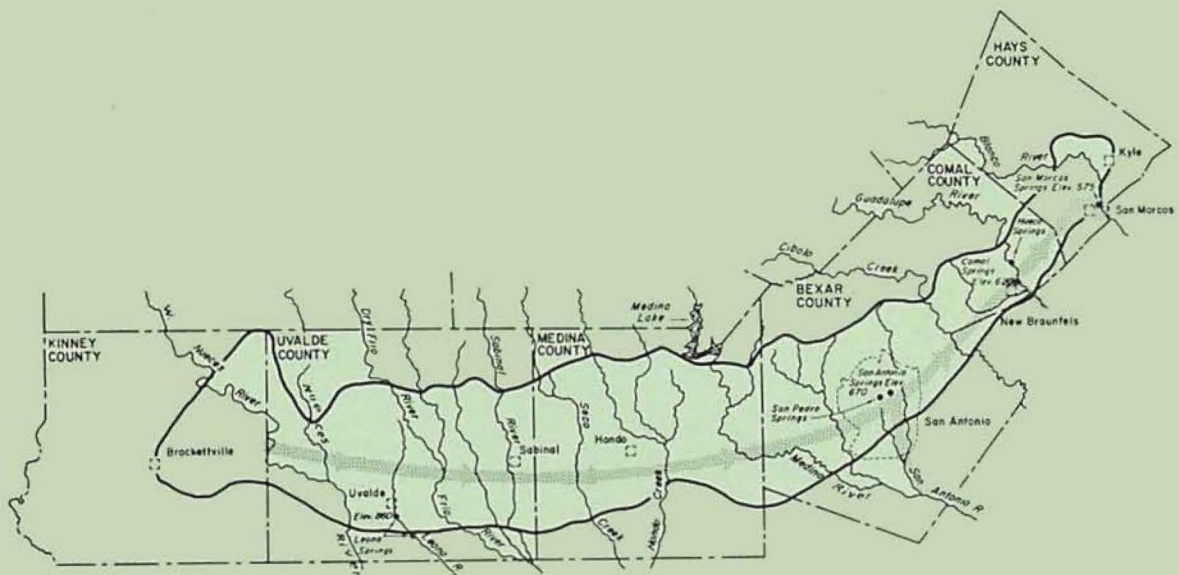


Ground-Water Discharge from the Edwards and Associated Limestones, San Antonio Area, Texas, 1970

Bulletin 26

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 26

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LIMESTONES, SAN ANTONIO AREA, TEXAS, 1970

Compiled by

Celso Puente
United States Geological Survey

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May 1971

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GROUND-WATER DISCHARGE FROM THE EDWARDS AND ASSOCIATED
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INTRODUCTION

Records of ground-water discharge from the Edwards and associated limestones in the San Antonio area during 1970 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.

METHODS OF INVESTIGATION

The spring discharge was compiled from records of gages operated by the U. S. Geological Survey at the points of discharge. Pumpage for agriculture was estimated from 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 1970 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 for 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. Wells in Bexar County supplied water for municipal and military use. Other wells in Bexar County and most of the large wells in Uvalde and Medina Counties supplied the irrigation needs for an estimated 50,000 acres. The remaining discharge, principally from wells in Bexar County, was for industrial, domestic, stock, and miscellaneous purposes.

The 1970 estimated total well and spring discharge from the Edwards and associated limestones was 727,100 acre-feet and is the record high for the period 1934-70. The increase was due primarily to above average springflow and pumpage for agricultural purposes.

About 45 percent of the total discharge came from wells, and approximately two-thirds of this discharge was from wells in Bexar County. Well discharge in 1970 was 7 percent greater than 1969, while the total discharge from wells and springs was 10 percent greater. Compared to the 1934-69 average, the total discharge was 36 percent greater.

Estimated discharge from the Edwards and associated limestones

in the San Antonio area, 1970
(in millions of gallons per day)

County	Springs	USE				TOTAL	
		Municipal and military	Agri- culture	Industry	Domestic, stock & misc.	Million gallons per day	Thousand acre-feet per year
Kinney	-	-	-	-	0.2	0.2	0.2
Uvalde	22.4	3.7	62.2	-	1.6	89.9	100.8
Medina	-	1.5	12.5	.1	.6	14.7	16.5
Bexar	5.9	134.3	22.8	19.5	23.1	205.6	230.5
Comal	197.4	$\frac{15.1}{5.9}$ 153.8	.3	.5	.4	204.5	229.2
Hays	129.1	4.0	.4	-	.2	133.7	149.9
Total million gallons per day	354.8	149.4	98.2	20.1	26.1	648.6	
Total thousand acre-ft. per year	397.7	167.5	110.1	22.5	29.3		727.1

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