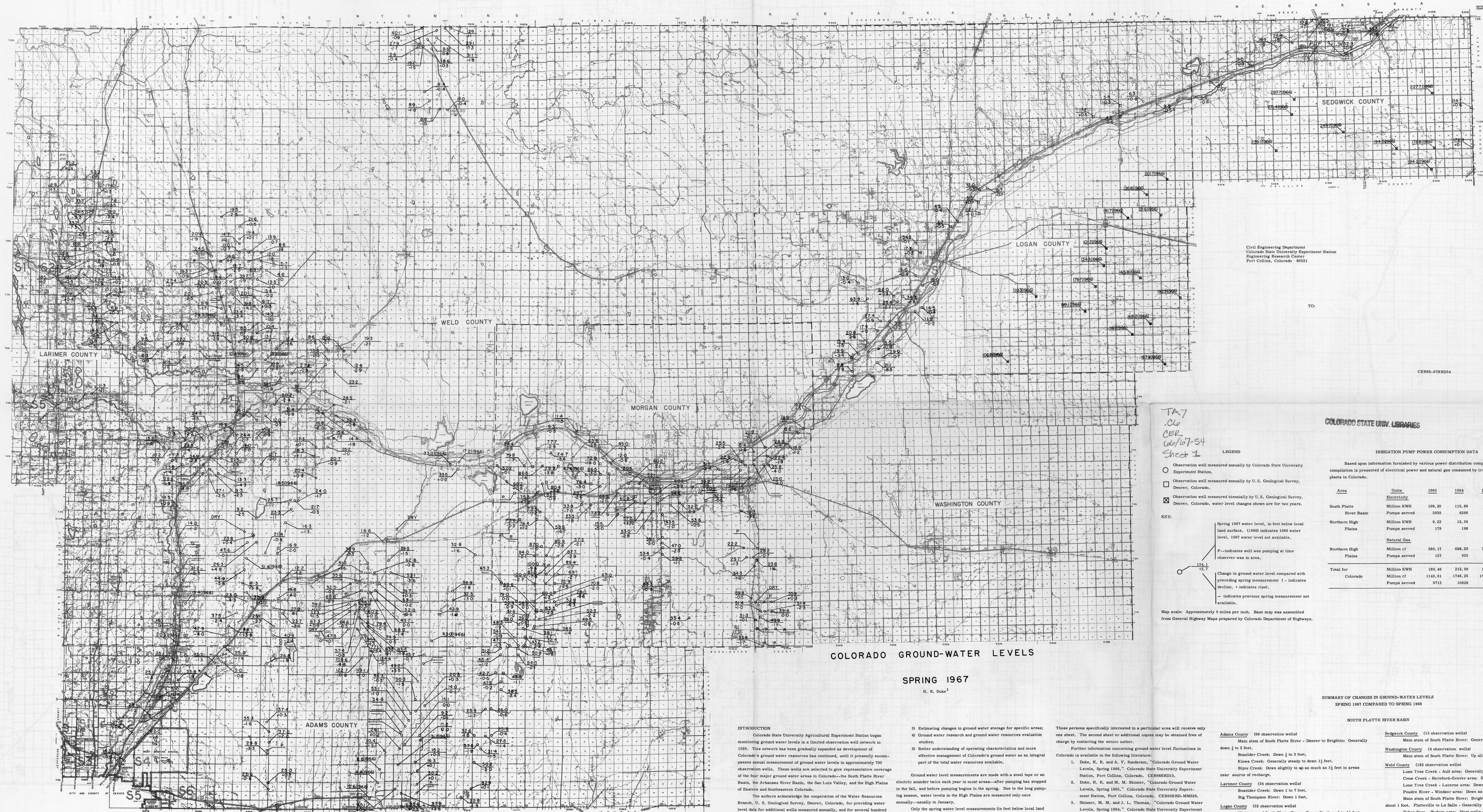




Civil Engineering Department
Colorado State University Experiment Station
Engineering Research Center
Fort Collins, Colorado 80521

TO:

CER66-6THRDS4

TA-7
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66/67-54
Sheet 1

LEGEND

- Observation well measured annually by Colorado State University Experiment Station.
- Observation well measured annually by U.S. Geological Survey, Denver, Colorado.
- ⊗ Observation well measured biennially by U.S. Geological Survey, Denver, Colorado, water level changes shown are for two years.

KEY:

- Spring 1967 water level, in feet below local land surface. (1966) indicates 1966 water level, 1967 water level not available.
- P- indicates well was pumping at time observer was in area.
- Change in ground water level compared with preceding spring measurement (- indicates decline, + indicates rise).
- indicates previous spring measurement not available.

Map scale: Approximately 5 miles per inch. Base map was assembled from General Highway Maps prepared by Colorado Department of Highways.

COLORADO STATE UNIV. LIBRARIES

IRRIGATION PUMP POWER CONSUMPTION DATA

Based upon information furnished by various power distribution companies, the following compilation is presented of electrical power and natural gas consumed by irrigation pumping plants in Colorado.

Area	Units	Electricity	1963	1964	1965	1966
South Platte	Million KWH		108.20	115.86	79.21	116.38
River Basin	Pumps served		3550	6266	6408	6593
Northern High	Million KWH		9.32	12.36	12.35	15.79
Plains	Pumps served		179	188	246	285
Natural Gas						
Northern High	Million of		289.17	688.29	766.22	743.28
Plains	Pumps served		157	305	469	518
Total for	Million KWH		189.46	212.99	122.12	175.30
Colorado	Million of		1143.61	1746.25	1527.52	2020.32
	Pumps served		9713	10828	11424	11793

SUMMARY OF CHANGES IN GROUND-WATER LEVELS
SPRING 1967 COMPARED TO SPRING 1966

SOUTH PLATTE RIVER BASIN

- Adams County** (66 observation wells)
 - Main stem of South Platte River - Denver to Brighton: Generally down 1 to 2 feet.
 - Boxelder Creek: Down 1 to 3 feet.
 - Kiowa Creek: Generally steady to down 1 1/2 feet.
 - Bijou Creek: Down slightly to up as much as 1/2 feet in areas near source of recharge.
- Larimer County** (34 observation wells)
 - Boxelder Creek: Down 1 to 7 feet.
 - Big Thompson River: Down 1 foot.
- Logan County** (32 observation wells)
 - Main stem of South Platte River: Generally down 1 to 1 1/2 feet.
- Morgan County** (131 observation wells)
 - Main stem of South Platte River: Generally down 1 to 4 feet.
 - Bijou Creek: Generally down to 1 foot along Antelope Creek, Down 1 to 4 feet along Bijou Creek.
 - Boxelder Creek: Down 1 to 3 feet.
 - Beaver Creek: Down 1 to 3 feet.
- Sedgwick County** (15 observation wells)
 - Main stem of South Platte River: Generally down 1 to 1 1/2 feet.
- Washington County** (4 observation wells)
 - Main stem of South Platte River: Up slightly.
- Weld County** (182 observation wells)
 - Lone Tree Creek - Ault area: Generally down 1 to 3 feet.
 - Crow Creek - Hereford-Grover area: Slightly down 1 to 3 feet.
 - Lone Tree Creek - Lucerne area: Down 1 to 4 feet.
 - Poudre River - Windsor area: Down as much as 1/2 foot to 1 1/2 feet.
 - Main stem of South Platte River: Brighton to Platterville - Down about 1 foot. Platterville to La Salle - Generally down 1 to 4 feet.
 - Bobcat Reservoir - Hudson area: Most wells down 1 to 4 feet.
 - Boxelder Creek - below Hudson: Down 1 to 3 feet, except east of Milton Reservoir, down 1 to 2 feet.
 - Crow Creek - Gill area: Up 1 to 4 feet.
 - Prospect Valley: Generally down 1 to 1 foot. Wells near Olds Reservoir up to 4 feet.
 - Kiowa Creek: Generally down 1 to 3 feet.

SOUTH PLATTE RIVER BASIN

INTRODUCTION

Colorado State University Agricultural Experiment Station began monitoring ground water levels in a limited observation well network in 1929. This network has been gradually expanded as development of Colorado's ground water resources has continued, until it presently encompasses annual measurement of ground water levels in approximately 700 observation wells. These wells are selected to give representative coverage of the four major ground water areas in Colorado--the South Platte River Basin, the Arkansas River Basin, the San Luis Valley, and the High Plains of Eastern and Southeastern Colorado.

The authors acknowledge the cooperation of the Water Resources Branch, U. S. Geological Survey, Denver, Colorado, for providing water level data for additional wells measured annually, and for several hundred wells measured in special project areas.

The basic information obtained from the observation well network provides valuable data which is actively used for:

- 1) Detecting areas of critical ground water depletion or accretion;
- 2) Extending existing and establishing additional historical ground water level hydrographs;

- 3) Estimating changes in ground water storage for specific areas;
- 4) Ground water research and ground water resources evaluation studies;
- 5) Better understanding of operating characteristics and more effective management of Colorado's ground water as an integral part of the total water resources available.

Ground water level measurements are made with a steel tape or an electric sounder twice each year in most areas--after pumping has stopped in the fall, and before pumping begins in the spring. Due to the long pumping season, water levels in the High Plains are measured only once annually--usually in January.

Only the spring water level measurements (in feet below local land surface) are reported, since these measurements more nearly represent static water level conditions. For wells in which the water level was measured the previous year, changes in water level from the previous year are also noted.

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 senior author.

Further information concerning ground water level fluctuations in Colorado is available in the following literature:

1. Duke, H. R. and A. V. Sundaram, "Colorado Ground Water Levels, Spring 1966." Colorado State University Experiment Station, Fort Collins, Colorado, CER66HDD15.
2. Dobe, H. R. and M. M. Skinner, "Colorado Ground Water Levels, Spring 1965." Colorado State University Experiment Station, Fort Collins, Colorado, CER65HDD-MM59.
3. Skinner, M. M. and J. L. Thomas, "Colorado Ground Water Levels, Spring 1964." Colorado State University Experiment Station, Fort Collins, Colorado, CER64HDDMM59.
4. Code, W. E., "Water Table Fluctuations in Eastern Colorado," Bulletin 5008, Colorado State University Experiment Station, Fort Collins, Colorado, August 1958.

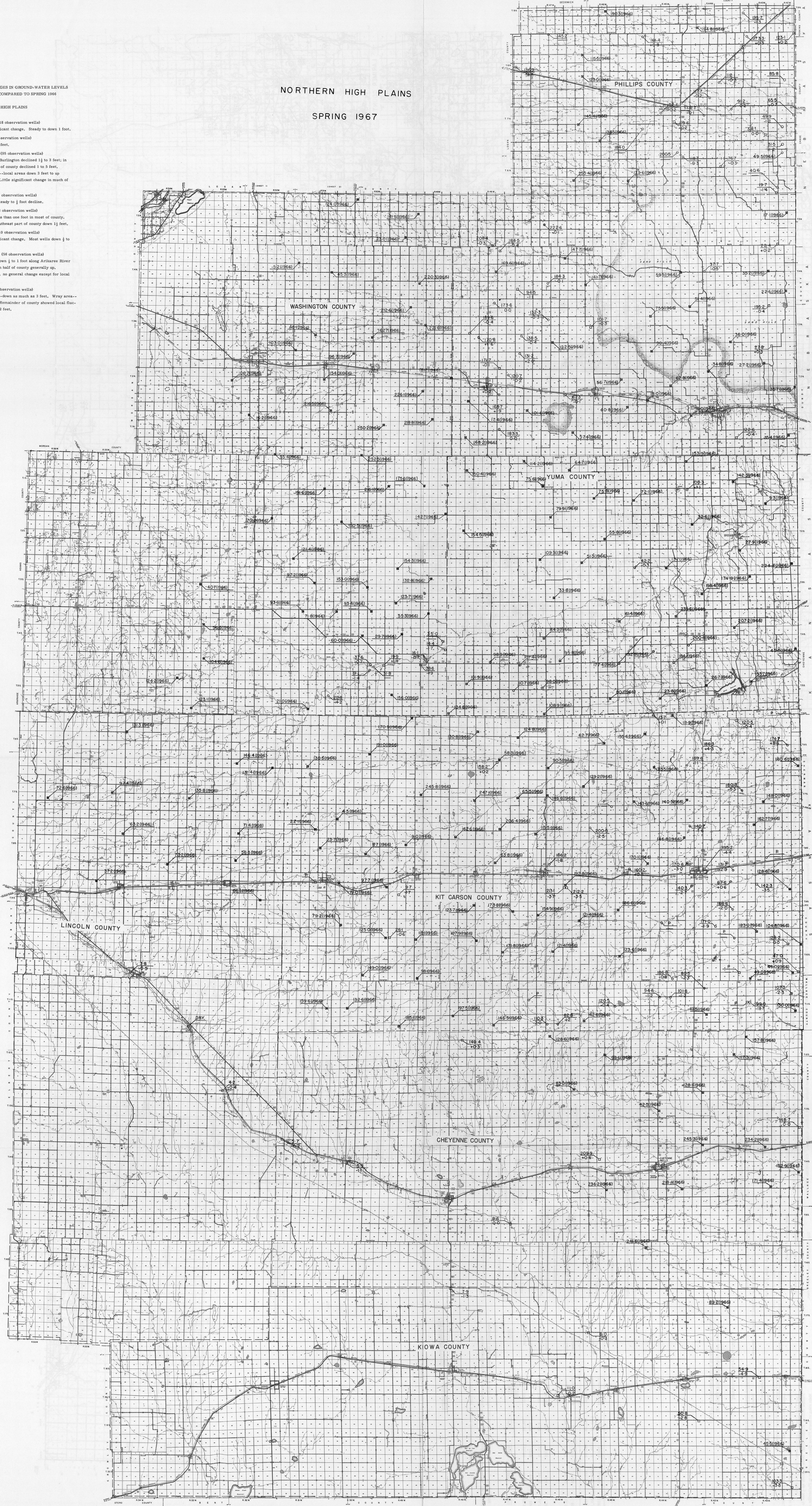
Junior Civil Engineer, Engineering Research Center, Colorado State University, Fort Collins, Colorado.

SUMMARY OF CHANGES IN GROUND-WATER LEVELS
SPRING 1967 COMPARED TO SPRING 1966

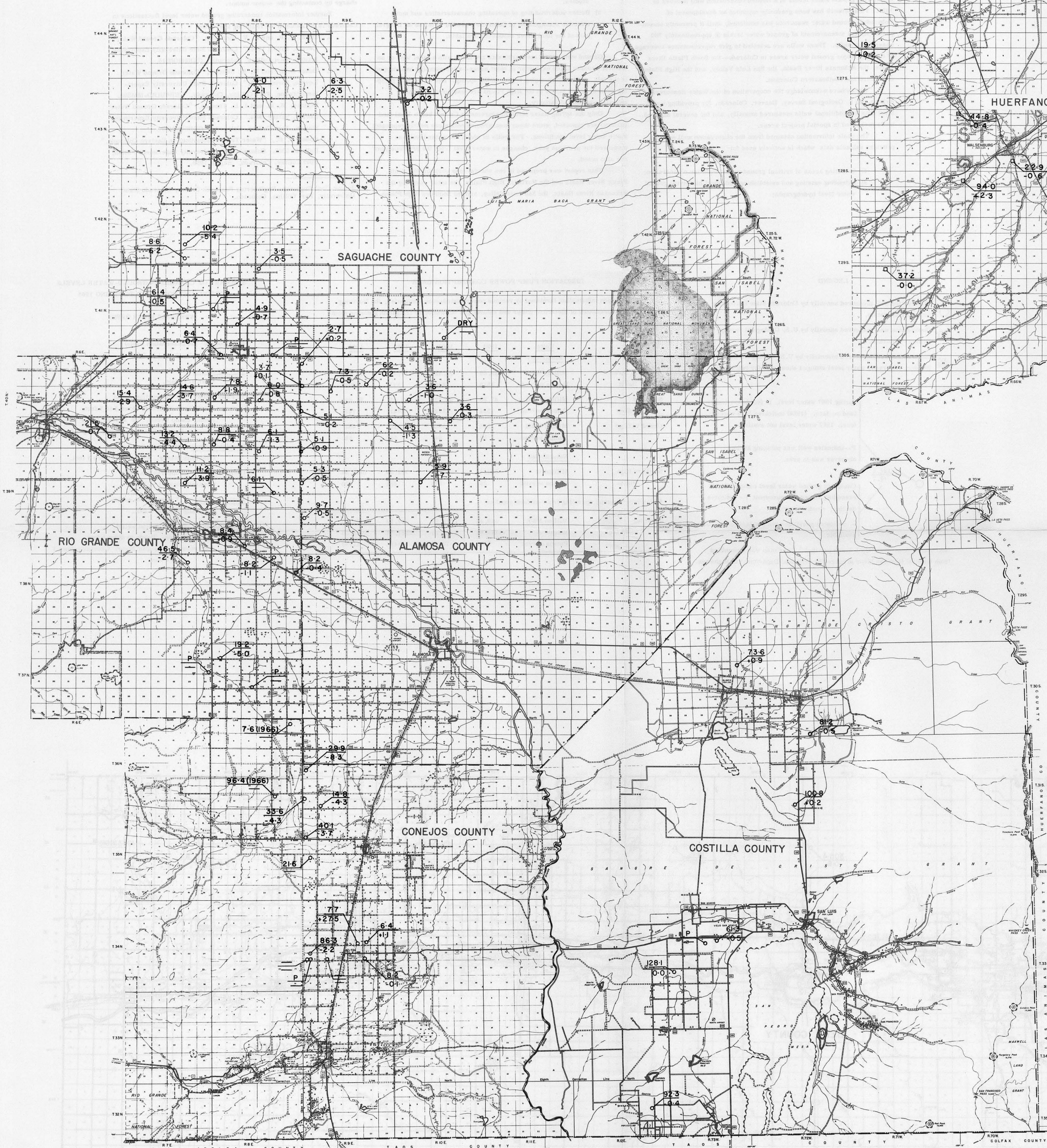
HIGH PLAINS

- Cheyenne County** (18 observation wells)
Little significant change. Steady to down 1 foot.
- Lincoln County** (4 observation wells)
Down 1 to 4 feet.
- Kit Carson County** (95 observation wells)
Wells near Burlington declined 1½ to 3 feet; in northeastern portion of county declined 1 to 5 feet. Remainder of county—local areas down 3 feet to up 2½ feet since 1964. Little significant change in much of the county.
- Phillips County** (33 observation wells)
Generally steady to ½ foot decline.
- Sedgwick County** (10 observation wells)
Changes less than one foot in most of county. Sand hills area in southeast part of county down 1½ feet.
- Washington County** (56 observation wells)
Little significant change. Most wells down ½ to 1½ feet.
- Yuma County** (64 observation wells)
Generally down ½ to 1 foot along Arkansas River near Cope. Northern half of county generally up. Remainder of county, no general change except for local instances.
- Yuma County** (64 observation wells)
Yuma area—down as much as 3 feet. Wray area—down 1 to 12½ feet. Remainder of county showed local fluctuations as much as 2 feet.

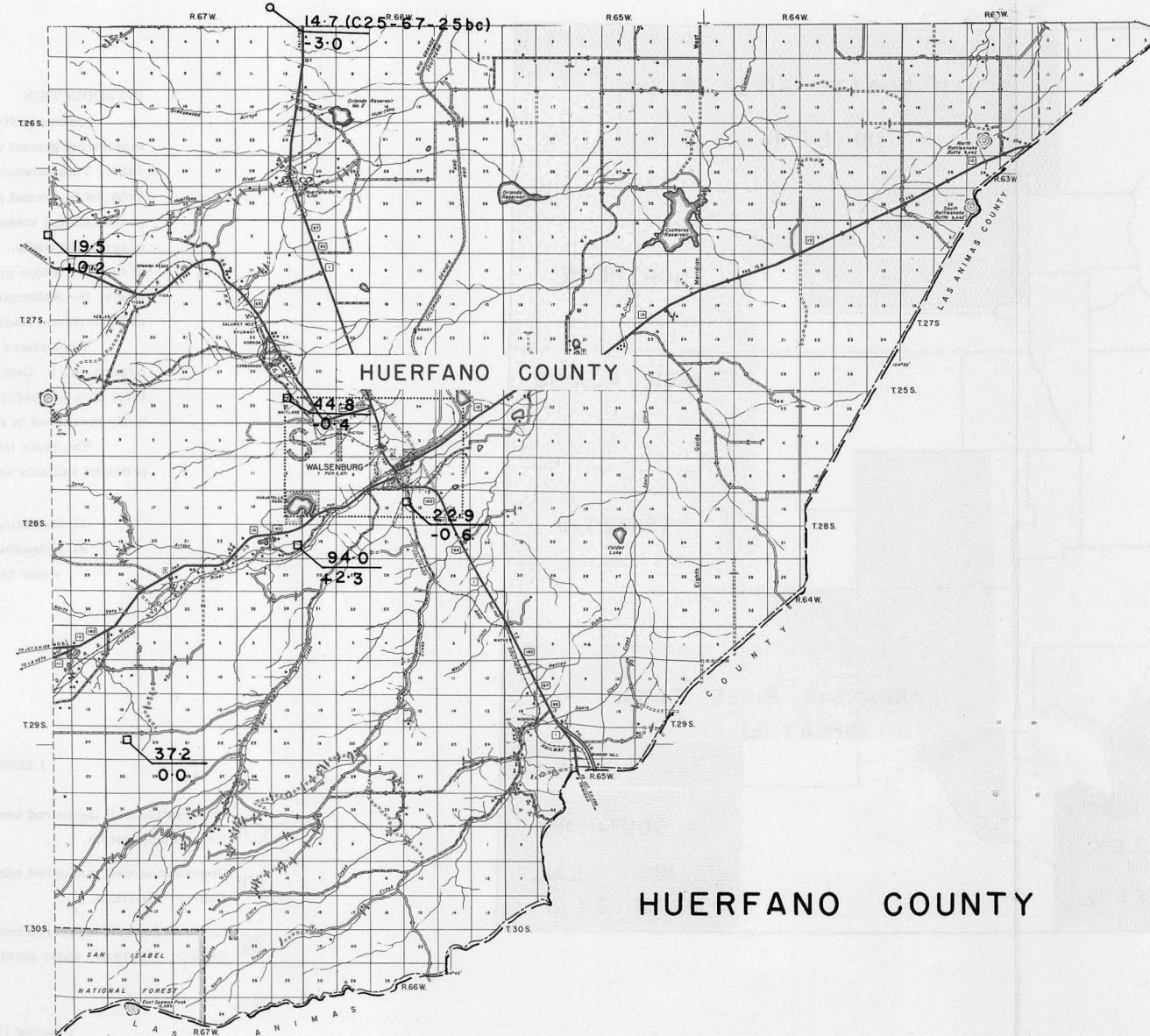
NORTHERN HIGH PLAINS
SPRING 1967



SPRING 1967

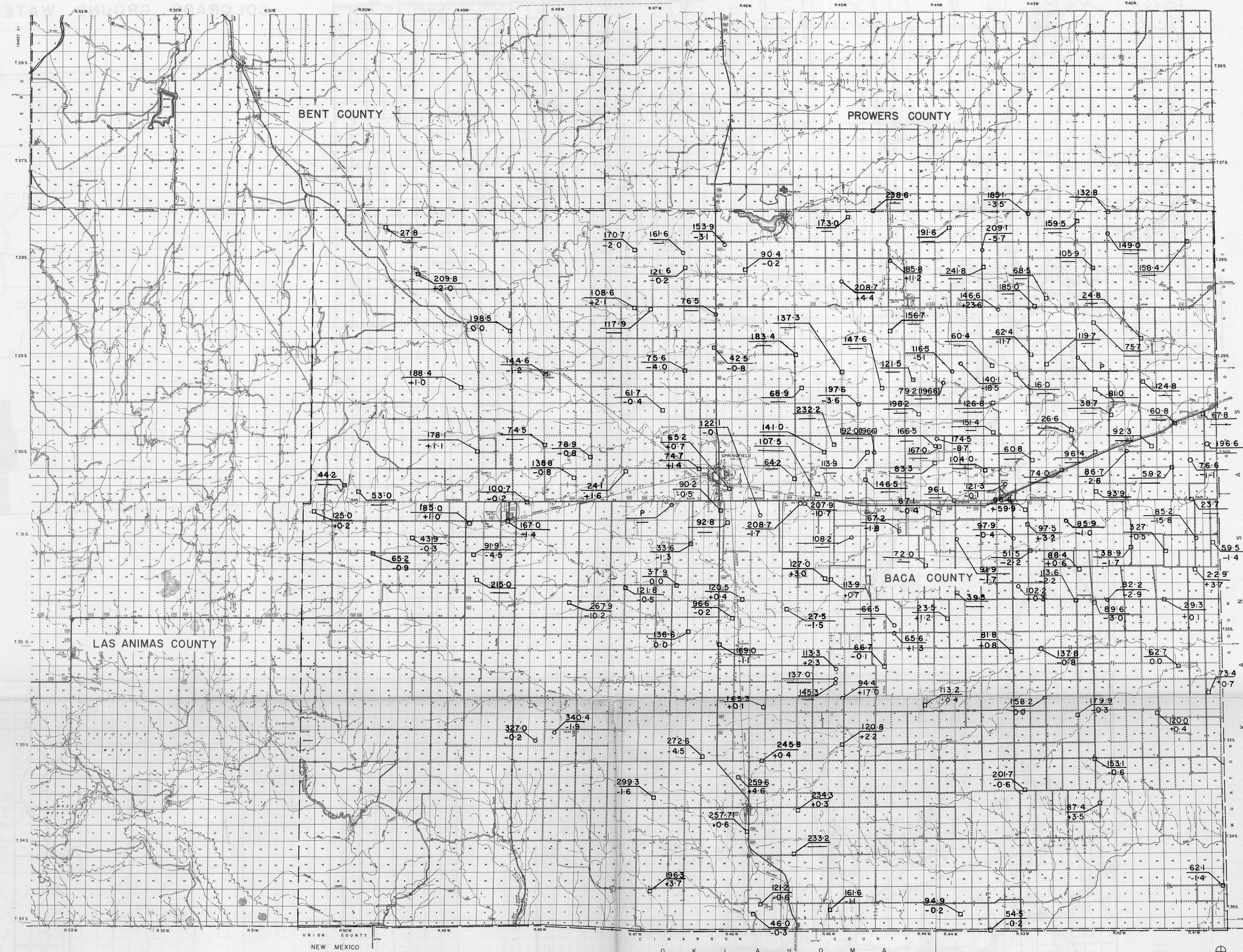


SAN LUIS VALLEY



HUEFANO COUNTY

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Sheet 2



SOUTHERN HIGH PLAINS

SUMMARY OF CHANGES IN GROUND-WATER LEVELS
SPRING 1967 COMPARED TO SPRING 1966

SAN LUIS VALLEY

- Alamosa County** (12 observation wells)
All wells up 2 to 3 feet, water table very near the surface - 3 to 5 feet in many areas.
- Conejos County** (14 observation wells)
Romeo area: Generally down 1 to 2 feet.
La Jara area: Down 4 to 8 feet.
- Costilla County** (7 observation wells)
Fort Garland-Blanca area: Steady to up 1/2 foot to down 1/2 foot.
San Acacio-Jarosa area: Steady to down 1/2 foot.
- Rio Grande County** (17 observation wells)
South of Monte Vista: down 1 to 7 feet.
Zinser area: Down 1 to 3 feet.
North of Monte Vista: Up 7 to 15 feet. Down 1 to 3 feet.
- Saguache County** (14 observation wells)
Center area: Generally down 1 to 6 feet, water table very near surface - 2 1/2 to 10 feet over most of the area.
Moffat area: Generally down 2 to 2 1/2 feet.

SOUTHERN HIGH PLAINS

- Baca County** (52 observation wells)
Majority of wells showed much less severe changes than in previous years. No general areal pattern to fluctuation, shallow wells were generally steady.

TO:

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CER66-67HDS4

