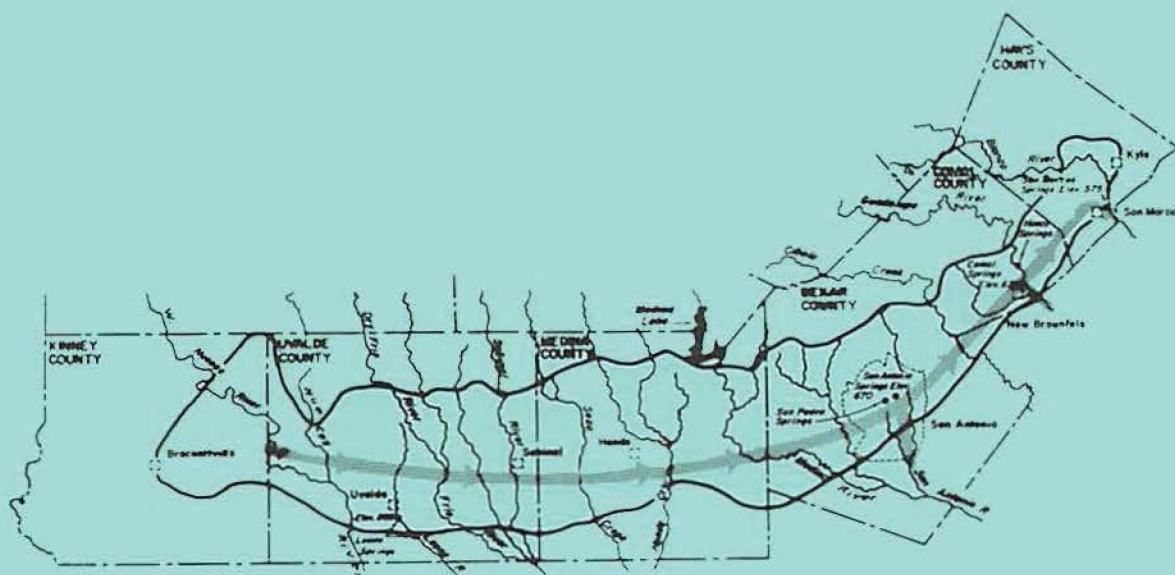


Ground-Water Discharge from the Edwards and Associated Limestones, San Antonio Area, Texas, 1974

Bulletin 34

Edwards Underground Water District
San Antonio, Texas



Prepared in cooperation with the U.S. Geological Survey and the Texas Water Development Board

EDWARDS UNDERGROUND WATER DISTRICT
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BULLETIN 34

GROUND-WATER DISCHARGE FROM THE EDWARDS AND ASSOCIATED
LIMESTONES, SAN ANTONIO AREA, TEXAS, 1974

Compiled by

R. A. Rappmund
United States Geological Survey

Prepared by the U. S. Geological Survey
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GROUND-WATER DISCHARGE FROM THE EDWARDS AND ASSOCIATED
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ABSTRACT

The estimated total well and spring discharge from the Edwards and associated limestones in the San Antonio area during 1974 was 847,500 acre-feet, which is the record high for the period 1934-74. The total discharge from wells and springs for 1974 was about one percent more than in 1973 and 53 percent more than the average for 1934-73.

About 43 percent of the total discharge came from wells, and approximately two-thirds of the well discharge was from wells in Bexar County. Well discharge in 1974 was 17 percent more than in 1973, while springflow decreased by about 8 percent.

INTRODUCTION

Records of ground-water discharge from the Edwards and associated limestones in the San Antonio area during 1974 are summarized in this report. The compilation of these basic records is part of a continuing hydrologic investigation by the U.S. Geological Survey in cooperation with the Edwards Underground Water District and the Texas Water Development Board. Previous reports are given in the list of references.

Readers interested in using metric equivalents of the English units of measurements used in this report may convert to metric units by the following conversion factors:

From	Multiply by	To obtain
acres	4,047	square metres
	.4047	square hectometres
acre-feet	1,233	cubic metres
	1.233×10^{-3}	cubic hectometres
millions gallons per day	9.08×10^{-4}	cubic decimetres per second
	9.08×10^{-7}	cubic metres per second

METHODS OF INVESTIGATION

The spring discharge was compiled from records of gages operated by the U.S. Geological Survey at points of discharge. Pumpage for agriculture was estimated from records of power consumption and irrigated acreage. Records of the annual canvass of pumpage in the San Antonio area by the Texas Water Development Board were used to compile municipal, military, and industrial usage.

GROUND-WATER DISCHARGE

The estimated discharge from the Edwards and associated limestones during 1974 is given in table 1. The discharge by springs was from San Marcos Springs in Hays County, Comal Springs in Comal County, San Antonio and San Pedro Springs in Bexar County, and the Leona River Springs in Uvalde County. The recorded discharge from Leona River Springs includes underflow through the gravel below the springs.

Major discharge by wells was from Bexar, Uvalde, and Medina Counties, while the major springflow was from Comal and Hays Counties. Many wells in Bexar County and most of the large wells in Uvalde and Medina Counties supplied the irrigation needs for an estimated 72,000 acres. The remaining discharge, principally from wells in Bexar County, was for industrial, domestic, stock, and miscellaneous purposes.

The 1974 estimated total well and spring discharge from the Edwards and associated limestones was 847,500 acre-feet, which is the record high for the period 1934-74. About 43 percent of the total discharge came from wells, and approximately two-thirds of well discharge was from wells in Bexar County. Well discharge in 1974 was 17 percent more than in 1973, while springflow decreased by about 8 percent.

The total discharge from wells and springs was about 1 percent more than in 1973. Compared to the 1934-73 average, the total discharge was 53 percent greater.

Table 1.--Estimated discharge from the Edwards and associated limestones in the San Antonio area, 1974
(in millions of gallons per day)

County	Springs	Municipal and Military	Agri- culture	Industry	Domestic Stock and misc.	Million gallons per day	Thousand acre-feet per year
Kinney	--	--	--	--	0.2	0.2	0.2
Uvalde	32.6	4.0	79.8	--	2.4	118.8	133.1
Medina	--	2.3	22.6	--	.6	25.5	28.6
Bexar	34.1	136.8	21.9	12.0	25.9	230.7	258.4
Comal	245.8	7.2	.3	1.5	.6	255.4	286.1
Hays	119.4	5.6	.8	--	.2	126.0	141.1
Total million gallons per day	431.9	155.9	125.4	13.5	29.9	756.6	
Total thousand acre-feet per year	483.8	174.6	140.5	15.1	33.5		847.5

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