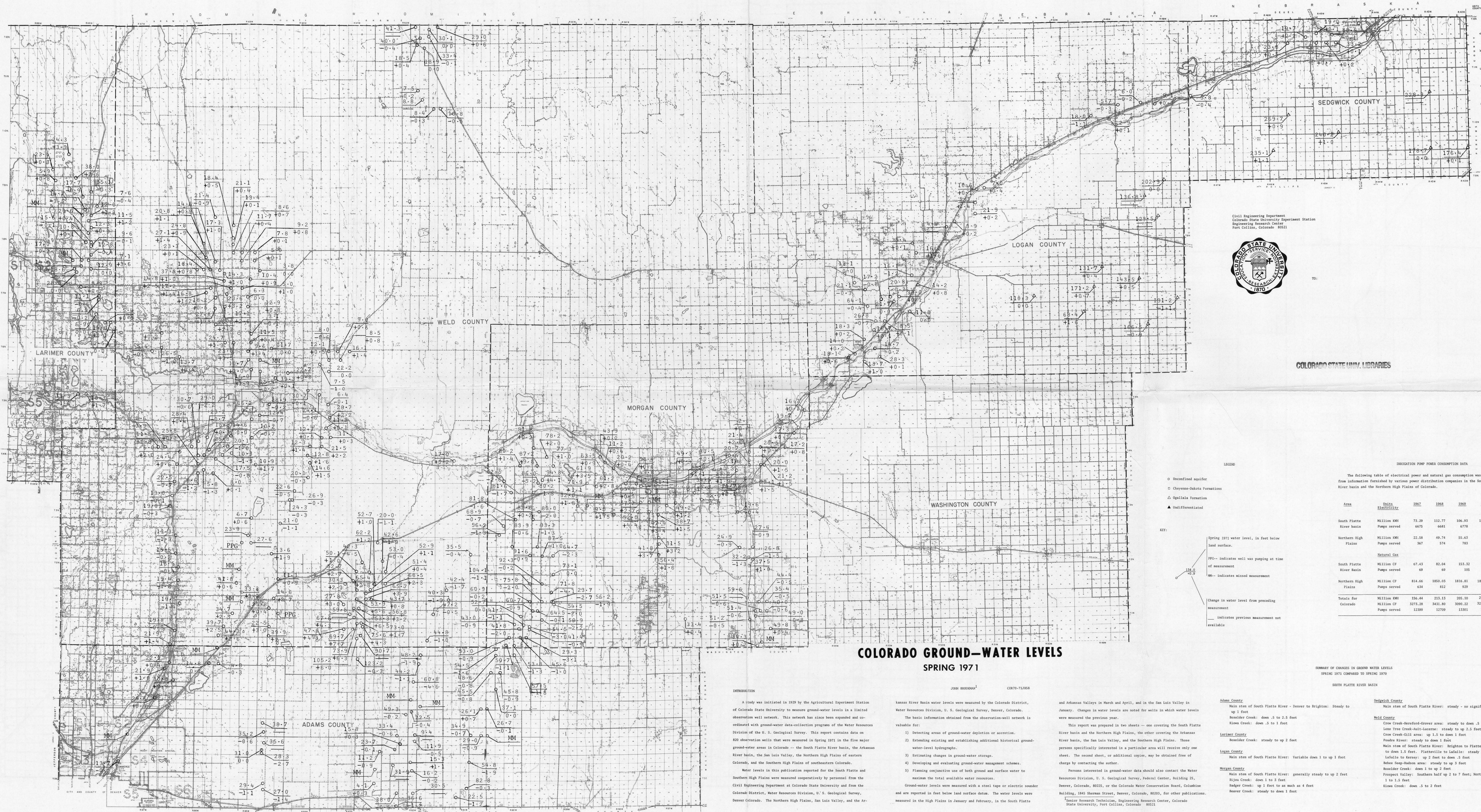


TAF
C6
CER
10/11-58
Sheet 2



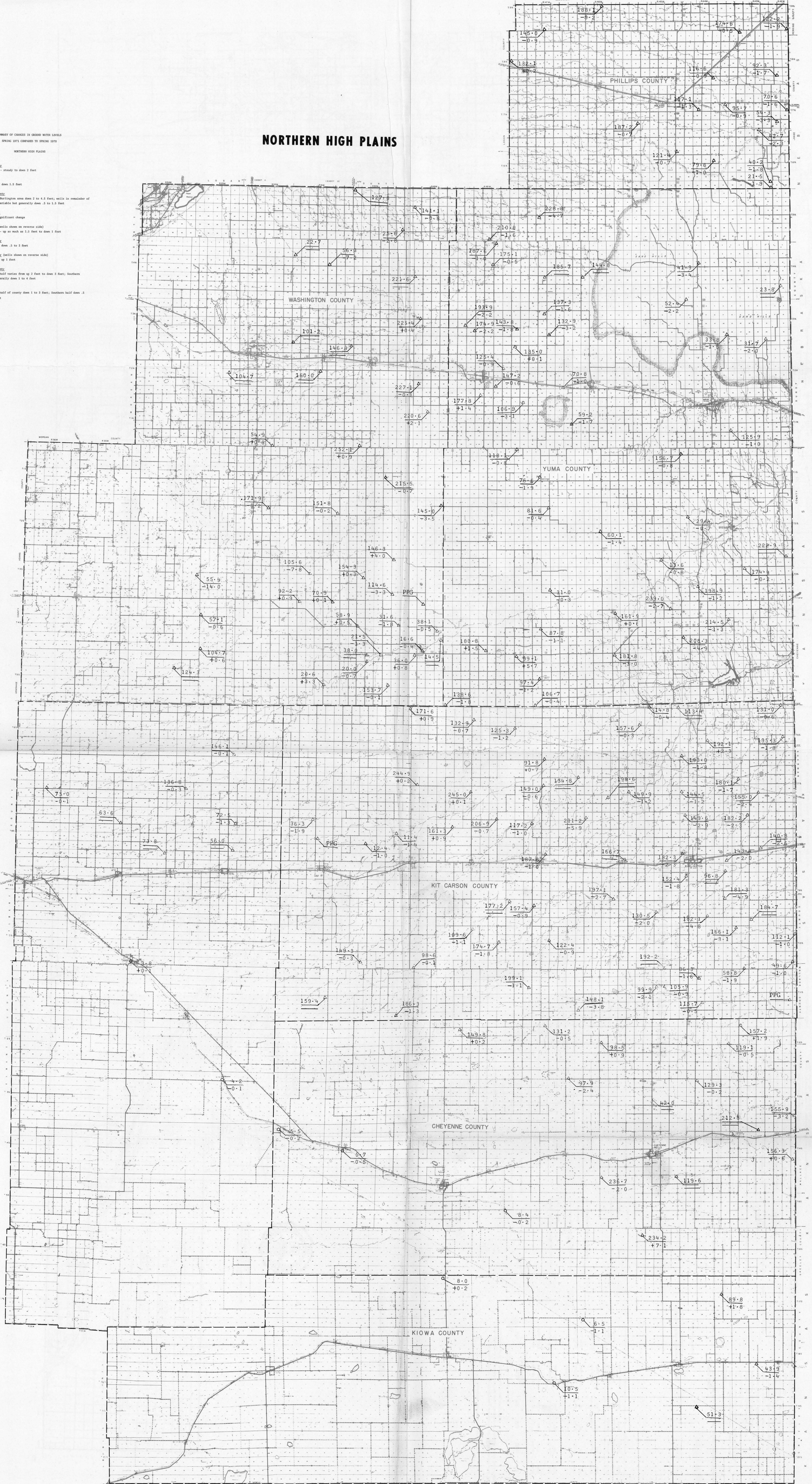
SOUTH PLATTE RIVER BASIN

SUMMARY OF CHANGES IN GROUND WATER LEVELS
SPRING 1972 COMPARED TO SPRING 1970

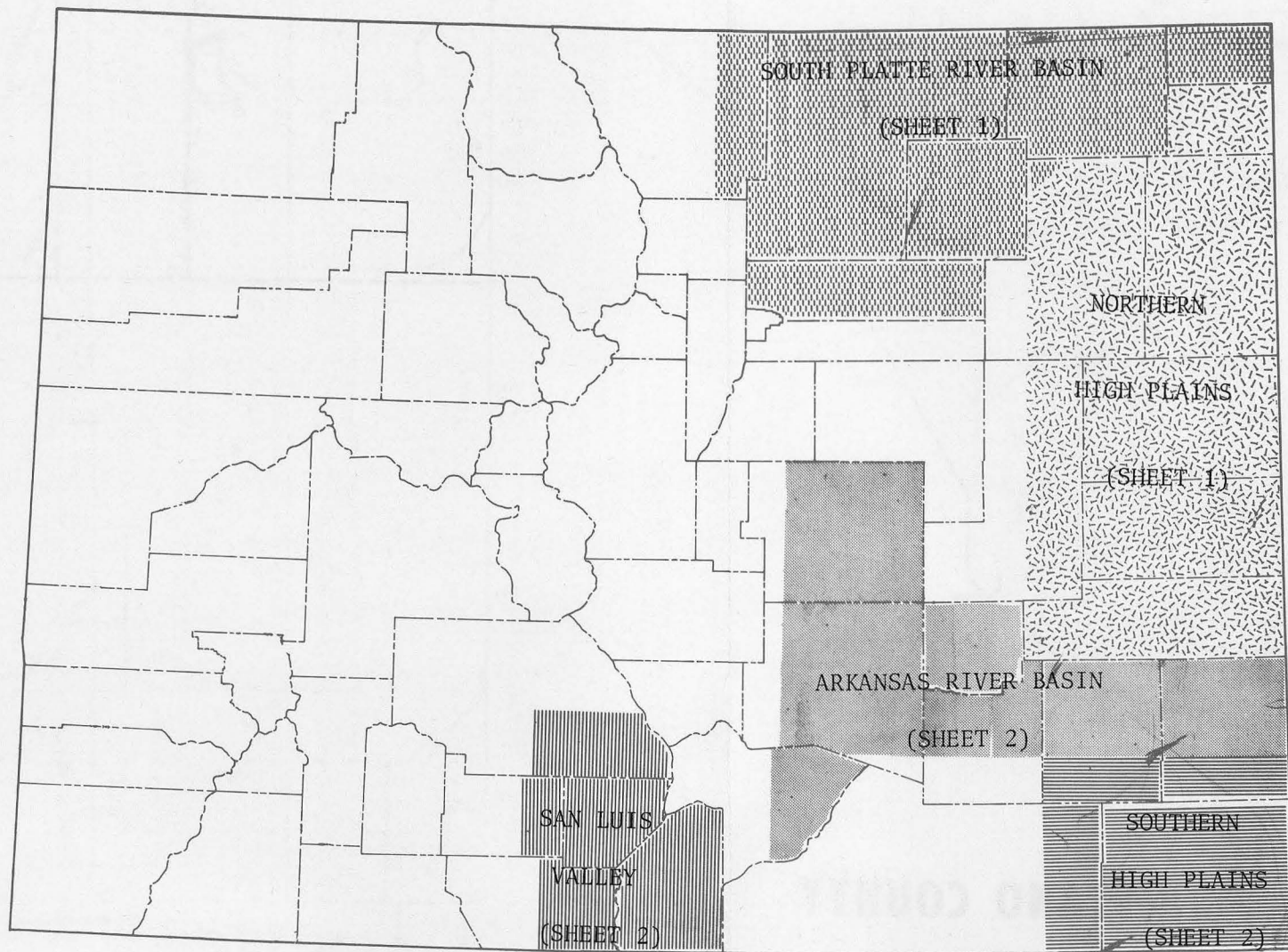
NORTHERN HIGH PLAINS

- Cherokee County**
Variable - steady to down 2 feet
- Etowah County**
Steady to down 1.5 feet
- Kit Carson County**
Wells in northern area down 1 to 4.5 feet; wells in remainder of county variable but generally down .5 to 1.5 feet
- Lincoln County**
Little significant change
- Logan County** (wells shown on reverse side)
Variable - up as much as 1.5 feet to down 1 foot
- Phillips County**
Generally down .5 to 3 feet
- Sedgwick County** (wells shown on reverse side)
Steady to up 1 foot
- Washington County**
Northern half varies from up 2 feet to down 3 feet; Southern half generally down 1 to 4 feet
- Yuma County**
Northern half of county down 1 to 3 feet; Southern half down .5 to 1 foot

NORTHERN HIGH PLAINS



COLORADO GROUND WATER LEVELS INCLUDED IN THIS REPORT



INTRODUCTION

A study was initiated in 1929 by the Agricultural Experiment Station of Colorado State University to measure ground-water levels in a limited observation well network. This network has since been expanded and co-ordinated with ground-water data-collection programs of the Water Resources Division of the U. S. Geological Survey. This report contains data on 820 observation wells that were measured in Spring 1971 in the five major ground-water areas in Colorado -- the South Platte River basin, the Arkansas River basin, the San Luis Valley, the Northern High Plains of eastern Colorado, and the Southern High Plains of southeastern Colorado.

Water levels in this publication reported for the South Platte and Southern High Plains were measured cooperatively by personnel from the Civil Engineering Department at Colorado State University and from the Colorado District, Water Resources Division, U. S. Geological Survey, Denver Colorado. The Northern High Plains, San Luis Valley, and the Ar-

LEGEND

- Unconfined aquifer
- Cheyenne-Dakota Formations
- △ Ogallala Formation
- ▲ Undifferentiated

KEY:

- Spring 1971 water level, in feet below land surface.
- PG-- indicates well was pumping at time of measurement
- MM-- indicates missed measurement
- Change in water level from preceding measurement
- Indicates previous measurement not available

COLORADO GROUND WATER LEVELS

SPRING 1971

JOHN BROOKMAN¹

CER70-71JBS8

Arkansas River Basin water levels were measured by the Colorado District, Water Resources Division, U. S. Geological Survey, Denver, Colorado.

The basic information obtained from the observation-well network is valuable for:

- 1) Detecting areas of ground-water depletion or accretion.
- 2) Extending existing and establishing additional historical ground-water-level hydrographs.
- 3) Estimating changes in ground-water storage.
- 4) Developing and evaluating ground-water management schemes.
- 5) Planning conjunctive use of both ground and surface water to maximize the total available water resources.

Ground-water levels were measured with a steel tape or electric sounder and are reported in feet below land surface datum. The water levels were measured in the High Plains in January and February, in the South Platte

and Arkansas Valleys in March and April, and in the San Luis Valley in January. Changes in water levels are noted for wells in which water levels were measured the previous year.

This report was prepared in two sheets -- one covering the South Platte River basin and the Northern High Plains, the other covering the Arkansas River basin, the San Luis Valley, and the Southern High Plains. Those persons specifically interested in a particular area will receive only one sheet. The second sheet, or additional copies, may be obtained free of charge by contacting the author.

Persons interested in ground-water data should also contact the Water Resources Division, U. S. Geological Survey, Federal Center, Building 25, Denver, Colorado, 80225, or the Colorado Water Conservation Board, Columbine Building, 1845 Sherman Street, Denver, Colorado, 80203, for other publications.

¹Senior Research Technician, Engineering Research Center, Colorado State University, Fort Collins, Colorado 80521

IRRIGATION PUMP POWER CONSUMPTION DATA

The following table of electrical power and natural gas consumption was compiled from information furnished by various power distribution companies in the South Platte River basin and the Northern High Plains of Colorado.

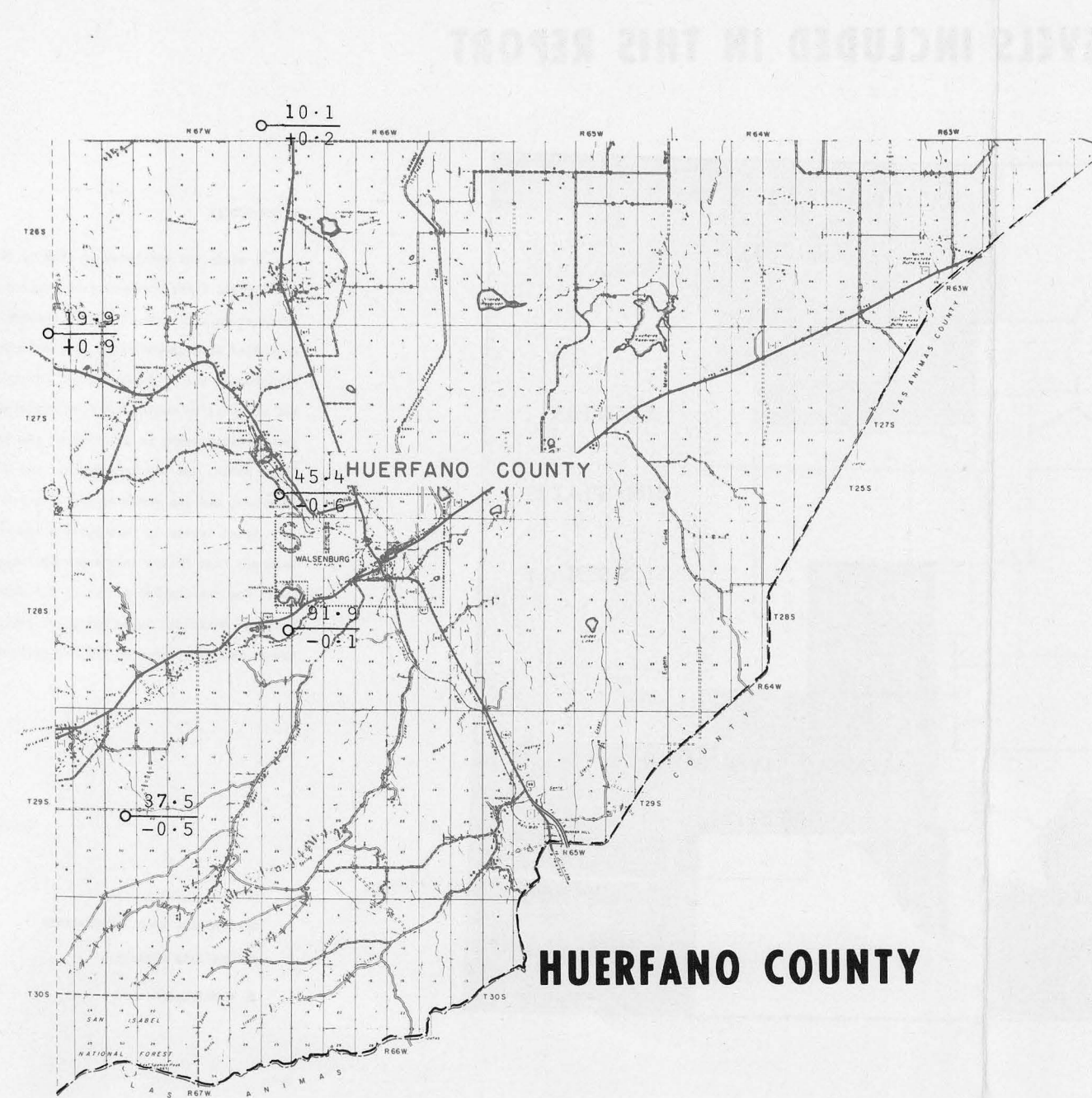
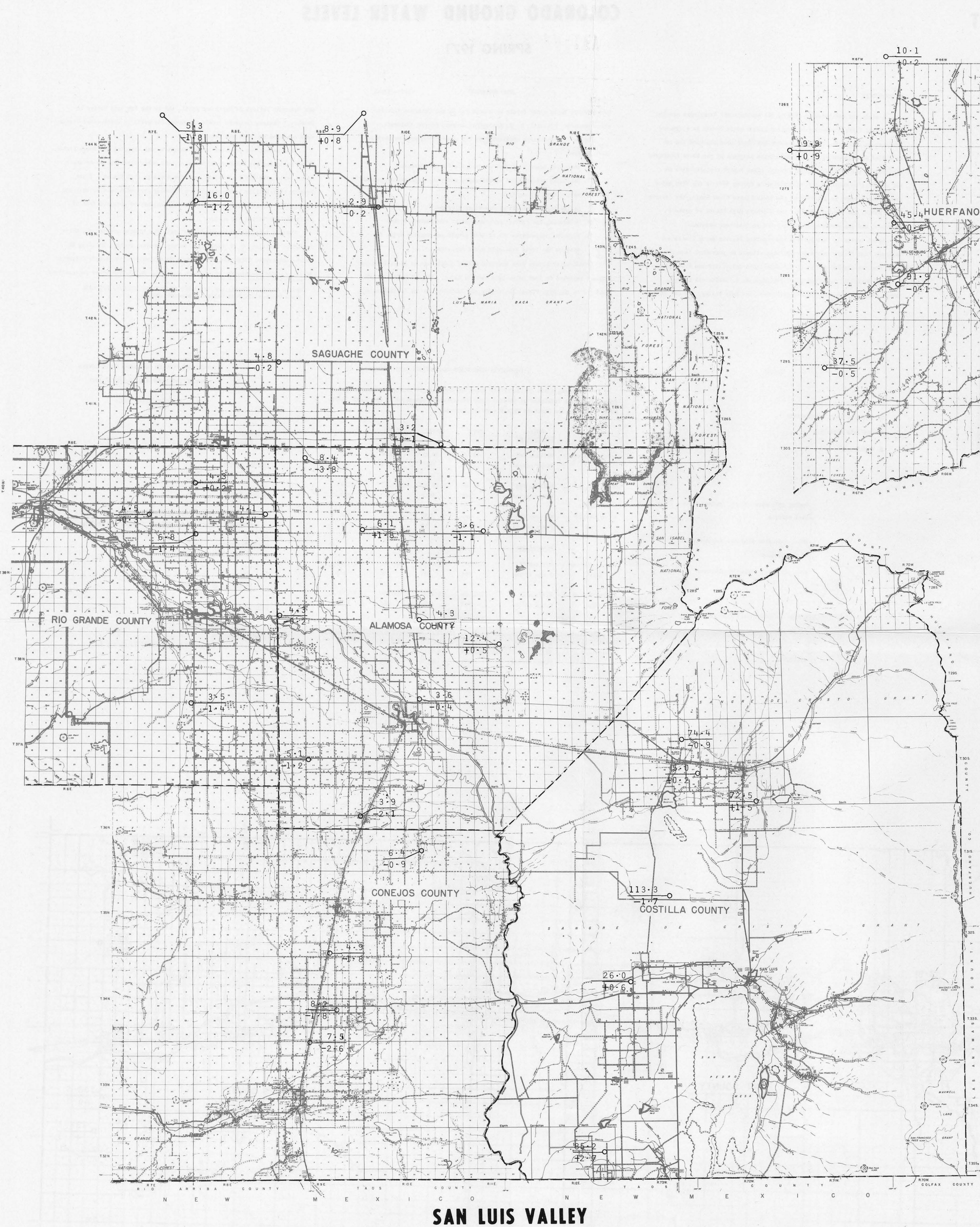
Area	Units Electricity	1967	1968	1969	1970
Arkansas River basin	Million KWH Pumps served	18.65 1903	20.89 1912	16.30 1913	18.58 1937
San Luis Valley	Million KWH Pumps served	41.58 1978	29.40 1872	25.82 1941	25.16 1907
Grand Valley*	Million KWH Pumps served	.363 75	.331 58	.385 74	.383 56
Natural Gas					
Arkansas River basin	Million CF Pumps served	228.13 164	348.49 205	232.23 224	311.405 239
Southern High Plains	Million CF Pumps served	2163.06 534	1151.24 553	887.86 554	983.73 571
*Majority of pumps operating from surface supplies					
Total for Colorado	Million KWH Million CF Pumps served	156.44 3273.28 12399	213.13 3431.80 12709	205.10 3090.22 13301	224.01 3264.78 13572

SUMMARY OF CHANGES IN GROUND WATER LEVELS

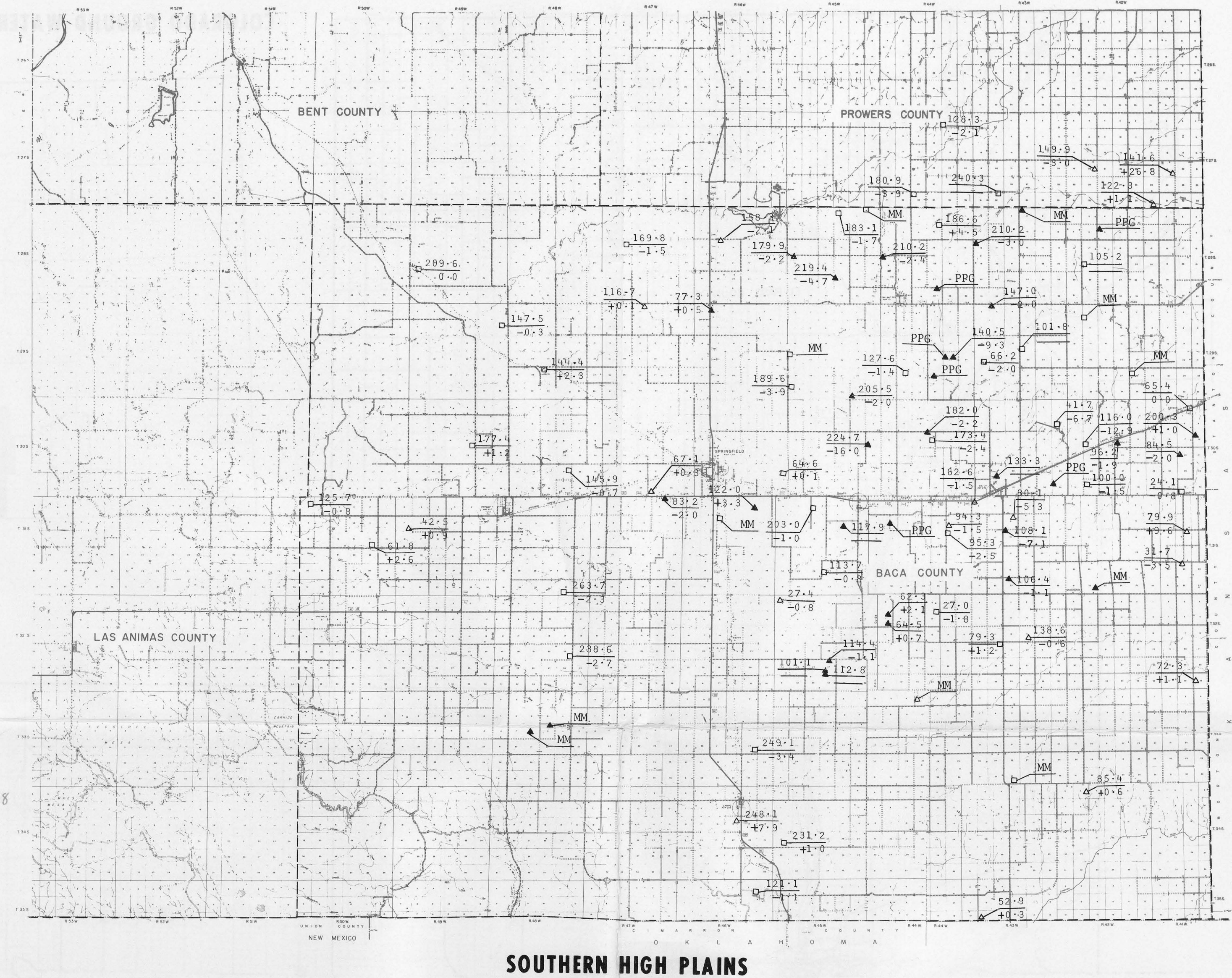
SPRING 1971 COMPARED TO SPRING 1970

ARKANSAS RIVER BASIN

- Bent County
Variable - from up 1.5 to down .5 foot
- Crowley County
No significant change
- El Paso County
Black Squirrel Creek: up .5 to down 1.5 feet
Jimmy Camp Creek: no significant change
Fountain Creek: no significant change; one well up 10 feet
- Huerfano County
No significant change
- Otero County
Steady to up 1.5 feet
- Prowers County
No significant change
- Pueblo County
Main stem Arkansas River: steady to up 1.5 feet



TA7
C6
CER
70171-58
Sheet 1



LEGEND

○ Unconfined aquifer
□ Confined aquifer
△ Ogallala Formation
▲ Undifferentiated

KEY:

Spring 1971 water level, in feet below land surface.
PPG- indicates well was pumping at time of measurement.
MM- indicates missed measurement.

Change in water level from preceding measurement.
— indicates previous measurement not available.

SUMMARY OF CHANGES IN GROUND WATER LEVELS
SPRING 1971 COMPARED TO SPRING 1970
SOUTHERN HIGH PLAINS

Baca County
No general area pattern fluctuation. Wells in Cheyenne and Dakota formations up 1 foot to down 4 feet. Wells in the Ogallala formation up 1 foot to down 3.5 feet. Undifferentiated wells up 2 to down 7 feet.

SAN LUIS VALLEY

Alamosa County
Variable - wells up 1.5 to down 2 feet

Conejos County
Wells down 1 to 2.5 feet

Costilla County
Wells up 2.5 feet to down 1.5 feet

Rio Grande County
Steady to down 1.5 feet

Saguache County
Steady to down 1.5 feet

Civil Engineering Department
Colorado State University Experiment Station
Engineering Research Center
Fort Collins, Colorado 80521



70: