4	34.6	65.4	.119	.106	--	.109	–.596	.004
123	TD–68–33–603	03/07/96	1	28.8	71.2	.234	.609	--	2.209	–1.768	.881
123	TD–68–33–603	03/07/96	2	15.4	84.6	.075	.686	--	2.230	–1.841	.885
123	TD–68–33–603	08/20/96	3	44.6	55.4	–.192	.337	--	1.487	–.504	–.062
148	TD–69–40–202	03/13/96	1	36.3	63.7	.167	.076	--	.016	–.490	.026
148	TD–69–40–202	03/13/96	2	26.8	73.2	--	.131	.053	.031	–.542	.029
148	TD–69–40–202	03/13/96	3	36.3	63.7	.191	.077	--	.019	–.517	.043
148	TD–69–40–202	03/13/96	4	25.4	74.6	--	.140	.061	.036	–.576	.046
148	TD–69–40–202	08/20/96	1	10.9	89.1	.095	.182	--	.194	–.293	.030
148	TD–69–40–202	08/20/96	2	5.4	94.6	--	.213	.030	.203	–.323	.032
149	TD–69–40–301	01/24/96	1	15.9	84.1	–.601	.436	--	.023	–.390	.044
149	TD–69–40–301	08/21/96	2	21.5	78.5	–.333	.371	--	.082	–.630	.008
150	TD–69–40–604	12/05/95	1	32.2	67.8	–.900	.145	--	.051	.443	–.084
150	TD–69–40–604	12/05/95	2	58.2	41.8	–.445	.293	--	.010	.141	–.091
150	TD–69–40–604	08/21/96	3	58.2	41.8	–.304	.344	--	.043	–.037	.003

Appendix A—
Hydrologic Data

Appendix A. Precipitation

[Site numbers correspond to figure 3 and table 2. in., inches; acre-ft, acre-feet]

Date	08179110 Red Bluff Creek precipitation (site 2) (in.)	08179300 Elm Creek precipitation (site 3) (in.)	08179280 Cypress Creek precipitation (site 10) (in.)	08179240 Bruins Creek precipitation (site 11) (in.)	08179505 Medina Lake at main dam precipitation (site 13) (in.)	Average precipitation Medina Lake				08180010 Diversion Lake precipitation (site 15)		Precipitation Diversion Lake	
						(in.)	(+\- error) (in.)	(acre-ft)	(+/- error) (acre-ft)	(in.)	(+\- error) (in.)	(acre-ft)	(+\- error) (acre-ft)
8/1/1995													
8/2/1995													
8/3/1995													
8/4/1995													
8/5/1995													
8/6/1995													
8/7/1995													
8/8/1995													
8/9/1995													
8/10/1995													
8/11/1995													
8/12/1995		0.03	0.11	0.19		0.11	0.02						
8/13/1995		0.19								0.53	0.08		
8/14/1995													
8/15/1995													
8/16/1995													
8/17/1995													
8/18/1995													
8/19/1995													
8/20/1995													
8/21/1995	1.15	0.23	0.38	1.04		0.70	0.11						
8/22/1995													
8/23/1995													
8/24/1995													
8/25/1995													
8/26/1995													
8/27/1995													
8/28/1995	1.15			0.76									
8/29/1995													
8/30/1995													
8/31/1995	0.16	1.79	0.3			0.75	0.11						
9/1/1995													
9/2/1995													
9/3/1995													
9/4/1995													
9/5/1995													
9/6/1995													
9/7/1995	1.57	0.96	0.18	0.31	0.84	0.77	0.12			0.33	0.05		
9/8/1995													
9/9/1995													
9/10/1995													
9/11/1995													
9/12/1995													
9/13/1995		1.03	0.18	0.11		0.44	0.07			0.11	0.02		
9/14/1995													

Appendix A. Precipitation—Continued

Date	08179110 Red Bluff Creek precipitation (site 2) (in.)	08179300 Elm Creek precipitation (site 3) (in.)	08179280 Cypress Creek precipitation (site 10) (in.)	08179240 Bruins Creek precipitation (site 11) (in.)	08179505 Medina Lake at main dam precipitation (site 13) (in.)	Average precipitation Medina Lake				08180010 Diversion Lake precipitation (site 15)		Precipitation Diversion Lake	
						(in.)	(+\- error) (in.)	(acre-ft)	(+/- error) (acre-ft)	(in.)	(+\- error) (in.)	(acre-ft)	(+\- error) (acre-ft)
9/15/1995													
9/16/1995													
9/17/1995													
9/18/1995													
9/19/1995													
9/20/1995	3.81	4.31	4.04	4.73	3.16	4.01	0.60	1,462.65	219.40	4.73	0.71		
9/21/1995	1.2	0.71	1.33	0.96	1.08	1.06	0.16	387.11	58.07	0.96	0.14		
9/22/1995	0.12		0.07	0.07	0.04	0.08	0.01	27.77	4.17	0.07	0.01		
9/23/1995													
9/24/1995													
9/25/1995													
9/26/1995													
9/27/1995													
9/28/1995													
9/29/1995													
9/30/1995													
10/1/1995													
10/2/1995													
10/3/1995													
10/4/1995													
10/5/1995													
10/6/1995													
10/7/1995													
10/8/1995													
10/9/1995													
10/10/1995													
10/11/1995													
10/12/1995													
10/13/1995													
10/14/1995													
10/15/1995													
10/16/1995													
10/17/1995													
10/18/1995													
10/19/1995													
10/20/1995													
10/21/1995		0.15											
10/22/1995													
10/23/1995													
10/24/1995													
10/25/1995													
10/26/1995													
10/27/1995													
10/28/1995													
10/29/1995	0.2	0.15	0.18	0.19	0.24	0.19	0.03	70.54	10.58	0.12	0.02	1.22	0.18
10/30/1995			0.11	0.07	0.08	0.09	0.01	31.84	4.78				
10/31/1995	1.07	1.93	1.41	0.72	1.54	1.33	0.20	490.13	73.52	1.74	0.26	17.55	2.63
11/1/1995	1.03	1.91	1.71	0.79	1.74	1.44	0.22	533.00	79.95	0.88	0.13	9.31	1.40

Appendix A. Precipitation—Continued

Date	08179110 Red Bluff Creek precipitation (site 2) (in.)	08179300 Elm Creek precipitation (site 3) (in.)	08179280 Cypress Creek precipitation (site 10) (in.)	08179240 Bruins Creek precipitation (site 11) (in.)	08179505 Medina Lake at main dam precipitation (site 13) (in.)	Average precipitation Medina Lake				08180010 Diversion Lake precipitation (site 15)		Precipitation Diversion Lake	
						(in.)	(+\- error) (in.)	(acre-ft)	(+/- error) (acre-ft)	(in.)	(+\- error) (in.)	(acre-ft)	(+\- error) (acre-ft)
11/2/1995													
11/3/1995													
11/4/1995													
11/5/1995													
11/6/1995													
11/7/1995													
11/8/1995													
11/9/1995													
11/10/1995													
11/11/1995													
11/12/1995													
11/13/1995													
11/14/1995													
11/15/1995													
11/16/1995		0.03								0.12	0.02	1.27	0.19
11/17/1995	1.86	1.75	1.53	1.51	1.94	1.72	0.26	639.24	95.89	1.07	0.16	11.24	1.69
11/18/1995													
11/19/1995													
11/20/1995													
11/21/1995													
11/22/1995													
11/23/1995													
11/24/1995													
11/25/1995													
11/26/1995													
11/27/1995													
11/28/1995													
11/29/1995													
11/30/1995													
12/1/1995													
12/2/1995													
12/3/1995													
12/4/1995													
12/5/1995													
12/6/1995													
12/7/1995													
12/8/1995	0.12	0.03	0.11	0.11	0.08	0.09	0.01	33.57	5.04	0.08	0.01	0.85	0.13
12/9/1995													
12/10/1995													
12/11/1995													
12/12/1995													
12/13/1995													
12/14/1995													
12/15/1995													
12/16/1995													
12/17/1995	0.65	0.07	0.18	0.15	0.08	0.23	0.03	84.09	12.61				
12/18/1995	0.08	0.07		0.07	0.2	0.11	0.02	39.07	5.86	0.12	0.02	1.16	0.17
12/19/1995													

Appendix A. Precipitation—Continued

Date	08179110 Red Bluff Creek precipitation (site 2) (in.)	08179300 Elm Creek precipitation (site 3) (in.)	08179280 Cypress Creek precipitation (site 10) (in.)	08179240 Bruins Creek precipitation (site 11) (in.)	08179505 Medina Lake at main dam precipitation (site 13) (in.)	Average precipitation Medina Lake				08180010 Diversion Lake precipitation (site 15)		Precipitation Diversion Lake	
						(in.)	(+\- error) (in.)	(acre-ft)	(+/- error) (acre-ft)	(in.)	(+\- error) (in.)	(acre-ft)	(+\- error) (acre-ft)
12/20/1995										0.3	0.05	2.88	0.43
12/21/1995	0.08			0.07									
12/22/1995													
12/23/1995													
12/24/1995													
12/25/1995													
12/26/1995													
12/27/1995													
12/28/1995													
12/29/1995	0.12	0.03	0.07	0.11		0.08	0.01	30.47	4.57				
12/30/1995													
12/31/1995													
1/1/1996													
1/2/1996													
1/3/1996													
1/4/1996													
1/5/1996													
1/6/1996													
1/7/1996													
1/8/1996													
1/9/1996													
1/10/1996													
1/11/1996													
1/12/1996													
1/13/1996													
1/14/1996													
1/15/1996													
1/16/1996													
1/17/1996													
1/18/1996													
1/19/1996													
1/20/1996													
1/21/1996													
1/22/1996													
1/23/1996													
1/24/1996													
1/25/1996													
1/26/1996													
1/27/1996													
1/28/1996													
1/29/1996													
1/30/1996													
1/31/1996													
2/1/1996													
2/2/1996													
2/3/1996													
2/4/1996	0.08	0.03	0.07	0.11		0.07	0.01	26.00	3.90				
2/5/1996													

Appendix A. Precipitation—Continued

Date	08179110 Red Bluff Creek precipitation (site 2) (in.)	08179300 Elm Creek precipitation (site 3) (in.)	08179280 Cypress Creek precipitation (site 10) (in.)	08179240 Bruins Creek precipitation (site 11) (in.)	08179505 Medina Lake at main dam precipitation (site 13) (in.)	Average precipitation Medina Lake				08180010 Diversion Lake precipitation (site 15)		Precipitation Diversion Lake	
						(in.)	(+\- error) (in.)	(acre-ft)	(+/- error) (acre-ft)	(in.)	(+\- error) (in.)	(acre-ft)	(+\- error) (acre-ft)
2/6/1996													
2/7/1996													
2/8/1996													
2/9/1996													
2/10/1996													
2/11/1996													
2/12/1996													
2/13/1996													
2/14/1996													
2/15/1996													
2/16/1996													
2/17/1996													
2/18/1996													
2/19/1996													
2/20/1996													
2/21/1996													
2/22/1996													
2/23/1996													
2/24/1996													
2/25/1996													
2/26/1996													
2/27/1996													
2/28/1996		0.03	0.07	0.07		0.06	0.01	19.62	2.94				
2/29/1996	0.69	0.63	0.7	0.59	0.68	0.66	0.10	227.23	34.08	0.61	0.09	6.30	0.95
3/1/1996													
3/2/1996													
3/3/1996													
3/4/1996													
3/5/1996		0.03											
3/6/1996													
3/7/1996													
3/8/1996													
3/9/1996													
3/10/1996													
3/11/1996													
3/12/1996													
3/13/1996													
3/14/1996													
3/15/1996													
3/16/1996													
3/17/1996													
3/18/1996													
3/19/1996													
3/20/1996													
3/21/1996													
3/22/1996													
3/23/1996													
3/24/1996													

Appendix A. Precipitation—Continued

Date	08179110 Red Bluff Creek precipitation (site 2) (in.)	08179300 Elm Creek precipitation (site 3) (in.)	08179280 Cypress Creek precipitation (site 10) (in.)	08179240 Bruins Creek precipitation (site 11) (in.)	08179505 Medina Lake at main dam precipitation (site 13) (in.)	Average precipitation Medina Lake				08180010 Diversion Lake precipitation (site 15)		Precipitation Diversion Lake	
						(in.)	(+\- error) (in.)	(acre-ft)	(+/- error) (acre-ft)	(in.)	(+\- error) (in.)	(acre-ft)	(+\- error) (acre-ft)
3/25/1996													
3/26/1996	0.12	0.03	0.07	0.07	0.08	0.07	0.01	23.88	3.58				
3/27/1996	0.24	0.16	0.23	0.2	0.16	0.20	0.03	63.67	9.55	0.2	0.03	2.13	0.32
3/28/1996													
3/29/1996													
3/30/1996													
3/31/1996													
4/1/1996													
4/2/1996													
4/3/1996													
4/4/1996													
4/5/1996	0.53	0.59	0.62	0.51	0.89	0.63	0.09	198.13	29.72	0.77	0.12	8.21	1.23
4/6/1996													
4/7/1996													
4/8/1996													
4/9/1996													
4/10/1996													
4/11/1996													
4/12/1996													
4/13/1996													
4/14/1996													
4/15/1996													
4/16/1996													
4/17/1996													
4/18/1996													
4/19/1996													
4/20/1996													
4/21/1996													
4/22/1996	0.12	0.07	0.11	0.11	0.08	0.10	0.01	29.62	4.44				
4/23/1996													
4/24/1996													
4/25/1996													
4/26/1996													
4/27/1996													
4/28/1996	0.99	0.59	0.3	1	0.4	0.66	0.10	195.05	29.26	0.53	0.08	5.70	0.85
4/29/1996													
4/30/1996													
5/1/1996													
5/2/1996													
5/3/1996													
5/4/1996													
5/5/1996													
5/6/1996													
5/7/1996													
5/8/1996		0.15			0.56	0.36	0.05	102.60	15.39	0.44	0.07	4.69	0.70
5/9/1996													
5/10/1996													
5/11/1996													

Appendix A. Precipitation—Continued

Date	08179110 Red Bluff Creek precipitation (site 2) (in.)	08179300 Elm Creek precipitation (site 3) (in.)	08179280 Cypress Creek precipitation (site 10) (in.)	08179240 Bruins Creek precipitation (site 11) (in.)	08179505 Medina Lake at main dam precipitation (site 13) (in.)	Average precipitation Medina Lake				08180010 Diversion Lake precipitation (site 15)		Precipitation Diversion Lake	
						(in.)	(+\- error) (in.)	(acre-ft)	(+/- error) (acre-ft)	(in.)	(+\- error) (in.)	(acre-ft)	(+\- error) (acre-ft)
5/12/1996													
5/13/1996													
5/14/1996													
5/15/1996													
5/16/1996													
5/17/1996													
5/18/1996													
5/19/1996													
5/20/1996													
5/21/1996													
5/22/1996													
5/23/1996													
5/24/1996													
5/25/1996													
5/26/1996													
5/27/1996	0.87	0.59	0.46	1.05	0.48	0.69	0.10	190.10	28.51	0.61	0.09	6.61	0.99
5/28/1996													
5/29/1996													
5/30/1996													
5/31/1996	0.12		0.15	0.19		0.15	0.02	41.82	6.27				
6/1/1996		0.11	0.11		0.24	0.15	0.02	41.62	6.24	0.28	0.04	3.03	0.46
6/2/1996													
6/3/1996													
6/4/1996													
6/5/1996													
6/6/1996													
6/7/1996													
6/8/1996													
6/9/1996													
6/10/1996													
6/11/1996													
6/12/1996													
6/13/1996													
6/14/1996													
6/15/1996													
6/16/1996													
6/17/1996													
6/18/1996													
6/19/1996													
6/20/1996													
6/21/1996													
6/22/1996													
6/23/1996													
6/24/1996													
6/25/1996	0.77	1.12	0.07	1.01	0.32	0.66	0.10	164.55	24.68				
6/26/1996			0.46	0.11	0.08	0.22	0.03	53.97	8.10	0.12	0.02	1.31	0.20
6/27/1996													
6/28/1996													

Appendix A. Precipitation—Continued

Date	08179110 Red Bluff Creek precipitation (site 2) (in.)	08179300 Elm Creek precipitation (site 3) (in.)	08179280 Cypress Creek precipitation (site 10) (in.)	08179240 Bruins Creek precipitation (site 11) (in.)	08179505 Medina Lake at main dam precipitation (site 13) (in.)	Average precipitation Medina Lake				08180010 Diversion Lake precipitation (site 15)		Precipitation Diversion Lake	
						(in.)	(+\- error) (in.)	(acre-ft)	(+/- error) (acre-ft)	(in.)	(+\- error) (in.)	(acre-ft)	(+\- error) (acre-ft)
6/29/1996													
6/30/1996													
7/1/1996													
7/2/1996													
7/3/1996													
7/4/1996													
7/5/1996													
7/6/1996													
7/7/1996													
7/8/1996													
7/9/1996			0.18		0.16	0.17	0.03	40.45	6.07	0.12	0.02	1.31	0.20
7/10/1996	1.07	1.23	1.18	1.04	1.71	1.25	0.19	296.44	44.47	2.19	0.33	24.27	3.64
7/11/1996										0.12	0.02	1.35	0.20
7/12/1996													
7/13/1996													
7/14/1996													
7/15/1996													
7/16/1996													
7/17/1996													
7/18/1996													
7/19/1996													
7/20/1996													
7/21/1996													
7/22/1996													
7/23/1996													
7/24/1996													
7/25/1996													
7/26/1996													
7/27/1996													
7/28/1996													
7/29/1996													
7/30/1996													
7/31/1996													
8/1/1996													
8/2/1996													
8/3/1996													
8/4/1996													
8/5/1996													
8/6/1996													
8/7/1996													
8/8/1996													
8/9/1996													
8/10/1996													
8/11/1996													
8/12/1996										0.4	0.06	4.37	0.66
8/13/1996	0.36			0.19									
8/14/1996	0.2				0.08								
8/15/1996													

Appendix A. Precipitation—Continued

Date	08179110 Red Bluff Creek precipitation (site 2) (in.)	08179300 Elm Creek precipitation (site 3) (in.)	08179280 Cypress Creek precipitation (site 10) (in.)	08179240 Bruins Creek precipitation (site 11) (in.)	08179505 Medina Lake at main dam precipitation (site 13) (in.)	Average precipitation Medina Lake				08180010 Diversion Lake precipitation (site 15)		Precipitation Diversion Lake	
						(in.)	(+\- error) (in.)	(acre-ft)	(+/- error) (acre-ft)	(in.)	(+\- error) (in.)	(acre-ft)	(+\- error) (acre-ft)
8/16/1996													
8/17/1996													
8/18/1996													
8/19/1996		0.23											
8/20/1996		0.15	0.58	0.59		0.44	0.07	89.50	13.43				
8/21/1996													
8/22/1996	0.49	0.07	0.3	0.39	0.16	0.28	0.04	56.68	8.50	0.32	0.05	3.49	0.52
8/23/1996	0.2	0.39	0.12	0.12	0.64	0.29	0.04	58.92	8.84	0.77	0.12	8.28	1.24
8/24/1996	0.12	0.12		0.43		0.22	0.03	44.65	6.70				
8/25/1996	0.61	0.07	0.5	0.11	0.08	0.27	0.04	54.78	8.22	0.36	0.05	3.84	0.58
8/26/1996	0.77	0.87	0.22	0.59		0.61	0.09	122.09	18.31				
8/27/1996		0.07	0.11							0.28	0.04	2.94	0.44
8/28/1996													
8/29/1996	0.28	0.43	0.42	2.34		0.87	0.13	172.42	25.86				
8/30/1996	2.75	1.27	1.12	1.84	1.21	1.64	0.25	326.51	48.98	0.53	0.08	5.39	0.81
8/31/1996		0.19	0.11										
9/1/1996	0.12		0.83	0.51	0.4	0.47	0.07	92.69	13.90	0.69	0.10	6.96	1.04
9/2/1996													
9/3/1996				0.27									
9/4/1996	0.34	0.07	0.11	0.07	0.16	0.15	0.02	29.81	4.47	1.24	0.19	11.99	1.80
9/5/1996	1.37	0.07	0.26	0.79	0.24	0.55	0.08	108.52	16.28				
9/6/1996													
9/7/1996													
9/8/1996		0.03	0.58										
9/9/1996													
9/10/1996													
9/11/1996													
9/12/1996													
9/13/1996	0.12	0.07	0.11	0.11		0.10	0.02	20.30	3.05				
9/14/1996													
9/15/1996	1.07	0.55	0.9	0.59	0.72	0.77	0.11	151.73	22.76	1	0.15	8.75	1.31
9/16/1996													
9/17/1996													
9/18/1996													
9/19/1996													
9/20/1996			0.18	0.19	0.08	0.15	0.02	29.71	4.46	0.12	0.02	1.06	0.16
9/21/1996													
9/22/1996													
9/23/1996													
9/24/1996	0.16	0.71	0.07			0.31	0.05	61.70	9.26				
9/25/1996													
9/26/1996													
9/27/1996				0.87		0.87	0.13	170.30	25.55				
9/28/1996													
9/29/1996													
9/30/1996													

Appendix A. Evaporation

[Shading indicates dam weather station data used to supplement lake station data. °C, degrees Celsius; mbar, millibars; m, meters; mi/hr, miles per hour; cm, centimeters; in., inches; acre-ft, acre-feet]

Date	Water temperature (°C)	Saturation vapor pressure at water-surface temperature (e_0) (mbar)	Air temperature (°C)	Saturation vapor pressure of air at 2.0 m (e_s) (mbar)	Relative humidity (RH) (percent)	Vapor pressure of air at 2.0 m (e_a) (mbar)	e_0-e_a (mbar)	Wind speed (u_2)	Mass transfer product ($u_2(e_0-e_a)$) (mbar-mi/hr)	Stability parameter (Smt) (°C-mi/hr)^2
9/6/1995			29.1	40.28	62.5	25.18		6.26		
9/7/1995			28.6	39.13	67.2	26.30		4.92		
9/8/1995			26.0	33.61	77.1	25.91		4.92		
9/9/1995			26.9	35.44	68.2	24.17		3.13		
9/10/1995			26.8	35.23	66.2	23.32		2.91		
9/11/1995			26.5	34.62	70.9	24.54		3.80		
9/12/1995			27.6	36.92	68.3	25.22		7.61		
9/13/1995			28.2	38.24	68.8	26.31		5.59		
9/14/1995			25.2	32.05	89.3	28.62		2.46		
9/15/1995			26.6	34.82	78.9	27.47		4.70		
9/16/1995			28.1	38.01	71.8	27.29		9.17		
9/17/1995			29.0	40.05	68.7	27.52		4.70		
9/18/1995			28.3	38.46	68	26.15		4.92		
9/19/1995			29.1	40.28	67.5	27.19		7.16		
9/20/1995			24.4	30.56	82.2	25.12		7.83		
9/21/1995			23.2	28.43	83.1	23.63		5.37		
9/22/1995					78.6			14.00		
9/23/1995			16.2	18.41	59.8	11.01		3.58		
9/24/1995			20.3	23.82	62.3	14.84		4.70		
9/25/1995			22.9	27.92	60.1	16.78		3.36		
9/26/1995			23.7	29.30	61.9	18.14		4.25		
9/27/1995			25.5	32.63	70.5	23.00		5.14		
9/28/1995			26.8	35.23	72.1	25.40		7.16		
9/29/1995			25.7	33.02	70.3	23.21		8.95		
9/30/1995			25.5	32.63	70	22.84		7.16		
10/1/1995	27.0	35.65	26.0	33.61	73.3	24.64	11.01	3.58	39.41	-0.078
10/2/1995			25.2	32.05	73.9	23.69		3.13		
10/3/1995			21.9	26.28	64.8	17.03		11.18		
10/4/1995					66.3			3.13		
10/5/1995										
10/6/1995										
10/7/1995										
10/8/1995										
10/9/1995										
10/10/1995										
10/11/1995										
10/12/1995										
10/13/1995			23.2	28.43	68.5	19.48		4.03		
10/14/1995			21.7	25.96	47.6	12.36		10.29		
10/15/1995			17.5	20.00	45.7	9.14		3.13		
10/16/1995			17.7	20.25	53.1	10.75		4.70		
10/17/1995			20.2	23.67	61.6	14.58		5.59		
10/18/1995			22.0	26.44	70.3	18.58		4.03		
10/19/1995			23.1	28.26	62.7	17.72		5.14		
10/20/1995										
10/21/1995										
10/22/1995										

Appendix A. Evaporation—Continued

Date	Medina Lake						Diversion Lake					
	Surface area (acres)	Mass transfer coefficient (N) (Harbeck, 1962)	Evaporation				Surface area (acres)	Mass transfer coefficient (N) (Harbeck, 1962)	Evaporation			
			(cm)	(in.)	(acre-ft)	(+/-error) (acre-ft)			(cm)	(in.)	(acre-ft)	(+/-error) (acre-ft)
9/6/1995												
9/7/1995												
9/8/1995												
9/9/1995												
9/10/1995							117	0.00677				
9/11/1995							117	0.00677				
9/12/1995							116	0.00677				
9/13/1995												
9/14/1995												
9/15/1995												
9/16/1995												
9/17/1995												
9/18/1995												
9/19/1995												
9/20/1995	4,377	0.00565										
9/21/1995	4,399	0.00565										
9/22/1995	4,443	0.00564										
9/23/1995	4,476	0.00564										
9/24/1995	4,497	0.00564										
9/25/1995	4,508	0.00564					140	0.00671				
9/26/1995	4,508	0.00564					142	0.00670				
9/27/1995	4,508	0.00564					141	0.00671				
9/28/1995	4,520	0.00564										
9/29/1995	4,520	0.00564										
9/30/1995	4,528	0.00564										
10/1/1995	4,528	0.00564	0.222	0.088	33.02	8.25						
10/2/1995	4,528	0.00564										
10/3/1995	4,528	0.00564										
10/4/1995	4,528	0.00564										
10/5/1995	4,528	0.00564										
10/6/1995	4,528	0.00564										
10/7/1995	4,520	0.00564										
10/8/1995	4,520	0.00564										
10/9/1995	4,520	0.00564										
10/10/1995	4,520	0.00564					119	0.00676				
10/11/1995	4,520	0.00564					118	0.00677				
10/12/1995	4,520	0.00564					118	0.00677				
10/13/1995	4,508	0.00564					119	0.00676				
10/14/1995	4,508	0.00564					120	0.00676				
10/15/1995	4,497	0.00564					120	0.00676				
10/16/1995	4,497	0.00564					121	0.00676				
10/17/1995	4,486	0.00564					122	0.00676				
10/18/1995	4,476	0.00564					124	0.00675				
10/19/1995	4,476	0.00564					125	0.00675				
10/20/1995	4,465	0.00564					125	0.00675				
10/21/1995	4,454	0.00564					126	0.00674				
10/22/1995	4,454	0.00564					126	0.00674				

Appendix A. Evaporation—Continued

Date	Water temperature (°C)	Saturation vapor pressure at water-surface temperature (e_0) (mbar)	Air temperature (°C)	Saturation vapor pressure of air at 2.0 m (e_s) (mbar)	Relative humidity (RH) (percent)	Vapor pressure of air at 2.0 m (e_a) (mbar)	e_0-e_a (mbar)	Wind speed (u_2)	Mass transfer product ($u_2(e_0-e_a)$) (mbar-mi/hr)	Stability parameter (Smt) (°C-mi/hr)^2
10/23/1995										
10/24/1995										
10/25/1995										
10/26/1995										
10/27/1995										
10/28/1995										
10/29/1995										
10/30/1995										
10/31/1995										
11/1/1995										
11/2/1995										
11/3/1995			10.6	12.78	56.5	7.22		13.20		
11/4/1995	21.1	25.04	9.4	11.79	49.2	5.80	19.23	6.04	116.17	-0.321
11/5/1995	20.4	24.03	8.8	11.33	82.2	9.31	14.72	4.47	65.86	-0.582
11/6/1995	20.0	23.38	11.9	13.93	99.3	13.83	9.55	5.59	53.38	-0.259
11/7/1995	19.9	23.30	17.7	20.25	71.2	14.42	8.88	6.26	55.62	-0.057
11/8/1995	19.8	23.06	16.9	19.25	46.8	9.01	14.05	5.37	75.43	-0.100
11/9/1995			16.4	18.65	71	13.24		8.28		
11/10/1995	19.3	22.36	21.9	26.28	79.4	20.86	1.49	8.28	12.35	0.038
11/11/1995	19.3	22.36	14.3	16.30	53.1	8.65	13.70	8.50	116.46	-0.069
11/12/1995	19.0	21.97	9.9	12.20	60.8	7.42	14.56	5.37	78.15	-0.316
11/13/1995	18.8	21.74	15.2	17.27	60.6	10.47	11.28	2.01	22.70	-0.896
11/14/1995	18.8	21.74	15.2	17.24	62.5	10.77	10.97	4.00	43.89	-0.229
11/15/1995	18.5	21.30	14.9	16.94	79.3	13.44	7.86	3.58	28.13	-0.281
11/16/1995	18.2	20.90	17.1	19.50	66.9	13.04	7.85	4.25	33.38	-0.061
11/17/1995	18.0	20.64	16.3	18.51	70.2	12.99	7.65	5.59	42.76	-0.055
11/18/1995	17.9	20.51	16.4	18.65	80.4	15.00	5.51	4.47	24.66	-0.075
11/19/1995	18.5	21.30	16.9	19.25	80.7	15.54	5.76	2.46	14.17	-0.264
11/20/1995	18.5	21.30	16.9	19.25	90.1	17.35	3.95	2.01	7.95	-0.395
11/21/1995	18.6	21.43	16.9	19.25	81.6	15.71	5.72	3.58	20.47	-0.133
11/22/1995	18.2	20.90	17.2	19.62	80.1	15.72	5.18	6.71	34.77	-0.022
11/23/1995	18.2	20.90	17.4	19.87	67.4	13.39	7.51	5.37	40.29	-0.028
11/24/1995	18.1	20.77	13.6	15.57	50.5	7.87	12.90	5.82	75.04	-0.133
11/25/1995	17.9	20.51	13.2	15.17	70	10.62	9.89	4.47	44.23	-0.235
11/26/1995	17.9	20.51	16.8	19.13	77.9	14.90	5.61	5.14	28.84	-0.042
11/27/1995	18.1	20.77	17.3	19.75	71.8	14.18	6.59	5.59	36.85	-0.026
11/28/1995	17.4	19.87	10.8	12.95	45.3	5.87	14.00	15.66	219.29	-0.027
11/29/1995	17.9	20.57	8.1	10.81	59.5	6.43	14.13	11.0	155.48	-0.081
11/30/1995	17.8	20.35	6.8	9.90	79.8	7.90	12.45	2.0	24.90	-2.736
12/1/1995	17.3	19.79	15.4	17.55	92	16.14	3.65	2.6	9.48	-0.279
12/2/1995	17.4	19.86	18.7	21.59	89.7	19.37	0.49	3.5	1.71	0.109
12/3/1995	17.9	20.49	19.1	22.05	84.4	18.61	1.89	2.8	5.28	0.149
12/4/1995	18.2	20.86	15.6	17.73	69.7	12.36	8.49	5.2	44.17	-0.095
12/5/1995	18.1	20.71	16.4	18.64	78.7	14.67	6.04	4.8	29.00	-0.072
12/6/1995	17.9	20.57	14.8	16.81	66.9	11.25	9.32	6.7	62.45	-0.071
12/7/1995	17.8	20.35	13.8	15.76	74.1	11.67	8.68	9.1	78.95	-0.048
12/8/1995	16.8	19.13	13.1	15.09	93	14.03	5.10	6.9	35.20	-0.077
12/9/1995	16.4	18.65	5.6	9.09	47.7	4.34	14.31	11.86	169.69	-0.077
12/10/1995	16.0	18.18	4.3	8.31	37.2	3.09	15.09	6.49	97.90	-0.278
12/11/1995	15.9	18.07	11.3	13.39	61.9	8.29	9.78	6.49	63.42	-0.109

Appendix A. Evaporation—Continued

Date	Medina Lake						Diversion Lake					
	Surface area (acres)	Mass transfer coefficient (N) (Harbeck, 1962)	Evaporation				Surface area (acres)	Mass transfer coefficient (N) (Harbeck, 1962)	Evaporation			
			(cm)	(in.)	(acre-ft)	(+/-error) (acre-ft)			(cm)	(in.)	(acre-ft)	(+/-error) (acre-ft)
10/23/1995	4,443	0.00564					126	0.00674				
10/24/1995	4,432	0.00564					126	0.00674				
10/25/1995	4,420	0.00565					126	0.00674				
10/26/1995	4,420	0.00565					126	0.00674				
10/27/1995	4,420	0.00565					124	0.00675				
10/28/1995	4,409	0.00565					122	0.00676				
10/29/1995	4,409	0.00565					122	0.00676				
10/30/1995	4,409	0.00565					121	0.00676				
10/31/1995	4,409	0.00565					121	0.00676				
11/1/1995	4,454	0.00564					127	0.00674				
11/2/1995	4,465	0.00564					130	0.00673				
11/3/1995	4,465	0.00564					132	0.00673				
11/4/1995	4,465	0.00564	0.656	0.258	96.03	24.01	134	0.00672	0.781	0.308	3.43	0.86
11/5/1995	4,465	0.00564	0.372	0.146	54.44	13.61	135	0.00672	0.443	0.174	1.96	0.49
11/6/1995	4,465	0.00564	0.301	0.119	44.13	11.03	136	0.00672	0.359	0.141	1.60	0.40
11/7/1995	4,465	0.00564	0.314	0.124	45.98	11.49	137	0.00672	0.374	0.147	1.68	0.42
11/8/1995	4,465	0.00564	0.426	0.168	62.35	15.59	136	0.00672	0.507	0.200	2.26	0.57
11/9/1995	4,465	0.00564					136	0.00672				
11/10/1995	4,476	0.00564	0.070	0.027	10.23	2.56	135	0.00672	0.083	0.033	0.37	0.09
11/11/1995	4,476	0.00564	0.657	0.259	96.49	24.12	134	0.00672	0.783	0.308	3.44	0.86
11/12/1995	4,465	0.00564	0.441	0.174	64.60	16.15	133	0.00673	0.526	0.207	2.29	0.57
11/13/1995	4,465	0.00564	0.128	0.050	18.77	4.69	131	0.00673	0.153	0.060	0.66	0.16
11/14/1995	4,465	0.00564	0.248	0.098	36.28	9.07	130	0.00673	0.296	0.116	1.26	0.32
11/15/1995	4,465	0.00564	0.159	0.062	23.25	5.81	129	0.00674	0.190	0.075	0.80	0.20
11/16/1995	4,465	0.00564	0.188	0.074	27.59	6.90	127	0.00674	0.225	0.089	0.94	0.23
11/17/1995	4,465	0.00564	0.241	0.095	35.35	8.84	126	0.00674	0.288	0.114	1.19	0.30
11/18/1995	4,476	0.00564	0.139	0.055	20.44	5.11	128	0.00674	0.166	0.065	0.70	0.17
11/19/1995	4,486	0.00564	0.080	0.031	11.77	2.94	130	0.00673	0.095	0.038	0.41	0.10
11/20/1995	4,486	0.00564	0.045	0.018	6.60	1.65	131	0.00673	0.054	0.021	0.23	0.06
11/21/1995	4,486	0.00564	0.115	0.045	17.00	4.25	133	0.00673	0.138	0.054	0.60	0.15
11/22/1995	4,486	0.00564	0.196	0.077	28.87	7.22	134	0.00672	0.234	0.092	1.03	0.26
11/23/1995	4,486	0.00564	0.227	0.089	33.45	8.36	135	0.00672	0.271	0.107	1.20	0.30
11/24/1995	4,486	0.00564	0.423	0.167	62.31	15.58	136	0.00672	0.504	0.199	2.25	0.56
11/25/1995	4,486	0.00564	0.250	0.098	36.73	9.18	137	0.00672	0.297	0.117	1.34	0.33
11/26/1995	4,486	0.00564	0.163	0.064	23.95	5.99	138	0.00671	0.194	0.076	0.88	0.22
11/27/1995	4,486	0.00564	0.208	0.082	30.60	7.65	139	0.00671	0.247	0.097	1.13	0.28
11/28/1995	4,486	0.00564	1.237	0.487	182.08	45.52	140	0.00671	1.471	0.579	6.76	1.69
11/29/1995	4,476	0.00564	0.877	0.345	128.83	32.21	139	0.00671	1.044	0.411	4.76	1.19
11/30/1995	4,476	0.00564	0.140	0.055	20.63	5.16	137	0.00672	0.167	0.066	0.75	0.19
12/1/1995	4,476	0.00564	0.053	0.021	7.85	1.96	136	0.00672	0.064	0.025	0.28	0.07
12/2/1995	4,476	0.00564	0.010	0.004	1.42	0.35	135	0.00672	0.011	0.005	0.05	0.01
12/3/1995	4,476	0.00564	0.030	0.012	4.37	1.09	134	0.00672	0.036	0.014	0.16	0.04
12/4/1995	4,476	0.00564	0.249	0.098	36.60	9.15	132	0.00673	0.297	0.117	1.29	0.32
12/5/1995	4,476	0.00564	0.164	0.064	24.03	6.01	131	0.00673	0.195	0.077	0.84	0.21
12/6/1995	4,476	0.00564	0.352	0.139	51.74	12.93	130	0.00673	0.421	0.166	1.79	0.45
12/7/1995	4,476	0.00564	0.445	0.175	65.42	16.35	128	0.00674	0.532	0.209	2.23	0.56
12/8/1995	4,476	0.00564	0.199	0.078	29.17	7.29	127	0.00674	0.237	0.093	0.99	0.25
12/9/1995	4,476	0.00564	0.957	0.377	140.60	35.15	126	0.00674	1.145	0.451	4.73	1.18
12/10/1995	4,465	0.00564	0.552	0.217	80.93	20.23	124	0.00675	0.661	0.260	2.69	0.67
12/11/1995	4,465	0.00564	0.358	0.141	52.43	13.11	122	0.00676	0.428	0.169	1.72	0.43

Appendix A. Evaporation—Continued

Date	Water temperature (°C)	Saturation vapor pressure at water-surface temperature (e_0) (mbar)	Air temperature (°C)	Saturation vapor pressure of air at 2.0 m (e_s) (mbar)	Relative humidity (RH) (percent)	Vapor pressure of air at 2.0 m (e_a) (mbar)	e_0-e_a (mbar)	Wind speed (u_2)	Mass transfer product ($u_2(e_0-e_a)$) (mbar-mi/hr)	Stability parameter (Smt) (°C-mi/hr)^2
12/12/1995	16.0	18.18	15.5	17.61	78.6	13.84	4.34	4.25	18.45	-0.028
12/13/1995	16.4	18.65	17.0	19.38	82.9	16.06	2.59	4.70	12.16	0.027
12/14/1995	16.6	18.89	19.3	22.39	79	17.69	1.20	6.93	8.35	0.056
12/15/1995	17.3	19.75	20.3	23.82	72.5	17.27	2.48	4.92	12.20	0.124
12/16/1995	16.8	19.13	16.1	18.30	67	12.26	6.87	5.59	38.43	-0.022
12/17/1995	17.1	19.50	18.9	21.83	90.7	19.80	-0.31	3.58	-1.09	0.141
12/18/1995	16.2	18.41	12.5	14.49	73.5	10.65	7.76	13.42	104.18	-0.021
12/19/1995	15.9	18.07	8.9	11.40	57.4	6.55	11.52	12.53	144.31	-0.045
12/20/1995	15.6	17.72	5.7	9.16	73.1	6.69	11.03	5.37	59.20	-0.343
12/21/1995	15.2	17.27	5.2	8.85	75.7	6.70	10.58	2.46	26.03	-1.652
12/22/1995	14.9	16.94	5.9	9.29	75.4	7.00	9.94	8.72	86.72	-0.118
12/23/1995	14.7	16.73	5.4	8.97	60.7	5.44	11.28	4.47	50.47	-0.465
12/24/1995	14.5	16.51	5.7	9.16	61.6	5.64	10.87	3.58	38.90	-0.687
12/25/1995	14.4	16.40	9.7	12.03	53.8	6.47	9.93	3.13	31.10	-0.479
12/26/1995	14.3	16.30	7.6	10.44	63.8	6.66	9.64	2.91	28.03	-0.792
12/27/1995	14.1	16.09	8.9	11.40	65	7.41	8.68	4.03	34.94	-0.321
12/28/1995	14.0	15.98	10.0	12.28	52.1	6.40	9.59	4.92	47.18	-0.165
12/29/1995	13.7	15.68	7.3	10.23	85.5	8.74	6.93	5.59	38.77	-0.205
12/30/1995	13.7	15.68	12.4	14.40	96.9	13.95	1.72	3.36	5.78	-0.115
12/31/1995	14.0	15.98	14.3	16.30	69.5	11.33	4.66	3.36	15.63	0.027
1/1/1996	13.8	15.78	10.4	12.61	75.7	9.55	6.23	13.87	86.42	-0.018
1/2/1996	13.2	15.17	5.7	9.16	56.6	5.18	9.99	16.55	165.37	-0.027
1/3/1996	13.0	14.98	5.6	9.09	48.5	4.41	10.57	6.93	73.27	-0.154
1/4/1996	13.0	14.98	9.0	11.48	59.6	6.84	8.13	3.58	29.11	-0.312
1/5/1996	12.8	14.78	8.7	11.25	69.9	7.86	6.92	8.28	57.26	-0.060
1/6/1996	12.4	14.40	3.6	7.91	63.9	5.05	9.35	15.66	146.36	-0.036
1/7/1996	12.1	14.12	1.8	6.96	50.1	3.48	10.63	6.04	64.22	-0.282
1/8/1996	11.9	13.93	3.0	7.58	58.6	4.44	9.49	4.70	44.59	-0.403
1/9/1996	12.0	14.02	8.2	10.87	57.4	6.24	7.78	3.13	24.37	-0.387
1/10/1996	12.2	14.21	9.6	11.96						
1/11/1996	11.8	13.82	11.3	13.37						
1/12/1996	12.3	14.28	11.7	13.72						
1/13/1996	12.6	14.60	10.9	13.03						
1/14/1996	11.8	13.87	11.9	13.92						
1/15/1996	13.9	15.88	12.7	14.65						
1/16/1996	12.6	14.59	14.0	15.98	74	11.83	2.76	4.47	12.35	0.070
1/17/1996	12.5	14.49	17.9	20.51	76.8	15.75	-1.26	11.86	-14.90	0.038
1/18/1996	11.8	13.84	10.4	12.61				15.21		-0.006
1/19/1996	11.3	13.39	3.5	7.85				6.93		-0.162
1/20/1996	11.7	13.75	8.9	11.40	68.3	7.79	5.96	2.01	12.00	-0.691
1/21/1996	11.5	13.57	12.2	14.21	55	7.82	5.75	5.82	33.46	0.021
1/22/1996	11.5	13.57	16.2	18.41	85.8	15.80	-2.23	10.74	-23.95	0.041
1/23/1996	12.1	14.12	17.7	20.25	66.1	13.39	0.73	10.07	7.36	0.055
1/24/1996	12.1	14.12	10.4	12.61	30.3	3.82	10.30	5.14	52.97	-0.064
1/25/1996	11.7	13.75	11.7	13.75	69.1	9.50	4.25	9.17	38.97	0.000
1/26/1996	11.9	13.93	14.6	16.62	56.8	9.44	4.49	8.72	39.20	0.035
1/27/1996	11.8	13.84	7.1	10.09	26.6	2.68	11.16	5.82	64.89	-0.139
1/28/1996	11.6	13.66	9.4	11.79	66.2	7.81	5.85	5.82	34.03	-0.065
1/29/1996	12.4	14.40	13.8	15.78				3.80		0.097
1/30/1996	13.1	15.03	16.5	18.77						

Appendix A. Evaporation—Continued

Date	Medina Lake						Diversion Lake					
	Surface area (acres)	Mass transfer coefficient (N) (Harbeck, 1962)	Evaporation				Surface area (acres)	Mass transfer coefficient (N) (Harbeck, 1962)	Evaporation			
			(cm)	(in.)	(acre-ft)	(+/-error) (acre-ft)			(cm)	(in.)	(acre-ft)	(+/-error) (acre-ft)
12/12/1995	4,465	0.00564	0.104	0.041	15.25	3.81	121	0.00676	0.125	0.049	0.49	0.12
12/13/1995	4,465	0.00564	0.069	0.027	10.05	2.51	119	0.00676	0.082	0.032	0.32	0.08
12/14/1995	4,465	0.00564	0.047	0.019	6.91	1.73	118	0.00677	0.057	0.022	0.22	0.05
12/15/1995	4,465	0.00564	0.069	0.027	10.08	2.52	118	0.00677	0.083	0.032	0.32	0.08
12/16/1995	4,465	0.00564	0.217	0.085	31.77	7.94	117	0.00677	0.260	0.102	1.00	0.25
12/17/1995	4,465	0.00564	-0.006	-0.002	-0.90	-0.23	117	0.00677	-0.007	-0.003	-0.03	-0.01
12/18/1995	4,465	0.00564	0.588	0.231	86.12	21.53	116	0.00677	0.706	0.278	2.69	0.67
12/19/1995	4,454	0.00564	0.814	0.321	119.01	29.75	116	0.00677	0.977	0.385	3.72	0.93
12/20/1995	4,454	0.00564	0.334	0.132	48.82	12.21	115	0.00678	0.401	0.158	1.51	0.38
12/21/1995	4,454	0.00564	0.147	0.058	21.46	5.37	115	0.00678	0.176	0.069	0.67	0.17
12/22/1995	4,454	0.00564	0.489	0.193	71.52	17.88	115	0.00678	0.588	0.231	2.22	0.55
12/23/1995	4,454	0.00564	0.285	0.112	41.62	10.41	117	0.00677	0.342	0.135	1.31	0.33
12/24/1995	4,443	0.00564	0.220	0.086	32.01	8.00	118	0.00677	0.263	0.104	1.02	0.25
12/25/1995	4,443	0.00564	0.176	0.069	25.59	6.40	119	0.00676	0.210	0.083	0.82	0.21
12/26/1995	4,443	0.00564	0.158	0.062	23.06	5.77	121	0.00676	0.189	0.075	0.75	0.19
12/27/1995	4,443	0.00564	0.197	0.078	28.75	7.19	122	0.00676	0.236	0.093	0.94	0.24
12/28/1995	4,443	0.00564	0.266	0.105	38.82	9.70	121	0.00676	0.319	0.126	1.27	0.32
12/29/1995	4,432	0.00564	0.219	0.086	31.82	7.96	121	0.00676	0.262	0.103	1.04	0.26
12/30/1995	4,432	0.00564	0.033	0.013	4.75	1.19	119	0.00676	0.039	0.015	0.15	0.04
12/31/1995	4,432	0.00564	0.088	0.035	12.83	3.21	119	0.00676	0.106	0.042	0.41	0.10
1/1/1996	4,432	0.00564	0.488	0.192	70.94	17.73	119	0.00676	0.585	0.230	2.28	0.57
1/2/1996	4,432	0.00564	0.933	0.368	135.74	33.93	118	0.00677	1.119	0.441	4.33	1.08
1/3/1996	4,420	0.00565	0.414	0.163	59.98	15.00	118	0.00677	0.496	0.195	1.92	0.48
1/4/1996	4,420	0.00565	0.164	0.065	23.84	5.96	117	0.00677	0.197	0.078	0.76	0.19
1/5/1996	4,420	0.00565	0.323	0.127	46.88	11.72	117	0.00677	0.388	0.153	1.49	0.37
1/6/1996	4,420	0.00565	0.826	0.325	119.82	29.96	116	0.00677	0.991	0.390	3.77	0.94
1/7/1996	4,409	0.00565	0.363	0.143	52.45	13.11	116	0.00677	0.435	0.171	1.66	0.41
1/8/1996	4,409	0.00565	0.252	0.099	36.42	9.10	115	0.00678	0.302	0.119	1.14	0.28
1/9/1996	4,409	0.00565	0.138	0.054	19.91	4.98	115	0.00678	0.165	0.065	0.62	0.16
1/10/1996	4,409	0.00565					115	0.00678				
1/11/1996	4,399	0.00565					117	0.00677				
1/12/1996	4,399	0.00565					117	0.00677				
1/13/1996	4,399	0.00565					118	0.00677				
1/14/1996	4,388	0.00565					118	0.00677				
1/15/1996	4,388	0.00565					118	0.00677				
1/16/1996	4,388	0.00565	0.070	0.027	10.04	2.51	118	0.00677	0.084	0.033	0.32	0.08
1/17/1996	4,377	0.00565	-0.084	-0.033	-12.09	-3.02	118	0.00677	-0.101	-0.040	-0.39	-0.10
1/18/1996	4,377	0.00565					117	0.00677				
1/19/1996	4,366	0.00565					117	0.00677				
1/20/1996	4,366	0.00565	0.068	0.027	9.71	2.43	117	0.00677	0.081	0.032	0.31	0.08
1/21/1996	4,366	0.00565	0.189	0.074	27.08	6.77	118	0.00677	0.226	0.089	0.88	0.22
1/22/1996	4,355	0.00565	-0.135	-0.053	-19.34	-4.83	118	0.00677	-0.162	-0.064	-0.63	-0.16
1/23/1996	4,355	0.00565	0.042	0.016	5.94	1.48	118	0.00677	0.050	0.020	0.19	0.05
1/24/1996	4,355	0.00565	0.299	0.118	42.76	10.69	118	0.00677	0.358	0.141	1.39	0.35
1/25/1996	4,345	0.00565	0.220	0.087	31.39	7.85	118	0.00677	0.264	0.104	1.02	0.26
1/26/1996	4,345	0.00565	0.222	0.087	31.58	7.89	118	0.00677	0.265	0.104	1.03	0.26
1/27/1996	4,345	0.00565	0.367	0.144	52.27	13.07	118	0.00677	0.439	0.173	1.70	0.43
1/28/1996	4,334	0.00565	0.192	0.076	27.35	6.84	119	0.00676	0.230	0.091	0.90	0.22
1/29/1996	4,334	0.00565					119	0.00676				
1/30/1996	4,334	0.00565					119	0.00676				

Appendix A. Evaporation—Continued

Date	Water temperature (°C)	Saturation vapor pressure at water-surface temperature (e_0) (mbar)	Air temperature (°C)	Saturation vapor pressure of air at 2.0 m (e_s) (mbar)	Relative humidity (RH) (percent)	Vapor pressure of air at 2.0 m (e_a) (mbar)	e_0-e_a (mbar)	Wind speed (u_2)	Mass transfer product ($u_2(e_0-e_a)$) (mbar-mi/hr)	Stability parameter (Smt) (°C-mi/hr)^2
1/31/1996	12.3	14.34	0.9	6.54						
2/1/1996	11.3	13.39	-0.2	6.02	86.6	5.21	8.18	6.71	54.88	-0.255
2/2/1996	11.5	13.57	-1.7	5.38						
2/3/1996	11.1	13.22	-2.1	5.25						
2/4/1996	10.9	13.04	-1.8	5.36						
2/5/1996	10.8	12.93	4.3	8.32						
2/6/1996	10.5	12.70	13.8	15.78						
2/7/1996	10.7	12.87	15.1	17.16	73.2	12.56	0.30	8.28	2.52	0.064
2/8/1996	11.4	13.48	16.0	18.18	71.6	13.02	0.46	6.49	2.99	0.109
2/9/1996	12.6	14.59	14.9	16.94	77.1	13.06	1.53	2.91	4.44	0.272
2/10/1996	13.2	15.17	17.3	19.75	81.8	16.15	-0.98	3.80	-3.72	0.284
2/11/1996	11.6	13.66	13.5	15.47	32.9	5.09	8.57	11.86	101.58	0.014
2/12/1996	11.6	13.66	10.3	12.53	31.4	3.93	9.73	4.92	47.86	-0.054
2/13/1996	11.7	13.75	10.3	12.53	45.5	5.70	8.05	4.03	32.41	-0.086
2/14/1996	12.4	14.40	14.7	16.73	59.3	9.92	4.48	2.24	10.02	0.460
2/15/1996	12.1	14.12	15.6	17.72	45.1	7.99	6.12	6.93	42.47	0.073
2/16/1996	11.9	13.93	9.5	11.87	34.4	4.08	9.85	6.49	63.88	-0.057
2/17/1996	11.8	13.84	10.5	12.70	57.7	7.33	6.51	5.59	36.43	-0.042
2/18/1996	12.4	14.40	13.3	15.27	83.9	12.81	1.58	3.13	4.96	0.092
2/19/1996	12.8	14.78	16.6	18.89	53.3	10.07	4.71	3.80	17.92	0.263
2/20/1996	13.4	15.37								
2/21/1996	14.7	16.75	20.7	24.36	43.8	10.67	6.08	4.30	26.14	0.321
2/22/1996	14.8	16.83	21.7	25.99	48.5	12.61	4.23	3.90	16.49	0.455
2/23/1996	15.6	17.72	22.3	26.98	53.2	14.35	3.37	7.60	25.61	0.117
2/24/1996	14.6	16.62	18.8	21.67	41.7	9.04	7.58	7.80	59.14	0.069
2/25/1996	14.8	16.83	21.3	25.29	78.1	19.76	-2.92	6.50	-18.99	0.153
2/26/1996	15.4	17.50	20.7	24.41	86.1	21.02	-3.52	4.00	-14.09	0.331
2/27/1996	16.0	18.18	21.0	24.87	76.3	18.97	-0.79	3.58	-2.84	0.390
2/28/1996	14.5	16.51	9.4	11.79	50.7	5.98	10.53	11.86	124.86	-0.036
2/29/1996	13.8	15.78	3.9	8.08	73.9	5.97	9.81	6.71	65.84	-0.220
3/1/1996	13.7	15.68	5.1	8.78	89.1	7.83	7.85	3.80	29.85	-0.595
3/2/1996	13.7	15.68	9.2	11.64	67.9	7.90	7.78	5.37	41.74	-0.156
3/3/1996	13.7	15.68	12.7	14.69	65.7	9.65	6.03	6.71	40.45	-0.022
3/4/1996	13.9	15.88	16.7	19.01	91.7	17.43	-1.55	9.62	-14.92	0.030
3/5/1996	15.0	17.05	20.0	23.38	82	19.17	-2.12	5.14	-10.91	0.189
3/6/1996	15.5	17.61	17.8	20.38	71	14.47	3.14	8.95	28.09	0.029
3/7/1996	12.7	14.69	3.6	7.91	43.9	3.47	11.21	17.67	198.18	-0.029
3/8/1996	12.7	14.69	4.1	8.19	31.3	2.56	12.12	6.04	73.21	-0.236
3/9/1996	12.7	14.69	5.0	8.72	33.5	2.92	11.76	2.68	31.58	-1.069
3/10/1996	12.6	14.59	8.2	10.87	41.9	4.56	10.03	6.04	60.60	-0.121
3/11/1996	12.5	14.49	11.1	13.21	59.2	7.82	6.67	9.84	65.66	-0.014
3/12/1996	12.7	14.69	14.0	15.98	70.7	11.30	3.38	8.28	28.01	0.019
3/13/1996	13.2	15.17	17.6	20.12	73.1	14.71	0.46	10.74	4.97	0.038
3/14/1996	14.5	16.51	20.5	24.11	61.2	14.76	1.75	6.49	11.37	0.143
3/15/1996	16.2	18.41	19.7	22.95	65.4	15.01	3.41	2.68	9.14	0.486
3/16/1996	17.1	19.50	18.9	21.83	71	15.50	4.00	3.13	12.51	0.184
3/17/1996	16.9	19.25	18.2	20.90	56.6	11.83	7.42	5.14	38.20	0.049
3/18/1996	15.4	17.50	15.4	17.50	46.8	8.19	9.31	14.99	139.50	0.000
3/19/1996	15.1	17.16	12.1	14.12	42.5	6.00	11.16	8.72	97.38	-0.039
3/20/1996	15.1	17.16	10.8	12.95	43.3	5.61	11.55	4.47	51.69	-0.215

Appendix A. Evaporation—Continued

Date	Medina Lake						Diversion Lake					
	Surface area (acres)	Mass transfer coefficient (N) (Harbeck, 1962)	Evaporation				Surface area (acres)	Mass transfer coefficient (N) (Harbeck, 1962)	Evaporation			
			(cm)	(in.)	(acre-ft)	(+/-error) (acre-ft)			(cm)	(in.)	(acre-ft)	(+/-error) (acre-ft)
1/31/1996	4,324	0.00565					120	0.00676				
2/1/1996	4,313	0.00565	0.310	0.122	43.89	10.97	121	0.00676	0.371	0.146	1.47	0.37
2/2/1996	4,313	0.00565					121	0.00676				
2/3/1996	4,303	0.00565					120	0.00676				
2/4/1996	4,303	0.00565					119	0.00676				
2/5/1996	4,292	0.00565					119	0.00676				
2/6/1996	4,292	0.00565					121	0.00676				
2/7/1996	4,281	0.00565	0.014	0.006	2.00	0.50	122	0.00676	0.017	0.007	0.07	0.02
2/8/1996	4,281	0.00565	0.017	0.007	2.38	0.59	122	0.00676	0.020	0.008	0.08	0.02
2/9/1996	4,281	0.00565	0.025	0.010	3.53	0.88	121	0.00676	0.030	0.012	0.12	0.03
2/10/1996	4,271	0.00566	-0.021	-0.008	-2.95	-0.74	122	0.00676	-0.025	-0.010	-0.10	-0.03
2/11/1996	4,271	0.00566	0.574	0.226	80.50	20.13	122	0.00676	0.686	0.270	2.75	0.69
2/12/1996	4,271	0.00566	0.271	0.107	37.93	9.48	122	0.00676	0.323	0.127	1.29	0.32
2/13/1996	4,250	0.00566	0.183	0.072	25.56	6.39	122	0.00676	0.219	0.086	0.88	0.22
2/14/1996	4,250	0.00566	0.057	0.022	7.91	1.98	122	0.00676	0.068	0.027	0.27	0.07
2/15/1996	4,239	0.00566	0.240	0.095	33.42	8.35	122	0.00676	0.287	0.113	1.15	0.29
2/16/1996	4,229	0.00566	0.361	0.142	50.15	12.54	122	0.00676	0.432	0.170	1.73	0.43
2/17/1996	4,229	0.00566	0.206	0.081	28.60	7.15	124	0.00675	0.246	0.097	1.00	0.25
2/18/1996	4,218	0.00566	0.028	0.011	3.89	0.97	124	0.00675	0.034	0.013	0.14	0.03
2/19/1996	4,208	0.00566	0.101	0.040	14.01	3.50	122	0.00676	0.121	0.048	0.48	0.12
2/20/1996	4,208	0.00566					122	0.00676				
2/21/1996	4,197	0.00566	0.148	0.058	20.37	5.09	122	0.00676	0.177	0.070	0.71	0.18
2/22/1996	4,197	0.00566	0.093	0.037	12.85	3.21	122	0.00676	0.111	0.044	0.45	0.11
2/23/1996	4,186	0.00566	0.145	0.057	19.91	4.98	122	0.00676	0.173	0.068	0.69	0.17
2/24/1996	4,186	0.00566	0.335	0.132	45.98	11.49	124	0.00675	0.399	0.157	1.62	0.41
2/25/1996	4,176	0.00566	-0.108	-0.042	-14.73	-3.68	124	0.00675	-0.128	-0.050	-0.52	-0.13
2/26/1996	4,165	0.00566	-0.080	-0.031	-10.91	-2.73	124	0.00675	-0.095	-0.037	-0.39	-0.10
2/27/1996	4,155	0.00566	-0.016	-0.006	-2.19	-0.55	124	0.00675	-0.019	-0.008	-0.08	-0.02
2/28/1996	4,155	0.00566	0.707	0.278	96.39	24.10	124	0.00675	0.843	0.332	3.43	0.86
2/29/1996	4,144	0.00566	0.373	0.147	50.70	12.67	124	0.00675	0.444	0.175	1.81	0.45
3/1/1996	4,144	0.00566	0.169	0.067	22.99	5.75	122	0.00676	0.202	0.079	0.81	0.20
3/2/1996	4,132	0.00566	0.236	0.093	32.06	8.01	122	0.00676	0.282	0.111	1.13	0.28
3/3/1996	4,132	0.00566	0.229	0.090	31.07	7.77	124	0.00675	0.273	0.108	1.11	0.28
3/4/1996	4,121	0.00567	-0.085	-0.033	-11.43	-2.86	124	0.00675	-0.101	-0.040	-0.41	-0.10
3/5/1996	4,121	0.00567	-0.062	-0.024	-8.35	-2.09	124	0.00675	-0.074	-0.029	-0.30	-0.07
3/6/1996	4,121	0.00567	0.159	0.063	21.51	5.38	124	0.00675	0.190	0.075	0.77	0.19
3/7/1996	4,109	0.00567	1.123	0.442	151.38	37.85	124	0.00675	1.338	0.527	5.44	1.36
3/8/1996	4,099	0.00567	0.415	0.163	55.80	13.95	124	0.00675	0.494	0.195	2.01	0.50
3/9/1996	4,099	0.00567	0.179	0.070	24.06	6.02	124	0.00675	0.213	0.084	0.87	0.22
3/10/1996	4,087	0.00567	0.343	0.135	46.05	11.51	122	0.00676	0.409	0.161	1.64	0.41
3/11/1996	4,087	0.00567	0.372	0.147	49.90	12.48	122	0.00676	0.444	0.175	1.78	0.44
3/12/1996	4,076	0.00567	0.159	0.063	21.23	5.31	122	0.00676	0.189	0.074	0.76	0.19
3/13/1996	4,076	0.00567	0.028	0.011	3.76	0.94	121	0.00676	0.034	0.013	0.13	0.03
3/14/1996	4,065	0.00567	0.064	0.025	8.60	2.15	121	0.00676	0.077	0.030	0.31	0.08
3/15/1996	4,065	0.00567	0.052	0.020	6.91	1.73	121	0.00676	0.062	0.024	0.25	0.06
3/16/1996	4,053	0.00567	0.071	0.028	9.43	2.36	121	0.00676	0.085	0.033	0.34	0.08
3/17/1996	4,053	0.00567	0.217	0.085	28.80	7.20	122	0.00676	0.258	0.102	1.03	0.26
3/18/1996	4,042	0.00567	0.791	0.311	104.91	26.23	122	0.00676	0.942	0.371	3.77	0.94
3/19/1996	4,021	0.00567	0.552	0.217	72.87	18.22	122	0.00676	0.658	0.259	2.63	0.66
3/20/1996	4,008	0.00567	0.293	0.115	38.56	9.64	122	0.00676	0.349	0.137	1.40	0.35

Appendix A. Evaporation—Continued

Date	Water temperature (°C)	Saturation vapor pressure at water-surface temperature (e_0) (mbar)	Air temperature (°C)	Saturation vapor pressure of air at 2.0 m (e_s) (mbar)	Relative humidity (RH) (percent)	Vapor pressure of air at 2.0 m (e_a) (mbar)	e_0-e_a (mbar)	Wind speed (u_2)	Mass transfer product ($u_2(e_0-e_a)$) (mbar-mi/hr)	Stability parameter (Smt) (°C-mi/hr)^2
3/21/1996	15.1	17.16	13.3	15.27	53.6	8.19	8.98	7.61	68.27	-0.031
3/22/1996	15.3	17.38	17.5	20.00	71.6	14.32	3.07	11.63	35.66	0.016
3/23/1996	15.3	17.38	17.1	19.50	84	16.38	1.01	14.99	15.07	0.008
3/24/1996	16.1	18.30	19.5	22.67	76.9	17.43	0.87	6.93	6.01	0.071
3/25/1996	15.1	17.16	10.4	12.61	50.6	6.38	10.78	11.63	125.40	-0.035
3/26/1996	14.1	16.09	5.6	9.09	73.2	6.66	9.43	10.51	99.16	-0.077
3/27/1996	13.7	15.68	5.9	9.29	94.6	8.78	6.89	9.62	66.29	-0.084
3/28/1996	14.7	16.73	12.4	14.40	67.1	9.66	7.06	4.25	30.02	-0.127
3/29/1996	14.4	16.40	14.3	16.30	89.5	14.59	1.82	6.04	10.98	-0.003
3/30/1996	14.9	16.94	20.4	23.97	60	14.38	2.56	7.83	20.07	0.090
3/31/1996	15.0	17.05	16.4	18.65	46.1	8.60	8.45	7.38	62.41	0.026
4/1/1996	15.1	17.16	16.1	18.30	42.5	7.78	9.39	2.91	27.29	0.118
4/2/1996	15.1	17.16	15.1	17.16	57.1	9.80	7.36	8.50	62.58	0.000
4/3/1996	15.2	17.27	18.0	20.64	76.8	15.85	1.42	10.29	14.64	0.026
4/4/1996	15.8	17.95	20.2	23.67	71.7	16.97	0.98	4.03	3.94	0.271
4/5/1996	15.2	17.27	9.1	11.56	89.1	10.30	6.97	11.63	81.13	-0.045
4/6/1996	14.8	16.83	9.9	12.20	60.9	7.43	9.41	8.50	79.95	-0.068
4/7/1996	15.5	17.61	11.4	13.48	60.6	8.17	9.44	3.36	31.68	-0.364
4/8/1996	16.7	19.01	15.9	18.07	60	10.84	8.17	2.46	20.11	-0.132
4/9/1996	17.1	19.50	18.6	21.43	58	12.43	7.07	2.46	17.40	0.248
4/10/1996	17.5	20.00	20.5	24.11	57.9	13.96	6.04	6.71	40.51	0.067
4/11/1996	16.6	18.89	20.7	24.41	74.1	18.09	0.80	14.32	11.45	0.020
4/12/1996	18.1	20.77	22.5	27.25	61.1	16.65	4.12	7.83	32.23	0.072
4/13/1996	18.2	20.90	21.4	25.48	58.1	14.81	6.09	7.61	46.33	0.055
4/14/1996	18.5	21.30	22.8	27.75	50	13.88	7.42	10.96	81.32	0.036
4/15/1996	17.9	20.51	17.4	19.87	36	7.15	13.35	11.63	155.34	-0.004
4/16/1996	18.1	20.77	17.0	19.38	44.7	8.66	12.11	7.83	94.79	-0.018
4/17/1996	18.2	20.90	19.8	23.09	69.1	15.96	4.94	11.41	56.38	0.012
4/18/1996	20.0	23.38	23.5	28.95	68.9	19.95	3.43	4.70	16.12	0.159
4/19/1996	20.5	24.11	25.0	31.67	71.1	22.52	1.59	7.83	12.48	0.073
4/20/1996	20.3	23.82	22.8	27.75	56.8	15.76	8.05	4.70	37.84	0.113
4/21/1996	20.2	23.67	24.4	30.56	74.2	22.67	1.00	13.42	13.37	0.023
4/22/1996	20.3	23.82	21.7	25.96	77.8	20.19	3.62	10.51	38.10	0.013
4/23/1996	20.2	23.67	19.1	22.11	53.6	11.85	11.82	5.82	68.75	-0.033
4/24/1996	20.4	23.97	20.6	24.26	49.2	11.94	12.03	7.61	91.48	0.003
4/25/1996	20.1	23.53			66.9			10.07		-0.198
4/26/1996	21.8	26.17	23.8	29.54	58.8	17.37	8.80	9.90	87.12	0.020
4/27/1996	22.0	26.44	23.6	29.05	78.9	22.92	3.52	5.60	19.69	0.050
4/28/1996	21.2	25.12	24.7	31.15	73.1	22.77	2.35	7.10	16.68	0.071
4/29/1996	21.2	25.12	15.7	17.86	46.5	8.31	16.82	13.00	218.63	-0.032
4/30/1996	20.8	24.53	16.2	18.44	47.4	8.74	15.79	5.10	80.52	-0.175
5/1/1996	20.5	24.11	20.1	23.54	64.3	15.14	8.98	5.10	45.78	-0.015
5/2/1996	20.6	24.20	21.2	25.12	84.2	21.15	3.04	4.70	14.30	0.028
5/3/1996	20.7	24.36	23.1	28.28	84	23.76	0.61	6.40	3.89	0.060
5/4/1996										
5/5/1996										
5/6/1996								7.40		
5/7/1996	21.9	26.26	24.1	30.04	81.4	24.45	1.81	6.60	11.94	0.051
5/8/1996	21.9	26.35	22.6	27.44	86.9	23.84	2.50	6.70	16.78	0.015
5/9/1996	22.3	26.89	24.4	30.54	78.5	23.97	2.91	6.7	19.52	0.047

Appendix A. Evaporation—Continued

Date	Medina Lake						Diversion Lake					
	Surface area (acres)	Mass transfer coefficient (N) (Harbeck, 1962)	Evaporation				Surface area (acres)	Mass transfer coefficient (N) (Harbeck, 1962)	Evaporation			
			(cm)	(in.)	(acre-ft)	(+/-error) (acre-ft)			(cm)	(in.)	(acre-ft)	(+/-error) (acre-ft)
3/21/1996	3,994	0.00567	0.387	0.153	50.76	12.69	124	0.00675	0.461	0.181	1.87	0.47
3/22/1996	3,994	0.00567	0.202	0.080	26.51	6.63	125	0.00675	0.241	0.095	0.99	0.25
3/23/1996	3,917	0.00568	0.086	0.034	11.00	2.75	126	0.00674	0.102	0.040	0.42	0.11
3/24/1996	3,902	0.00568	0.034	0.013	4.37	1.09	126	0.00674	0.041	0.016	0.17	0.04
3/25/1996	3,886	0.00568	0.713	0.281	90.84	22.71	127	0.00674	0.845	0.333	3.52	0.88
3/26/1996	3,872	0.00568	0.564	0.222	71.59	17.90	128	0.00674	0.668	0.263	2.81	0.70
3/27/1996	3,859	0.00568	0.377	0.148	47.71	11.93	128	0.00674	0.447	0.176	1.88	0.47
3/28/1996	3,859	0.00568	0.171	0.067	21.61	5.40	128	0.00674	0.202	0.080	0.85	0.21
3/29/1996	3,846	0.00569	0.062	0.025	7.87	1.97	129	0.00674	0.074	0.029	0.31	0.08
3/30/1996	3,846	0.00569	0.114	0.045	14.40	3.60	130	0.00673	0.135	0.053	0.58	0.14
3/31/1996	3,834	0.00569	0.355	0.140	44.63	11.16	130	0.00673	0.420	0.165	1.79	0.45
4/1/1996	3,822	0.00569	0.155	0.061	19.46	4.87	130	0.00673	0.184	0.072	0.78	0.20
4/2/1996	3,810	0.00569	0.356	0.140	44.50	11.12	130	0.00673	0.421	0.166	1.80	0.45
4/3/1996	3,798	0.00569	0.083	0.033	10.38	2.59	130	0.00673	0.099	0.039	0.42	0.11
4/4/1996	3,786	0.00569	0.022	0.009	2.78	0.70	130	0.00673	0.027	0.010	0.11	0.03
4/5/1996	3,786	0.00569	0.462	0.182	57.34	14.33	128	0.00674	0.547	0.215	2.30	0.57
4/6/1996	3,786	0.00569	0.455	0.179	56.50	14.13	127	0.00674	0.539	0.212	2.25	0.56
4/7/1996	3,775	0.00569	0.180	0.071	22.32	5.58	126	0.00674	0.214	0.084	0.88	0.22
4/8/1996	3,775	0.00569	0.114	0.045	14.17	3.54	125	0.00675	0.136	0.053	0.56	0.14
4/9/1996	3,763	0.00569	0.099	0.039	12.22	3.06	122	0.00676	0.118	0.046	0.47	0.12
4/10/1996	3,752	0.00569	0.231	0.091	28.38	7.10	124	0.00675	0.273	0.108	1.11	0.28
4/11/1996	3,740	0.00569	0.065	0.026	8.00	2.00	124	0.00675	0.077	0.030	0.31	0.08
4/12/1996	3,740	0.00569	0.183	0.072	22.51	5.63	124	0.00675	0.218	0.086	0.89	0.22
4/13/1996	3,728	0.00569	0.264	0.104	32.27	8.07	124	0.00675	0.313	0.123	1.27	0.32
4/14/1996	3,717	0.00569	0.463	0.182	56.48	14.12	124	0.00675	0.549	0.216	2.23	0.56
4/15/1996	3,705	0.00570	0.885	0.348	107.55	26.89	124	0.00675	1.049	0.413	4.27	1.07
4/16/1996	3,693	0.00570	0.540	0.213	65.43	16.36	125	0.00675	0.640	0.252	2.62	0.66
4/17/1996	3,682	0.00570	0.321	0.126	38.80	9.70	126	0.00674	0.380	0.150	1.57	0.39
4/18/1996	3,671	0.00570	0.092	0.036	11.07	2.77	126	0.00674	0.109	0.043	0.45	0.11
4/19/1996	3,671	0.00570	0.071	0.028	8.56	2.14	126	0.00674	0.084	0.033	0.35	0.09
4/20/1996	3,660	0.00570	0.216	0.085	25.89	6.47	126	0.00674	0.255	0.100	1.05	0.26
4/21/1996	3,649	0.00570	0.076	0.030	9.12	2.28	127	0.00674	0.090	0.035	0.38	0.09
4/22/1996	3,627	0.00570	0.217	0.086	25.85	6.46	127	0.00674	0.257	0.101	1.07	0.27
4/23/1996	3,627	0.00570	0.392	0.154	46.65	11.66	128	0.00674	0.463	0.182	1.95	0.49
4/24/1996	3,617	0.00570	0.522	0.205	61.91	15.48	128	0.00674	0.617	0.243	2.59	0.65
4/25/1996	3,607	0.00570					129	0.00674				
4/26/1996	3,588	0.00570	0.497	0.196	58.51	14.63	129	0.00674	0.587	0.231	2.48	0.62
4/27/1996	3,578	0.00571	0.112	0.044	13.19	3.30	129	0.00674	0.133	0.052	0.56	0.14
4/28/1996	3,568	0.00571	0.095	0.037	11.14	2.79	129	0.00674	0.112	0.044	0.48	0.12
4/29/1996	3,559	0.00571	1.248	0.491	145.70	36.42	129	0.00674	1.473	0.580	6.23	1.56
4/30/1996	3,559	0.00571	0.460	0.181	53.66	13.42	128	0.00674	0.543	0.214	2.28	0.57
5/1/1996	3,550	0.00571	0.261	0.103	30.43	7.61	128	0.00674	0.309	0.121	1.30	0.32
5/2/1996	3,531	0.00571	0.082	0.032	9.46	2.36	128	0.00674	0.096	0.038	0.40	0.10
5/3/1996	3,522	0.00571	0.022	0.009	2.56	0.64	128	0.00674	0.026	0.010	0.11	0.03
5/4/1996	3,513	0.00571					128	0.00674				
5/5/1996	3,504	0.00571					128	0.00674				
5/6/1996	3,495	0.00571					128	0.00674				
5/7/1996	3,477	0.00571	0.068	0.027	7.78	1.95	128	0.00674	0.080	0.032	0.34	0.08
5/8/1996	3,468	0.00571	0.096	0.038	10.91	2.73	128	0.00674	0.113	0.045	0.47	0.12
5/9/1996	3,468	0.00571	0.112	0.044	12.69	3.17	132	0.00673	0.131	0.052	0.57	0.14

Appendix A. Evaporation—Continued

Date	Water temperature (°C)	Saturation vapor pressure at water-surface temperature (e_0) (mbar)	Air temperature (°C)	Saturation vapor pressure of air at 2.0 m (e_s) (mbar)	Relative humidity (RH) (percent)	Vapor pressure of air at 2.0 m (e_a) (mbar)	e_0-e_a (mbar)	Wind speed (u_2)	Mass transfer product ($u_2(e_0-e_a)$) (mbar-mi/hr)	Stability parameter (Smt) (°C-mi/hr)^2
5/10/1996										
5/11/1996										
5/12/1996	24.6	30.93								
5/13/1996	24.1	30.01								
5/14/1996	23.9	29.66								
5/15/1996	23.6	29.13	25.6	32.82				14.32		0.010
5/16/1996	24.0	29.84	26.1	33.81	69.5	23.50	6.34	13.20	83.65	0.012
5/17/1996	24.1	30.01	26.1	33.81	68	22.99	7.02	14.32	100.57	0.010
5/18/1996	24.2	30.20	26.4	34.41	68	23.40	6.79	15.21	103.36	0.010
5/19/1996	24.4	30.56	26.2	34.01	69.1	23.50	7.06	15.21	107.37	0.008
5/20/1996	24.8	31.30	26.8	35.23	69.6	24.52	6.78	11.86	80.34	0.014
5/21/1996	25.4	32.44	27.2	36.07	66.6	24.02	8.41	8.95	75.29	0.022
5/22/1996	25.4	32.44	27.2	36.07	65.1	23.48	8.96	11.63	104.17	0.013
5/23/1996	25.4	32.44	26.7	35.03	71.1	24.90	7.53	11.86	89.31	0.009
5/24/1996	25.3	32.24	26.4	34.41	72.1	24.81	7.43	12.75	94.77	0.007
5/25/1996	25.1	31.86	27.2	36.07	70.8	25.54	6.33	14.32	90.57	0.010
5/26/1996	25.1	31.86	27.1	35.86	74.9	26.86	5.01	13.20	66.06	0.011
5/27/1996	25.5	32.63	25.0	31.67	87.9	27.84	4.79	4.03	19.28	-0.031
5/28/1996	26.0	33.61	27.3	36.28	80.2	29.10	4.51	4.25	19.18	0.072
5/29/1996	26.3	34.21	29.1	40.28	71.9	28.96	5.25	4.70	24.65	0.127
5/30/1996	26.4	34.41	28.1	38.01	69.1	26.27	8.14	9.17	74.70	0.020
5/31/1996	26.2	34.01	26.8	35.23	74.8	26.35	7.66	7.83	59.94	0.010
6/1/1996	26.5	34.62	26.0	33.61	74.5	25.04	9.58	8.95	85.69	-0.006
6/2/1996	27.3	36.28	27.0	35.65	71.1	25.35	10.93	3.58	39.14	-0.023
6/3/1996	27.9	37.57	25.8	33.21	65.9	21.89	15.69	4.03	63.16	-0.130
6/4/1996	27.4	36.49	26.9	35.44	62.7	22.22	14.27	6.49	92.59	-0.012
6/5/1996	27.4	36.49	27.2	36.07	65.4	23.59	12.90	8.28	106.81	-0.003
6/6/1996	27.0	35.65	27.0	35.65	69.2	24.67	10.98	12.97	142.45	0.000
6/7/1996	26.9	35.44	24.8	31.30	74.8	23.41	12.03	7.83	94.18	-0.034
6/8/1996	27.1	35.86	25.0	31.67	59.2	18.75	17.11	4.25	72.71	-0.116
6/9/1996	27.1	35.86	25.7	33.02	55.2	18.23	17.63	5.37	94.66	-0.049
6/10/1996	27.0	35.65	28.0	37.79	56.8	21.47	14.18	9.40	133.24	0.011
6/11/1996	26.9	35.44	26.6	34.82	69	24.03	11.41	8.05	91.91	-0.005
6/12/1996	27.2	36.07	27.9	37.57	67	25.17	10.89	7.38	80.42	0.013
6/13/1996	27.8	37.36	28.4	38.68	67.1	25.96	11.40	6.04	68.85	0.016
6/14/1996	28.2	38.24	28.7	39.36	67.2	26.45	11.79	5.82	68.54	0.015
6/15/1996	28.1	38.01	28.5	38.91	66	25.68	12.34	7.38	91.06	0.007
6/16/1996	28.4	38.68	28.3	38.46	66.7	25.65	13.03	6.93	90.36	-0.002
6/17/1996	29.2	40.52	29.3	40.75	63.6	25.92	14.60	4.47	65.31	0.005
6/18/1996	29.5	41.22	29.3	40.75	63.6	25.92	15.31	4.47	68.47	-0.010
6/19/1996	29.4	40.99	30.3	43.16	62.2	26.85	14.14	7.16	101.22	0.018
6/20/1996	29.8	41.94	30.7	44.16	62.9	27.78	14.17	4.92	69.71	0.037
6/21/1996	29.7	41.70	29.8	41.94	64.8	27.18	14.52	3.80	55.23	0.007
6/22/1996	29.0	40.05	27.8	37.36	75.5	28.20	11.85	8.05	95.40	-0.019
6/23/1996	28.9	39.82	27.5	36.71	75	27.53	12.29	8.05	98.97	-0.022
6/24/1996	29.1	40.28	27.8	37.36	76.7	28.65	11.63	6.93	80.65	-0.027
6/25/1996	28.6	39.13	25.3	32.20	90.1	29.01	10.12	4.9	49.59	-0.138
6/26/1996	29.2	40.57	25.2	31.99	89.5	28.63	11.94	4.7	56.11	-0.184
6/27/1996	29.1	40.18	27.4	36.59	74.1	27.11	13.07	5.9	77.10	-0.046
6/28/1996	29.1	40.18	27.2	36.00	71.7	25.81	14.37	4.7	67.53	-0.086

Appendix A. Evaporation—Continued

Date	Medina Lake						Diversion Lake					
	Surface area (acres)	Mass transfer coefficient (N) (Harbeck, 1962)	Evaporation				Surface area (acres)	Mass transfer coefficient (N) (Harbeck, 1962)	Evaporation			
			(cm)	(in.)	(acre-ft)	(+/-error) (acre-ft)			(cm)	(in.)	(acre-ft)	(+/-error) (acre-ft)
5/10/1996	3,459	0.00572					133	0.00673				
5/11/1996	3,459	0.00572					132	0.00673				
5/12/1996	3,450	0.00572					131	0.00673				
5/13/1996	3,441	0.00572					131	0.00673				
5/14/1996	3,432	0.00572					130	0.00673				
5/15/1996	3,423	0.00572					129	0.00674				
5/16/1996	3,423	0.00572	0.478	0.188	53.72	13.43	124	0.00675	0.565	0.222	2.30	0.57
5/17/1996	3,415	0.00572	0.575	0.226	64.44	16.11	127	0.00674	0.678	0.267	2.83	0.71
5/18/1996	3,407	0.00572	0.591	0.233	66.08	16.52	126	0.00674	0.697	0.274	2.88	0.72
5/19/1996	3,398	0.00572	0.614	0.242	68.48	17.12	126	0.00674	0.724	0.285	2.99	0.75
5/20/1996	3,390	0.00572	0.460	0.181	51.12	12.78	125	0.00675	0.542	0.213	2.22	0.56
5/21/1996	3,381	0.00572	0.431	0.170	47.79	11.95	126	0.00674	0.508	0.200	2.10	0.52
5/22/1996	3,373	0.00572	0.596	0.235	65.97	16.49	127	0.00674	0.702	0.277	2.93	0.73
5/23/1996	3,364	0.00572	0.511	0.201	56.41	14.10	128	0.00674	0.602	0.237	2.53	0.63
5/24/1996	3,348	0.00572	0.543	0.214	59.59	14.90	129	0.00674	0.638	0.251	2.70	0.68
5/25/1996	3,331	0.00573	0.519	0.204	56.67	14.17	129	0.00674	0.610	0.240	2.58	0.65
5/26/1996	3,323	0.00573	0.378	0.149	41.24	10.31	130	0.00673	0.445	0.175	1.90	0.47
5/27/1996	3,306	0.00573	0.110	0.043	11.98	2.99	130	0.00673	0.130	0.051	0.55	0.14
5/28/1996	3,306	0.00573	0.110	0.043	11.92	2.98	130	0.00673	0.129	0.051	0.55	0.14
5/29/1996	3,289	0.00573	0.141	0.056	15.24	3.81	130	0.00673	0.166	0.065	0.71	0.18
5/30/1996	3,281	0.00573	0.428	0.169	46.08	11.52	130	0.00673	0.503	0.198	2.15	0.54
5/31/1996	3,273	0.00573	0.344	0.135	36.89	9.22	130	0.00673	0.404	0.159	1.72	0.43
6/1/1996	3,257	0.00573	0.491	0.193	52.49	13.12	130	0.00673	0.577	0.227	2.46	0.62
6/2/1996	3,249	0.00573	0.224	0.088	23.92	5.98	130	0.00673	0.264	0.104	1.12	0.28
6/3/1996	3,249	0.00573	0.362	0.143	38.60	9.65	131	0.00673	0.425	0.167	1.83	0.46
6/4/1996	3,241	0.00573	0.531	0.209	56.45	14.11	131	0.00673	0.623	0.245	2.68	0.67
6/5/1996	3,233	0.00573	0.613	0.241	64.97	16.24	131	0.00673	0.719	0.283	3.09	0.77
6/6/1996	3,209	0.00574	0.817	0.322	86.04	21.51	131	0.00673	0.959	0.378	4.12	1.03
6/7/1996	3,201	0.00574	0.540	0.213	56.75	14.19	131	0.00673	0.634	0.250	2.72	0.68
6/8/1996	3,194	0.00574	0.417	0.164	43.72	10.93	131	0.00673	0.489	0.193	2.10	0.53
6/9/1996	3,180	0.00574	0.543	0.214	56.68	14.17	130	0.00673	0.637	0.251	2.72	0.68
6/10/1996	3,165	0.00574	0.765	0.301	79.43	19.86	130	0.00673	0.897	0.353	3.83	0.96
6/11/1996	3,151	0.00574	0.528	0.208	54.56	13.64	130	0.00673	0.619	0.244	2.64	0.66
6/12/1996	3,144	0.00574	0.462	0.182	47.64	11.91	130	0.00673	0.542	0.213	2.31	0.58
6/13/1996	3,129	0.00574	0.395	0.156	40.60	10.15	130	0.00673	0.464	0.183	1.98	0.49
6/14/1996	3,123	0.00574	0.394	0.155	40.34	10.09	130	0.00673	0.462	0.182	1.97	0.49
6/15/1996	3,109	0.00575	0.523	0.206	53.37	13.34	130	0.00673	0.613	0.241	2.62	0.65
6/16/1996	3,102	0.00575	0.519	0.204	52.85	13.21	130	0.00673	0.609	0.240	2.60	0.65
6/17/1996	3,088	0.00575	0.375	0.148	38.03	9.51	130	0.00673	0.440	0.173	1.88	0.47
6/18/1996	3,075	0.00575	0.394	0.155	39.72	9.93	130	0.00673	0.461	0.182	1.97	0.49
6/19/1996	3,069	0.00575	0.582	0.229	58.60	14.65	131	0.00673	0.681	0.268	2.93	0.73
6/20/1996	3,050	0.00575	0.401	0.158	40.12	10.03	131	0.00673	0.469	0.185	2.02	0.50
6/21/1996	3,044	0.00575	0.318	0.125	31.72	7.93	131	0.00673	0.372	0.146	1.60	0.40
6/22/1996	3,032	0.00575	0.549	0.216	54.60	13.65	131	0.00673	0.642	0.253	2.76	0.69
6/23/1996	3,020	0.00575	0.569	0.224	56.43	14.11	131	0.00673	0.666	0.262	2.86	0.72
6/24/1996	3,007	0.00576	0.464	0.183	45.80	11.45	131	0.00673	0.543	0.214	2.33	0.58
6/25/1996	3,001	0.00576	0.285	0.112	28.11	7.03	131	0.00673	0.334	0.131	1.43	0.36
6/26/1996	2,989	0.00576	0.323	0.127	31.68	7.92	131	0.00673	0.378	0.149	1.62	0.41
6/27/1996	2,983	0.00576	0.444	0.175	43.45	10.86	131	0.00673	0.519	0.204	2.23	0.56
6/28/1996	2,972	0.00576	0.389	0.153	37.92	9.48	131	0.00673	0.455	0.179	1.95	0.49

Appendix A. Evaporation—Continued

Date	Water temperature (°C)	Saturation vapor pressure at water-surface temperature (e_0) (mbar)	Air temperature (°C)	Saturation vapor pressure of air at 2.0 m (e_s) (mbar)	Relative humidity (RH) (percent)	Vapor pressure of air at 2.0 m (e_a) (mbar)	e_0-e_a (mbar)	Wind speed (u_2)	Mass transfer product ($u_2(e_0-e_a)$) (mbar-mi/hr)	Stability parameter (Smt) (°C-mi/hr)^2
6/29/1996	29.1	40.31	27.2	36.00	68.2	24.55	15.76	4.7	74.06	-0.088
6/30/1996	29.4	40.96	27.5	36.71	59.8	21.95	19.01	3.3	62.73	-0.173
7/1/1996	29.8	41.89	28.2	38.29	58.7	22.47	19.41	2.8	54.36	-0.198
7/2/1996	29.8	41.94	28.9	39.92	58.2	23.24	18.71	3.6	67.34	-0.066
7/3/1996	29.4	40.99	29.5	41.22	59.8	24.65	16.33	3.58	58.46	0.008
7/4/1996	29.4	40.99	29.7	41.70	57.3	23.89	17.09	3.36	57.35	0.027
7/5/1996	29.4	40.99	28.9	39.82	60.3	24.01	16.97	5.14	87.33	-0.019
7/6/1996	29.5	41.22	29.7	41.70	63.1	26.31	14.91	5.82	86.72	0.006
7/7/1996	29.8	41.94	29.7	41.70	63	26.27	15.67	5.37	84.12	-0.003
7/8/1996	29.7	41.70	29.8	41.94	66.3	27.81	13.89	7.16	99.45	0.002
7/9/1996	29.7	41.70	29.9	42.18	66.4	28.01	13.69	8.28	113.32	0.003
7/10/1996	29.6	41.46	25.9	33.41	82	27.40	14.06	3.58	50.33	-0.289
7/11/1996	29.5	41.22	27.8	37.36	74.8	27.94	13.28	7.38	98.04	-0.031
7/12/1996	29.6	41.46	28.8	39.59	67	26.53	14.94	8.05	120.27	-0.012
7/13/1996	29.8	41.94	28.7	39.36	66.9	26.33	15.61	6.26	97.75	-0.028
7/14/1996	30.1	42.67	29.2	40.52	65.2	26.42	16.25	5.59	90.89	-0.029
7/15/1996	30.2	42.91	29.3	40.75	65.7	26.77	16.14	5.82	93.87	-0.027
7/16/1996	29.7	41.70	29.1	40.28	66.1	26.63	15.07	9.40	141.61	-0.007
7/17/1996	29.5	41.22	28.8	39.59	67	26.53	14.70	8.28	121.64	-0.010
7/18/1996	29.5	41.22	29.2	40.52	67.6	27.39	13.83	8.95	123.78	-0.004
7/19/1996	29.5	41.22	29.4	40.99	67.9	27.83	13.39	9.84	131.82	-0.001
7/20/1996	29.6	41.46	29.2	40.52	64.6	26.17	15.29	8.72	133.37	-0.005
7/21/1996	29.6	41.46	29.0	40.05	64.3	25.75	15.71	8.05	126.50	-0.009
7/22/1996	29.6	41.46	29.2	40.52	68.1	27.59	13.87	7.61	105.48	-0.007
7/23/1996	29.7	41.70	29.9	42.18	65.8	27.76	13.94	6.71	93.58	0.004
7/24/1996	29.8	41.94	29.6	41.46	68.6	28.44	13.50	7.61	102.66	-0.003
7/25/1996	29.9	42.18	26.9	35.42	73.1	25.89	16.29	4.8	78.20	-0.131
7/26/1996			26.7	34.96	69.9	24.44		4.1		
7/27/1996			27.7	37.19	63.7	23.69		4.9		
7/28/1996			28.6	39.03	64	24.98		4.3		
7/29/1996			28.6	39.03	60.1	23.46		4.7		
7/30/1996			28.7	39.29	62.6	24.59		5.2		
7/31/1996			29.2	40.57	56	22.72		4.9		
8/1/1996			28.9	39.92	59.2	23.63		3.9		
8/2/1996			29.4	41.09	60.7	24.94		4.1		
8/3/1996			29.7	41.62	62.8	26.14		6.7		
8/4/1996			29.1	40.18	64.1	25.76		7.6		
8/5/1996			29.2	40.44	64	25.88		7.2		
8/6/1996			29.0	40.05	62.5	25.03		5.7		
8/7/1996			28.4	38.78	66.3	25.71		4.9		
8/8/1996			27.4	36.59	67.1	24.55		3.6		
8/9/1996			28.0	37.79	63.4	23.96		3.0		
8/10/1996			28.1	37.92	63	23.89		3.2		
8/11/1996	29.8	41.94	28.2	38.16	61.9	23.62	18.32	4.7	86.09	-0.074
8/12/1996	30.7	44.16								
8/13/1996	30.0	42.42	28.5	38.91	65.5	25.48	16.94			
8/14/1996	29.4	40.99	26.9	35.44	76.8	27.22	13.77	4.03	55.44	-0.154
8/15/1996	29.3	40.75	26.9	35.44	72.6	25.73	15.02	5.37	80.64	-0.083
8/16/1996	29.2	40.52	28.3	38.46	66.9	25.73	14.79	6.71	99.23	-0.020
8/17/1996	29.1	40.28	28.5	38.91	66.2	25.76	14.53	8.28	120.22	-0.009

Appendix A. Evaporation—Continued

Date	Medina Lake						Diversion Lake					
	Surface area (acres)	Mass transfer coefficient (N) (Harbeck, 1962)	Evaporation				Surface area (acres)	Mass transfer coefficient (N) (Harbeck, 1962)	Evaporation			
			(cm)	(in.)	(acre-ft)	(+/-error) (acre-ft)			(cm)	(in.)	(acre-ft)	(+/-error) (acre-ft)
6/29/1996	2,966	0.00576	0.427	0.168	41.51	10.38	132	0.00673	0.498	0.196	2.16	0.54
6/30/1996	2,954	0.00576	0.361	0.142	35.02	8.76	131	0.00673	0.422	0.166	1.81	0.45
7/1/1996	2,942	0.00576	0.313	0.123	30.23	7.56	131	0.00673	0.366	0.144	1.57	0.39
7/2/1996	2,930	0.00576	0.388	0.153	37.31	9.33	131	0.00673	0.453	0.178	1.95	0.49
7/3/1996	2,925	0.00576	0.337	0.133	32.34	8.08	131	0.00673	0.394	0.155	1.69	0.42
7/4/1996	2,914	0.00576	0.331	0.130	31.61	7.90	131	0.00673	0.386	0.152	1.66	0.41
7/5/1996	2,903	0.00577	0.504	0.198	47.96	11.99	131	0.00673	0.588	0.231	2.53	0.63
7/6/1996	2,887	0.00577	0.500	0.197	47.37	11.84	131	0.00673	0.584	0.230	2.51	0.63
7/7/1996	2,876	0.00577	0.485	0.191	45.79	11.45	131	0.00673	0.566	0.223	2.43	0.61
7/8/1996	2,865	0.00577	0.574	0.226	53.93	13.48	131	0.00673	0.669	0.264	2.88	0.72
7/9/1996	2,855	0.00577	0.654	0.257	61.25	15.31	131	0.00673	0.763	0.300	3.28	0.82
7/10/1996	2,855	0.00577	0.290	0.114	27.21	6.80	133	0.00673	0.339	0.133	1.48	0.37
7/11/1996	2,845	0.00577	0.566	0.223	52.81	13.20	135	0.00672	0.659	0.259	2.92	0.73
7/12/1996	2,839	0.00577	0.694	0.273	64.66	16.17	134	0.00672	0.809	0.318	3.56	0.89
7/13/1996	2,834	0.00577	0.564	0.222	52.47	13.12	131	0.00673	0.658	0.259	2.83	0.71
7/14/1996	2,829	0.00577	0.525	0.207	48.70	12.17	130	0.00673	0.612	0.241	2.61	0.65
7/15/1996	2,823	0.00577	0.542	0.213	50.20	12.55	131	0.00673	0.632	0.249	2.72	0.68
7/16/1996	2,818	0.00577	0.818	0.322	75.60	18.90	130	0.00673	0.954	0.375	4.07	1.02
7/17/1996	2,807	0.00578	0.703	0.277	64.70	16.17	130	0.00673	0.819	0.323	3.49	0.87
7/18/1996	2,802	0.00578	0.715	0.281	65.73	16.43	130	0.00673	0.834	0.328	3.56	0.89
7/19/1996	2,791	0.00578	0.762	0.300	69.73	17.43	130	0.00673	0.888	0.350	3.79	0.95
7/20/1996	2,781	0.00578	0.771	0.303	70.31	17.58	130	0.00673	0.898	0.354	3.83	0.96
7/21/1996	2,776	0.00578	0.731	0.288	66.57	16.64	130	0.00673	0.852	0.335	3.63	0.91
7/22/1996	2,766	0.00578	0.610	0.240	55.33	13.83	130	0.00673	0.710	0.280	3.03	0.76
7/23/1996	2,760	0.00578	0.541	0.213	48.98	12.24	129	0.00674	0.630	0.248	2.67	0.67
7/24/1996	2,750	0.00578	0.594	0.234	53.55	13.39	129	0.00674	0.692	0.272	2.93	0.73
7/25/1996	2,740	0.00578	0.452	0.178	40.65	10.16	129	0.00674	0.527	0.207	2.23	0.56
7/26/1996	2,729	0.00578					129	0.00674				
7/27/1996	2,719	0.00578					130	0.00673				
7/28/1996	2,708	0.00579					130	0.00673				
7/29/1996	2,702	0.00579					130	0.00673				
7/30/1996	2,691	0.00579					130	0.00673				
7/31/1996	2,680	0.00579					130	0.00673				
8/1/1996	2,669	0.00579					130	0.00673				
8/2/1996	2,658	0.00579					131	0.00673				
8/3/1996	2,646	0.00579					130	0.00673				
8/4/1996	2,635	0.00579					131	0.00673				
8/5/1996	2,624	0.00579					131	0.00673				
8/6/1996	2,612	0.00580					131	0.00673				
8/7/1996	2,600	0.00580					131	0.00673				
8/8/1996	2,594	0.00580					131	0.00673				
8/9/1996	2,576	0.00580					131	0.00673				
8/10/1996	2,564	0.00580					131	0.00673				
8/11/1996	2,558	0.00580	0.500	0.197	41.92	10.48	131	0.00673	0.580	0.228	2.49	0.27
8/12/1996	2,545	0.00580					131	0.00673				
8/13/1996	2,524	0.00581					130	0.00673				
8/14/1996	2,517	0.00581	0.322	0.127	26.58	6.65	130	0.00673	0.373	0.147	1.59	0.17
8/15/1996	2,504	0.00581	0.468	0.184	38.48	9.62	130	0.00673	0.543	0.214	2.32	0.25
8/16/1996	2,490	0.00581	0.577	0.227	47.10	11.78	130	0.00673	0.668	0.263	2.85	0.31
8/17/1996	2,476	0.00581	0.699	0.275	56.76	14.19	130	0.00673	0.810	0.319	3.45	0.38

Appendix A. Evaporation—Continued

Date	Water temperature (°C)	Saturation vapor pressure at water-surface temperature (e_0) (mbar)	Air temperature (°C)	Saturation vapor pressure of air at 2.0 m (e_s) (mbar)	Relative humidity (RH) (percent)	Vapor pressure of air at 2.0 m (e_a) (mbar)	e_0-e_a (mbar)	Wind speed (u_2)	Mass transfer product ($u_2(e_0-e_a)$) (mbar-mi/hr)	Stability parameter (Smt) (°C-mi/hr)^2
8/18/1996	28.9	39.82	28.0	37.79	69.4	26.23	13.59	9.40	127.69	-0.010
8/19/1996	28.7	39.36	27.2	36.07	73	26.33	13.03	9.40	122.43	-0.017
8/20/1996	28.8	39.59	26.9	35.44	76.6	27.15	12.44	5.14	64.02	-0.072
8/21/1996	28.6	39.13	26.4	34.41	74.9	25.78	13.36	4.47	59.77	-0.110
8/22/1996	28.1	38.01	24.6	30.93	85.5	26.44	11.57	3.58	41.42	-0.273
8/23/1996	28.0	37.79	24.9	31.49	89.6	28.21	9.58	3.36	32.15	-0.275
8/24/1996	28.0	37.79	24.8	31.30	89.9	28.14	9.66	3.80	36.72	-0.221
8/25/1996	27.9	37.57	23.5	28.95	93.6	27.10	10.48	2.24	23.43	-0.879
8/26/1996	27.9	37.57	23.9	29.66	90.6	26.87	10.71	4.03	43.11	-0.247
8/27/1996	27.9	37.57	25.6	32.82	85.1	27.93	9.64	7.16	69.02	-0.045
8/28/1996	28.1	38.01	27.1	35.86	77.6	27.83	10.19	8.28	84.33	-0.015
8/29/1996	28.3	38.46	26.6	34.82	80.4	28.00	10.46	5.37	56.17	-0.059
8/30/1996	28.2	38.24	24.2	30.20	92.5	27.93	10.31	2.46	25.36	-0.661
8/31/1996	28.1	38.01	25.2	32.05	85.5	27.41	10.61	2.68	28.48	-0.402
9/1/1996	28.2	38.24	25.1	31.86	85.2	27.15	11.09	2.91	32.25	-0.367
9/2/1996	28.3	38.46	26.5	34.62	76.8	26.59	11.87	3.80	45.15	-0.124
9/3/1996			26.2	33.94						
9/4/1996			24.1	29.94						
9/5/1996			22.4	27.07						
9/6/1996			24.3	30.44						
9/7/1996			24.4	30.64						
9/8/1996			24.9	31.57						
9/9/1996			25.6	32.74						
9/10/1996			25.7	33.06						
9/11/1996			24.7	31.05						
9/12/1996			24.0	29.84						
9/13/1996			23.7	29.24						
9/14/1996			24.7	31.15						
9/15/1996			25.3	32.20						
9/16/1996			26.5	34.62						
9/17/1996			27.0	35.65						
9/18/1996										
9/19/1996			26.8	35.19						
9/20/1996			25.0	31.67						
9/21/1996			24.4	30.54						
9/22/1996			25.8	33.28						
9/23/1996			26.4	34.50						
9/24/1996			25.6	32.74						
9/25/1996										
9/26/1996										
9/27/1996										
9/28/1996			16.4	18.70						
9/29/1996			17.4	19.93						
9/30/1996										

Appendix A. Evaporation—Continued

Date	Medina Lake						Diversion Lake					
	Surface area (acres)	Mass transfer coefficient (N) (Harbeck, 1962)	Evaporation				Surface area (acres)	Mass transfer coefficient (N) (Harbeck, 1962)	Evaporation			
			(cm)	(in.)	(acre-ft)	(+/-error) (acre-ft)			(cm)	(in.)	(acre-ft)	(+/-error) (acre-ft)
8/18/1996	2,462	0.00581	0.742	0.292	59.96	14.99	129	0.00674	0.860	0.339	3.64	0.40
8/19/1996	2,455	0.00581	0.712	0.280	57.34	14.33	129	0.00674	0.825	0.325	3.49	0.38
8/20/1996	2,441	0.00582	0.372	0.147	29.82	7.45	130	0.00673	0.431	0.170	1.84	0.20
8/21/1996	2,427	0.00582	0.348	0.137	27.69	6.92	131	0.00673	0.402	0.158	1.73	0.19
8/22/1996	2,412	0.00582	0.241	0.095	19.07	4.77	131	0.00673	0.279	0.110	1.20	0.13
8/23/1996	2,405	0.00582	0.187	0.074	14.77	3.69	129	0.00674	0.217	0.085	0.92	0.10
8/24/1996	2,399	0.00582	0.214	0.084	16.82	4.21	128	0.00674	0.247	0.097	1.04	0.11
8/25/1996	2,399	0.00582	0.136	0.054	10.74	2.68	128	0.00674	0.158	0.062	0.66	0.07
8/26/1996	2,392	0.00582	0.251	0.099	19.69	4.92	128	0.00674	0.291	0.114	1.22	0.13
8/27/1996	2,392	0.00582	0.402	0.158	31.53	7.88	126	0.00674	0.466	0.183	1.92	0.21
8/28/1996	2,392	0.00582	0.491	0.193	38.53	9.63	125	0.00675	0.569	0.224	2.33	0.25
8/29/1996	2,385	0.00582	0.327	0.129	25.59	6.40	122	0.00676	0.380	0.149	1.52	0.17
8/30/1996	2,392	0.00582	0.148	0.058	11.59	2.90	122	0.00676	0.171	0.067	0.69	0.07
8/31/1996	2,392	0.00582	0.166	0.065	13.01	3.25	121	0.00676	0.192	0.076	0.76	0.08
9/1/1996	2,392	0.00582	0.188	0.074	14.73	3.68	121	0.00676	0.218	0.086	0.87	0.09
9/2/1996	2,392	0.00582	0.263	0.103	20.63	5.16	120	0.00676	0.305	0.120	1.20	0.13
9/3/1996	2,392	0.00582					119	0.00676				
9/4/1996	2,385	0.00582					116	0.00677				
9/5/1996	2,385	0.00582					114	0.00678				
9/6/1996	2,385	0.00582					112	0.00678				
9/7/1996	2,385	0.00582					111	0.00679				
9/8/1996	2,385	0.00582					110	0.00679				
9/9/1996	2,385	0.00582					109	0.00679				
9/10/1996	2,385	0.00582					108	0.00680				
9/11/1996	2,385	0.00582					107	0.00680				
9/12/1996	2,385	0.00582					107	0.00680				
9/13/1996	2,377	0.00582					106	0.00680				
9/14/1996	2,377	0.00582					105	0.00681				
9/15/1996	2,377	0.00582					105	0.00681				
9/16/1996	2,377	0.00582					105	0.00681				
9/17/1996	2,377	0.00582					104	0.00681				
9/18/1996	2,377	0.00582					104	0.00681				
9/19/1996	2,377	0.00582					105	0.00681				
9/20/1996	2,377	0.00582					106	0.00680				
9/21/1996	2,377	0.00582					108	0.00680				
9/22/1996	2,370	0.00582					109	0.00679				
9/23/1996	2,370	0.00582					110	0.00679				
9/24/1996	2,363	0.00583					113	0.00678				
9/25/1996	2,363	0.00583					115	0.00678				
9/26/1996	2,356	0.00583					117	0.00677				
9/27/1996	2,349	0.00583					117	0.00677				
9/28/1996	2,342	0.00583					117	0.00677				
9/29/1996	2,335	0.00583					117	0.00677				
9/30/1996	2,335	0.00583					117	0.00677				

Appendix A. Surface-water inflow, Medina Lake

[Site numbers correspond to figure 3 and table 2. ft^3/s, cubic feet per second; acre-ft, acre-feet; SW_{in}, surface-water inflow]

Date	08178990 Medina River at English Crossing (site 1)			08179110 Red Bluff Creek (site 2)			08179300 Elm Creek (site 3)			08179280 Cypress Creek (site 10)			SW_{in} Medina Lake total	
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)
8/1/1995				0	0	0				0.9	1.79	0.22		
8/2/1995				0	0	0				1.2	2.38	0.30		
8/3/1995				0	0	0				0.98	1.94	0.24		
8/4/1995				0	0	0				0.71	1.41	0.18		
8/5/1995				0	0	0				0.73	1.45	0.18		
8/6/1995				0	0	0				0.82	1.63	0.20		
8/7/1995				0	0	0				0.82	1.63	0.20		
8/8/1995				0	0	0				0.91	1.80	0.23		
8/9/1995				0	0	0				1	1.98	0.25		
8/10/1995				0	0	0				1	1.98	0.25		
8/11/1995				0	0	0				1.1	2.18	0.27		
8/12/1995				0	0	0				1.3	2.58	0.32		
8/13/1995				0	0	0				1.3	2.58	0.32		
8/14/1995				0	0	0				1.2	2.38	0.30		
8/15/1995				0	0	0				1.4	2.78	0.35		
8/16/1995				0	0	0				1.5	2.98	0.37		
8/17/1995				0	0	0				1.2	2.38	0.30		
8/18/1995				0	0	0				1	1.98	0.25		
8/19/1995				0	0	0				1	1.98	0.25		
8/20/1995				0	0	0				1	1.98	0.25		
8/21/1995				0	0	0				1.1	2.18	0.27		
8/22/1995				0	0	0				1	1.98	0.25		
8/23/1995				0	0	0				1	1.98	0.25		
8/24/1995				0	0	0				1	1.98	0.25		
8/25/1995				0	0	0				1	1.98	0.25		
8/26/1995				0	0	0				1	1.98	0.25		
8/27/1995				0	0	0				1	1.98	0.25		
8/28/1995				0	0	0				1	1.98	0.25		
8/29/1995				0	0	0				1	1.98	0.25		
8/30/1995				0	0	0				1	1.98	0.25		
8/31/1995				0	0	0				1	1.98	0.25		
9/1/1995				0	0	0				1	1.98	0.25		
9/2/1995				0	0	0				1	1.98	0.25		
9/3/1995				0	0	0				1	1.98	0.25		
9/4/1995				0	0	0				1	1.98	0.25		
9/5/1995				0	0	0				1	1.98	0.25		
9/6/1995				0	0	0				1	1.98	0.25		
9/7/1995				0	0	0				1	1.98	0.25		
9/8/1995				0	0	0				1	1.98	0.25		
9/9/1995				0	0	0				0.85	1.69	0.21		
9/10/1995				0	0	0				0.82	1.63	0.20		
9/11/1995				0	0	0				0.71	1.41	0.18		
9/12/1995				0	0	0				0.7	1.39	0.17		
9/13/1995				0	0	0				0.87	1.73	0.22		
9/14/1995				0	0	0				1	1.98	0.25		
9/15/1995				0	0	0				1	1.98	0.25		
9/16/1995				0	0	0				1	1.98	0.25		

Appendix A. Surface-water inflow, Medina Lake—Continued

Date	08178990 Medina River at English Crossing (site 1)			08179110 Red Bluff Creek (site 2)			08179300 Elm Creek (site 3)			08179280 Cypress Creek (site 10)			SW_{in} Medina Lake total	
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)
9/17/1995				0	0	0				1	1.98	0.25		
9/18/1995				0	0	0				1	1.98	0.25		
9/19/1995				0	0	0				1	1.98	0.25		
9/20/1995				97	192.40	19.24				27	53.55	6.69		
9/21/1995				20	39.67	3.97				7.8	15.47	1.93		
9/22/1995				8.9	17.65	1.77				15	29.75	3.72		
9/23/1995				1.4	2.78	0.28				8.3	16.46	2.06		
9/24/1995				0.58	1.15	0.12				6.6	13.09	1.64		
9/25/1995				0.36	0.71	0.07				5.5	10.91	1.36		
9/26/1995				0.26	0.52	0.05				5.3	10.51	1.31		
9/27/1995				0.19	0.38	0.04				4.9	9.72	1.21		
9/28/1995				0.12	0.24	0.02				5.3	10.51	1.31		
9/29/1995				0.05	0.10	0.01				4.8	9.52	1.19		
9/30/1995				0	0	0				4.4	8.73	1.09		
10/1/1995	114	226.12	22.61	0	0	0	0.39	0.77	0.12	4.5	8.93	1.12	235.81	23.84
10/2/1995	111	220.17	22.02	0	0	0	0.34	0.67	0.10	4.7	9.32	1.17	230.16	23.28
10/3/1995	108	214.21	21.42	0	0	0	0.28	0.56	0.08	3.9	7.74	0.97	222.51	22.47
10/4/1995	103	204.30	20.43	0	0	0	0.26	0.52	0.08	3.9	7.74	0.97	212.55	21.47
10/5/1995	99	196.36	19.64	0	0	0	0.22	0.44	0.07	3.9	7.74	0.97	204.54	20.67
10/6/1995	93	184.46	18.45	0	0	0	0.18	0.36	0.05	3.6	7.14	0.89	191.96	19.39
10/7/1995	90	178.51	17.85	0	0	0	0.12	0.24	0.04	3.5	6.94	0.87	185.69	18.75
10/8/1995	85	168.59	16.86	0	0	0	0.11	0.22	0.03	3.4	6.74	0.84	175.56	17.74
10/9/1995	89	176.53	17.65	0	0	0	0.09	0.18	0.03	3.4	6.74	0.84	183.45	18.52
10/10/1995	88	174.55	17.45	0	0	0	0.09	0.18	0.03	3.4	6.74	0.84	181.47	18.32
10/11/1995	85	168.59	16.86	0	0	0	0.07	0.14	0.02	3.4	6.74	0.84	175.48	17.72
10/12/1995	79	156.69	15.67	0	0	0	0.07	0.14	0.02	3.4	6.74	0.84	163.58	16.53
10/13/1995	74	146.78	14.68	0	0	0	0.07	0.14	0.02	3.4	6.74	0.84	153.66	15.54
10/14/1995	69	136.86	13.69	0	0	0	0.05	0.10	0.01	3.2	6.35	0.79	143.31	14.49
10/15/1995	65	128.93	12.89	0	0	0	0.05	0.10	0.01	2.6	5.16	0.64	134.18	13.55
10/16/1995	62	122.98	12.30	0	0	0	0.04	0.08	0.01	2.2	4.36	0.55	127.42	12.85
10/17/1995	69	136.86	13.69	0	0	0	0.04	0.08	0.01	2.4	4.76	0.60	141.70	14.29
10/18/1995	72	142.81	14.28	0	0	0	0.04	0.08	0.01	2.5	4.96	0.62	147.85	14.91
10/19/1995	73	144.79	14.48	0	0	0	0.04	0.08	0.01	2.2	4.36	0.55	149.24	15.04
10/20/1995	69	136.86	13.69	0	0	0	0.03	0.06	0.01	2.2	4.36	0.55	141.28	14.24
10/21/1995	66	130.91	13.09	0	0	0	0.03	0.06	0.01	2.2	4.36	0.55	135.33	13.65
10/22/1995	50	99.17	9.92	0	0	0	0.04	0.08	0.01	2.2	4.36	0.55	103.62	10.47
10/23/1995	50	99.17	9.92	0	0	0	0.04	0.08	0.01	2.2	4.36	0.55	103.62	10.47
10/24/1995	52	103.14	10.31	0	0	0	0.03	0.06	0.01	2.2	4.36	0.55	107.56	10.87
10/25/1995	52	103.14	10.31	0	0	0	0.03	0.06	0.01	2.2	4.36	0.55	107.56	10.87
10/26/1995	52	103.14	10.31	0	0	0	0.03	0.06	0.01	2.2	4.36	0.55	107.56	10.87
10/27/1995	52	103.14	10.31	0	0	0	0.03	0.06	0.01	2.2	4.36	0.55	107.56	10.87
10/28/1995	52	103.14	10.31	0	0	0	0.03	0.06	0.01	2.2	4.36	0.55	107.56	10.87
10/29/1995	55	109.09	10.91	0	0	0	0.03	0.06	0.01	2.2	4.36	0.55	113.51	11.46
10/30/1995	62	122.98	12.30	0	0	0	0.03	0.06	0.01	2.2	4.36	0.55	127.40	12.85
10/31/1995	77	152.73	15.27	0	0	0				4.1	8.13	1.02	160.86	16.29
11/1/1995	120	238.02	23.80	0	0	0				17	33.72	4.21	271.74	28.02
11/2/1995	176	349.09	34.91	0	0	0	2.7	5.36	0.80	6.7	13.29	1.66	367.74	37.37
11/3/1995	190	376.86	37.69	0	0	0	2	3.97	0.60	4.6	9.12	1.14	389.95	39.42
11/4/1995	140	277.69	27.77	0	0	0	1.3	2.58	0.39	4.4	8.73	1.09	288.99	29.25

Appendix A. Surface-water inflow, Medina Lake—Continued

Date	08178990 Medina River at English Crossing (site 1)			08179110 Red Bluff Creek (site 2)			08179300 Elm Creek (site 3)			08179280 Cypress Creek (site 10)			SW_{in} Medina Lake total	
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)
11/5/1995	115	228.10	22.81	0	0	0	1	1.98	0.30	3.8	7.54	0.94	237.62	24.05
11/6/1995	110	218.18	21.82	0	0	0	0.87	1.73	0.26	3.3	6.55	0.82	226.45	22.90
11/7/1995	103	204.30	20.43	0	0	0	0.76	1.51	0.23	3	5.95	0.74	211.76	21.40
11/8/1995	94	186.45	18.64	0	0	0	0.71	1.41	0.21	3	5.95	0.74	193.80	19.60
11/9/1995	86	170.58	17.06	0	0	0	0.63	1.25	0.19	3	5.95	0.74	177.78	17.99
11/10/1995	81	160.66	16.07	0	0	0	0.66	1.31	0.20	3	5.95	0.74	167.92	17.01
11/11/1995	82	162.64	16.26	0	0	0	0.59	1.17	0.18	2.6	5.16	0.64	168.97	17.08
11/12/1995	72	142.81	14.28	0	0	0	0.52	1.03	0.15	2.6	5.16	0.64	149.00	15.08
11/13/1995	73	144.79	14.48	0	0	0	0.51	1.01	0.15	2.6	5.16	0.64	150.96	15.28
11/14/1995	74	146.78	14.68	0	0	0	0.41	0.81	0.12	2.6	5.16	0.64	152.75	15.44
11/15/1995	67	132.89	13.29	0	0	0	0.29	0.58	0.09	2.6	5.16	0.64	138.62	14.02
11/16/1995	65	128.93	12.89	0	0	0	0.2	0.40	0.06	2.6	5.16	0.64	134.48	13.60
11/17/1995	79	156.69	15.67	0	0	0	0.68	1.35	0.20	4.1	8.13	1.02	166.18	16.89
11/18/1995	93	184.46	18.45	0	0	0	0.93	1.84	0.28	7.2	14.28	1.79	200.59	20.51
11/19/1995	96	190.41	19.04	0	0	0	0.63	1.25	0.19	5.6	11.11	1.39	202.77	20.62
11/20/1995	97	192.40	19.24	0	0	0	0.52	1.03	0.15	4.9	9.72	1.21	203.15	20.61
11/21/1995	92	182.48	18.25	0	0	0	0.43	0.85	0.13	4.4	8.73	1.09	192.06	19.47
11/22/1995	86	170.58	17.06	0	0	0	0.43	0.85	0.13	4.1	8.13	1.02	179.56	18.20
11/23/1995	85	168.59	16.86	0	0	0	0.41	0.81	0.12	4.1	8.13	1.02	177.54	18.00
11/24/1995	78	154.71	15.47	0	0	0	0.38	0.75	0.11	3.9	7.74	0.97	163.20	16.55
11/25/1995	70	138.84	13.88	0	0	0	0.39	0.77	0.12	3.9	7.74	0.97	147.35	14.97
11/26/1995	65	128.93	12.89	0	0	0	0.39	0.77	0.12	3.9	7.74	0.97	137.43	13.98
11/27/1995	64	126.94	12.69	0	0	0	0.39	0.77	0.12	3.9	7.74	0.97	135.45	13.78
11/28/1995	62	122.98	12.30	0	0	0	0.37	0.73	0.11	3.8	7.54	0.94	131.25	13.35
11/29/1995	60	119.01	11.90	0	0	0	0.33	0.65	0.10	3.5	6.94	0.87	126.60	12.87
11/30/1995	62	122.98	12.30	0	0	0	0.3	0.60	0.09	3	5.95	0.74	129.52	13.13
12/1/1995	65	128.93	12.89	0	0	0	0.3	0.60	0.09	3	5.95	0.74	135.47	13.73
12/2/1995	67	132.89	13.29	0	0	0	0.29	0.58	0.09	3	5.95	0.74	139.42	14.12
12/3/1995	69	136.86	13.69	0	0	0	0.24	0.48	0.07	3.3	6.55	0.82	143.88	14.58
12/4/1995	72	142.81	14.28	0	0	0	0.23	0.46	0.07	3.4	6.74	0.84	150.01	15.19
12/5/1995	70	138.84	13.88	0	0	0	0.23	0.46	0.07	3.4	6.74	0.84	146.04	14.80
12/6/1995	67	132.89	13.29	0	0	0	0.22	0.44	0.07	3.4	6.74	0.84	140.07	14.20
12/7/1995	65	128.93	12.89	0	0	0	0.19	0.38	0.06	3.4	6.74	0.84	136.05	13.79
12/8/1995	64	126.94	12.69	0	0	0	0.17	0.34	0.05	3.4	6.74	0.84	134.02	13.59
12/9/1995	64	126.94	12.69	0	0	0	0.13	0.26	0.04	3.1	6.15	0.77	133.35	13.50
12/10/1995	65	128.93	12.89	0	0	0	0.1	0.20	0.03	3	5.95	0.74	135.07	13.67
12/11/1995	67	132.89	13.29	0	0	0	0.1	0.20	0.03	3	5.95	0.74	139.04	14.06
12/12/1995	69	136.86	13.69	0	0	0	0.13	0.26	0.04	3	5.95	0.74	143.07	14.47
12/13/1995	72	142.81	14.28	0	0	0	0.13	0.26	0.04	3	5.95	0.74	149.02	15.06
12/14/1995	72	142.81	14.28	0	0	0	0.12	0.24	0.04	3	5.95	0.74	149.00	15.06
12/15/1995	72	142.81	14.28	0	0	0	0.11	0.22	0.03	3	5.95	0.74	148.98	15.06
12/16/1995	73	144.79	14.48	0	0	0	0.12	0.24	0.04	3	5.95	0.74	150.98	15.26
12/17/1995	74	146.78	14.68	0	0	0	0.14	0.28	0.04	3	5.95	0.74	153.00	15.46
12/18/1995	78	154.71	15.47	0	0	0	0.14	0.28	0.04	2.7	5.36	0.67	160.34	16.18
12/19/1995	82	162.64	16.26	0	0	0	0.11	0.22	0.03	2.2	4.36	0.55	167.23	16.84
12/20/1995	85	168.59	16.86	0	0	0	0.11	0.22	0.03	2.2	4.36	0.55	173.18	17.44
12/21/1995	72	142.81	14.28	0	0	0	0.11	0.22	0.03	2.2	4.36	0.55	147.39	14.86
12/22/1995	65	128.93	12.89	0	0	0	0.1	0.20	0.03	2.2	4.36	0.55	133.49	13.47
12/23/1995	64	126.94	12.69	0	0	0	0.08	0.16	0.02	2.2	4.36	0.55	131.46	13.26

Appendix A. Surface-water inflow, Medina Lake—Continued

Date	08178990 Medina River at English Crossing (site 1)			08179110 Red Bluff Creek (site 2)			08179300 Elm Creek (site 3)			08179280 Cypress Creek (site 10)			SW_{in} Medina Lake total	
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)
12/24/1995	64	126.94	12.69	0	0	0	0.08	0.16	0.02	2.2	4.36	0.55	131.46	13.26
12/25/1995	65	128.93	12.89	0	0	0	0.08	0.16	0.02	2.2	4.36	0.55	133.45	13.46
12/26/1995	63	124.96	12.50	0	0	0	0.08	0.16	0.02	2.2	4.36	0.55	129.48	13.07
12/27/1995	61	120.99	12.10	0	0	0	0.09	0.18	0.03	2.2	4.36	0.55	125.53	12.67
12/28/1995	59	117.02	11.70	0	0	0	0.08	0.16	0.02	2.2	4.36	0.55	121.55	12.27
12/29/1995	60	119.01	11.90	0	0	0	0.08	0.16	0.02	2.2	4.36	0.55	123.53	12.47
12/30/1995	62	122.98	12.30	0	0	0	0.08	0.16	0.02	2.2	4.36	0.55	127.50	12.87
12/31/1995	65	128.93	12.89	0	0	0	0.08	0.16	0.02	2.2	4.36	0.55	133.45	13.46
1/1/1996	69	136.86	13.69	0	0	0	0.09	0.18	0.03	2.1	4.17	0.52	141.20	14.23
1/2/1996	69	136.86	13.69	0	0	0	0.08	0.16	0.02	1.6	3.17	0.40	140.19	14.11
1/3/1996	58	115.04	11.50	0	0	0	0.07	0.14	0.02	1.6	3.17	0.40	118.35	11.92
1/4/1996	56	111.07	11.11	0	0	0	0.08	0.16	0.02	1.6	3.17	0.40	114.41	11.53
1/5/1996	54	107.11	10.71	0	0	0	0.07	0.14	0.02	1.6	3.17	0.40	110.42	11.13
1/6/1996	52	103.14	10.31	0	0	0	0.06	0.12	0.02	1.6	3.17	0.40	106.43	10.73
1/7/1996	51	101.16	10.12	0	0	0	0.06	0.12	0.02	1.6	3.17	0.40	104.45	10.53
1/8/1996	53	105.12	10.51	0	0	0	0.05	0.10	0.01	1.6	3.17	0.40	108.40	10.92
1/9/1996	54	107.11	10.71	0	0	0	0.05	0.10	0.01	1.6	3.17	0.40	110.38	11.12
1/10/1996	55	109.09	10.91	0	0	0	0.05	0.10	0.01	1.6	3.17	0.40	112.36	11.32
1/11/1996	54	107.11	10.71	0	0	0	0.06	0.12	0.02	1.6	3.17	0.40	110.40	11.13
1/12/1996	52	103.14	10.31	0	0	0	0.05	0.10	0.01	1.6	3.17	0.40	106.41	10.73
1/13/1996	50	99.17	9.92	0	0	0	0.05	0.10	0.01	1.6	3.17	0.40	102.45	10.33
1/14/1996	50	99.17	9.92	0	0	0	0.05	0.10	0.01	1.6	3.17	0.40	102.45	10.33
1/15/1996	51	101.16	10.12	0	0	0	0.05	0.10	0.01	1.4	2.78	0.35	104.03	10.48
1/16/1996	51	101.16	10.12	0	0	0	0.05	0.10	0.01	1.3	2.58	0.32	103.83	10.45
1/17/1996	51	101.16	10.12	0	0	0	0.07	0.14	0.02	1.4	2.78	0.35	104.07	10.48
1/18/1996	50	99.17	9.92	0	0	0	0.06	0.12	0.02	1.3	2.58	0.32	101.87	10.26
1/19/1996	49	97.19	9.72	0	0	0	0.05	0.10	0.01	1.5	2.98	0.37	100.26	10.11
1/20/1996	48	95.21	9.52	0	0	0	0.05	0.10	0.01	1.9	3.77	0.47	99.07	10.01
1/21/1996	49	97.19	9.72	0	0	0	0.05	0.10	0.01	1.9	3.77	0.47	101.06	10.20
1/22/1996	50	99.17	9.92	0	0	0	0.05	0.10	0.01	1.8	3.57	0.45	102.84	10.38
1/23/1996	51	101.16	10.12	0	0	0	0.05	0.10	0.01	1.9	3.77	0.47	105.02	10.60
1/24/1996	51	101.16	10.12	0	0	0	0.05	0.10	0.01	1.9	3.77	0.47	105.02	10.60
1/25/1996	49	97.19	9.72	0	0	0	0.05	0.10	0.01	1.9	3.77	0.47	101.06	10.20
1/26/1996	48	95.21	9.52	0	0	0	0.05	0.10	0.01	1.8	3.57	0.45	98.88	9.98
1/27/1996	47	93.22	9.32	0	0	0	0.04	0.08	0.01	1.5	2.98	0.37	96.28	9.71
1/28/1996	46	91.24	9.12	0	0	0	0.04	0.08	0.01	1.3	2.58	0.32	93.90	9.46
1/29/1996	45	89.26	8.93	0	0	0	0.05	0.10	0.01	1.3	2.58	0.32	91.93	9.26
1/30/1996	45	89.26	8.93	0	0	0	0.04	0.08	0.01	1.3	2.58	0.32	91.91	9.26
1/31/1996	43	85.29	8.53	0	0	0	0.05	0.10	0.01	1.3	2.58	0.32	87.97	8.87
2/1/1996	43	85.29	8.53	0	0	0	0.05	0.10	0.01	1.3	2.58	0.32	87.97	8.87
2/2/1996	45	89.26	8.93	0	0	0	0.06	0.12	0.02	1.3	2.58	0.32	91.95	9.27
2/3/1996	45	89.26	8.93	0	0	0	0.04	0.08	0.01	1.3	2.58	0.32	91.91	9.26
2/4/1996	43	85.29	8.53	0	0	0	0.03	0.06	0.01	1.3	2.58	0.32	87.93	8.86
2/5/1996	44	87.27	8.73	0	0	0	0.03	0.06	0.01	1.3	2.58	0.32	89.91	9.06
2/6/1996	46	91.24	9.12	0	0	0	0.03	0.06	0.01	1.3	2.58	0.32	93.88	9.46
2/7/1996	48	95.21	9.52	0	0	0	0.04	0.08	0.01	1.3	2.58	0.32	97.86	9.85
2/8/1996	51	101.16	10.12	0	0	0	0.04	0.08	0.01	1.3	2.58	0.32	103.81	10.45
2/9/1996	51	101.16	10.12	0	0	0	0.04	0.08	0.01	1.3	2.58	0.32	103.81	10.45
2/10/1996	51	101.16	10.12	0	0	0	0.05	0.10	0.01	1.3	2.58	0.32	103.83	10.45

Appendix A. Surface-water inflow, Medina Lake—Continued

Date	08178990 Medina River at English Crossing (site 1)			08179110 Red Bluff Creek (site 2)			08179300 Elm Creek (site 3)			08179280 Cypress Creek (site 10)			SW_{in} Medina Lake total	
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)
2/11/1996	50	99.17	9.92	0	0	0	0.04	0.08	0.01	1.3	2.58	0.32	101.83	10.25
2/12/1996	44	87.27	8.73	0	0	0	0.03	0.06	0.01	1.3	2.58	0.32	89.91	9.06
2/13/1996	40	79.34	7.93	0	0	0	0.03	0.06	0.01	1.3	2.58	0.32	81.98	8.27
2/14/1996	40	79.34	7.93	0	0	0	0.04	0.08	0.01	1.3	2.58	0.32	82.00	8.27
2/15/1996	42	83.31	8.33	0	0	0	0.04	0.08	0.01	1.3	2.58	0.32	85.96	8.66
2/16/1996	44	87.27	8.73	0	0	0	0.05	0.10	0.01	1.3	2.58	0.32	89.95	9.06
2/17/1996	39	77.36	7.74	0	0	0	0.04	0.08	0.01	1.3	2.58	0.32	80.01	8.07
2/18/1996	40	79.34	7.93	0	0	0	0.06	0.12	0.02	1.3	2.58	0.32	82.04	8.27
2/19/1996	43	85.29	8.53	0	0	0	0.07	0.14	0.02	1	1.98	0.25	87.41	8.80
2/20/1996	44	87.27	8.73	0	0	0	0.07	0.14	0.02	0.82	1.63	0.20	89.04	8.95
2/21/1996	44	87.27	8.73	0	0	0	0.05	0.10	0.01	0.82	1.63	0.20	89.00	8.95
2/22/1996	44	87.27	8.73	0	0	0	0.04	0.08	0.01	0.83	1.65	0.21	89.00	8.94
2/23/1996	44	87.27	8.73	0	0	0	0.05	0.10	0.01	0.82	1.63	0.20	89.00	8.95
2/24/1996	43	85.29	8.53	0	0	0	0.04	0.08	0.01	1.1	2.18	0.27	87.55	8.81
2/25/1996	41	81.32	8.13	0	0	0	0.04	0.08	0.01	0.8	1.59	0.20	82.99	8.34
2/26/1996	40	79.34	7.93	0	0	0	0.04	0.08	0.01	0.71	1.41	0.18	80.83	8.12
2/27/1996	40	79.34	7.93	0	0	0	0.04	0.08	0.01	0.68	1.35	0.17	80.77	8.11
2/28/1996	45	89.26	8.93	0	0	0	0.04	0.08	0.01	0.6	1.19	0.15	90.53	9.09
2/29/1996	50	99.17	9.92	0	0	0	0.17	0.34	0.05	0.94	1.86	0.23	101.38	10.20
3/1/1996	50	99.17	9.92	0	0	0	0.05	0.10	0.01	1	1.98	0.25	101.26	10.18
3/2/1996	49	97.19	9.72	0	0	0	0.04	0.08	0.01	0.79	1.57	0.20	98.84	9.93
3/3/1996	47	93.22	9.32	0	0	0	0.04	0.08	0.01	0.61	1.21	0.15	94.51	9.49
3/4/1996	45	89.26	8.93	0	0	0	0.04	0.08	0.01	0.62	1.23	0.15	90.57	9.09
3/5/1996	48	95.21	9.52	0	0	0	0.04	0.08	0.01	0.6	1.19	0.15	96.48	9.68
3/6/1996	51	101.16	10.12	0	0	0	0.04	0.08	0.01	0.6	1.19	0.15	102.43	10.28
3/7/1996	53	105.12	10.51	0	0	0	0.02	0.04	0.01	0.64	1.27	0.16	106.43	10.68
3/8/1996	46	91.24	9.12	0	0	0	0.02	0.04	0.01	1	1.98	0.25	93.26	9.38
3/9/1996	39	77.36	7.74	0	0	0	0.02	0.04	0.01	1	1.98	0.25	79.38	7.99
3/10/1996	37	73.39	7.34	0	0	0	0.02	0.04	0.01	1	1.98	0.25	75.41	7.59
3/11/1996	38	75.37	7.54	0	0	0	0.02	0.04	0.01	1	1.98	0.25	77.39	7.79
3/12/1996	39	77.36	7.74	0	0	0	0.02	0.04	0.01	1	1.98	0.25	79.38	7.99
3/13/1996	40	79.34	7.93	0	0	0	0.02	0.04	0.01	1.1	2.18	0.27	81.56	8.21
3/14/1996	40	79.34	7.93	0	0	0	0.02	0.04	0.01	0.99	1.96	0.25	81.34	8.19
3/15/1996	40	79.34	7.93	0	0	0	0.02	0.04	0.01	0.92	1.82	0.23	81.20	8.17
3/16/1996	39	77.36	7.74	0	0	0	0.01	0.02	0	0.9	1.79	0.22	79.16	7.96
3/17/1996	39	77.36	7.74	0	0	0	0.01	0.02	0	0.81	1.61	0.20	78.98	7.94
3/18/1996	38	75.37	7.54	0	0	0	0	0	0	0.71	1.41	0.18	76.78	7.71
3/19/1996	37	73.39	7.34	0	0	0	0	0	0	0.73	1.45	0.18	74.84	7.52
3/20/1996	35	69.42	6.94	0	0	0	0	0	0	0.75	1.49	0.19	70.91	7.13
3/21/1996	32	63.47	6.35	0	0	0	0	0	0	0.95	1.88	0.24	65.36	6.58
3/22/1996	32	63.47	6.35	0	0	0	0	0	0	1.1	2.18	0.27	65.65	6.62
3/23/1996	32	63.47	6.35	0	0	0	0	0	0	1.1	2.18	0.27	65.65	6.62
3/24/1996	32	63.47	6.35	0	0	0	0	0	0	1	1.98	0.25	65.45	6.60
3/25/1996	33	65.45	6.55	0	0	0	0	0	0	1	1.98	0.25	67.44	6.79
3/26/1996	34	67.44	6.74	0	0	0	0	0	0	1	1.98	0.25	69.42	6.99
3/27/1996	36	71.40	7.14	0	0	0	0.01	0.02	0	1	1.98	0.25	73.41	7.39
3/28/1996	38	75.37	7.54	0	0	0	0.01	0.02	0	1	1.98	0.25	77.38	7.79
3/29/1996	39	77.36	7.74	0	0	0	0.01	0.02	0	1	1.98	0.25	79.36	7.99
3/30/1996	40	79.34	7.93	0	0	0	0.01	0.02	0	0.8	1.59	0.20	80.95	8.14

Appendix A. Surface-water inflow, Medina Lake—Continued

Date	08178990 Medina River at English Crossing (site 1)			08179110 Red Bluff Creek (site 2)			08179300 Elm Creek (site 3)			08179280 Cypress Creek (site 10)			SW_{in} Medina Lake total	
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)
3/31/1996	40	79.34	7.93	0	0	0	0	0	0	0.77	1.53	0.19	80.87	8.12
4/1/1996	41	81.32	8.13	0	0	0	0	0	0	1	1.98	0.25	83.31	8.38
4/2/1996	36	71.40	7.14	0	0	0	0	0	0	1.3	2.58	0.32	73.98	7.46
4/3/1996	32	63.47	6.35	0	0	0	0	0	0	1.3	2.58	0.32	66.05	6.67
4/4/1996	33	65.45	6.55	0	0	0	0	0	0	1.3	2.58	0.32	68.03	6.87
4/5/1996	36	71.40	7.14	0	0	0	0.03	0.06	0.01	1.2	2.38	0.30	73.84	7.45
4/6/1996	45	89.26	8.93	0	0	0	0.01	0.02	0	1.3	2.58	0.32	91.85	9.25
4/7/1996	62	122.98	12.30	0	0	0	0	0	0	1.3	2.58	0.32	125.55	12.62
4/8/1996	71	140.83	14.08	0	0	0	0	0	0	1.3	2.58	0.32	143.40	14.40
4/9/1996	69	136.86	13.69	0	0	0	0	0	0	1.1	2.18	0.27	139.04	13.96
4/10/1996	63	124.96	12.50	0	0	0	0	0	0	1.1	2.18	0.27	127.14	12.77
4/11/1996	57	113.06	11.31	0	0	0	0	0	0	1.3	2.58	0.32	115.64	11.63
4/12/1996	51	101.16	10.12	0	0	0	0	0	0	1	1.98	0.25	103.14	10.36
4/13/1996	47	93.22	9.32	0	0	0	0	0	0	0.96	1.90	0.24	95.13	9.56
4/14/1996	46	91.24	9.12	0	0	0	0	0	0	0.82	1.63	0.20	92.87	9.33
4/15/1996	43	85.29	8.53	0	0	0	0	0	0	0.82	1.63	0.20	86.92	8.73
4/16/1996	39	77.36	7.74	0	0	0	0	0	0	0.93	1.84	0.23	79.20	7.97
4/17/1996	36	71.40	7.14	0	0	0	0	0	0	0.96	1.90	0.24	73.31	7.38
4/18/1996	32	63.47	6.35	0	0	0	0	0	0	0.85	1.69	0.21	65.16	6.56
4/19/1996	29	57.52	5.75	0	0	0	0	0	0	0.85	1.69	0.21	59.21	5.96
4/20/1996	29	57.52	5.75	0	0	0	0	0	0	0.82	1.63	0.20	59.15	5.96
4/21/1996	28	55.54	5.55	0	0	0	0	0	0	1.2	2.38	0.30	57.92	5.85
4/22/1996	27	53.55	5.36	0	0	0	0	0	0	1	1.98	0.25	55.54	5.60
4/23/1996	27	53.55	5.36	0	0	0	0	0	0	0.82	1.63	0.20	55.18	5.56
4/24/1996	26	51.57	5.16	0	0	0	0	0	0	0.83	1.65	0.21	53.22	5.36
4/25/1996	26	51.57	5.16	0	0	0	0	0	0	0.82	1.63	0.20	53.20	5.36
4/26/1996	26	51.57	5.16	0	0	0	0	0	0	0.95	1.88	0.24	53.45	5.39
4/27/1996	25	49.59	4.96	0	0	0	0	0	0	0.86	1.71	0.21	51.29	5.17
4/28/1996	24	47.60	4.76	0	0	0	0.05	0.10	0.01	0.87	1.73	0.22	49.43	4.99
4/29/1996	25	49.59	4.96	0	0	0	0	0	0	0.88	1.75	0.22	51.33	5.18
4/30/1996	26	51.57	5.16	0	0	0	0	0	0	0.83	1.65	0.21	53.22	5.36
5/1/1996	27	53.55	5.36	0	0	0	0	0	0	0.83	1.65	0.21	55.20	5.56
5/2/1996	26	51.57	5.16	0	0	0	0	0	0	0.82	1.63	0.20	53.20	5.36
5/3/1996	23	45.62	4.56	0	0	0	0	0	0	0.84	1.67	0.21	47.29	4.77
5/4/1996	22	43.64	4.36	0	0	0	0	0	0	0.82	1.63	0.20	45.26	4.57
5/5/1996	22	43.64	4.36	0	0	0	0	0	0	0.82	1.63	0.20	45.26	4.57
5/6/1996	21	41.65	4.17	0	0	0	0	0	0	0.82	1.63	0.20	43.28	4.37
5/7/1996	21	41.65	4.17	0	0	0	0	0	0	0.88	1.75	0.22	43.40	4.38
5/8/1996	23	45.62	4.56	0	0	0	0	0	0	1	1.98	0.25	47.60	4.81
5/9/1996	23	45.62	4.56	2.5	4.96	0.50	0	0	0	1	1.98	0.25	52.56	5.31
5/10/1996	23	45.62	4.56	0.5	0.99	0.10	0.05	0.10	0.01	0.6	1.19	0.15	47.90	4.82
5/11/1996	24	47.60	4.76	0.22	0.44	0.04	0.16	0.32	0.05	0.6	1.19	0.15	49.55	5.00
5/12/1996	25	49.59	4.96	0.14	0.28	0.03	0.01	0.02	0	0.6	1.19	0.15	51.07	5.14
5/13/1996	26	51.57	5.16	0.07	0.14	0.01	0	0	0	0.61	1.21	0.15	52.92	5.32
5/14/1996	26	51.57	5.16	0	0	0	0	0	0	0.55	1.09	0.14	52.66	5.29
5/15/1996	26	51.57	5.16	0	0	0	0	0	0	0.59	1.17	0.15	52.74	5.30
5/16/1996	24	47.60	4.76	0	0	0	0	0	0	0.54	1.07	0.13	48.67	4.89
5/17/1996	22	43.64	4.36	0	0	0	0	0	0	0.54	1.07	0.13	44.71	4.50
5/18/1996	20	39.67	3.97	0	0	0	0	0	0	0.56	1.11	0.14	40.78	4.11

Appendix A. Surface-water inflow, Medina Lake—Continued

Date	08178990 Medina River at English Crossing (site 1)			08179110 Red Bluff Creek (site 2)			08179300 Elm Creek (site 3)			08179280 Cypress Creek (site 10)			SW_{in} Medina Lake total	
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)
5/19/1996	18	35.70	3.57	0	0	0	0	0	0	0.58	1.15	0.14	36.85	3.71
5/20/1996	16	31.74	3.17	0	0	0	0	0	0	0.6	1.19	0.15	32.93	3.32
5/21/1996	16	31.74	3.17	0	0	0	0	0	0	0.56	1.11	0.14	32.85	3.31
5/22/1996	15	29.75	2.98	0	0	0	0	0	0	0.47	0.93	0.12	30.68	3.09
5/23/1996	14	27.77	2.78	0	0	0	0	0	0	0.47	0.93	0.12	28.70	2.89
5/24/1996	13	25.79	2.58	0	0	0	0	0	0	0.57	1.13	0.14	26.92	2.72
5/25/1996	13	25.79	2.58	0	0	0	0	0	0	0.6	1.19	0.15	26.98	2.73
5/26/1996	13	25.79	2.58	0	0	0	0	0	0	0.44	0.87	0.11	26.66	2.69
5/27/1996	15	29.75	2.98	0	0	0	0.05	0.10	0.01	0.42	0.83	0.10	30.68	3.09
5/28/1996	15	29.75	2.98	0	0	0	0	0	0	0.42	0.83	0.10	30.59	3.08
5/29/1996	15	29.75	2.98	0	0	0	0	0	0	0.42	0.83	0.10	30.59	3.08
5/30/1996	15	29.75	2.98	0	0	0	0	0	0	0.31	0.61	0.08	30.37	3.05
5/31/1996	16	31.74	3.17	0	0	0	0	0	0	0.28	0.56	0.07	32.29	3.24
6/1/1996	19	37.69	3.77	0	0	0	0	0	0	0.28	0.56	0.07	38.24	3.84
6/2/1996	23	45.62	4.56	0	0	0	0	0	0	0.28	0.56	0.07	46.18	4.63
6/3/1996	17	33.72	3.37	0	0	0	0	0	0	0.28	0.56	0.07	34.27	3.44
6/4/1996	15	29.75	2.98	0	0	0	0	0	0	0.28	0.56	0.07	30.31	3.04
6/5/1996	13	25.79	2.58	0	0	0	0	0	0	0.28	0.56	0.07	26.34	2.65
6/6/1996	11	21.82	2.18	0	0	0	0	0	0	0.26	0.52	0.06	22.33	2.25
6/7/1996	12	23.80	2.38	0	0	0	0	0	0	0.21	0.42	0.05	24.22	2.43
6/8/1996	11	21.82	2.18	0	0	0	0	0	0	0.13	0.26	0.03	22.08	2.21
6/9/1996	10	19.83	1.98	0	0	0	0	0	0	0.16	0.32	0.04	20.15	2.02
6/10/1996	9.8	19.44	1.94	0	0	0	0	0	0	0.23	0.46	0.06	19.89	2.00
6/11/1996	10	19.83	1.98	0	0	0	0	0	0	0.2	0.40	0.05	20.23	2.03
6/12/1996	11	21.82	2.18	0	0	0	0	0	0	0.16	0.32	0.04	22.14	2.22
6/13/1996	9.9	19.64	1.96	0	0	0	0	0	0	0.16	0.32	0.04	19.95	2.00
6/14/1996	10	19.83	1.98	0	0	0	0	0	0	0.16	0.32	0.04	20.15	2.02
6/15/1996	9	17.85	1.79	0	0	0	0	0	0	0.16	0.32	0.04	18.17	1.82
6/16/1996	7.4	14.68	1.47	0	0	0	0	0	0	0.14	0.28	0.03	14.96	1.50
6/17/1996	7.2	14.28	1.43	0	0	0	0	0	0	0.12	0.24	0.03	14.52	1.46
6/18/1996	7.4	14.68	1.47	0	0	0	0	0	0	0.11	0.22	0.03	14.90	1.50
6/19/1996	7	13.88	1.39	0	0	0	0	0	0	0.11	0.22	0.03	14.10	1.42
6/20/1996	7.6	15.07	1.51	0	0	0	0	0	0	0.13	0.26	0.03	15.33	1.54
6/21/1996	7.3	14.48	1.45	0	0	0	0	0	0	0.14	0.28	0.03	14.76	1.48
6/22/1996	7.2	14.28	1.43	0	0	0	0	0	0	0.18	0.36	0.04	14.64	1.47
6/23/1996	5	9.92	0.99	0	0	0	0	0	0	0.16	0.32	0.04	10.23	1.03
6/24/1996	5.1	10.12	1.01	0	0	0	0	0	0	0.16	0.32	0.04	10.43	1.05
6/25/1996	7.7	15.27	1.53	0	0	0	0.09	0.18	0.03	0.2	0.40	0.05	15.85	1.60
6/26/1996	9.3	18.45	1.84	0	0	0	0	0	0	0.36	0.71	0.09	19.16	1.93
6/27/1996	12	23.80	2.38	0	0	0	0	0	0	0.28	0.56	0.07	24.36	2.45
6/28/1996	10	19.83	1.98	0	0	0	0	0	0	0.28	0.56	0.07	20.39	2.05
6/29/1996	9.7	19.24	1.92	0	0	0	0	0	0	0.28	0.56	0.07	19.80	1.99
6/30/1996	7.8	15.47	1.55	0	0	0	0	0	0	0.26	0.52	0.06	15.99	1.61
7/1/1996	6.9	13.69	1.37	0	0	0	0	0	0	0.16	0.32	0.04	14.00	1.41
7/2/1996	6.7	13.29	1.33	0	0	0	0	0	0	0.16	0.32	0.04	13.61	1.37
7/3/1996	6.2	12.30	1.23	0	0	0	0	0	0	0.16	0.32	0.04	12.61	1.27
7/4/1996	5.7	11.31	1.13	0	0	0	0	0	0	0.16	0.32	0.04	11.62	1.17
7/5/1996	5.1	10.12	1.01	0	0	0	0	0	0	0.16	0.32	0.04	10.43	1.05
7/6/1996	5.2	10.31	1.03	0	0	0	0	0	0	0.16	0.32	0.04	10.63	1.07

Appendix A. Surface-water inflow, Medina Lake—Continued

Date	08178990 Medina River at English Crossing (site 1)			08179110 Red Bluff Creek (site 2)			08179300 Elm Creek (site 3)			08179280 Cypress Creek (site 10)			SW_{in} Medina Lake total	
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)
7/7/1996	4.8	9.52	0.95	0	0	0	0	0	0	0.16	0.32	0.04	9.84	0.99
7/8/1996	4.5	8.93	0.89	0	0	0	0	0	0	0.16	0.32	0.04	9.24	0.93
7/9/1996	4.2	8.33	0.83	0	0	0	0	0	0	0.16	0.32	0.04	8.65	0.87
7/10/1996	5.2	10.31	1.03	0	0	0	0.16	0.32	0.05	0.84	1.67	0.21	12.30	1.29
7/11/1996	5.3	10.51	1.05	0	0	0	0	0	0	0.49	0.97	0.12	11.48	1.17
7/12/1996	5.3	10.51	1.05	0	0	0	0	0	0	0.22	0.44	0.05	10.95	1.11
7/13/1996	5.6	11.11	1.11	0	0	0	0	0	0	0.16	0.32	0.04	11.42	1.15
7/14/1996	5.4	10.71	1.07	0	0	0	0	0	0	0.16	0.32	0.04	11.03	1.11
7/15/1996	4.7	9.32	0.93	0	0	0	0	0	0	0.16	0.32	0.04	9.64	0.97
7/16/1996	4.3	8.53	0.85	0	0	0	0	0	0	0.16	0.32	0.04	8.85	0.89
7/17/1996	4	7.93	0.79	0	0	0	0	0	0	0.15	0.30	0.04	8.23	0.83
7/18/1996	3.8	7.54	0.75	0	0	0	0	0	0	0.16	0.32	0.04	7.85	0.79
7/19/1996	3.6	7.14	0.71	0	0	0	0	0	0	0.16	0.32	0.04	7.46	0.75
7/20/1996	3.4	6.74	0.67	0	0	0	0	0	0	0.15	0.30	0.04	7.04	0.71
7/21/1996	3.1	6.15	0.61	0	0	0	0	0	0	0.14	0.28	0.03	6.43	0.65
7/22/1996	2.9	5.75	0.58	0	0	0	0	0	0	0.13	0.26	0.03	6.01	0.61
7/23/1996	2.9	5.75	0.58	0	0	0	0	0	0	0.15	0.30	0.04	6.05	0.61
7/24/1996	2.9	5.75	0.58	0	0	0	0	0	0	0.15	0.30	0.04	6.05	0.61
7/25/1996	2.9	5.75	0.58	0	0	0	0	0	0	0.21	0.42	0.05	6.17	0.63
7/26/1996	4.1	8.13	0.81	0	0	0	0	0	0	0.25	0.50	0.06	8.63	0.88
7/27/1996	4.8	9.52	0.95	0	0	0	0	0	0	0.19	0.38	0.05	9.90	1.00
7/28/1996	3	5.95	0.60	0	0	0	0	0	0	0.17	0.34	0.04	6.29	0.64
7/29/1996	3.1	6.15	0.61	0	0	0	0	0	0	0.17	0.34	0.04	6.49	0.66
7/30/1996	3	5.95	0.60	0	0	0	0	0	0	0.17	0.34	0.04	6.29	0.64
7/31/1996	2.9	5.75	0.58	0	0	0	0	0	0	0.16	0.32	0.04	6.07	0.61
8/1/1996	2.7	5.36	0.54	0	0	0	0	0	0	0.16	0.32	0.04	5.67	0.58
8/2/1996	2.6	5.16	0.52	0	0	0	0	0	0	0.17	0.34	0.04	5.49	0.56
8/3/1996	2.4	4.76	0.48	0	0	0	0	0	0	0.2	0.40	0.05	5.16	0.53
8/4/1996	2.4	4.76	0.48	0	0	0	0	0	0	0.16	0.32	0.04	5.08	0.52
8/5/1996	2.3	4.56	0.46	0	0	0	0	0	0	0.16	0.32	0.04	4.88	0.50
8/6/1996	2.3	4.56	0.46	0	0	0	0	0	0	0.16	0.32	0.04	4.88	0.50
8/7/1996	2.3	4.56	0.46	0	0	0	0	0	0	0.14	0.28	0.03	4.84	0.49
8/8/1996	2.2	4.36	0.44	0	0	0	0	0	0	0.15	0.30	0.04	4.66	0.47
8/9/1996	2.2	4.36	0.44	0	0	0	0	0	0	0.13	0.26	0.03	4.62	0.47
8/10/1996	2.2	4.36	0.44	0	0	0	0	0	0	0.13	0.26	0.03	4.62	0.47
8/11/1996	2.1	4.17	0.42	0	0	0	0	0	0	0.14	0.28	0.03	4.44	0.45
8/12/1996	2.1	4.17	0.42	0	0	0	0	0	0	0.14	0.28	0.03	4.44	0.45
8/13/1996	2.5	4.96	0.50	0	0	0	0	0	0	0.16	0.32	0.04	5.28	0.54
8/14/1996	2.5	4.96	0.50	0	0	0	0	0	0	0.21	0.42	0.05	5.38	0.55
8/15/1996	2.3	4.56	0.46	0	0	0	0	0	0	0.26	0.52	0.06	5.08	0.52
8/16/1996	2.3	4.56	0.46	0	0	0	0	0	0	0.21	0.42	0.05	4.98	0.51
8/17/1996	2.3	4.56	0.46	0	0	0	0	0	0	0.26	0.52	0.06	5.08	0.52
8/18/1996	2.3	4.56	0.46	0	0	0	0	0	0	0.28	0.56	0.07	5.12	0.53
8/19/1996	2.3	4.56	0.46	0	0	0	0	0	0	0.3	0.60	0.07	5.16	0.53
8/20/1996	2.4	4.76	0.48	0	0	0	0	0	0	1.5	2.98	0.37	7.74	0.85
8/21/1996	2.4	4.76	0.48	0	0	0	0	0	0	0.81	1.61	0.20	6.37	0.68
8/22/1996	2.6	5.16	0.52	0	0	0	0	0	0	0.44	0.87	0.11	6.03	0.62
8/23/1996	2.9	5.75	0.58	0	0	0	0	0	0	0.44	0.87	0.11	6.62	0.68
8/24/1996	2.9	5.75	0.58	0	0	0	0.02	0.04	0.01	0.38	0.75	0.09	6.55	0.68

Appendix A. Surface-water inflow, Medina Lake—Continued

Date	08178990 Medina River at English Crossing (site 1)			08179110 Red Bluff Creek (site 2)			08179300 Elm Creek (site 3)			08179280 Cypress Creek (site 10)			SW_{in} Medina Lake total	
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)
8/25/1996	4.5	8.93	0.89	0	0	0	0	0	0	0.47	0.93	0.12	9.86	1.01
8/26/1996	6.7	13.29	1.33	0	0	0	0.09	0.18	0.03	0.42	0.83	0.10	14.30	1.46
8/27/1996	8.9	17.65	1.77	0	0	0	0	0	0	0.42	0.83	0.10	18.49	1.87
8/28/1996	7.9	15.67	1.57	0	0	0	0	0	0	0.42	0.83	0.10	16.50	1.67
8/29/1996	7.3	14.48	1.45	0	0	0	0.02	0.04	0.01	0.46	0.91	0.11	15.43	1.57
8/30/1996	7.1	14.08	1.41	0	0	0	0.43	0.85	0.13	1.6	3.17	0.40	18.11	1.93
8/31/1996	12	23.80	2.38	0	0	0	0.26	0.52	0.08	1.3	2.58	0.32	26.90	2.78
9/1/1996	15	29.75	2.98	0	0	0	0.03	0.06	0.01	23	45.62	5.70	75.43	8.69
9/2/1996	14	27.77	2.78	0	0	0	0.01	0.02	0	3.8	7.54	0.94	35.33	3.72
9/3/1996	12	23.80	2.38	0	0	0	0	0	0	1.5	2.98	0.37	26.78	2.75
9/4/1996	12	23.80	2.38	0	0	0	0	0	0	0.9	1.79	0.22	25.59	2.60
9/5/1996	31	61.49	6.15	0	0	0	0	0	0	0.93	1.84	0.23	63.33	6.38
9/6/1996	61	120.99	12.10	0	0	0	0	0	0	0.82	1.63	0.20	122.62	12.30
9/7/1996	48	95.21	9.52	0	0	0	0	0	0	0.82	1.63	0.20	96.83	9.72
9/8/1996	42	83.31	8.33	0	0	0	0	0	0	3.1	6.15	0.77	89.45	9.10
9/9/1996	36	71.40	7.14	0	0	0	0	0	0	1.7	3.37	0.42	74.78	7.56
9/10/1996	30	59.50	5.95	0	0	0	0	0	0	1.3	2.58	0.32	62.08	6.27
9/11/1996	28	55.54	5.55	0	0	0	0	0	0	1.1	2.18	0.27	57.72	5.83
9/12/1996	26	51.57	5.16	0	0	0	0	0	0	0.82	1.63	0.20	53.20	5.36
9/13/1996	23	45.62	4.56	0	0	0	0	0	0	0.82	1.63	0.20	47.25	4.77
9/14/1996	21	41.65	4.17	0	0	0	0	0	0	0.82	1.63	0.20	43.28	4.37
9/15/1996	26	51.57	5.16	0	0	0	0.05	0.10	0.01	3.9	7.74	0.97	59.40	6.14
9/16/1996	99	196.36	19.64	0	0	0	0	0	0	1.3	2.58	0.32	198.94	19.96
9/17/1996	105	208.26	20.83	0	0	0	0	0	0	1.3	2.58	0.32	210.84	21.15
9/18/1996	71	140.83	14.08	0	0	0	0	0	0	1.3	2.58	0.32	143.40	14.40
9/19/1996	60	119.01	11.90	0	0	0	0	0	0	1.2	2.38	0.30	121.39	12.20
9/20/1996	53	105.12	10.51	0	0	0	0	0	0	1.2	2.38	0.30	107.50	10.81
9/21/1996	48	95.21	9.52	0	0	0	0	0	0	0.95	1.88	0.24	97.09	9.76
9/22/1996	42	83.31	8.33	0	0	0	0	0	0	1.2	2.38	0.30	85.69	8.63
9/23/1996	38	75.37	7.54	0	0	0	0	0	0	0.83	1.65	0.21	77.02	7.74
9/24/1996	36	71.40	7.14	0	0	0	0.06	0.12	0.02	0.82	1.63	0.20	73.15	7.36
9/25/1996	37	73.39	7.34	0	0	0	0.52	1.03	0.15	0.82	1.63	0.20	76.05	7.70
9/26/1996	37	73.39	7.34	0	0	0	0.02	0.04	0.01	0.82	1.63	0.20	75.05	7.55
9/27/1996	37	73.39	7.34	0	0	0	0.01	0.02	0	0.82	1.63	0.20	75.03	7.55
9/28/1996	34	67.44	6.74	0	0	0	0	0	0	0.82	1.63	0.20	69.06	6.95
9/29/1996	32	63.47	6.35	0	0	0	0	0	0	0.82	1.63	0.20	65.10	6.55
9/30/1996	30	59.50	5.95	0	0	0	0	0	0	0.82	1.63	0.20	61.13	6.15

Appendix A. Surface-water inflow, Diversion Lake

[Site numbers correspond to figure 3 and table 2. ft^3/s, cubic feet per second; acre-ft, acre-feet; SW_{in}, surface-water inflow]

Date	08179530 Koenig Creek (site 5)			08179520 Medina River below Medina Lake (site 6)			SW_{in} Diversion Lake total	
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)
8/1/1995				137	271.74	27.17		
8/2/1995				137	271.74	27.17		
8/3/1995				137	271.74	27.17		
8/4/1995				137	271.74	27.17		
8/5/1995				140	277.69	27.77		
8/6/1995				144	285.62	28.56		
8/7/1995				143	283.64	28.36		
8/8/1995				143	283.64	28.36		
8/9/1995				143	283.64	28.36		
8/10/1995				143	283.64	28.36		
8/11/1995				143	283.64	28.36		
8/12/1995				143	283.64	28.36		
8/13/1995				144	285.62	28.56		
8/14/1995				143	283.64	28.36		
8/15/1995				143	283.64	28.36		
8/16/1995				143	283.64	28.36		
8/17/1995				143	283.64	28.36		
8/18/1995	0.77	1.53	0.23	143	283.64	28.36	285.16	28.59
8/19/1995	0.76	1.51	0.23	143	283.64	28.36	285.14	28.59
8/20/1995	0.76	1.51	0.23	143	283.64	28.36	285.14	28.59
8/21/1995	0.76	1.51	0.23	143	283.64	28.36	285.14	28.59
8/22/1995	0.76	1.51	0.23	143	283.64	28.36	285.14	28.59
8/23/1995	0.75	1.49	0.22	143	283.64	28.36	285.12	28.59
8/24/1995	0.75	1.49	0.22	143	283.64	28.36	285.12	28.59
8/25/1995	0.75	1.49	0.22	143	283.64	28.36	285.12	28.59
8/26/1995	0.74	1.47	0.22	143	283.64	28.36	285.10	28.58
8/27/1995	0.74	1.47	0.22	143	283.64	28.36	285.10	28.58
8/28/1995	0.74	1.47	0.22	143	283.64	28.36	285.10	28.58
8/29/1995	0.74	1.47	0.22	143	283.64	28.36	285.10	28.58
8/30/1995	0.74	1.47	0.22	143	283.64	28.36	285.10	28.58
8/31/1995	0.74	1.47	0.22	143	283.64	28.36	285.10	28.58
9/1/1995	0.74	1.47	0.22	143	283.64	28.36	285.10	28.58
9/2/1995	0.73	1.45	0.22	143	283.64	28.36	285.08	28.58
9/3/1995	0.73	1.45	0.22	143	283.64	28.36	285.08	28.58
9/4/1995	0.73	1.45	0.22	143	283.64	28.36	285.08	28.58
9/5/1995	0.73	1.45	0.22	143	283.64	28.36	285.08	28.58
9/6/1995	0.72	1.43	0.21	143	283.64	28.36	285.06	28.58
9/7/1995	0.72	1.43	0.21	143	283.64	28.36	285.06	28.58
9/8/1995	0.72	1.43	0.21	143	283.64	28.36	285.06	28.58
9/9/1995	0.72	1.43	0.21	143	283.64	28.36	285.06	28.58
9/10/1995	0.72	1.43	0.21	143	283.64	28.36	285.06	28.58
9/11/1995	0.72	1.43	0.21	135	267.77	26.78	269.20	26.99
9/12/1995	0.72	1.43	0.21	112	222.15	22.21	223.58	22.43
9/13/1995	0.71	1.41	0.21	112	222.15	22.21	223.56	22.43
9/14/1995	0.71	1.41	0.21	112	222.15	22.21	223.56	22.43
9/15/1995	0.71	1.41	0.21	112	222.15	22.21	223.56	22.43
9/16/1995	0.70	1.39	0.21	112	222.15	22.21	223.54	22.42

Appendix A. Surface-water inflow, Diversion Lake—Continued

Date	08179530 Koenig Creek (site 5)			08179520 Medina River below Medina Lake (site 6)			SW_{in} Diversion Lake total	
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)
9/17/1995	0.70	1.39	0.21	112	222.15	22.21	223.54	22.42
9/18/1995	0.70	1.39	0.21	112	222.15	22.21	223.54	22.42
9/19/1995	0.70	1.39	0.21	120	238.02	23.80	239.40	24.01
9/20/1995	0.70	1.39	0.21					
9/21/1995	0.70	1.39	0.21	34	67.44	6.74	68.83	6.95
9/22/1995	0.70	1.39	0.21	34	67.44	6.74	68.83	6.95
9/23/1995	0.70	1.39	0.21	33	65.45	6.55	66.84	6.75
9/24/1995	0.69	1.37	0.21	33	65.45	6.55	66.82	6.75
9/25/1995	0.69	1.37	0.21	33	65.45	6.55	66.82	6.75
9/26/1995	0.69	1.37	0.21	33	65.45	6.55	66.82	6.75
9/27/1995	0.69	1.37	0.21	33	65.45	6.55	66.82	6.75
9/28/1995	0.68	1.35	0.20	33	65.45	6.55	66.80	6.75
9/29/1995	0.68	1.35	0.20	33	65.45	6.55	66.80	6.75
9/30/1995	0.68	1.35	0.20	32	63.47	6.35	64.82	6.55
10/1/1995	0.68	1.35	0.20	32	63.47	6.35	64.82	6.55
10/2/1995	0.68	1.35	0.20	32	63.47	6.35	64.82	6.55
10/3/1995	0.67	1.33	0.20	32	63.47	6.35	64.80	6.55
10/4/1995	0.66	1.31	0.20	32	63.47	6.35	64.78	6.54
10/5/1995	0.66	1.31	0.20	32	63.47	6.35	64.78	6.54
10/6/1995	0.66	1.31	0.20	32	63.47	6.35	64.78	6.54
10/7/1995	0.66	1.31	0.20	32	63.47	6.35	64.78	6.54
10/8/1995	0.66	1.31	0.20	32	63.47	6.35	64.78	6.54
10/9/1995	0.66	1.31	0.20	32	63.47	6.35	64.78	6.54
10/10/1995	0.66	1.31	0.20	32	63.47	6.35	64.78	6.54
10/11/1995	0.65	1.29	0.19	45	89.26	8.93	90.55	9.12
10/12/1995	0.65	1.29	0.19	71	140.83	14.08	142.12	14.28
10/13/1995	0.63	1.26	0.19	83	164.63	16.46	165.89	16.65
10/14/1995	0.64	1.27	0.19	83	164.63	16.46	165.90	16.65
10/15/1995	0.64	1.27	0.19	83	164.63	16.46	165.90	16.65
10/16/1995	0.63	1.25	0.19	104	206.28	20.63	207.53	20.82
10/17/1995	0.63	1.25	0.19	126	249.92	24.99	251.17	25.18
10/18/1995	0.63	1.25	0.19	126	249.92	24.99	251.17	25.18
10/19/1995	0.63	1.25	0.19	126	249.92	24.99	251.17	25.18
10/20/1995	0.63	1.25	0.19	126	249.92	24.99	251.17	25.18
10/21/1995	0.63	1.25	0.19	126	249.92	24.99	251.17	25.18
10/22/1995	0.63	1.25	0.19	127	251.90	25.19	253.15	25.38
10/23/1995	0.63	1.25	0.19	126	249.92	24.99	251.17	25.18
10/24/1995	0.62	1.23	0.18	126	249.92	24.99	251.15	25.18
10/25/1995	0.62	1.23	0.18	116	230.08	23.01	231.31	23.19
10/26/1995	0.62	1.23	0.18	86	170.58	17.06	171.81	17.24
10/27/1995	0.62	1.23	0.18	70	138.84	13.88	140.07	14.07
10/28/1995	0.62	1.23	0.18	70	138.84	13.88	140.07	14.07
10/29/1995	0.62	1.23	0.18	70	138.84	13.88	140.07	14.07
10/30/1995	0.62	1.23	0.18	68	134.88	13.49	136.11	13.67
10/31/1995	0.62	1.23	0.18	61	120.99	12.10	122.22	12.28
11/1/1995	0.62	1.23	0.18	53	105.12	10.51	106.35	10.70
11/2/1995	0.61	1.21	0.18	32	63.47	6.35	64.68	6.53
11/3/1995	0.61	1.21	0.18	32	63.47	6.35	64.68	6.53
11/4/1995	0.60	1.19	0.18	32	63.47	6.35	64.66	6.53

Appendix A. Surface-water inflow, Diversion Lake—Continued

Date	08179530 Koenig Creek (site 5)			08179520 Medina River below Medina Lake (site 6)			SW_{in} Diversion Lake total	
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)
11/5/1995	0.60	1.19	0.18	31	61.49	6.15	62.68	6.33
11/6/1995	0.60	1.19	0.18	31	61.49	6.15	62.68	6.33
11/7/1995	0.60	1.19	0.18	31	61.49	6.15	62.68	6.33
11/8/1995	0.60	1.19	0.18	31	61.49	6.15	62.68	6.33
11/9/1995	0.60	1.19	0.18	31	61.49	6.15	62.68	6.33
11/10/1995	0.60	1.19	0.18	31	61.49	6.15	62.68	6.33
11/11/1995	0.60	1.19	0.18	30	59.50	5.95	60.69	6.13
11/12/1995	0.60	1.19	0.18	30	59.50	5.95	60.69	6.13
11/13/1995	0.60	1.19	0.18	30	59.50	5.95	60.69	6.13
11/14/1995	0.60	1.19	0.18	30	59.50	5.95	60.69	6.13
11/15/1995	0.60	1.19	0.18	30	59.50	5.95	60.69	6.13
11/16/1995	0.60	1.19	0.18	30	59.50	5.95	60.69	6.13
11/17/1995	0.59	1.17	0.18	33	65.45	6.55	66.62	6.72
11/18/1995	0.59	1.17	0.18	32	63.47	6.35	64.64	6.52
11/19/1995	0.58	1.15	0.17	31	61.49	6.15	62.64	6.32
11/20/1995	0.58	1.15	0.17	31	61.49	6.15	62.64	6.32
11/21/1995	0.58	1.15	0.17	31	61.49	6.15	62.64	6.32
11/22/1995	0.58	1.15	0.17	30	59.50	5.95	60.65	6.12
11/23/1995	0.58	1.15	0.17	30	59.50	5.95	60.65	6.12
11/24/1995	0.58	1.15	0.17	30	59.50	5.95	60.65	6.12
11/25/1995	0.58	1.15	0.17	30	59.50	5.95	60.65	6.12
11/26/1995	0.58	1.15	0.17	30	59.50	5.95	60.65	6.12
11/27/1995	0.57	1.13	0.17	30	59.50	5.95	60.63	6.12
11/28/1995	0.57	1.13	0.17	30	59.50	5.95	60.63	6.12
11/29/1995	0.57	1.13	0.17	30	59.50	5.95	60.63	6.12
11/30/1995	0.57	1.13	0.17	30	59.50	5.95	60.63	6.12
12/1/1995	0.56	1.11	0.17	30	59.50	5.95	60.61	6.12
12/2/1995	0.56	1.11	0.17	30	59.50	5.95	60.61	6.12
12/3/1995	0.56	1.11	0.17	30	59.50	5.95	60.61	6.12
12/4/1995	0.56	1.11	0.17	30	59.50	5.95	60.61	6.12
12/5/1995	0.56	1.11	0.17	30	59.50	5.95	60.61	6.12
12/6/1995	0.55	1.09	0.16	30	59.50	5.95	60.60	6.11
12/7/1995	0.55	1.09	0.16	30	59.50	5.95	60.60	6.11
12/8/1995	0.54	1.07	0.16	30	59.50	5.95	60.58	6.11
12/9/1995	0.54	1.07	0.16	29	57.52	5.75	58.59	5.91
12/10/1995	0.54	1.07	0.16	30	59.50	5.95	60.58	6.11
12/11/1995	0.54	1.07	0.16	30	59.50	5.95	60.58	6.11
12/12/1995	0.54	1.07	0.16	30	59.50	5.95	60.58	6.11
12/13/1995	0.53	1.05	0.16	30	59.50	5.95	60.56	6.11
12/14/1995	0.52	1.03	0.15	30	59.50	5.95	60.54	6.11
12/15/1995	0.52	1.03	0.15	30	59.50	5.95	60.54	6.11
12/16/1995	0.52	1.03	0.15	29	57.52	5.75	58.55	5.91
12/17/1995	0.52	1.03	0.15	29	57.52	5.75	58.55	5.91
12/18/1995	0.51	1.01	0.15	29	57.52	5.75	58.53	5.90
12/19/1995	0.51	1.01	0.15	29	57.52	5.75	58.53	5.90
12/20/1995	0.51	1.01	0.15	29	57.52	5.75	58.53	5.90
12/21/1995	0.50	0.99	0.15	29	57.52	5.75	58.51	5.90
12/22/1995	0.50	0.99	0.15	29	57.52	5.75	58.51	5.90
12/23/1995	0.49	0.97	0.15	29	57.52	5.75	58.49	5.90

Appendix A. Surface-water inflow, Diversion Lake—Continued

Date	08179530 Koenig Creek (site 5)			08179520 Medina River below Medina Lake (site 6)			SW_{in} Diversion Lake total	
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)
12/24/1995	0.49	0.97	0.15	29	57.52	5.75	58.49	5.90
12/25/1995	0.49	0.97	0.15	29	57.52	5.75	58.49	5.90
12/26/1995	0.48	0.95	0.14	29	57.52	5.75	58.47	5.89
12/27/1995	0.48	0.95	0.14	29	57.52	5.75	58.47	5.89
12/28/1995	0.47	0.93	0.14	29	57.52	5.75	58.45	5.89
12/29/1995	0.47	0.93	0.14	29	57.52	5.75	58.45	5.89
12/30/1995	0.46	0.91	0.14	29	57.52	5.75	58.43	5.89
12/31/1995	0.46	0.91	0.14	29	57.52	5.75	58.43	5.89
1/1/1996	0.45	0.89	0.13	29	57.52	5.75	58.41	5.89
1/2/1996	0.45	0.89	0.13	29	57.52	5.75	58.41	5.89
1/3/1996	0.45	0.89	0.13	29	57.52	5.75	58.41	5.89
1/4/1996	0.44	0.87	0.13	29	57.52	5.75	58.39	5.88
1/5/1996	0.44	0.87	0.13	29	57.52	5.75	58.39	5.88
1/6/1996	0.43	0.85	0.13	29	57.52	5.75	58.37	5.88
1/7/1996	0.43	0.85	0.13	29	57.52	5.75	58.37	5.88
1/8/1996	0.42	0.83	0.12	29	57.52	5.75	58.35	5.88
1/9/1996	0.42	0.83	0.12	29	57.52	5.75	58.35	5.88
1/10/1996	0.41	0.81	0.12	51	101.16	10.12	101.97	10.24
1/11/1996	0.41	0.81	0.12	70	138.84	13.88	139.66	14.01
1/12/1996	0.41	0.81	0.12	57	113.06	11.31	113.87	11.43
1/13/1996	0.40	0.79	0.12	57	113.06	11.31	113.85	11.42
1/14/1996	0.40	0.79	0.12	57	113.06	11.31	113.85	11.42
1/15/1996	0.40	0.79	0.12	57	113.06	11.31	113.85	11.42
1/16/1996	0.39	0.77	0.12	57	113.06	11.31	113.83	11.42
1/17/1996	0.39	0.77	0.12	54	107.11	10.71	107.88	10.83
1/18/1996	0.38	0.75	0.11	48	95.21	9.52	95.96	9.63
1/19/1996	0.38	0.75	0.11	51	101.16	10.12	101.91	10.23
1/20/1996	0.37	0.73	0.11	58	115.04	11.50	115.78	11.61
1/21/1996	0.37	0.73	0.11	58	115.04	11.50	115.78	11.61
1/22/1996	0.37	0.73	0.11	58	115.04	11.50	115.78	11.61
1/23/1996	0.36	0.71	0.11	58	115.04	11.50	115.76	11.61
1/24/1996	0.36	0.71	0.11	53	105.12	10.51	105.84	10.62
1/25/1996	0.36	0.71	0.11	53	105.12	10.51	105.84	10.62
1/26/1996	0.35	0.69	0.10	64	126.94	12.69	127.64	12.80
1/27/1996	0.35	0.69	0.10	71	140.83	14.08	141.52	14.19
1/28/1996	0.35	0.69	0.10	71	140.83	14.08	141.52	14.19
1/29/1996	0.34	0.67	0.10	71	140.83	14.08	141.50	14.18
1/30/1996	0.34	0.67	0.10	74	146.78	14.68	147.45	14.78
1/31/1996	0.34	0.67	0.10	87	172.56	17.26	173.24	17.36
2/1/1996	0.33	0.65	0.10	82	162.64	16.26	163.30	16.36
2/2/1996	0.32	0.63	0.10	64	126.94	12.69	127.58	12.79
2/3/1996	0.32	0.63	0.10	59	117.02	11.70	117.66	11.80
2/4/1996	0.32	0.63	0.10	59	117.02	11.70	117.66	11.80
2/5/1996	0.32	0.63	0.10	74	146.78	14.68	147.41	14.77
2/6/1996	0.31	0.61	0.09	104	206.28	20.63	206.90	20.72
2/7/1996	0.31	0.61	0.09	92	182.48	18.25	183.09	18.34
2/8/1996	0.30	0.60	0.09	85	168.59	16.86	169.19	16.95
2/9/1996	0.30	0.60	0.09	88	174.55	17.45	175.14	17.54
2/10/1996	0.30	0.60	0.09	99	196.36	19.64	196.96	19.73

Appendix A. Surface-water inflow, Diversion Lake—Continued

Date	08179530 Koenig Creek (site 5)			08179520 Medina River below Medina Lake (site 6)			SW_{in} Diversion Lake total	
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)
2/11/1996	0.29	0.58	0.09	99	196.36	19.64	196.94	19.72
2/12/1996	0.29	0.58	0.09	102	202.31	20.23	202.89	20.32
2/13/1996	0.29	0.58	0.09	106	210.25	21.02	210.82	21.11
2/14/1996	0.29	0.58	0.09	105	208.26	20.83	208.84	20.91
2/15/1996	0.28	0.56	0.08	109	216.20	21.62	216.75	21.70
2/16/1996	0.28	0.56	0.08	117	232.07	23.21	232.62	23.29
2/17/1996	0.27	0.54	0.08	118	234.05	23.40	234.58	23.49
2/18/1996	0.27	0.54	0.08	118	234.05	23.40	234.58	23.49
2/19/1996	0.27	0.54	0.08	114	226.12	22.61	226.65	22.69
2/20/1996	0.26	0.52	0.08	107	212.23	21.22	212.75	21.30
2/21/1996	0.26	0.52	0.08	108	214.21	21.42	214.73	21.50
2/22/1996	0.26	0.52	0.08	111	220.17	22.02	220.68	22.09
2/23/1996	0.25	0.50	0.07	118	234.05	23.40	234.55	23.48
2/24/1996	0.25	0.50	0.07	124	245.95	24.60	246.45	24.67
2/25/1996	0.25	0.50	0.07	124	245.95	24.60	246.45	24.67
2/26/1996	0.24	0.48	0.07	124	245.95	24.60	246.43	24.67
2/27/1996	0.24	0.48	0.07	124	245.95	24.60	246.43	24.67
2/28/1996	0.24	0.48	0.07	121	240.00	24.00	240.48	24.07
2/29/1996	0.24	0.48	0.07	104	206.28	20.63	206.76	20.70
3/1/1996	0.23	0.46	0.07	76	150.74	15.07	151.20	15.14
3/2/1996	0.23	0.46	0.07	76	150.74	15.07	151.20	15.14
3/3/1996	0.23	0.46	0.07	76	150.74	15.07	151.20	15.14
3/4/1996	0.23	0.46	0.07	76	150.74	15.07	151.20	15.14
3/5/1996	0.22	0.44	0.07	76	150.74	15.07	151.18	15.14
3/6/1996	0.22	0.44	0.07	75	148.76	14.88	149.20	14.94
3/7/1996	0.22	0.44	0.07	73	144.79	14.48	145.23	14.54
3/8/1996	0.21	0.42	0.06	68	134.88	13.49	135.29	13.55
3/9/1996	0.21	0.42	0.06	68	134.88	13.49	135.29	13.55
3/10/1996	0.21	0.42	0.06	68	134.88	13.49	135.29	13.55
3/11/1996	0.20	0.40	0.06	68	134.88	13.49	135.27	13.55
3/12/1996	0.20	0.40	0.06	68	134.88	13.49	135.27	13.55
3/13/1996	0.19	0.38	0.06	74	146.78	14.68	147.15	14.73
3/14/1996	0.19	0.38	0.06	78	154.71	15.47	155.09	15.53
3/15/1996	0.19	0.38	0.06	84	166.61	16.66	166.99	16.72
3/16/1996	0.18	0.36	0.05	103	204.30	20.43	204.65	20.48
3/17/1996	0.18	0.36	0.05	103	204.30	20.43	204.65	20.48
3/18/1996	0.18	0.36	0.05	104	206.28	20.63	206.64	20.68
3/19/1996	0.17	0.34	0.05	110	218.18	21.82	218.52	21.87
3/20/1996	0.17	0.34	0.05	116	230.08	23.01	230.42	23.06
3/21/1996	0.16	0.32	0.05	135	267.77	26.78	268.09	26.82
3/22/1996	0.16	0.32	0.05	150	297.52	29.75	297.84	29.80
3/23/1996	0.16	0.32	0.05	150	297.52	29.75	297.84	29.80
3/24/1996	0.15	0.30	0.04	150	297.52	29.75	297.82	29.80
3/25/1996	0.15	0.30	0.04	143	283.64	28.36	283.93	28.41
3/26/1996	0.15	0.30	0.04	125	247.93	24.79	248.23	24.84
3/27/1996	0.14	0.28	0.04	114	226.12	22.61	226.39	22.65
3/28/1996	0.14	0.28	0.04	121	240.00	24.00	240.28	24.04
3/29/1996	0.14	0.28	0.04	139	275.70	27.57	275.98	27.61
3/30/1996	0.13	0.26	0.04	139	275.70	27.57	275.96	27.61

Appendix A. Surface-water inflow, Diversion Lake—Continued

Date	08179530 Koenig Creek (site 5)			08179520 Medina River below Medina Lake (site 6)			SW_{in} Diversion Lake total	
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)
3/31/1996	0.13	0.26	0.04	138	273.72	27.37	273.98	27.41
4/1/1996	0.13	0.26	0.04	138	273.72	27.37	273.98	27.41
4/2/1996	0.12	0.24	0.04	138	273.72	27.37	273.96	27.41
4/3/1996	0.12	0.24	0.04	138	273.72	27.37	273.96	27.41
4/4/1996	0.12	0.24	0.04	108	214.21	21.42	214.45	21.46
4/5/1996	0.11	0.22	0.03	90	178.51	17.85	178.73	17.88
4/6/1996	0.11	0.22	0.03	89	176.53	17.65	176.75	17.69
4/7/1996	0.11	0.22	0.03	89	176.53	17.65	176.75	17.69
4/8/1996	0.10	0.20	0.03	89	176.53	17.65	176.73	17.68
4/9/1996	0.10	0.20	0.03	101	200.33	20.03	200.53	20.06
4/10/1996	0.10	0.20	0.03	114	226.12	22.61	226.31	22.64
4/11/1996	0.10	0.19	0.03	120	238.02	23.80	238.21	23.83
4/12/1996	0.09	0.19	0.03	119	236.03	23.60	236.22	23.63
4/13/1996	0.09	0.18	0.03	124	245.95	24.60	246.13	24.62
4/14/1996	0.09	0.17	0.03	127	251.90	25.19	252.08	25.22
4/15/1996	0.09	0.17	0.03	139	275.70	27.57	275.87	27.60
4/16/1996	0.08	0.16	0.02	146	289.59	28.96	289.75	28.98
4/17/1996	0.05	0.10	0.01	146	289.59	28.96	289.69	28.97
4/18/1996	0.08	0.15	0.02	145	287.60	28.76	287.76	28.78
4/19/1996	0.08	0.15	0.02	151	299.50	29.95	299.65	29.97
4/20/1996	0.07	0.15	0.02	171	339.17	33.92	339.32	33.94
4/21/1996	0.07	0.14	0.02	171	339.17	33.92	339.32	33.94
4/22/1996	0.07	0.14	0.02	171	339.17	33.92	339.31	33.94
4/23/1996	0.07	0.13	0.02	171	339.17	33.92	339.31	33.94
4/24/1996	0.07	0.13	0.02	171	339.17	33.92	339.30	33.94
4/25/1996	0.06	0.12	0.02	170	337.19	33.72	337.31	33.74
4/26/1996	0.06	0.12	0.02	170	337.19	33.72	337.31	33.74
4/27/1996	0.06	0.12	0.02	170	337.19	33.72	337.30	33.74
4/28/1996	0.06	0.11	0.02	171	339.17	33.92	339.28	33.93
4/29/1996	0.05	0.11	0.02	171	339.17	33.92	339.28	33.93
4/30/1996	0.05	0.10	0.02	171	339.17	33.92	339.28	33.93
5/1/1996	0.05	0.10	0.01	171	339.17	33.92	339.27	33.93
5/2/1996	0.05	0.09	0.01	174	345.12	34.51	345.22	34.53
5/3/1996	0.05	0.09	0.01	180	357.02	35.70	357.12	35.72
5/4/1996	0.04	0.09	0.01	186	368.93	36.89	369.01	36.91
5/5/1996	0.04	0.08	0.01	187	370.91	37.09	370.99	37.10
5/6/1996	0.04	0.08	0.01	188	372.89	37.29	372.97	37.30
5/7/1996	0.04	0.08	0.01	191	378.84	37.88	378.92	37.90
5/8/1996	0.04	0.07	0.01					
5/9/1996	0.04	0.07	0.01	154	305.45	30.55	305.52	30.56
5/10/1996	0.03	0.07	0.01	91	180.50	18.05	180.56	18.06
5/11/1996	0.03	0.07	0.01	91	180.50	18.05	180.56	18.06
5/12/1996	0.03	0.06	0.01	91	180.50	18.05	180.56	18.06
5/13/1996	0.03	0.06	0.01	91	180.50	18.05	180.56	18.06
5/14/1996	0.03	0.06	0.01	91	180.50	18.05	180.55	18.06
5/15/1996	0.03	0.05	0.01	91	180.50	18.05	180.55	18.06
5/16/1996	0.03	0.05	0.01	91	180.50	18.05	180.55	18.06
5/17/1996	0.02	0.05	0.01	91	180.50	18.05	180.54	18.06
5/18/1996	0.02	0.05	0.01	109	216.20	21.62	216.24	21.63

Appendix A. Surface-water inflow, Diversion Lake—Continued

Date	08179530 Koenig Creek (site 5)			08179520 Medina River below Medina Lake (site 6)			SW_{in} Diversion Lake total	
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)
5/19/1996	0.02	0.04	0.01	127	251.90	25.19	251.94	25.20
5/20/1996	0.02	0.04	0.01	145	287.60	28.76	287.64	28.77
5/21/1996	0.02	0.04	0.01	179	355.04	35.50	355.08	35.51
5/22/1996	0.02	0.04	0.01	194	384.79	38.48	384.83	38.48
5/23/1996	0.02	0.03	0					
5/24/1996	0.02	0.03	0.01					
5/25/1996	0.02	0.03	0					
5/26/1996	0.02	0.03	0					
5/27/1996	0.02	0.03	0					
5/28/1996	0.01	0.03	0					
5/29/1996	0.01	0.03	0					
5/30/1996	0.01	0.03	0					
5/31/1996	0.01	0.02	0					
6/1/1996	0.01	0.02	0					
6/2/1996	0.01	0.02	0					
6/3/1996	0	0	0					
6/4/1996	0	0	0					
6/5/1996	0	0	0					
6/6/1996	0	0	0					
6/7/1996	0	0	0					
6/8/1996	0	0	0					
6/9/1996	0	0	0					
6/10/1996	0	0	0					
6/11/1996	0	0	0					
6/12/1996	0	0	0					
6/13/1996	0	0	0					
6/14/1996	0	0	0					
6/15/1996	0	0	0					
6/16/1996	0	0	0					
6/17/1996	0	0	0					
6/18/1996	0	0	0					
6/19/1996	0	0	0					
6/20/1996	0	0	0					
6/21/1996	0	0	0					
6/22/1996	0	0	0					
6/23/1996	0	0	0					
6/24/1996	0	0	0					
6/25/1996	0	0	0					
6/26/1996	0	0	0					
6/27/1996	0	0	0					
6/28/1996	0	0	0					
6/29/1996	0	0	0					
6/30/1996	0	0	0					
7/1/1996	0	0	0					
7/2/1996	0	0	0					
7/3/1996	0	0	0					
7/4/1996	0	0	0					
7/5/1996	0	0	0					
7/6/1996	0	0	0					

Appendix A. Surface-water inflow, Diversion Lake—Continued

Date	08179530 Koenig Creek (site 5)			08179520 Medina River below Medina Lake (site 6)			SW_{in} Diversion Lake total	
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)
7/7/1996	0	0	0					
7/8/1996	0	0	0					
7/9/1996	0	0	0					
7/10/1996	0	0	0					
7/11/1996	0	0	0					
7/12/1996	0	0	0	110	218.18	21.82	218.18	21.82
7/13/1996	0	0	0	124	245.95	24.60	245.95	24.60
7/14/1996	0	0	0	150	297.52	29.75	297.52	29.75
7/15/1996	0	0	0	159	315.37	31.54	315.37	31.54
7/16/1996	0	0	0	162	321.32	32.13	321.32	32.13
7/17/1996	0	0	0	166	329.26	32.93	329.26	32.93
7/18/1996	0	0	0	169	335.21	33.52	335.21	33.52
7/19/1996	0	0	0	176	349.09	34.91	349.09	34.91
7/20/1996	0	0	0	182	360.99	36.10	360.99	36.10
7/21/1996	0	0	0	189	374.88	37.49	374.88	37.49
7/22/1996	0	0	0	196	388.76	38.88	388.76	38.88
7/23/1996	0	0	0	197	390.74	39.07	390.74	39.07
7/24/1996	0	0	0					
7/25/1996	0	0	0					
7/26/1996	0	0	0					
7/27/1996	0	0	0					
7/28/1996	0	0	0					
7/29/1996	0	0	0					
7/30/1996	0	0	0					
7/31/1996	0	0	0					
8/1/1996	0	0	0					
8/2/1996	0	0	0					
8/3/1996	0	0	0					
8/4/1996	0	0	0					
8/5/1996	0	0	0					
8/6/1996	0	0	0					
8/7/1996	0	0	0					
8/8/1996	0	0	0					
8/9/1996	0	0	0					
8/10/1996	0	0	0					
8/11/1996	0	0	0					
8/12/1996	0	0	0					
8/13/1996	0	0	0					
8/14/1996	0	0	0					
8/15/1996	0	0	0					
8/16/1996	0	0	0					
8/17/1996	0	0	0					
8/18/1996	0	0	0					
8/19/1996	0	0	0					
8/20/1996	0	0	0					
8/21/1996	0	0	0					
8/22/1996	0	0	0					
8/23/1996	0	0	0	122	241.98	24.20	241.98	24.20
8/24/1996	0	0	0	62	122.98	12.30	122.98	12.30

Appendix A. Surface-water inflow, Diversion Lake—Continued

Date	08179530 Koenig Creek (site 5)			08179520 Medina River below Medina Lake (site 6)			SW_{in} Diversion Lake total	
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)
8/25/1996	0	0	0	61	120.99	12.10	120.99	12.10
8/26/1996	0	0	0	34	67.44	6.74	67.44	6.74
8/27/1996	0	0	0	15	29.75	2.98	29.75	2.98
8/28/1996	0	0	0	15	29.75	2.98	29.75	2.98
8/29/1996	0	0	0	15	29.75	2.98	29.75	2.98
8/30/1996	0	0	0	16	31.74	3.17	31.74	3.17
8/31/1996	0	0	0	16	31.74	3.17	31.74	3.17
9/1/1996	0	0	0	16	31.74	3.17	31.74	3.17
9/2/1996	0	0	0	15	29.75	2.98	29.75	2.98
9/3/1996	0	0	0	15	29.75	2.98	29.75	2.98
9/4/1996	0	0	0	15	29.75	2.98	29.75	2.98
9/5/1996	0	0	0	15	29.75	2.98	29.75	2.98
9/6/1996	0	0	0	15	29.75	2.98	29.75	2.98
9/7/1996	0	0	0	15	29.75	2.98	29.75	2.98
9/8/1996	0	0	0	15	29.75	2.98	29.75	2.98
9/9/1996	0	0	0	15	29.75	2.98	29.75	2.98
9/10/1996	0	0	0	15	29.75	2.98	29.75	2.98
9/11/1996	0	0	0	15	29.75	2.98	29.75	2.98
9/12/1996	0	0	0	15	29.75	2.98	29.75	2.98
9/13/1996	0	0	0	15	29.75	2.98	29.75	2.98
9/14/1996	0	0	0	15	29.75	2.98	29.75	2.98
9/15/1996	0	0	0	16	31.74	3.17	31.74	3.17
9/16/1996	0	0	0	15	29.75	2.98	29.75	2.98
9/17/1996	0	0	0	15	29.75	2.98	29.75	2.98
9/18/1996	0	0	0	30	59.50	5.95	59.50	5.95
9/19/1996	0	0	0	44	87.27	8.73	87.27	8.73
9/20/1996	0	0	0	43	85.29	8.53	85.29	8.53
9/21/1996	0	0	0	43	85.29	8.53	85.29	8.53
9/22/1996	0	0	0	43	85.29	8.53	85.29	8.53
9/23/1996	0	0	0	64	126.94	12.69	126.94	12.69
9/24/1996	0	0	0	87	172.56	17.26	172.56	17.26
9/25/1996	0	0	0	87	172.56	17.26	172.56	17.26
9/26/1996	0	0	0	87	172.56	17.26	172.56	17.26
9/27/1996	0	0	0	77	152.73	15.27	152.73	15.27
9/28/1996	0	0	0	57	113.06	11.31	113.06	11.31
9/29/1996	0	0	0	57	113.06	11.31	113.06	11.31
9/30/1996	0	0	0	64	126.94	12.69	126.94	12.69

Appendix A. Surface-water outflow, Medina and Diversion Lakes

[Site numbers correspond to figure 3 and table 2. ft^3/s, cubic feet per second; acre-ft, acre-feet; SW_{out}, surface-water outflow]

Date	Medina Lake					Diversion Lake					
	08179520 Medina River below Medina Lake (site 6)			SW_{out} Medina Lake total		08179990 Medina canal (site 7)			08180015 Medina River below Diversion Lake (site 8) (A)		
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)
8/1/1995	137	271.74	27.17	271.74	27.17						
8/2/1995	137	271.74	27.17	271.74	27.17						
8/3/1995	137	271.74	27.17	271.74	27.17						
8/4/1995	137	271.74	27.17	271.74	27.17						
8/5/1995	140	277.69	27.77	277.69	27.77						
8/6/1995	144	285.62	28.56	285.62	28.56						
8/7/1995	143	283.64	28.36	283.64	28.36						
8/8/1995	143	283.64	28.36	283.64	28.36						
8/9/1995	143	283.64	28.36	283.64	28.36						
8/10/1995	143	283.64	28.36	283.64	28.36						
8/11/1995	143	283.64	28.36	283.64	28.36						
8/12/1995	143	283.64	28.36	283.64	28.36						
8/13/1995	144	285.62	28.56	285.62	28.56						
8/14/1995	143	283.64	28.36	283.64	28.36						
8/15/1995	143	283.64	28.36	283.64	28.36						
8/16/1995	143	283.64	28.36	283.64	28.36						
8/17/1995	143	283.64	28.36	283.64	28.36						
8/18/1995	143	283.64	28.36	283.64	28.36						
8/19/1995	143	283.64	28.36	283.64	28.36						
8/20/1995	143	283.64	28.36	283.64	28.36						
8/21/1995	143	283.64	28.36	283.64	28.36	141.00	279.67	27.97			
8/22/1995	143	283.64	28.36	283.64	28.36	141.00	279.67	27.97			
8/23/1995	143	283.64	28.36	283.64	28.36	141.00	279.67	27.97			
8/24/1995	143	283.64	28.36	283.64	28.36	141.00	279.67	27.97			
8/25/1995	143	283.64	28.36	283.64	28.36	140.00	277.69	27.77			
8/26/1995	143	283.64	28.36	283.64	28.36	137.00	271.74	27.17			
8/27/1995	143	283.64	28.36	283.64	28.36	139.00	275.70	27.57			
8/28/1995	143	283.64	28.36	283.64	28.36	140.00	277.69	27.77			
8/29/1995	143	283.64	28.36	283.64	28.36	133.00	263.80	26.38			
8/30/1995	143	283.64	28.36	283.64	28.36	131.00	259.83	25.98			
8/31/1995	143	283.64	28.36	283.64	28.36	128.00	253.88	25.39	5.70	11.31	1.13
9/1/1995	143	283.64	28.36	283.64	28.36	126.00	249.92	24.99	5.70	11.31	1.13
9/2/1995	143	283.64	28.36	283.64	28.36	123.00	243.97	24.40	5.60	11.11	1.11
9/3/1995	143	283.64	28.36	283.64	28.36	121.00	240.00	24.00	5.60	11.11	1.11
9/4/1995	143	283.64	28.36	283.64	28.36	118.00	234.05	23.40	5.60	11.11	1.11
9/5/1995	143	283.64	28.36	283.64	28.36	116.00	230.08	23.01	5.50	10.91	1.09
9/6/1995	143	283.64	28.36	283.64	28.36	113.00	224.13	22.41	5.40	10.71	1.07
9/7/1995	143	283.64	28.36	283.64	28.36	111.00	220.17	22.02	5.40	10.71	1.07
9/8/1995	143	283.64	28.36	283.64	28.36	113.00	224.13	22.41	5.40	10.71	1.07
9/9/1995	143	283.64	28.36	283.64	28.36	106.00	210.25	21.02	5.20	10.31	1.03
9/10/1995	143	283.64	28.36	283.64	28.36	103.00	204.30	20.43	5.30	10.51	1.05
9/11/1995	135	267.77	26.78	267.77	26.78	103.00	204.30	20.43	5.30	10.51	1.05
9/12/1995	112	222.15	22.21	222.15	22.21	102.00	202.31	20.23	5.30	10.51	1.05
9/13/1995	112	222.15	22.21	222.15	22.21	101.00	200.33	20.03	5.20	10.31	1.03
9/14/1995	112	222.15	22.21	222.15	22.21	100.00	198.35	19.83	4.90	9.72	0.97
9/15/1995	112	222.15	22.21	222.15	22.21	99.00	196.36	19.64	4.90	9.72	0.97

Appendix A. Surface-water outflow, Medina and Diversion Lakes—Continued

Date	08180500 Medina River near Riomedina (site 9) (B)			Diversion Lake				Increase in streamflow site 8 (A) to site 9 (B) (acre-ft)
				SW_{out} (A) Diversion Lake total		SW_{out} (B) Diversion Lake total		
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	
8/1/1995	23.00	45.62	4.56					
8/2/1995	23.00	45.62	4.56					
8/3/1995	22.00	43.64	4.36					
8/4/1995	21.00	41.65	4.17					
8/5/1995	21.00	41.65	4.17					
8/6/1995	21.00	41.65	4.17					
8/7/1995	21.00	41.65	4.17					
8/8/1995	21.00	41.65	4.17					
8/9/1995	21.00	41.65	4.17					
8/10/1995	21.00	41.65	4.17					
8/11/1995	21.00	41.65	4.17					
8/12/1995	21.00	41.65	4.17					
8/13/1995	21.00	41.65	4.17					
8/14/1995	21.00	41.65	4.17					
8/15/1995	21.00	41.65	4.17					
8/16/1995	21.00	41.65	4.17					
8/17/1995	21.00	41.65	4.17					
8/18/1995	21.00	41.65	4.17					
8/19/1995	21.00	41.65	4.17					
8/20/1995	21.00	41.65	4.17					
8/21/1995	21.00	41.65	4.17			321.32	32.13	
8/22/1995	21.00	41.65	4.17			321.32	32.13	
8/23/1995	21.00	41.65	4.17			321.32	32.13	
8/24/1995	21.00	41.65	4.17			321.32	32.13	
8/25/1995	21.00	41.65	4.17			319.34	31.93	
8/26/1995	21.00	41.65	4.17			313.39	31.34	
8/27/1995	22.00	43.64	4.36			319.34	31.93	
8/28/1995	21.00	41.65	4.17			319.34	31.93	
8/29/1995	21.00	41.65	4.17			305.45	30.55	
8/30/1995	21.00	41.65	4.17			301.49	30.15	
8/31/1995	21.00	41.65	4.17	265.19	26.52	295.54	29.55	30.35
9/1/1995	21.00	41.65	4.17	261.22	26.12	291.57	29.16	30.35
9/2/1995	20.00	39.67	3.97	255.07	25.51	283.64	28.36	28.56
9/3/1995	21.00	41.65	4.17	251.11	25.11	281.65	28.17	30.55
9/4/1995	23.00	45.62	4.56	245.16	24.52	279.67	27.97	34.51
9/5/1995	22.00	43.64	4.36	240.99	24.10	273.72	27.37	32.73
9/6/1995	22.00	43.64	4.36	234.84	23.48	267.77	26.78	32.93
9/7/1995	22.00	43.64	4.36	230.88	23.09	263.80	26.38	32.93
9/8/1995	22.00	43.64	4.36	234.84	23.48	267.77	26.78	32.93
9/9/1995	22.00	43.64	4.36	220.56	22.06	253.88	25.39	33.32
9/10/1995	22.00	43.64	4.36	214.81	21.48	247.93	24.79	33.12
9/11/1995	22.00	43.64	4.36	214.81	21.48	247.93	24.79	33.12
9/12/1995	22.00	43.64	4.36	212.83	21.28	245.95	24.60	33.12
9/13/1995	22.00	43.64	4.36	210.64	21.06	243.97	24.40	33.32
9/14/1995	22.00	43.64	4.36	208.07	20.81	241.98	24.20	33.92
9/15/1995	22.00	43.64	4.36	206.08	20.61	240.00	24.00	33.92

Appendix A. Surface-water outflow, Medina and Diversion Lakes—Continued

Date	Medina Lake					Diversion Lake					
	08179520 Medina River below Medina Lake (site 6)			SW_{out} Medina Lake total		08179990 Medina canal (site 7)			08180015 Medina River below Diversion Lake (site 8) (A)		
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)
9/16/1995	112	222.15	22.21	222.15	22.21	99.00	196.36	19.64	4.90	9.72	0.97
9/17/1995	112	222.15	22.21	222.15	22.21	99.00	196.36	19.64	4.90	9.72	0.97
9/18/1995	112	222.15	22.21	222.15	22.21	98.00	194.38	19.44	4.90	9.72	0.97
9/19/1995	120	238.02	23.80	238.02	23.80	99.00	196.36	19.64	4.90	9.72	0.97
9/20/1995						46	91.24	9.12	6.4	12.69	1.27
9/21/1995	34	67.44	6.74	67.44	6.74	0	0	0	7.30	14.48	1.45
9/22/1995	34	67.44	6.74	67.44	6.74	0	0	0	7.60	15.07	1.51
9/23/1995	33	65.45	6.55	65.45	6.55	0	0	0	8.00	15.87	1.59
9/24/1995	33	65.45	6.55	65.45	6.55	0	0	0	8.40	16.66	1.67
9/25/1995	33	65.45	6.55	65.45	6.55	0	0	0	8.40	16.66	1.67
9/26/1995	33	65.45	6.55	65.45	6.55	16.00	31.74	3.17	8.40	16.66	1.67
9/27/1995	33	65.45	6.55	65.45	6.55	67.00	132.89	13.29	8.80	17.45	1.75
9/28/1995	33	65.45	6.55	65.45	6.55	51.00	101.16	10.12	8.80	17.45	1.75
9/29/1995	33	65.45	6.55	65.45	6.55	50.00	99.17	9.92	8.60	17.06	1.71
9/30/1995	32	63.47	6.35	63.47	6.35	49.00	97.19	9.72	8.40	16.66	1.67
10/1/1995	32	63.47	6.35	63.47	6.35	48.00	95.21	9.52	8.40	16.66	1.67
10/2/1995	32	63.47	6.35	63.47	6.35	46.00	91.24	9.12	8.40	16.66	1.67
10/3/1995	32	63.47	6.35	63.47	6.35	65.00	128.93	12.89	7.90	15.67	1.57
10/4/1995	32	63.47	6.35	63.47	6.35	76.00	150.74	15.07	7.60	15.07	1.51
10/5/1995	32	63.47	6.35	63.47	6.35	73.00	144.79	14.48	7.10	14.08	1.41
10/6/1995	32	63.47	6.35	63.47	6.35	71.00	140.83	14.08	6.80	13.49	1.35
10/7/1995	32	63.47	6.35	63.47	6.35	71.00	140.83	14.08	6.20	12.30	1.23
10/8/1995	32	63.47	6.35	63.47	6.35	70.00	138.84	13.88	5.70	11.31	1.13
10/9/1995	32	63.47	6.35	63.47	6.35	69.00	136.86	13.69	5.20	10.31	1.03
10/10/1995	32	63.47	6.35	63.47	6.35	69.00	136.86	13.69	4.60	9.12	0.91
10/11/1995	45	89.26	8.93	89.26	8.93	56.00	111.07	11.11	4.60	9.12	0.91
10/12/1995	71	140.83	14.08	140.83	14.08	57.00	113.06	11.31	4.60	9.12	0.91
10/13/1995	83	164.63	16.46	164.63	16.46	67.00	132.89	13.29	4.60	9.12	0.91
10/14/1995	83	164.63	16.46	164.63	16.46	73.00	144.79	14.48	4.60	9.12	0.91
10/15/1995	83	164.63	16.46	164.63	16.46	75.00	148.76	14.88	4.70	9.32	0.93
10/16/1995	104	206.28	20.63	206.28	20.63	79.00	156.69	15.67	4.80	9.52	0.95
10/17/1995	126	249.92	24.99	249.92	24.99	93.00	184.46	18.45	4.90	9.72	0.97
10/18/1995	126	249.92	24.99	249.92	24.99	102.00	202.31	20.23	5.30	10.51	1.05
10/19/1995	126	249.92	24.99	249.92	24.99	107.00	212.23	21.22	5.70	11.31	1.13
10/20/1995	126	249.92	24.99	249.92	24.99	109.00	216.20	21.62	5.70	11.31	1.13
10/21/1995	126	249.92	24.99	249.92	24.99	109.00	216.20	21.62	5.70	11.31	1.13
10/22/1995	127	251.90	25.19	251.90	25.19	110.00	218.18	21.82	5.70	11.31	1.13
10/23/1995	126	249.92	24.99	249.92	24.99	111.00	220.17	22.02	5.70	11.31	1.13
10/24/1995	126	249.92	24.99	249.92	24.99	111.00	220.17	22.02	5.70	11.31	1.13
10/25/1995	116	230.08	23.01	230.08	23.01	101.00	200.33	20.03	5.70	11.31	1.13
10/26/1995	86	170.58	17.06	170.58	17.06	86.00	170.58	17.06	5.70	11.31	1.13
10/27/1995	70	138.84	13.88	138.84	13.88	80.00	158.68	15.87	5.70	11.31	1.13
10/28/1995	70	138.84	13.88	138.84	13.88	79.00	156.69	15.67	5.30	10.51	1.05
10/29/1995	70	138.84	13.88	138.84	13.88	75.00	148.76	14.88	4.90	9.72	0.97
10/30/1995	68	134.88	13.49	134.88	13.49	72.00	142.81	14.28	4.90	9.72	0.97
10/31/1995	61	120.99	12.10	120.99	12.10	44.00	87.27	8.73	5.00	9.92	0.99
11/1/1995	53	105.12	10.51	105.12	10.51	17.00	33.72	3.37	6.10	12.10	1.21
11/2/1995	32	63.47	6.35	63.47	6.35	18.00	35.70	3.57	6.50	12.89	1.29

Appendix A. Surface-water outflow, Medina and Diversion Lakes—Continued

Date	Diversion Lake							
	08180500 Medina River near Riomedina (site 9) (B)			SW_{out} (A) Diversion Lake total		SW_{out} (B) Diversion Lake total		Increase in streamflow site 8 (A) to site 9 (B) (acre-ft)
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	
9/16/1995	22.00	43.64	4.36	206.08	20.61	240.00	24.00	33.92
9/17/1995	22.00	43.64	4.36	206.08	20.61	240.00	24.00	33.92
9/18/1995	22.00	43.64	4.36	204.10	20.41	238.02	23.80	33.92
9/19/1995	22.00	43.64	4.36	206.08	20.61	240.00	24.00	33.92
9/20/1995	22.00	43.64	4.36	103.93	10.39	134.88	13.49	30.94
9/21/1995	33.00	65.45	6.55	14.48	1.45	65.45	6.55	50.98
9/22/1995	27.00	53.55	5.36	15.07	1.51	53.55	5.36	38.48
9/23/1995	26.00	51.57	5.16	15.87	1.59	51.57	5.16	35.70
9/24/1995	26.00	51.57	5.16	16.66	1.67	51.57	5.16	34.91
9/25/1995	26.00	51.57	5.16	16.66	1.67	51.57	5.16	34.91
9/26/1995	27.00	53.55	5.36	48.40	4.84	85.29	8.53	36.89
9/27/1995	27.00	53.55	5.36	150.35	15.03	186.45	18.64	36.10
9/28/1995	27.00	53.55	5.36	118.61	11.86	154.71	15.47	36.10
9/29/1995	27.00	53.55	5.36	116.23	11.62	152.73	15.27	36.50
9/30/1995	27.00	53.55	5.36	113.85	11.39	150.74	15.07	36.89
10/1/1995	27.00	53.55	5.36	111.87	11.19	148.76	14.88	36.89
10/2/1995	27.00	53.55	5.36	107.90	10.79	144.79	14.48	36.89
10/3/1995	27.00	53.55	5.36	144.59	14.46	182.48	18.25	37.88
10/4/1995	26.00	51.57	5.16	165.82	16.58	202.31	20.23	36.50
10/5/1995	26.00	51.57	5.16	158.88	15.89	196.36	19.64	37.49
10/6/1995	25.00	49.59	4.96	154.31	15.43	190.41	19.04	36.10
10/7/1995	24.00	47.60	4.76	153.12	15.31	188.43	18.84	35.31
10/8/1995	22.00	43.64	4.36	150.15	15.01	182.48	18.25	32.33
10/9/1995	20.00	39.67	3.97	147.17	14.72	176.53	17.65	29.36
10/10/1995	19.00	37.69	3.77	145.98	14.60	174.55	17.45	28.56
10/11/1995	19.00	37.69	3.77	120.20	12.02	148.76	14.88	28.56
10/12/1995	19.00	37.69	3.77	122.18	12.22	150.74	15.07	28.56
10/13/1995	17.00	33.72	3.37	142.02	14.20	166.61	16.66	24.60
10/14/1995	17.00	33.72	3.37	153.92	15.39	178.51	17.85	24.60
10/15/1995	18.00	35.70	3.57	158.08	15.81	184.46	18.45	26.38
10/16/1995	18.00	35.70	3.57	166.21	16.62	192.40	19.24	26.18
10/17/1995	18.00	35.70	3.57	194.18	19.42	220.17	22.02	25.98
10/18/1995	19.00	37.69	3.77	212.83	21.28	240.00	24.00	27.17
10/19/1995	21.00	41.65	4.17	223.54	22.35	253.88	25.39	30.35
10/20/1995	21.00	41.65	4.17	227.50	22.75	257.85	25.79	30.35
10/21/1995	22.00	43.64	4.36	227.50	22.75	259.83	25.98	32.33
10/22/1995	23.00	45.62	4.56	229.49	22.95	263.80	26.38	34.31
10/23/1995	23.00	45.62	4.56	231.47	23.15	265.78	26.58	34.31
10/24/1995	23.00	45.62	4.56	231.47	23.15	265.78	26.58	34.31
10/25/1995	23.00	45.62	4.56	211.64	21.16	245.95	24.60	34.31
10/26/1995	23.00	45.62	4.56	181.88	18.19	216.20	21.62	34.31
10/27/1995	23.00	45.62	4.56	169.98	17.00	204.30	20.43	34.31
10/28/1995	23.00	45.62	4.56	167.21	16.72	202.31	20.23	35.11
10/29/1995	24.00	47.60	4.76	158.48	15.85	196.36	19.64	37.88
10/30/1995	24.00	47.60	4.76	152.53	15.25	190.41	19.04	37.88
10/31/1995	24.00	47.60	4.76	97.19	9.72	134.88	13.49	37.69
11/1/1995	24.00	47.60	4.76	45.82	4.58	81.32	8.13	35.50
11/2/1995	24.00	47.60	4.76	48.60	4.86	83.31	8.33	34.71

Appendix A. Surface-water outflow, Medina and Diversion Lakes—Continued

Date	Medina Lake					Diversion Lake					
	08179520 Medina River below Medina Lake (site 6)			SW_{out} Medina Lake total		08179990 Medina canal (site 7)			08180015 Medina River below Diversion Lake (site 8) (A)		
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)
11/3/1995	32	63.47	6.35	63.47	6.35	19.00	37.69	3.77	6.80	13.49	1.35
11/4/1995	32	63.47	6.35	63.47	6.35	19.00	37.69	3.77	7.00	13.88	1.39
11/5/1995	31	61.49	6.15	61.49	6.15	20.00	39.67	3.97	7.20	14.28	1.43
11/6/1995	31	61.49	6.15	61.49	6.15	14.00	27.77	2.78	7.50	14.88	1.49
11/7/1995	31	61.49	6.15	61.49	6.15	21.00	41.65	4.17	7.60	15.07	1.51
11/8/1995	31	61.49	6.15	61.49	6.15	36.00	71.40	7.14	7.60	15.07	1.51
11/9/1995	31	61.49	6.15	61.49	6.15	37.00	73.39	7.34	7.20	14.28	1.43
11/10/1995	31	61.49	6.15	61.49	6.15	45.00	89.26	8.93	6.80	13.49	1.35
11/11/1995	30	59.50	5.95	59.50	5.95	44.00	87.27	8.73	6.80	13.49	1.35
11/12/1995	30	59.50	5.95	59.50	5.95	42.00	83.31	8.33	6.80	13.49	1.35
11/13/1995	30	59.50	5.95	59.50	5.95	41.00	81.32	8.13	6.80	13.49	1.35
11/14/1995	30	59.50	5.95	59.50	5.95	45.00	89.26	8.93	6.80	13.49	1.35
11/15/1995	30	59.50	5.95	59.50	5.95	59.00	117.02	11.70	6.60	13.09	1.31
11/16/1995	30	59.50	5.95	59.50	5.95	57.00	113.06	11.31	6.00	11.90	1.19
11/17/1995	33	65.45	6.55	65.45	6.55	17.00	33.72	3.37	5.40	10.71	1.07
11/18/1995	32	63.47	6.35	63.47	6.35	0	0	0	5.80	11.50	1.15
11/19/1995	31	61.49	6.15	61.49	6.15	0	0	0	6.00	11.90	1.19
11/20/1995	31	61.49	6.15	61.49	6.15	0	0	0	6.30	12.50	1.25
11/21/1995	31	61.49	6.15	61.49	6.15	0	0	0	6.80	13.49	1.35
11/22/1995	30	59.50	5.95	59.50	5.95	0	0	0	6.80	13.49	1.35
11/23/1995	30	59.50	5.95	59.50	5.95	0	0	0	6.80	13.49	1.35
11/24/1995	30	59.50	5.95	59.50	5.95	0	0	0	7.20	14.28	1.43
11/25/1995	30	59.50	5.95	59.50	5.95	0	0	0	7.20	14.28	1.43
11/26/1995	30	59.50	5.95	59.50	5.95	0	0	0	7.20	14.28	1.43
11/27/1995	30	59.50	5.95	59.50	5.95	0	0	0	7.20	14.28	1.43
11/28/1995	30	59.50	5.95	59.50	5.95	0	0	0	7.20	14.28	1.43
11/29/1995	30	59.50	5.95	59.50	5.95	37.00	73.39	7.34	7.60	15.07	1.51
11/30/1995	30	59.50	5.95	59.50	5.95	40.00	79.34	7.93	7.40	14.68	1.47
12/1/1995	30	59.50	5.95	59.50	5.95	39.00	77.36	7.74	7.20	14.28	1.43
12/2/1995	30	59.50	5.95	59.50	5.95	41.00	81.32	8.13	7.20	14.28	1.43
12/3/1995	30	59.50	5.95	59.50	5.95	40.00	79.34	7.93	6.80	13.49	1.35
12/4/1995	30	59.50	5.95	59.50	5.95	39.00	77.36	7.74	6.80	13.49	1.35
12/5/1995	30	59.50	5.95	59.50	5.95	38.00	75.37	7.54	6.80	13.49	1.35
12/6/1995	30	59.50	5.95	59.50	5.95	48.00	95.21	9.52	6.10	12.10	1.21
12/7/1995	30	59.50	5.95	59.50	5.95	51.00	101.16	10.12	6.00	11.90	1.19
12/8/1995	30	59.50	5.95	59.50	5.95	44.00	87.27	8.73	5.60	11.11	1.11
12/9/1995	29	57.52	5.75	57.52	5.75	39.00	77.36	7.74	5.30	10.51	1.05
12/10/1995	30	59.50	5.95	59.50	5.95	38.00	75.37	7.54	4.90	9.72	0.97
12/11/1995	30	59.50	5.95	59.50	5.95	46.00	91.24	9.12	4.90	9.72	0.97
12/12/1995	30	59.50	5.95	59.50	5.95	46.00	91.24	9.12	4.90	9.72	0.97
12/13/1995	30	59.50	5.95	59.50	5.95	42.00	83.31	8.33	4.60	9.12	0.91
12/14/1995	30	59.50	5.95	59.50	5.95	39.00	77.36	7.74	4.20	8.33	0.83
12/15/1995	30	59.50	5.95	59.50	5.95	37.00	73.39	7.34	4.20	8.33	0.83
12/16/1995	29	57.52	5.75	57.52	5.75	34.00	67.44	6.74	4.20	8.33	0.83
12/17/1995	29	57.52	5.75	57.52	5.75	33.00	65.45	6.55	4.20	8.33	0.83
12/18/1995	29	57.52	5.75	57.52	5.75	37.00	73.39	7.34	3.90	7.74	0.77
12/19/1995	29	57.52	5.75	57.52	5.75	35.00	69.42	6.94	3.60	7.14	0.71
12/20/1995	29	57.52	5.75	57.52	5.75	33.00	65.45	6.55	3.50	6.94	0.69

Appendix A. Surface-water outflow, Medina and Diversion Lakes—Continued

Date	Diversion Lake							
	08180500 Medina River near Riomedina (site 9) (B)			SW_{out} (A) Diversion Lake total		SW_{out} (B) Diversion Lake total		Increase in streamflow site 8 (A) to site 9 (B) (acre-ft)
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	
11/3/1995	26.00	51.57	5.16	51.17	5.12	89.26	8.93	38.08
11/4/1995	27.00	53.55	5.36	51.57	5.16	91.24	9.12	39.67
11/5/1995	27.00	53.55	5.36	53.95	5.40	93.22	9.32	39.27
11/6/1995	27.00	53.55	5.36	42.64	4.26	81.32	8.13	38.68
11/7/1995	27.00	53.55	5.36	56.73	5.67	95.21	9.52	38.48
11/8/1995	27.00	53.55	5.36	86.48	8.65	124.96	12.50	38.48
11/9/1995	27.00	53.55	5.36	87.67	8.77	126.94	12.69	39.27
11/10/1995	27.00	53.55	5.36	102.74	10.27	142.81	14.28	40.07
11/11/1995	27.00	53.55	5.36	100.76	10.08	140.83	14.08	40.07
11/12/1995	27.00	53.55	5.36	96.79	9.68	136.86	13.69	40.07
11/13/1995	26.00	51.57	5.16	94.81	9.48	132.89	13.29	38.08
11/14/1995	24.00	47.60	4.76	102.74	10.27	136.86	13.69	34.12
11/15/1995	24.00	47.60	4.76	130.12	13.01	164.63	16.46	34.51
11/16/1995	23.00	45.62	4.56	124.96	12.50	158.68	15.87	33.72
11/17/1995	22.00	43.64	4.36	44.43	4.44	77.36	7.74	32.93
11/18/1995	22.00	43.64	4.36	11.50	1.15	43.64	4.36	32.13
11/19/1995	22.00	43.64	4.36	11.90	1.19	43.64	4.36	31.74
11/20/1995	22.00	43.64	4.36	12.50	1.25	43.64	4.36	31.14
11/21/1995	22.00	43.64	4.36	13.49	1.35	43.64	4.36	30.15
11/22/1995	22.00	43.64	4.36	13.49	1.35	43.64	4.36	30.15
11/23/1995	22.00	43.64	4.36	13.49	1.35	43.64	4.36	30.15
11/24/1995	23.00	45.62	4.56	14.28	1.43	45.62	4.56	31.34
11/25/1995	24.00	47.60	4.76	14.28	1.43	47.60	4.76	33.32
11/26/1995	24.00	47.60	4.76	14.28	1.43	47.60	4.76	33.32
11/27/1995	24.00	47.60	4.76	14.28	1.43	47.60	4.76	33.32
11/28/1995	24.00	47.60	4.76	14.28	1.43	47.60	4.76	33.32
11/29/1995	26.00	51.57	5.16	88.46	8.85	124.96	12.50	36.50
11/30/1995	27.00	53.55	5.36	94.02	9.40	132.89	13.29	38.88
12/1/1995	26.00	51.57	5.16	91.64	9.16	128.93	12.89	37.29
12/2/1995	27.00	53.55	5.36	95.60	9.56	134.88	13.49	39.27
12/3/1995	27.00	53.55	5.36	92.83	9.28	132.89	13.29	40.07
12/4/1995	26.00	51.57	5.16	90.84	9.08	128.93	12.89	38.08
12/5/1995	24.00	47.60	4.76	88.86	8.89	122.98	12.30	34.12
12/6/1995	24.00	47.60	4.76	107.31	10.73	142.81	14.28	35.50
12/7/1995	24.00	47.60	4.76	113.06	11.31	148.76	14.88	35.70
12/8/1995	23.00	45.62	4.56	98.38	9.84	132.89	13.29	34.51
12/9/1995	23.00	45.62	4.56	87.87	8.79	122.98	12.30	35.11
12/10/1995	21.00	41.65	4.17	85.09	8.51	117.02	11.70	31.93
12/11/1995	21.00	41.65	4.17	100.96	10.10	132.89	13.29	31.93
12/12/1995	21.00	41.65	4.17	100.96	10.10	132.89	13.29	31.93
12/13/1995	21.00	41.65	4.17	92.43	9.24	124.96	12.50	32.53
12/14/1995	21.00	41.65	4.17	85.69	8.57	119.01	11.90	33.32
12/15/1995	19.00	37.69	3.77	81.72	8.17	111.07	11.11	29.36
12/16/1995	19.00	37.69	3.77	75.77	7.58	105.12	10.51	29.36
12/17/1995	19.00	37.69	3.77	73.79	7.38	103.14	10.31	29.36
12/18/1995	19.00	37.69	3.77	81.12	8.11	111.07	11.11	29.95
12/19/1995	19.00	37.69	3.77	76.56	7.66	107.11	10.71	30.55
12/20/1995	19.00	37.69	3.77	72.40	7.24	103.14	10.31	30.74

Appendix A. Surface-water outflow, Medina and Diversion Lakes—Continued

Date	Medina Lake					Diversion Lake					
	08179520 Medina River below Medina Lake (site 6)			SW_{out} Medina Lake total		08179990 Medina canal (site 7)			08180015 Medina River below Diversion Lake (site 8) (A)		
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)
12/21/1995	29	57.52	5.75	57.52	5.75	31.00	61.49	6.15	3.50	6.94	0.69
12/22/1995	29	57.52	5.75	57.52	5.75	11.00	21.82	2.18	3.50	6.94	0.69
12/23/1995	29	57.52	5.75	57.52	5.75	0	0	0	3.50	6.94	0.69
12/24/1995	29	57.52	5.75	57.52	5.75	0	0	0	3.90	7.74	0.77
12/25/1995	29	57.52	5.75	57.52	5.75	0	0	0	4.20	8.33	0.83
12/26/1995	29	57.52	5.75	57.52	5.75	0	0	0	4.70	9.32	0.93
12/27/1995	29	57.52	5.75	57.52	5.75	20.00	39.67	3.97	4.90	9.72	0.97
12/28/1995	29	57.52	5.75	57.52	5.75	31.00	61.49	6.15	4.90	9.72	0.97
12/29/1995	29	57.52	5.75	57.52	5.75	33.00	65.45	6.55	4.90	9.72	0.97
12/30/1995	29	57.52	5.75	57.52	5.75	32.00	63.47	6.35	4.90	9.72	0.97
12/31/1995	29	57.52	5.75	57.52	5.75	31.00	61.49	6.15	4.80	9.52	0.95
1/1/1996	29	57.52	5.75	57.52	5.75	29.00	57.52	5.75	4.40	8.73	0.87
1/2/1996	29	57.52	5.75	57.52	5.75	28.00	55.54	5.55	4.60	9.12	0.91
1/3/1996	29	57.52	5.75	57.52	5.75	28.00	55.54	5.55	4.60	9.12	0.91
1/4/1996	29	57.52	5.75	57.52	5.75	31.00	61.49	6.15	4.60	9.12	0.91
1/5/1996	29	57.52	5.75	57.52	5.75	33.00	65.45	6.55	4.50	8.93	0.89
1/6/1996	29	57.52	5.75	57.52	5.75	31.00	61.49	6.15	4.10	8.13	0.81
1/7/1996	29	57.52	5.75	57.52	5.75	29.00	57.52	5.75	3.90	7.74	0.77
1/8/1996	29	57.52	5.75	57.52	5.75	28.00	55.54	5.55	3.90	7.74	0.77
1/9/1996	29	57.52	5.75	57.52	5.75	28.00	55.54	5.55	3.90	7.74	0.77
1/10/1996	51	101.16	10.12	101.16	10.12	31.00	61.49	6.15	3.90	7.74	0.77
1/11/1996	70	138.84	13.88	138.84	13.88	44.00	87.27	8.73	4.30	8.53	0.85
1/12/1996	57	113.06	11.31	113.06	11.31	48.00	95.21	9.52	4.60	9.12	0.91
1/13/1996	57	113.06	11.31	113.06	11.31	50.00	99.17	9.92	4.40	8.73	0.87
1/14/1996	57	113.06	11.31	113.06	11.31	51.00	101.16	10.12	4.20	8.33	0.83
1/15/1996	57	113.06	11.31	113.06	11.31	51.00	101.16	10.12	4.20	8.33	0.83
1/16/1996	57	113.06	11.31	113.06	11.31	51.00	101.16	10.12	4.20	8.33	0.83
1/17/1996	54	107.11	10.71	107.11	10.71	50.00	99.17	9.92	4.20	8.33	0.83
1/18/1996	48	95.21	9.52	95.21	9.52	45.00	89.26	8.93	4.20	8.33	0.83
1/19/1996	51	101.16	10.12	101.16	10.12	44.00	87.27	8.73	4.20	8.33	0.83
1/20/1996	58	115.04	11.50	115.04	11.50	47.00	93.22	9.32	4.20	8.33	0.83
1/21/1996	58	115.04	11.50	115.04	11.50	49.00	97.19	9.72	4.20	8.33	0.83
1/22/1996	58	115.04	11.50	115.04	11.50	49.00	97.19	9.72	4.20	8.33	0.83
1/23/1996	58	115.04	11.50	115.04	11.50	50.00	99.17	9.92	4.20	8.33	0.83
1/24/1996	53	105.12	10.51	105.12	10.51	47.00	93.22	9.32	4.20	8.33	0.83
1/25/1996	53	105.12	10.51	105.12	10.51	46.00	91.24	9.12	4.40	8.73	0.87
1/26/1996	64	126.94	12.69	126.94	12.69	50.00	99.17	9.92	4.60	9.12	0.91
1/27/1996	71	140.83	14.08	140.83	14.08	53.00	105.12	10.51	4.60	9.12	0.91
1/28/1996	71	140.83	14.08	140.83	14.08	56.00	111.07	11.11	4.60	9.12	0.91
1/29/1996	71	140.83	14.08	140.83	14.08	60.00	119.01	11.90	4.60	9.12	0.91
1/30/1996	74	146.78	14.68	146.78	14.68	62.00	122.98	12.30	4.70	9.32	0.93
1/31/1996	87	172.56	17.26	172.56	17.26	66.00	130.91	13.09	5.30	10.51	1.05
2/1/1996	82	162.64	16.26	162.64	16.26	62.00	122.98	12.30	5.30	10.51	1.05
2/2/1996	64	126.94	12.69	126.94	12.69	58.00	115.04	11.50	5.30	10.51	1.05
2/3/1996	59	117.02	11.70	117.02	11.70	59.00	117.02	11.70	5.30	10.51	1.05
2/4/1996	59	117.02	11.70	117.02	11.70	56.00	111.07	11.11	5.30	10.51	1.05
2/5/1996	74	146.78	14.68	146.78	14.68	56.00	111.07	11.11	4.90	9.72	0.97
2/6/1996	104	206.28	20.63	206.28	20.63	71.00	140.83	14.08	5.10	10.12	1.01

Appendix A. Surface-water outflow, Medina and Diversion Lakes—Continued

Date	08180500 Medina River near Riomedina (site 9) (B)			Diversion Lake				Increase in streamflow site 8 (A) to site 9 (B) (acre-ft)
				SW_{out} (A) Diversion Lake total		SW_{out} (B) Diversion Lake total		
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	
12/21/1995	19.00	37.69	3.77	68.43	6.84	99.17	9.92	30.74
12/22/1995	19.00	37.69	3.77	28.76	2.88	59.50	5.95	30.74
12/23/1995	17.00	33.72	3.37	6.94	0.69	33.72	3.37	26.78
12/24/1995	16.00	31.74	3.17	7.74	0.77	31.74	3.17	24.00
12/25/1995	16.00	31.74	3.17	8.33	0.83	31.74	3.17	23.40
12/26/1995	16.00	31.74	3.17	9.32	0.93	31.74	3.17	22.41
12/27/1995	17.00	33.72	3.37	49.39	4.94	73.39	7.34	24.00
12/28/1995	17.00	33.72	3.37	71.21	7.12	95.21	9.52	24.00
12/29/1995	17.00	33.72	3.37	75.17	7.52	99.17	9.92	24.00
12/30/1995	17.00	33.72	3.37	73.19	7.32	97.19	9.72	24.00
12/31/1995	17.00	33.72	3.37	71.01	7.10	95.21	9.52	24.20
1/1/1996	17.00	33.72	3.37	66.25	6.62	91.24	9.12	24.99
1/2/1996	17.00	33.72	3.37	64.66	6.47	89.26	8.93	24.60
1/3/1996	17.00	33.72	3.37	64.66	6.47	89.26	8.93	24.60
1/4/1996	17.00	33.72	3.37	70.61	7.06	95.21	9.52	24.60
1/5/1996	17.00	33.72	3.37	74.38	7.44	99.17	9.92	24.79
1/6/1996	17.00	33.72	3.37	69.62	6.96	95.21	9.52	25.59
1/7/1996	17.00	33.72	3.37	65.26	6.53	91.24	9.12	25.98
1/8/1996	16.00	31.74	3.17	63.27	6.33	87.27	8.73	24.00
1/9/1996	16.00	31.74	3.17	63.27	6.33	87.27	8.73	24.00
1/10/1996	16.00	31.74	3.17	69.22	6.92	93.22	9.32	24.00
1/11/1996	16.00	31.74	3.17	95.80	9.58	119.01	11.90	23.21
1/12/1996	16.00	31.74	3.17	104.33	10.43	126.94	12.69	22.61
1/13/1996	16.00	31.74	3.17	107.90	10.79	130.91	13.09	23.01
1/14/1996	16.00	31.74	3.17	109.49	10.95	132.89	13.29	23.40
1/15/1996	16.00	31.74	3.17	109.49	10.95	132.89	13.29	23.40
1/16/1996	16.00	31.74	3.17	109.49	10.95	132.89	13.29	23.40
1/17/1996	16.00	31.74	3.17	107.50	10.75	130.91	13.09	23.40
1/18/1996	16.00	31.74	3.17	97.59	9.76	120.99	12.10	23.40
1/19/1996	16.00	31.74	3.17	95.60	9.56	119.01	11.90	23.40
1/20/1996	16.00	31.74	3.17	101.55	10.16	124.96	12.50	23.40
1/21/1996	16.00	31.74	3.17	105.52	10.55	128.93	12.89	23.40
1/22/1996	17.00	33.72	3.37	105.52	10.55	130.91	13.09	25.39
1/23/1996	17.00	33.72	3.37	107.50	10.75	132.89	13.29	25.39
1/24/1996	17.00	33.72	3.37	101.55	10.16	126.94	12.69	25.39
1/25/1996	17.00	33.72	3.37	99.97	10.00	124.96	12.50	24.99
1/26/1996	17.00	33.72	3.37	108.30	10.83	132.89	13.29	24.60
1/27/1996	17.00	33.72	3.37	114.25	11.42	138.84	13.88	24.60
1/28/1996	17.00	33.72	3.37	120.20	12.02	144.79	14.48	24.60
1/29/1996	17.00	33.72	3.37	128.13	12.81	152.73	15.27	24.60
1/30/1996	17.00	33.72	3.37	132.30	13.23	156.69	15.67	24.40
1/31/1996	17.00	33.72	3.37	141.42	14.14	164.63	16.46	23.21
2/1/1996	17.00	33.72	3.37	133.49	13.35	156.69	15.67	23.21
2/2/1996	18.00	35.70	3.57	125.55	12.56	150.74	15.07	25.19
2/3/1996	18.00	35.70	3.57	127.54	12.75	152.73	15.27	25.19
2/4/1996	17.00	33.72	3.37	121.59	12.16	144.79	14.48	23.21
2/5/1996	17.00	33.72	3.37	120.79	12.08	144.79	14.48	24.00
2/6/1996	17.00	33.72	3.37	150.94	15.09	174.55	17.45	23.60

Appendix A. Surface-water outflow, Medina and Diversion Lakes—Continued

Date	Medina Lake					Diversion Lake					
	08179520 Medina River below Medina Lake (site 6)			SW_{out} Medina Lake total		08179990 Medina canal (site 7)			08180015 Medina River below Diversion Lake (site 8) (A)		
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)
2/7/1996	92	182.48	18.25	182.48	18.25	76.00	150.74	15.07	5.30	10.51	1.05
2/8/1996	85	168.59	16.86	168.59	16.86	75.00	148.76	14.88	5.30	10.51	1.05
2/9/1996	88	174.55	17.45	174.55	17.45	75.00	148.76	14.88	5.30	10.51	1.05
2/10/1996	99	196.36	19.64	196.36	19.64	80.00	158.68	15.87	5.30	10.51	1.05
2/11/1996	99	196.36	19.64	196.36	19.64	81.00	160.66	16.07	5.30	10.51	1.05
2/12/1996	102	202.31	20.23	202.31	20.23	82.00	162.64	16.26	5.30	10.51	1.05
2/13/1996	106	210.25	21.02	210.25	21.02	86.00	170.58	17.06	5.30	10.51	1.05
2/14/1996	105	208.26	20.83	208.26	20.83	90.00	178.51	17.85	5.30	10.51	1.05
2/15/1996	109	216.20	21.62	216.20	21.62	91.00	180.50	18.05	5.30	10.51	1.05
2/16/1996	117	232.07	23.21	232.07	23.21	96.00	190.41	19.04	5.30	10.51	1.05
2/17/1996	118	234.05	23.40	234.05	23.40	98.00	194.38	19.44	5.30	10.51	1.05
2/18/1996	118	234.05	23.40	234.05	23.40	98.00	194.38	19.44	5.30	10.51	1.05
2/19/1996	114	226.12	22.61	226.12	22.61	99.00	196.36	19.64	5.40	10.71	1.07
2/20/1996	107	212.23	21.22	212.23	21.22	95.00	188.43	18.84	5.30	10.51	1.05
2/21/1996	108	214.21	21.42	214.21	21.42	93.00	184.46	18.45	5.30	10.51	1.05
2/22/1996	111	220.17	22.02	220.17	22.02	92.00	182.48	18.25	5.30	10.51	1.05
2/23/1996	118	234.05	23.40	234.05	23.40	94.00	186.45	18.64	5.30	10.51	1.05
2/24/1996	124	245.95	24.60	245.95	24.60	98.00	194.38	19.44	5.30	10.51	1.05
2/25/1996	124	245.95	24.60	245.95	24.60	101.00	200.33	20.03	5.30	10.51	1.05
2/26/1996	124	245.95	24.60	245.95	24.60	103.00	204.30	20.43	5.30	10.51	1.05
2/27/1996	124	245.95	24.60	245.95	24.60	104.00	206.28	20.63	5.30	10.51	1.05
2/28/1996	121	240.00	24.00	240.00	24.00	104.00	206.28	20.63	5.30	10.51	1.05
2/29/1996	104	206.28	20.63	206.28	20.63	101.00	200.33	20.03	5.40	10.71	1.07
3/1/1996	76	150.74	15.07	150.74	15.07	71.00	140.83	14.08	5.30	10.51	1.05
3/2/1996	76	150.74	15.07	150.74	15.07	52.00	103.14	10.31	5.30	10.51	1.05
3/3/1996	76	150.74	15.07	150.74	15.07	55.00	109.09	10.91	5.30	10.51	1.05
3/4/1996	76	150.74	15.07	150.74	15.07	63.00	124.96	12.50	5.30	10.51	1.05
3/5/1996	76	150.74	15.07	150.74	15.07	65.00	128.93	12.89	5.30	10.51	1.05
3/6/1996	75	148.76	14.88	148.76	14.88	63.00	124.96	12.50	5.30	10.51	1.05
3/7/1996	73	144.79	14.48	144.79	14.48	58.00	115.04	11.50	5.30	10.51	1.05
3/8/1996	68	134.88	13.49	134.88	13.49	54.00	107.11	10.71	5.30	10.51	1.05
3/9/1996	68	134.88	13.49	134.88	13.49	54.00	107.11	10.71	5.30	10.51	1.05
3/10/1996	68	134.88	13.49	134.88	13.49	54.00	107.11	10.71	5.30	10.51	1.05
3/11/1996	68	134.88	13.49	134.88	13.49	54.00	107.11	10.71	5.30	10.51	1.05
3/12/1996	68	134.88	13.49	134.88	13.49	71.00	140.83	14.08	5.30	10.51	1.05
3/13/1996	74	146.78	14.68	146.78	14.68	70.00	138.84	13.88	5.30	10.51	1.05
3/14/1996	78	154.71	15.47	154.71	15.47	69.00	136.86	13.69	5.30	10.51	1.05
3/15/1996	84	166.61	16.66	166.61	16.66	70.00	138.84	13.88	5.30	10.51	1.05
3/16/1996	103	204.30	20.43	204.30	20.43	81.00	160.66	16.07	5.30	10.51	1.05
3/17/1996	103	204.30	20.43	204.30	20.43	84.00	166.61	16.66	5.30	10.51	1.05
3/18/1996	104	206.28	20.63	206.28	20.63	87.00	172.56	17.26	5.30	10.51	1.05
3/19/1996	110	218.18	21.82	218.18	21.82	91.00	180.50	18.05	5.50	10.91	1.09
3/20/1996	116	230.08	23.01	230.08	23.01	94.00	186.45	18.64	5.70	11.31	1.13
3/21/1996	135	267.77	26.78	267.77	26.78	95.00	188.43	18.84	5.70	11.31	1.13
3/22/1996	150	297.52	29.75	297.52	29.75	95.00	188.43	18.84	5.70	11.31	1.13
3/23/1996	150	297.52	29.75	297.52	29.75	95.00	188.43	18.84	5.30	10.51	1.05
3/24/1996	150	297.52	29.75	297.52	29.75	95.00	188.43	18.84	5.30	10.51	1.05
3/25/1996	143	283.64	28.36	283.64	28.36	95.00	188.43	18.84	5.30	10.51	1.05

Appendix A. Surface-water outflow, Medina and Diversion Lakes—Continued

Date	Diversion Lake							
	08180500 Medina River near Riomedina (site 9) (B)			SW_{out} (A) Diversion Lake total		SW_{out} (B) Diversion Lake total		Increase in streamflow site 8 (A) to site 9 (B) (acre-ft)
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	
2/7/1996	19.00	37.69	3.77	161.26	16.13	188.43	18.84	27.17
2/8/1996	19.00	37.69	3.77	159.27	15.93	186.45	18.64	27.17
2/9/1996	19.00	37.69	3.77	159.27	15.93	186.45	18.64	27.17
2/10/1996	19.00	37.69	3.77	169.19	16.92	196.36	19.64	27.17
2/11/1996	19.00	37.69	3.77	171.17	17.12	198.35	19.83	27.17
2/12/1996	19.00	37.69	3.77	173.16	17.32	200.33	20.03	27.17
2/13/1996	19.00	37.69	3.77	181.09	18.11	208.26	20.83	27.17
2/14/1996	19.00	37.69	3.77	189.02	18.90	216.20	21.62	27.17
2/15/1996	19.00	37.69	3.77	191.01	19.10	218.18	21.82	27.17
2/16/1996	19.00	37.69	3.77	200.93	20.09	228.10	22.81	27.17
2/17/1996	19.00	37.69	3.77	204.89	20.49	232.07	23.21	27.17
2/18/1996	19.00	37.69	3.77	204.89	20.49	232.07	23.21	27.17
2/19/1996	19.00	37.69	3.77	207.07	20.71	234.05	23.40	26.98
2/20/1996	19.00	37.69	3.77	198.94	19.89	226.12	22.61	27.17
2/21/1996	18.00	35.70	3.57	194.98	19.50	220.17	22.02	25.19
2/22/1996	18.00	35.70	3.57	192.99	19.30	218.18	21.82	25.19
2/23/1996	18.00	35.70	3.57	196.96	19.70	222.15	22.21	25.19
2/24/1996	18.00	35.70	3.57	204.89	20.49	230.08	23.01	25.19
2/25/1996	18.00	35.70	3.57	210.84	21.08	236.03	23.60	25.19
2/26/1996	18.00	35.70	3.57	214.81	21.48	240.00	24.00	25.19
2/27/1996	19.00	37.69	3.77	216.79	21.68	243.97	24.40	27.17
2/28/1996	19.00	37.69	3.77	216.79	21.68	243.97	24.40	27.17
2/29/1996	19.00	37.69	3.77	211.04	21.10	238.02	23.80	26.98
3/1/1996	19.00	37.69	3.77	151.34	15.13	178.51	17.85	27.17
3/2/1996	18.00	35.70	3.57	113.65	11.37	138.84	13.88	25.19
3/3/1996	18.00	35.70	3.57	119.60	11.96	144.79	14.48	25.19
3/4/1996	19.00	37.69	3.77	135.47	13.55	162.64	16.26	27.17
3/5/1996	19.00	37.69	3.77	139.44	13.94	166.61	16.66	27.17
3/6/1996	20.00	39.67	3.97	135.47	13.55	164.63	16.46	29.16
3/7/1996	19.00	37.69	3.77	125.55	12.56	152.73	15.27	27.17
3/8/1996	19.00	37.69	3.77	117.62	11.76	144.79	14.48	27.17
3/9/1996	19.00	37.69	3.77	117.62	11.76	144.79	14.48	27.17
3/10/1996	18.00	35.70	3.57	117.62	11.76	142.81	14.28	25.19
3/11/1996	18.00	35.70	3.57	117.62	11.76	142.81	14.28	25.19
3/12/1996	18.00	35.70	3.57	151.34	15.13	176.53	17.65	25.19
3/13/1996	18.00	35.70	3.57	149.36	14.94	174.55	17.45	25.19
3/14/1996	18.00	35.70	3.57	147.37	14.74	172.56	17.26	25.19
3/15/1996	18.00	35.70	3.57	149.36	14.94	174.55	17.45	25.19
3/16/1996	18.00	35.70	3.57	171.17	17.12	196.36	19.64	25.19
3/17/1996	18.00	35.70	3.57	177.12	17.71	202.31	20.23	25.19
3/18/1996	18.00	35.70	3.57	183.07	18.31	208.26	20.83	25.19
3/19/1996	18.00	35.70	3.57	191.40	19.14	216.20	21.62	24.79
3/20/1996	18.00	35.70	3.57	197.75	19.78	222.15	22.21	24.40
3/21/1996	18.00	35.70	3.57	199.74	19.97	224.13	22.41	24.40
3/22/1996	19.00	37.69	3.77	199.74	19.97	226.12	22.61	26.38
3/23/1996	19.00	37.69	3.77	198.94	19.89	226.12	22.61	27.17
3/24/1996	19.00	37.69	3.77	198.94	19.89	226.12	22.61	27.17
3/25/1996	20.00	39.67	3.97	198.94	19.89	228.10	22.81	29.16

Appendix A. Surface-water outflow, Medina and Diversion Lakes—Continued

Date	Medina Lake					Diversion Lake					
	08179520 Medina River below Medina Lake (site 6)			SW_{out} Medina Lake total		08179990 Medina canal (site 7)			08180015 Medina River below Diversion Lake (site 8) (A)		
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)
3/26/1996	125	247.93	24.79	247.93	24.79	93.00	184.46	18.45	6.40	12.69	1.27
3/27/1996	114	226.12	22.61	226.12	22.61	88.00	174.55	17.45	6.40	12.69	1.27
3/28/1996	121	240.00	24.00	240.00	24.00	93.00	184.46	18.45	6.40	12.69	1.27
3/29/1996	139	275.70	27.57	275.70	27.57	103.00	204.30	20.43	6.40	12.69	1.27
3/30/1996	139	275.70	27.57	275.70	27.57	105.00	208.26	20.83	6.40	12.69	1.27
3/31/1996	138	273.72	27.37	273.72	27.37	107.00	212.23	21.22	6.40	12.69	1.27
4/1/1996	138	273.72	27.37	273.72	27.37	107.00	212.23	21.22	6.40	12.69	1.27
4/2/1996	138	273.72	27.37	273.72	27.37	110.00	218.18	21.82	6.70	13.29	1.33
4/3/1996	138	273.72	27.37	273.72	27.37	114.00	226.12	22.61	7.00	13.88	1.39
4/4/1996	108	214.21	21.42	214.21	21.42	106.00	210.25	21.02	7.00	13.88	1.39
4/5/1996	90	178.51	17.85	178.51	17.85	96.00	190.41	19.04	6.80	13.49	1.35
4/6/1996	89	176.53	17.65	176.53	17.65	95.00	188.43	18.84	6.60	13.09	1.31
4/7/1996	89	176.53	17.65	176.53	17.65	95.00	188.43	18.84	6.20	12.30	1.23
4/8/1996	89	176.53	17.65	176.53	17.65	95.00	188.43	18.84	6.00	11.90	1.19
4/9/1996	101	200.33	20.03	200.33	20.03	92.00	182.48	18.25	5.70	11.31	1.13
4/10/1996	114	226.12	22.61	226.12	22.61	92.00	182.48	18.25	5.70	11.31	1.13
4/11/1996	120	238.02	23.80	238.02	23.80	97.00	192.40	19.24	5.70	11.31	1.13
4/12/1996	119	236.03	23.60	236.03	23.60	102.00	202.31	20.23	5.40	10.71	1.07
4/13/1996	124	245.95	24.60	245.95	24.60	104.00	206.28	20.63	5.30	10.51	1.05
4/14/1996	127	251.90	25.19	251.90	25.19	106.00	210.25	21.02	5.30	10.51	1.05
4/15/1996	139	275.70	27.57	275.70	27.57	108.00	214.21	21.42	5.40	10.71	1.07
4/16/1996	146	289.59	28.96	289.59	28.96	114.00	226.12	22.61	5.80	11.50	1.15
4/17/1996	146	289.59	28.96	289.59	28.96	118.00	234.05	23.40	6.00	11.90	1.19
4/18/1996	145	287.60	28.76	287.60	28.76	120.00	238.02	23.80	6.00	11.90	1.19
4/19/1996	151	299.50	29.95	299.50	29.95	121.00	240.00	24.00	6.00	11.90	1.19
4/20/1996	171	339.17	33.92	339.17	33.92	129.00	255.87	25.59	6.00	11.90	1.19
4/21/1996	171	339.17	33.92	339.17	33.92	132.00	261.82	26.18	6.00	11.90	1.19
4/22/1996	171	339.17	33.92	339.17	33.92	132.00	261.82	26.18	6.20	12.30	1.23
4/23/1996	171	339.17	33.92	339.17	33.92	131.00	259.83	25.98	6.80	13.49	1.35
4/24/1996	171	339.17	33.92	339.17	33.92	130.00	257.85	25.79	6.80	13.49	1.35
4/25/1996	170	337.19	33.72	337.19	33.72	132.00	261.82	26.18	6.80	13.49	1.35
4/26/1996	170	337.19	33.72	337.19	33.72	136.00	269.75	26.98	6.80	13.49	1.35
4/27/1996	170	337.19	33.72	337.19	33.72	138.00	273.72	27.37	6.80	13.49	1.35
4/28/1996	171	339.17	33.92	339.17	33.92	138.00	273.72	27.37	6.80	13.49	1.35
4/29/1996	171	339.17	33.92	339.17	33.92	139.00	275.70	27.57	6.80	13.49	1.35
4/30/1996	171	339.17	33.92	339.17	33.92	137.00	271.74	27.17	6.80	13.49	1.35
5/1/1996	171	339.17	33.92	339.17	33.92	136.00	269.75	26.98	6.80	13.49	1.35
5/2/1996	174	345.12	34.51	345.12	34.51	141.00	279.67	27.97	6.80	13.49	1.35
5/3/1996	180	357.02	35.70	357.02	35.70	144.00	285.62	28.56	6.80	13.49	1.35
5/4/1996	186	368.93	36.89	368.93	36.89	147.00	291.57	29.16	6.80	13.49	1.35
5/5/1996	187	370.91	37.09	370.91	37.09	147.00	291.57	29.16	6.80	13.49	1.35
5/6/1996	188	372.89	37.29	372.89	37.29	147.00	291.57	29.16	6.80	13.49	1.35
5/7/1996	191	378.84	37.88	378.84	37.88	149.00	295.54	29.55	6.80	13.49	1.35
5/8/1996						132.00	261.82	26.18	6.80	13.49	1.35
5/9/1996	154	305.45	30.55	305.45	30.55	75.00	148.76	14.88	7.30	14.48	1.45
5/10/1996	91	180.50	18.05	180.50	18.05	80.00	158.68	15.87	7.60	15.07	1.51
5/11/1996	91	180.50	18.05	180.50	18.05	82.00	162.64	16.26	7.60	15.07	1.51
5/12/1996	91	180.50	18.05	180.50	18.05	82.00	162.64	16.26	7.60	15.07	1.51

Appendix A. Surface-water outflow, Medina and Diversion Lakes—Continued

Date	Diversion Lake							
	08180500 Medina River near Riomedina (site 9) (B)			SW_{out} (A) Diversion Lake total		SW_{out} (B) Diversion Lake total		Increase in streamflow site 8 (A) to site 9 (B) (acre-ft)
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	
3/26/1996	21.00	41.65	4.17	197.16	19.72	226.12	22.61	28.96
3/27/1996	21.00	41.65	4.17	187.24	18.72	216.20	21.62	28.96
3/28/1996	21.00	41.65	4.17	197.16	19.72	226.12	22.61	28.96
3/29/1996	21.00	41.65	4.17	216.99	21.70	245.95	24.60	28.96
3/30/1996	21.00	41.65	4.17	220.96	22.10	249.92	24.99	28.96
3/31/1996	22.00	43.64	4.36	224.93	22.49	255.87	25.59	30.94
4/1/1996	22.00	43.64	4.36	224.93	22.49	255.87	25.59	30.94
4/2/1996	22.00	43.64	4.36	231.47	23.15	261.82	26.18	30.35
4/3/1996	22.00	43.64	4.36	240.00	24.00	269.75	26.98	29.75
4/4/1996	22.00	43.64	4.36	224.13	22.41	253.88	25.39	29.75
4/5/1996	22.00	43.64	4.36	203.90	20.39	234.05	23.40	30.15
4/6/1996	22.00	43.64	4.36	201.52	20.15	232.07	23.21	30.55
4/7/1996	22.00	43.64	4.36	200.73	20.07	232.07	23.21	31.34
4/8/1996	22.00	43.64	4.36	200.33	20.03	232.07	23.21	31.74
4/9/1996	22.00	43.64	4.36	193.79	19.38	226.12	22.61	32.33
4/10/1996	21.00	41.65	4.17	193.79	19.38	224.13	22.41	30.35
4/11/1996	19.00	37.69	3.77	203.70	20.37	230.08	23.01	26.38
4/12/1996	19.00	37.69	3.77	213.02	21.30	240.00	24.00	26.98
4/13/1996	19.00	37.69	3.77	216.79	21.68	243.97	24.40	27.17
4/14/1996	19.00	37.69	3.77	220.76	22.08	247.93	24.79	27.17
4/15/1996	18.00	35.70	3.57	224.93	22.49	249.92	24.99	24.99
4/16/1996	19.00	37.69	3.77	237.62	23.76	263.80	26.38	26.18
4/17/1996	19.00	37.69	3.77	245.95	24.60	271.74	27.17	25.79
4/18/1996	19.00	37.69	3.77	249.92	24.99	275.70	27.57	25.79
4/19/1996	22.00	43.64	4.36	251.90	25.19	283.64	28.36	31.74
4/20/1996	22.00	43.64	4.36	267.77	26.78	299.50	29.95	31.74
4/21/1996	22.00	43.64	4.36	273.72	27.37	305.45	30.55	31.74
4/22/1996	22.00	43.64	4.36	274.12	27.41	305.45	30.55	31.34
4/23/1996	22.00	43.64	4.36	273.32	27.33	303.47	30.35	30.15
4/24/1996	22.00	43.64	4.36	271.34	27.13	301.49	30.15	30.15
4/25/1996	22.00	43.64	4.36	275.31	27.53	305.45	30.55	30.15
4/26/1996	22.00	43.64	4.36	283.24	28.32	313.39	31.34	30.15
4/27/1996	22.00	43.64	4.36	287.21	28.72	317.36	31.74	30.15
4/28/1996	22.00	43.64	4.36	287.21	28.72	317.36	31.74	30.15
4/29/1996	22.00	43.64	4.36	289.19	28.92	319.34	31.93	30.15
4/30/1996	22.00	43.64	4.36	285.22	28.52	315.37	31.54	30.15
5/1/1996	22.00	43.64	4.36	283.24	28.32	313.39	31.34	30.15
5/2/1996	22.00	43.64	4.36	293.16	29.32	323.31	32.33	30.15
5/3/1996	22.00	43.64	4.36	299.11	29.91	329.26	32.93	30.15
5/4/1996	22.00	43.64	4.36	305.06	30.51	335.21	33.52	30.15
5/5/1996	22.00	43.64	4.36	305.06	30.51	335.21	33.52	30.15
5/6/1996	22.00	43.64	4.36	305.06	30.51	335.21	33.52	30.15
5/7/1996	22.00	43.64	4.36	309.02	30.90	339.17	33.92	30.15
5/8/1996	23.00	45.62	4.56	275.31	27.53	307.44	30.74	32.13
5/9/1996	24.00	47.60	4.76	163.24	16.32	196.36	19.64	33.12
5/10/1996	26.00	51.57	5.16	173.75	17.38	210.25	21.02	36.50
5/11/1996	26.00	51.57	5.16	177.72	17.77	214.21	21.42	36.50
5/12/1996	26.00	51.57	5.16	177.72	17.77	214.21	21.42	36.50

Appendix A. Surface-water outflow, Medina and Diversion Lakes—Continued

Date	Medina Lake					Diversion Lake					
	08179520 Medina River below Medina Lake (site 6)			SW_{out} Medina Lake total		08179990 Medina canal (site 7)			08180015 Medina River below Diversion Lake (site 8) (A)		
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)
5/13/1996	91	180.50	18.05	180.50	18.05	84.00	166.61	16.66	7.60	15.07	1.51
5/14/1996	91	180.50	18.05	180.50	18.05	88.00	174.55	17.45	7.60	15.07	1.51
5/15/1996	91	180.50	18.05	180.50	18.05	89.00	176.53	17.65	7.40	14.68	1.47
5/16/1996	91	180.50	18.05	180.50	18.05	86.00	170.58	17.06	6.90	13.69	1.37
5/17/1996	91	180.50	18.05	180.50	18.05	94.00	186.45	18.64	6.80	13.49	1.35
5/18/1996	109	216.20	21.62	216.20	21.62	100.00	198.35	19.83	6.60	13.09	1.31
5/19/1996	127	251.90	25.19	251.90	25.19	106.00	210.25	21.02	6.40	12.69	1.27
5/20/1996	145	287.60	28.76	287.60	28.76	112.00	222.15	22.21	6.20	12.30	1.23
5/21/1996	179	355.04	35.50	355.04	35.50	122.00	241.98	24.20	6.20	12.30	1.23
5/22/1996	194	384.79	38.48	384.79	38.48	134.00	265.78	26.58	6.60	13.09	1.31
5/23/1996						147.00	291.57	29.16	6.80	13.49	1.35
5/24/1996						160.00	317.36	31.74	6.80	13.49	1.35
5/25/1996						161.00	319.34	31.93	6.80	13.49	1.35
5/26/1996						161.00	319.34	31.93	7.00	13.88	1.39
5/27/1996						165.00	327.27	32.73	7.50	14.88	1.49
5/28/1996						164.00	325.29	32.53	7.60	15.07	1.51
5/29/1996						164.00	325.29	32.53	7.60	15.07	1.51
5/30/1996						167.00	331.24	33.12	7.60	15.07	1.51
5/31/1996						168.00	333.22	33.32	7.60	15.07	1.51
6/1/1996						169.00	335.21	33.52	7.60	15.07	1.51
6/2/1996						171.00	339.17	33.92	7.60	15.07	1.51
6/3/1996						174.00	345.12	34.51	7.60	15.07	1.51
6/4/1996						174.00	345.12	34.51	7.60	15.07	1.51
6/5/1996						174.00	345.12	34.51	7.60	15.07	1.51
6/6/1996						174.00	345.12	34.51	7.60	15.07	1.51
6/7/1996						173.00	343.14	34.31	7.60	15.07	1.51
6/8/1996						172.00	341.16	34.12	7.60	15.07	1.51
6/9/1996						171.00	339.17	33.92	7.60	15.07	1.51
6/10/1996						170.00	337.19	33.72	7.60	15.07	1.51
6/11/1996						171.00	339.17	33.92	7.60	15.07	1.51
6/12/1996						172.00	341.16	34.12	7.60	15.07	1.51
6/13/1996						173.00	343.14	34.31	7.60	15.07	1.51
6/14/1996						174.00	345.12	34.51	7.60	15.07	1.51
6/15/1996						177.00	351.07	35.11	7.60	15.07	1.51
6/16/1996						179.00	355.04	35.50	7.60	15.07	1.51
6/17/1996						179.00	355.04	35.50	7.60	15.07	1.51
6/18/1996						179.00	355.04	35.50	7.60	15.07	1.51
6/19/1996						185.00	366.94	36.69	7.60	15.07	1.51
6/20/1996						186.00	368.93	36.89	7.60	15.07	1.51
6/21/1996						187.00	370.91	37.09	7.60	15.07	1.51
6/22/1996						188.00	372.89	37.29	7.60	15.07	1.51
6/23/1996						190.00	376.86	37.69	7.60	15.07	1.51
6/24/1996						189.00	374.88	37.49	7.60	15.07	1.51
6/25/1996						189.00	374.88	37.49	7.60	15.07	1.51
6/26/1996						190.00	376.86	37.69	7.60	15.07	1.51
6/27/1996						190.00	376.86	37.69	7.60	15.07	1.51
6/28/1996						189.00	374.88	37.49	7.60	15.07	1.51
6/29/1996						187.00	370.91	37.09	7.60	15.07	1.51

Appendix A. Surface-water outflow, Medina and Diversion Lakes—Continued

Date	Diversion Lake							
	08180500 Medina River near Riomedina (site 9) (B)			SW_{out} (A) Diversion Lake total		SW_{out} (B) Diversion Lake total		Increase in streamflow site 8 (A) to site 9 (B) (acre-ft)
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	
5/13/1996	26.00	51.57	5.16	181.69	18.17	218.18	21.82	36.50
5/14/1996	25.00	49.59	4.96	189.62	18.96	224.13	22.41	34.51
5/15/1996	24.00	47.60	4.76	191.21	19.12	224.13	22.41	32.93
5/16/1996	24.00	47.60	4.76	184.26	18.43	218.18	21.82	33.92
5/17/1996	24.00	47.60	4.76	199.93	19.99	234.05	23.40	34.12
5/18/1996	22.00	43.64	4.36	211.44	21.14	241.98	24.20	30.55
5/19/1996	22.00	43.64	4.36	222.94	22.29	253.88	25.39	30.94
5/20/1996	22.00	43.64	4.36	234.45	23.44	265.78	26.58	31.34
5/21/1996	22.00	43.64	4.36	254.28	25.43	285.62	28.56	31.34
5/22/1996	22.00	43.64	4.36	278.88	27.89	309.42	30.94	30.55
5/23/1996	24.00	47.60	4.76	305.06	30.51	339.17	33.92	34.12
5/24/1996	24.00	47.60	4.76	330.84	33.08	364.96	36.50	34.12
5/25/1996	24.00	47.60	4.76	332.83	33.28	366.94	36.69	34.12
5/26/1996	26.00	51.57	5.16	333.22	33.32	370.91	37.09	37.69
5/27/1996	27.00	53.55	5.36	342.15	34.21	380.83	38.08	38.68
5/28/1996	26.00	51.57	5.16	340.36	34.04	376.86	37.69	36.50
5/29/1996	26.00	51.57	5.16	340.36	34.04	376.86	37.69	36.50
5/30/1996	27.00	53.55	5.36	346.31	34.63	384.79	38.48	38.48
5/31/1996	27.00	53.55	5.36	348.30	34.83	386.78	38.68	38.48
6/1/1996	27.00	53.55	5.36	350.28	35.03	388.76	38.88	38.48
6/2/1996	27.00	53.55	5.36	354.25	35.42	392.73	39.27	38.48
6/3/1996	27.00	53.55	5.36	360.20	36.02	398.68	39.87	38.48
6/4/1996	27.00	53.55	5.36	360.20	36.02	398.68	39.87	38.48
6/5/1996	27.00	53.55	5.36	360.20	36.02	398.68	39.87	38.48
6/6/1996	27.00	53.55	5.36	360.20	36.02	398.68	39.87	38.48
6/7/1996	28.00	55.54	5.55	358.21	35.82	398.68	39.87	40.46
6/8/1996	28.00	55.54	5.55	356.23	35.62	396.69	39.67	40.46
6/9/1996	28.00	55.54	5.55	354.25	35.42	394.71	39.47	40.46
6/10/1996	28.00	55.54	5.55	352.26	35.23	392.73	39.27	40.46
6/11/1996	27.00	53.55	5.36	354.25	35.42	392.73	39.27	38.48
6/12/1996	27.00	53.55	5.36	356.23	35.62	394.71	39.47	38.48
6/13/1996	27.00	53.55	5.36	358.21	35.82	396.69	39.67	38.48
6/14/1996	27.00	53.55	5.36	360.20	36.02	398.68	39.87	38.48
6/15/1996	27.00	53.55	5.36	366.15	36.61	404.63	40.46	38.48
6/16/1996	28.00	55.54	5.55	370.12	37.01	410.58	41.06	40.46
6/17/1996	29.00	57.52	5.75	370.12	37.01	412.56	41.26	42.45
6/18/1996	29.00	57.52	5.75	370.12	37.01	412.56	41.26	42.45
6/19/1996	29.00	57.52	5.75	382.02	38.20	424.46	42.45	42.45
6/20/1996	29.00	57.52	5.75	384.00	38.40	426.45	42.64	42.45
6/21/1996	29.00	57.52	5.75	385.98	38.60	428.43	42.84	42.45
6/22/1996	30.00	59.50	5.95	387.97	38.80	432.40	43.24	44.43
6/23/1996	30.00	59.50	5.95	391.93	39.19	436.36	43.64	44.43
6/24/1996	29.00	57.52	5.75	389.95	39.00	432.40	43.24	42.45
6/25/1996	29.00	57.52	5.75	389.95	39.00	432.40	43.24	42.45
6/26/1996	28.00	55.54	5.55	391.93	39.19	432.40	43.24	40.46
6/27/1996	28.00	55.54	5.55	391.93	39.19	432.40	43.24	40.46
6/28/1996	29.00	57.52	5.75	389.95	39.00	432.40	43.24	42.45
6/29/1996	29.00	57.52	5.75	385.98	38.60	428.43	42.84	42.45

Appendix A. Surface-water outflow, Medina and Diversion Lakes—Continued

Date	Medina Lake					Diversion Lake					
	08179520 Medina River below Medina Lake (site 6)			SW_{out} Medina Lake total		08179990 Medina canal (site 7)			08180015 Medina River below Diversion Lake (site 8) (A)		
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)
6/30/1996						187.00	370.91	37.09	7.60	15.07	1.51
7/1/1996						187.00	370.91	37.09	7.60	15.07	1.51
7/2/1996						186.00	368.93	36.89	7.60	15.07	1.51
7/3/1996						186.00	368.93	36.89	7.60	15.07	1.51
7/4/1996						188.00	372.89	37.29	7.60	15.07	1.51
7/5/1996						189.00	374.88	37.49	7.60	15.07	1.51
7/6/1996						190.00	376.86	37.69	7.60	15.07	1.51
7/7/1996						190.00	376.86	37.69	7.60	15.07	1.51
7/8/1996						190.00	376.86	37.69	7.60	15.07	1.51
7/9/1996						192.00	380.83	38.08	7.60	15.07	1.51
7/10/1996						159.00	315.37	31.54	7.90	15.67	1.57
7/11/1996						113.00	224.13	22.41	7.90	15.67	1.57
7/12/1996	110	218.18	21.82	218.18	21.82	103.00	204.30	20.43	7.80	15.47	1.55
7/13/1996	124	245.95	24.60	245.95	24.60	107.00	212.23	21.22	7.60	15.07	1.51
7/14/1996	150	297.52	29.75	297.52	29.75	108.00	214.21	21.42	7.60	15.07	1.51
7/15/1996	159	315.37	31.54	315.37	31.54	108.00	214.21	21.42	7.60	15.07	1.51
7/16/1996	162	321.32	32.13	321.32	32.13	116.00	230.08	23.01	7.60	15.07	1.51
7/17/1996	166	329.26	32.93	329.26	32.93	122.00	241.98	24.20	7.60	15.07	1.51
7/18/1996	169	335.21	33.52	335.21	33.52	120.00	238.02	23.80	7.40	14.68	1.47
7/19/1996	176	349.09	34.91	349.09	34.91	124.00	245.95	24.60	7.2	14.28	1.43
7/20/1996	182	360.99	36.10	360.99	36.10	128.00	253.88	25.39	7.10	14.08	1.41
7/21/1996	189	374.88	37.49	374.88	37.49	133.00	263.80	26.38	7.00	13.88	1.39
7/22/1996	196	388.76	38.88	388.76	38.88	137.00	271.74	27.17	6.80	13.49	1.35
7/23/1996	197	390.74	39.07	390.74	39.07	140.00	277.69	27.77	6.80	13.49	1.35
7/24/1996						147.00	291.57	29.16	7.00	13.88	1.39
7/25/1996						156.00	309.42	30.94	7.20	14.28	1.43
7/26/1996						162.00	321.32	32.13	7.20	14.28	1.43
7/27/1996						163.00	323.31	32.33	7.20	14.28	1.43
7/28/1996						163.00	323.31	32.33	7.30	14.48	1.45
7/29/1996						165.00	327.27	32.73	7.60	15.07	1.51
7/30/1996						169.00	335.21	33.52	7.60	15.07	1.51
7/31/1996						171.00	339.17	33.92	7.60	15.07	1.51
8/1/1996						175.00	347.11	34.71	7.80	15.47	1.55
8/2/1996						178.00	353.06	35.31	8.00	15.87	1.59
8/3/1996						179.00	355.04	35.50	7.90	15.67	1.57
8/4/1996						179.00	355.04	35.50	8.00	15.87	1.59
8/5/1996						179.00	355.04	35.50	8.00	15.87	1.59
8/6/1996						178.00	353.06	35.31	8.00	15.87	1.59
8/7/1996						178.00	353.06	35.31	8.00	15.87	1.59
8/8/1996						175.00	347.11	34.71	8.00	15.87	1.59
8/9/1996						172.00	341.16	34.12	8.00	15.87	1.59
8/10/1996						170.00	337.19	33.72	8.00	15.87	1.59
8/11/1996						168.00	333.22	33.32	8.00	15.87	1.59
8/12/1996						167.00	331.24	33.12	8.00	15.87	1.59
8/13/1996						166.00	329.26	32.93	8.00	15.87	1.59
8/14/1996						159.00	315.37	31.54	7.70	15.27	1.53
8/15/1996						154.00	305.45	30.55	7.20	14.28	1.43
8/16/1996						125.00	247.93	24.79	7.20	14.28	1.43

Appendix A. Surface-water outflow, Medina and Diversion Lakes—Continued

Date	Diversion Lake							
	08180500 Medina River near Riomedina (site 9) (B)			SW_{out} (A) Diversion Lake total		SW_{out} (B) Diversion Lake total		Increase in streamflow site 8 (A) to site 9 (B) (acre-ft)
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	
6/30/1996	28.00	55.54	5.55	385.98	38.60	426.45	42.64	40.46
7/1/1996	28.00	55.54	5.55	385.98	38.60	426.45	42.64	40.46
7/2/1996	28.00	55.54	5.55	384.00	38.40	424.46	42.45	40.46
7/3/1996	29.00	57.52	5.75	384.00	38.40	426.45	42.64	42.45
7/4/1996	28.00	55.54	5.55	387.97	38.80	428.43	42.84	40.46
7/5/1996	28.00	55.54	5.55	389.95	39.00	430.41	43.04	40.46
7/6/1996	28.00	55.54	5.55	391.93	39.19	432.40	43.24	40.46
7/7/1996	28.00	55.54	5.55	391.93	39.19	432.40	43.24	40.46
7/8/1996	29.00	57.52	5.75	391.93	39.19	434.38	43.44	42.45
7/9/1996	28.00	55.54	5.55	395.90	39.59	436.36	43.64	40.46
7/10/1996	28.00	55.54	5.55	331.04	33.10	370.91	37.09	39.87
7/11/1996	28.00	55.54	5.55	239.80	23.98	279.67	27.97	39.87
7/12/1996	29.00	57.52	5.75	219.77	21.98	261.82	26.18	42.05
7/13/1996	29.00	57.52	5.75	227.31	22.73	269.75	26.98	42.45
7/14/1996	29.00	57.52	5.75	229.29	22.93	271.74	27.17	42.45
7/15/1996	28.00	55.54	5.55	229.29	22.93	269.75	26.98	40.46
7/16/1996	28.00	55.54	5.55	245.16	24.52	285.62	28.56	40.46
7/17/1996	29.00	57.52	5.75	257.06	25.71	299.50	29.95	42.45
7/18/1996	29.00	57.52	5.75	252.69	25.27	295.54	29.55	42.84
7/19/1996	29.00	57.52	5.75	260.23	26.02	303.47	30.35	43.24
7/20/1996	29.00	57.52	5.75	267.97	26.80	311.40	31.14	43.44
7/21/1996	29.00	57.52	5.75	277.69	27.77	321.32	32.13	43.64
7/22/1996	28.00	55.54	5.55	285.22	28.52	327.27	32.73	42.05
7/23/1996	28.00	55.54	5.55	291.17	29.12	333.22	33.32	42.05
7/24/1996	28.00	55.54	5.55	305.45	30.55	347.11	34.71	41.65
7/25/1996	27.00	53.55	5.36	323.70	32.37	362.98	36.30	39.27
7/26/1996	28.00	55.54	5.55	335.60	33.56	376.86	37.69	41.26
7/27/1996	28.00	55.54	5.55	337.59	33.76	378.84	37.88	41.26
7/28/1996	27.00	53.55	5.36	337.78	33.78	376.86	37.69	39.07
7/29/1996	26.00	51.57	5.16	342.35	34.23	378.84	37.88	36.50
7/30/1996	26.00	51.57	5.16	350.28	35.03	386.78	38.68	36.50
7/31/1996	28.00	55.54	5.55	354.25	35.42	394.71	39.47	40.46
8/1/1996	28.00	55.54	5.55	362.58	36.26	402.64	40.26	40.07
8/2/1996	28.00	55.54	5.55	368.93	36.89	408.59	40.86	39.67
8/3/1996	28.00	55.54	5.55	370.71	37.07	410.58	41.06	39.87
8/4/1996	28.00	55.54	5.55	370.91	37.09	410.58	41.06	39.67
8/5/1996	28.00	55.54	5.55	370.91	37.09	410.58	41.06	39.67
8/6/1996	28.00	55.54	5.55	368.93	36.89	408.59	40.86	39.67
8/7/1996	28.00	55.54	5.55	368.93	36.89	408.59	40.86	39.67
8/8/1996	28.00	55.54	5.55	362.98	36.30	402.64	40.26	39.67
8/9/1996	28.00	55.54	5.55	357.02	35.70	396.69	39.67	39.67
8/10/1996	29.00	57.52	5.75	353.06	35.31	394.71	39.47	41.65
8/11/1996	29.00	57.52	5.75	349.09	34.91	390.74	39.07	41.65
8/12/1996	29.00	57.52	5.75	347.11	34.71	388.76	38.88	41.65
8/13/1996	28.00	55.54	5.55	345.12	34.51	384.79	38.48	39.67
8/14/1996	26.00	51.57	5.16	330.64	33.06	366.94	36.69	36.30
8/15/1996	28.00	55.54	5.55	319.74	31.97	360.99	36.10	41.26
8/16/1996	28.00	55.54	5.55	262.21	26.22	303.47	30.35	41.26

Appendix A. Surface-water outflow, Medina and Diversion Lakes—Continued

Date	Medina Lake					Diversion Lake					
	08179520 Medina River below Medina Lake (site 6)			SW_{out} Medina Lake total		08179990 Medina canal (site 7)			08180015 Medina River below Diversion Lake (site 8) (A)		
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)
8/17/1996						131.00	259.83	25.98	7.20	14.28	1.43
8/18/1996						129.00	255.87	25.59	7.20	14.28	1.43
8/19/1996						128.00	253.88	25.39	7.20	14.28	1.43
8/20/1996						131.00	259.83	25.98	7.20	14.28	1.43
8/21/1996						82.00	162.64	16.26	7.20	14.28	1.43
8/22/1996						84.00	166.61	16.66	7.20	14.28	1.43
8/23/1996	122	241.98	24.20	241.98	24.20	68.00	134.88	13.49	6.80	13.49	1.35
8/24/1996	62	122.98	12.30	122.98	12.30	55.00	109.09	10.91	6.40	12.69	1.27
8/25/1996	61	120.99	12.10	120.99	12.10	45.00	89.26	8.93	6.40	12.69	1.27
8/26/1996	34	67.44	6.74	67.44	6.74	18.00	35.70	3.57	6.40	12.69	1.27
8/27/1996	15	29.75	2.98	29.75	2.98	7.20	14.28	1.43	5.90	11.70	1.17
8/28/1996	15	29.75	2.98	29.75	2.98	0	0	0	5.70	11.31	1.13
8/29/1996	15	29.75	2.98	29.75	2.98	0	0	0	5.40	10.71	1.07
8/30/1996	16	31.74	3.17	31.74	3.17	0	0	0	5.30	10.51	1.05
8/31/1996	16	31.74	3.17	31.74	3.17	0	0	0	5.30	10.51	1.05
9/1/1996	16	31.74	3.17	31.74	3.17	0	0	0	5.30	10.51	1.05
9/2/1996	15	29.75	2.98	29.75	2.98	0	0	0	5.30	10.51	1.05
9/3/1996	15	29.75	2.98	29.75	2.98	12.00	23.80	2.38	5.00	9.92	0.99
9/4/1996	15	29.75	2.98	29.75	2.98	25.00	49.59	4.96	4.60	9.12	0.91
9/5/1996	15	29.75	2.98	29.75	2.98	22.00	43.64	4.36	4.00	7.93	0.79
9/6/1996	15	29.75	2.98	29.75	2.98	16.00	31.74	3.17	3.70	7.34	0.73
9/7/1996	15	29.75	2.98	29.75	2.98	11.00	21.82	2.18	3.50	6.94	0.69
9/8/1996	15	29.75	2.98	29.75	2.98	6.00	11.90	1.19	3.50	6.94	0.69
9/9/1996	15	29.75	2.98	29.75	2.98	0	0	0	3.50	6.94	0.69
9/10/1996	15	29.75	2.98	29.75	2.98	0	0	0	3.10	6.15	0.61
9/11/1996	15	29.75	2.98	29.75	2.98	0	0	0	2.90	5.75	0.58
9/12/1996	15	29.75	2.98	29.75	2.98	0	0	0	2.90	5.75	0.58
9/13/1996	15	29.75	2.98	29.75	2.98	0	0	0	2.90	5.75	0.58
9/14/1996	15	29.75	2.98	29.75	2.98	0	0	0	2.90	5.75	0.58
9/15/1996	16	31.74	3.17	31.74	3.17	0	0	0	2.90	5.75	0.58
9/16/1996	15	29.75	2.98	29.75	2.98	0	0	0	2.90	5.75	0.58
9/17/1996	15	29.75	2.98	29.75	2.98	0	0	0	2.90	5.75	0.58
9/18/1996	30	59.50	5.95	59.50	5.95	0	0	0	2.90	5.75	0.58
9/19/1996	44	87.27	8.73	87.27	8.73	0	0	0	2.90	5.75	0.58
9/20/1996	43	85.29	8.53	85.29	8.53	0	0	0	2.90	5.75	0.58
9/21/1996	43	85.29	8.53	85.29	8.53	0	0	0	2.90	5.75	0.58
9/22/1996	43	85.29	8.53	85.29	8.53	0	0	0	3.10	6.15	0.61
9/23/1996	64	126.94	12.69	126.94	12.69	9.00	17.85	1.79	3.40	6.74	0.67
9/24/1996	87	172.56	17.26	172.56	17.26	17.00	33.72	3.37	3.80	7.54	0.75
9/25/1996	87	172.56	17.26	172.56	17.26	26.00	51.57	5.16	4.10	8.13	0.81
9/26/1996	87	172.56	17.26	172.56	17.26	30.00	59.50	5.95	4.70	9.32	0.93
9/27/1996	77	152.73	15.27	152.73	15.27	35.00	69.42	6.94	5.30	10.51	1.05
9/28/1996	57	113.06	11.31	113.06	11.31	26.00	51.57	5.16	5.30	10.51	1.05
9/29/1996	57	113.06	11.31	113.06	11.31	25.00	49.59	4.96	5.30	10.51	1.05
9/30/1996	64	126.94	12.69	126.94	12.69	29.00	57.52	5.75	5.30	10.51	1.05

Appendix A. Surface-water outflow, Medina and Diversion Lakes—Continued

Date	Diversion Lake							
	08180500 Medina River near Riomedina (site 9) (B)			SW_{out} (A) Diversion Lake total		SW_{out} (B) Diversion Lake total		Increase in streamflow site 8 (A) to site 9 (B) (acre-ft)
	(ft^3/s)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	(acre-ft)	(+\- error) (acre-ft)	
8/17/1996	28.00	55.54	5.55	274.12	27.41	315.37	31.54	41.26
8/18/1996	27.00	53.55	5.36	270.15	27.01	309.42	30.94	39.27
8/19/1996	27.00	53.55	5.36	268.17	26.82	307.44	30.74	39.27
8/20/1996	26.00	51.57	5.16	274.12	27.41	311.40	31.14	37.29
8/21/1996	26.00	51.57	5.16	176.93	17.69	214.21	21.42	37.29
8/22/1996	28.00	55.54	5.55	180.89	18.09	222.15	22.21	41.26
8/23/1996	30.00	59.50	5.95	148.36	14.84	194.38	19.44	46.02
8/24/1996	29.00	57.52	5.75	121.79	12.18	166.61	16.66	44.83
8/25/1996	28.00	55.54	5.55	101.95	10.20	144.79	14.48	42.84
8/26/1996	28.00	55.54	5.55	48.40	4.84	91.24	9.12	42.84
8/27/1996	26.00	51.57	5.16	25.98	2.60	65.85	6.59	39.87
8/28/1996	24.00	47.60	4.76	11.31	1.13	47.60	4.76	36.30
8/29/1996	24.00	47.60	4.76	10.71	1.07	47.60	4.76	36.89
8/30/1996	23.00	45.62	4.56	10.51	1.05	45.62	4.56	35.11
8/31/1996	23.00	45.62	4.56	10.51	1.05	45.62	4.56	35.11
9/1/1996	23.00	45.62	4.56	10.51	1.05	45.62	4.56	35.11
9/2/1996	23.00	45.62	4.56	10.51	1.05	45.62	4.56	35.11
9/3/1996	21.00	41.65	4.17	33.72	3.37	65.45	6.55	31.74
9/4/1996	22.00	43.64	4.36	58.71	5.87	93.22	9.32	34.51
9/5/1996	21.00	41.65	4.17	51.57	5.16	85.29	8.53	33.72
9/6/1996	21.00	41.65	4.17	39.07	3.91	73.39	7.34	34.31
9/7/1996	20.00	39.67	3.97	28.76	2.88	61.49	6.15	32.73
9/8/1996	18.00	35.70	3.57	18.84	1.88	47.60	4.76	28.76
9/9/1996	18.00	35.70	3.57	6.94	0.69	35.70	3.57	28.76
9/10/1996	17.00	33.72	3.37	6.15	0.61	33.72	3.37	27.57
9/11/1996	17.00	33.72	3.37	5.75	0.58	33.72	3.37	27.97
9/12/1996	16.00	31.74	3.17	5.75	0.58	31.74	3.17	25.98
9/13/1996	16.00	31.74	3.17	5.75	0.58	31.74	3.17	25.98
9/14/1996	16.00	31.74	3.17	5.75	0.58	31.74	3.17	25.98
9/15/1996	16.00	31.74	3.17	5.75	0.58	31.74	3.17	25.98
9/16/1996	15.00	29.75	2.98	5.75	0.58	29.75	2.98	24.00
9/17/1996	15.00	29.75	2.98	5.75	0.58	29.75	2.98	24.00
9/18/1996	15.00	29.75	2.98	5.75	0.58	29.75	2.98	24.00
9/19/1996	15.00	29.75	2.98	5.75	0.58	29.75	2.98	24.00
9/20/1996	15.00	29.75	2.98	5.75	0.58	29.75	2.98	24.00
9/21/1996	16.00	31.74	3.17	5.75	0.58	31.74	3.17	25.98
9/22/1996	16.00	31.74	3.17	6.15	0.61	31.74	3.17	25.59
9/23/1996	16.00	31.74	3.17	24.60	2.46	49.59	4.96	24.99
9/24/1996	18.00	35.70	3.57	41.26	4.13	69.42	6.94	28.17
9/25/1996	19.00	37.69	3.77	59.70	5.97	89.26	8.93	29.55
9/26/1996	21.00	41.65	4.17	68.83	6.88	101.16	10.12	32.33
9/27/1996	23.00	45.62	4.56	79.93	7.99	115.04	11.50	35.11
9/28/1996	23.00	45.62	4.56	62.08	6.21	97.19	9.72	35.11
9/29/1996	23.00	45.62	4.56	60.10	6.01	95.21	9.52	35.11
9/30/1996	23.00	45.62	4.56	68.03	6.80	103.14	10.31	35.11

Appendix A. Storage

[Site numbers correspond to figure 3 and table 2. acre-ft, acre-feet; △ storage, change in storage]

Date	08179505 Medina Lake (site 13)			08180010 Diversion Lake (site 15)			Medina/Diversion Lakes combined		
	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)
8/1/1995									
8/2/1995									
8/3/1995									
8/4/1995									
8/5/1995									
8/6/1995									
8/7/1995									
8/8/1995									
8/9/1995									
8/10/1995									
8/11/1995									
8/12/1995									
8/13/1995									
8/14/1995									
8/15/1995									
8/16/1995									
8/17/1995									
8/18/1995									
8/19/1995									
8/20/1995									
8/21/1995									
8/22/1995									
8/23/1995									
8/24/1995									
8/25/1995									
8/26/1995									
8/27/1995									
8/28/1995									
8/29/1995									
8/30/1995									
8/31/1995									
9/1/1995									
9/2/1995									
9/3/1995									
9/4/1995									
9/5/1995									
9/6/1995									
9/7/1995									
9/8/1995									
9/9/1995									
9/10/1995				1,500					
9/11/1995				1,490	-10.0	-1.5			
9/12/1995				1,490	0	0			
9/13/1995									
9/14/1995									
9/15/1995									

Appendix A. Storage—Continued

Date	08179505 Medina Lake (site 13)			08180010 Diversion Lake (site 15)			Medina/Diversion Lakes combined		
	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)
9/16/1995									
9/17/1995									
9/18/1995									
9/19/1995									
9/20/1995	148,627								
9/21/1995	149,601	974	97.40						
9/22/1995	151,395	1,794	179.40						
9/23/1995	152,967	1,572	157.20						
9/24/1995	153,621	654	65.40						
9/25/1995	154,039	418	41.80	2,030			156,069		
9/26/1995	154,317	278	27.80	2,070	40.0	6.0	156,387	318.0	33.80
9/27/1995	154,509	192	19.20	2,030	-40.0	-6.0	156,539	152.0	13.20
9/28/1995	154,684	175	17.50						
9/29/1995	154,775	91	9.10						
9/30/1995	154,867	92	9.20						
10/1/1995	154,991	124	12.40						
10/2/1995	155,090	99	9.90						
10/3/1995	155,127	37	3.70						
10/4/1995	155,015	-112	-11.20						
10/5/1995	155,002	-13	-1.30						
10/6/1995	154,874	-128	-12.80						
10/7/1995	154,788	-86	-8.60						
10/8/1995	154,717	-71	-7.10						
10/9/1995	154,651	-66	-6.60						
10/10/1995	154,600	-51	-5.10	1,549			156,149		
10/11/1995	154,604	4	0.40	1,518	-31.4	-4.7	156,122	-27.4	-4.31
10/12/1995	154,483	-121	-12.10	1,522	4.6	0.7	156,005	-116.4	-11.41
10/13/1995	154,332	-151	-15.10	1,548	25.8	3.9	155,880	-125.2	-11.23
10/14/1995	154,155	-177	-17.70	1,563	15.4	2.3	155,718	-161.6	-15.39
10/15/1995	153,825	-330	-33.00	1,570	6.5	1.0	155,395	-323.5	-32.03
10/16/1995	153,581	-244	-24.40	1,580	10.2	1.5	155,161	-233.8	-22.87
10/17/1995	153,281	-300	-30.00	1,615	34.5	5.2	154,896	-265.5	-24.83
10/18/1995	153,019	-262	-26.20	1,638	23.4	3.5	154,657	-238.6	-22.69
10/19/1995	152,774	-245	-24.50	1,650	12.0	1.8	154,424	-233.0	-22.70
10/20/1995	152,484	-290	-29.00	1,656	6.0	0.9	154,140	-284.0	-28.10
10/21/1995	152,039	-445	-44.50	1,658	2.0	0.3	153,697	-443.0	-44.20
10/22/1995	151,708	-331	-33.10	1,660	2.1	0.3	153,368	-328.9	-32.79
10/23/1995	151,448	-260	-26.00	1,663	2.8	0.4	153,111	-257.2	-25.58
10/24/1995	151,079	-369	-36.90	1,662	-1.0	-0.2	152,741	-370.0	-37.05
10/25/1995	150,785	-294	-29.40	1,664	2.1	0.3	152,449	-291.9	-29.09
10/26/1995	150,587	-198	-19.80	1,662	-2.0	-0.3	152,249	-200.0	-20.10
10/27/1995	150,461	-126	-12.60	1,644	-17.6	-2.6	152,105	-143.6	-15.24
10/28/1995	150,241	-220	-22.00	1,618	-26.9	-4.0	151,859	-246.9	-26.04
10/29/1995	150,044	-197	-19.70	1,600	-17.7	-2.7	151,644	-214.7	-22.36
10/30/1995	149,933	-111	-11.10	1,589	-10.4	-1.6	151,522	-121.4	-12.66
10/31/1995	150,117	184	18.40	1,591	1.2	0.2	151,708	185.2	18.58
11/1/1995	151,763	1,646	164.60	1,707	116.7	17.5	153,470	1,762.7	182.11
11/2/1995	152,225	462	46.20	1,777	70.1	10.5	154,002	532.1	56.72

Appendix A. Storage—Continued

Date	08179505 Medina Lake (site 13)			08180010 Diversion Lake (site 15)			Medina/Diversion Lakes combined		
	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)
11/3/1995	152,407	182	18.20	1,823	45.6	6.8	154,230	227.6	25.04
11/4/1995	152,376	-31	-3.10	1,858	35.4	5.3	154,234	4.4	2.21
11/5/1995	152,425	49	4.90	1,886	27.3	4.1	154,311	76.3	8.99
11/6/1995	152,499	74	7.40	1,908	22.0	3.3	154,407	96.0	10.70
11/7/1995	152,578	79	7.90	1,935	27.5	4.1	154,513	106.5	12.03
11/8/1995	152,581	3	0.30	1,927	-8.2	-1.2	154,508	-5.2	-0.93
11/9/1995	152,555	-26	-2.60	1,915	-11.9	-1.8	154,470	-37.9	-4.39
11/10/1995	152,586	31	3.10	1,894	-21.6	-3.2	154,480	9.4	-0.14
11/11/1995	152,604	18	1.80	1,865	-28.1	-4.2	154,469	-10.1	-2.41
11/12/1995	152,415	-189	-18.90	1,836	-29.4	-4.4	154,251	-218.4	-23.31
11/13/1995	152,394	-21	-2.10	1,808	-27.7	-4.2	154,202	-48.7	-6.26
11/14/1995	152,352	-42	-4.20	1,780	-28.7	-4.3	154,132	-70.7	-8.51
11/15/1995	152,334	-18	-1.80	1,738	-42.1	-6.3	154,072	-60.1	-8.11
11/16/1995	152,294	-40	-4.00	1,683	-54.1	-8.1	153,977	-94.1	-12.12
11/17/1995	152,576	282	28.20	1,674	-9.3	-1.4	154,250	272.7	26.81
11/18/1995	152,995	419	41.90	1,721	47.3	7.1	154,716	466.3	49.00
11/19/1995	153,050	55	5.50	1,763	41.6	6.2	154,813	96.6	11.74
11/20/1995	153,143	93	9.30	1,801	38.3	5.7	154,944	131.3	15.05
11/21/1995	153,217	74	7.40	1,835	33.3	5.0	155,052	107.3	12.40
11/22/1995	153,231	14	1.40	1,864	29.7	4.5	155,095	43.7	5.86
11/23/1995	153,254	23	2.30	1,892	27.7	4.2	155,146	50.7	6.46
11/24/1995	153,218	-36	-3.60	1,917	24.8	3.7	155,135	-11.2	0.12
11/25/1995	153,158	-60	-6.00	1,939	22.2	3.3	155,097	-37.8	-2.67
11/26/1995	153,136	-22	-2.20	1,962	23.0	3.5	155,098	1.0	1.25
11/27/1995	153,171	35	3.50	1,984	22.0	3.3	155,155	57.0	6.80
11/28/1995	153,120	-51	-5.10	2,002	17.8	2.7	155,122	-33.2	-2.43
11/29/1995	152,976	-144	-14.40	2,001	-0.5	-0.1	154,977	-144.5	-14.48
11/30/1995	152,922	-54	-5.40	1,952	-49.5	-7.4	154,874	-103.5	-12.83
12/1/1995	152,888	-34	-3.40	1,922	-30.0	-4.5	154,810	-64.0	-7.90
12/2/1995	152,890	2	0.20	1,887	-35.1	-5.3	154,777	-33.1	-5.06
12/3/1995	152,904	14	1.40	1,855	-31.8	-4.8	154,759	-17.8	-3.37
12/4/1995	152,861	-43	-4.30	1,825	-30.1	-4.5	154,686	-73.1	-8.82
12/5/1995	152,825	-36	-3.60	1,797	-27.6	-4.1	154,622	-63.6	-7.74
12/6/1995	152,802	-23	-2.30	1,766	-31.2	-4.7	154,568	-54.2	-6.98
12/7/1995	152,725	-77	-7.70	1,722	-44.5	-6.7	154,447	-121.5	-14.38
12/8/1995	152,685	-40	-4.00	1,686	-35.2	-5.3	154,371	-75.2	-9.28
12/9/1995	152,645	-40	-4.00	1,659	-27.0	-4.1	154,304	-67.0	-8.05
12/10/1995	152,396	-249	-24.90	1,635	-24.7	-3.7	154,031	-273.7	-28.61
12/11/1995	152,314	-82	-8.20	1,610	-24.4	-3.7	153,924	-106.4	-11.86
12/12/1995	152,251	-63	-6.30	1,578	-32.1	-4.8	153,829	-95.1	-11.12
12/13/1995	152,234	-17	-1.70	1,552	-26.3	-3.9	153,786	-43.3	-5.64
12/14/1995	152,194	-40	-4.00	1,531	-20.6	-3.1	153,725	-60.6	-7.09
12/15/1995	152,191	-3	-0.30	1,516	-15.7	-2.4	153,707	-18.7	-2.66
12/16/1995	152,152	-39	-3.90	1,502	-13.1	-2.0	153,654	-52.1	-5.86
12/17/1995	152,145	-7	-0.70	1,494	-8.8	-1.3	153,639	-15.8	-2.02
12/18/1995	152,226	81	8.10	1,485	-8.3	-1.2	153,711	72.7	6.86
12/19/1995	152,099	-127	-12.70	1,469	-15.9	-2.4	153,568	-142.9	-15.09
12/20/1995	151,965	-134	-13.40	1,459	-10.5	-1.6	153,424	-144.5	-14.98

Appendix A. Storage—Continued

Date	08179505 Medina Lake (site 13)			08180010 Diversion Lake (site 15)			Medina/Diversion Lakes combined		
	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)
12/21/1995	151,895	-70	-7.00	1,452	-7.3	-1.1	153,347	-77.3	-8.10
12/22/1995	151,853	-42	-4.20	1,457	5.1	0.8	153,310	-36.9	-3.43
12/23/1995	151,703	-150	-15.00	1,488.4	31.7	4.8	153,191	-118.3	-10.25
12/24/1995	151,633	-70	-7.00	1,521.7	33.3	5.0	153,155	-36.7	-2.01
12/25/1995	151,548	-85	-8.50	1,554.4	32.7	4.9	153,102	-52.3	-3.59
12/26/1995	151,475	-73	-7.30	1,584.4	30.0	4.5	153,059	-43.0	-2.80
12/27/1995	151,406	-69	-6.90	1,603.6	19.2	2.9	153,010	-49.8	-4.02
12/28/1995	151,303	-103	-10.30	1,591.5	-12.1	-1.8	152,895	-115.1	-12.12
12/29/1995	151,217	-86	-8.60	1,573.3	-18.2	-2.7	152,790	-104.2	-11.33
12/30/1995	151,214	-3	-0.30	1,559.1	-14.2	-2.1	152,773	-17.2	-2.43
12/31/1995	151,186	-28	-2.80	1,546.8	-12.3	-1.8	152,733	-40.3	-4.64
1/1/1996	151,142	-44	-4.40	1,537.2	-9.6	-1.4	152,679	-53.6	-5.84
1/2/1996	150,980	-162	-16.20	1,526.3	-10.9	-1.6	152,506	-172.9	-17.84
1/3/1996	150,773	-207	-20.70	1,516.8	-9.5	-1.4	152,290	-216.5	-22.13
1/4/1996	150,685	-88	-8.80	1,509	-7.8	-1.2	152,194	-95.8	-9.97
1/5/1996	150,676	-9	-0.90	1,495	-14.0	-2.1	152,171	-23.0	-3.00
1/6/1996	150,573	-103	-10.30	1,482	-13.0	-2.0	152,055	-116.0	-12.25
1/7/1996	150,314	-259	-25.90	1,471.1	-10.9	-1.6	151,785	-269.9	-27.54
1/8/1996	150,173	-141	-14.10	1,464	-7.1	-1.1	151,637	-148.1	-15.17
1/9/1996	150,097	-76	-7.60	1,458.4	-5.6	-0.8	151,555	-81.6	-8.44
1/10/1996	150,000	-97	-9.70	1,459.3	0.9	0.1	151,459	-96.1	-9.57
1/11/1996	149,872	-128	-12.80	1,495.2	35.9	5.4	151,367	-92.1	-7.41
1/12/1996	149,675	-197	-19.70	1,509	13.8	2.1	151,184	-183.2	-17.63
1/13/1996	149,511	-164	-16.40	1,512	3.0	0.5	151,023	-161.0	-15.95
1/14/1996	149,363	-148	-14.80	1,513	1.0	0.2	150,876	-147.0	-14.65
1/15/1996	149,233	-130	-13.00	1,513.2	0.2	0	150,746	-129.8	-12.97
1/16/1996	149,096	-137	-13.70	1,513.2	0	0	150,609	-137.0	-13.70
1/17/1996	148,983	-113	-11.30	1,513.7	0.5	0.1	150,497	-112.5	-11.23
1/18/1996	148,983	0	0	1,510.1	-3.6	-0.5	150,493	-3.6	-0.54
1/19/1996	148,591	-392	-39.20	1,503.2	-6.9	-1.0	150,094	-398.9	-40.24
1/20/1996	148,436	-155	-15.50	1,506.6	3.4	0.5	149,943	-151.6	-14.99
1/21/1996	148,300	-136	-13.60	1,511.5	4.9	0.7	149,812	-131.1	-12.87
1/22/1996	148,145	-155	-15.50	1,514.2	2.7	0.4	149,659	-152.3	-15.10
1/23/1996	148,089	-56	-5.60	1,517.2	3.0	0.5	149,606	-53.0	-5.15
1/24/1996	147,901	-188	-18.80	1,517.1	-0.1	0	149,418	-188.1	-18.82
1/25/1996	147,727	-174	-17.40	1,513.8	-3.3	-0.5	149,241	-177.3	-17.90
1/26/1996	147,642	-85	-8.50	1,518.9	5.1	0.8	149,161	-79.9	-7.73
1/27/1996	147,373	-269	-26.90	1,531	12.1	1.8	148,904	-256.9	-25.09
1/28/1996	147,160	-213	-21.30	1,541.6	10.6	1.6	148,702	-202.4	-19.71
1/29/1996	147,036	-124	-12.40	1,548.4	6.8	1.0	148,584	-117.2	-11.38
1/30/1996	146,883	-153	-15.30	1,550.6	2.2	0.3	148,434	-150.8	-14.97
1/31/1996	146,631	-252	-25.20	1,559.9	9.3	1.4	148,191	-242.7	-23.81
2/1/1996	146,364	-267	-26.70	1,578.3	18.4	2.8	147,942	-248.6	-23.94
2/2/1996	146,181	-183	-18.30	1,583.9	5.6	0.8	147,765	-177.4	-17.46
2/3/1996	145,955	-226	-22.60	1,568.3	-15.6	-2.3	147,523	-241.6	-24.94
2/4/1996	145,738	-217	-21.70	1,555.2	-13.1	-2.0	147,293	-230.1	-23.67
2/5/1996	145,554	-184	-18.40	1,549.8	-5.4	-0.8	147,104	-189.4	-19.21
2/6/1996	145,359	-195	-19.50	1,577.9	28.1	4.2	146,937	-166.9	-15.29

Appendix A. Storage—Continued

Date	08179505 Medina Lake (site 13)			08180010 Diversion Lake (site 15)			Medina/Diversion Lakes combined		
	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)
2/7/1996	145,140	-219	-21.90	1,597.2	19.3	2.9	146,737	-199.7	-19.01
2/8/1996	144,963	-177	-17.70	1,596.2	-1.0	-0.2	146,559	-178.0	-17.85
2/9/1996	144,783	-180	-18.00	1,594.2	-2.0	-0.3	146,377	-182.0	-18.30
2/10/1996	144,577	-206	-20.60	1,599.5	5.3	0.8	146,177	-200.7	-19.81
2/11/1996	144,478	-99	-9.90	1,605	5.5	0.8	146,083	-93.5	-9.08
2/12/1996	144,034	-444	-44.40	1,606	1.0	0.2	145,640	-443.0	-44.25
2/13/1996	143,781	-253	-25.30	1,612.6	6.6	1.0	145,394	-246.4	-24.31
2/14/1996	143,556	-225	-22.50	1,614	1.4	0.2	145,170	-223.6	-22.29
2/15/1996	143,245	-311	-31.10	1,614.2	0.2	0	144,859	-310.8	-31.07
2/16/1996	142,992	-253	-25.30	1,619.1	4.9	0.7	144,611	-248.1	-24.57
2/17/1996	142,697	-295	-29.50	1,620.5	1.4	0.2	144,318	-293.6	-29.29
2/18/1996	142,444	-253	-25.30	1,621.2	0.7	0.1	144,065	-252.3	-25.20
2/19/1996	142,150	-294	-29.40	1,618	-3.2	-0.5	143,768	-297.2	-29.88
2/20/1996	141,897	-253	-25.30	1,616	-2.0	-0.3	143,513	-255.0	-25.60
2/21/1996	141,621	-276	-27.60	1,610.8	-5.2	-0.8	143,232	-281.2	-28.38
2/22/1996	141,400	-221	-22.10	1,609.2	-1.6	-0.2	143,009	-222.6	-22.34
2/23/1996	141,175	-225	-22.50	1,613.8	4.6	0.7	142,789	-220.4	-21.81
2/24/1996	140,826	-349	-34.90	1,622.8	9.0	1.4	142,449	-340.0	-33.55
2/25/1996	140,519	-307	-30.70	1,630.1	7.3	1.1	142,149	-299.7	-29.61
2/26/1996	140,254	-265	-26.50	1,634.3	4.2	0.6	141,888	-260.8	-25.87
2/27/1996	140,005	-249	-24.90	1,636.2	1.9	0.3	141,641	-247.1	-24.62
2/28/1996	139,811	-194	-19.40	1,636	-0.2	0	141,447	-194.2	-19.43
2/29/1996	139,511	-300	-30.00	1,627	-9.0	-1.4	141,138	-309.0	-31.35
3/1/1996	139,365	-146	-14.60	1,604.3	-22.7	-3.4	140,969	-168.7	-18.01
3/2/1996	139,155	-210	-21.00	1,613.5	9.2	1.4	140,769	-200.8	-19.62
3/3/1996	138,938	-217	-21.70	1,625.2	11.7	1.8	140,563	-205.3	-19.95
3/4/1996	138,748	-190	-19.00	1,631.8	6.6	1.0	140,380	-183.4	-18.01
3/5/1996	138,614	-134	-13.40	1,627	-4.8	-0.7	140,241	-138.8	-14.12
3/6/1996	138,576	-38	-3.80	1,626.8	-0.2	0	140,203	-38.2	-3.83
3/7/1996	138,294	-282	-28.20	1,624.2	-2.6	-0.4	139,918	-284.6	-28.59
3/8/1996	137,902	-392	-39.20	1,620.9	-3.3	-0.5	139,523	-395.3	-39.70
3/9/1996	137,675	-227	-22.70	1,620	-0.9	-0.1	139,295	-227.9	-22.84
3/10/1996	137,449	-226	-22.60	1,617.2	-2.8	-0.4	139,066	-228.8	-23.02
3/11/1996	137,253	-196	-19.60	1,614	-3.2	-0.5	138,867	-199.2	-20.08
3/12/1996	137,001	-252	-25.20	1,608	-6.0	-0.9	138,609	-258.0	-26.10
3/13/1996	136,879	-122	-12.20	1,593.5	-14.5	-2.2	138,473	-136.5	-14.38
3/14/1996	136,705	-174	-17.40	1,586.6	-6.9	-1.0	138,292	-180.9	-18.44
3/15/1996	136,543	-162	-16.20	1,583.6	-3.0	-0.5	138,127	-165.0	-16.65
3/16/1996	136,311	-232	-23.20	1,594	10.4	1.6	137,905	-221.6	-21.64
3/17/1996	136,080	-231	-23.10	1,604	10.0	1.5	137,684	-221.0	-21.60
3/18/1996	135,845	-235	-23.50	1,607	3.0	0.5	137,452	-232.0	-23.05
3/19/1996	135,460	-385	-38.50	1,610.1	3.1	0.5	137,070	-381.9	-38.04
3/20/1996	135,105	-355	-35.50	1,613	2.9	0.4	136,718	-352.1	-35.07
3/21/1996	134,769	-336	-33.60	1,630	17.0	2.6	136,399	-319.0	-31.05
3/22/1996	134,425	-344	-34.40	1,647	17.0	2.6	136,072	-327.0	-31.85
3/23/1996	134,086	-339	-33.90	1,664	17.0	2.6	135,750	-322.0	-31.35
3/24/1996	133,796	-290	-29.00	1,681	17.0	2.6	135,477	-273.0	-26.45
3/25/1996	133,561	-235	-23.50	1,698	17.0	2.6	135,259	-218.0	-20.95

Appendix A. Storage—Continued

Date	08179505 Medina Lake (site 13)			08180010 Diversion Lake (site 15)			Medina/Diversion Lakes combined		
	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)
3/26/1996	133,136	-425	-42.50	1,716	18.0	2.7	134,852	-407.0	-39.80
3/27/1996	132,793	-343	-34.30	1,722	6.2	0.9	134,515	-336.8	-33.37
3/28/1996	132,588	-205	-20.50	1,733	10.6	1.6	134,321	-194.4	-18.91
3/29/1996	132,287	-301	-30.10	1,744	11.1	1.7	134,031	-289.9	-28.44
3/30/1996	132,046	-241	-24.10	1,759	15.4	2.3	133,805	-225.6	-21.79
3/31/1996	131,746	-300	-30.00	1,769	9.3	1.4	133,515	-290.7	-28.61
4/1/1996	131,373	-373	-37.30	1,775	6.4	1.0	133,148	-366.6	-36.34
4/2/1996	131,022	-351	-35.10	1,780	4.9	0.7	132,802	-346.1	-34.37
4/3/1996	130,716	-306	-30.60	1,778	-1.5	-0.2	132,494	-307.5	-30.83
4/4/1996	130,517	-199	-19.90	1,768	-10.5	-1.6	132,285	-209.5	-21.48
4/5/1996	130,385	-132	-13.20	1,731	-37.4	-5.6	132,116	-169.4	-18.81
4/6/1996	130,271	-114	-11.40	1,705	-25.5	-3.8	131,976	-139.5	-15.23
4/7/1996	129,988	-283	-28.30	1,671	-33.8	-5.1	131,659	-316.8	-33.37
4/8/1996	129,804	-184	-18.40	1,645	-26.2	-3.9	131,449	-210.2	-22.33
4/9/1996	129,402	-402	-40.20	1,619	-26.0	-3.9	131,021	-428.0	-44.10
4/10/1996	129,300	-102	-10.20	1,621	2.0	0.3	130,921	-100.0	-9.90
4/11/1996	128,990	-310	-31.00	1,629	8.4	1.3	130,619	-301.6	-29.74
4/12/1996	128,747	-243	-24.30	1,634	4.9	0.7	130,381	-238.1	-23.57
4/13/1996	128,465	-282	-28.20	1,632	-2.2	-0.3	130,097	-284.2	-28.53
4/14/1996	128,117	-348	-34.80	1,635	3.1	0.5	129,752	-344.9	-34.34
4/15/1996	127,853	-264	-26.40	1,638	2.5	0.4	129,491	-261.5	-26.03
4/16/1996	127,402	-451	-45.10	1,650	12.4	1.9	129,052	-438.6	-43.24
4/17/1996	127,023	-379	-37.90	1,657	7.2	1.1	128,680	-371.8	-36.82
4/18/1996	126,692	-331	-33.10	1,662	4.2	0.6	128,354	-326.8	-32.47
4/19/1996	126,472	-220	-22.00	1,664	2.5	0.4	128,136	-217.5	-21.63
4/20/1996	126,106	-366	-36.60	1,680	15.7	2.4	127,786	-350.3	-34.25
4/21/1996	125,739	-367	-36.70	1,692	12.1	1.8	127,431	-354.9	-34.89
4/22/1996	125,302	-437	-43.70	1,706	13.8	2.1	127,008	-423.2	-41.63
4/23/1996	124,941	-361	-36.10	1,717	11.2	1.7	126,658	-349.8	-34.42
4/24/1996	124,616	-325	-32.50	1,727	10.0	1.5	126,343	-315.0	-31.00
4/25/1996	124,255	-361	-36.10	1,735	8.2	1.2	125,990	-352.8	-34.87
4/26/1996	123,857	-398	-39.80	1,741	6.0	0.9	125,598	-392.0	-38.90
4/27/1996	123,428	-429	-42.90	1,738	-2.9	-0.4	125,166	-431.9	-43.34
4/28/1996	123,107	-321	-32.10	1,735	-3.0	-0.5	124,842	-324.0	-32.55
4/29/1996	122,786	-321	-32.10	1,738	2.9	0.4	124,524	-318.1	-31.67
4/30/1996	122,466	-320	-32.00	1,732	-5.7	-0.9	124,198	-325.7	-32.86
5/1/1996	121,846	-620	-62.00	1,730	-2.0	-0.3	123,576	-622.0	-62.30
5/2/1996	121,480	-366	-36.60	1,728	-1.9	-0.3	123,208	-367.9	-36.89
5/3/1996	121,123	-357	-35.70	1,724	-4.7	-0.7	122,847	-361.7	-36.41
5/4/1996	120,735	-388	-38.80	1,722	-1.7	-0.3	122,457	-389.7	-39.06
5/5/1996	120,383	-352	-35.20	1,722	0	0	122,105	-352.0	-35.20
5/6/1996	119,988	-395	-39.50	1,722	0	0	121,710	-395.0	-39.50
5/7/1996	119,597	-391	-39.10	1,722	-0.1	0	121,319	-391.1	-39.12
5/8/1996	119,239	-358	-35.80	1,730	8.0	1.2	120,969	-350.0	-34.60
5/9/1996	118,946	-293	-29.30	1,819	89.0	13.4	120,765	-204.0	-15.95
5/10/1996	118,706	-240	-24.00	1,829	10.1	1.5	120,535	-229.9	-22.49
5/11/1996	118,644	-62	-6.20	1,820	-9.0	-1.4	120,464	-71.0	-7.55
5/12/1996	118,367	-277	-27.70	1,810	-10.0	-1.5	120,177	-287.0	-29.20

Appendix A. Storage—Continued

Date	08179505 Medina Lake (site 13)			08180010 Diversion Lake (site 15)			Medina/Diversion Lakes combined		
	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)
5/13/1996	118,127	-240	-24.00	1,801	-9.0	-1.4	119,928	-249.0	-25.35
5/14/1996	117,887	-240	-24.00	1,775	-26.0	-3.9	119,662	-266.0	-27.90
5/15/1996	117,510	-377	-37.70	1,745	-30.0	-4.5	119,255	-407.0	-42.20
5/16/1996	117,373	-137	-13.70	1,723	-21.9	-3.3	119,096	-158.9	-16.99
5/17/1996	117,065	-308	-30.80	1,694	-29.1	-4.4	118,759	-337.1	-35.17
5/18/1996	116,722	-343	-34.30	1,682	-12.0	-1.8	118,404	-355.0	-36.10
5/19/1996	116,349	-373	-37.30	1,663	-19.0	-2.9	118,012	-392.0	-40.15
5/20/1996	115,943	-406	-40.60	1,647	-16.0	-2.4	117,590	-422.0	-43.00
5/21/1996	115,707	-236	-23.60	1,670	23.0	3.5	117,377	-213.0	-20.15
5/22/1996	115,368	-339	-33.90	1,693	23.0	3.5	117,061	-316.0	-30.45
5/23/1996	114,929	-439	-43.90	1,717	24.0	3.6	116,646	-415.0	-40.30
5/24/1996	114,361	-568	-56.80	1,740	23.0	3.5	116,101	-545.0	-53.35
5/25/1996	113,826	-535	-53.50	1,749	9.0	1.4	115,575	-526.0	-52.15
5/26/1996	113,226	-600	-60.00	1,765	16.4	2.5	114,991	-583.6	-57.54
5/27/1996	112,764	-462	-46.20	1,779	13.8	2.1	114,543	-448.2	-44.13
5/28/1996	112,631	-133	-13.30	1,782	3.0	0.5	114,413	-130.0	-12.85
5/29/1996	112,136	-495	-49.50	1,776	-6.3	-0.9	113,912	-501.3	-50.45
5/30/1996	111,641	-495	-49.50	1,767	-9.1	-1.4	113,408	-504.1	-50.87
5/31/1996	111,251	-390	-39.00	1,761	-6.1	-0.9	113,012	-396.1	-39.92
6/1/1996	110,859	-392	-39.20	1,760	-0.7	-0.1	112,619	-392.7	-39.31
6/2/1996	110,370	-489	-48.90	1,774	14.0	2.1	112,144	-475.0	-46.80
6/3/1996	110,501	131	13.10	1,786	12.0	1.8	112,287	143.0	14.90
6/4/1996	110,012	-489	-48.90	1,784	-2.3	-0.3	111,796	-491.3	-49.25
6/5/1996	109,432	-580	-58.00	1,789	5.3	0.8	111,221	-574.7	-57.21
6/6/1996	108,853	-579	-57.90	1,787	-1.7	-0.3	110,640	-580.7	-58.16
6/7/1996	108,498	-355	-35.50	1,787	-0.5	-0.1	110,285	-355.5	-35.58
6/8/1996	108,052	-446	-44.60	1,786	-1.1	-0.2	109,838	-447.1	-44.77
6/9/1996	107,639	-413	-41.30	1,783	-2.5	-0.4	109,422	-415.5	-41.68
6/10/1996	106,906	-733	-73.30	1,782	-1.1	-0.2	108,688	-734.1	-73.47
6/11/1996	106,371	-535	-53.50	1,780	-1.7	-0.3	108,151	-536.7	-53.76
6/12/1996	105,899	-472	-47.20	1,777	-3.7	-0.6	107,676	-475.7	-47.76
6/13/1996	105,427	-472	-47.20	1,772	-4.9	-0.7	107,199	-476.9	-47.94
6/14/1996	104,958	-469	-46.90	1,771	-0.6	-0.1	106,729	-469.6	-46.99
6/15/1996	104,430	-528	-52.80	1,780	8.9	1.3	106,210	-519.1	-51.47
6/16/1996	103,900	-530	-53.00	1,782	2.1	0.3	105,682	-527.9	-52.69
6/17/1996	103,375	-525	-52.50	1,783	0.7	0.1	105,158	-524.3	-52.40
6/18/1996	102,882	-493	-49.30	1,785	1.7	0.3	104,667	-491.3	-49.05
6/19/1996	102,359	-523	-52.30	1,795	10.0	1.5	104,154	-513.0	-50.80
6/20/1996	101,625	-734	-73.40	1,804	9.3	1.4	103,429	-724.7	-72.01
6/21/1996	101,170	-455	-45.50	1,809	4.8	0.7	102,979	-450.2	-44.78
6/22/1996	100,709	-461	-46.10	1,811	2.6	0.4	102,520	-458.4	-45.71
6/23/1996	100,108	-601	-60.10	1,812	0.4	0.1	101,920	-600.6	-60.04
6/24/1996	99,572	-536	-53.60	1,808	-4.2	-0.6	101,380	-540.2	-54.23
6/25/1996	99,107	-465	-46.50	1,809	1.9	0.3	100,916	-463.1	-46.22
6/26/1996	98,672	-435	-43.50	1,808	-1.3	-0.2	100,480	-436.3	-43.70
6/27/1996	98,199	-473	-47.30	1,807	-1.0	-0.2	100,006	-474.0	-47.45
6/28/1996	97,700	-499	-49.90	1,803	-4.1	-0.6	99,503	-503.1	-50.52
6/29/1996	97,228	-472	-47.20	1,800	-3.4	-0.5	99,028	-475.4	-47.71

Appendix A. Storage—Continued

Date	08179505 Medina Lake (site 13)			08180010 Diversion Lake (site 15)			Medina/Diversion Lakes combined		
	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)
6/30/1996	96,650	-578	-57.80	1,798	-1.6	-0.2	98,448	-579.6	-58.04
7/1/1996	96,087	-563	-56.30	1,797	-1.4	-0.2	97,884	-564.4	-56.51
7/2/1996	95,640	-447	-44.70	1,797	0	0	97,437	-447.0	-44.70
7/3/1996	95,171	-469	-46.90	1,798	0.9	0.1	96,969	-468.1	-46.77
7/4/1996	94,614	-557	-55.70	1,801	3.0	0.5	96,415	-554.0	-55.25
7/5/1996	94,060	-554	-55.40	1,806	5.3	0.8	95,866	-548.7	-54.61
7/6/1996	93,173	-887	-88.70	1,807	0.8	0.1	94,980	-886.2	-88.58
7/7/1996	92,656	-517	-51.70	1,807	0	0	94,463	-517.0	-51.70
7/8/1996	92,110	-546	-54.60	1,806	-0.2	0	93,916	-546.2	-54.63
7/9/1996	91,538	-572	-57.20	1,809	2.9	0.4	93,347	-569.1	-56.77
7/10/1996	91,425	-113	-11.30	1,850	40.6	6.1	93,275	-72.4	-5.21
7/11/1996	90,940	-485	-48.50	1,894	44.3	6.6	92,834	-440.7	-41.86
7/12/1996	90,713	-227	-22.70	1,860	-34.2	-5.1	92,573	-261.2	-27.83
7/13/1996	90,315	-398	-39.80	1,808	-51.7	-7.8	92,123	-449.7	-47.56
7/14/1996	9,0089	-226	-22.60	1,782	-26.3	-3.9	91,871	-252.3	-26.55
7/15/1996	89,892	-197	-19.70	1,786	3.5	0.5	91,678	-193.5	-19.18
7/16/1996	89,452	-440	-44.00	1,784	-1.5	-0.2	91,236	-441.5	-44.23
7/17/1996	89,060	-392	-39.20	1,772	-12.5	-1.9	90,832	-404.5	-41.08
7/18/1996	88,621	-439	-43.90	1,764	-7.5	-1.1	90,385	-446.5	-45.03
7/19/1996	88,200	-421	-42.10	1,764	0	0	89,964	-421.0	-42.10
7/20/1996	87,690	-510	-51.00	1,764	0	0	89,454	-510.0	-51.00
7/21/1996	87,209	-481	-48.10	1,764	0	0	88,973	-481.0	-48.10
7/22/1996	86,807	-402	-40.20	1,764	0	0	88,571	-402.0	-40.20
7/23/1996	86,403	-404	-40.40	1,757	-7.0	-1.1	88,160	-411.0	-41.45
7/24/1996	85,977	-426	-42.60	1,751	-6.0	-0.9	87,728	-432.0	-43.50
7/25/1996	85,401	-576	-57.60	1,751	-0.5	-0.1	87,152	-576.5	-57.68
7/26/1996	84,863	-538	-53.80	1,758	7.6	1.1	86,621	-530.4	-52.66
7/27/1996	84,325	-538	-53.80	1,761	3.0	0.5	86,086	-535.0	-53.35
7/28/1996	83,866	-459	-45.90	1,763	2.1	0.3	85,629	-456.9	-45.59
7/29/1996	83,364	-502	-50.20	1,765	1.3	0.2	85,129	-500.7	-50.01
7/30/1996	82,866	-498	-49.80	1,768	3.9	0.6	84,634	-494.1	-49.22
7/31/1996	82,356	-510	-51.00	1,772	3.7	0.6	84,128	-506.3	-50.45
8/1/1996	81,887	-469	-46.90	1,781	9.1	1.4	83,668	-459.9	-45.54
8/2/1996	81,443	-444	-44.40	1,786	4.6	0.7	83,229	-439.4	-43.71
8/3/1996	80,870	-573	-57.30	1,784	-2.0	-0.3	82,654	-575.0	-57.60
8/4/1996	80,363	-507	-50.70	1,787	3.1	0.5	82,150	-503.9	-50.24
8/5/1996	79,808	-555	-55.50	1,787	0	0	81,595	-555.0	-55.50
8/6/1996	79,356	-452	-45.20	1,787	0.2	0	81,143	-451.8	-45.17
8/7/1996	78,852	-504	-50.40	1,787	-0.1	0	80,639	-504.1	-50.42
8/8/1996	78,354	-498	-49.80	1,788	0.6	0.1	80,142	-497.4	-49.71
8/9/1996	77,675	-679	-67.90	1,795	7.7	1.2	79,470	-671.3	-66.75
8/10/1996	77,212	-463	-46.30	1,791	-4.4	-0.7	79,003	-467.4	-46.96
8/11/1996	76,931	-281	-28.10	1,787	-4.1	-0.6	78,718	-285.1	-28.72
8/12/1996	76,451	-480	-48.00	1,786	-0.9	-0.1	78,237	-480.9	-48.14
8/13/1996	75,760	-691	-69.10	1,782	-4.1	-0.6	77,542	-695.1	-69.72
8/14/1996	75,357	-403	-40.30	1,771	-11.2	-1.7	77,128	-414.2	-41.98
8/15/1996	74,881	-476	-47.60	1,761	-9.5	-1.4	76,642	-485.5	-49.03
8/16/1996	74,405	-476	-47.60	1,768	6.9	1.0	76,173	-469.1	-46.57

Appendix A. Storage—Continued

Date	08179505 Medina Lake (site 13)			08180010 Diversion Lake (site 15)			Medina/Diversion Lakes combined		
	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)	Storage (acre-ft)	△ storage (acre-ft)	△ storage (+/- error) (acre-ft)
8/17/1996	73,960	-445	-44.50	1,760	-7.6	-1.1	75,720	-452.6	-45.64
8/18/1996	73,515	-445	-44.50	1,751	-9.0	-1.4	75,266	-454.0	-45.85
8/19/1996	73,096	-419	-41.90	1,749	-2.4	-0.4	74,845	-421.4	-42.26
8/20/1996	72,681	-415	-41.50	1,759	10.1	1.5	74,440	-404.9	-39.99
8/21/1996	72,120	-561	-56.10	1,800	41.0	6.2	73,920	-520.0	-49.95
8/22/1996	71,590	-530	-53.00	1,802	2.1	0.3	73,392	-527.9	-52.69
8/23/1996	71,397	-193	-19.30	1,747	-55.4	-8.3	73,144	-248.4	-27.61
8/24/1996	71,181	-216	-21.60	1,728	-19.3	-2.9	72,909	-235.3	-24.50
8/25/1996	71,109	-72	-7.20	1,731	3.1	0.5	72,840	-68.9	-6.74
8/26/1996	70,989	-120	-12.00	1,723	-8.0	-1.2	72,712	-128.0	-13.20
8/27/1996	70,965	-24	-2.40	1,673	-49.5	-7.4	72,638	-73.5	-9.83
8/28/1996	70,941	-24	-2.40	1,645	-28.4	-4.3	72,586	-52.4	-6.66
8/29/1996	70,821	-120	-12.00	1,618	-27.1	-4.1	72,439	-147.1	-16.07
8/30/1996	70,869	48	4.80	1,599	-19.0	-2.9	72,468	29.0	1.95
8/31/1996	70,965	96	9.60	1,586	-12.9	-1.9	72,551	83.1	7.67
9/1/1996	70,941	-24	-2.40	1,574	-12.0	-1.8	72,515	-36.0	-4.20
9/2/1996	70,965	24	2.40	1,561	-12.6	-1.9	72,526	11.4	0.51
9/3/1996	70,893	-72	-7.20	1,538	-23.0	-3.5	72,431	-95.0	-10.65
9/4/1996	70,773	-120	-12.00	1,484	-54.6	-8.2	72,257	-174.6	-20.19
9/5/1996	70,725	-48	-4.80	1,434	-49.6	-7.4	72,159	-97.6	-12.24
9/6/1996	70797	72	7.20	1390	-44.3	-6.6	72187	27.7	0.55
9/7/1996	70,749	-48	-4.80	1,357	-32.7	-4.9	72,106	-80.7	-9.70
9/8/1996	70,773	24	2.40	1,332	-24.5	-3.7	72,105	-0.5	-1.28
9/9/1996	70,797	24	2.40	1,315	-17.6	-2.6	72,112	6.4	-0.24
9/10/1996	70,749	-48	-4.80	1,300	-14.5	-2.2	72,049	-62.5	-6.98
9/11/1996	70,701	-48	-4.80	1,285	-15.0	-2.3	71,986	-63.0	-7.05
9/12/1996	70,654	-47	-4.70	1,270	-15.6	-2.3	71,924	-62.6	-7.04
9/13/1996	70,536	-118	-11.80	1,257	-12.6	-1.9	71,793	-130.6	-13.69
9/14/1996	70,465	-71	-7.10	1,244	-13.6	-2.0	71,709	-84.6	-9.14
9/15/1996	70,536	71	7.10	1,240	-3.9	-0.6	71,776	67.1	6.51
9/16/1996	70,512	-24	-2.40	1,230	-10.0	-1.5	71,742	-34.0	-3.90
9/17/1996	70,536	24	2.40	1,216	-13.2	-2.0	71,752	10.8	0.42
9/18/1996	70,536	0	0	1,210	-6.4	-1.0	71,746	-6.4	-0.96
9/19/1996	70,512	-24	-2.40	1,234	24.0	3.6	71,746	0	1.20
9/20/1996	70,488	-24	-2.40	1,262	27.8	4.2	71,750	3.8	1.77
9/21/1996	70,418	-70	-7.00	1,290	28.1	4.2	71,708	-41.9	-2.78
9/22/1996	70,347	-71	-7.10	1,314	24.2	3.6	71,661	-46.8	-3.47
9/23/1996	70,276	-71	-7.10	1,344	30.3	4.5	71,620	-40.7	-2.55
9/24/1996	70,110	-166	-16.60	1,405	60.6	9.1	71,515	-105.4	-7.51
9/25/1996	69,968	-142	-14.20	1,454	49.0	7.4	71,422	-93.0	-6.85
9/26/1996	69,731	-237	-23.70	1,506	52.0	7.8	71,237	-185.0	-15.90
9/27/1996	69,496	-235	-23.50	1,505	-1.4	-0.2	71,001	-236.4	-23.71
9/28/1996	69,286	-210	-21.00	1,496	-8.6	-1.3	70,782	-218.6	-22.29
9/29/1996	69,053	-233	-23.30	1,489	-7.3	-1.1	70,542	-240.3	-24.40
9/30/1996	69,029	-24	-2.40	1,484	-4.7	-0.7	70,513	-28.7	-3.11

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Appendix B—
Hydrologic Budgets

Appendix B. Medina Lake hydrologic budget

[Shading indicates budget period. acre-ft, acre-feet; SW_{in}, surface-water inflow; SW_{out}, surface-water outflow; △ storage, change in storage; GW_{out}, ground-water outflow; ft, feet; BMA, Bexar-Medina-Atascosa Counties Water Control and Improvement District No. 1; acre-ft/d, acre-feet per day]

Date	Precipitation		SW_{in}		SW_{out}		Evaporation		△ storage		GW_{out}	
	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)
10/01/95			235.81	23.84	63.47	6.35	33.02	8.25	124	12.40	15.33	28.82
10/02/95			230.16	23.28	63.47	6.35			99	9.90		
10/03/95			222.51	22.47	63.47	6.35			37	3.70		
10/04/95			212.55	21.47	63.47	6.35			-112	-11.20		
10/05/95			204.54	20.67	63.47	6.35			-13	-1.30		
10/06/95			191.96	19.39	63.47	6.35			-128	-12.80		
10/07/95			185.69	18.75	63.47	6.35			-86	-8.60		
10/08/95			175.56	17.74	63.47	6.35			-71	-7.10		
10/09/95			183.45	18.52	63.47	6.35			-66	-6.60		
10/10/95			181.47	18.32	63.47	6.35			-51	-5.10		
10/11/95			175.48	17.72	89.26	8.93			4	0.40		
10/12/95			163.58	16.53	140.83	14.08			-121	-12.10		
10/13/95			153.66	15.54	164.63	16.46			-151	-15.10		
10/14/95			143.31	14.49	164.63	16.46			-177	-17.70		
10/15/95			134.18	13.55	164.63	16.46			-330	-33.00		
10/16/95			127.42	12.85	206.28	20.63			-244	-24.40		
10/17/95			141.70	14.29	249.92	24.99			-300	-30.00		
10/18/95			147.85	14.91	249.92	24.99			-262	-26.20		
10/19/95			149.24	15.04	249.92	24.99			-245	-24.50		
10/20/95			141.28	14.24	249.92	24.99			-290	-29.00		
10/21/95			135.33	13.65	249.92	24.99			-445	-44.50		
10/22/95			103.62	10.47	251.90	25.19			-331	-33.10		
10/23/95			103.62	10.47	249.92	24.99			-260	-26.00		
10/24/95			107.56	10.87	249.92	24.99			-369	-36.90		
10/25/95			107.56	10.87	230.08	23.01			-294	-29.40		
10/26/95			107.56	10.87	170.58	17.06			-198	-19.80		
10/27/95			107.56	10.87	138.84	13.88			-126	-12.60		
10/28/95			107.56	10.87	138.84	13.88			-220	-22.00		
10/29/95	70.54	10.58	113.51	11.46	138.84	13.88			-197	-19.70		
10/30/95	31.84	4.78	127.40	12.85	134.88	13.49			-111	-11.10		
10/31/95	490.13	73.52	160.86	16.29	120.99	12.10			184	18.40		
11/01/95	533.00	79.95	271.74	28.02	105.12	10.51			1,646	164.60		
11/02/95			367.74	37.37	63.47	6.35			462	46.20		
11/03/95			389.95	39.42	63.47	6.35			182	18.20		
11/04/95			288.99	29.25	63.47	6.35	96.03	24.01	-31	-3.10	160.49	38.49
11/05/95			237.62	24.05	61.49	6.15	54.44	13.61	49	4.90	72.69	28.73
11/06/95			226.45	22.90	61.49	6.15	44.13	11.03	74	7.40	46.84	27.17
11/07/95			211.76	21.40	61.49	6.15	45.98	11.49	79	7.90	25.29	26.27
11/08/95			193.80	19.60	61.49	6.15	62.35	15.59	3	0.30	66.96	25.79
11/09/95			177.78	17.99	61.49	6.15			-26	-2.60		
11/10/95			167.92	17.01	61.49	6.15	10.23	2.56	31	3.10	65.20	18.53
11/11/95			168.97	17.08	59.50	5.95	96.49	24.12	18	1.80	-5.03	30.21
11/12/95			149.00	15.08	59.50	5.95	64.60	16.15	-189	-18.90	213.90	29.68
11/13/95			150.96	15.28	59.50	5.95	18.77	4.69	-21	-2.10	93.69	17.18
11/14/95			152.75	15.44	59.50	5.95	36.28	9.07	-42	-4.20	98.96	19.33
11/15/95			138.62	14.02	59.50	5.95	23.25	5.81	-18	-1.80	73.87	16.40
11/16/95			134.48	13.60	59.50	5.95	27.59	6.90	-40	-4.00	87.38	16.85

Appendix B. Medina Lake hydrologic budget—Continued

Date	Stage		Average GW_{out}		Average stage (ft above mean sea level)	Average precipitation (acre-ft/d)	Average SW_{in} (acre-ft/d)	Average SW_{out} (acre-ft/d)	Average evaporation (acre-ft/d)	Average △ storage (acre-ft/d)
	(ft above BMA datum)	(ft above mean sea level)	(acre-ft/d)	(+/- error) (acre-ft/d)						
10/01/95	1,053.18	1,045.38								
10/02/95	1,053.20	1,045.40								
10/03/95	1,053.21	1,045.41								
10/04/95	1,053.19	1,045.39								
10/05/95	1,053.18	1,045.38								
10/06/95	1,053.15	1,045.35								
10/07/95	1,053.14	1,045.34								
10/08/95	1,053.12	1,045.32								
10/09/95	1,053.10	1,045.30								
10/10/95	1,053.09	1,045.29								
10/11/95	1,053.09	1,045.29								
10/12/95	1,053.07	1,045.27								
10/13/95	1,053.03	1,045.23								
10/14/95	1,053.00	1,045.20								
10/15/95	1,052.92	1,045.12								
10/16/95	1,052.87	1,045.07								
10/17/95	1,052.80	1,045.00								
10/18/95	1,052.74	1,044.94								
10/19/95	1,052.69	1,044.89								
10/20/95	1,052.62	1,044.82								
10/21/95	1,052.52	1,044.72								
10/22/95	1,052.45	1,044.65								
10/23/95	1,052.39	1,044.59								
10/24/95	1,052.31	1,044.51								
10/25/95	1,052.24	1,044.44								
10/26/95	1,052.20	1,044.40								
10/27/95	1,052.17	1,044.37								
10/28/95	1,052.12	1,044.32								
10/29/95	1,052.07	1,044.27								
10/30/95	1,052.05	1,044.25								
10/31/95	1,052.09	1,044.29								
11/01/95	1,052.46	1,044.66								
11/02/95	1,052.56	1,044.76								
11/03/95	1,052.61	1,044.81								
11/04/95	1,052.60	1,044.80								
11/05/95	1,052.61	1,044.81								
11/06/95	1,052.63	1,044.83								
11/07/95	1,052.64	1,044.84								
11/08/95	1,052.64	1,044.84								
11/09/95	1,052.64	1,044.84								
11/10/95	1,052.65	1,044.85								
11/11/95	1,052.65	1,044.85								
11/12/95	1,052.61	1,044.81								
11/13/95	1,052.60	1,044.80								
11/14/95	1,052.59	1,044.79								
11/15/95	1,052.59	1,044.79								
11/16/95	1,052.58	1,044.78	113.56	19.89	1,044.79	0	145.16	59.50	34.10	-62.00

Appendix B. Medina Lake hydrologic budget—Continued

Date	Precipitation		SW_{in}		SW_{out}		Evaporation		△ storage		GW_{out}	
	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)
11/17/95	639.24	95.89	166.18	16.89	65.45	6.55	35.35	8.84	282	28.20	422.61	101.96
11/18/95			200.59	20.51	63.47	6.35	20.44	5.11	419	41.90	-302.32	47.36
11/19/95			202.77	20.62	61.49	6.15	11.77	2.94	55	5.50	74.52	22.40
11/20/95			203.15	20.61	61.49	6.15	6.60	1.65	93	9.30	42.06	23.49
11/21/95			192.06	19.47	61.49	6.15	17.00	4.25	74	7.40	39.58	22.13
11/22/95			179.56	18.20	59.50	5.95	28.87	7.22	14	1.40	77.19	20.51
11/23/95			177.54	18.00	59.50	5.95	33.45	8.36	23	2.30	61.58	20.85
11/24/95			163.20	16.55	59.50	5.95	62.31	15.58	-36	-3.60	77.39	23.77
11/25/95			147.35	14.97	59.50	5.95	36.73	9.18	-60	-6.00	111.12	19.49
11/26/95			137.43	13.98	59.50	5.95	23.95	5.99	-22	-2.20	75.99	16.47
11/27/95			135.45	13.78	59.50	5.95	30.60	7.65	35	3.50	10.35	17.20
11/28/95			131.25	13.35	59.50	5.95	182.08	45.52	-51	-5.10	-59.34	48.08
11/29/95			126.60	12.87	59.50	5.95	128.83	32.21	-144	-14.40	82.27	38.02
11/30/95			129.52	13.13	59.50	5.95	20.63	5.16	-54	-5.40	103.39	16.23
12/01/95			135.47	13.73	59.50	5.95	7.85	1.96	-34	-3.40	102.11	15.47
12/02/95			139.42	14.12	59.50	5.95	1.42	0.35	2	0.20	76.50	15.33
12/03/95			143.88	14.58	59.50	5.95	4.37	1.09	14	1.40	66.00	15.84
12/04/95			150.01	15.19	59.50	5.95	36.60	9.15	-43	-4.30	96.91	19.19
12/05/95			146.04	14.80	59.50	5.95	24.03	6.01	-36	-3.60	98.51	17.42
12/06/95			140.07	14.20	59.50	5.95	51.74	12.93	-23	-2.30	51.83	20.24
12/07/95			136.05	13.79	59.50	5.95	65.42	16.35	-77	-7.70	88.12	23.50
12/08/95	33.57	5.04	134.02	13.59	59.50	5.95	29.17	7.29	-40	-4.00	118.92	17.74
12/09/95			133.35	13.50	57.52	5.75	140.60	35.15	-40	-4.00	-24.77	38.30
12/10/95			135.07	13.67	59.50	5.95	80.93	20.23	-249	-24.90	243.64	35.38
12/11/95			139.04	14.06	59.50	5.95	52.43	13.11	-82	-8.20	109.11	21.73
12/12/95			143.07	14.47	59.50	5.95	15.25	3.81	-63	-6.30	131.31	17.29
12/13/95			149.02	15.06	59.50	5.95	10.05	2.51	-17	-1.70	96.46	16.48
12/14/95			149.00	15.06	59.50	5.95	6.91	1.73	-40	-4.00	122.59	16.77
12/15/95			148.98	15.06	59.50	5.95	10.08	2.52	-3	-0.30	82.39	16.39
12/16/95			150.98	15.26	57.52	5.75	31.77	7.94	-39	-3.90	100.69	18.55
12/17/95	84.09	12.61	153.00	15.46	57.52	5.75	-0.90	-0.23	-7	-0.70	187.48	20.78
12/18/95	39.07	5.86	160.34	16.18	57.52	5.75	86.12	21.53	81	8.10	-25.22	29.30
12/19/95			167.23	16.84	57.52	5.75	119.01	29.75	-127	-12.70	117.69	36.92
12/20/95			173.18	17.44	57.52	5.75	48.82	12.21	-134	-13.40	200.83	25.80
12/21/95			147.39	14.86	57.52	5.75	21.46	5.37	-70	-7.00	138.41	18.21
12/22/95			133.49	13.47	57.52	5.75	71.52	17.88	-42	-4.20	46.45	23.49
12/23/95			131.46	13.26	57.52	5.75	41.62	10.41	-150	-15.00	182.32	23.29
12/24/95			131.46	13.26	57.52	5.75	32.01	8.00	-70	-7.00	111.94	17.95
12/25/95			133.45	13.46	57.52	5.75	25.59	6.40	-85	-8.50	135.34	18.10
12/26/95			129.48	13.07	57.52	5.75	23.06	5.77	-73	-7.30	121.90	17.04
12/27/95			125.53	12.67	57.52	5.75	28.75	7.19	-69	-6.90	108.27	17.11
12/28/95			121.55	12.27	57.52	5.75	38.82	9.70	-103	-10.30	128.21	19.59
12/29/95	30.47	4.57	123.53	12.47	57.52	5.75	31.82	7.96	-86	-8.60	150.66	18.62
12/30/95			127.50	12.87	57.52	5.75	4.75	1.19	-3	-0.30	68.23	14.15
12/31/95			133.45	13.46	57.52	5.75	12.83	3.21	-28	-2.80	91.10	15.25
01/01/96			141.20	14.23	57.52	5.75	70.94	17.73	-44	-4.40	56.75	23.86
01/02/96			140.19	14.11	57.52	5.75	135.74	33.93	-162	-16.20	108.93	40.57
01/03/96			118.35	11.92	57.52	5.75	59.98	15.00	-207	-20.70	207.85	28.79
01/04/96			114.41	11.53	57.52	5.75	23.84	5.96	-88	-8.80	121.05	16.70
01/05/96			110.42	11.13	57.52	5.75	46.88	11.72	-9	-0.90	15.02	17.18

Appendix B. Medina Lake hydrologic budget—Continued

Date	Stage		Average GW_{out}		Average stage (ft above mean sea level)	Average precipitation (acre-ft/d)	Average SW_{in} (acre-ft/d)	Average SW_{out} (acre-ft/d)	Average evaporation (acre-ft/d)	Average △ storage (acre-ft/d)
	(ft above BMA datum)	(ft above mean sea level)	(acre-ft/d)	(+/- error) (acre-ft/d)						
11/17/95	1,052.64	1,044.84								
11/18/95	1,052.74	1,044.94								
11/19/95	1,052.75	1,044.95								
11/20/95	1,052.77	1,044.97								
11/21/95	1,052.79	1,044.99								
11/22/95	1,052.79	1,044.99								
11/23/95	1,052.79	1,044.99								
11/24/95	1,052.79	1,044.99								
11/25/95	1,052.77	1,044.97								
11/26/95	1,052.77	1,044.97								
11/27/95	1,052.78	1,044.98								
11/28/95	1,052.76	1,044.96								
11/29/95	1,052.73	1,044.93								
11/30/95	1,052.72	1,044.92								
12/01/95	1,052.71	1,044.91								
12/02/95	1,052.71	1,044.91								
12/03/95	1,052.72	1,044.92								
12/04/95	1,052.71	1,044.91								
12/05/95	1,052.70	1,044.90								
12/06/95	1,052.69	1,044.89								
12/07/95	1,052.68	1,044.88								
12/08/95	1,052.67	1,044.87								
12/09/95	1,052.66	1,044.86								
12/10/95	1,052.60	1,044.80								
12/11/95	1,052.58	1,044.78								
12/12/95	1,052.57	1,044.77								
12/13/95	1,052.57	1,044.77								
12/14/95	1,052.56	1,044.76								
12/15/95	1,052.56	1,044.76								
12/16/95	1,052.55	1,044.75	85.64	21.87	1,044.87	1.53	140.05	59.32	45.06	-48.45
12/17/95	1,052.55	1,044.75								
12/18/95	1,052.56	1,044.76								
12/19/95	1,052.54	1,044.74								
12/20/95	1,052.51	1,044.71								
12/21/95	1,052.49	1,044.69								
12/22/95	1,052.48	1,044.68								
12/23/95	1,052.45	1,044.65								
12/24/95	1,052.43	1,044.63								
12/25/95	1,052.41	1,044.61								
12/26/95	1,052.40	1,044.60								
12/27/95	1,052.38	1,044.58								
12/28/95	1,052.36	1,044.56	121.13	22.30	1,044.66	10.26	142.30	57.52	44.66	-70.75
12/29/95	1,052.34	1,044.54								
12/30/95	1,052.34	1,044.54								
12/31/95	1,052.33	1,044.53								
01/01/96	1,052.32	1,044.52								
01/02/96	1,052.28	1,044.48								
01/03/96	1,052.24	1,044.44	113.92	23.54	1,044.51	5.08	130.70	57.52	52.68	-88.33
01/04/96	1,052.22	1,044.42								
01/05/96	1,052.22	1,044.42								

Appendix B. Medina Lake hydrologic budget—Continued

Date	Precipitation		SW_{in}		SW_{out}		Evaporation		△ storage		GW_{out}	
	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)
01/06/96			106.43	10.73	57.52	5.75	119.82	29.96	-103	-10.30	32.09	33.94
01/07/96			104.45	10.53	57.52	5.75	52.45	13.11	-259	-25.90	253.48	31.41
01/08/96			108.40	10.92	57.52	5.75	36.42	9.10	-141	-14.10	155.46	20.84
01/09/96			110.38	11.12	57.52	5.75	19.91	4.98	-76	-7.60	108.95	15.47
01/10/96			112.36	11.32	101.16	10.12			-97	-9.70		
01/11/96			110.40	11.13	138.84	13.88			-128	-12.80		
01/12/96			106.41	10.73	113.06	11.31			-197	-19.70		
01/13/96			102.45	10.33	113.06	11.31			-164	-16.40		
01/14/96			102.45	10.33	113.06	11.31			-148	-14.80		
01/15/96			104.03	10.48	113.06	11.31			-130	-13.00		
01/16/96			103.83	10.45	113.06	11.31	10.04	2.51	-137	-13.70	117.74	20.76
01/17/96			104.07	10.48	107.11	10.71	-12.09	-3.02	-113	-11.30	122.05	19.01
01/18/96			101.87	10.26	95.21	9.52			0	0		
01/19/96			100.26	10.11	101.16	10.12			-392	-39.20		
01/20/96			99.07	10.01	115.04	11.50	9.71	2.43	-155	-15.50	129.32	21.88
01/21/96			101.06	10.20	115.04	11.50	27.08	6.77	-136	-13.60	94.94	21.62
01/22/96			102.84	10.38	115.04	11.50	-19.34	-4.83	-155	-15.50	162.14	22.44
01/23/96			105.02	10.60	115.04	11.50	5.94	1.48	-56	-5.60	40.04	16.68
01/24/96			105.02	10.60	105.12	10.51	42.76	10.69	-188	-18.80	145.14	26.28
01/25/96			101.06	10.20	105.12	10.51	31.39	7.85	-174	-17.40	138.55	24.06
01/26/96			98.88	9.98	126.94	12.69	31.58	7.89	-85	-8.50	25.36	19.88
01/27/96			96.28	9.71	140.83	14.08	52.27	13.07	-269	-26.90	172.18	34.45
01/28/96			93.90	9.46	140.83	14.08	27.35	6.84	-213	-21.30	138.72	28.08
01/29/96			91.93	9.26	140.83	14.08			-124	-12.40		
01/30/96			91.91	9.26	146.78	14.68			-153	-15.30		
01/31/96			87.97	8.87	172.56	17.26			-252	-25.20		
02/01/96			87.97	8.87	162.64	16.26	43.89	10.97	-267	-26.70	148.43	34.30
02/02/96			91.95	9.27	126.94	12.69			-183	-18.30		
02/03/96			91.91	9.26	117.02	11.70			-226	-22.60		
02/04/96	26.00	3.90	87.93	8.86	117.02	11.70			-217	-21.70		
02/05/96			89.91	9.06	146.78	14.68			-184	-18.40		
02/06/96			93.88	9.46	206.28	20.63			-195	-19.50		
02/07/96			97.86	9.85	182.48	18.25	2.00	0.50	-219	-21.90	132.39	30.17
02/08/96			103.81	10.45	168.59	16.86	2.38	0.59	-177	-17.70	109.84	26.59
02/09/96			103.81	10.45	174.55	17.45	3.53	0.88	-180	-18.00	105.74	27.18
02/10/96			103.83	10.45	196.36	19.64	-2.95	-0.74	-206	-20.60	116.42	30.33
02/11/96			101.83	10.25	196.36	19.64	80.50	20.13	-99	-9.90	-76.03	31.52
02/12/96			89.91	9.06	202.31	20.23	37.93	9.48	-444	-44.40	293.67	50.52
02/13/96			81.98	8.27	210.25	21.02	25.56	6.39	-253	-25.30	99.16	34.52
02/14/96			82.00	8.27	208.26	20.83	7.91	1.98	-225	-22.50	90.83	31.82
02/15/96			85.96	8.66	216.20	21.62	33.42	8.35	-311	-31.10	147.35	39.74
02/16/96			89.95	9.06	232.07	23.21	50.15	12.54	-253	-25.30	60.73	37.66
02/17/96			80.01	8.07	234.05	23.40	28.60	7.15	-295	-29.50	112.36	39.17
02/18/96			82.04	8.27	234.05	23.40	3.89	0.97	-253	-25.30	97.10	35.46
02/19/96			87.41	8.80	226.12	22.61	14.01	3.50	-294	-29.40	141.29	38.28
02/20/96			89.04	8.95	212.23	21.22			-253	-25.30		
02/21/96			89.00	8.95	214.21	21.42	20.37	5.09	-276	-27.60	130.41	36.42
02/22/96			89.00	8.94	220.17	22.02	12.85	3.21	-221	-22.10	76.98	32.61
02/23/96			89.00	8.95	234.05	23.40	19.91	4.98	-225	-22.50	60.04	34.04
02/24/96			87.55	8.81	245.95	24.60	45.98	11.49	-349	-34.90	144.62	45.09

Appendix B. Medina Lake hydrologic budget—Continued

Date	Stage		Average GW_{out}		Average stage (ft above mean sea level)	Average precipitation (acre-ft/d)	Average SW_{in} (acre-ft/d)	Average SW_{out} (acre-ft/d)	Average evaporation (acre-ft/d)	Average △ storage (acre-ft/d)
	(ft above BMA datum)	(ft above mean sea level)	(acre-ft/d)	(+/- error) (acre-ft/d)						
01/06/96	1,052.19	1,044.39								
01/07/96	1,052.13	1,044.33								
01/08/96	1,052.10	1,044.30								
01/09/96	1,052.08	1,044.28	114.34	22.59	1,044.36	0	109.08	57.52	49.89	-112.67
01/10/96	1,052.06	1,044.26								
01/11/96	1,052.03	1,044.23								
01/12/96	1,051.99	1,044.19								
01/13/96	1,051.95	1,044.15								
01/14/96	1,051.92	1,044.12								
01/15/96	1,051.89	1,044.09								
01/16/96	1,051.86	1,044.06								
01/17/96	1,051.83	1,044.03								
01/18/96	1,051.83	1,044.03								
01/19/96	1,051.74	1,043.94								
01/20/96	1,051.71	1,043.91								
01/21/96	1,051.67	1,043.87								
01/22/96	1,051.64	1,043.84								
01/23/96	1,051.63	1,043.83								
01/24/96	1,051.58	1,043.78								
01/25/96	1,051.54	1,043.74								
01/26/96	1,051.52	1,043.72								
01/27/96	1,051.46	1,043.66								
01/28/96	1,051.41	1,043.61	116.27	23.93	1,043.77	0	100.35	119.89	23.19	-159.00
01/29/96	1,051.38	1,043.58								
01/30/96	1,051.35	1,043.55								
01/31/96	1,051.29	1,043.49								
02/01/96	1,051.23	1,043.43								
02/02/96	1,051.19	1,043.39								
02/03/96	1,051.13	1,043.33								
02/04/96	1,051.08	1,043.28								
02/05/96	1,051.04	1,043.24								
02/06/96	1,051.00	1,043.20								
02/07/96	1,050.94	1,043.14								
02/08/96	1,050.90	1,043.10								
02/09/96	1,050.86	1,043.06								
02/10/96	1,050.81	1,043.01								
02/11/96	1,050.79	1,042.99								
02/12/96	1,050.68	1,042.88								
02/13/96	1,050.63	1,042.83	111.60	32.97	1,043.00	0	97.58	190.13	21.28	-225.43
02/14/96	1,050.57	1,042.77								
02/15/96	1,050.50	1,042.70								
02/16/96	1,050.44	1,042.64								
02/17/96	1,050.37	1,042.57								
02/18/96	1,050.31	1,042.51								
02/19/96	1,050.24	1,042.44	108.28	37.02	1,042.61	0	84.56	225.12	23.00	-271.83
02/20/96	1,050.18	1,042.38								
02/21/96	1,050.11	1,042.31								
02/22/96	1,050.06	1,042.26								
02/23/96	1,050.01	1,042.21								
02/24/96	1,049.92	1,042.12								

Appendix B. Medina Lake hydrologic budget—Continued

Date	Precipitation		SW_{in}		SW_{out}		Evaporation		△ storage		GW_{out}	
	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)
02/25/96			82.99	8.34	245.95	24.60	-14.73	-3.68	-307	-30.70	158.77	40.38
02/26/96			80.83	8.12	245.95	24.60	-10.91	-2.73	-265	-26.50	110.78	37.16
02/27/96			80.77	8.11	245.95	24.60	-2.19	-0.55	-249	-24.90	86.01	35.93
02/28/96	19.62	2.94	90.53	9.09	240.00	24.00	96.39	24.10	-194	-19.40	-32.24	40.30
02/29/96	227.23	34.08	101.38	10.20	206.28	20.63	50.70	12.67	-300	-30.00	371.62	52.46
03/01/96			101.26	10.18	150.74	15.07	22.99	5.75	-146	-14.60	73.53	24.02
03/02/96			98.84	9.93	150.74	15.07	32.06	8.01	-210	-21.00	126.04	28.83
03/03/96			94.51	9.49	150.74	15.07	31.07	7.77	-217	-21.70	129.70	29.13
03/04/96			90.57	9.09	150.74	15.07	-11.43	-2.86	-190	-19.00	141.25	26.06
03/05/96			96.48	9.68	150.74	15.07	-8.35	-2.09	-134	-13.40	88.09	22.47
03/06/96			102.43	10.28	148.76	14.88	21.51	5.38	-38	-3.80	-29.85	19.24
03/07/96			106.43	10.68	144.79	14.48	151.38	37.85	-282	-28.20	92.26	50.51
03/08/96			93.26	9.38	134.88	13.49	55.80	13.95	-392	-39.20	294.59	44.73
03/09/96			79.38	7.99	134.88	13.49	24.06	6.02	-227	-22.70	147.44	28.24
03/10/96			75.41	7.59	134.88	13.49	46.05	11.51	-226	-22.60	120.48	29.71
03/11/96			77.39	7.79	134.88	13.49	49.90	12.48	-196	-19.60	88.62	27.97
03/12/96			79.38	7.99	134.88	13.49	21.23	5.31	-252	-25.20	175.27	30.15
03/13/96			81.56	8.21	146.78	14.68	3.76	0.94	-122	-12.20	53.02	20.80
03/14/96			81.34	8.19	154.71	15.47	8.60	2.15	-174	-17.40	92.03	24.77
03/15/96			81.20	8.17	166.61	16.66	6.91	1.73	-162	-16.20	69.68	24.69
03/16/96			79.16	7.96	204.30	20.43	9.43	2.36	-232	-23.20	97.43	32.01
03/17/96			78.98	7.94	204.30	20.43	28.80	7.20	-231	-23.10	76.88	32.65
03/18/96			76.78	7.71	206.28	20.63	104.91	26.23	-235	-23.50	0.59	41.54
03/19/96			74.84	7.52	218.18	21.82	72.87	18.22	-385	-38.50	168.78	48.44
03/20/96			70.91	7.13	230.08	23.01	38.56	9.64	-355	-35.50	157.26	43.97
03/21/96			65.36	6.58	267.77	26.78	50.76	12.69	-336	-33.60	82.83	45.28
03/22/96			65.65	6.62	297.52	29.75	26.51	6.63	-344	-34.40	85.62	46.44
03/23/96			65.65	6.62	297.52	29.75	11.00	2.75	-339	-33.90	96.13	45.67
03/24/96			65.45	6.60	297.52	29.75	4.37	1.09	-290	-29.00	53.56	42.08
03/25/96			67.44	6.79	283.64	28.36	90.84	22.71	-235	-23.50	-72.04	43.80
03/26/96	23.88	3.58	69.42	6.99	247.93	24.79	71.59	17.90	-425	-42.50	198.78	52.94
03/27/96	63.67	9.55	73.41	7.39	226.12	22.61	47.71	11.93	-343	-34.30	206.26	44.45
03/28/96			77.38	7.79	240.00	24.00	21.61	5.40	-205	-20.50	20.77	32.96
03/29/96			79.36	7.99	275.70	27.57	7.87	1.97	-301	-30.10	96.78	41.64
03/30/96			80.95	8.14	275.70	27.57	14.40	3.60	-241	-24.10	31.85	37.68
03/31/96			80.87	8.12	273.72	27.37	44.63	11.16	-300	-30.00	62.51	42.89
04/01/96			83.31	8.38	273.72	27.37	19.46	4.87	-373	-37.30	163.12	47.27
04/02/96			73.98	7.46	273.72	27.37	44.50	11.12	-351	-35.10	106.77	46.48
04/03/96			66.05	6.67	273.72	27.37	10.38	2.59	-306	-30.60	87.95	41.67
04/04/96			68.03	6.87	214.21	21.42	2.78	0.70	-199	-19.90	50.04	30.04
04/05/96	198.13	29.72	73.84	7.45	178.51	17.85	57.34	14.33	-132	-13.20	168.13	40.46
04/06/96			91.85	9.25	176.53	17.65	56.50	14.13	-114	-11.40	-27.18	26.96
04/07/96			125.55	12.62	176.53	17.65	22.32	5.58	-283	-28.30	209.70	36.10
04/08/96			143.40	14.40	176.53	17.65	14.17	3.54	-184	-18.40	136.71	29.50
04/09/96			139.04	13.96	200.33	20.03	12.22	3.06	-402	-40.20	328.49	47.13
04/10/96			127.14	12.77	226.12	22.61	28.38	7.10	-102	-10.20	-25.36	28.79
04/11/96			115.64	11.63	238.02	23.80	8.00	2.00	-310	-31.00	179.62	40.83
04/12/96			103.14	10.36	236.03	23.60	22.51	5.63	-243	-24.30	87.59	35.87
04/13/96			95.13	9.56	245.95	24.60	32.27	8.07	-282	-28.20	98.91	39.45
04/14/96			92.87	9.33	251.90	25.19	56.48	14.12	-348	-34.80	132.49	46.17

Appendix B. Medina Lake hydrologic budget—Continued

Date	Stage		Average GW_{out}		Average stage (ft above mean sea level)	Average precipitation (acre-ft/d)	Average SW_{in} (acre-ft/d)	Average SW_{out} (acre-ft/d)	Average evaporation (acre-ft/d)	Average △ storage (acre-ft/d)
	(ft above BMA datum)	(ft above mean sea level)	(acre-ft/d)	(+/- error) (acre-ft/d)						
02/25/96	1,049.85	1,042.05								
02/26/96	1,049.79	1,041.99								
02/27/96	1,049.73	1,041.93	109.66	37.38	1,042.12	0	85.59	236.03	10.18	-270.29
02/28/96	1,049.68	1,041.88								
02/29/96	1,049.61	1,041.81								
03/01/96	1,049.57	1,041.77								
03/02/96	1,049.52	1,041.72								
03/03/96	1,049.47	1,041.67								
03/04/96	1,049.42	1,041.62	134.98	33.47	1,041.75	41.14	96.18	174.88	36.96	-209.50
03/05/96	1,049.39	1,041.59								
03/06/96	1,049.38	1,041.58								
03/07/96	1,049.31	1,041.51								
03/08/96	1,049.22	1,041.42								
03/09/96	1,049.16	1,041.36	118.50	33.04	1,041.49	0	95.60	142.81	48.88	-214.60
03/10/96	1,049.11	1,041.31								
03/11/96	1,049.06	1,041.26								
03/12/96	1,049.00	1,041.20								
03/13/96	1,048.97	1,041.17								
03/14/96	1,048.93	1,041.13	105.88	26.68	1,041.21	0	79.02	141.22	25.91	-194.00
03/15/96	1,048.89	1,041.09								
03/16/96	1,048.83	1,041.03								
03/17/96	1,048.77	1,040.97								
03/18/96	1,048.71	1,040.91								
03/19/96	1,048.62	1,040.82								
03/20/96	1,048.53	1,040.73								
03/21/96	1,048.44	1,040.64								
03/22/96	1,048.36	1,040.56								
03/23/96	1,048.27	1,040.47								
03/24/96	1,048.20	1,040.40								
03/25/96	1,048.14	1,040.34	74.25	40.60	1,040.72	0	71.95	243.07	40.45	-285.82
03/26/96	1,048.03	1,040.23								
03/27/96	1,047.94	1,040.14								
03/28/96	1,047.89	1,040.09								
03/29/96	1,047.81	1,040.01								
03/30/96	1,047.75	1,039.95								
03/31/96	1,047.67	1,039.87								
04/01/96	1,047.57	1,039.77								
04/02/96	1,047.48	1,039.68								
04/03/96	1,047.40	1,039.60								
04/04/96	1,047.34	1,039.54	102.48	41.80	1,039.89	8.76	75.27	257.45	28.49	-304.40
04/05/96	1,047.31	1,039.51								
04/06/96	1,047.28	1,039.48								
04/07/96	1,047.20	1,039.40								
04/08/96	1,047.16	1,039.36								
04/09/96	1,047.05	1,039.25								
04/10/96	1,047.02	1,039.22	131.75	34.82	1,039.37	33.02	116.81	189.09	31.82	-202.83
04/11/96	1,046.94	1,039.14								
04/12/96	1,046.87	1,039.07								
04/13/96	1,046.80	1,039.00								
04/14/96	1,046.71	1,038.91								

Appendix B. Medina Lake hydrologic budget—Continued

Date	Precipitation		SW_{in}		SW_{out}		Evaporation		△ storage		GW_{out}	
	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)
04/15/96			86.92	8.73	275.70	27.57	107.55	26.89	-264	-26.40	-32.34	47.50
04/16/96			79.20	7.97	289.59	28.96	65.43	16.36	-451	-45.10	175.19	56.60
04/17/96			73.31	7.38	289.59	28.96	38.80	9.70	-379	-37.90	123.92	49.23
04/18/96			65.16	6.56	287.60	28.76	11.07	2.77	-331	-33.10	97.49	44.42
04/19/96			59.21	5.96	299.50	29.95	8.56	2.14	-220	-22.00	-28.86	37.70
04/20/96			59.15	5.96	339.17	33.92	25.89	6.47	-366	-36.60	60.08	50.67
04/21/96			57.92	5.85	339.17	33.92	9.12	2.28	-367	-36.70	76.62	50.37
04/22/96	29.62	4.44	55.54	5.60	339.17	33.92	25.85	6.46	-437	-43.70	157.14	56.15
04/23/96			55.18	5.56	339.17	33.92	46.65	11.66	-361	-36.10	30.36	51.19
04/24/96			53.22	5.36	339.17	33.92	61.91	15.48	-325	-32.50	-22.86	49.75
04/25/96			53.20	5.36	337.19	33.72			-361	-36.10		
04/26/96			53.45	5.39	337.19	33.72	58.51	14.63	-398	-39.80	55.76	54.44
04/27/96			51.29	5.17	337.19	33.72	13.19	3.30	-429	-42.90	129.91	54.91
04/28/96	195.05	29.26	49.43	4.99	339.17	33.92	11.14	2.79	-321	-32.10	215.16	55.40
04/29/96			51.33	5.18	339.17	33.92	145.70	36.42	-321	-32.10	-112.54	59.45
04/30/96			53.22	5.36	339.17	33.92	53.66	13.42	-320	-32.00	-19.62	48.82
05/01/96			55.20	5.56	339.17	33.92	30.43	7.61	-620	-62.00	305.59	71.30
05/02/96			53.20	5.36	345.12	34.51	9.46	2.36	-366	-36.60	64.61	50.65
05/03/96			47.29	4.77	357.02	35.70	2.56	0.64	-357	-35.70	44.70	50.72
05/04/96			45.26	4.57	368.93	36.89			-388	-38.80		
05/05/96			45.26	4.57	370.91	37.09			-352	-35.20		
05/06/96			43.28	4.37	372.89	37.29			-395	-39.50		
05/07/96			43.40	4.38	378.84	37.88	7.78	1.95	-391	-39.10	47.77	54.65
05/08/96	102.60	15.39	47.60	4.81			10.91	2.73	-358	-35.80		
05/09/96			52.56	5.31	305.45	30.55	12.69	3.17	-293	-29.30	27.41	42.78
05/10/96			47.90	4.82	180.50	18.05			-240	-24.00		
05/11/96			49.55	5.00	180.50	18.05			-62	-6.20		
05/12/96			51.07	5.14	180.50	18.05			-277	-27.70		
05/13/96			52.92	5.32	180.50	18.05			-240	-24.00		
05/14/96			52.66	5.29	180.50	18.05			-240	-24.00		
05/15/96			52.74	5.30	180.50	18.05			-377	-37.70		
05/16/96			48.67	4.89	180.50	18.05	53.72	13.43	-137	-13.70	-48.54	26.79
05/17/96			44.71	4.50	180.50	18.05	64.44	16.11	-308	-30.80	107.77	39.42
05/18/96			40.78	4.11	216.20	21.62	66.08	16.52	-343	-34.30	101.50	43.97
05/19/96			36.85	3.71	251.90	25.19	68.48	17.12	-373	-37.30	89.48	48.30
05/20/96			32.93	3.32	287.60	28.76	51.12	12.78	-406	-40.60	100.20	51.48
05/21/96			32.85	3.31	355.04	35.50	47.79	11.95	-236	-23.60	-133.98	44.40
05/22/96			30.68	3.09	384.79	38.48	65.97	16.49	-339	-33.90	-81.08	53.96
05/23/96			28.70	2.89			56.41	14.10	-439	-43.90		
05/24/96			26.92	2.72			59.59	14.90	-568	-56.80		
05/25/96			26.98	2.73			56.67	14.17	-535	-53.50		
05/26/96			26.66	2.69			41.24	10.31	-600	-60.00		
05/27/96	190.10	28.51	30.68	3.09			11.98	2.99	-462	-46.20		
05/28/96			30.59	3.08			11.92	2.98	-133	-13.30		
05/29/96			30.59	3.08			15.24	3.81	-495	-49.50		
05/30/96			30.37	3.05			46.08	11.52	-495	-49.50		
05/31/96	41.82	6.27	32.29	3.24			36.89	9.22	-390	-39.00		
06/01/96	41.62	6.24	38.24	3.84			52.49	13.12	-392	-39.20		
06/02/96			46.18	4.63			23.92	5.98	-489	-48.90		
06/03/96			34.27	3.44			38.60	9.65	131	13.10		

Appendix B. Medina Lake hydrologic budget—Continued

Date	Stage		Average GW_{out}		Average stage (ft above mean sea level)	Average precipitation (acre-ft/d)	Average SW_{in} (acre-ft/d)	Average SW_{out} (acre-ft/d)	Average evaporation (acre-ft/d)	Average △ storage (acre-ft/d)
	(ft above BMA datum)	(ft above mean sea level)	(acre-ft/d)	(+/- error) (acre-ft/d)						
04/15/96	1,046.63	1,038.83								
04/16/96	1,046.51	1,038.71	106.91	44.40	1,038.94	0	95.48	256.20	48.71	-316.33
04/17/96	1,046.41	1,038.61								
04/18/96	1,046.32	1,038.52								
04/19/96	1,046.26	1,038.46								
04/20/96	1,046.16	1,038.36								
04/21/96	1,046.06	1,038.26								
04/22/96	1,045.94	1,038.14								
04/23/96	1,045.85	1,038.05								
04/24/96	1,045.75	1,037.95	61.73	48.68	1,038.29	3.70	59.83	321.57	28.48	-348.25
04/25/96	1,045.65	1,037.85								
04/26/96	1,045.54	1,037.74								
04/27/96	1,045.42	1,037.62								
04/28/96	1,045.33	1,037.53								
04/29/96	1,045.24	1,037.44								
04/30/96	1,045.15	1,037.35								
05/01/96	1,044.98	1,037.18								
05/02/96	1,044.87	1,037.07								
05/03/96	1,044.77	1,036.97	85.45	55.71	1,037.36	24.38	51.80	341.65	40.58	-391.50
05/04/96	1,044.66	1,036.86								
05/05/96	1,044.56	1,036.76								
05/06/96	1,044.45	1,036.65								
05/07/96	1,044.33	1,036.53								
05/08/96	1,044.23	1,036.43								
05/09/96	1,044.15	1,036.35								
05/10/96	1,044.08	1,036.28								
05/11/96	1,044.06	1,036.26								
05/12/96	1,043.98	1,036.18								
05/13/96	1,043.91	1,036.11								
05/14/96	1,043.84	1,036.04								
05/15/96	1,043.73	1,035.93								
05/16/96	1,043.69	1,035.89								
05/17/96	1,043.60	1,035.80								
05/18/96	1,043.50	1,035.70								
05/19/96	1,043.39	1,035.59								
05/20/96	1,043.27	1,035.47	70.08	41.99	1,035.69	0	40.79	223.34	60.77	-313.40
05/21/96	1,043.20	1,035.40								
05/22/96	1,043.10	1,035.30								
05/23/96	1,042.97	1,035.17								
05/24/96	1,042.80	1,035.00								
05/25/96	1,042.64	1,034.84								
05/26/96	1,042.46	1,034.66								
05/27/96	1,042.32	1,034.52								
05/28/96	1,042.28	1,034.48								
05/29/96	1,042.13	1,034.33								
05/30/96	1,041.98	1,034.18								
05/31/96	1,041.86	1,034.06								
06/01/96	1,041.74	1,033.94								
06/02/96	1,041.59	1,033.79								
06/03/96	1,041.63	1,033.83								

Appendix B. Medina Lake hydrologic budget—Continued

Date	Precipitation		SW_{in}		SW_{out}		Evaporation		△ storage		GW_{out}	
	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)
06/04/96			30.31	3.04			56.45	14.11	-489	-48.90		
06/05/96			26.34	2.65			64.97	16.24	-580	-58.00		
06/06/96			22.33	2.25			86.04	21.51	-579	-57.90		
06/07/96			24.22	2.43			56.75	14.19	-355	-35.50		
06/08/96			22.08	2.21			43.72	10.93	-446	-44.60		
06/09/96			20.15	2.02			56.68	14.17	-413	-41.30		
06/10/96			19.89	2.00			79.43	19.86	-733	-73.30		
06/11/96			20.23	2.03			54.56	13.64	-535	-53.50		
06/12/96			22.14	2.22			47.64	11.91	-472	-47.20		
06/13/96			19.95	2.00			40.60	10.15	-472	-47.20		
06/14/96			20.15	2.02			40.34	10.09	-469	-46.90		
06/15/96			18.17	1.82			53.37	13.34	-528	-52.80		
06/16/96			14.96	1.50			52.85	13.21	-530	-53.00		
06/17/96			14.52	1.46			38.03	9.51	-525	-52.50		
06/18/96			14.90	1.50			39.72	9.93	-493	-49.30		
06/19/96			14.10	1.42			58.60	14.65	-523	-52.30		
06/20/96			15.33	1.54			40.12	10.03	-734	-73.40		
06/21/96			14.76	1.48			31.72	7.93	-455	-45.50		
06/22/96			14.64	1.47			54.60	13.65	-461	-46.10		
06/23/96			10.23	1.03			56.43	14.11	-601	-60.10		
06/24/96			10.43	1.05			45.80	11.45	-536	-53.60		
06/25/96	164.55	24.68	15.85	1.60			28.11	7.03	-465	-46.50		
06/26/96	53.97	8.10	19.16	1.93			31.68	7.92	-435	-43.50		
06/27/96			24.36	2.45			43.45	10.86	-473	-47.30		
06/28/96			20.39	2.05			37.92	9.48	-499	-49.90		
06/29/96			19.80	1.99			41.51	10.38	-472	-47.20		
06/30/96			15.99	1.61			35.02	8.76	-578	-57.80		
07/01/96			14.00	1.41			30.23	7.56	-563	-56.30		
07/02/96			13.61	1.37			37.31	9.33	-447	-44.70		
07/03/96			12.61	1.27			32.34	8.08	-469	-46.90		
07/04/96			11.62	1.17			31.61	7.90	-557	-55.70		
07/05/96			10.43	1.05			47.96	11.99	-554	-55.40		
07/06/96			10.63	1.07			47.37	11.84	-887	-88.70		
07/07/96			9.84	0.99			45.79	11.45	-517	-51.70		
07/08/96			9.24	0.93			53.93	13.48	-546	-54.60		
07/09/96	40.45	6.07	8.65	0.87			61.25	15.31	-572	-57.20		
07/10/96	296.44	44.47	12.30	1.29			27.21	6.80	-113	-11.30		
07/11/96			11.48	1.17			52.81	13.20	-485	-48.50		
07/12/96			10.95	1.11	218.18	21.82	64.66	16.17	-227	-22.70	-44.90	35.41
07/13/96			11.42	1.15	245.95	24.60	52.47	13.12	-398	-39.80	111.01	48.60
07/14/96			11.03	1.11	297.52	29.75	48.78	12.20	-226	-22.60	-109.27	39.32
07/15/96			9.64	0.97	315.37	31.54	50.20	12.55	-433	-43.30	77.07	55.03
07/16/96			8.85	0.89	321.32	32.13	75.60	18.90	-440	-44.00	51.92	57.68
07/17/96			8.23	0.83	329.26	32.93	64.70	16.17	-392	-39.20	6.28	53.69
07/18/96			7.85	0.79	335.21	33.52	65.73	16.43	-439	-43.90	45.92	57.63
07/19/96			7.46	0.75	349.09	34.91	69.73	17.43	-421	-42.10	9.63	57.41
07/20/96			7.04	0.71	360.99	36.10	70.31	17.58	-510	-51.00	85.74	64.91
07/21/96			6.43	0.65	374.88	37.49	66.57	16.64	-481	-48.10	45.98	63.22
07/22/96			6.01	0.61	388.76	38.88	55.33	13.83	-402	-40.20	-36.08	57.61
07/23/96			6.05	0.61	390.74	39.07	48.98	12.24	-404	-40.40	-29.67	57.53

Appendix B. Medina Lake hydrologic budget—Continued

Date	Stage		Average GW_{out}		Average stage (ft above mean sea level)	Average precipitation (acre-ft/d)	Average SW_{in} (acre-ft/d)	Average SW_{out} (acre-ft/d)	Average evaporation (acre-ft/d)	Average △ storage (acre-ft/d)
	(ft above BMA datum)	(ft above mean sea level)	(acre-ft/d)	(+/- error) (acre-ft/d)						
06/04/96	1,041.48	1,033.68								
06/05/96	1,041.30	1,033.50								
06/06/96	1,041.12	1,033.32								
06/07/96	1,041.01	1,033.21								
06/08/96	1,040.87	1,033.07								
06/09/96	1,040.74	1,032.94								
06/10/96	1,040.51	1,032.71								
06/11/96	1,040.34	1,032.54								
06/12/96	1,040.19	1,032.39								
06/13/96	1,040.04	1,032.24								
06/14/96	1,039.89	1,032.09								
06/15/96	1,039.72	1,031.92								
06/16/96	1,039.55	1,031.75								
06/17/96	1,039.38	1,031.58								
06/18/96	1,039.22	1,031.42								
06/19/96	1,039.05	1,031.25								
06/20/96	1,038.81	1,031.01								
06/21/96	1,038.66	1,030.86								
06/22/96	1,038.51	1,030.71								
06/23/96	1,038.31	1,030.51								
06/24/96	1,038.13	1,030.33								
06/25/96	1,037.98	1,030.18								
06/26/96	1,037.83	1,030.03								
06/27/96	1,037.67	1,029.87								
06/28/96	1,037.51	1,029.71								
06/29/96	1,037.35	1,029.55								
06/30/96	1,037.15	1,029.35								
07/01/96	1,036.96	1,029.16								
07/02/96	1,036.81	1,029.01								
07/03/96	1,036.65	1,028.85								
07/04/96	1,036.46	1,028.66								
07/05/96	1,036.27	1,028.47								
07/06/96	1,035.96	1,028.16								
07/07/96	1,035.78	1,027.98								
07/08/96	1,035.59	1,027.79								
07/09/96	1,035.39	1,027.59								
07/10/96	1,035.35	1,027.55								
07/11/96	1,035.18	1,027.38								
07/12/96	1,035.10	1,027.30								
07/13/96	1,034.96	1,027.16								
07/14/96	1,034.88	1,027.08								
07/15/96	1,034.81	1,027.01								
07/16/96	1,034.65	1,026.85								
07/17/96	1,034.51	1,026.71								
07/18/96	1,034.36	1,026.56	13.98	47.37	1,026.95	0	9.71	294.69	60.29	-331.29
07/19/96	1,034.21	1,026.41								
07/20/96	1,034.02	1,026.22								
07/21/96	1,033.85	1,026.05								
07/22/96	1,033.71	1,025.91								
07/23/96	1,033.56	1,025.76	15.12	60.13	1,026.07	0	6.60	372.89	62.18	-443.60

Appendix B. Medina Lake hydrologic budget—Continued

Date	Precipitation		SW_{in}		SW_{out}		Evaporation		△ storage		GW_{out}	
	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)
07/24/96			6.05	0.61			53.55	13.39	-426	-42.60		
07/25/96			6.17	0.63			40.65	10.16	-576	-57.60		
07/26/96			8.63	0.88					-538	-53.80		
07/27/96			9.90	1.00					-538	-53.80		
07/28/96			6.29	0.64					-459	-45.90		
07/29/96			6.49	0.66					-502	-50.20		
07/30/96			6.29	0.64					-498	-49.80		
07/31/96			6.07	0.61					-510	-51.00		
08/01/96			5.67	0.58					-469	-46.90		
08/02/96			5.49	0.56					-444	-44.40		
08/03/96			5.16	0.53					-573	-57.30		
08/04/96			5.08	0.52					-507	-50.70		
08/05/96			4.88	0.50					-555	-55.50		
08/06/96			4.88	0.50					-452	-45.20		
08/07/96			4.84	0.49					-504	-50.40		
08/08/96			4.66	0.47					-498	-49.80		
08/09/96			4.62	0.47					-679	-67.90		
08/10/96			4.62	0.47					-463	-46.30		
08/11/96			4.44	0.45			41.92	10.48	-281	-28.10		
08/12/96			4.44	0.45					-480	-48.00		
08/13/96			5.28	0.54					-691	-69.10		
08/14/96			5.38	0.55			26.58	6.65	-403	-40.30		
08/15/96			5.08	0.52			38.48	9.62	-476	-47.60		
08/16/96			4.98	0.51			47.10	11.78	-476	-47.60		
08/17/96			5.08	0.52			56.76	14.19	-445	-44.50		
08/18/96			5.12	0.53			59.96	14.99	-445	-44.50		
08/19/96			5.16	0.53			57.34	14.33	-419	-41.90		
08/20/96	89.50	13.43	7.74	0.85			29.82	7.45	-415	-41.50		
08/21/96			6.37	0.68			27.69	6.92	-561	-56.10		
08/22/96	56.68	8.50	6.03	0.62			19.07	4.77	-530	-53.00		
08/23/96	58.92	8.84	6.62	0.68	241.98	24.20	14.77	3.69	-193	-19.30	1.80	32.41
08/24/96	44.65	6.70	6.55	0.68	122.98	12.30	16.82	4.21	-216	-21.60	127.39	26.09
08/25/96	54.78	8.22	9.86	1.01	120.99	12.10	10.74	2.68	-72	-7.20	4.91	16.55
08/26/96	122.09	18.31	14.30	1.46	67.44	6.74	19.69	4.92	-120	-12.00	169.26	23.48
08/27/96			18.49	1.87	29.75	2.98	31.53	7.88	-24	-2.40	-18.80	8.96
08/28/96			16.50	1.67	29.75	2.98	38.53	9.63	-24	-2.40	-27.78	10.50
08/29/96	172.42	25.86	15.43	1.57	29.75	2.98	25.59	6.40	-120	-12.00	252.50	29.41
08/30/96	326.51	48.98	18.11	1.93	31.74	3.17	11.59	2.90	48	4.80	253.30	49.44
08/31/96			26.90	2.78	31.74	3.17	13.01	3.25	96	9.60	-113.85	10.98
09/01/96	92.69	13.90	75.43	8.69	31.74	3.17	14.73	3.68	-24	-2.40	145.65	17.27
09/02/96			35.33	3.72	29.75	2.98	20.63	5.16	24	2.40	-39.06	7.42
09/03/96			26.78	2.75	29.75	2.98			-72	-7.20		
09/04/96	29.81	4.47	25.59	2.60	29.75	2.98			-120	-12.00		
09/05/96	108.52	16.28	63.33	6.38	29.75	2.98			-48	-4.80		
09/06/96			122.62	12.30	29.75	2.98			72	7.20		
09/07/96			96.83	9.72	29.75	2.98			-48	-4.80		
09/08/96			89.45	9.10	29.75	2.98			24	2.40		
09/09/96			74.78	7.56	29.75	2.98			24	2.40		
09/10/96			62.08	6.27	29.75	2.98			-48	-4.80		
09/11/96			57.72	5.83	29.75	2.98			-48	-4.80		

Appendix B. Medina Lake hydrologic budget—Continued

Date	Stage		Average GW_{out}		Average stage (ft above mean sea level)	Average precipitation (acre-ft/d)	Average SW_{in} (acre-ft/d)	Average SW_{out} (acre-ft/d)	Average evaporation (acre-ft/d)	Average △ storage (acre-ft/d)
	(ft above BMA datum)	(ft above mean sea level)	(acre-ft/d)	(+/- error) (acre-ft/d)						
07/24/96	1,033.41	1,025.61								
07/25/96	1,033.20	1,025.40								
07/26/96	1,033.00	1,025.20								
07/27/96	1,032.80	1,025.00								
07/28/96	1,032.63	1,024.83								
07/29/96	1,032.45	1,024.65								
07/30/96	1,032.26	1,024.46								
07/31/96	1,032.07	1,024.27								
08/01/96	1,031.90	1,024.10								
08/02/96	1,031.73	1,023.93								
08/03/96	1,031.51	1,023.71								
08/04/96	1,031.32	1,023.52								
08/05/96	1,031.11	1,023.31								
08/06/96	1,030.94	1,023.14								
08/07/96	1,030.74	1,022.94								
08/08/96	1,030.55	1,022.75								
08/09/96	1,030.29	1,022.49								
08/10/96	1,030.11	1,022.31								
08/11/96	1,030.00	1,022.20								
08/12/96	1,029.81	1,022.01								
08/13/96	1,029.54	1,021.74								
08/14/96	1,029.38	1,021.58								
08/15/96	1,029.19	1,021.39								
08/16/96	1,029.00	1,021.20								
08/17/96	1,028.82	1,021.02								
08/18/96	1,028.64	1,020.84								
08/19/96	1,028.47	1,020.67								
08/20/96	1,028.30	1,020.50								
08/21/96	1,028.07	1,020.27								
08/22/96	1,027.85	1,020.05								
08/23/96	1,027.77	1,019.97								
08/24/96	1,027.68	1,019.88								
08/25/96	1,027.65	1,019.85								
08/26/96	1,027.60	1,019.80								
08/27/96	1,027.59	1,019.79								
08/28/96	1,027.58	1,019.78								
08/29/96	1,027.53	1,019.73								
08/30/96	1,027.55	1,019.75								
08/31/96	1,027.59	1,019.79								
09/01/96	1,027.58	1,019.78								
09/02/96	1,027.59	1,019.79								
09/03/96	1,027.56	1,019.76								
09/04/96	1,027.51	1,019.71								
09/05/96	1,027.49	1,019.69								
09/06/96	1,027.52	1,019.72								
09/07/96	1,027.50	1,019.70								
09/08/96	1,027.51	1,019.71								
09/09/96	1,027.52	1,019.72								
09/10/96	1,027.50	1,019.70								
09/11/96	1,027.48	1,019.68								

Appendix B. Medina Lake hydrologic budget—Continued

Date	Precipitation		SW_{in}		SW_{out}		Evaporation		△ storage		GW_{out}	
	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)
09/12/96			53.20	5.36	29.75	2.98			-47	-4.70		
09/13/96	20.30	3.05	47.25	4.77	29.75	2.98			-118	-11.80		
09/14/96			43.28	4.37	29.75	2.98			-71	-7.10		
09/15/96	151.73	22.76	59.40	6.14	31.74	3.17			71	7.10		
09/16/96			198.94	19.96	29.75	2.98			-24	-2.40		
09/17/96			210.84	21.15	29.75	2.98			24	2.40		
09/18/96			143.40	14.40	59.50	5.95			0	0		
09/19/96			121.39	12.20	87.27	8.73			-24	-2.40		
09/20/96	29.71	4.46	107.50	10.81	85.29	8.53			-24	-2.40		
09/21/96			97.09	9.76	85.29	8.53			-70	-7.00		
09/22/96			85.69	8.63	85.29	8.53			-71	-7.10		
09/23/96			77.02	7.74	126.94	12.69			-71	-7.10		
09/24/96	61.70	9.26	73.15	7.36	172.56	17.26			-166	-16.60		
09/25/96			76.05	7.70	172.56	17.26			-142	-14.20		
09/26/96			75.05	7.55	172.56	17.26			-237	-23.70		
09/27/96	170.30	25.55	75.03	7.55	152.73	15.27			-235	-23.50		
09/28/96			69.06	6.95	113.06	11.31			-210	-21.00		
09/29/96			65.10	6.55	113.06	11.31			-233	-23.30		
09/30/96			61.13	6.15	126.94	12.69			-24	-2.40		

Appendix B. Medina Lake hydrologic budget—Continued

Date	Stage		Average GW_{out}		Average stage (ft above mean sea level)	Average precipitation (acre-ft/d)	Average SW_{in} (acre-ft/d)	Average SW_{out} (acre-ft/d)	Average evaporation (acre-ft/d)	Average △ storage (acre-ft/d)
	(ft above BMA datum)	(ft above mean sea level)	(acre-ft/d)	(+/- error) (acre-ft/d)						
09/12/96	1,027.46	1,019.66								
09/13/96	1,027.41	1,019.61								
09/14/96	1,027.38	1,019.58								
09/15/96	1,027.41	1,019.61								
09/16/96	1,027.40	1,019.60								
09/17/96	1,027.41	1,019.61								
09/18/96	1,027.41	1,019.61								
09/19/96	1,027.40	1,019.60								
09/20/96	1,027.39	1,019.59								
09/21/96	1,027.36	1,019.56								
09/22/96	1,027.33	1,019.53								
09/23/96	1,027.30	1,019.50								
09/24/96	1,027.23	1,019.43								
09/25/96	1,027.17	1,019.37								
09/26/96	1,027.07	1,019.27								
09/27/96	1,026.97	1,019.17								
09/28/96	1,026.88	1,019.08								
09/29/96	1,026.78	1,018.98								
09/30/96	1,026.77	1,018.97								

Appendix B. Diversion Lake hydrologic budget

[Site number corresponds to figure 3 and table 2. Shading indicates budget period. acre-ft, acre-feet; SW_{in}, surface-water inflow; SW_{out}, surface-water outflow; △ storage, change in storage; GW_{out}, ground-water outflow; ft, feet; BMA, Bexar-Medina-Atascosa Counties Water Control and Improvement District No. 1; acre-ft/d, acre-feet per day]

Date	Precipitation		SW_{in}		SW_{out} (site 8)		Evaporation		△ storage		GW_{out} (site 8)	
	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)
10/01/95			64.82	6.55	111.87	11.19						
10/02/95			64.82	6.55	107.90	10.79						
10/03/95			64.80	6.55	144.59	14.46						
10/04/95			64.78	6.54	165.82	16.58						
10/05/95			64.78	6.54	158.88	15.89						
10/06/95			64.78	6.54	154.31	15.43						
10/07/95			64.78	6.54	153.12	15.31						
10/08/95			64.78	6.54	150.15	15.01						
10/09/95			64.78	6.54	147.17	14.72						
10/10/95			64.78	6.54	145.98	14.60						
10/11/95			90.55	9.12	120.20	12.02			-31.4	-4.7		
10/12/95			142.12	14.28	122.18	12.22			4.6	0.7		
10/13/95			165.89	16.65	142.02	14.20			25.8	3.9		
10/14/95			165.90	16.65	153.92	15.39			15.4	2.3		
10/15/95			165.90	16.65	158.08	15.81			6.5	1.0		
10/16/95			207.53	20.82	166.21	16.62			10.2	1.5		
10/17/95			251.17	25.18	194.18	19.42			34.5	5.2		
10/18/95			251.17	25.18	212.83	21.28			23.4	3.5		
10/19/95			251.17	25.18	223.54	22.35			12.0	1.8		
10/20/95			251.17	25.18	227.50	22.75			6.0	0.9		
10/21/95			251.17	25.18	227.50	22.75			2.0	0.3		
10/22/95			253.15	25.38	229.49	22.95			2.1	0.3		
10/23/95			251.17	25.18	231.47	23.15			2.8	0.4		
10/24/95			251.15	25.18	231.47	23.15			-1.0	-0.2		
10/25/95			231.31	23.19	211.64	21.16			2.1	0.3		
10/26/95			171.81	17.24	181.88	18.19			-2.0	-0.3		
10/27/95			140.07	14.07	169.98	17.00			-17.6	-2.6		
10/28/95			140.07	14.07	167.21	16.72			-26.9	-4.0		
10/29/95	1.22	0.18	140.07	14.07	158.48	15.85			-17.7	-2.7		
10/30/95			136.11	13.67	152.53	15.25			-10.4	-1.6		
10/31/95	17.55	2.63	122.22	12.28	97.19	9.72			1.2	0.2		
11/01/95	9.31	1.40	106.35	10.70	45.82	4.58			116.7	17.5		
11/02/95			64.68	6.53	48.60	4.86			70.1	10.5		
11/03/95			64.68	6.53	51.17	5.12			45.6	6.8		
11/04/95			64.66	6.53	51.57	5.16	3.43	0.86	35.4	5.3	-25.74	9.91
11/05/95			62.68	6.33	53.95	5.40	1.96	0.49	27.3	4.1	-20.53	9.28
11/06/95			62.68	6.33	42.64	4.26	1.60	0.40	22.0	3.3	-3.57	8.32
11/07/95			62.68	6.33	56.73	5.67	1.68	0.42	27.5	4.1	-23.23	9.46
11/08/95			62.68	6.33	86.48	8.65	2.26	0.57	-8.2	-1.2	-17.86	10.80
11/09/95			62.68	6.33	87.67	8.77			-11.9	-1.8		
11/10/95			62.68	6.33	102.74	10.27	0.37	0.09	-21.6	-3.2	-18.83	12.49
11/11/95			60.69	6.13	100.76	10.08	3.44	0.86	-28.1	-4.2	-15.41	12.55
11/12/95			60.69	6.13	96.79	9.68	2.29	0.57	-29.4	-4.4	-8.99	12.29
11/13/95			60.69	6.13	94.81	9.48	0.66	0.16	-27.7	-4.2	-7.07	12.03
11/14/95			60.69	6.13	102.74	10.27	1.26	0.32	-28.7	-4.3	-14.61	12.72

Date	Stage		Average GW_{out}		Average stage (ft above mean sea level)	Average precipitation (acre-ft/d)	Average SW_{in} (acre-ft/d)	Average SW_{out} (acre-ft/d)	Average evaporation (acre-ft/d)	Average △ storage (acre-ft/d)
	(ft above BMA datum)	(ft above mean sea level)	(acre-ft/d)	(+/- error) (acre-ft/d)						
10/01/95										
10/02/95										
10/03/95										
10/04/95										
10/05/95										
10/06/95										
10/07/95										
10/08/95										
10/09/95										
10/10/95	919.36	911.56								
10/11/95	919.1	911.30								
10/12/95	919.14	911.34								
10/13/95	919.35	911.55								
10/14/95	919.48	911.68								
10/15/95	919.53	911.73								
10/16/95	919.62	911.82								
10/17/95	919.90	912.10								
10/18/95	920.09	912.29								
10/19/95	920.19	912.39								
10/20/95	920.24	912.44								
10/21/95	920.25	912.45								
10/22/95	920.27	912.47								
10/23/95	920.29	912.49								
10/24/95	920.28	912.48								
10/25/95	920.3	912.50								
10/26/95	920.28	912.48								
10/27/95	920.14	912.34								
10/28/95	919.93	912.13								
10/29/95	919.78	911.98								
10/30/95	919.69	911.89								
10/31/95	919.71	911.91								
11/01/95	920.64	912.84								
11/02/95	921.18	913.38								
11/03/95	921.53	913.73								
11/04/95	921.80	914.00								
11/05/95	922.00	914.20								
11/06/95	922.16	914.36								
11/07/95	922.36	914.56								
11/08/95	922.30	914.50								
11/09/95	922.22	914.42								
11/10/95	922.06	914.26								
11/11/95	921.85	914.05								
11/12/95	921.63	913.83								
11/13/95	921.42	913.62								
11/14/95	921.20	913.40								

Appendix B. Diversion Lake hydrologic budget—Continued

Date	Precipitation		SW_{in}		SW_{out} (site 8)		Evaporation		△ storage		GW_{out} (site 8)	
	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)
11/15/95			60.69	6.13	130.12	13.01	0.80	0.20	-42.1	-6.3	-28.12	15.71
11/16/95	1.27	0.19	60.69	6.13	124.96	12.50	0.94	0.23	-54.1	-8.1	-9.83	16.11
11/17/95	11.24	1.69	66.62	6.72	44.43	4.44	1.19	0.30	-9.3	-1.4	41.54	8.35
11/18/95			64.64	6.52	11.50	1.15	0.70	0.17	47.3	7.1	5.14	9.71
11/19/95			62.64	6.32	11.90	1.19	0.41	0.10	41.6	6.2	8.73	8.96
11/20/95			62.64	6.32	12.50	1.25	0.23	0.06	38.3	5.7	11.61	8.63
11/21/95			62.64	6.32	13.49	1.35	0.60	0.15	33.3	5.0	15.25	8.17
11/22/95			60.65	6.12	13.49	1.35	1.03	0.26	29.7	4.5	16.44	7.70
11/23/95			60.65	6.12	13.49	1.35	1.20	0.30	27.7	4.2	18.27	7.53
11/24/95			60.65	6.12	14.28	1.43	2.25	0.56	24.8	3.7	19.32	7.33
11/25/95			60.65	6.12	14.28	1.43	1.34	0.33	22.2	3.3	22.84	7.12
11/26/95			60.65	6.12	14.28	1.43	0.88	0.22	23.0	3.5	22.50	7.18
11/27/95			60.63	6.12	14.28	1.43	1.13	0.28	22.0	3.3	23.23	7.10
11/28/95			60.63	6.12	14.28	1.43	6.76	1.69	17.8	2.7	21.80	7.03
11/29/95			60.63	6.12	88.46	8.85	4.76	1.19	-0.5	-0.1	-32.09	10.82
11/30/95			60.63	6.12	94.02	9.40	0.75	0.19	-49.5	-7.4	15.37	13.45
12/01/95			60.61	6.12	91.64	9.16	0.28	0.07	-30.0	-4.5	-1.31	11.90
12/02/95			60.61	6.12	95.60	9.56	0.05	0.01	-35.1	-5.3	0.06	12.51
12/03/95			60.61	6.12	92.83	9.28	0.16	0.04	-31.8	-4.8	-0.57	12.10
12/04/95			60.61	6.12	90.84	9.08	1.29	0.32	-30.1	-4.5	-1.42	11.85
12/05/95			60.61	6.12	88.86	8.89	0.84	0.21	-27.6	-4.1	-1.48	11.56
12/06/95			60.60	6.11	107.31	10.73	1.79	0.45	-31.2	-4.7	-17.30	13.21
12/07/95			60.60	6.11	113.06	11.31	2.23	0.56	-44.5	-6.7	-10.20	14.49
12/08/95	0.85	0.13	60.58	6.11	98.38	9.84	0.99	0.25	-35.2	-5.3	-2.75	12.73
12/09/95			58.59	5.91	87.87	8.79	4.73	1.18	-27.0	-4.1	-7.01	11.40
12/10/95			60.58	6.11	85.09	8.51	2.69	0.67	-24.7	-3.7	-2.50	11.13
12/11/95			60.58	6.11	100.96	10.10	1.72	0.43	-24.4	-3.7	-17.70	12.36
12/12/95			60.58	6.11	100.96	10.10	0.49	0.12	-32.1	-4.8	-8.78	12.75
12/13/95			60.56	6.11	92.43	9.24	0.32	0.08	-26.3	-3.9	-5.90	11.76
12/14/95			60.54	6.11	85.69	8.57	0.22	0.05	-20.6	-3.1	-4.77	10.97
12/15/95			60.54	6.11	81.72	8.17	0.32	0.08	-15.7	-2.4	-5.80	10.47
12/16/95			58.55	5.91	75.77	7.58	1.00	0.25	-13.1	-2.0	-5.12	9.81
12/17/95			58.55	5.91	73.79	7.38	-0.03	-0.01	-8.8	-1.3	-6.40	9.54
12/18/95	1.16	0.17	58.53	5.90	81.12	8.11	2.69	0.67	-8.3	-1.2	-15.82	10.13
12/19/95			58.53	5.90	76.56	7.66	3.72	0.93	-15.9	-2.4	-5.85	10.00
12/20/95	2.88	0.43	58.53	5.90	72.40	7.24	1.51	0.38	-10.5	-1.6	-2.00	9.49
12/21/95			58.51	5.90	68.43	6.84	0.67	0.17	-7.3	-1.1	-3.28	9.10
12/22/95			58.51	5.90	28.76	2.88	2.22	0.55	5.1	0.8	22.43	6.63
12/23/95			58.49	5.90	6.94	0.69	1.31	0.33	31.7	4.8	18.54	7.61
12/24/95			58.49	5.90	7.74	0.77	1.02	0.25	33.3	5.0	16.44	7.77
12/25/95			58.49	5.90	8.33	0.83	0.82	0.21	32.7	4.9	16.64	7.72
12/26/95			58.47	5.89	9.32	0.93	0.75	0.19	30.0	4.5	18.40	7.48
12/27/95			58.47	5.89	49.39	4.94	0.94	0.24	19.2	2.9	-11.06	8.22
12/28/95			58.45	5.89	71.21	7.12	1.27	0.32	-12.1	-1.8	-1.92	9.42
12/29/95			58.45	5.89	75.17	7.52	1.04	0.26	-18.2	-2.7	0.44	9.94
12/30/95			58.43	5.89	73.19	7.32	0.15	0.04	-14.2	-2.1	-0.71	9.63
12/31/95			58.43	5.89	71.01	7.10	0.41	0.10	-12.3	-1.8	-0.69	9.41
01/01/96			58.41	5.89	66.25	6.62	2.28	0.57	-9.6	-1.4	-0.52	9.00
01/02/96			58.41	5.89	64.66	6.47	4.33	1.08	-10.9	-1.6	0.32	8.96
01/03/96			58.41	5.89	64.66	6.47	1.92	0.48	-9.5	-1.4	1.33	8.87

Appendix B. Diversion Lake hydrologic budget—Continued

Date	Stage		Average GW_{out}		Average stage (ft above mean sea level)	Average precipitation (acre-ft/d)	Average SW_{in} (acre-ft/d)	Average SW_{out} (acre-ft/d)	Average evaporation (acre-ft/d)	Average △ storage (acre-ft/d)
	(ft above BMA datum)	(ft above mean sea level)	(acre-ft/d)	(+/- error) (acre-ft/d)						
11/15/95	920.88	913.08								
11/16/95	920.45	912.65								
11/17/95	920.38	912.58								
11/18/95	920.75	912.95								
11/19/95	921.08	913.28								
11/20/95	921.37	913.57								
11/21/95	921.62	913.82								
11/22/95	921.84	914.04								
11/23/95	922.05	914.25								
11/24/95	922.23	914.43								
11/25/95	922.39	914.59								
11/26/95	922.55	914.75								
11/27/95	922.72	914.92								
11/28/95	922.85	915.05								
11/29/95	922.84	915.04								
11/30/95	922.48	914.68								
12/01/95	922.27	914.47								
12/02/95	922.01	914.21								
12/03/95	921.77	913.97								
12/04/95	921.54	913.74								
12/05/95	921.34	913.54								
12/06/95	921.10	913.30								
12/07/95	920.75	912.95								
12/08/95	920.47	912.67								
12/09/95	920.26	912.46								
12/10/95	920.07	912.27								
12/11/95	919.87	912.07								
12/12/95	919.60	911.80								
12/13/95	919.38	911.58								
12/14/95	919.21	911.41								
12/15/95	919.08	911.28								
12/16/95	918.97	911.17								
12/17/95	918.89	911.09								
12/18/95	918.82	911.02								
12/19/95	918.68	910.88								
12/20/95	918.59	910.79								
12/21/95	918.52	910.72								
12/22/95	918.57	910.77								
12/23/95	918.85	911.05	2.34	8.83	910.87	0.67	58.52	55.70	2.02	-0.87
12/24/95	919.13	911.33								
12/25/95	919.40	911.60								
12/26/95	919.65	911.85								
12/27/95	919.81	912.01								
12/28/95	919.71	911.91	7.70	8.12	911.74	0	58.48	29.20	0.96	20.62
12/29/95	919.56	911.76								
12/30/95	919.44	911.64								
12/31/95	919.34	911.54								
01/01/96	919.26	911.46								
01/02/96	919.17	911.37								
01/03/96	919.09	911.29	0.03	9.30	911.51	0	58.43	69.16	1.69	-12.45

Appendix B. Diversion Lake hydrologic budget—Continued

Date	Precipitation		SW_{in}		SW_{out} (site 8)		Evaporation		△ storage		GW_{out} (site 8)	
	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)
01/04/96			58.39	5.88	70.61	7.06	0.76	0.19	-7.8	-1.2	-5.17	9.27
01/05/96			58.39	5.88	74.38	7.44	1.49	0.37	-14.0	-2.1	-3.47	9.72
01/06/96			58.37	5.88	69.62	6.96	3.77	0.94	-13.0	-2.0	-2.02	9.37
01/07/96			58.37	5.88	65.26	6.53	1.66	0.41	-10.9	-1.6	2.36	8.94
01/08/96			58.35	5.88	63.27	6.33	1.14	0.28	-7.1	-1.1	1.04	8.71
01/09/96			58.35	5.88	63.27	6.33	0.62	0.16	-5.6	-0.8	0.06	8.68
01/10/96			101.97	10.24	69.22	6.92			0.9	0.1		
01/11/96			139.66	14.01	95.80	9.58			35.9	5.4		
01/12/96			113.87	11.43	104.33	10.43			13.8	2.1		
01/13/96			113.85	11.42	107.90	10.79			3.0	0.5		
01/14/96			113.85	11.42	109.49	10.95			1.0	0.2		
01/15/96			113.85	11.42	109.49	10.95			0.2	0		
01/16/96			113.83	11.42	109.49	10.95	0.32	0.08	0	0	4.02	15.82
01/17/96			107.88	10.83	107.50	10.75	-0.39	-0.10	0.5	0.1	0.27	15.26
01/18/96			95.96	9.63	97.59	9.76			-3.6	-0.5		
01/19/96			101.91	10.23	95.60	9.56			-6.9	-1.0		
01/20/96			115.78	11.61	101.55	10.16	0.31	0.08	3.4	0.5	10.51	15.44
01/21/96			115.78	11.61	105.52	10.55	0.88	0.22	4.9	0.7	4.48	15.71
01/22/96			115.78	11.61	105.52	10.55	-0.63	-0.16	2.7	0.4	8.18	15.70
01/23/96			115.76	11.61	107.50	10.75	0.19	0.05	3.0	0.5	5.06	15.83
01/24/96			105.84	10.62	101.55	10.16	1.39	0.35	-0.1	0	3.00	14.70
01/25/96			105.84	10.62	99.97	10.00	1.02	0.26	-3.3	-0.5	8.15	14.60
01/26/96			127.64	12.80	108.30	10.83	1.03	0.26	5.1	0.8	13.21	16.78
01/27/96			141.52	14.19	114.25	11.42	1.70	0.43	12.1	1.8	13.47	18.31
01/28/96			141.52	14.19	120.20	12.02	0.90	0.22	10.6	1.6	9.82	18.66
01/29/96			141.50	14.18	128.13	12.81			6.8	1.0		
01/30/96			147.45	14.78	132.30	13.23			2.2	0.3		
01/31/96			173.24	17.36	141.42	14.14			9.3	1.4		
02/01/96			163.30	16.36	133.49	13.35	1.47	0.37	18.4	2.8	9.94	21.30
02/02/96			127.58	12.79	125.55	12.56			5.6	0.8		
02/03/96			117.66	11.80	127.54	12.75			-15.6	-2.3		
02/04/96			117.66	11.80	121.59	12.16			-13.1	-2.0		
02/05/96			147.41	14.77	120.79	12.08			-5.4	-0.8		
02/06/96			206.90	20.72	150.94	15.09			28.1	4.2		
02/07/96			183.09	18.34	161.26	16.13	0.07	0.02	19.3	2.9	2.47	24.59
02/08/96			169.19	16.95	159.27	15.93	0.08	0.02	-1.0	-0.2	10.84	23.26
02/09/96			175.14	17.54	159.27	15.93	0.12	0.03	-2.0	-0.3	17.75	23.70
02/10/96			196.96	19.73	169.19	16.92	-0.10	-0.03	5.3	0.8	22.57	26.00
02/11/96			196.94	19.72	171.17	17.12	2.75	0.69	5.5	0.8	17.52	26.14
02/12/96			202.89	20.32	173.16	17.32	1.29	0.32	1.0	0.2	27.44	26.70
02/13/96			210.82	21.11	181.09	18.11	0.88	0.22	6.6	1.0	22.26	27.83
02/14/96			208.84	20.91	189.02	18.90	0.27	0.07	1.4	0.2	18.14	28.19
02/15/96			216.75	21.70	191.01	19.10	1.15	0.29	0.2	0	24.40	28.91
02/16/96			232.62	23.29	200.93	20.09	1.73	0.43	4.9	0.7	25.07	30.77
02/17/96			234.58	23.49	204.89	20.49	1.00	0.25	1.4	0.2	27.29	31.17
02/18/96			234.58	23.49	204.89	20.49	0.14	0.03	0.7	0.1	28.86	31.17
02/19/96			226.65	22.69	207.07	20.71	0.48	0.12	-3.2	-0.5	22.29	30.72
02/20/96			212.75	21.30	198.94	19.89			-2.0	-0.3		
02/21/96			214.73	21.50	194.98	19.50	0.71	0.18	-5.2	-0.8	24.25	29.03
02/22/96			220.68	22.09	192.99	19.30	0.45	0.11	-1.6	-0.2	28.84	29.34

Appendix B. Diversion Lake hydrologic budget—Continued

Date	Stage		Average GW_{out}		Average stage (ft above mean sea level)	Average precipitation (acre-ft/d)	Average SW_{in} (acre-ft/d)	Average SW_{out} (acre-ft/d)	Average evaporation (acre-ft/d)	Average △ storage (acre-ft/d)
	(ft above BMA datum)	(ft above mean sea level)	(acre-ft/d)	(+/- error) (acre-ft/d)						
01/04/96	919.02	911.22								
01/05/96	918.90	911.10								
01/06/96	918.79	910.99								
01/07/96	918.69	910.89								
01/08/96	918.63	910.83								
01/09/96	918.58	910.78	-1.20	9.11	910.97	0	58.37	67.74	1.57	-9.73
01/10/96	918.59	910.79								
01/11/96	918.91	911.11								
01/12/96	919.03	911.23								
01/13/96	919.05	911.25								
01/14/96	919.06	911.26								
01/15/96	919.06	911.26								
01/16/96	919.06	911.26								
01/17/96	919.06	911.26								
01/18/96	919.03	911.23								
01/19/96	918.98	911.18								
01/20/96	919.00	911.20								
01/21/96	919.05	911.25								
01/22/96	919.07	911.27								
01/23/96	919.09	911.29								
01/24/96	919.09	911.29								
01/25/96	919.07	911.27								
01/26/96	919.11	911.31								
01/27/96	919.21	911.41								
01/28/96	919.30	911.50	8.43	16.19	911.31	0	120.60	107.15	0.75	4.27
01/29/96	919.35	911.55								
01/30/96	919.37	911.57								
01/31/96	919.45	911.65								
02/01/96	919.60	911.80								
02/02/96	919.65	911.85								
02/03/96	919.52	911.72								
02/04/96	919.41	911.61								
02/05/96	919.36	911.56								
02/06/96	919.60	911.80								
02/07/96	919.76	911.96								
02/08/96	919.75	911.95								
02/09/96	919.73	911.93								
02/10/96	919.78	911.98								
02/11/96	919.83	912.03								
02/12/96	919.83	912.03								
02/13/96	919.89	912.09	17.26	25.46	912.00	0	190.72	167.77	0.73	4.96
02/14/96	919.90	912.10								
02/15/96	919.90	912.10								
02/16/96	919.94	912.14								
02/17/96	919.95	912.15								
02/18/96	919.96	912.16								
02/19/96	919.93	912.13	24.34	30.16	912.13	0	225.67	199.64	0.79	0.90
02/20/96	919.92	912.12								
02/21/96	919.87	912.07								
02/22/96	919.86	912.06								

Appendix B. Diversion Lake hydrologic budget—Continued

Date	Precipitation		SW_{in}		SW_{out} (site 8)		Evaporation		△ storage		GW_{out} (site 8)	
	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)
02/23/96			234.55	23.48	196.96	19.70	0.69	0.17	4.6	0.7	32.29	30.65
02/24/96			246.45	24.67	204.89	20.49	1.62	0.41	9.0	1.4	30.93	32.10
02/25/96			246.45	24.67	210.84	21.08	-0.52	-0.13	7.3	1.1	28.82	32.47
02/26/96			246.43	24.67	214.81	21.48	-0.39	-0.10	4.2	0.6	27.80	32.72
02/27/96			246.43	24.67	216.79	21.68	-0.08	-0.02	1.9	0.3	27.81	32.84
02/28/96			240.48	24.07	216.79	21.68	3.43	0.86	-0.2	0	20.45	32.41
02/29/96	6.30	0.95	206.76	20.70	211.04	21.10	1.81	0.45	-9.0	-1.4	9.21	29.61
03/01/96			151.20	15.14	151.34	15.13	0.81	0.20	-22.7	-3.4	21.75	21.68
03/02/96			151.20	15.14	113.65	11.37	1.13	0.28	9.2	1.4	27.22	18.99
03/03/96			151.20	15.14	119.60	11.96	1.11	0.28	11.7	1.8	18.79	19.38
03/04/96			151.20	15.14	135.47	13.55	-0.41	-0.10	6.6	1.0	9.54	20.34
03/05/96			151.18	15.14	139.44	13.94	-0.30	-0.07	-4.8	-0.7	16.84	20.60
03/06/96			149.20	14.94	135.47	13.55	0.77	0.19	-0.2	0	13.15	20.17
03/07/96			145.23	14.54	125.55	12.56	5.44	1.36	-2.6	-0.4	16.83	19.27
03/08/96			135.29	13.55	117.62	11.76	2.01	0.50	-3.3	-0.5	18.96	17.96
03/09/96			135.29	13.55	117.62	11.76	0.87	0.22	-0.9	-0.1	17.71	17.94
03/10/96			135.29	13.55	117.62	11.76	1.64	0.41	-2.8	-0.4	18.83	17.95
03/11/96			135.27	13.55	117.62	11.76	1.78	0.44	-3.2	-0.5	19.08	17.95
03/12/96			135.27	13.55	151.34	15.13	0.76	0.19	-6.0	-0.9	-10.82	20.33
03/13/96			147.15	14.73	149.36	14.94	0.13	0.03	-14.5	-2.2	12.17	21.09
03/14/96			155.09	15.53	147.37	14.74	0.31	0.08	-6.9	-1.0	14.31	21.43
03/15/96			166.99	16.72	149.36	14.94	0.25	0.06	-3.0	-0.5	20.39	22.42
03/16/96			204.65	20.48	171.17	17.12	0.34	0.08	10.4	1.6	22.75	26.74
03/17/96			204.65	20.48	177.12	17.71	1.03	0.26	10.0	1.5	16.50	27.12
03/18/96			206.64	20.68	183.07	18.31	3.77	0.94	3.0	0.5	16.79	27.64
03/19/96			218.52	21.87	191.40	19.14	2.63	0.66	3.1	0.5	21.38	29.07
03/20/96			230.42	23.06	197.75	19.78	1.40	0.35	2.9	0.4	28.37	30.38
03/21/96			268.09	26.82	199.74	19.97	1.87	0.47	17.0	2.6	49.48	33.54
03/22/96			297.84	29.80	199.74	19.97	0.99	0.25	17.0	2.6	80.12	35.97
03/23/96			297.84	29.80	198.94	19.89	0.42	0.11	17.0	2.6	81.48	35.92
03/24/96			297.82	29.80	198.94	19.89	0.17	0.04	17.0	2.6	81.71	35.92
03/25/96			283.93	28.41	198.94	19.89	3.52	0.88	17.0	2.6	64.47	34.79
03/26/96			248.23	24.84	197.16	19.72	2.81	0.70	18.0	2.7	30.27	31.83
03/27/96	2.13	0.32	226.39	22.65	187.24	18.72	1.88	0.47	6.2	0.9	33.21	29.41
03/28/96			240.28	24.04	197.16	19.72	0.85	0.21	10.6	1.6	31.67	31.13
03/29/96			275.98	27.61	216.99	21.70	0.31	0.08	11.1	1.7	47.58	35.16
03/30/96			275.96	27.61	220.96	22.10	0.58	0.14	15.4	2.3	39.03	35.44
03/31/96			273.98	27.41	224.93	22.49	1.79	0.45	9.3	1.4	37.96	35.49
04/01/96			273.98	27.41	224.93	22.49	0.78	0.20	6.4	1.0	41.87	35.47
04/02/96			273.96	27.41	231.47	23.15	1.80	0.45	4.9	0.7	35.79	35.88
04/03/96			273.96	27.41	240.00	24.00	0.42	0.11	-1.5	-0.2	35.04	36.43
04/04/96			214.45	21.46	224.13	22.41	0.11	0.03	-10.5	-1.6	0.71	31.07
04/05/96	8.21	1.23	178.73	17.88	203.90	20.39	2.30	0.57	-37.4	-5.6	18.15	27.73
04/06/96			176.75	17.69	201.52	20.15	2.25	0.56	-25.5	-3.8	-1.52	27.09
04/07/96			176.75	17.69	200.73	20.07	0.88	0.22	-33.8	-5.1	8.94	27.23
04/08/96			176.73	17.68	200.33	20.03	0.56	0.14	-26.2	-3.9	2.04	27.01
04/09/96			200.53	20.06	193.79	19.38	0.47	0.12	-26.0	-3.9	32.27	28.16
04/10/96			226.31	22.64	193.79	19.38	1.11	0.28	2.0	0.3	29.42	29.80
04/11/96			238.21	23.83	203.70	20.37	0.31	0.08	8.4	1.3	25.79	31.38
04/12/96			236.22	23.63	213.02	21.30	0.89	0.22	4.9	0.7	17.41	31.82

Appendix B. Diversion Lake hydrologic budget—Continued

Date	Stage		Average GW_{out}		Average stage (ft above mean sea level)	Average precipitation (acre-ft/d)	Average SW_{in} (acre-ft/d)	Average SW_{out} (acre-ft/d)	Average evaporation (acre-ft/d)	Average △ storage (acre-ft/d)
	(ft above BMA datum)	(ft above mean sea level)	(acre-ft/d)	(+/- error) (acre-ft/d)						
02/23/96	919.90	912.10								
02/24/96	919.97	912.17								
02/25/96	920.03	912.23								
02/26/96	920.07	912.27	28.82	31.05	912.15	0	234.88	202.58	0.43	3.05
02/27/96	920.08	912.28								
02/28/96	920.08	912.28								
02/29/96	920.00	912.20								
03/01/96	919.82	912.02								
03/02/96	919.90	912.10								
03/03/96	919.99	912.19								
03/04/96	920.05	912.25	19.25	25.03	912.19	0.90	185.49	166.38	1.11	-0.36
03/05/96	920.01	912.21								
03/06/96	920.01	912.21								
03/07/96	919.98	912.18								
03/08/96	919.96	912.16								
03/09/96	919.95	912.15								
03/10/96	919.92	912.12								
03/11/96	919.90	912.10	17.34	18.83	912.16	0	140.97	124.42	1.74	-2.54
03/12/96	919.85	912.05								
03/13/96	919.73	911.93								
03/14/96	919.67	911.87								
03/15/96	919.65	911.85								
03/16/96	919.73	911.93								
03/17/96	919.82	912.02								
03/18/96	919.84	912.04	13.15	23.83	911.96	0	174.35	161.26	0.94	-1.00
03/19/96	919.87	912.07								
03/20/96	919.89	912.09								
03/21/96	920.03	912.23								
03/22/96	920.16	912.36								
03/23/96	920.30	912.50								
03/24/96	920.43	912.63								
03/25/96	920.57	912.77								
03/26/96	920.71	912.91	54.66	33.43	912.45	0	267.84	197.83	1.73	13.63
03/27/96	920.76	912.96								
03/28/96	920.84	913.04								
03/29/96	920.93	913.13								
03/30/96	921.05	913.25								
03/31/96	921.12	913.32								
04/01/96	921.17	913.37								
04/02/96	921.20	913.40								
04/03/96	921.19	913.39								
04/04/96	921.11	913.31	33.65	33.94	913.24	0.24	258.77	218.64	0.95	5.77
04/05/96	920.82	913.02								
04/06/96	920.62	912.82								
04/07/96	920.36	912.56								
04/08/96	920.15	912.35								
04/09/96	919.94	912.14								
04/10/96	919.96	912.16	14.88	27.84	912.51	1.37	189.30	199.01	1.26	-24.48
04/11/96	920.03	912.23								
04/12/96	920.07	912.27								

Appendix B. Diversion Lake hydrologic budget—Continued

Date	Precipitation		SW_{in}		SW_{out} (site 8)		Evaporation		△ storage		GW_{out} (site 8)	
	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)
04/13/96			246.13	24.62	216.79	21.68	1.27	0.32	-2.2	-0.3	30.26	32.81
04/14/96			252.08	25.22	220.76	22.08	2.23	0.56	3.1	0.5	25.98	33.52
04/15/96			275.87	27.60	224.93	22.49	4.27	1.07	2.5	0.4	44.18	35.62
04/16/96			289.75	28.98	237.62	23.76	2.62	0.66	12.4	1.9	37.11	37.53
04/17/96			289.69	28.97	245.95	24.60	1.57	0.39	7.2	1.1	34.96	38.02
04/18/96			287.76	28.78	249.92	24.99	0.45	0.11	4.2	0.6	33.19	38.12
04/19/96			299.65	29.97	251.90	25.19	0.35	0.09	2.5	0.4	44.91	39.15
04/20/96			339.32	33.94	267.77	26.78	1.05	0.26	15.7	2.4	54.80	43.30
04/21/96			339.32	33.94	273.72	27.37	0.38	0.09	12.1	1.8	53.12	43.64
04/22/96			339.31	33.94	274.12	27.41	1.07	0.27	13.8	2.1	50.33	43.68
04/23/96			339.31	33.94	273.32	27.33	1.95	0.49	11.2	1.7	52.84	43.61
04/24/96			339.30	33.94	271.34	27.13	2.59	0.65	10.0	1.5	55.37	43.48
04/25/96			337.31	33.74	275.31	27.53			8.2	1.2		
04/26/96			337.31	33.74	283.24	28.32	2.48	0.62	6.0	0.9	45.59	44.06
04/27/96			337.30	33.74	287.21	28.72	0.56	0.14	-2.9	-0.4	52.44	44.31
04/28/96	5.70	0.85	339.28	33.93	287.21	28.72	0.48	0.12	-3.0	-0.5	60.30	44.47
04/29/96			339.28	33.93	289.19	28.92	6.23	1.56	2.9	0.4	40.96	44.61
04/30/96			339.28	33.93	285.22	28.52	2.28	0.57	-5.7	-0.9	57.47	44.34
05/01/96			339.27	33.93	283.24	28.32	1.30	0.32	-2.0	-0.3	56.74	44.20
05/02/96			345.22	34.53	293.16	29.32	0.40	0.10	-1.9	-0.3	53.56	45.29
05/03/96			357.12	35.72	299.11	29.91	0.11	0.03	-4.7	-0.7	62.60	46.59
05/04/96			369.01	36.91	305.06	30.51			-1.7	-0.3		
05/05/96			370.99	37.10	305.06	30.51			0	0		
05/06/96			372.97	37.30	305.06	30.51			0	0		
05/07/96			378.92	37.90	309.02	30.90	0.34	0.08	-0.1	0	69.66	48.90
05/08/96	4.69	0.70			275.31	27.53	0.47	0.12	8.0	1.2		
05/09/96			305.52	30.56	163.24	16.32	0.57	0.14	89.0	13.4	52.72	37.13
05/10/96			180.56	18.06	173.75	17.38			10.1	1.5		
05/11/96			180.56	18.06	177.72	17.77			-9.0	-1.4		
05/12/96			180.56	18.06	177.72	17.77			-10.0	-1.5		
05/13/96			180.56	18.06	181.69	18.17			-9.0	-1.4		
05/14/96			180.55	18.06	189.62	18.96			-26.0	-3.9		
05/15/96			180.55	18.06	191.21	19.12			-30.0	-4.5		
05/16/96			180.55	18.06	184.26	18.43	2.30	0.57	-21.9	-3.3	15.89	26.01
05/17/96			180.54	18.06	199.93	19.99	2.83	0.71	-29.1	-4.4	6.88	27.30
05/18/96			216.24	21.63	211.44	21.14	2.88	0.72	-12.0	-1.8	13.92	30.31
05/19/96			251.94	25.20	222.94	22.29	2.99	0.75	-19.0	-2.9	45.01	33.77
05/20/96			287.64	28.77	234.45	23.44	2.22	0.56	-16.0	-2.4	66.98	37.19
05/21/96			355.08	35.51	254.28	25.43	2.10	0.52	23.0	3.5	75.70	43.81
05/22/96			384.83	38.48	278.88	27.89	2.93	0.73	23.0	3.5	80.03	47.66
05/23/96					305.06	30.51	2.53	0.63	24.0	3.6		
05/24/96					330.84	33.08	2.70	0.68	23.0	3.5		
05/25/96					332.83	33.28	2.58	0.65	9.0	1.4		
05/26/96					333.22	33.32	1.90	0.47	16.4	2.5		
05/27/96	6.61	0.99			342.15	34.21	0.55	0.14	13.8	2.1		
05/28/96					340.36	34.04	0.55	0.14	3.0	0.5		
05/29/96					340.36	34.04	0.71	0.18	-6.3	-0.9		
05/30/96					346.31	34.63	2.15	0.54	-9.1	-1.4		
05/31/96					348.30	34.83	1.72	0.43	-6.1	-0.9		
06/01/96	3.03	0.46			350.28	35.03	2.46	0.62	-0.7	-0.1		

Appendix B. Diversion Lake hydrologic budget—Continued

Date	Stage		Average GW_{out}		Average stage (ft above mean sea level)	Average precipitation (acre-ft/d)	Average SW_{in} (acre-ft/d)	Average SW_{out} (acre-ft/d)	Average evaporation (acre-ft/d)	Average △ storage (acre-ft/d)
	(ft above BMA datum)	(ft above mean sea level)	(acre-ft/d)	(+/- error) (acre-ft/d)						
04/13/96	920.05	912.25								
04/14/96	920.07	912.27								
04/15/96	920.09	912.29								
04/16/96	920.19	912.39	30.12	33.78	912.28	0	256.38	219.47	1.93	4.85
04/17/96	920.25	912.45								
04/18/96	920.28	912.48								
04/19/96	920.30	912.50								
04/20/96	920.42	912.62								
04/21/96	920.52	912.72								
04/22/96	920.63	912.83								
04/23/96	920.71	912.91								
04/24/96	920.79	912.99	47.44	41.63	912.69	0	321.71	263.50	1.18	9.59
04/25/96	920.85	913.05								
04/26/96	920.91	913.11								
04/27/96	920.88	913.08								
04/28/96	920.86	913.06								
04/29/96	920.88	913.08								
04/30/96	920.84	913.04								
05/01/96	920.82	913.02								
05/02/96	920.81	913.01								
05/03/96	920.77	912.97	53.71	44.74	913.05	0.71	341.76	288.45	1.73	-1.41
05/04/96	920.76	912.96								
05/05/96	920.76	912.96								
05/06/96	920.75	912.95								
05/07/96	920.75	912.95								
05/08/96	920.82	913.02								
05/09/96	921.50	913.70								
05/10/96	921.58	913.78								
05/11/96	921.51	913.71								
05/12/96	921.43	913.63								
05/13/96	921.36	913.56								
05/14/96	921.17	913.37								
05/15/96	920.94	913.14								
05/16/96	920.76	912.96								
05/17/96	920.53	912.73								
05/18/96	920.44	912.64								
05/19/96	920.29	912.49								
05/20/96	920.16	912.36								
05/21/96	920.34	912.54								
05/22/96	920.52	912.72	43.49	35.15	912.63	0	265.26	226.60	2.61	-7.43
05/23/96	920.72	912.92								
05/24/96	920.90	913.10								
05/25/96	920.96	913.16								
05/26/96	921.09	913.29								
05/27/96	921.20	913.40								
05/28/96	921.22	913.42								
05/29/96	921.17	913.37								
05/30/96	921.10	913.30								
05/31/96	921.06	913.26								
06/01/96	921.12	913.32								

Appendix B. Diversion Lake hydrologic budget—Continued

Date	Precipitation		SW_{in}		SW_{out} (site 8)		Evaporation		△ storage		GW_{out} (site 8)	
	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)
06/02/96					354.25	35.42	1.12	0.28	14.0	2.1		
06/03/96					360.20	36.02	1.83	0.46	12.0	1.8		
06/04/96					360.20	36.02	2.68	0.67	-2.3	-0.3		
06/05/96					360.20	36.02	3.09	0.77	5.3	0.8		
06/06/96					360.20	36.02	4.12	1.03	-1.7	-0.3		
06/07/96					358.21	35.82	2.72	0.68	-0.5	-0.1		
06/08/96					356.23	35.62	2.10	0.53	-1.1	-0.2		
06/09/96					354.25	35.42	2.72	0.68	-2.5	-0.4		
06/10/96					352.26	35.23	3.83	0.96	-1.1	-0.2		
06/11/96					354.25	35.42	2.64	0.66	-1.7	-0.3		
06/12/96					356.23	35.62	2.31	0.58	-3.7	-0.6		
06/13/96					358.21	35.82	1.98	0.49	-4.9	-0.7		
06/14/96					360.20	36.02	1.97	0.49	-0.6	-0.1		
06/15/96					366.15	36.61	2.62	0.65	8.9	1.3		
06/16/96					370.12	37.01	2.60	0.65	2.1	0.3		
06/17/96					370.12	37.01	1.88	0.47	0.7	0.1		
06/18/96					370.12	37.01	1.97	0.49	1.7	0.3		
06/19/96					382.02	38.20	2.93	0.73	10.0	1.5		
06/20/96					384.00	38.40	2.02	0.50	9.3	1.4		
06/21/96					385.98	38.60	1.60	0.40	4.8	0.7		
06/22/96					387.97	38.80	2.76	0.69	2.6	0.4		
06/23/96					391.93	39.19	2.86	0.72	0.4	0.1		
06/24/96					389.95	39.00	2.33	0.58	-4.2	-0.6		
06/25/96					389.95	39.00			1.9	0.3		
06/26/96	1.31	0.20			391.93	39.19			-1.3	-0.2		
06/27/96					391.93	39.19			-1.0	-0.2		
06/28/96					389.95	39.00			-4.1	-0.6		
06/29/96					385.98	38.60			-3.4	-0.5		
06/30/96					385.98	38.60			-1.6	-0.2		
07/01/96					385.98	38.60			-1.4	-0.2		
07/02/96					384.00	38.40			0	0		
07/03/96					384.00	38.40	1.69	0.42	0.9	0.1		
07/04/96					387.97	38.80	1.66	0.41	3.0	0.5		
07/05/96					389.95	39.00	2.53	0.63	5.3	0.8		
07/06/96					391.93	39.19	2.51	0.63	0.8	0.1		
07/07/96					391.93	39.19	2.43	0.61	0	0		
07/08/96					391.93	39.19	2.88	0.72	-0.2	0		
07/09/96	1.31	0.20			395.90	39.59	3.28	0.82	2.9	0.4		
07/10/96	24.27	3.64			331.04	33.10	1.48	0.37	40.6	6.1		
07/11/96	1.35	0.20			239.80	23.98	2.92	0.73	44.3	6.6		
07/12/96			218.18	21.82	219.77	21.98	3.56	0.89	-34.2	-5.1	29.06	31.40
07/13/96			245.95	24.60	227.31	22.73	2.83	0.71	-51.7	-7.8	67.52	34.38
07/14/96			297.52	29.75	229.29	22.93	2.61	0.65	-26.3	-3.9	91.92	37.77
07/15/96			315.37	31.54	229.29	22.93	2.72	0.68	3.5	0.5	79.87	39.00
07/16/96			321.32	32.13	245.16	24.52	4.07	1.02	-1.5	-0.2	73.60	40.43
07/17/96			329.26	32.93	257.06	25.71	3.49	0.87	-12.5	-1.9	81.20	41.82
07/18/96			335.21	33.52	252.69	25.27	3.56	0.89	-7.5	-1.1	86.46	42.00
07/19/96			349.09	34.91	260.23	26.02	3.79	0.95	0	0	85.07	43.55
07/20/96			360.99	36.10	267.97	26.80	3.83	0.96	0	0	89.19	44.97
07/21/96			374.88	37.49	277.69	27.77	3.63	0.91	0	0	93.56	46.66

Appendix B. Diversion Lake hydrologic budget—Continued

Date	Stage		Average GW_{out}		Average stage (ft above mean sea level)	Average precipitation (acre-ft/d)	Average SW_{in} (acre-ft/d)	Average SW_{out} (acre-ft/d)	Average evaporation (acre-ft/d)	Average △ storage (acre-ft/d)
	(ft above BMA datum)	(ft above mean sea level)	(acre-ft/d)	(+/- error) (acre-ft/d)						
06/02/96	921.16	913.36								
06/03/96	921.25	913.45								
06/04/96	921.23	913.43								
06/05/96	921.27	913.47								
06/06/96	921.26	913.46								
06/07/96	921.26	913.46								
06/08/96	921.25	913.45								
06/09/96	921.23	913.43								
06/10/96	921.22	913.42								
06/11/96	921.21	913.41								
06/12/96	921.18	913.38								
06/13/96	921.14	913.34								
06/14/96	921.13	913.33								
06/15/96	921.21	913.41								
06/16/96	921.22	913.42								
06/17/96	921.23	913.43								
06/18/96	921.24	913.44								
06/19/96	921.32	913.52								
06/20/96	921.39	913.59								
06/21/96	921.42	913.62								
06/22/96	921.44	913.64								
06/23/96	921.44	913.64								
06/24/96	921.41	913.61								
06/25/96	921.43	913.63								
06/26/96	921.42	913.62								
06/27/96	921.41	913.61								
06/28/96	921.38	913.58								
06/29/96	921.35	913.55								
06/30/96	921.34	913.54								
07/01/96	921.33	913.53								
07/02/96	921.33	913.53								
07/03/96	921.34	913.54								
07/04/96	921.36	913.56								
07/05/96	921.4	913.60								
07/06/96	921.41	913.61								
07/07/96	921.41	913.61								
07/08/96	921.4	913.60								
07/09/96	921.43	913.63								
07/10/96	921.73	913.93								
07/11/96	922.07	914.27								
07/12/96	921.81	914.01								
07/13/96	921.42	913.62								
07/14/96	921.22	913.42								
07/15/96	921.25	913.45								
07/16/96	921.23	913.43								
07/17/96	921.14	913.34	70.53	37.47	913.55	0	287.93	234.64	3.21	-20.45
07/18/96	921.08	913.28								
07/19/96	921.08	913.28								
07/20/96	921.08	913.28								
07/21/96	921.08	913.28								

Appendix B. Diversion Lake hydrologic budget—Continued

Date	Precipitation		SW_{in}		SW_{out} (site 8)		Evaporation		△ storage		GW_{out} (site 8)	
	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)
07/22/96			388.76	38.88	285.22	28.52	3.03	0.76	0	0	100.51	48.22
07/23/96			390.74	39.07	291.17	29.12	2.67	0.67	-7.0	-1.1	103.90	48.75
07/24/96					305.45	30.55	2.93	0.73	-6.0	-0.9		
07/25/96					323.70	32.37	2.23	0.56	-0.5	-0.1		
07/26/96					335.60	33.56			7.6	1.1		
07/27/96					337.59	33.76			3.0	0.5		
07/28/96					337.78	33.78			2.1	0.3		
07/29/96					342.35	34.23			1.3	0.2		
07/30/96					350.28	35.03			3.9	0.6		
07/31/96					354.25	35.42			3.7	0.6		
08/01/96					362.58	36.26			9.1	1.4		
08/02/96					368.93	36.89			4.6	0.7		
08/03/96					370.71	37.07			-2.0	-0.3		
08/04/96					370.91	37.09			3.1	0.5		
08/05/96					370.91	37.09			0	0		
08/06/96					368.93	36.89			0.2	0		
08/07/96					368.93	36.89			-0.1	0		
08/08/96					362.98	36.30			0.6	0.1		
08/09/96					357.02	35.70			7.7	1.2		
08/10/96					353.06	35.31			-4.4	-0.7		
08/11/96					349.09	34.91	2.49	0.27	-4.1	-0.6		
08/12/96	4.37	0.66			347.11	34.71			-0.9	-0.1		
08/13/96					345.12	34.51			-4.1	-0.6		
08/14/96					330.64	33.06	1.59	0.17	-11.2	-1.7		
08/15/96					319.74	31.97	2.32	0.25	-9.5	-1.4		
08/16/96					262.21	26.22	2.85	0.31	6.9	1.0		
08/17/96					274.12	27.41	3.45	0.38	-7.6	-1.1		
08/18/96					270.15	27.01	3.64	0.40	-9.0	-1.4		
08/19/96					268.17	26.82	3.49	0.38	-2.4	-0.4		
08/20/96					274.12	27.41	1.84	0.20	10.1	1.5		
08/21/96					176.93	17.69	1.73	0.19	41.0	6.2		
08/22/96	3.49	0.52			180.89	18.09	1.20	0.13	2.1	0.3		
08/23/96	8.28	1.24	241.98	24.20	148.36	14.84	0.92	0.10	-55.4	-8.3	156.38	29.60
08/24/96			122.98	12.30	121.79	12.18	1.04	0.11	-19.3	-2.9	19.45	17.55
08/25/96	3.84	0.58	120.99	12.10	101.95	10.20	0.66	0.07	3.1	0.5	19.12	15.84
08/26/96			67.44	6.74	48.40	4.84	1.22	0.13	-8.0	-1.2	25.82	8.39
08/27/96	2.94	0.44	29.75	2.98	25.98	2.60	1.92	0.21	-49.5	-7.4	54.28	8.42
08/28/96			29.75	2.98	11.31	1.13	2.33	0.25	-28.4	-4.3	44.51	5.32
08/29/96			29.75	2.98	10.71	1.07	1.52	0.17	-27.1	-4.1	44.62	5.15
08/30/96	5.39	0.81	31.74	3.17	10.51	1.05	0.69	0.07	-19.0	-2.9	44.93	4.47
08/31/96			31.74	3.17	10.51	1.05	0.76	0.08	-12.9	-1.9	33.36	3.86
09/01/96	6.96	1.04	31.74	3.17	10.51	1.05	0.87	0.09	-12.0	-1.8	39.32	3.94
09/02/96			29.75	2.98	10.51	1.05	1.20	0.13	-12.6	-1.9	30.64	3.68
09/03/96			29.75	2.98	33.72	3.37			-23.0	-3.5		
09/04/96	11.99	1.80	29.75	2.98	58.71	5.87			-54.6	-8.2		
09/05/96			29.75	2.98	51.57	5.16			-49.6	-7.4		
09/06/96			29.75	2.98	39.07	3.91			-44.3	-6.6		
09/07/96			29.75	2.98	28.76	2.88			-32.7	-4.9		
09/08/96			29.75	2.98	18.84	1.88			-24.5	-3.7		
09/09/96			29.75	2.98	6.94	0.69			-17.6	-2.6		

Appendix B. Diversion Lake hydrologic budget—Continued

Date	Stage		Average GW_{out}		Average stage (ft above mean sea level)	Average precipitation (acre-ft/d)	Average SW_{in} (acre-ft/d)	Average SW_{out} (acre-ft/d)	Average evaporation (acre-ft/d)	Average △ storage (acre-ft/d)
	(ft above BMA datum)	(ft above mean sea level)	(acre-ft/d)	(+/- error) (acre-ft/d)						
07/22/96	921.08	913.28								
07/23/96	921.03	913.23	93.12	45.69	913.27	0	366.61	272.50	3.42	-2.42
07/24/96	920.98	913.18								
07/25/96	920.98	913.18								
07/26/96	921.04	913.24								
07/27/96	921.06	913.26								
07/28/96	921.08	913.28								
07/29/96	921.09	913.29								
07/30/96	921.12	913.32								
07/31/96	921.14	913.34								
08/01/96	921.21	913.41								
08/02/96	921.25	913.45								
08/03/96	921.23	913.43								
08/04/96	921.26	913.46								
08/05/96	921.26	913.46								
08/06/96	921.26	913.46								
08/07/96	921.26	913.46								
08/08/96	921.26	913.46								
08/09/96	921.32	913.52								
08/10/96	921.29	913.49								
08/11/96	921.26	913.46								
08/12/96	921.25	913.45								
08/13/96	921.21	913.41								
08/14/96	921.13	913.33								
08/15/96	921.06	913.26								
08/16/96	921.11	913.31								
08/17/96	921.06	913.26								
08/18/96	920.99	913.19								
08/19/96	920.97	913.17								
08/20/96	921.05	913.25								
08/21/96	921.36	913.56								
08/22/96	921.37	913.57								
08/23/96	920.95	913.15								
08/24/96	920.80	913.00								
08/25/96	920.82	913.02								
08/26/96	920.76	912.96								
08/27/96	920.37	912.57	55.01	15.96	912.94	3.01	116.63	89.30	1.15	-25.82
08/28/96	920.15	912.35								
08/29/96	919.93	912.13								
08/30/96	919.77	911.97								
08/31/96	919.66	911.86								
09/01/96	919.56	911.76								
09/02/96	919.46	911.66	39.56	4.40	911.96	2.06	30.74	10.68	1.23	-18.67
09/03/96	919.27	911.47								
09/04/96	918.80	911.00								
09/05/96	918.37	910.57								
09/06/96	917.98	910.18								
09/07/96	917.68	909.88								
09/08/96	917.46	909.66								
09/09/96	917.30	909.50								

Appendix B. Diversion Lake hydrologic budget—Continued

Date	Precipitation		SW_{in}		SW_{out} (site 8)		Evaporation		△ storage		GW_{out} (site 8)	
	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)
09/10/96			29.75	2.98	6.15	0.61			-14.5	-2.2		
09/11/96			29.75	2.98	5.75	0.58			-15.0	-2.3		
09/12/96			29.75	2.98	5.75	0.58			-15.6	-2.3		
09/13/96			29.75	2.98	5.75	0.58			-12.6	-1.9		
09/14/96			29.75	2.98	5.75	0.58			-13.6	-2.0		
09/15/96	8.75	1.31	31.74	3.17	5.75	0.58			-3.9	-0.6		
09/16/96			29.75	2.98	5.75	0.58			-10.0	-1.5		
09/17/96			29.75	2.98	5.75	0.58			-13.2	-2.0		
09/18/96			59.50	5.95	5.75	0.58			-6.4	-1.0		
09/19/96			87.27	8.73	5.75	0.58			24.0	3.6		
09/20/96	1.06	0.16	85.29	8.53	5.75	0.58			27.8	4.2		
09/21/96			85.29	8.53	5.75	0.58			28.1	4.2		
09/22/96			85.29	8.53	6.15	0.61			24.2	3.6		
09/23/96			126.94	12.69	24.60	2.46			30.3	4.5		
09/24/96			172.56	17.26	41.26	4.13			60.6	9.1		
09/25/96			172.56	17.26	59.70	5.97			49.0	7.4		
09/26/96			172.56	17.26	68.83	6.88			52.0	7.8		
09/27/96			152.73	15.27	79.93	7.99			-1.4	-0.2		
09/28/96			113.06	11.31	62.08	6.21			-8.6	-1.3		
09/29/96			113.06	11.31	60.10	6.01			-7.3	-1.1		
09/30/96			126.94	12.69	68.03	6.80			-4.7	-0.7		

Appendix B. Diversion Lake hydrologic budget—Continued

Date	Stage		Average GW_{out}		Average stage (ft above mean sea level)	Average precipitation (acre-ft/d)	Average SW_{in} (acre-ft/d)	Average SW_{out} (acre-ft/d)	Average evaporation (acre-ft/d)	Average △ storage (acre-ft/d)
	(ft above BMA datum)	(ft above mean sea level)	(acre-ft/d)	(+/- error) (acre-ft/d)						
09/10/96	917.17	909.37								
09/11/96	917.03	909.23								
09/12/96	916.88	909.08								
09/13/96	916.76	908.96								
09/14/96	916.63	908.83								
09/15/96	916.60	908.80								
09/16/96	916.50	908.70								
09/17/96	916.38	908.58								
09/18/96	916.31	908.51								
09/19/96	916.54	908.74								
09/20/96	916.81	909.01								
09/21/96	917.07	909.27								
09/22/96	917.29	909.49								
09/23/96	917.57	909.77								
09/24/96	918.11	910.31								
09/25/96	918.54	910.74								
09/26/96	919.00	911.20								
09/27/96	918.99	911.19								
09/28/96	918.91	911.11								
09/29/96	918.85	911.05								
09/30/96	918.81	911.01								

Appendix B. Medina/Diversion Lakes combined hydrologic budget

[Shading indicates budget period. acre-ft, acre-feet; SW_{in}, surface-water inflow; SW_{out}, surface-water outflow; △ storage, change in storage; GW_{out}, ground-water outflow; ft, feet; BMA, Bexar-Medina-Atascosa Counties Water Control and Improvement District No. 1; acre-ft/d, acre-feet per day]

Date	Precipitation Medina Lake		Precipitation Diversion Lake		SW_{in} Medina Lake		SW_{out} Diversion Lake		Evaporation Medina Lake		Evaporation Diversion Lake		Evaporation total (acre-ft)	△ storage Medina Lake		△ storage Diversion Lake	
	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)		(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)
10/01/95					235.81	23.84	148.76	14.88	33.02	8.25				124	12.4		
10/02/95					230.16	23.28	144.79	14.48						99	9.9		
10/03/95					222.51	22.47	182.48	18.25						37	3.7		
10/04/95					212.55	21.47	202.31	20.23						-112	-11.2		
10/05/95					204.54	20.67	196.36	19.64						-13	-1.3		
10/06/95					191.96	19.39	190.41	19.04						-128	-12.8		
10/07/95					185.69	18.75	188.43	18.84						-86	-8.6		
10/08/95					175.56	17.74	182.48	18.25						-71	-7.1		
10/09/95					183.45	18.52	176.53	17.65						-66	-6.6		
10/10/95					181.47	18.32	174.55	17.45						-51	-5.1		
10/11/95					175.48	17.72	148.76	14.88						4	0.4	-31.4	-4.7
10/12/95					163.58	16.53	150.74	15.07						-121	-12.1	4.6	0.7
10/13/95					153.66	15.54	166.61	16.66						-151	-15.1	25.8	3.9
10/14/95					143.31	14.49	178.51	17.85						-177	-17.7	15.4	2.3
10/15/95					134.18	13.55	184.46	18.45						-330	-33.0	6.5	1.0
10/16/95					127.42	12.85	192.40	19.24						-244	-24.4	10.2	1.5
10/17/95					141.70	14.29	220.17	22.02						-300	-30.0	34.5	5.2
10/18/95					147.85	14.91	240.00	24.00						-262	-26.2	23.4	3.5
10/19/95					149.24	15.04	253.88	25.39						-245	-24.5	12	1.8
10/20/95					141.28	14.24	257.85	25.79						-290	-29.0	6	0.9
10/21/95					135.33	13.65	259.83	25.98						-445	-44.5	2	0.3
10/22/95					103.62	10.47	263.80	26.38						-331	-33.1	2.1	0.3
10/23/95					103.62	10.47	265.78	26.58						-260	-26.0	2.8	0.4
10/24/95					107.56	10.87	265.78	26.58						-369	-36.9	-1	-0.2
10/25/95					107.56	10.87	245.95	24.60						-294	-29.4	2.1	0.3
10/26/95					107.56	10.87	216.20	21.62						-198	-19.8	-2	-0.3
10/27/95					107.56	10.87	204.30	20.43						-126	-12.6	-17.6	-2.6
10/28/95					107.56	10.87	202.31	20.23						-220	-22.0	-26.9	-4.0
10/29/95	70.54	10.58	1.22	0.18	113.51	11.46	196.36	19.64						-197	-19.7	-17.7	-2.7
10/30/95	31.84	4.78			127.40	12.85	190.41	19.04						-111	-11.1	-10.4	-1.6
10/31/95	490.13	73.52	17.55	2.63	160.86	16.29	134.88	13.49						184	18.4	1.2	0.2
11/01/95	533.00	79.95	9.31	1.40	271.74	28.02	81.32	8.13						1646	164.6	116.7	17.5
11/02/95					367.74	37.37	83.31	8.33						462	46.2	70.1	10.5
11/03/95					389.95	39.42	89.26	8.93						182	18.2	45.6	6.8
11/04/95					288.99	29.25	91.24	9.12	96.03	24.01	3.43	0.86	99.47	-31	-3.1	35.4	5.3
11/05/95					237.62	24.05	93.22	9.32	54.44	13.61	1.96	0.49	56.40	49	4.9	27.3	4.1
11/06/95					226.45	22.90	81.32	8.13	44.13	11.03	1.60	0.40	45.73	74	7.4	22	3.3
11/07/95					211.76	21.40	95.21	9.52	45.98	11.49	1.68	0.42	47.66	79	7.9	27.5	4.1
11/08/95					193.80	19.60	124.96	12.50	62.35	15.59	2.26	0.57	64.61	3	0.3	-8.2	-1.2
11/09/95					177.78	17.99	126.94	12.69						-26	-2.6	-11.9	-1.8
11/10/95					167.92	17.01	142.81	14.28	10.23	2.56	0.37	0.09	10.60	31	3.1	-21.6	-3.2
11/11/95					168.97	17.08	140.83	14.08	96.49	24.12	3.44	0.86	99.94	18	1.8	-28.1	-4.2
11/12/95					149.00	15.08	136.86	13.69	64.60	16.15	2.29	0.57	66.89	-189	-18.9	-29.4	-4.4
11/13/95					150.96	15.28	132.89	13.29	18.77	4.69	0.66	0.16	19.42	-21	-2.1	-27.7	-4.2
11/14/95					152.75	15.44	136.86	13.69	36.28	9.07	1.26	0.32	37.54	-42	-4.2	-28.7	-4.3

Appendix B. Medina/Diversion Lakes combined hydrologic budget—Continued

Date	△ storage total (acre-ft)	GW_{out} total system (acre-ft)	GW_{out} total system (+/- error) (acre-ft)	Medina Lake stage (ft above BMA datum)	Medina Lake stage (ft above mean sea level)	Average GW_{out} (acre-ft/d)	Average GW_{out} (+/- error) (acre-ft)	Average Medina Lake stage (ft above mean sea level)	Average precipitation (acre-ft/d)	Average Sw_{in} (acre-ft/d)	Average Sw_{out} (acre-ft/d)	Average total evaporation (acre-ft/d)	Average △ storage (acre-ft/d)
10/01/95				1,053.18	1,045.38								
10/02/95				1,053.2	1,045.4								
10/03/95				1,053.21	1,045.41								
10/04/95				1,053.19	1,045.39								
10/05/95				1,053.18	1,045.38								
10/06/95				1,053.15	1,045.35								
10/07/95				1,053.14	1,045.34								
10/08/95				1,053.12	1,045.32								
10/09/95				1,053.1	1,045.3								
10/10/95				1,053.09	1,045.29								
10/11/95	-27.4			1,053.09	1,045.29								
10/12/95	-116.4			1,053.07	1,045.27								
10/13/95	-125.2			1,053.03	1,045.23								
10/14/95	-161.6			1,053	1,045.2								
10/15/95	-323.5			1,052.92	1,045.12								
10/16/95	-233.8			1,052.87	1,045.07								
10/17/95	-265.5			1,052.8	1,045								
10/18/95	-238.6			1,052.74	1,044.94								
10/19/95	-233.0			1,052.69	1,044.89								
10/20/95	-284.0			1,052.62	1,044.82								
10/21/95	-443.0			1,052.52	1,044.72								
10/22/95	-328.9			1,052.45	1,044.65								
10/23/95	-257.2			1,052.39	1,044.59								
10/24/95	-370.0			1,052.31	1,044.51								
10/25/95	-291.9			1,052.24	1,044.44								
10/26/95	-200.0			1,052.2	1,044.4								
10/27/95	-143.6			1,052.17	1,044.37								
10/28/95	-246.9			1,052.12	1,044.32								
10/29/95	-214.7			1,052.07	1,044.27								
10/30/95	-121.4			1,052.05	1,044.25								
10/31/95	185.2			1,052.09	1,044.29								
11/01/95	1762.7			1,052.46	1,044.66								
11/02/95	532.1			1,052.56	1,044.76								
11/03/95	227.6			1,052.61	1,044.81								
11/04/95	4.4	93.89	39.41	1,052.6	1,044.8								
11/05/95	76.3	11.69	29.86	1,052.61	1,044.81								
11/06/95	96.0	3.40	27.89	1,052.63	1,044.83								
11/07/95	106.5	-37.61	27.57	1,052.64	1,044.84								
11/08/95	-5.2	9.43	28.02	1,052.64	1,044.84								
11/09/95	-37.9			1,052.64	1,044.84								
11/10/95	9.4	5.11	22.80	1,052.65	1,044.85								
11/11/95	-10.1	-61.69	33.07	1,052.65	1,044.85								
11/12/95	-218.4	163.65	32.44	1,052.61	1,044.81								
11/13/95	-48.7	47.35	21.30	1,052.6	1,044.8								
11/14/95	-70.7	49.05	23.33	1,052.59	1,044.79								

Appendix B. Medina/Diversion Lakes combined hydrologic budget—Continued

Date	Precipitation Medina Lake		Precipitation Diversion Lake		SW_{in} Medina Lake		SW_{out} Diversion Lake		Evaporation Medina Lake		Evaporation Diversion Lake		Evapo-ration total (acre-ft)	△ storage Medina Lake		△ storage Diversion Lake	
	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)		(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)
11/15/95					138.62	14.02	164.63	16.46	23.25	5.81	0.80	0.20	24.06	-18	-1.8	-42.1	-6.3
11/16/95			1.27	0.19	134.48	13.60	158.68	15.87	27.59	6.90	0.94	0.23	28.53	-40	-4.0	-54.1	-8.1
11/17/95	639.24	95.89	11.24	1.69	166.18	16.89	77.36	7.74	35.35	8.84	1.19	0.30	36.54	282	28.2	-9.3	-1.4
11/18/95					200.59	20.51	43.64	4.36	20.44	5.11	0.70	0.17	21.13	419	41.9	47.3	7.1
11/19/95					202.77	20.62	43.64	4.36	11.77	2.94	0.41	0.10	12.17	55	5.5	41.6	6.2
11/20/95					203.15	20.61	43.64	4.36	6.60	1.65	0.23	0.06	6.83	93	9.3	38.3	5.7
11/21/95					192.06	19.47	43.64	4.36	17.00	4.25	0.60	0.15	17.60	74	7.4	33.3	5.0
11/22/95					179.56	18.20	43.64	4.36	28.87	7.22	1.03	0.26	29.90	14	1.4	29.7	4.5
11/23/95					177.54	18.00	43.64	4.36	33.45	8.36	1.20	0.30	34.65	23	2.3	27.7	4.2
11/24/95					163.20	16.55	45.62	4.56	62.31	15.58	2.25	0.56	64.56	-36	-3.6	24.8	3.7
11/25/95					147.35	14.97	47.60	4.76	36.73	9.18	1.34	0.33	38.06	-60	-6.0	22.2	3.3
11/26/95					137.43	13.98	47.60	4.76	23.95	5.99	0.88	0.22	24.82	-22	-2.2	23	3.5
11/27/95					135.45	13.78	47.60	4.76	30.60	7.65	1.13	0.28	31.73	35	3.5	22	3.3
11/28/95					131.25	13.35	47.60	4.76	182.08	45.52	6.76	1.69	188.84	-51	-5.1	17.8	2.7
11/29/95					126.60	12.87	124.96	12.50	128.83	32.21	4.76	1.19	133.59	-144	-14.4	-0.5	-0.1
11/30/95					129.52	13.13	132.89	13.29	20.63	5.16	0.75	0.19	21.38	-54	-5.4	-49.5	-7.4
12/01/95					135.47	13.73	128.93	12.89	7.85	1.96	0.28	0.07	8.14	-34	-3.4	-30	-4.5
12/02/95					139.42	14.12	134.88	13.49	1.42	0.35	0.05	0.01	1.47	2	0.2	-35.1	-5.3
12/03/95					143.88	14.58	132.89	13.29	4.37	1.09	0.16	0.04	4.53	14	1.4	-31.8	-4.8
12/04/95					150.01	15.19	128.93	12.89	36.60	9.15	1.29	0.32	37.88	-43	-4.3	-30.1	-4.5
12/05/95					146.04	14.80	122.98	12.30	24.03	6.01	0.84	0.21	24.87	-36	-3.6	-27.6	-4.1
12/06/95					140.07	14.20	142.81	14.28	51.74	12.93	1.79	0.45	53.53	-23	-2.3	-31.2	-4.7
12/07/95					136.05	13.79	148.76	14.88	65.42	16.35	2.23	0.56	67.65	-77	-7.7	-44.5	-6.7
12/08/95	33.57	5.04	0.85	0.13	134.02	13.59	132.89	13.29	29.17	7.29	0.99	0.25	30.15	-40	-4.0	-35.2	-5.3
12/09/95					133.35	13.50	122.98	12.30	140.60	35.15	4.73	1.18	145.33	-40	-4.0	-27	-4.1
12/10/95					135.07	13.67	117.02	11.70	80.93	20.23	2.69	0.67	83.62	-249	-24.9	-24.7	-3.7
12/11/95					139.04	14.06	132.89	13.29	52.43	13.11	1.72	0.43	54.14	-82	-8.2	-24.4	-3.7
12/12/95					143.07	14.47	132.89	13.29	15.25	3.81	0.49	0.12	15.75	-63	-6.3	-32.1	-4.8
12/13/95					149.02	15.06	124.96	12.50	10.05	2.51	0.32	0.08	10.37	-17	-1.7	-26.3	-3.9
12/14/95					149.00	15.06	119.01	11.90	6.91	1.73	0.22	0.05	7.12	-40	-4.0	-20.6	-3.1
12/15/95					148.98	15.06	111.07	11.11	10.08	2.52	0.32	0.08	10.40	-3	-0.3	-15.7	-2.4
12/16/95					150.98	15.26	105.12	10.51	31.77	7.94	1.00	0.25	32.77	-39	-3.9	-13.1	-2.0
12/17/95	84.09	12.61			153.00	15.46	103.14	10.31	-0.90	-0.23	-0.03	-0.01	-0.93	-7	-0.7	-8.8	-1.3
12/18/95	39.07	5.86	1.16	0.17	160.34	16.18	111.07	11.11	86.12	21.53	2.69	0.67	88.80	81	8.1	-8.3	-1.2
12/19/95					167.23	16.84	107.11	10.71	119.01	29.75	3.72	0.93	122.73	-127	-12.7	-15.9	-2.4
12/20/95			2.88	0.43	173.18	17.44	103.14	10.31	48.82	12.21	1.51	0.38	50.34	-134	-13.4	-10.5	-1.6
12/21/95					147.39	14.86	99.17	9.92	21.46	5.37	0.67	0.17	22.13	-70	-7.0	-7.3	-1.1
12/22/95					133.49	13.47	59.50	5.95	71.52	17.88	2.22	0.55	73.74	-42	-4.2	5.1	0.8
12/23/95					131.46	13.26	33.72	3.37	41.62	10.41	1.31	0.33	42.93	-150	-15.0	31.7	4.8
12/24/95					131.46	13.26	31.74	3.17	32.01	8.00	1.02	0.25	33.03	-70	-7.0	33.3	5.0
12/25/95					133.45	13.46	31.74	3.17	25.59	6.40	0.82	0.21	26.41	-85	-8.5	32.7	4.9
12/26/95					129.48	13.07	31.74	3.17	23.06	5.77	0.75	0.19	23.81	-73	-7.3	30	4.5
12/27/95					125.53	12.67	73.39	7.34	28.75	7.19	0.94	0.24	29.69	-69	-6.9	19.2	2.9
12/28/95					121.55	12.27	95.21	9.52	38.82	9.70	1.27	0.32	40.09	-103	-10.3	-12.1	-1.8
12/29/95	30.47	4.57			123.53	12.47	99.17	9.92	31.82	7.96	1.04	0.26	32.86	-86	-8.6	-18.2	-2.7
12/30/95					127.50	12.87	97.19	9.72	4.75	1.19	0.15	0.04	4.90	-3	-0.3	-14.2	-2.1
12/31/95					133.45	13.46	95.21	9.52	12.83	3.21	0.41	0.10	13.24	-28	-2.8	-12.3	-1.8
01/01/96					141.20	14.23	91.24	9.12	70.94	17.73	2.28	0.57	73.22	-44	-4.4	-9.6	-1.4
01/02/96					140.19	14.11	89.26	8.93	135.74	33.93	4.33	1.08	140.07	-162	-16.2	-10.9	-1.6

Appendix B. Medina/Diversion Lakes combined hydrologic budget—Continued

Date	△ storage total (acre-ft)	GW_{out} total system (acre-ft)	GW_{out} total system (+/- error) (acre-ft)	Medina Lake stage (ft above BMA datum)	Medina Lake stage (ft above mean sea level)	Average GW_{out} (acre-ft/d)	Average GW_{out} (+/- error) (acre-ft)	Average Medina Lake stage (ft above mean sea level)	Average precipitation (acre-ft/d)	Average Sw_{in} (acre-ft/d)	Average Sw_{out} (acre-ft/d)	Average total evaporation (acre-ft/d)	Average △ storage (acre-ft/d)
11/15/95	-60.1	10.04	23.34	1,052.59	1,044.79								
11/16/95	-94.1	42.64	23.79	1,052.58	1,044.78								
11/17/95	272.7	430.05	102.07	1,052.64	1,044.84								
11/18/95	466.3	-330.48	47.66	1,052.74	1,044.94								
11/19/95	96.6	50.36	22.85	1,052.75	1,044.95								
11/20/95	131.3	21.38	23.79	1,052.77	1,044.97								
11/21/95	107.3	23.53	22.27	1,052.79	1,044.99								
11/22/95	43.7	62.33	20.60	1,052.79	1,044.99								
11/23/95	50.7	48.55	20.87	1,052.79	1,044.99								
11/24/95	-11.2	64.22	23.76	1,052.79	1,044.99								
11/25/95	-37.8	99.49	19.45	1,052.77	1,044.97								
11/26/95	1.0	64.01	16.45	1,052.77	1,044.97								
11/27/95	57.0	-0.88	17.15	1,052.78	1,044.98								
11/28/95	-33.2	-71.99	48.05	1,052.76	1,044.96								
11/29/95	-144.5	12.56	39.59	1,052.73	1,044.93								
11/30/95	-103.5	78.75	21.45	1,052.72	1,044.92								
12/01/95	-64.0	62.41	19.76	1,052.71	1,044.91								
12/02/95	-33.1	36.17	20.23	1,052.71	1,044.91								
12/03/95	-17.8	24.26	20.37	1,052.72	1,044.92								
12/04/95	-73.1	56.30	22.80	1,052.71	1,044.91								
12/05/95	-63.6	61.80	20.89	1,052.7	1,044.9								
12/06/95	-54.2	-2.07	24.50	1,052.69	1,044.89								
12/07/95	-121.5	41.13	27.98	1,052.68	1,044.88								
12/08/95	-75.2	80.59	21.99	1,052.67	1,044.87								
12/09/95	-67.0	-67.95	40.03	1,052.66	1,044.86								
12/10/95	-273.7	208.13	36.98	1,052.6	1,044.8								
12/11/95	-106.4	58.41	25.04	1,052.58	1,044.78								
12/12/95	-95.1	89.53	21.53	1,052.57	1,044.77								
12/13/95	-43.3	56.99	20.19	1,052.57	1,044.77								
12/14/95	-60.6	83.47	19.92	1,052.56	1,044.76								
12/15/95	-18.7	46.20	19.03	1,052.56	1,044.76								
12/16/95	-52.1	65.19	20.63	1,052.55	1,044.75								
12/17/95	-15.8	150.69	22.51	1,052.55	1,044.75								
12/18/95	72.7	-72.00	30.83	1,052.56	1,044.76								
12/19/95	-142.9	80.29	38.10	1,052.54	1,044.74								
12/20/95	-144.5	167.08	27.24	1,052.51	1,044.71								
12/21/95	-77.3	103.39	19.95	1,052.49	1,044.69								
12/22/95	-36.9	37.15	23.56	1,052.48	1,044.68								
12/23/95	-118.3	173.11	23.31	1,052.45	1,044.65								
12/24/95	-36.7	103.40	18.00	1,052.43	1,044.63								
12/25/95	-52.3	127.61	18.13	1,052.41	1,044.61								
12/26/95	-43.0	116.93	16.96	1,052.4	1,044.6								
12/27/95	-49.8	72.26	17.95	1,052.38	1,044.58								
12/28/95	-115.1	101.36	21.09	1,052.36	1,044.56	96.77	23.14	1,044.66	10.60	142.30	73.39	46.06	-63.33
12/29/95	-104.2	126.16	20.48	1,052.34	1,044.54								
12/30/95	-17.2	42.61	16.31	1,052.34	1,044.54								
12/31/95	-40.3	65.30	17.13	1,052.33	1,044.53								
01/01/96	-53.6	30.34	24.94	1,052.32	1,044.52								
01/02/96	-172.9	83.77	41.19	1,052.28	1,044.48								

Appendix B. Medina/Diversion Lakes combined hydrologic budget—Continued

Date	Precipitation Medina Lake		Precipitation Diversion Lake		SW_{in} Medina Lake		SW_{out} Diversion Lake		Evaporation Medina Lake		Evaporation Diversion Lake		Evapo-ration total (acre-ft)	△ storage Medina Lake		△ storage Diversion Lake	
	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)		(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)
01/03/96					118.35	11.92	89.26	8.93	59.98	15.00	1.92	0.48	61.90	-207	-20.7	-9.5	-1.4
01/04/96					114.41	11.53	95.21	9.52	23.84	5.96	0.76	0.19	24.59	-88	-8.8	-7.8	-1.2
01/05/96					110.42	11.13	99.17	9.92	46.88	11.72	1.49	0.37	48.37	-9	-0.9	-14	-2.1
01/06/96					106.43	10.73	95.21	9.52	119.82	29.96	3.77	0.94	123.60	-103	-10.3	-13	-2.0
01/07/96					104.45	10.53	91.24	9.12	52.45	13.11	1.66	0.41	54.11	-259	-25.9	-10.9	-1.6
01/08/96					108.40	10.92	87.27	8.73	36.42	9.10	1.14	0.28	37.56	-141	-14.1	-7.1	-1.1
01/09/96					110.38	11.12	87.27	8.73	19.91	4.98	0.62	0.16	20.53	-76	-7.6	-5.6	-0.8
01/10/96					112.36	11.32	93.22	9.32						-97	-9.7	0.9	0.1
01/11/96					110.40	11.13	119.01	11.90						-128	-12.8	35.9	5.4
01/12/96					106.41	10.73	126.94	12.69						-197	-19.7	13.8	2.1
01/13/96					102.45	10.33	130.91	13.09						-164	-16.4	3	0.5
01/14/96					102.45	10.33	132.89	13.29						-148	-14.8	1	0.2
01/15/96					104.03	10.48	132.89	13.29						-130	-13.0	0.2	0
01/16/96					103.83	10.45	132.89	13.29	10.04	2.51	0.32	0.08	10.36	-137	-13.7	0	0
01/17/96					104.07	10.48	130.91	13.09	-12.09	-3.02	-0.39	-0.10	-12.48	-113	-11.3	0.5	0.1
01/18/96					101.87	10.26	120.99	12.10						0	0	-3.6	-0.5
01/19/96					100.26	10.11	119.01	11.90						-392	-39.2	-6.9	-1.0
01/20/96					99.07	10.01	124.96	12.50	9.71	2.43	0.31	0.08	10.02	-155	-15.5	3.4	0.5
01/21/96					101.06	10.20	128.93	12.89	27.08	6.77	0.88	0.22	27.95	-136	-13.6	4.9	0.7
01/22/96					102.84	10.38	130.91	13.09	-19.34	-4.83	-0.63	-0.16	-19.97	-155	-15.5	2.7	0.4
01/23/96					105.02	10.60	132.89	13.29	5.94	1.48	0.19	0.05	6.13	-56	-5.6	3	0.5
01/24/96					105.02	10.60	126.94	12.69	42.76	10.69	1.39	0.35	44.15	-188	-18.8	-0.1	0
01/25/96					101.06	10.20	124.96	12.50	31.39	7.85	1.02	0.26	32.41	-174	-17.4	-3.3	-0.5
01/26/96					98.88	9.98	132.89	13.29	31.58	7.89	1.03	0.26	32.60	-85	-8.5	5.1	0.8
01/27/96					96.28	9.71	138.84	13.88	52.27	13.07	1.70	0.43	53.97	-269	-26.9	12.1	1.8
01/28/96					93.90	9.46	144.79	14.48	27.35	6.84	0.90	0.22	28.25	-213	-21.3	10.6	1.6
01/29/96					91.93	9.26	152.73	15.27						-124	-12.4	6.8	1.0
01/30/96					91.91	9.26	156.69	15.67						-153	-15.3	2.2	0.3
01/31/96					87.97	8.87	164.63	16.46						-252	-25.2	9.3	1.4
02/01/96					87.97	8.87	156.69	15.67	43.89	10.97	1.47	0.37	45.37	-267	-26.7	18.4	2.8
02/02/96					91.95	9.27	150.74	15.07						-183	-18.3	5.6	0.8
02/03/96					91.91	9.26	152.73	15.27						-226	-22.6	-15.6	-2.3
02/04/96	26.00	3.90			87.93	8.86	144.79	14.48						-217	-21.7	-13.1	-2.0
02/05/96					89.91	9.06	144.79	14.48						-184	-18.4	-5.4	-0.8
02/06/96					93.88	9.46	174.55	17.45						-195	-19.5	28.1	4.2
02/07/96					97.86	9.85	188.43	18.84	2.00	0.50	0.07	0.02	2.07	-219	-21.9	19.3	2.9
02/08/96					103.81	10.45	186.45	18.64	2.38	0.59	0.08	0.02	2.46	-177	-17.7	-1	-0.2
02/09/96					103.81	10.45	186.45	18.64	3.53	0.88	0.12	0.03	3.64	-180	-18.0	-2	-0.3
02/10/96					103.83	10.45	196.36	19.64	-2.95	-0.74	-0.10	-0.03	-3.05	-206	-20.6	5.3	0.8
02/11/96					101.83	10.25	198.35	19.83	80.50	20.13	2.75	0.69	83.25	-99	-9.9	5.5	0.8
02/12/96					89.91	9.06	200.33	20.03	37.93	9.48	1.29	0.32	39.22	-444	-44.4	1	0.2
02/13/96					81.98	8.27	208.26	20.83	25.56	6.39	0.88	0.22	26.44	-253	-25.3	6.6	1.0
02/14/96					82.00	8.27	216.20	21.62	7.91	1.98	0.27	0.07	8.18	-225	-22.5	1.4	0.2
02/15/96					85.96	8.66	218.18	21.82	33.42	8.35	1.15	0.29	34.57	-311	-31.1	0.2	0
02/16/96					89.95	9.06	228.10	22.81	50.15	12.54	1.73	0.43	51.88	-253	-25.3	4.9	0.7
02/17/96					80.01	8.07	232.07	23.21	28.60	7.15	1.00	0.25	29.60	-295	-29.5	1.4	0.2
02/18/96					82.04	8.27	232.07	23.21	3.89	0.97	0.14	0.03	4.02	-253	-25.3	0.7	0.1
02/19/96					87.41	8.80	234.05	23.40	14.01	3.50	0.48	0.12	14.49	-294	-29.4	-3.2	-0.5
02/20/96					89.04	8.95	226.12	22.61						-253	-25.3	-2	-0.3

Appendix B. Medina/Diversion Lakes combined hydrologic budget—Continued

Date	△ storage total (acre-ft)	GW_{out} total system (acre-ft)	GW_{out} total system (+/- error) (acre-ft)	Medina Lake stage (ft above BMA datum)	Medina Lake stage (ft above mean sea level)	Average GW_{out} (acre-ft/d)	Average GW_{out} (+/- error) (acre-ft)	Average Medina Lake stage (ft above mean sea level)	Average precipitation (acre-ft/d)	Average Sw_{in} (acre-ft/d)	Average Sw_{out} (acre-ft/d)	Average total evaporation (acre-ft/d)	Average △ storage (acre-ft/d)
01/03/96	-216.5	183.69	29.62	1,052.24	1,044.44								
01/04/96	-95.8	90.41	18.38	1,052.22	1,044.42								
01/05/96	-23.0	-14.12	19.10	1,052.22	1,044.42								
01/06/96	-116.0	3.63	34.84	1,052.19	1,044.39								
01/07/96	-269.9	229.00	32.24	1,052.13	1,044.33								
01/08/96	-148.1	131.66	21.87	1,052.1	1,044.3								
01/09/96	-81.6	84.18	16.83	1,052.08	1,044.28	88.05	32.81	1,044.43	2.54	119.89	93.06	52.91	-111.59
01/10/96	-96.1			1,052.06	1,044.26								
01/11/96	-92.1			1,052.03	1,044.23								
01/12/96	-183.2			1,051.99	1,044.19								
01/13/96	-161.0			1,051.95	1,044.15								
01/14/96	-147.0			1,051.92	1,044.12								
01/15/96	-129.8			1,051.89	1,044.09								
01/16/96	-137.0	97.58	21.91	1,051.86	1,044.06								
01/17/96	-112.5	98.14	20.45	1,051.83	1,044.03								
01/18/96	-3.6			1,051.83	1,044.03								
01/19/96	-398.9			1,051.74	1,043.94								
01/20/96	-151.6	115.69	22.42	1,051.71	1,043.91								
01/21/96	-131.1	75.28	22.40	1,051.67	1,043.87								
01/22/96	-152.3	144.20	23.30	1,051.64	1,043.84								
01/23/96	-53.0	19.00	17.97	1,051.63	1,043.83								
01/24/96	-188.1	122.03	27.23	1,051.58	1,043.78								
01/25/96	-177.3	120.99	25.00	1,051.54	1,043.74								
01/26/96	-79.9	13.28	20.28	1,051.52	1,043.72								
01/27/96	-256.9	160.36	34.42	1,051.46	1,043.66								
01/28/96	-202.4	123.26	28.32	1,051.41	1,043.61	99.34	24.59	1,043.77	0	100.35	131.79	23.95	-154.73
01/29/96	-117.2			1,051.38	1,043.58								
01/30/96	-150.8			1,051.35	1,043.55								
01/31/96	-242.7			1,051.29	1,043.49								
02/01/96	-248.6	134.51	34.13	1,051.23	1,043.43								
02/02/96	-177.4			1,051.19	1,043.39								
02/03/96	-241.6			1,051.13	1,043.33								
02/04/96	-230.1			1,051.08	1,043.28								
02/05/96	-189.4			1,051.04	1,043.24								
02/06/96	-166.9			1,051	1,043.2								
02/07/96	-199.7	107.07	30.67	1,050.94	1,043.14								
02/08/96	-178.0	92.91	27.76	1,050.9	1,043.1								
02/09/96	-182.0	95.72	27.96	1,050.86	1,043.06								
02/10/96	-200.7	111.22	30.34	1,050.81	1,043.01								
02/11/96	-93.5	-86.26	31.67	1,050.79	1,042.99								
02/12/96	-443.0	293.36	50.45	1,050.68	1,042.88								
02/13/96	-246.4	93.67	34.41	1,050.63	1,042.83	101.10	33.32	1,043.00	0	97.58	194.95	22.00	-220.47
02/14/96	-223.6	81.22	32.34	1,050.57	1,042.77								
02/15/96	-310.8	144.02	39.85	1,050.5	1,042.7								
02/16/96	-248.1	58.07	37.42	1,050.44	1,042.64								
02/17/96	-293.6	111.94	39.05	1,050.37	1,042.57								
02/18/96	-252.3	98.25	35.33	1,050.31	1,042.51								
02/19/96	-297.2	136.07	38.76	1,050.24	1,042.44	104.93	37.13	1,042.61	0	84.56	226.78	23.79	-270.93
02/20/96	-255.0			1,050.18	1,042.38								

Appendix B. Medina/Diversion Lakes combined hydrologic budget—Continued

Date	Precipitation Medina Lake		Precipitation Diversion Lake		SW_{in} Medina Lake		SW_{out} Diversion Lake		Evaporation Medina Lake		Evaporation Diversion Lake		Evapo-ration total (acre-ft)	△ storage Medina Lake		△ storage Diversion Lake	
	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)		(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)
02/21/96					89.00	8.95	220.17	22.02	20.37	5.09	0.71	0.18	21.08	-276	-27.6	-5.2	-0.8
02/22/96					89.00	8.94	218.18	21.82	12.85	3.21	0.45	0.11	13.30	-221	-22.1	-1.6	-0.2
02/23/96					89.00	8.95	222.15	22.21	19.91	4.98	0.69	0.17	20.60	-225	-22.5	4.6	0.7
02/24/96					87.55	8.81	230.08	23.01	45.98	11.49	1.62	0.41	47.60	-349	-34.9	9	1.4
02/25/96					82.99	8.34	236.03	23.60	-14.73	-3.68	-0.52	-0.13	-15.25	-307	-30.7	7.3	1.1
02/26/96					80.83	8.12	240.00	24.00	-10.91	-2.73	-0.39	-0.10	-11.29	-265	-26.5	4.2	0.6
02/27/96					80.77	8.11	243.97	24.40	-2.19	-0.55	-0.08	-0.02	-2.27	-249	-24.9	1.9	0.3
02/28/96	19.62	2.94			90.53	9.09	243.97	24.40	96.39	24.10	3.43	0.86	99.82	-194	-19.4	-0.2	0
02/29/96	227.23	34.08	6.30	0.95	101.38	10.20	238.02	23.80	50.70	12.67	1.81	0.45	52.51	-300	-30.0	-9	-1.4
03/01/96					101.26	10.18	178.51	17.85	22.99	5.75	0.81	0.20	23.79	-146	-14.6	-22.7	-3.4
03/02/96					98.84	9.93	138.84	13.88	32.06	8.01	1.13	0.28	33.19	-210	-21.0	9.2	1.4
03/03/96					94.51	9.49	144.79	14.48	31.07	7.77	1.11	0.28	32.18	-217	-21.7	11.7	1.8
03/04/96					90.57	9.09	162.64	16.26	-11.43	-2.86	-0.41	-0.10	-11.84	-190	-19.0	6.6	1.0
03/05/96					96.48	9.68	166.61	16.66	-8.35	-2.09	-0.30	-0.07	-8.65	-134	-13.4	-4.8	-0.7
03/06/96					102.43	10.28	164.63	16.46	21.51	5.38	0.77	0.19	22.29	-38	-3.8	-0.2	0
03/07/96					106.43	10.68	152.73	15.27	151.38	37.85	5.44	1.36	156.83	-282	-28.2	-2.6	-0.4
03/08/96					93.26	9.38	144.79	14.48	55.80	13.95	2.01	0.50	57.81	-392	-39.2	-3.3	-0.5
03/09/96					79.38	7.99	144.79	14.48	24.06	6.02	0.87	0.22	24.93	-227	-22.7	-0.9	-0.1
03/10/96					75.41	7.59	142.81	14.28	46.05	11.51	1.64	0.41	47.69	-226	-22.6	-2.8	-0.4
03/11/96					77.39	7.79	142.81	14.28	49.90	12.48	1.78	0.44	51.68	-196	-19.6	-3.2	-0.5
03/12/96					79.38	7.99	176.53	17.65	21.23	5.31	0.76	0.19	21.99	-252	-25.2	-6	-0.9
03/13/96					81.56	8.21	174.55	17.45	3.76	0.94	0.13	0.03	3.90	-122	-12.2	-14.5	-2.2
03/14/96					81.34	8.19	172.56	17.26	8.60	2.15	0.31	0.08	8.90	-174	-17.4	-6.9	-1.0
03/15/96					81.20	8.17	174.55	17.45	6.91	1.73	0.25	0.06	7.16	-162	-16.2	-3	-0.5
03/16/96					79.16	7.96	196.36	19.64	9.43	2.36	0.34	0.08	9.77	-232	-23.2	10.4	1.6
03/17/96					78.98	7.94	202.31	20.23	28.80	7.20	1.03	0.26	29.83	-231	-23.1	10	1.5
03/18/96					76.78	7.71	208.26	20.83	104.91	26.23	3.77	0.94	108.68	-235	-23.5	3	0.5
03/19/96					74.84	7.52	216.20	21.62	72.87	18.22	2.63	0.66	75.51	-385	-38.5	3.1	0.5
03/20/96					70.91	7.13	222.15	22.21	38.56	9.64	1.40	0.35	39.96	-355	-35.5	2.9	0.4
03/21/96					65.36	6.58	224.13	22.41	50.76	12.69	1.87	0.47	52.63	-336	-33.6	17	2.6
03/22/96					65.65	6.62	226.12	22.61	26.51	6.63	0.99	0.25	27.50	-344	-34.4	17	2.6
03/23/96					65.65	6.62	226.12	22.61	11.00	2.75	0.42	0.11	11.42	-339	-33.9	17	2.6
03/24/96					65.45	6.60	226.12	22.61	4.37	1.09	0.17	0.04	4.54	-290	-29.0	17	2.6
03/25/96					67.44	6.79	228.10	22.81	90.84	22.71	3.52	0.88	94.37	-235	-23.5	17	2.6
03/26/96	23.88	3.58			69.42	6.99	226.12	22.61	71.59	17.90	2.81	0.70	74.39	-425	-42.5	18	2.7
03/27/96	63.67	9.55	2.13	0.32	73.41	7.39	216.20	21.62	47.71	11.93	1.88	0.47	49.58	-343	-34.3	6.2	0.9
03/28/96					77.38	7.79	226.12	22.61	21.61	5.40	0.85	0.21	22.46	-205	-20.5	10.6	1.6
03/29/96					79.36	7.99	245.95	24.60	7.87	1.97	0.31	0.08	8.19	-301	-30.1	11.1	1.7
03/30/96					80.95	8.14	249.92	24.99	14.40	3.60	0.58	0.14	14.97	-241	-24.1	15.4	2.3
03/31/96					80.87	8.12	255.87	25.59	44.63	11.16	1.79	0.45	46.43	-300	-30.0	9.3	1.4
04/01/96					83.31	8.38	255.87	25.59	19.46	4.87	0.78	0.20	20.25	-373	-37.3	6.4	1.0
04/02/96					73.98	7.46	261.82	26.18	44.50	11.12	1.80	0.45	46.29	-351	-35.1	4.9	0.7
04/03/96					66.05	6.67	269.75	26.98	10.38	2.59	0.42	0.11	10.80	-306	-30.6	-1.5	-0.2
04/04/96					68.03	6.87	253.88	25.39	2.78	0.70	0.11	0.03	2.90	-199	-19.9	-10.5	-1.6
04/05/96	198.13	29.72	8.21	1.23	73.84	7.45	234.05	23.40	57.34	14.33	2.30	0.57	59.63	-132	-13.2	-37.4	-5.6
04/06/96					91.85	9.25	232.07	23.21	56.50	14.13	2.25	0.56	58.75	-114	-11.4	-25.5	-3.8
04/07/96					125.55	12.62	232.07	23.21	22.32	5.58	0.88	0.22	23.21	-283	-28.3	-33.8	-5.1
04/08/96					143.40	14.40	232.07	23.21	14.17	3.54	0.56	0.14	14.73	-184	-18.4	-26.2	-3.9
04/09/96					139.04	13.96	226.12	22.61	12.22	3.06	0.47	0.12	12.69	-402	-40.2	-26	-3.9

Appendix B. Medina/Diversion Lakes combined hydrologic budget—Continued

Date	△ storage total (acre-ft)	GW_{out} total system		Medina Lake stage		Average GW_{out}		Average Medina Lake stage (ft above mean sea level)	Average precipitation (acre-ft/d)	Average Sw_{in} (acre-ft/d)	Average Sw_{out} (acre-ft/d)	Average total evaporation (acre-ft/d)	Average △ storage (acre-ft/d)
		(acre-ft)	(+/- error) (acre-ft)	(ft above BMA datum)	(ft above mean sea level)	(acre-ft/d)	(+/- error) (acre-ft)						
02/21/96	-281.2	128.95	36.78	1,050.11	1,042.31								
02/22/96	-222.6	80.12	32.48	1,050.06	1,042.26								
02/23/96	-220.4	66.65	33.24	1,050.01	1,042.21								
02/24/96	-340.0	149.87	44.26	1,049.92	1,042.12								
02/25/96	-299.7	161.91	39.80	1,049.85	1,042.05								
02/26/96	-260.8	112.92	36.77	1,049.79	1,041.99								
02/27/96	-247.1	86.17	35.80	1,049.73	1,041.93	112.37	37.02	1,042.12	0	85.59	230.08	10.54	-267.40
02/28/96	-194.2	-39.44	40.55	1,049.68	1,041.88								
02/29/96	-309.0	353.38	53.81	1,049.61	1,041.81								
03/01/96	-168.7	67.65	26.08	1,049.57	1,041.77								
03/02/96	-200.8	127.61	28.26	1,049.52	1,041.72								
03/03/96	-205.3	122.84	28.88	1,049.47	1,041.67								
03/04/96	-183.4	123.16	26.78	1,049.42	1,041.62								
03/05/96	-138.8	77.32	23.57	1,049.39	1,041.59	118.93	32.56	1,041.72	36.16	96.22	181.91	31.57	-200.03
03/06/96	-38.2	-46.29	20.49	1,049.38	1,041.58								
03/07/96	-284.6	81.48	50.76	1,049.31	1,041.51								
03/08/96	-395.3	285.96	45.05	1,049.22	1,041.42								
03/09/96	-227.9	137.55	28.72	1,049.16	1,041.36								
03/10/96	-228.8	113.71	30.09	1,049.11	1,041.31								
03/11/96	-199.2	82.11	28.37	1,049.06	1,041.26	109.09	33.91	1,041.41	0	89.05	148.76	60.20	-229.00
03/12/96	-258.0	138.86	32.24	1,049	1,041.2								
03/13/96	-136.5	39.62	22.95	1,048.97	1,041.17								
03/14/96	-180.9	80.78	25.95	1,048.93	1,041.13								
03/15/96	-165.0	64.50	25.24	1,048.89	1,041.09								
03/16/96	-221.6	94.63	31.55	1,048.83	1,041.03								
03/17/96	-221.0	67.83	32.56	1,048.77	1,040.97								
03/18/96	-232.0	-8.17	41.65	1,048.71	1,040.91								
03/19/96	-381.9	165.03	48.36	1,048.62	1,040.82								
03/20/96	-352.1	160.90	43.56	1,048.53	1,040.73								
03/21/96	-319.0	107.59	42.92	1,048.44	1,040.64								
03/22/96	-327.0	139.04	42.30	1,048.36	1,040.56								
03/23/96	-322.0	150.12	41.45	1,048.27	1,040.47								
03/24/96	-273.0	107.80	37.46	1,048.2	1,040.4								
03/25/96	-218.0	-37.03	40.52	1,048.14	1,040.34	90.82	36.34	1,040.82	0	73.84	205.29	35.44	-257.71
03/26/96	-407.0	199.79	52.03	1,048.03	1,040.23								
03/27/96	-336.8	210.24	43.97	1,047.94	1,040.14								
03/28/96	-194.4	23.20	32.00	1,047.89	1,040.09								
03/29/96	-289.9	115.12	39.77	1,047.81	1,040.01								
03/30/96	-225.6	41.66	35.91	1,047.75	1,039.95								
03/31/96	-290.7	69.27	41.80	1,047.67	1,039.87								
04/01/96	-366.6	173.79	46.27	1,047.57	1,039.77								
04/02/96	-346.1	111.97	45.80	1,047.48	1,039.68								
04/03/96	-307.5	93.00	41.42	1,047.4	1,039.6								
04/04/96	-209.5	20.75	33.03	1,047.34	1,039.54	105.88	41.20	1,039.89	8.97	75.27	246.15	29.63	-297.41
04/05/96	-169.4	155.91	43.58	1,047.31	1,039.51								
04/06/96	-139.5	-59.46	31.12	1,047.28	1,039.48								
04/07/96	-316.8	187.08	39.44	1,047.2	1,039.4								
04/08/96	-210.2	106.81	33.36	1,047.16	1,039.36								
04/09/96	-428.0	328.23	48.44	1,047.05	1,039.25								

Appendix B. Medina/Diversion Lakes combined hydrologic budget—Continued

Date	Precipitation Medina Lake		Precipitation Diversion Lake		SW_{in} Medina Lake		SW_{out} Diversion Lake		Evaporation Medina Lake		Evaporation Diversion Lake		Evapo-ration total (acre-ft)	△ storage Medina Lake		△ storage Diversion Lake	
	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)		(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)
04/10/96					127.14	12.77	224.13	22.41	28.38	7.10	1.11	0.28	29.49	-102	-10.2	2	0.3
04/11/96					115.64	11.63	230.08	23.01	8.00	2.00	0.31	0.08	8.31	-310	-31.0	8.4	1.3
04/12/96					103.14	10.36	240.00	24.00	22.51	5.63	0.89	0.22	23.40	-243	-24.3	4.9	0.7
04/13/96					95.13	9.56	243.97	24.40	32.27	8.07	1.27	0.32	33.54	-282	-28.2	-2.2	-0.3
04/14/96					92.87	9.33	247.93	24.79	56.48	14.12	2.23	0.56	58.71	-348	-34.8	3.1	0.5
04/15/96					86.92	8.73	249.92	24.99	107.55	26.89	4.27	1.07	111.82	-264	-26.4	2.5	0.4
04/16/96					79.20	7.97	263.80	26.38	65.43	16.36	2.62	0.66	68.05	-451	-45.1	12.4	1.9
04/17/96					73.31	7.38	271.74	27.17	38.80	9.70	1.57	0.39	40.38	-379	-37.9	7.2	1.1
04/18/96					65.16	6.56	275.70	27.57	11.07	2.77	0.45	0.11	11.52	-331	-33.1	4.2	0.6
04/19/96					59.21	5.96	283.64	28.36	8.56	2.14	0.35	0.09	8.91	-220	-22.0	2.5	0.4
04/20/96					59.15	5.96	299.50	29.95	25.89	6.47	1.05	0.26	26.95	-366	-36.6	15.7	2.4
04/21/96					57.92	5.85	305.45	30.55	9.12	2.28	0.38	0.09	9.50	-367	-36.7	12.1	1.8
04/22/96	29.62	4.44			55.54	5.60	305.45	30.55	25.85	6.46	1.07	0.27	26.92	-437	-43.7	13.8	2.1
04/23/96					55.18	5.56	303.47	30.35	46.65	11.66	1.95	0.49	48.59	-361	-36.1	11.2	1.7
04/24/96					53.22	5.36	301.49	30.15	61.91	15.48	2.59	0.65	64.50	-325	-32.5	10	1.5
04/25/96					53.20	5.36	305.45	30.55						-361	-36.1	8.2	1.2
04/26/96					53.45	5.39	313.39	31.34	58.51	14.63	2.48	0.62	60.99	-398	-39.8	6	0.9
04/27/96					51.29	5.17	317.36	31.74	13.19	3.30	0.56	0.14	13.75	-429	-42.9	-2.9	-0.4
04/28/96	195.05	29.26	5.70	0.85	49.43	4.99	317.36	31.74	11.14	2.79	0.48	0.12	11.62	-321	-32.1	-3	-0.5
04/29/96					51.33	5.18	319.34	31.93	145.70	36.42	6.23	1.56	151.93	-321	-32.1	2.9	0.4
04/30/96					53.22	5.36	315.37	31.54	53.66	13.42	2.28	0.57	55.94	-320	-32.0	-5.7	-0.9
05/01/96					55.20	5.56	313.39	31.34	30.43	7.61	1.30	0.32	31.73	-620	-62.0	-2	-0.3
05/02/96					53.20	5.36	323.31	32.33	9.46	2.36	0.40	0.10	9.86	-366	-36.6	-1.9	-0.3
05/03/96					47.29	4.77	329.26	32.93	2.56	0.64	0.11	0.03	2.67	-357	-35.7	-4.7	-0.7
05/04/96					45.26	4.57	335.21	33.52						-388	-38.8	-1.7	-0.3
05/05/96					45.26	4.57	335.21	33.52						-352	-35.2	0	0
05/06/96					43.28	4.37	335.21	33.52						-395	-39.5	0	0
05/07/96					43.40	4.38	339.17	33.92	7.78	1.95	0.34	0.08	8.12	-391	-39.1	-0.1	0
05/08/96	102.60	15.39	4.69	0.70	47.60	4.81	307.44	30.74	10.91	2.73	0.47	0.12	11.38	-358	-35.8	8	1.2
05/09/96					52.56	5.31	196.36	19.64	12.69	3.17	0.57	0.14	13.26	-293	-29.3	89	13.4
05/10/96					47.90	4.82	210.25	21.02						-240	-24.0	10.1	1.5
05/11/96					49.55	5.00	214.21	21.42						-62	-6.2	-9	-1.4
05/12/96					51.07	5.14	214.21	21.42						-277	-27.7	-10	-1.5
05/13/96					52.92	5.32	218.18	21.82						-240	-24.0	-9	-1.4
05/14/96					52.66	5.29	224.13	22.41						-240	-24.0	-26	-3.9
05/15/96					52.74	5.30	224.13	22.41						-377	-37.7	-30	-4.5
05/16/96					48.67	4.89	218.18	21.82	53.72	13.43	2.30	0.57	56.02	-137	-13.7	-21.9	-3.3
05/17/96					44.71	4.50	234.05	23.40	64.44	16.11	2.83	0.71	67.27	-308	-30.8	-29.1	-4.4
05/18/96					40.78	4.11	241.98	24.20	66.08	16.52	2.88	0.72	68.96	-343	-34.3	-12	-1.8
05/19/96					36.85	3.71	253.88	25.39	68.48	17.12	2.99	0.75	71.47	-373	-37.3	-19	-2.9
05/20/96					32.93	3.32	265.78	26.58	51.12	12.78	2.22	0.56	53.35	-406	-40.6	-16	-2.4
05/21/96					32.85	3.31	285.62	28.56	47.79	11.95	2.10	0.52	49.89	-236	-23.6	23	3.5
05/22/96					30.68	3.09	309.42	30.94	65.97	16.49	2.93	0.73	68.89	-339	-33.9	23	3.5
05/23/96					28.70	2.89	339.17	33.92	56.41	14.10	2.53	0.63	58.94	-439	-43.9	24	3.6
05/24/96					26.92	2.72	364.96	36.50	59.59	14.90	2.70	0.68	62.29	-568	-56.8	23	3.5
05/25/96					26.98	2.73	366.94	36.69	56.67	14.17	2.58	0.65	59.26	-535	-53.5	9	1.4
05/26/96					26.66	2.69	370.91	37.09	41.24	10.31	1.90	0.47	43.14	-600	-60.0	16.4	2.5
05/27/96	190.10	28.51	6.61	0.99	30.68	3.09	380.83	38.08	11.98	2.99	0.55	0.14	12.53	-462	-46.2	13.8	2.1
05/28/96					30.59	3.08	376.86	37.69	11.92	2.98	0.55	0.14	12.47	-133	-13.3	3	0.5

Appendix B. Medina/Diversion Lakes combined hydrologic budget—Continued

Date	△ storage total (acre-ft)	GW_{out} total system		Medina Lake stage		Average GW_{out}		Average Medina Lake stage (ft above mean sea level)	Average precipitation (acre-ft/d)	Average Sw_{in} (acre-ft/d)	Average Sw_{out} (acre-ft/d)	Average total evaporation (acre-ft/d)	Average △ storage (acre-ft/d)
		(acre-ft)	(+/- error) (acre-ft)	(ft above BMA datum)	(ft above mean sea level)	(acre-ft/d)	(+/- error) (acre-ft)						
04/10/96	-100.0	-26.49	28.63	1,047.02	1,039.22	115.35	37.43	1,039.37	34.39	116.81	230.08	33.08	-227.32
04/11/96	-301.6	178.84	40.39	1,046.94	1,039.14								
04/12/96	-238.1	77.84	36.14	1,046.87	1,039.07								
04/13/96	-284.2	101.82	39.33	1,046.8	1,039								
04/14/96	-344.9	131.12	45.96	1,046.71	1,038.91								
04/15/96	-261.5	-13.32	46.07	1,046.63	1,038.83	95.26	41.58	1,038.99	0	98.74	242.38	47.16	-286.06
04/16/96	-438.6	185.95	55.36	1,046.51	1,038.71								
04/17/96	-371.8	133.00	48.21	1,046.41	1,038.61								
04/18/96	-326.8	104.74	43.67	1,046.32	1,038.52								
04/19/96	-217.5	-15.84	36.45	1,046.26	1,038.46								
04/20/96	-350.3	83.00	48.16	1,046.16	1,038.36								
04/21/96	-354.9	97.86	48.19	1,046.06	1,038.26								
04/22/96	-423.2	175.98	54.22	1,045.94	1,038.14								
04/23/96	-349.8	52.92	48.93	1,045.85	1,038.05								
04/24/96	-315.0	2.23	47.29	1,045.75	1,037.95	91.09	47.83	1,038.34	3.29	61.99	290.03	33.92	-349.77
04/25/96	-352.8			1,045.65	1,037.85								
04/26/96	-392.0	71.07	53.01	1,045.54	1,037.74								
04/27/96	-431.9	152.09	53.72	1,045.42	1,037.62								
04/28/96	-324.0	245.20	54.10	1,045.33	1,037.53								
04/29/96	-318.1	-101.84	58.36	1,045.24	1,037.44								
04/30/96	-325.7	7.60	47.21	1,045.15	1,037.35								
05/01/96	-622.0	332.08	70.11	1,044.98	1,037.18								
05/02/96	-367.9	87.93	49.19	1,044.87	1,037.07								
05/03/96	-361.7	77.06	48.81	1,044.77	1,036.97	108.90	54.31	1,037.36	25.09	51.80	318.59	42.31	-392.91
05/04/96	-389.7			1,044.66	1,036.86								
05/05/96	-352.0			1,044.56	1,036.76								
05/06/96	-395.0			1,044.45	1,036.65								
05/07/96	-391.1	87.20	51.98	1,044.33	1,036.53								
05/08/96	-350.0	186.07	49.96	1,044.23	1,036.43								
05/09/96	-204.0	46.93	38.22	1,044.15	1,036.35								
05/10/96	-229.9			1,044.08	1,036.28								
05/11/96	-71.0			1,044.06	1,036.26								
05/12/96	-287.0			1,043.98	1,036.18								
05/13/96	-249.0			1,043.91	1,036.11								
05/14/96	-266.0			1,043.84	1,036.04								
05/15/96	-407.0			1,043.73	1,035.93								
05/16/96	-158.9	-66.62	29.65	1,043.69	1,035.89								
05/17/96	-337.1	80.49	42.38	1,043.6	1,035.8								
05/18/96	-355.0	84.84	45.34	1,043.5	1,035.7								
05/19/96	-392.0	103.50	48.49	1,043.39	1,035.59								
05/20/96	-422.0	135.80	50.35	1,043.27	1,035.47	67.60	43.24	1,035.69	0	40.79	242.78	63.41	-333.00
05/21/96	-213.0	-89.66	39.23	1,043.2	1,035.4								
05/22/96	-316.0	-31.63	49.00	1,043.1	1,035.3								
05/23/96	-415.0	45.59	57.43	1,042.97	1,035.17								
05/24/96	-545.0	144.66	69.28	1,042.8	1,035								
05/25/96	-526.0	126.78	66.48	1,042.64	1,034.84								
05/26/96	-583.6	196.21	71.38	1,042.46	1,034.66	65.32	58.80	1,035.06	0	28.80	339.50	57.07	-433.10
05/27/96	-448.2	282.23	66.50	1,042.32	1,034.52								
05/28/96	-130.0	-228.74	40.20	1,042.28	1,034.48								

Appendix B. Medina/Diversion Lakes combined hydrologic budget—Continued

Date	Precipitation Medina Lake		Precipitation Diversion Lake		SW_{in} Medina Lake		SW_{out} Diversion Lake		Evaporation Medina Lake		Evaporation Diversion Lake		Evapo-ration total (acre-ft)	△ storage Medina Lake		△ storage Diversion Lake	
	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)		(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)
05/29/96					30.59	3.08	376.86	37.69	15.24	3.81	0.71	0.18	15.95	-495	-49.5	-6.3	-0.9
05/30/96					30.37	3.05	384.79	38.48	46.08	11.52	2.15	0.54	48.22	-495	-49.5	-9.1	-1.4
05/31/96	41.82	6.27			32.29	3.24	386.78	38.68	36.89	9.22	1.72	0.43	38.61	-390	-39.0	-6.1	-0.9
06/01/96	41.62	6.24	3.03	0.46	38.24	3.84	388.76	38.88	52.49	13.12	2.46	0.62	54.95	-392	-39.2	-0.7	-0.1
06/02/96					46.18	4.63	392.73	39.27	23.92	5.98	1.12	0.28	25.04	-489	-48.9	14	2.1
06/03/96					34.27	3.44	398.68	39.87	38.60	9.65	1.83	0.46	40.43	131	13.1	12	1.8
06/04/96					30.31	3.04	398.68	39.87	56.45	14.11	2.68	0.67	59.13	-489	-48.9	-2.3	-0.3
06/05/96					26.34	2.65	398.68	39.87	64.97	16.24	3.09	0.77	68.06	-580	-58.0	5.3	0.8
06/06/96					22.33	2.25	398.68	39.87	86.04	21.51	4.12	1.03	90.16	-579	-57.9	-1.7	-0.3
06/07/96					24.22	2.43	398.68	39.87	56.75	14.19	2.72	0.68	59.47	-355	-35.5	-0.5	-0.1
06/08/96					22.08	2.21	396.69	39.67	43.72	10.93	2.10	0.53	45.82	-446	-44.6	-1.1	-0.2
06/09/96					20.15	2.02	394.71	39.47	56.68	14.17	2.72	0.68	59.40	-413	-41.3	-2.5	-0.4
06/10/96					19.89	2.00	392.73	39.27	79.43	19.86	3.83	0.96	83.25	-733	-73.3	-1.1	-0.2
06/11/96					20.23	2.03	392.73	39.27	54.56	13.64	2.64	0.66	57.20	-535	-53.5	-1.7	-0.3
06/12/96					22.14	2.22	394.71	39.47	47.64	11.91	2.31	0.58	49.95	-472	-47.2	-3.7	-0.6
06/13/96					19.95	2.00	396.69	39.67	40.60	10.15	1.98	0.49	42.58	-472	-47.2	-4.9	-0.7
06/14/96					20.15	2.02	398.68	39.87	40.34	10.09	1.97	0.49	42.31	-469	-46.9	-0.6	-0.1
06/15/96					18.17	1.82	404.63	40.46	53.37	13.34	2.62	0.65	55.98	-528	-52.8	8.9	1.3
06/16/96					14.96	1.50	410.58	41.06	52.85	13.21	2.60	0.65	55.44	-530	-53.0	2.1	0.3
06/17/96					14.52	1.46	412.56	41.26	38.03	9.51	1.88	0.47	39.91	-525	-52.5	0.7	0.1
06/18/96					14.90	1.50	412.56	41.26	39.72	9.93	1.97	0.49	41.68	-493	-49.3	1.7	0.3
06/19/96					14.10	1.42	424.46	42.45	58.60	14.65	2.93	0.73	61.53	-523	-52.3	10	1.5
06/20/96					15.33	1.54	426.45	42.64	40.12	10.03	2.02	0.50	42.14	-734	-73.4	9.3	1.4
06/21/96					14.76	1.48	428.43	42.84	31.72	7.93	1.60	0.40	33.32	-455	-45.5	4.8	0.7
06/22/96					14.64	1.47	432.40	43.24	54.60	13.65	2.76	0.69	57.36	-461	-46.1	2.6	0.4
06/23/96					10.23	1.03	436.36	43.64	56.43	14.11	2.86	0.72	59.29	-601	-60.1	0.4	0.1
06/24/96					10.43	1.05	432.40	43.24	45.80	11.45	2.33	0.58	48.13	-536	-53.6	-4.2	-0.6
06/25/96	164.55	24.68			15.85	1.60	432.40	43.24	28.11	7.03	1.43	0.36	29.54	-465	-46.5	1.9	0.3
06/26/96	53.97	8.10	1.31	0.20	19.16	1.93	432.40	43.24	31.68	7.92	1.62	0.41	33.30	-435	-43.5	-1.3	-0.2
06/27/96					24.36	2.45	432.40	43.24	43.45	10.86	2.23	0.56	45.68	-473	-47.3	-1	-0.2
06/28/96					20.39	2.05	432.40	43.24	37.92	9.48	1.95	0.49	39.88	-499	-49.9	-4.1	-0.6
06/29/96					19.80	1.99	428.43	42.84	41.51	10.38	2.16	0.54	43.67	-472	-47.2	-3.4	-0.5
06/30/96					15.99	1.61	426.45	42.64	35.02	8.76	1.81	0.45	36.84	-578	-57.8	-1.6	-0.2
07/01/96					14.00	1.41	426.45	42.64	30.23	7.56	1.57	0.39	31.80	-563	-56.3	-1.4	-0.2
07/02/96					13.61	1.37	424.46	42.45	37.31	9.33	1.95	0.49	39.25	-447	-44.7	0	0
07/03/96					12.61	1.27	426.45	42.64	32.34	8.08	1.69	0.42	34.03	-469	-46.9	0.9	0.1
07/04/96					11.62	1.17	428.43	42.84	31.61	7.90	1.66	0.41	33.27	-557	-55.7	3	0.5
07/05/96					10.43	1.05	430.41	43.04	47.96	11.99	2.53	0.63	50.49	-554	-55.4	5.3	0.8
07/06/96					10.63	1.07	432.40	43.24	47.37	11.84	2.51	0.63	49.88	-887	-88.7	0.8	0.1
07/07/96					9.84	0.99	432.40	43.24	45.79	11.45	2.43	0.61	48.22	-517	-51.7	0	0
07/08/96					9.24	0.93	434.38	43.44	53.93	13.48	2.88	0.72	56.81	-546	-54.6	-0.2	0
07/09/96	40.45	6.07	1.31	0.20	8.65	0.87	436.36	43.64	61.25	15.31	3.28	0.82	64.53	-572	-57.2	2.9	0.4
07/10/96	296.44	44.47	24.27	3.64	12.30	1.29	370.91	37.09	27.21	6.80	1.48	0.37	28.68	-113	-11.3	40.6	6.1
07/11/96			1.35	0.20	11.48	1.17	279.67	27.97	52.81	13.20	2.92	0.73	55.73	-485	-48.5	44.3	6.6
07/12/96					10.95	1.11	261.82	26.18	64.66	16.17	3.56	0.89	68.22	-227	-22.7	-34.2	-5.1
07/13/96					11.42	1.15	269.75	26.98	52.47	13.12	2.83	0.71	55.30	-398	-39.8	-51.7	-7.8
07/14/96					11.03	1.11	271.74	27.17	48.78	12.20	2.61	0.65	51.39	-226	-22.6	-26.3	-3.9
07/15/96					9.64	0.97	269.75	26.98	50.20	12.55	2.72	0.68	52.91	-433	-43.3	3.5	0.5
07/16/96					8.85	0.89	285.62	28.56	75.60	18.90	4.07	1.02	79.67	-440	-44.0	-1.5	-0.2

Appendix B. Medina/Diversion Lakes combined hydrologic budget—Continued

Date	△ storage total (acre-ft)	GW_{out} total system		Medina Lake stage		Average GW_{out}		Average Medina Lake stage (ft above mean sea level)	Average precipitation (acre-ft/d)	Average Sw_{in} (acre-ft/d)	Average Sw_{out} (acre-ft/d)	Average total evaporation (acre-ft/d)	Average △ storage (acre-ft/d)
		(acre-ft)	(+/- error) (acre-ft)	(ft above BMA datum)	(ft above mean sea level)	(acre-ft/d)	(+/- error) (acre-ft)						
05/29/96	-501.3	139.08	62.41	1,042.13	1,034.33								
05/30/96	-504.1	101.45	63.84	1,041.98	1,034.18								
05/31/96	-396.1	44.83	56.15	1,041.86	1,034.06								
06/01/96	-392.7	31.88	57.22	1,041.74	1,033.94								
06/02/96	-475.0	103.41	63.21	1,041.59	1,033.79	67.73	58.50	1,034.19	40.45	34.13	383.94	29.68	-406.77
06/03/96	143.0	-547.83	43.24	1,041.63	1,033.83								
06/04/96	-491.3	63.80	64.73	1,041.48	1,033.68								
06/05/96	-574.7	134.30	72.29	1,041.3	1,033.5								
06/06/96	-580.7	114.19	73.56	1,041.12	1,033.32								
06/07/96	-355.5	-78.43	55.29	1,041.01	1,033.21								
06/08/96	-447.1	26.66	60.72	1,040.87	1,033.07								
06/09/96	-415.5	-18.46	58.90	1,040.74	1,032.94								
06/10/96	-734.1	278.01	85.52	1,040.51	1,032.71								
06/11/96	-536.7	107.00	67.79	1,040.34	1,032.54								
06/12/96	-475.7	53.18	62.72	1,040.19	1,032.39	75.58	66.84	1,033.04	0	23.08	396.25	63.61	-512.37
06/13/96	-476.9	57.58	62.52	1,040.04	1,032.24								
06/14/96	-469.6	48.76	62.41	1,039.89	1,032.09								
06/15/96	-519.1	76.66	67.89	1,039.72	1,031.92								
06/16/96	-527.9	76.83	68.35	1,039.55	1,031.75								
06/17/96	-524.3	86.35	67.46	1,039.38	1,031.58								
06/18/96	-491.3	51.95	65.07	1,039.22	1,031.42	66.36	65.62	1,031.83	0	17.11	405.95	46.32	-501.52
06/19/96	-513.0	41.11	68.97	1,039.05	1,031.25								
06/20/96	-724.7	271.45	85.51	1,038.81	1,031.01								
06/21/96	-450.2	3.20	63.02	1,038.66	1,030.86								
06/22/96	-458.4	-16.72	64.68	1,038.51	1,030.71								
06/23/96	-600.6	115.18	75.61	1,038.31	1,030.51								
06/24/96	-540.2	70.11	69.83	1,038.13	1,030.33	80.72	71.27	1,030.78	0	13.25	430.08	50.29	-547.85
06/25/96	-463.1	181.57	68.51	1,037.98	1,030.18								
06/26/96	-436.3	45.04	62.40	1,037.83	1,030.03								
06/27/96	-474.0	20.28	65.05	1,037.67	1,029.87								
06/28/96	-503.1	51.22	66.74	1,037.51	1,029.71								
06/29/96	-475.4	23.10	64.62	1,037.35	1,029.55								
06/30/96	-579.6	132.30	72.38	1,037.15	1,029.35								
07/01/96	-564.4	120.15	71.05	1,036.96	1,029.16								
07/02/96	-447.0	-3.11	62.36	1,036.81	1,029.01								
07/03/96	-468.1	20.24	63.92	1,036.65	1,028.85								
07/04/96	-554.0	103.93	70.73	1,036.46	1,028.66								
07/05/96	-548.7	78.24	71.19	1,036.27	1,028.47								
07/06/96	-886.2	414.55	99.39	1,035.96	1,028.16								
07/07/96	-517.0	46.22	68.37	1,035.78	1,027.98								
07/08/96	-546.2	64.25	71.07	1,035.59	1,027.79	92.71	69.84	1,029.06	15.70	14.82	429.99	40.90	-533.08
07/09/96	-569.1	118.61	73.82	1,035.39	1,027.59								
07/10/96	-72.4	5.82	59.83	1,035.35	1,027.55								
07/11/96	-440.7	118.13	57.92	1,035.18	1,027.38								
07/12/96	-261.2	-57.89	38.61	1,035.1	1,027.3								
07/13/96	-449.7	136.08	50.46	1,034.96	1,027.16								
07/14/96	-252.3	-59.80	37.62	1,034.88	1,027.08								
07/15/96	-429.5	116.47	52.55	1,034.81	1,027.01								
07/16/96	-441.5	85.06	55.78	1,034.65	1,026.85								

Appendix B. Medina/Diversion Lakes combined hydrologic budget—Continued

Date	Precipitation Medina Lake		Precipitation Diversion Lake		SW_{in} Medina Lake		SW_{out} Diversion Lake		Evaporation Medina Lake		Evaporation Diversion Lake		Evapo-ration total (acre-ft)	△ storage Medina Lake		△ storage Diversion Lake	
	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)		(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)
07/17/96					8.23	0.83	299.50	29.95	64.70	16.17	3.49	0.87	68.19	-392	-39.2	-12.5	-1.9
07/18/96					7.85	0.79	295.54	29.55	65.73	16.43	3.56	0.89	69.28	-439	-43.9	-7.5	-1.1
07/19/96					7.46	0.75	303.47	30.35	69.73	17.43	3.79	0.95	73.52	-421	-42.1	0	0
07/20/96					7.04	0.71	311.40	31.14	70.31	17.58	3.83	0.96	74.14	-510	-51.0	0	0
07/21/96					6.43	0.65	321.32	32.13	66.57	16.64	3.63	0.91	70.21	-481	-48.1	0	0
07/22/96					6.01	0.61	327.27	32.73	55.33	13.83	3.03	0.76	58.35	-402	-40.2	0	0
07/23/96					6.05	0.61	333.22	33.32	48.98	12.24	2.67	0.67	51.65	-404	-40.4	-7	-1.1
07/24/96					6.05	0.61	347.11	34.71	53.55	13.39	2.93	0.73	56.48	-426	-42.6	-6	-0.9
07/25/96					6.17	0.63	362.98	36.30	40.65	10.16	2.23	0.56	42.88	-576	-57.6	-0.5	-0.1
07/26/96					8.63	0.88	376.86	37.69						-538	-53.8	7.6	1.1
07/27/96					9.90	1.00	378.84	37.88						-538	-53.8	3	0.5
07/28/96					6.29	0.64	376.86	37.69						-459	-45.9	2.1	0.3
07/29/96					6.49	0.66	378.84	37.88						-502	-50.2	1.3	0.2
07/30/96					6.29	0.64	386.78	38.68						-498	-49.8	3.9	0.6
07/31/96					6.07	0.61	394.71	39.47						-510	-51.0	3.7	0.6
08/01/96					5.67	0.58	402.64	40.26						-469	-46.9	9.1	1.4
08/02/96					5.49	0.56	408.59	40.86						-444	-44.4	4.6	0.7
08/03/96					5.16	0.53	410.58	41.06						-573	-57.3	-2	-0.3
08/04/96					5.08	0.52	410.58	41.06						-507	-50.7	3.1	0.5
08/05/96					4.88	0.50	410.58	41.06						-555	-55.5	0	0
08/06/96					4.88	0.50	408.59	40.86						-452	-45.2	0.2	0
08/07/96					4.84	0.49	408.59	40.86						-504	-50.4	-0.1	0
08/08/96					4.66	0.47	402.64	40.26						-498	-49.8	0.6	0.1
08/09/96					4.62	0.47	396.69	39.67						-679	-67.9	7.7	1.2
08/10/96					4.62	0.47	394.71	39.47						-463	-46.3	-4.4	-0.7
08/11/96					4.44	0.45	390.74	39.07	41.92	10.48	2.49	0.27	44.41	-281	-28.1	-4.1	-0.6
08/12/96			4.37	0.66	4.44	0.45	388.76	38.88						-480	-48.0	-0.9	-0.1
08/13/96					5.28	0.54	384.79	38.48						-691	-69.1	-4.1	-0.6
08/14/96					5.38	0.55	366.94	36.69	26.58	6.65	1.59	0.17	28.18	-403	-40.3	-11.2	-1.7
08/15/96					5.08	0.52	360.99	36.10	38.48	9.62	2.32	0.25	40.80	-476	-47.6	-9.5	-1.4
08/16/96					4.98	0.51	303.47	30.35	47.10	11.78	2.85	0.31	49.95	-476	-47.6	6.9	1.0
08/17/96					5.08	0.52	315.37	31.54	56.76	14.19	3.45	0.38	60.21	-445	-44.5	-7.6	-1.1
08/18/96					5.12	0.53	309.42	30.94	59.96	14.99	3.64	0.40	63.60	-445	-44.5	-9	-1.4
08/19/96					5.16	0.53	307.44	30.74	57.34	14.33	3.49	0.38	60.83	-419	-41.9	-2.4	-0.4
08/20/96	89.50	13.43			7.74	0.85	311.40	31.14	29.82	7.45	1.84	0.20	31.66	-415	-41.5	10.1	1.5
08/21/96					6.37	0.68	214.21	21.42	27.69	6.92	1.73	0.19	29.42	-561	-56.1	41	6.2
08/22/96	56.68	8.50	3.49	0.52	6.03	0.62	222.15	22.21	19.07	4.77	1.20	0.13	20.27	-530	-53.0	2.1	0.3
08/23/96	58.92	8.84	8.28	1.24	6.62	0.68	194.38	19.44	14.77	3.69	0.92	0.10	15.68	-193	-19.3	-55.4	-8.3
08/24/96	44.65	6.70			6.55	0.68	166.61	16.66	16.82	4.21	1.04	0.11	17.86	-216	-21.6	-19.3	-2.9
08/25/96	54.78	8.22	3.84	0.58	9.86	1.01	144.79	14.48	10.74	2.68	0.66	0.07	11.40	-72	-7.2	3.1	0.5
08/26/96	122.09	18.31			14.30	1.46	91.24	9.12	19.69	4.92	1.22	0.13	20.91	-120	-12.0	-8	-1.2
08/27/96			2.94	0.44	18.49	1.87	65.85	6.59	31.53	7.88	1.92	0.21	33.46	-24	-2.4	-49.5	-7.4
08/28/96					16.50	1.67	47.60	4.76	38.53	9.63	2.33	0.25	40.86	-24	-2.4	-28.4	-4.3
08/29/96	172.42	25.86			15.43	1.57	47.60	4.76	25.59	6.40	1.52	0.17	27.11	-120	-12.0	-27.1	-4.1
08/30/96	326.51	48.98	5.39	0.81	18.11	1.93	45.62	4.56	11.59	2.90	0.69	0.07	12.27	48	4.8	-19	-2.9
08/31/96					26.90	2.78	45.62	4.56	13.01	3.25	0.76	0.08	13.78	96	9.6	-12.9	-1.9
09/01/96	92.69	13.90	6.96	1.04	75.43	8.69	45.62	4.56	14.73	3.68	0.87	0.09	15.60	-24	-2.4	-12	-1.8
09/02/96					35.33	3.72	45.62	4.56	20.63	5.16	1.20	0.13	21.83	24	2.4	-12.6	-1.9
09/03/96					26.78	2.75	65.45	6.55						-72	-7.2	-23	-3.5

Appendix B. Medina/Diversion Lakes combined hydrologic budget—Continued

Date	△ storage total (acre-ft)	GW_{out} total system		Medina Lake stage		Average GW_{out}		Average Medina Lake stage (ft above mean sea level)	Average precipitation (acre-ft/d)	Average Sw_{in} (acre-ft/d)	Average Sw_{out} (acre-ft/d)	Average total evaporation (acre-ft/d)	Average △ storage (acre-ft/d)
		(acre-ft)	(+/- error) (acre-ft)	(ft above BMA datum)	(ft above mean sea level)	(acre-ft/d)	(+/- error) (acre-ft)						
07/17/96	-404.5	45.03	51.96	1,034.51	1,026.71								
07/18/96	-446.5	89.54	55.44	1,034.36	1,026.56	36.11	51.71	1,027.12	36.38	10.04	304.07	59.39	-353.14
07/19/96	-421.0	51.47	54.76	1,034.21	1,026.41								
07/20/96	-510.0	131.50	62.30	1,034.02	1,026.22								
07/21/96	-481.0	95.90	60.20	1,033.85	1,026.05								
07/22/96	-402.0	22.38	53.66	1,033.71	1,025.91								
07/23/96	-411.0	32.18	53.80	1,033.56	1,025.76								
07/24/96	-432.0	34.47	56.57	1,033.41	1,025.61								
07/25/96	-576.5	176.81	68.84	1,033.2	1,025.4	77.81	58.59	1,025.91	0	6.46	329.54	61.03	-461.93
07/26/96	-530.4			1,033	1,025.2								
07/27/96	-535.0			1,032.8	1,025								
07/28/96	-456.9			1,032.63	1,024.83								
07/29/96	-500.7			1,032.45	1,024.65								
07/30/96	-494.1			1,032.26	1,024.46								
07/31/96	-506.3			1,032.07	1,024.27								
08/01/96	-459.9			1,031.9	1,024.1								
08/02/96	-439.4			1,031.73	1,023.93								
08/03/96	-575.0			1,031.51	1,023.71								
08/04/96	-503.9			1,031.32	1,023.52								
08/05/96	-555.0			1,031.11	1,023.31								
08/06/96	-451.8			1,030.94	1,023.14								
08/07/96	-504.1			1,030.74	1,022.94								
08/08/96	-497.4			1,030.55	1,022.75								
08/09/96	-671.3			1,030.29	1,022.49								
08/10/96	-467.4			1,030.11	1,022.31								
08/11/96	-285.1	-145.61	49.26	1,030	1,022.2								
08/12/96	-480.9			1,029.81	1,022.01								
08/13/96	-695.1			1,029.54	1,021.74								
08/14/96	-414.2	24.46	54.94	1,029.38	1,021.58								
08/15/96	-485.5	88.79	60.53	1,029.19	1,021.39								
08/16/96	-469.1	120.66	57.68	1,029	1,021.2								
08/17/96	-452.6	82.09	56.37	1,028.82	1,021.02								
08/18/96	-454.0	86.10	56.25	1,028.64	1,020.84								
08/19/96	-421.4	58.29	53.91	1,028.47	1,020.67	76.73	56.61	1,021.12	0	5.13	327.27	50.59	-449.47
08/20/96	-404.9	159.08	54.14	1,028.3	1,020.5								
08/21/96	-520.0	282.74	60.76	1,028.07	1,020.27								
08/22/96	-527.9	351.68	58.30	1,027.85	1,020.05								
08/23/96	-248.4	112.16	30.22	1,027.77	1,019.97								
08/24/96	-235.3	102.02	28.56	1,027.68	1,019.88								
08/25/96	-68.9	-18.82	18.38	1,027.65	1,019.85								
08/26/96	-128.0	152.24	24.30	1,027.6	1,019.8								
08/27/96	-73.5	-4.38	13.04	1,027.59	1,019.79								
08/28/96	-52.4	-19.56	11.92	1,027.58	1,019.78								
08/29/96	-147.1	260.23	29.92	1,027.53	1,019.73								
08/30/96	29.0	263.11	49.63	1,027.55	1,019.75								
08/31/96	83.1	-115.60	11.62	1,027.59	1,019.79								
09/01/96	-36.0	149.86	17.70	1,027.58	1,019.78								
09/02/96	11.4	-43.53	8.40	1,027.59	1,019.79								
09/03/96	-95.0			1,027.56	1,019.76								

Appendix B. Medina/Diversion Lakes combined hydrologic budget—Continued

Date	Precipitation Medina Lake		Precipitation Diversion Lake		SW_{in} Medina Lake		SW_{out} Diversion Lake		Evaporation Medina Lake		Evaporation Diversion Lake		Evapo-ration total (acre-ft)	△ storage Medina Lake		△ storage Diversion Lake	
	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)		(acre-ft)	(+/- error) (acre-ft)	(acre-ft)	(+/- error) (acre-ft)
09/04/96	29.81	4.47	11.99	1.80	25.59	2.60	93.22	9.32						-120	-12.0	-54.6	-8.2
09/05/96	108.52	16.28			63.33	6.38	85.29	8.53						-48	-4.8	-49.6	-7.4
09/06/96					122.62	12.30	73.39	7.34						72	7.2	-44.3	-6.6
09/07/96					96.83	9.72	61.49	6.15						-48	-4.8	-32.7	-4.9
09/08/96					89.45	9.10	47.60	4.76						24	2.4	-24.5	-3.7
09/09/96					74.78	7.56	35.70	3.57						24	2.4	-17.6	-2.6
09/10/96					62.08	6.27	33.72	3.37						-48	-4.8	-14.5	-2.2
09/11/96					57.72	5.83	33.72	3.37						-48	-4.8	-15	-2.3
09/12/96					53.20	5.36	31.74	3.17						-47	-4.7	-15.6	-2.3
09/13/96	20.30	3.05			47.25	4.77	31.74	3.17						-118	-11.8	-12.6	-1.9
09/14/96					43.28	4.37	31.74	3.17						-71	-7.1	-13.6	-2.0
09/15/96	151.73	22.76	8.75	1.31	59.40	6.14	31.74	3.17						71	7.1	-3.9	-0.6
09/16/96					198.94	19.96	29.75	2.98						-24	-2.4	-10	-1.5
09/17/96					210.84	21.15	29.75	2.98						24	2.4	-13.2	-2.0
09/18/96					143.40	14.40	29.75	2.98						0	0	-6.4	-1.0
09/19/96					121.39	12.20	29.75	2.98						-24	-2.4	24	3.6
09/20/96	29.71	4.46	1.06	0.16	107.50	10.81	29.75	2.98						-24	-2.4	27.8	4.2
09/21/96					97.09	9.76	31.74	3.17						-70	-7.0	28.1	4.2
09/22/96					85.69	8.63	31.74	3.17						-71	-7.1	24.2	3.6
09/23/96					77.02	7.74	49.59	4.96						-71	-7.1	30.3	4.5
09/24/96	61.70	9.26			73.15	7.36	69.42	6.94						-166	-16.6	60.6	9.1
09/25/96					76.05	7.70	89.26	8.93						-142	-14.2	49	7.4
09/26/96					75.05	7.55	101.16	10.12						-237	-23.7	52	7.8
09/27/96	170.30	25.55			75.03	7.55	115.04	11.50						-235	-23.5	-1.4	-0.2
09/28/96					69.06	6.95	97.19	9.72						-210	-21.0	-8.6	-1.3
09/29/96					65.10	6.55	95.21	9.52						-233	-23.3	-7.3	-1.1
09/30/96					61.13	6.15	103.14	10.31								-4.7	-0.7

Appendix B. Medina/Diversion Lakes combined hydrologic budget—Continued

Date	△ storage total (acre-ft)	GW_{out} total system (acre-ft)	GW_{out} total system (+/- error) (acre-ft)	Medina Lake stage (ft above BMA datum)	Medina Lake stage (ft above mean sea level)	Average GW_{out} (acre-ft/d)	Average GW_{out} (+/- error) (acre-ft)	Average Medina Lake stage (ft above mean sea level)	Average precipitation (acre-ft/d)	Average Sw_{in} (acre-ft/d)	Average Sw_{out} (acre-ft/d)	Average total evaporation (acre-ft/d)	Average △ storage (acre-ft/d)
09/04/96	-174.6			1,027.51	1,019.71								
09/05/96	-97.6			1,027.49	1,019.69								
09/06/96	27.7			1,027.52	1,019.72								
09/07/96	-80.7			1,027.5	1,019.7								
09/08/96	-0.5			1,027.51	1,019.71								
09/09/96	6.4			1,027.52	1,019.72								
09/10/96	-62.5			1,027.5	1,019.7								
09/11/96	-63.0			1,027.48	1,019.68								
09/12/96	-62.6			1,027.46	1,019.66								
09/13/96	-130.6			1,027.41	1,019.61								
09/14/96	-84.6			1,027.38	1,019.58								
09/15/96	67.1			1,027.41	1,019.61								
09/16/96	-34.0			1,027.4	1,019.6								
09/17/96	10.8			1,027.41	1,019.61								
09/18/96	-6.4			1,027.41	1,019.61								
09/19/96	0			1,027.4	1,019.6								
09/20/96	3.8			1,027.39	1,019.59								
09/21/96	-41.9			1,027.36	1,019.56								
09/22/96	-46.8			1,027.33	1,019.53								
09/23/96	-40.7			1,027.3	1,019.5								
09/24/96	-105.4			1,027.23	1,019.43								
09/25/96	-93.0			1,027.17	1,019.37								
09/26/96	-185.0			1,027.07	1,019.27								
09/27/96	-236.4			1,026.97	1,019.17								
09/28/96	-218.6			1,026.88	1,019.08								
09/29/96	-240.3			1,026.78	1,018.98								
09/30/96				1,026.77	1,018.97								

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Appendix C—
Water-Quality Data

Appendix C. Water quality at data-collection sites, Medina Lake area

Type of site: GW, ground water; SPR, spring; SW, surface water; LK, lake

Aquifer code: Trinity undifferentiated (GLRS); Edwards (EDRDA); upper Trinity (GLRSU); middle Trinity (GLRSL, CCRK)

[gal/min, gallons per minute; µS/cm, microsiemens per centimeter at 25 °C; °C, degrees Celsius; mg/L, milligrams per liter; µg/L, micrograms per liter; <, less than; QA, quality-assurance sample]

USGS site no.	State well no./site name	Site no. (pl. 2)	Type of site	Aquifer code	Sample date	Flow (gal/min)	Specific conductance (µS/cm)	pH (units)	Temperature (°C)	Dissolved solids, sum of constituents (mg/L)	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)
293552098573001	AS-68-25-102	63	GW	218GLRS	8/2/1995	50	1,156	6.86	23.5	786	136	68	20	4.9
					1/22/1996	50	1,160	6.85	23.3	774	135	72	20	5.0
					7/24/1996	50	1,167	7.01	23.7	809	154	76	21	5.5
293249098575101	TD-68-25-402	74	GW	218GLRS	1/30/1996	50-100	420	7.41	20.5	242	56	17	7.7	1.7
					8/8/1996	50-100	454	7.19	21.8	268	63	17	8.4	1.7
293420098552601	AS-68-25-505	79	GW	218GLRS	12/15/1995	144	681	7.00	21.3	388	92	29	9.8	<1.00
					7/30/1996	120	670	6.81	21.4	401	77	61	8.0	<1.00
293353098572301	AS-68-25-507	80	GW	218GLRS	8/2/1995	40	1,220	7.01	25.0	823	128	51	26.4	7.6
					1/19/1996	30	1,220	7.20	24.2	848	137	80	25.2	8.1
					7/24/1996	30	1,220	7.32	25.1	805	147	84	21.3	8.4
293255098560401	TD-68-25-510	82	GW	218GLRS	11/29/1995		495	7.20	23.0	307	73	17	8.6	1.7
					8/8/1996		509	7.19	20.9	308	74	17	9.0	1.6
293457098565501	AS-68-25-511	83	GW	218GLRS	8/2/1995	15	918	6.93	22.8	549	121	35	21.9	1.8
					1/22/1996	15	921	6.83	22.5	550	123	41	17.6	1.8
					7/24/1996	15	884	6.86	23.3	560	151	42	24.8	1.7
293309098541901	TD-68-25-602	91	GW	218GLRS	2/8/1996	30	3,160	7.00	23.9	2,935	466	275	12.7	16
					7/30/1996		3,160	6.66	24.9	2,642	491	238	10.5	14
293334098535401	TD-68-25-603	92	GW	218GLRS	11/28/1995		1,770	6.96	23.7	1,516	352	79	3.4	3.0
					7/29/1996	20	2,140	6.36	24.5	1,735	387	104	5.0	4.3
293127098573701	TD-68-25-701	93	GW	218EDRDA	11/30/1995		613	6.55	24.7	376	69	39	0.27	2.1
					7/29/1996		608	6.83	25.5	344	58	31	2.9	1.5
293033098571601	TD-68-25-806	103	GW	218EDRDA	12/5/1995		415	6.86	22.8	226	80	3	2.1	<1.00
					8/19/1996	10	413	6.85	23.9	236	85	3	5.3	<1.00
293158098560401	TD-68-25-807	104	GW	218GLRSU	1/25/1996	30	1,360	7.12	21.8	1,158	210	97	13	6.9
					7/9/1996	20	2,160	6.97	22.0	2,019	359	168	18	12
293229098553402	TD-68-25-809	106	GW	218GLRS	12/5/1995		2,060	7.30	19.0	1,823	536	25	4.1	1.4
					7/26/1996	10	2,050	7.31	22.4	1,748	498	34	7.2	1.7
293117098560301	TD-68-25-810	107	GW	218GLRS	3/6/1996	10	444	7.31	22.1	237	81	5	7.1	<1.0
					8/19/1996	10	465	6.43	22.5	255	84	6	7.8	<1.00
293220098544701	TD-68-25-901	110	SPR	218EDRDA	10/30/1995	50-100	434	7.10	19.4	249	62	14	8.5	1.6
					7/9/1996	1	435	7.30	19.8	256	65	16	6.9	1.8
293222098531201	TD-68-25-903	112	GW	218GLRSU	3/20/1996	30	2,020	7.01	23.5	1,584	408	102	11	6.8
					3/20/96 QA	30	2,020	7.01	23.5	1,489	359	78	11	5.1
					7/29/96 QA	20	1,780	6.79	24.6	1,623	248	114	16	6.9
293034098540901	TD-68-25-904	113	GW	218GLRS	3/6/1996	30	810	7.09	21.5	552	81	55	9.2	3.3
					7/26/1996	10	779	7.30	22.9	472	73	50	5.9	2.7
292831098590201	TD-68-33-101	117	GW	218EDRDA	11/29/1995		417	7.20	22.7	259	67	15	6.9	1.4
					8/21/1996	5	455	6.69	26.3	269	72	16	6.2	1.2
292825098574501	TD-68-33-103	119	GW	218EDRDA	2/21/1996	30	486	6.99	22.5	271	91	5	6.5	<1.00
					8/6/1996		469	7.05	22.8	265	88	8	6.2	<1.0
292843098564601	TD-68-33-204	120	GW	218EDRDA	12/13/1995	30	446	7.21	22.7	260	78	9	5.5	<1.00
					8/21/1996	10	410	7.23	25.1	262	80	10	6.5	<1.00
292525098534601	TD-68-33-603	123	GW	218EDRDA	3/7/1996	50	1,050	7.20	23.0	421	71	21	95	5.3
					8/20/1996	50	612	7.47	27.2	360	77	17	36	1.8
294245099024701	AS-69-24-208	132	GW	218CCRK	12/11/1995	1,000	911	7.30	23.2	542	72	57	29	14
					8/6/1996	500	902	7.00	23.8	542	70	54	42	14
					8/6/96 QA	500	902	7.00	23.8	511	58	47	42	15
294015099000701	AS-69-24-602	134	GW	218GLRSL	11/30/1995		519	6.90	21.8	331	89	19	6.3	2.5
					8/20/1996	10	582	6.40	22.1	335	92	20	8.7	2.4
					8/20/96 QA	10	582	6.40	22.1	315	79	17	7.9	2.3
294005099013201	AS-69-24-603	135	GW	218GLRSL	2/5/1996	10	710	6.80	21.0	412	126	16	7.2	1.3
					8/20/1996	10	701	6.35	22.9	405	119	17	8.6	1.3

Appendix C. Water quality at data-collection sites, Medina Lake area—Continued

USGS site no.	Alkalinity (field) (mg/L)	Alkalinity, phenol (mg/L)	Alkalinity, total (mg/L)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Bromide, dissolved (mg/L)	Silica, dissolved (mg/L)	Nitrogen, nitrate (NO_3) (mg/L)	Nitrogen, nitrite (NO_2) (mg/L)	Nitrogen, $NO_3 + NO_2$ (mg/L)	Nitrogen, ammonia (NH_3) (mg/L)	Nitrogen, Kjeldahl (mg/L)	Phosphorus, ortho (µg/L)	Arsenic, dissolved (µg/L)
293552098573001	278	0	283	346	27	0.99	0.15	16			<0.01	0.04	0.1	0.01	<2.0
	276	<1	271	337	25	0.75	0.14	14			<0.2	0.933	0.018		<1.0
	271	<1	257	352	22	1.2	0.14	15			<0.010	<0.010	<0.010		<1.0
293249098575101	140	<1	145	55.4	11	0.15	0.09	9			0.204	0.074	0.11		<1.0
	157	<1	157	58.9	13	0.2	0.1	12	0.10	<0.005		<0.010	<0.010	0.012	1
293420098552601	311	<1	302	37.9	17	0.12	0.22	15	0.22	<0.005		0.037	0.13	<0.001	<1.0
	304	<1	286	38.6	17	0.18		16	0.14	<0.005		0.213	<0.010	0.012	1.6
293353098572301	254	0	260	419	22	1.5	0.19	15	0.04		<0.01	0.02	0.1	0.01	<2.0
	253	<1	252	412	20	1.3	0.16	13			<0.20	0.034	<0.010		<1.0
	250	<1	236	360	20	1.8	0.15	13			<0.010	<0.010	<0.010		<1.0
293255098560401	163	<1	166	79.0	14	0.17	0.09	15			0.127	0.017	0.04	0.023	2.0
	162	<1	149	80.8	15	0.21	0.10	13	0.50	<0.005		<0.010	0.037	0.032	1.7
293457098565501	316	0	324	119	41	0.51	<0.1	19			1.68	0.08	0.1	0.01	<2.0
	310	<1	303	125	40	0.27	0.09	15			1.14	<0.010	<0.010		<1.0
	311	<1	295	102	35	0.46	0.59	16			2.64	<0.010	<0.010		<1.0
293309098541901	184	<1	182	2,026	12	5.7	0.15	11			0.449	0.687	0.53		<2.0
	180	<1	170	1,753	10	4.2		12	0.66	<0.005		0.666	0.026	<0.001	<1.0
293334098535401	209	<1	208	920	18	2.0	0.08	14			0.62	<0.010	<0.010	0.045	<1.0
	188	<1	190	1,093	12	1.1		14	0.47	<0.005		0.07	0.046	<0.001	<1.0
293127098573701	196	<1	190	127	8.5	0.64	0.06	12			0.162	<0.010	<0.010	0.003	<1.0
	194	<1	175	112	8.2	0.68		13	0.19	<0.005		<0.010	<0.010	<0.001	<1.0
293033098571601	197	<1	194	3.7	6.5	<0.05	<0.05	12			0.729	<0.010	<0.010	0.012	<1.0
	191		200	6.0	7.2	<1.00	<0.50	14			0.6	0.18	<0.100	<1.000	<5.0
293158098560401	182	<1	179	698	13	1.1	0.11	9.7			0.384	1.14	<0.010		<1.0
	177	<1	178	1,328	12	2.9	0.12	12	0.19	<0.005			0.39	<0.001	1.3
293229098553402	183	<1	179	1,119	14	1.6	0.07	12			<0.010	<0.010	<0.010	0.014	<1.0
	185	<1	171	1,073	9.9	0.29		12	<0.005	<0.005		0.584	0.037	<0.001	<1.0
293117098560301	186	7.0	189	7.9	13	0.06	0.06	10			2.55	<0.010	<0.010	<0.001	1.1
	189		200	15	15	<1.00	<0.50	12			2.4	0.17	<0.10	<1.000	<5.0
293220098544701	157	<1	152	46	12	0.14	<0.20	10			0.059	0.083	0.26	0.002	<2.0
	145	<1	150	56	12	0.17	0.09	11	0.10	<0.005			0.078	0.01	<1.0
293222098531201	226	<1	231	893	15	0.61	<0.05	12			1.88	0.068	0.083	<0.001	<1.0
	226	<1	231	871	15	0.55	0.11	12			1.87	0.014	0.078	<0.001	<1.0
	208	<1	200	1,079	18	3.2		13	1.3	<0.005		0.16	<0.010	0.105	<1.0
293034098540901	198	9.0	201	263	9.1	0.75	0.05	11			0.027	<0.010	0.072	0.04	<1.0
	201	<1	187	198	8.1	0.46		12	0.095	<0.005		0.12	0.041	<0.001	<1.0
292831098590201	188	<1	185	34	11	0.11	0.08	11			0.62	<0.010	<0.010	0.007	<1.0
	188		200	35	12	<1.00	<0.50	13			0.6	<0.10	0.1	<1.000	<5.0
292825098574501	206	3.0	184	18	13	0.09	0.08	13			1.52	0.017	0.06	<0.001	<1.0
	190	<1	180	24	12	0.08	0.07	12	1.1	<0.005		<0.010	<0.010	0.007	<1.0
292843098564601	204	<1	191	21	11	0.08	0.07	12			0.835	<0.010	<0.010	0.01	1.2
	191		200	22	12	<1.00	<0.50	14			0.7	<0.100	<0.100	<1.000	<5.0
292525098534601	190	3.0	155	19	86	0.23	0.34	8.4			<0.010	0.206	0.26	<0.001	<1.0
	209		210	28	62	<1.00	0.68	13			0.6	<0.100	<0.100	<1.000	<5.0
294245099024701	287	<1	287	149	36	2.4	0.19	11			<0.010	0.258	0.29	<0.001	<1.0
	273	<1	274	149	36	2.5	0.2	11	<0.005	<0.005		0.449	0.30	0.01	<1.0
	273			140	33	2.4		10		<0.01	0.06	0.4		<0.01	<1
294015099000701	234	<1	229	45	15	0.37	0.08	13			2.16	<0.010	<0.010	0.006	<1.0
	230		240	44	16	<1.00	<0.50	13			1.7	<0.100	<0.100	<1.000	<5.0
	230		230	44	14	0.50		12							<1
294005099013201	302	<1	304	56	11	0.40	0.07	14			0.879	<0.010	<0.010		<1.0
	304		220	43	17	<1.00	<0.50	16			0.9	<0.100	<0.100	<1.000	<5.0

Appendix C. Water quality at data-collection sites, Medina Lake area—Continued

USGS site no.	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Mercury, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
293552098573001	22	<1	<0.5	<8	<8	<6	27	<5	20	2.0	<0.13	<40	<20	<6	4,840	<8	13
	25	<1.0	<1.0	15	<1.0	<1.0	39	<1.0	16	<1.0	<0.2	6.6	21	<1.0	5,143	4.1	11
	24	<1.0			<1.0	<1.0	35	<1.0	19	<1.0		6.9	5.9		5,430	2.0	7.1
293249098575101	26	<1.0	<1.0	7.3	<1.0	2.1	<5.0	<1.0	<1.0	<1.0	<0.2	1.4	8.4	<1.0	602	4.0	11
	26	<1.0	<1.0	7.9	<1.0	<1.0	<5.0	<1.0	1.6	3.9	<.02	1.5	4.8	<1.0	633	3.7	33
293420098552601	34	<1.0	<1.0	7.6	1.7	<1.0	571	<1.0	5.6	55	1.6	1.8	13	<1.0	315	2.7	37
	32	<1.0	<1.0	11	1.4	<1.0	423	<1.0	4.8	61	0.9	2.1	8.0	<1.0	293	3.4	10
293353098572301	21	<1	<0.5	<8	<8	<6	307	<5	0	5.0	<0.13	<40	<20	<6	7,080	<8	196
	24	<1.0	<1.0	11	<1.0	<1.0	370	2.0	28	4.0	<0.2	<1.0	20	<1.0	7,185	2.9	183
	22	<1.0			<1.0	<1.0	262	<1.0	33	3.2		<1.0	5.8		8,016	2.2	151
293255098560401	27	<1.0	<1.0	11	<1.0	3.0	36	<1.0	2.6	11	<0.2	2.4	5.3	<1.0	634	5.7	230
	28	<1.0	<1.0	6.2	<1.0	1.3	<5.0	<1.0	1.9	2.9	<0.2	2.0	5.0	<1.0	568	4.3	156
293457098565501	33	<1	<0.5	<8	<8	<6	<6	<5	<0.02	<2	<0.13	<40	<20	<6	3,050	<8	5.0
	38	<1.0	<1.0	16	<1.0	<1.0	<5.0	<1.0	2.2	<1.0	<0.2	1.8	20	<1.0	3,426	5.3	6.6
	35	<1.0			<1.0	26	7.0	3.0	4.2	<1.0		1.8	5.5		2,772	4.2	20
293309098541901	8.5	<2.0	<2.0	8.5	2.9	<2.0	184	<2.0	64	6.5	<0.2	<2.0	69	<2.0	10,480	2.5	972
	8.4	<1.0	<1.0	6.5	1.3	<1.0	46	<1.0	7.6	5.8	0.3	1.5	27	<1.0	8,505	1.9	567
293334098535401	32	<1.0	<1.0	12	1.4	2.3	<1.00	<1.0	15	<1.0	<0.2	1.5	22	<1.0	4,318	4.1	12
	26	<1.0	<1.0	6.8	<1.0	1.7	<5.0	<1.0	21	<1.0	<0.2	2.2	19	<1.0	4,831	2.8	22
293127098573701	33	<1.0	<1.0	32	<1.0	<1.0	<5.0	<1.0	13	3.2	<0.2	1.6	5.2	<1.0	3,277	8.8	152
	34	<1.0	<1.0	8.3	<1.0	<1.0	20.0	<1.0	11	5.7	<0.2	1.9	4.6	<1.0	2,393	2.6	170
293033098571601	26	<1.0	<1.0	20	<1.0	3.0	<5.0	2.5	<1.0	<1.0	<0.2	<1.0	6.1	<1.0	84	7.2	2,395
	28	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<1.0	<20.0	<1.0	<0.2	<1.0	10	<1.0	82	2.5	660
293158098560401	9.9	<1.0	<1.0	8.3	1.3	<1.0	41	<1.0	27	1.6	<0.2	1.1	30	<1.0	4,966	2.4	14
	11		<1.0			<1.0	27	<1.0	65	3.2					7,454		19
293229098553402	51	<1.0	<1.0	18	2.2	<1.0	1,817	<1.0	6.7	6.4	<0.2	3.4	34	<1.0	3,590	4.8	86
	49	<1.0	<1.0	6.9	1.2	<1.0	1,376	<1.0	8.5	7.2	<0.2	4.1	25	<1.0	3,016	1.9	70
293117098560301	31	<1.0	<1.0	5.5	<1.0	3.6	<5.0	1.3	<1.0	<1.0	<0.2	<1.0	15	<1.0	83	3.7	240
	32	<1.0	<1.0	<1.0	<1.0	3.4	<5.0	<1.0	<20.0	<1.0	<0.2	<1.0	12	<1.0	90	2.6	300
293220098544701	27	<1.0	<1.0	19	<2.0	<2.0	913	<2.0	2.0	15	<0.2	<2.0	5.6	<2.0	1	7.0	<2.0
	28		<1.0			<1.0	<5.0	<1.0	3.0	<1.0					574		1.1
293222098531201	27	<1.0	<1.0	24	3.3	1.0	<5.0	1.8	36	2.4	<0.2	1.4	66	<1.0	3,219	8.0	1,289
	27	<1.0	<1.0	17	3.3	2.0	<5.0	1.8	24	2.1	<0.2	1.5	66	<1.0	2,605	6.1	1,218
	23	<1.0	<1.0	6.9	<1.0	<1.0	<5.0	<1.0	35	3.2	0.2	2.4	20	<1.0	4,074	2.7	1,741
293034098540901	27	<1.0	<1.0	6.4	<1.0	<1.0	16	<1.0	11	12	<0.2	4.2	15	<1.0	3,652	1.8	41
	25	<1.0	<1.0	4.5	<1.0	<1.0	<5.0	<1.0	14	2.5	<0.2	3.1	5.2	<1.0	3,175	1.3	67
292831098590201	27	<1.0	<1.0	7.8	<1.0	<1.0	<1.0	<1.0	1.5	<1.0	<0.2	<1.0	4.6	<1.0	406	4.4	98
	31	<1.0	<1.0	1.1	<1.0	2.6	<5.0	<1.0	<20.0	<1.0	<0.2	1.0	10	<1.0	400	2.8	99
292825098574501	53	<1.0	<1.0	5.2	<1.0	1.4	<5.0	<1.0	<1.0	5.3	<0.2	<1.0	17	<1.0	222	3.7	3.2
	38	<1.0	<1.0	8.9	<1.0	1.5	<5.0	<1.0	<1.0	<1.0	<0.2	<1.0	5.2	<1.0	282	4.6	4.6
292843098564601	33	<1.0	<1.0	8.4	<1.0	1.3	13	<1.0	2.1	1.6	<0.2	<1.0	7.4	<1.0	412	4.1	364
	37	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<1.0	<20.0	1.7	<0.2	<1.0	11	<1.0	390	2.0	510
292525098534601	77	<1.0	<1.0	34	<1.0	2.0	17	<1.0	82	26	0.3	1.7	16	<1.0	1,230	8.9	3.4
	56	<1.0	<1.0	<1.0	<1.0	2.9	<5.0	2.0	29	<1.0	<0.2	1.7	12	<1.0	620	<1.0	160
294245099024701	31	<1.0	<1.0	12	<1.0	<1.0	249	<1.0	59	2.0	<0.2	2.7	6.4	<1.0	10,101	3.2	2.9
	31	<1.0	<1.0	13	<1.0	<1.0	224	<1.0	57	2.8	<0.2	3.3	4.5	<1.0	9,463	3.6	3.1
	31	<0.5	<1	<5	<3	<10	89	<10	60	3.0	<0.1	<10	<10	2	9,400	<6	18
294015099000701	45	<1.0	<1.0	36	<1.0	3.9	<5.0	<1.0	3.8	<1.0	<0.2	2.1	6.6	<1.0	1,421	11.0	9.2
	52	<1.0	<1.0	1.3	<1.0	2.4	<5.0	<1.0	<20.0	<1.0	<0.2	1.9	14	<1.0	1,400	1.9	21
	46	1.0	<1	<5	<3	<10	<3	10	7.0	<1	<0.1	<10	<10	<1	1,300	<6	21
294005099013201	39	<1.0	<1.0	14	<1.0	4.1	<5.0	9.9	<1.0	<1.0	<0.2	<1.0	19	<1.0	4,052	4.8	773
	44	<1.0	<1.0	<1.0	<1.0	2.7	<5.0	4.9	<20.0	<1.0	<0.2	1.0	16	<1.0	4,800	1.5	600

Appendix C. Water quality at data-collection sites, Medina Lake area—Continued

USGS site no.	State well no./site name	Site no. (pl. 2)	Type of site	Aquifer code	Sample date	Flow (gal/min)	Specific conductance (µS/cm)	pH (units)	Temperature (°C)	Dissolved solids, sum of constituents (mg/L)	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)
293736099034801	AS-69-24-802	136	GW	218GLRSL	1/31/1996	20	3,010	6.62	21.5	2,804	585	179	0.12	8.1
					7/30/1996		2,950	6.51	22.6	2,598	597	175	1.7	8.8
293856099040101	AS-69-24-803	137	GW	218GLRSL	1/25/1996	20	2,930	7.09	20.2	2,652	458	222	13	14
					8/7/1996		2,950	6.85	24.1	2,400	472	218	21	15
293812099031101	AS-69-24-804	138	GW	218GLRSL	3/20/1996	50	2,610	7.34	23.9	2,093	334	220	24	15
					3/20/96 QA	50	2,610	7.34	23.9	2,281	357	212	20	16
					8/15/1996	20	2,570	6.07	25.2	2,241	346	216	25	14
293710099032201	TD-69-32-201	141	GW	218GLRS	1/31/1996		1,137	7.23	12.5	755	136	77	8.6	4.0
					8/28/1996		1,128	6.87	23.0	1,118	132	74	10	4.2
293640099020001	TD-69-32-303	143	GW	218GLRS	12/11/1995	30	2,640	9.38	19.2	2,217	369	175	35	16
					8/15/1996	20	2,660	6.95	23.6	2,426	359	235	34	17
					8/15/96 QA	20	2,660	6.95	23.6	2,269	350	190	28	17
293438099041201	AS-69-32-501	147	GW	218GLRS	12/11/1995	40	2,910	9.16	17.1	2,665	512	208	17	19
					8/15/1996		3,380	6.80	26.6	3,319	541	282	30	22
292803099042601	TD-69-40-202	148	GW	218EDRDA	3/13/1996	30	450	7.20	23.5	255	79	10	5.5	1.0
					3/13/96 QA	30	450	7.20	23.5	256	80	10	6.3	<1.0
					8/20/1996	30	450	7.13	25.0	279	87	9	8.5	<1.0
292841099012001	TD-69-40-301	149	GW	218EDRDA	1/24/1996	10	428	7.21	24.1	248	68	15	5.4	<1.00
					8/21/1996	10	415	7.35	25.0	261	76	15	5.4	<1.00
292727099003201	TD-69-40-604	150	GW	218EDRDA	12/5/1995		451	6.87	23.3	247	63	18	0.99	<1.00
					8/21/1996	3	455	6.87	22.7	262	67	19	6.1	1.1
08179520	Medina R. blw. Medina Lake SW	3	SW		5/18/1995	157	450	8.07	15.0	171	55	17	7.9	7.8
	SW				11/30/1995		413	7.82	18.8	241	56	18	2.8	1.4
	QA				11/30/1995	29	413	7.82	18.8	234	50	16	7.8	1.6
	SW				4/3/1996	133	479	8.20	13.0	248	55	18	8.3	2.0
	SW				5/31/1996	210	412	8.20	15.0	250	60	19	6.7	1.9
	SW				8/6/1996	214	440	7.63	19.4	255	56	17	7.0	1.6
08178990	Medina R. at English Crossing SW	1	SW		12/1/1995	78	535	8.11	17.4	315	77	21	2.6	1.1
					4/3/1996	39	593	8.10	17.1	330	77	22	6.0	1.5
					5/31/1996	17	543	8.10	23.5	348	79	23	11	2.4
					8/6/1996	3	583	7.95	30.6	356	71	26	15	2.1
08180500	Medina R. nr. Riomedina SW	4	SW		5/18/1995	26	435	7.88	20.0	248	59	15	4.3	3.1
	SW				12/1/1995	26	430	7.68	17.1	243	62	16	3.2	1.5
	SW				4/4/1996	25	470	8.00	16.1	242	54	15	3.7	1.3
	SW				6/3/1996	27	435	7.50	19.7	262	63	17	7.9	1.8
	SW				8/6/1996	27	455	7.44	21.9	271	64	17	8.3	1.7
08179530	Koenig Creek blw. Medina Lake SW	2	SW		5/18/1995	2	440	7.98	21.0	163	66	14	8.0	2.5
293225098560600	Medina Lake site AC		LK		5/22/1995					146	51	16	7.7	1.7
	AC-top				5/22/1995		403	8.00	24.0	155	50	17	8.6	1.7
	AC				8/29/1995		392	8.30	29.5					
293223098560000	Medina Lake site AL-top	5	LK		4/2/1996		418	8.20	15.0	239	53	16	4.8	1.5
	AL-bottom				4/2/1996		420	8.10	12.0	241	54	16	5.2	1.6
293426098544300	Medina Lake site BC-top	7	LK		8/29/1995		395	8.30	29.5					
293456098555500	Medina Lake site CC-top	8	LK		8/29/1995		397	8.30	29.6					
293324098584200	Medina Lake site DC-top	9	LK		5/23/1995		404	8.10	24.5	156	50	17	8.8	1.7
	DC-bottom				5/23/1995		420	7.20	15.0	158	55	18	8.8	1.7
	DC at 20 ft				5/23/1995		405	8.10	24.5					
	DC at 30 ft				5/23/1995		416	7.60	22.0					
	DC				8/29/1995		404	8.30	30.1					
	DC at 1145				4/2/1996					164	55	17	4.7	1.5
	DC at 1205				4/2/1996		420	8.20	15.5	241	52	16	3.8	1.4
293731098590300	Medina Lake site EC-top at 1005	10	LK		5/23/1995		419	8.00	25.0	163	53	18	8.9	1.7
	EC-bottom at 1009				5/23/1995		417	8.00	24.5	160	52	18	8.8	1.6
	EC-top at 1345				8/29/1995		422	8.20	30.2					
	EC-top at 1110				4/2/1996		468	7.70	16.0	269	60	17	5.0	1.4
	EC-bottom at 1055				4/2/1996		435	7.20	13.9	252	58	17	4.3	1.5

Appendix C. Water quality at data-collection sites, Medina Lake area—Continued

USGS site no.	Alkalinity (field) (mg/L)	Alkalinity, phenol (mg/L)	Alkalinity, total (mg/L)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Bromide, dissolved (mg/L)	Silica, dissolved (mg/L)	Nitrogen, nitrate (NO_3) (mg/L)	Nitrogen, nitrite (NO_2) (mg/L)	Nitrogen, $NO_3 + NO_2$ (mg/L)	Nitrogen, ammonia (NH_3) (mg/L)	Nitrogen, Kjeldahl (mg/L)	Phosphorus, ortho (µg/L)	Arsenic, dissolved (µg/L)
293736099034801	260	<1	255	1,847	12	3.8	0.08	14			<0.200	0.3	<0.010		<2.0
	265	<1	241	1,630	9.3	2.5		15	<0.005	<0.005		0.151	0.044	<0.001	<1.0
293856099040101	281	<1	264	1,746	15	4.8	0.13	11			<0.200	<0.010	<0.010		<2.0
	283	<1	256	1,476	13	4.0	0.15	12	0.22	<0.005		<0.010	0.035	0.044	<1.0
293812099031101	243	9.0	226	1,325	17	4.3	0.21	9.3			<0.010	0.55	0.53	<0.001	1.2
	243	9.0	225	1,502	17	4.3	0.20	9.3			<0.010	0.564	0.56	<0.001	1.6
	253		260	1,420	52	<20.00	<10.00	15			<0.100	0.14	0.5	<20.0	<5.0
293710099032201	270	<1	276	335	20	0.57	0.11	13			0.2	0.177	0.20		<1.0
	259	<1	270	706	21	1.3	<0.50	14			0.3	<0.100	<0.100	<20.000	<5.0
293640099020001	256	<1	246	1,434	19	3.2	0.25	12			<0.010	0.67	0.68	0.028	1.1
	245		260	1,590	25	5.9	0.67	13			<0.100	0.13	<0.100	<20.000	<5.0
	245		245	1,500	22	3.6		11		0.02	0.08	0.78		0.01	<1
293438099041201	236	<1	226	1,738	14	3.2	0.16	12			<0.010	0.577	0.62	0.06	<1.0
	216		230	2,270	22	7.2	0.63	14			0.50	0.16	0.1	30.6	<5.0
292803099042601	193	1.0	168	23	9.1	0.11	0.06	11			0.755	<0.010	<0.010	0.01	<1.0
	193	3.0	173	23	9.2	0.11	0.06	11			0.754	<0.010	0.037	0.008	<1.0
	223		190	9.5	14	<1.00	<0.50	16			1.5	<0.100	0.1	<1.000	<5.0
292841099012001	209	<1	196	12	8.2	0.11	0.06	13			1.02	<0.010	<0.010		<1.0
	207		220	15	11	<1.00	<0.50	14			0.8	<0.100	<0.100	<1.000	<5.0
292727099003201	180	<1	179	35	10	0.13	0.09	12			0.494	<0.010	<0.010	0.003	<1.0
	183		190	35	11	<1.00	<0.50	12			0.5	<0.100	<0.100	<1.000	<5.0
08179520		0	142	54	21	0.27	0.12	9.0	0.19	<0.01		0.02	0.2	<0.01	<2.0
	145	<1	138	53	12	0.16	0.10	11			0.128	<0.010	<0.010	0.006	1.3
	145			50	12	0.20		9.7							1.0
	137	<1	137	62	12	0.20	0.08	9.1	0.18	<0.005		<0.010	0.16	<0.001	<1.0
	130	<1	142	62	12	0.20	0.09	10.0	0.16	<0.005		<0.010	0.43	0.005	<1.0
	148	<1	141	60	13	0.20	0.09	12	0.006	<0.005		0.109	0.19	0.006	1.4
08178990	183	<1	180	82	11	0.19	0.07	11			0.167	0.139	0.15	0.003	<1.0
	167	1.0	164	102	12	0.24	0.06	7.9	0.16	<0.005		<0.010	<0.010	<.001	<1.0
	169	<1	161	100	15	0.28	0.08	14.7	0.28	<0.005		0.047	0.068	0.004	<1.0
	186	<1	136	87	21	0.38	0.14	21.3	0.23	<0.005		<0.010	0.30	<0.001	1.4
08180500		0	152	51	14	0.22	0.10	10.0	0.22	<0.01		0.02	0.1	<0.01	<2.0
	153	<1	156	46	12	0.14	0.08	10.6			0.273	<0.010	0.10	<0.001	1.1
	146	4.0	140	59	12	0.32	0.09	8.8	0.22	<0.005		<0.010	0.063	<0.001	1.1
	149	<1	145	60	12	0.19	0.08	9.8	0.20	<0.005		<0.010	0.07	0.008	<1.0
	157	<1	143	60	13	0.19	0.08	12	0.16	<0.005		<0.010	0.22	0.003	<1.0
08179530		0	157	49	14	0.20	0.09	10	0.24	<0.01		0.02	0.1	0.22	<2.0
293225098560600				49	12	0.20		8.1		<0.01	<0.05	0.1		<0.02	<1
		0	133	57	12	0.25	0.10	9.0	0.01	<0.01		0.01	0.3	<0.01	<2.0
293223098560000	134	3.0	138	62	12	0.19	0.08	9.1	0.08	<0.005		<0.010	0.10	0.007	1.6
	134	1.0	141	62	12	0.20	0.08	9.6	0.24	<0.005		<0.010	0.18	0.088	2.9
293426098544300															
293456098555500															
293324098584200		3.0	132	57	12	0.25	0.10	9.0	0.02	<0.01		<0.02	0.2	<0.01	<2.0
			147	52	12	0.24		11	0.12	0.01		0.06	0.5	<0.01	<2.0
		0	132	57	12	0.25	0.12	9.0	0.02	<0.01		<0.02	0.3	<0.01	
		0	139	56	12	0.24	0.12	10	0.12	<0.01		0.01	0.3	<0.01	
		4.0	143	63	12	0.19	0.08	10	0.10	<0.005		<0.010	0.17	<0.001	2.1
	139	3.0	139	62	12	0.19	0.09	9.1	0.09	<0.005		<0.010	0.16	0.005	2.6
293731098590300		0	138	59	12	0.25	0.10	10	0.02	<0.01		0.04	0.2	<0.01	<2.0
		0	138	58	12	0.26	0.11	10	0.02	<0.01		0.05	0.4	<0.01	<2.0
	147	4.0	152	76	12	0.20	0.08	9.0	0.10	<0.005		<0.010	0.081	<0.001	<1.0
	140	4.0	148	65	12	0.19	0.08	9.3	0.10	<0.005		<0.010	0.36	<0.001	<1.0

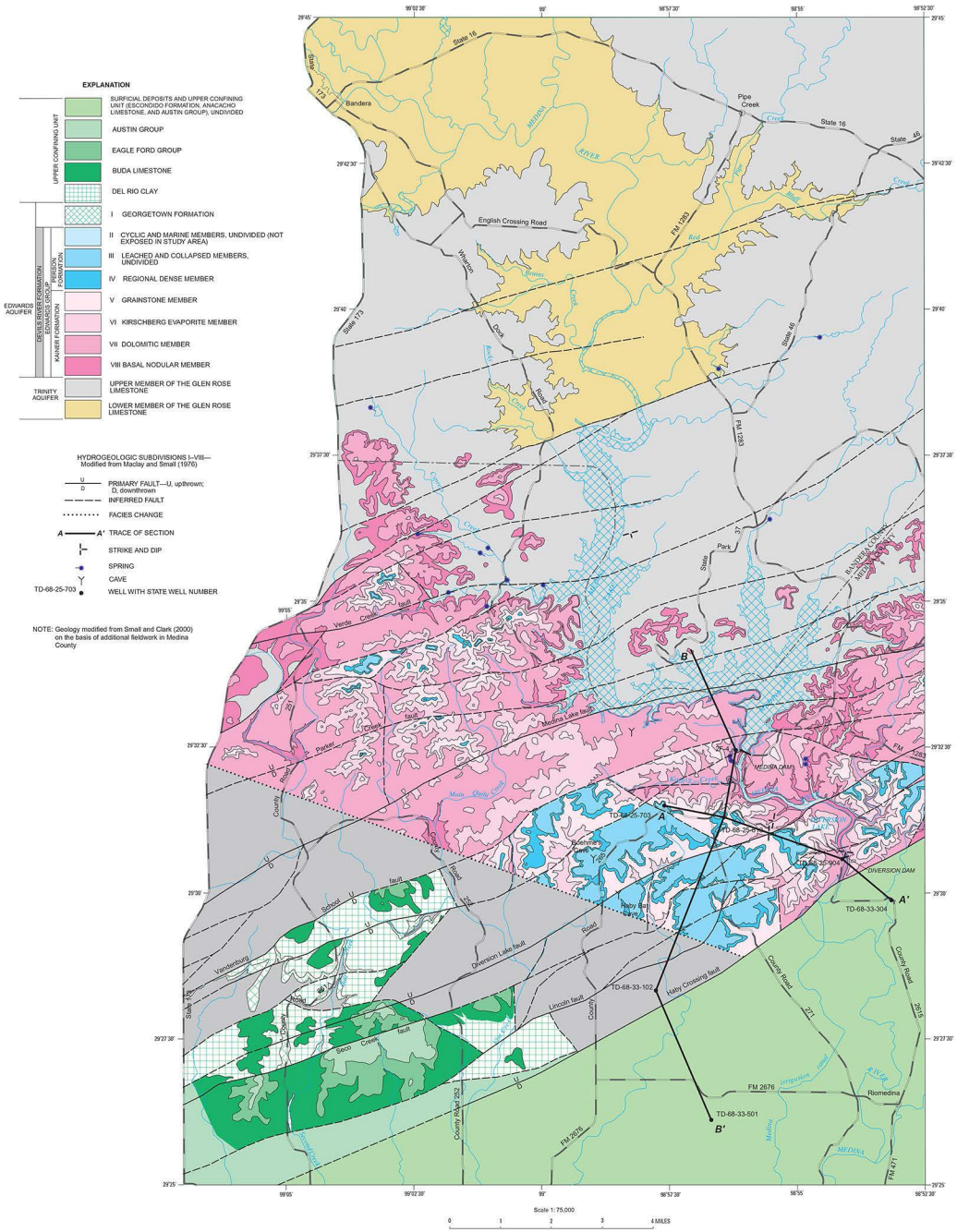
Appendix C. Water quality at data-collection sites, Medina Lake area—Continued

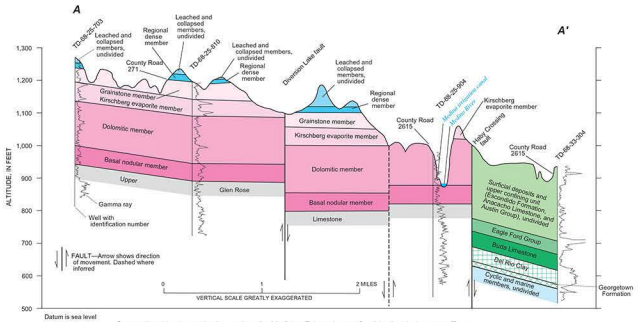
USGS site no.	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Lithium, dissolved (µg/L)	Manganese, dissolved (µg/L)	Mercury, dissolved (µg/L)	Molybdenum, dissolved (µg/L)	Nickel, dissolved (µg/L)	Silver, dissolved (µg/L)	Strontium, dissolved (µg/L)	Vanadium, dissolved (µg/L)	Zinc, dissolved (µg/L)
293736099034801	3.5	<2.0	<2.0	11	3.7	<2.0	1,320	<2.0	20	10	<0.2	<2.0	88	<2.0	11,499	3.2	43
	2.8	<1.0	<1.0	5.4	1.2	<1.0	1,354	<1.0	35	10	<0.2	1.3	280	<1.0	12,110	1.6	16
293856099040101	6.7	<2.0	<2.0	11	3.0	<2.0	12,640	<2.0	47	57	<0.2	<2.0	74	<2.0	11,480	3.1	926
	6.3	<1.0	<1.0	15	1.4	<1.0	4,152	<1.0	56	25	<0.2	<1.0	32	<1.0	11,036	4.2	401
293812099031101	5.0	<1.0	<1.0	7.4	1.6	1.2	10,752	<1.0	70	127	<0.2	54	39	<1.0	11,954	2.0	566
	5.0	<1.0	1.3	5.2	1.8	1.4	11,543	<1.0	66	125	<0.2	53	41	<1.0	12,652	1.4	571
	5.0	<1.0	<1.0		1.5	<2.0	4,000	<1.0	70	38	<0.2	20	54	<1.0	13,800	<1.0	77
293710099032201	27	<1.0	<1.0	12	1.1	12	50	<1.0	8.3	18	<0.2	4.1	23	<1.0	14,512	3.2	1056
	28	<1.0	<1.0	38	<1.0	10	170	<1.0	<20.0	11	<1.00	3.6	17	<1.0	15,400	<1.0	550
293640099020001	7.8	<1.0	<1.0	11	1.8	<1.0	5,271	<1.0	71	56	<0.2	<1.0	30	<1.0	11,347	3.1	150
	12	<1.0	<1.0		1.6	<2.0	760	<1.0	83	49	<0.2	<1.0	54	<1.0	10,900	<1.0	69
	9.0	<1.5	<3	<15	<9	<30	720		69	46	<0.1	<30	<30	<3	9,500	<18	45
293438099041201	5.2	<1.0	<1.0	9.7	2.1	<1.0	5,013	<1.0	82	30	<0.2	<1.0	33	<1.0	11,718	2.8	290
	2.3	<1.0	<1.0		2.4	<2.0	810	<1.0	110	14	<0.2	<1.0	85	<1.0	11,600	<1.0	140
292803099042601	31	<1.0	<1.0	16	<1.0	4.1	<5.0	<1.0	<1.0	<1.0	<0.2	<1.0	13	<1.0	250	6.6	6.8
	31	<1.0	<1.0	19	<1.0	3.4	<5.0	<1.0	<1.0	<1.0	<0.2	<1.0	13	<1.0	243	7.2	5.9
	38	<1.0	<1.0	<1.0	<1.0	8.4	<5.0	1.9	<20.0	<1.0	<0.2	<1.0	11	<1.0	160	3.0	27
292841099012001	35	<1.0	<1.0	8.3	<1.0	2.7	<5.0	1.2	<1.0	<1.0	<0.2	<1.0	11	<1.0	225	4.9	310
	38	<1.0	<1.0	<1.0	<1.0	3.1	<5.0	2.5	<20.0	1.4	<0.2	<1.0	11	<1.0	230	2.5	2,300
292727099003201	27	<1.0	<1.0	18	<1.0	1.5	15	<1.0	1.9	5.2	<0.2	<1.0	4.4	<1.0	591	5.4	275
	30	<1.0	<1.0	<1.0	<1.0	<2.0	<5.0	<1.0	<20.0	4.0	<0.2	<1.0	9.0	<1.0	560	1.4	260
08179520	27	<1	<2	<8	<8	<6	<6	<5		11	<0.13	<50	<20	<6	642	<8	8.0
	31	<1.0	<1.0	3.5	<1.0	<1.0	16	<1.0	3.8	15	<0.2	1.4	3.7	<1.0	633	2.8	1.6
	32	<0.5	<1.0	<5.0	<3.0	<10	21	<1	5.0	17	0.1	<10	<10	<1	590	<6	27
	29	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	3.6	7.6	<0.2	1.6	6.6	<1.0	681	1.5	3.2
	30		<1.0			<1.0	13	<1.0	3.1	19					711		1.8
	26	<1.0	<1.0	5.7	<1.0	<1.0	14	<1.0	2.1	59	<0.2	1.6	4.0	<1.0	626	2.4	1.7
08178990	30	<1.0	<1.0	14	<1.0	<1.0	<5.0	<1.0	2.6	<1.0	<0.2	1.4	5.7	<1.0	941	4.8	4.3
	32	<1.0	<1.0	2.4	<1.0	<1.0	<5.0	<1.0	4.6	1.3	<0.2	1.2	9.2	<1.0	1,109	1.7	4.6
	35		<1.0			<1.0	5.0	<1.0	5.2	2.8					1,312		2.5
	41	<1.0	<1.0	7.8	<1.0	<1.0	23	<1.0	6.1	65	<0.2	1.9	4.8	<1.0	1,864	3.8	2.0
08180500	26	<1	<2	<8	<8	<6	6.0	<5	11	3.0	<0.13	<2	<20	<6	538	<8	7.0
	29	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	3.5	3.7	<0.2	1.2	4.4	<1.0	574	1.8	2.1
	29	<1.0	<1.0	<1.0	<1.0	<1.0	10	<1.0	3.7	2.8	<0.2	1.7	6.8	<1.0	531	1.3	2.8
	30		<1.0			<1.0	<5.0	<1.0	3.0	4.4					646		2.2
	29	<1.0	<1.0	5.5	<1.0	<1.0	8.0	<1.0	2.2	7.1	<0.2	1.4	4.1	<1.0	614	2.9	1.6
08179530	28	<1	<2	<8	<8	<6	<6	<5		<2	<0.13	<50?	<20	<6	503	<8	<5
293225098560600	27	<0.5	<1	<5	<3	<10	4.0	<10	5.0	<1	<0.1	<10	<10	1.0	640	<6	<3
	24	<1.0	<2.0	<8.0	<8.0	<6.0	75	<5.0	<0.010	<2.0	<0.13	3.0	<20.0	<6.0	655	<8.0	<5.0
293223098560000	33	<1.0	<1.0	27	1.7	1.0	8.0	<1.0	2.3	<1.0	<0.2	1.5	40	<1.0	615	9.4	1.4
	44	<1.0	<1.0	28	1.9	2.1	9.0	<1.0	3.0	19	<0.2	1.6	41	<1.0	596	8.9	4.2
293426098544300																	
293456098555500																	
293324098584200	24	<1.0	<2.0	<8.0	<8.0	<6.0	<6.0	<5.0	<10	<2.0	<0.13	5.0	<20	<6.0	684	<8.0	<5.0
	26	<1.0	<2.0	<8.0	<8.0	<6.0	33	<5.0	<10	156	<0.13	3.0	<20.0	<6.0	681	<8.0	9.0
	27	<1.0	<1.0	30	2.0	2.1	<5.0	<1.0	2.5	4.5	<0.2	1.5	45	<1.0	638	9.8	3.3
	26	<1.0	<1.0	27	1.8	1.3	<5.0	<1.0	2.3	<1.0	<0.2	1.6	41	<1.0	615	9.2	2.0
293731098590300	24	<1.0	<2.0	<8.0	<8.0	<6.0	<6.0	<5.0	<10	<2.0	<0.13	2.0	<20.0	9.0	714	<8.0	<5.0
	25	<1.0	<2.0	<8.0	<8.0	<6.0	10	<5.0	<10	6.0	<0.13	<2.0	<20.0	<6.0	714	<8.0	<5.0
	30	<1.0	<1.0	4.9	<1.0	2.0	12	<1.0	4.4	1.7	<0.2	1.5	8.1	<1.0	722	1.8	2.9
	30	<1.0	<1.0	3.1	<1.0	<1.0	11	<1.0	4.0	3.6	<0.2	1.5	7.4	<1.0	666	1.8	4.0

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

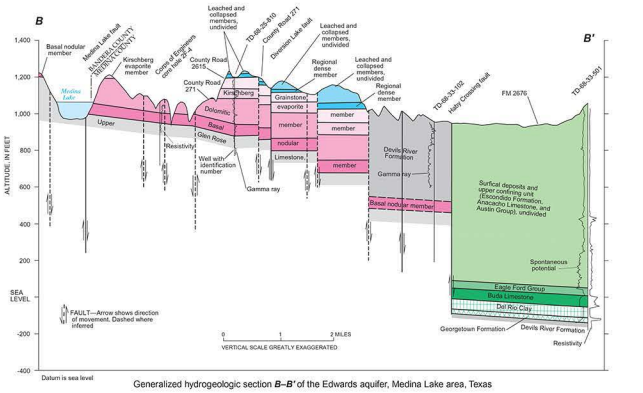
IN COOPERATION WITH THE
BEXAR-MEDINA-ATASCOSA COUNTIES WATER CONTROL AND IMPROVEMENT DISTRICT NO. 1,
BEXAR METROPOLITAN WATER DISTRICT, TEXAS WATER DEVELOPMENT BOARD,
AND
EDWARDS AQUIFER AUTHORITY

WATER-RESOURCES INVESTIGATIONS REPORT 00–4148
Hydrogeologic sections and subdivisions—PLATE 1
Lambert, R.B., Grimm, K.C., and Lee, R.W., 2000, Hydrogeology, hydrologic budget, and water chemistry of the Medina Lake area, Texas

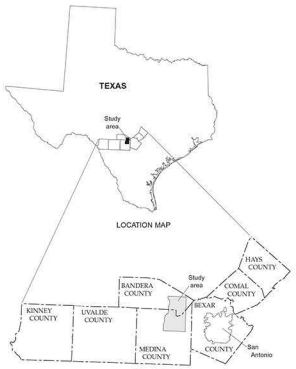




Generalized hydrogeologic section ***A–A'*** of the Edwards aquifer, Medina Lake area, Texas



Generalized hydrogeologic section ***B–B'*** of the Edwards aquifer, Medina Lake area, Texas



MAP SHOWING HYDROGEOLOGIC SECTIONS *A-A'* AND *B-B'* AND SHOWING SUBDIVISIONS OF THE EDWARDS AND TRINITY AQUIFERS, MEDINA LAKE AREA, TEXAS

By
Rebecca B. Lambert, Kenneth C. Grimm, and Roger W. Lee

2000

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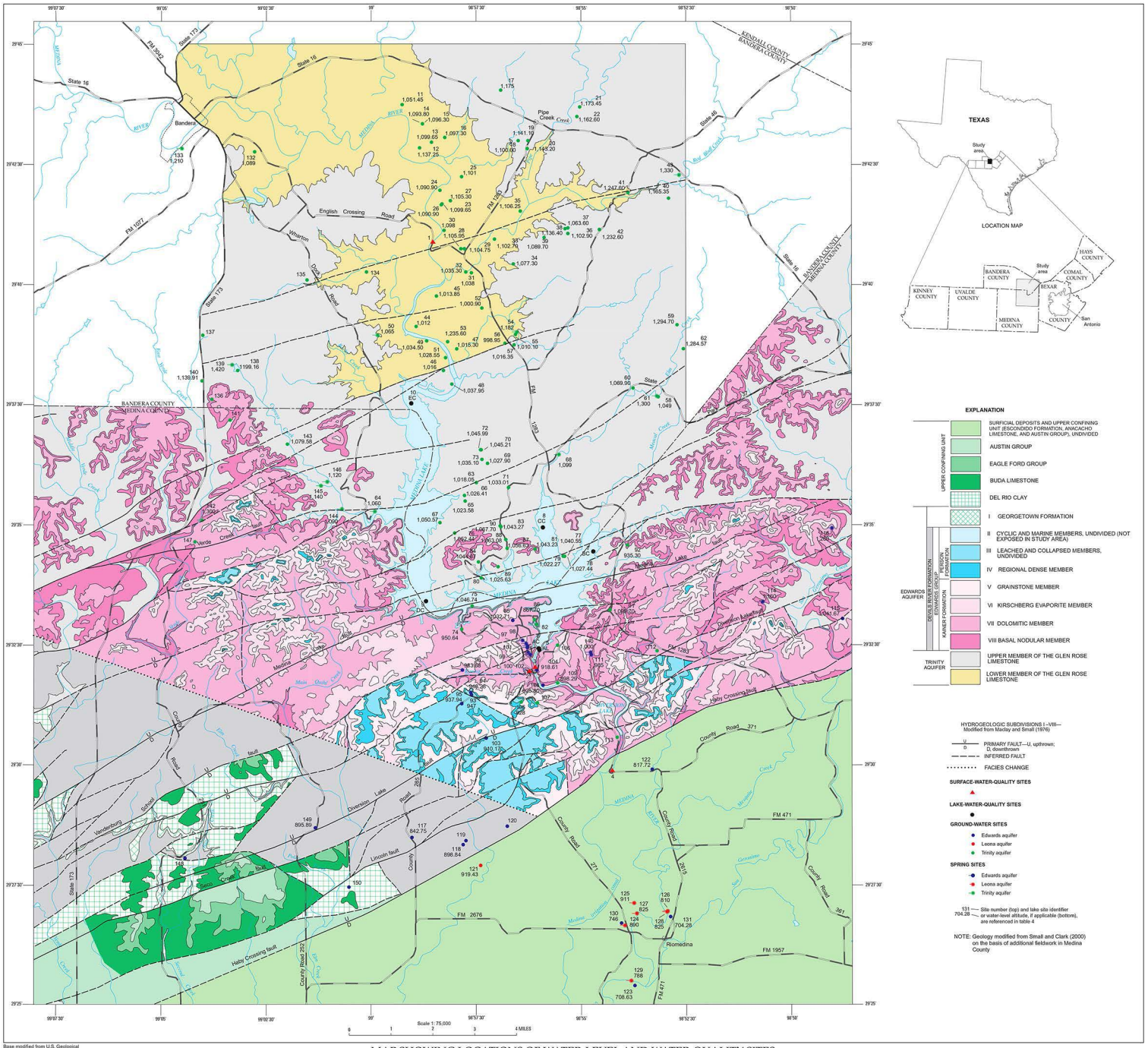

MAP SHOWING LOCATIONS OF WATER-LEVEL AND WATER-QUALITY SITES OF THE EDWARDS AND TRINITY AQUIFERS, MEDINA LAKE AREA, TEXAS

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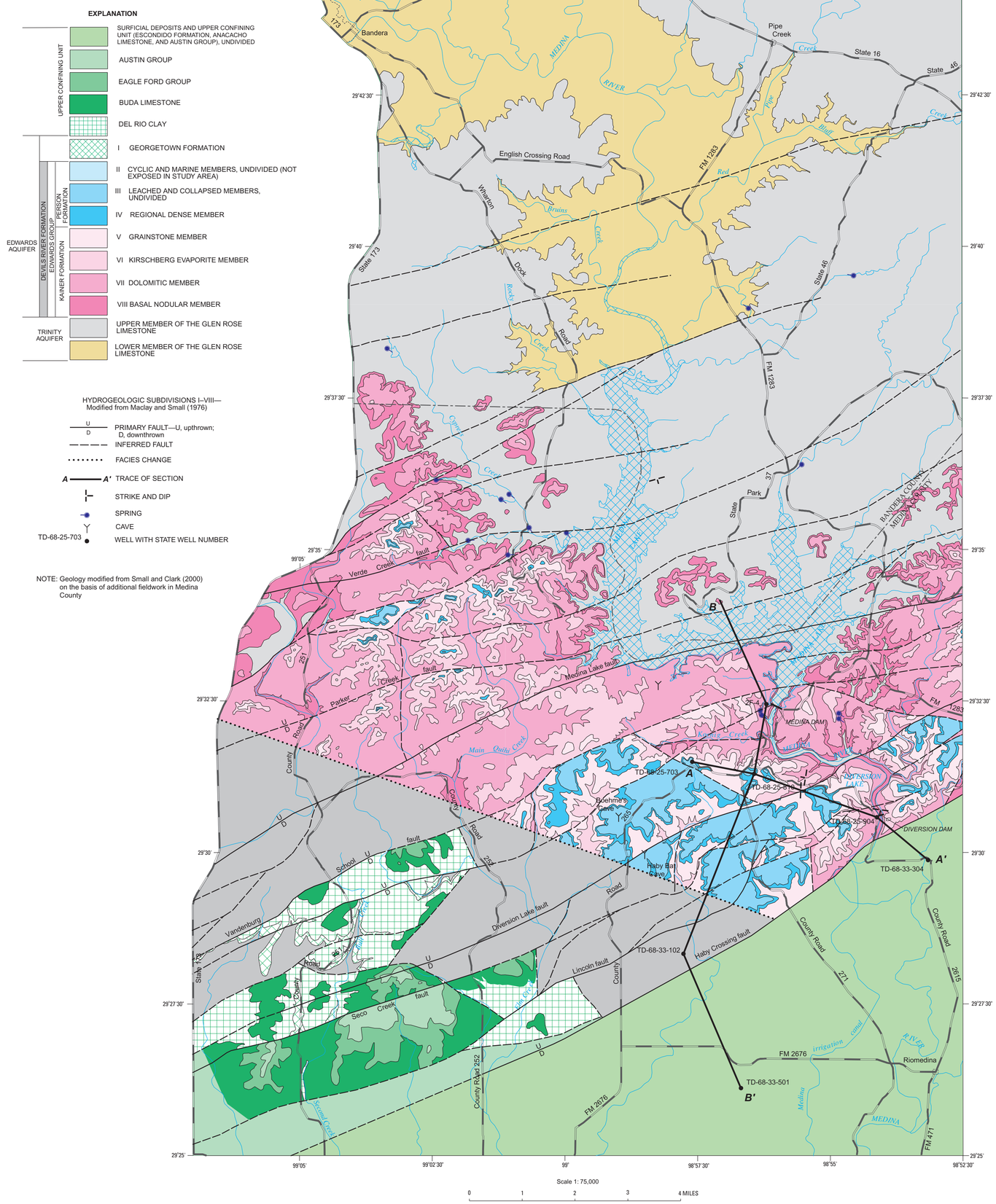

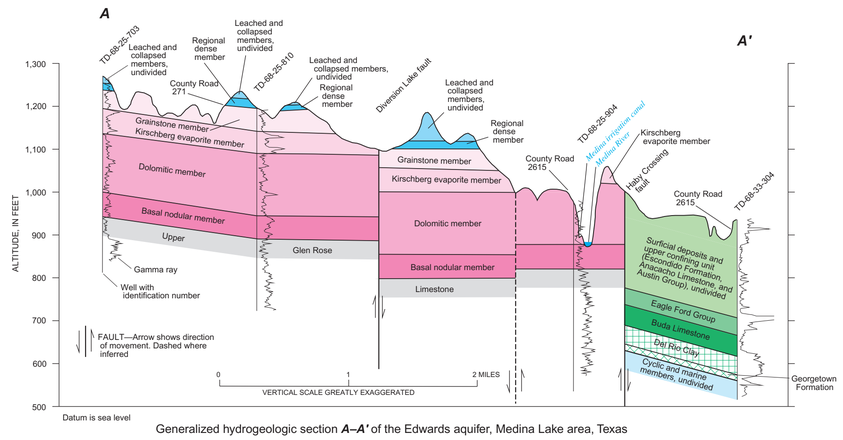

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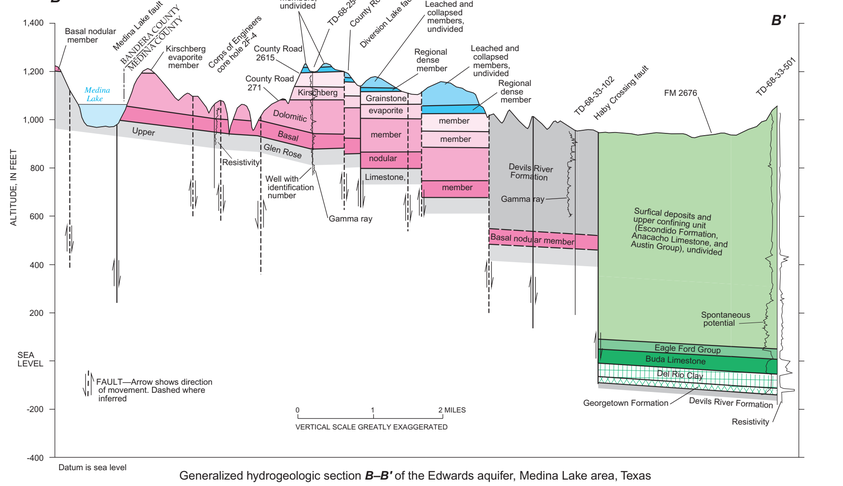
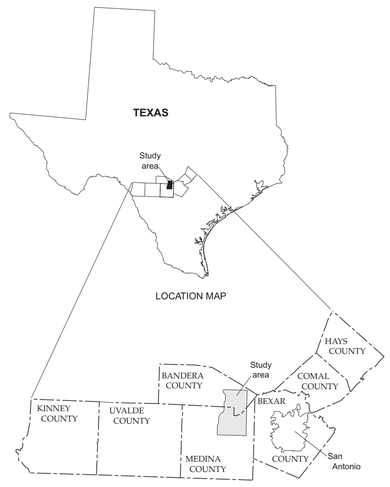


Generalized hydrogeologic section ***B–B′*** of the Edwards aquifer, Medina Lake area, Texas



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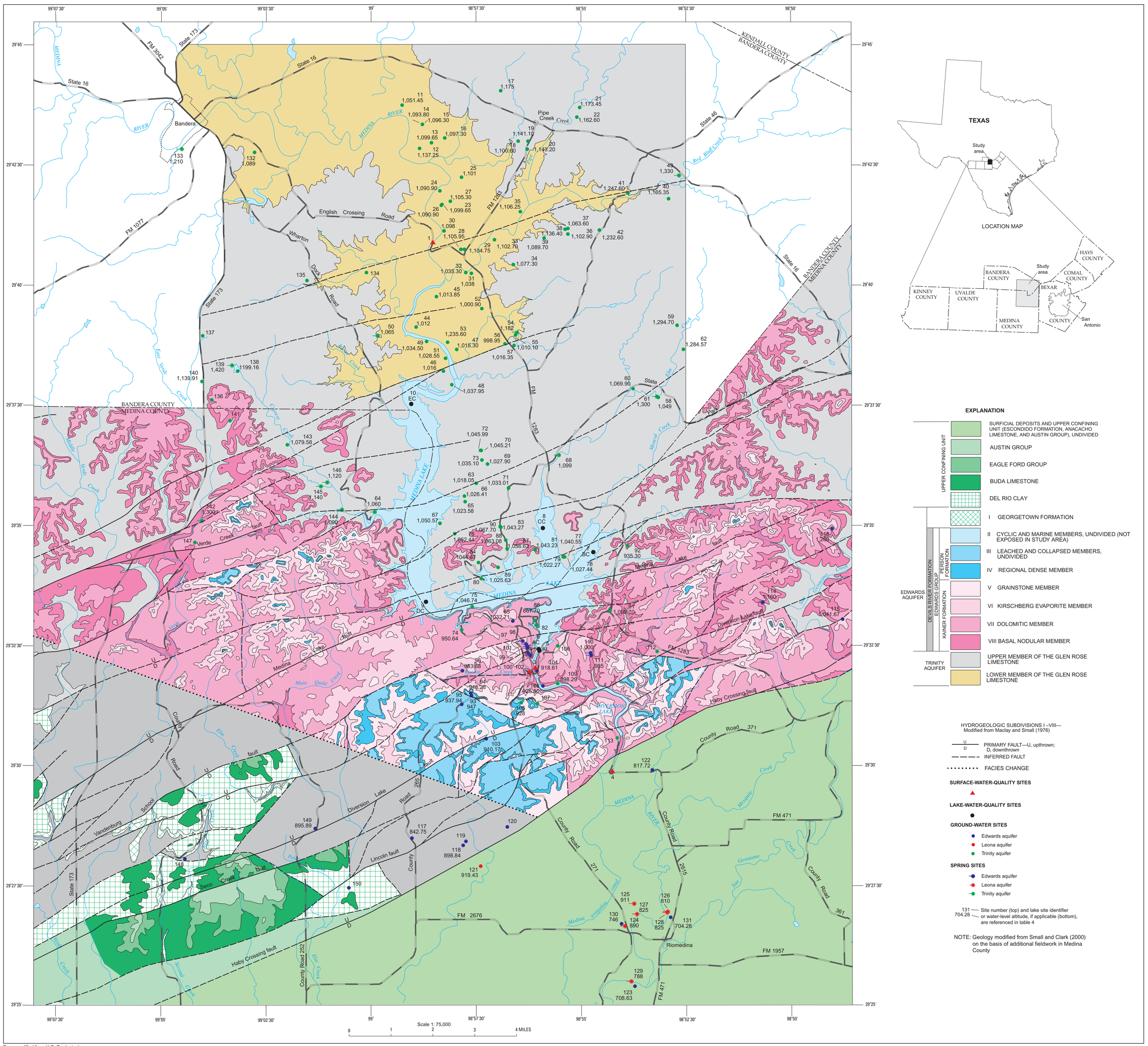

EXPLANATION

UPPER CONFINING UNIT
- SURFICIAL DEPOSITS AND UPPER CONFINING UNIT (ESCONDIDO FORMATION, ANACACHO LIMESTONE, AND AUSTIN GROUP), UNDIVIDED
- AUSTIN GROUP
- EAGLE FORD GROUP
- BUDA LIMESTONE
- DEL RIO CLAY

EDWARDS AQUIFER
- I GEORGETOWN FORMATION
- II CYCLIC AND MARINE MEMBERS, UNDIVIDED (NOT EXPOSED IN STUDY AREA)
- III LEACHED AND COLLAPSED MEMBERS, UNDIVIDED
- IV REGIONAL DENSE MEMBER
- V GRAINSTONE MEMBER
- VI KIRSCHBERG EVAPORITE MEMBER
- VII DOLOMITIC MEMBER
- VIII BASAL NODULAR MEMBER

DEVILS RIVER FORMATION; EDWARDS GROUP; PERSON FORMATION; KAINER FORMATION

TRINITY AQUIFER
- UPPER MEMBER OF THE GLEN ROSE LIMESTONE
- LOWER MEMBER OF THE GLEN ROSE LIMESTONE

HYDROGEOLOGIC SUBDIVISIONS I –VIII—
Modified from Maclay and Small (1976)

U / D — PRIMARY FAULT—U, upthrown; D, downthrown

INFERRED FAULT

FACIES CHANGE

SURFACE-WATER-QUALITY SITES

LAKE-WATER-QUALITY SITES

GROUND-WATER SITES
- Edwards aquifer
- Leona aquifer
- Trinity aquifer

SPRING SITES
- Edwards aquifer
- Leona aquifer
- Trinity aquifer

131 / 704.28 — Site number (top) and lake site identifier or water-level altitude, if applicable (bottom), are referenced in table 4

NOTE: Geology modified from Small and Clark (2000) on the basis of additional fieldwork in Medina County

Base modified from U.S. Geological Survey 1:24,000 quadrangles
Universal Transverse Mercator Projection
Zone 14

MAP SHOWING LOCATIONS OF WATER-LEVEL AND WATER-QUALITY SITES OF THE EDWARDS AND TRINITY AQUIFERS, MEDINA LAKE AREA, TEXAS

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