

## INTRODUCTORY STATEMENT

### Annual Division Engineers Report Irrigation Division #2

Irrigation Division #2 consists of all lands irrigated from ditches and canals taking water from the Arkansas River and its tributaries. The Division is made up of eleven Water Districts (10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 66, & 67) which comprise the counties of El Paso, Chaffee, Lake, Fremont, Custer, Pueblo, Huerfano, Las Animas, Park, Teller, Crowley, Otero, Bent, Prowers, Baca, and Kiowa. The area encompassed by Irrigation Division #2 may be best described by the following summarized table.

IRRIGATION DIVISION II

BACA COUNTY

|                                    |                            |
|------------------------------------|----------------------------|
| <u>MAJOR CITY</u>                  | SPRINGFIELD                |
| <u>ELEVATION</u>                   | 4,365                      |
| <u>MAJOR STREAM</u>                | CARRIZO                    |
| <u>MAJOR TRIBUTARY</u>             | NONE                       |
| <u>MAJOR WATER USE</u>             | IRRIGATION                 |
| <u>IRRIGATED ACRES</u>             | 56,910                     |
| <u>ANNUAL PERCIPITATION</u>        | 13"-16"                    |
| <u>MAJOR INDUSTRY</u>              | RANCH/FARM                 |
| <u>NUMBER OF FARMS</u>             | 750                        |
| <u>LENGTH - GROWING SEASON</u>     | 161 Days                   |
| <u>WATER RESOURCE PROJECTS</u>     | UNDERGROUND WATER DISTRICT |
| <u>COMMENTS - LAND DEVELOPMENT</u> | NONE KNOWN                 |

IRRIGATION DIVISION II

BENT COUNTY

|                                    |            |
|------------------------------------|------------|
| <u>MAJOR CITY</u>                  | LAS ANIMAS |
| <u>ELEVATION</u>                   | 3901       |
| <u>MAJOR STREAM</u>                | ARKANSAS   |
| <u>MAJOR TRIBUTARY</u>             | PURGATOIRE |
| <u>MAJOR WATER USE</u>             | IRRIGATION |
| <u>IRRIGATED ACRES</u>             | 45,292     |
| <u>ANNUAL PERCIPITATION</u>        | 12"-13"    |
| <u>MAJOR INDUSTRY</u>              | RANCH/FARM |
| <u>NUMBER OF FARMS</u>             | 450        |
| <u>LENGTH - GROWING SEASON</u>     | 162 Days   |
| <u>WATER RESOURCE PROJECTS</u>     | FRYING-PAN |
| <u>COMMENTS - LAND DEVELOPMENT</u> | NONE KNOWN |

IRRIGATION DIVISION II

CHAFFEE COUNTY

|                                    |                 |
|------------------------------------|-----------------|
| <u>MAJOR CITY</u>                  | SALIDA          |
| <u>ELEVATION</u>                   | 7,036           |
| <u>MAJOR STREAM</u>                | ARKANSAS        |
| <u>MAJOR TRIBUTARY</u>             | SO. ARKANSAS    |
| <u>MAJOR WATER USE</u>             | IRRIGATION      |
| <u>IRRIGATED ACRES</u>             | 16,216          |
| <u>ANNUAL PERCIPITATION</u>        | 10"-30"         |
| <u>MAJOR INDUSTRY</u>              | RANCH/FARM      |
| <u>NUMBER OF FARMS</u>             | 170             |
| <u>LENGTH - GROWING SEASON</u>     | 102 days        |
| <u>WATER RESOURCE PROJECTS</u>     | FRYING-PAN      |
| <u>COMMENTS - LAND DEVELOPMENT</u> | SEVERAL-UNKNOWN |

IRRIGATION DIVISION II

CROWLEY COUNTY

|                                    |            |
|------------------------------------|------------|
| <u>MAJOR CITY</u>                  | ORDWAY     |
| <u>ELEVATION</u>                   | 4,312      |
| <u>MAJOR STREAM</u>                | HORSE      |
| <u>MAJOR TRIBUTARY</u>             | NONE       |
| <u>MAJOR WATER USE</u>             | IRRIGATION |
| <u>IRRIGATED ACRES</u>             | 25,010     |
| <u>ANNUAL PERCIPITATION</u>        | 11"-12"    |
| <u>MAJOR INDUSTRY</u>              | RANCH/FARM |
| <u>NUMBER OF FARMS</u>             | 400        |
| <u>LENGTH - GROWING SEASON</u>     | 157 Days   |
| <u>WATER RESOURCE PROJECTS</u>     | FRYING-PAN |
| <u>COMMENTS - LAND DEVELOPMENT</u> | ONE KNOWN  |

IRRIGATION DIVISION II

CUSTER COUNTY

|                                    |                                  |
|------------------------------------|----------------------------------|
| <u>MAJOR CITY</u>                  | WESTCLIFFE                       |
| <u>ELEVATION</u>                   | 7,888                            |
| <u>MAJOR STREAM</u>                | GRAPE                            |
| <u>MAJOR TRIBUTARY</u>             | TEXAS                            |
| <u>MAJOR WATER USE</u>             | IRRIGATION                       |
| <u>IRRIGATED ACRES</u>             | 15,930                           |
| <u>ANNUAL PERCIPITATION</u>        | 15"-25"                          |
| <u>MAJOR INDUSTRY</u>              | RANCH/FARM                       |
| <u>NUMBER OF FARMS</u>             | 180                              |
| <u>LENGTH - GROWING SEASON</u>     | 80 Days                          |
| <u>WATER RESOURCE PROJECTS</u>     | U.S.G.S. UNDERGROUND WATER STUDY |
| <u>COMMENTS - LAND DEVELOPMENT</u> | FOUR KNOWN                       |

IRRIGATION DIVISION II

EL PASO COUNTY

|                                    |                         |
|------------------------------------|-------------------------|
| <u>MAJOR CITY</u>                  | COLORADO SPRINGS        |
| <u>ELEVATION</u>                   | 6,012                   |
| <u>MAJOR STREAM</u>                | FOUNTAIN                |
| <u>MAJOR TRIBUTARY</u>             | MONUMENT                |
| <u>MAJOR WATER USE</u>             | IRRIGATION/COMMERCIAL   |
| <u>IRRIGATED ACRES</u>             | 13,630                  |
| <u>ANNUAL PERCIPITATION</u>        | 12"-20"                 |
| <u>MAJOR INDUSTRY</u>              | U.S. DEFENSE DEPARTMENT |
| <u>NUMBER OF FARMS</u>             | 750                     |
| <u>LENGTH - GROWING SEASON</u>     | 122 Days                |
| <u>WATER RESOURCE PROJECTS</u>     | FRYING-PAN<br>HOMESTAKE |
| <u>COMMENTS - LAND DEVELOPMENT</u> | EIGHT KNOWN             |

IRRIGATION DIVISION II

FREMONT COUNTY

MAJOR CITY

CANON CITY

ELEVATION

5,332

MAJOR STREAM

ARKANSAS

MAJOR TRIBUTARY

GRAPE

MAJOR WATER USE

IRRIGATION

IRRIGATED ACRES

14,920

ANNUAL PERCIPITATION

12"-20"

MAJOR INDUSTRY

RANCH/FARM  
STATE PENITENTIARY

NUMBER OF FARMS

421

LENGTH - GROWING SEASON

169 days

WATER RESOURCE PROJECTS

FRYING-PAN

COMMENTS - LAND DEVELOPMENT

3 KNOWN



IRRIGATION DIVISION II

HUERFANO COUNTY

|                                    |            |
|------------------------------------|------------|
| <u>MAJOR CITY</u>                  | WALSENBURG |
| <u>ELEVATION</u>                   | 6,185      |
| <u>MAJOR STREAM</u>                | HUERFANO   |
| <u>MAJOR TRIBUTARY</u>             | CUCHARAS   |
| <u>MAJOR WATER USE</u>             | IRRIGATION |
| <u>IRRIGATED ACRES</u>             | 11,453     |
| <u>ANNUAL PERCIPTITATION</u>       | 11"-25"    |
| <u>MAJOR INDUSTRY</u>              | RANCHING   |
| <u>NUMBER OF FARMS</u>             | 280        |
| <u>LENGTH - GROWING SEASON</u>     | 153 Days   |
| <u>WATER RESOURCE PROJECTS</u>     | NONE KNOWN |
| <u>COMMENTS - LAND DEVELOPMENT</u> | 6 KNOWN    |

IRRIGATION DIVISION II

EADS COUNTY

|                                    |            |
|------------------------------------|------------|
| <u>MAJOR CITY</u>                  | EADS       |
| <u>ELEVATION</u>                   | 4,213      |
| <u>MAJOR STREAM</u>                | BIG SANDY  |
| <u>MAJOR TRIBUTARY</u>             | NONE       |
| <u>MAJOR WATER USE</u>             | IRRIGATION |
| <u>IRRIGATED ACRES</u>             | 5,127      |
| <u>ANNUAL PERCIPITATION</u>        | 12½"-14½"  |
| <u>MAJOR INDUSTRY</u>              | RANCH/FARM |
| <u>NUMBER OF FARMS</u>             | 350        |
| <u>LENGTH - GROWING SEASON</u>     | 155 Days   |
| <u>WATER RESOURCE PROJECTS</u>     | NONE       |
| <u>COMMENTS - LAND DEVELOPMENT</u> | NONE KNOWN |

IRRIGATION DIVISION II

KIT CARSON COUNTY

MAJOR CITY BURLINGTON

ELEVATION 4,163

MAJOR STREAM REPUBLICAN

MAJOR TRIBUTARY NONE

MAJOR WATER USE IRRIGATION

IRRIGATED ACRES 56,576

ANNUAL PERCIPITATION 13"-16"

MAJOR INDUSTRY RANCH/FARM

NUMBER OF FARMS 840

LENGTH - GROWING SEASON 153 Days

WATER RESOURCE PROJECTS NONE

COMMENTS - LAND DEVELOPMENT NONE KNOWN

IRRIGATION DIVISION II

LAKE COUNTY

MAJOR CITY LEADVILLE

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ELEVATION 10,152

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MAJOR STREAM ARKANSAS

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MAJOR TRIBUTARY LAKE FORK

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MAJOR WATER USE IRRIGATION

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IRRIGATED ACRES 6,036

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ANNUAL PERCIPTATION 10"-35"

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MAJOR INDUSTRY MINING

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NUMBER OF FARMS 17

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LENGTH - GROWING SEASON 77 Days

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WATER RESOURCE PROJECTS FRYING-PAN

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COMMENTS - LAND DEVELOPMENT 4 KNOWN

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IRRIGATION DIVISION II

LAS ANIMAS COUNTY

|                                    |              |
|------------------------------------|--------------|
| <u>MAJOR CITY</u>                  | TRINIDAD     |
| <u>ELEVATION</u>                   | 6,025        |
| <u>MAJOR STREAM</u>                | PURGATOIRE   |
| <u>MAJOR TRIBUTARY</u>             | NONE         |
| <u>MAJOR WATER USE</u>             | IRRIGATION   |
| <u>IRRIGATED ACRES</u>             | 19,463       |
| <u>ANNUAL PERCIPITATION</u>        | 11"-20"      |
| <u>MAJOR INDUSTRY</u>              | RANCH/FARM   |
| <u>NUMBER OF FARMS</u>             | 200          |
| <u>LENGTH - GROWING SEASON</u>     | 152 Days     |
| <u>WATER RESOURCE PROJECTS</u>     | TRINIDAD DAM |
| <u>COMMENTS - LAND DEVELOPMENT</u> | 3 KNOWN      |

IRRIGATION DIVISION II

OTERO COUNTY

|                                    |            |
|------------------------------------|------------|
| <u>MAJOR CITY</u>                  | LA JUNTA   |
| <u>ELEVATION</u>                   | 4,066      |
| <u>MAJOR STREAM</u>                | ARKANSAS   |
| <u>MAJOR TRIBUTARY</u>             | HORSE      |
| <u>MAJOR WATER USE</u>             | IRRIGATION |
| <u>IRRIGATED ACRES</u>             | 57,675     |
| <u>ANNUAL PERCIPITATION</u>        | 11"-12"    |
| <u>MAJOR INDUSTRY</u>              | RANCH/FARM |
| <u>NUMBER OF FARMS</u>             | 690        |
| <u>LENGTH - GROWING SEASON</u>     | 150 Days   |
| <u>WATER RESOURCE PROJECTS</u>     | FRYING-PAN |
| <u>COMMENTS - LAND DEVELOPMENT</u> | NONE KNOWN |

IRRIGATION DIVISION II

PROWERS COUNTY

MAJOR CITY

LAMAR

ELEVATION

3,622

MAJOR STREAM

ARKANSAS

MAJOR TRIBUTARY

NONE

MAJOR WATER USE

IRRIGATION/COMMERCIAL

IRRIGATED ACRES

93,044

ANNUAL PERCIPITATION

13"-15"

MAJOR INDUSTRY

FARM/STEEL

NUMBER OF FARMS

469

LENGTH - GROWING SEASON

150 Days

WATER RESOURCE PROJECTS

FRYING-PAN

COMMENTS - LAND DEVELOPMENT

7 KNOWN

IRRIGATION DIVISION II

TELLER COUNTY

MAJOR CITY CRIPPLE CREEK

ELEVATION 9,494

MAJOR STREAM FOUR MILE

MAJOR TRIBUTARY NONE

MAJOR WATER USE IRRIGATION

IRRIGATED ACRES 865

ANNUAL PERCIPITATION 14"-20"

MAJOR INDUSTRY TOURISM

NUMBER OF FARMS 10

LENGTH - GROWING SEASON 68 Days

WATER RESOURCE PROJECTS NONE

COMMENTS - LAND DEVELOPMENT 5 KNOWN



PERSONNEL  
DIVISION NO. 2  
DIVISION OF WATER RESOURCES

| <u>Name</u>         | <u>Position</u>     | <u>District</u> | <u>Months Worked</u> | <u>Mileage</u> |
|---------------------|---------------------|-----------------|----------------------|----------------|
| Rudy Styduhar       | Division Engineer   | Division No. 2  | Full Time            | 11,185         |
| Robert Jesse        | Asst. Div. Engineer | Division No. 2  | Full Time            | 12,436         |
| Mrs. Emmajean Perko | Int. Clk. Typist    | Division No. 2  | Full Time<br>(6 Mo.) | None           |
| Rufus Marshall      | Water Commissioner  | #10             | Full Time            | 17,044         |
| Merle Hardin        | Deputy Water Comm.  | #10             | 3 mo.                | 4,437          |
| Ralph Barnhart      | Water Commissioner  | #11             | Full Time            | 18,311         |
| Forrest Schneider   | Deputy Water Comm.  | #11             | 7 Mo.                | 7,245          |
| John Farwell        | Deputy Water Comm.  | #11             | 6 Mo.                | 4,998          |
| Jack McDonough      | Water Commissioner  | #12             | Full Time            | 12,669         |
| Byron Bean          | Deputy Water Comm.  | #12             | 5 Mo.                | 6,400          |
| Thomas Young        | Deputy Water Comm.  | #12             | 4 Mo.                | 5,060          |
| Gayle Patterson     | Water Commissioner  | #13             | Full Time            | 5,646          |
| Casper Seybold      | Deputy Water Comm.  | #13             | 6 Mo.                | 5,584          |
| Cecil Shepard       | Water Commissioner  | #14             | Full Time            | 9,806          |
| Beverly Klipfel     | Water Commissioner  | #15             | Full Time            | 15,632         |
| Joe Faris           | Water Commissioner  | #16             | Full Time            | 13,285         |
| Robert Brygoch      | Deputy Water Comm.  | #16             | 7 Mo.                | 10,646         |
| Augustine Garcia    | Deputy Water Comm.  | #16             | 3 Mo.                | 4,815          |
| William Pattie      | Water Commissioner  | #17             | Full Time            | 16,742         |
| George Watson       | Deputy Water Comm.  | #17             | None                 | None           |
| George Stakich      | Water Commissioner  | #18             | 6 Mo.                | 4,668          |
| Bob Mariano         | Water Commissioner  | #19             | Full Time            | 10,535         |
| John Cusimano       | Deputy Water Comm.  | #19             | 1 Mo                 | 403            |
| Manuel Vigil        | Deputy Water Comm.  | #19             | None                 | None           |

| <u>Name</u>          | <u>Position</u>    | <u>District</u> | <u>Months Worked</u> | <u>Mileage</u> |
|----------------------|--------------------|-----------------|----------------------|----------------|
| Lane Hackett         | Water Commissioner | #66,67          | Full Time            | 15,841         |
| Robert J. Coldfelter | Deputy Water Comm. | #66,67          | 7 Mo.                | 284            |
| Daries C. Lile       | Hydrographer       | Division #2     | Full Time            | None           |
| James Kasic          | Hydrographer       | Division #2     | Full Time            | None           |
| Raymond Walker       | Hydrographer       | Division #2     | Full Time            | None           |
| Raymond Liesman      | Hydrographer       | Division #2     | (7 Mo.)<br>1/2 Mo.   | None           |

Total Miles Water Commissioners: 190,051

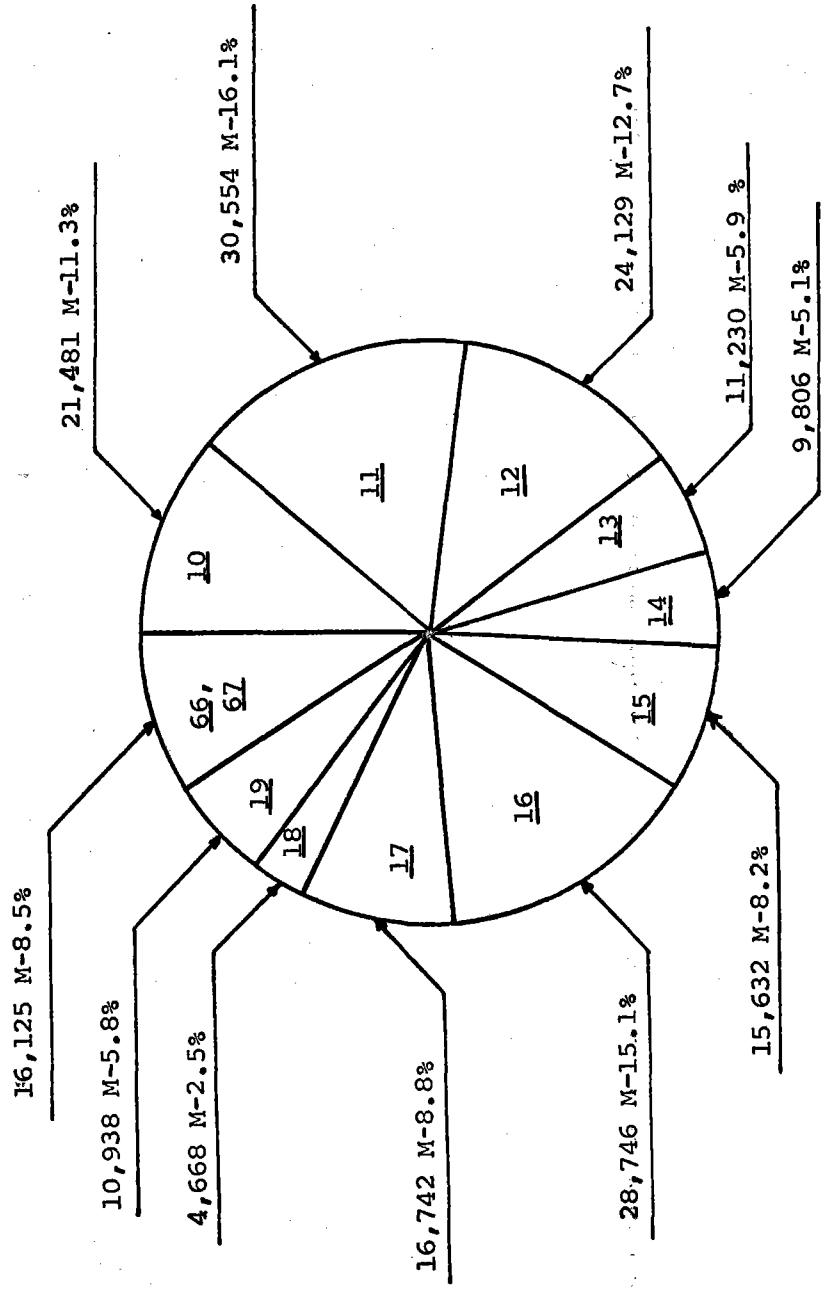
Total Miles Division Engineer and Assistant: 23,621

Total Miles Hydrographers: 0

Total 213,672 Miles

IRRIGATION DIVISION NO. 2  
 WATER DISTRICT MILEAGE

July 1, 1970 to June 30, 1971



Total Miles: 190,051 Miles

SNOW PACK  
IRRIGATION DIVISION #2

| STATION           | WATER CONTENT<br>% NORMAL - MAY 1971 | SNOW DEPTH | WATER CONTENT<br>MAY 1, 1971 | INCHES<br>AVERAGE |
|-------------------|--------------------------------------|------------|------------------------------|-------------------|
| Bigelon Divide    | 241%                                 | 16"        | 5.3                          | 2.2               |
| Cooper Hill       |                                      |            |                              |                   |
| East Fork         | 105%                                 | 22"        | 7.8                          | 7.4               |
| Four Mile Park    | 33%                                  | 1"         | .03                          | 1.0               |
| Fremont Pass      | 101%                                 | 52"        | 17.7                         | 17.9              |
| Garfield          | 69%                                  | 17"        | 5.9                          | 8.5               |
| Monarch Pass      | 85%                                  | 38"        | 14.0                         | 16.5              |
| Tennessee Pass    | 87%                                  | 17"        | 6.7                          | 7.7               |
| Twin Lakes Tunnel | 88%                                  | 30"        | 9.9                          | 8.7               |
| Westcliffe        |                                      | 0          | 0                            | 1.0               |
| Blue Lakes        |                                      | 0          | 0                            | .5                |
| Cucharas Pass     | -                                    | 0          | 0                            | -                 |
| La Veta Pass      |                                      | 0          | 0                            | 1.6               |
| Bourbon           |                                      | 0          | 0                            | 1.6               |

PRECIPITATION  
IRRIGATION DIVISION #2

| STATION    | April<br>1971 | May<br>1971 | June<br>1971 | July<br>1971 | August<br>1971 | September<br>1971 |
|------------|---------------|-------------|--------------|--------------|----------------|-------------------|
| Lamar      | 1.13          | 2.05        | 1.43         | 3.66         | 1.92           | 1.46              |
| Leadville  | 1.41          | 1.17        | .80          | 1.07         | 1.95           | 2.38              |
| Pueblo     | .88           | .73         | .66          | 1.93         | .85            | 1.24              |
| Trinidad   | .62           | 1.22        | .19          | 4.47         | 1.31           | 2.40              |
| Westcliffe | .83           | 2.21        | .23          | 2.80         | 1.50           | 2.31              |

No storms of consequence were reported in the Arkansas Drainage area this Year. There were isolated cases of heavy thunder storms, only very local flooding of some small road culverts resulted.

No reports of any hail suppression or "Rain Making" were made. There were very local and heavy hail storms in the Pueblo area, the crop damage in the affected area was severe.

Due to a late frost this fall this was the shortest growing season of record.

W.Y. 1970  
Water Budget, Arkansas River in Colorado  
(Exclusive of Fountain Creek)

(Units = 1,000 A.F.)

Derivation of Basin Yield

|   |                |
|---|----------------|
| 1. Recorded runoff Arkansas River near Portland<br>(includes 77.8 of trans. mtn. diversion) | 757.4          |
| 2. Estimated depletion by irrigation above gage<br>1.5 ft. x 88,000 A.                      | 132.0          |
| 3. Minnequa Canal Diversion   | 85.5           |
| 4. Drainage area yield at Portland gage   | <u>974.9</u>   |
| 5. Recorded St. Charles River near Vineland   | 23.8           |
| 6. St. Charles Diversion to CF&I  | 19.9           |
| 7. Estimated irrigation depletions above St. Charles<br>gage, 1.5 ft. x 8,500 A             | 12.8           |
| 8. Drainage area yield at St. Charles gage  | <u>56.5</u>    |
| 9. Recorded Cucharas River at Boyd Ranch  | 15.8           |
| 10. Estimated irrigation depletions above Boyd Ranch,<br>1.5 ft. x 500 A.                   | 0.8            |
| 11. Drainage area yield at Boyd Ranch   | <u>16.6</u>    |
| 12. Recorded Apishapa River near Fowler   | 17.4           |
| 13. Estimated irrigation depletion above Fowler,<br>1.5 ft. x 4700 A.                       | 7.0            |
| 14. Drainage area yield at Fowler   | <u>24.4</u>    |
| 15. Recorded Purgatoire River near Las Animas   | 33.9           |
| 16. Estimated irrigation depletions above Las Animas,<br>1.5 ft. x 36,000 A.                | 54.0           |
| 17. Drainage area yield Purgatoire River  | <u>87.9</u>    |
| 18. Total Basin Yield (4) + (8) + (11) + (14) + (17)  | <u>1,160.3</u> |

W.Y. 1970  
Water Budget, Arkansas River in Colorado  
(Exclusive of Fountain Creek)

(Units = 1,000 A.F.)

Depletion by Municipalities:

|  |            |
|--|------------|
| 1. Municipal Diversions (Pueblo only)  | 23.0       |
| 2. Municipal Return Flow (Pueblo only) | 14.2       |
| 3. Depletion by Municipal use          | <u>8.8</u> |

Depletion by Industrial Use:

|                                       |             |
|---------------------------------------|-------------|
| 4. Diversion by Minnequa Canal (CF&I) | 85.5        |
| 5. CF&I Diversion from St. Charles    | 19.9        |
| 6. CF&I Effluent (Salt Creek)         | 84.4        |
| 7. Depletion by Industry (CF&I only)  | <u>21.0</u> |

Irrigation Diversions:

|                                   |                |
|-----------------------------------|----------------|
| 8. W.D. #11                       | 132.1          |
| 9. W.D. #12                       | 319.2          |
| 10. W.D. #13                      | 37.0           |
| 11. W.D. #15                      | 39.9           |
| 12. W.D. #16                      | 24.5           |
| 13. W.D. #18                      | 33.4           |
| 14. W.D. #19                      | 1,182.2        |
| 15. W.D. #14, #17 and #67         | 1,768.3        |
| 16. Total Diversion by Irrigation | <u>1,768.3</u> |

W.Y. 1970  
Water Budget, Arkansas River in Colorado  
(Exclusive of Fountain Creek)

(Units = 1,000 A.F.)

Summary

|   |         |
|---|---------|
| 1. Total Basin Yield (line 18, page 1)  | 1,160.3 |
| 2. Depletion by Municipal use (line 3, page 1)  | 8.8     |
| 3. Depletion by Industrial use (line 7, page 1)   | 21.0    |
| 4. Estimated irrigation depletion in W.D.'s 11, 12, 13, 15, 16, 18 and 19 (lines 2, 7, 10, 13 and 16, page 1) | 206.6   |
| 5. Recorded State line flow   | 139.8   |
| 6. Irrigation depletion W.D. 14, 17, and 67, and nonbeneficial use (line 1 minus lines 2, 3, 4 and 5)         | 784.1   |

(a) Data not available for Fountain Creek Drainage Basin.  
(b) Recorded runoff data from USGS W.Y. October-September.  
(c) Diversion data from Water Commissioners F.B. W.Y. November-October.  
(d) Irrigation C.U. use in area above gaging stations estimated by judgement.  
(e) Irrigation C.U. in W.D. #14, #17 and #67 computed (line 6, page 3).  
(f) No data available on depletion due to ground water pumping or water table recharge.  
(g) Total irrigated area considered - 443,500 acres.  
(h) Total depletion by irrigation - 990,700 A.F.  
(i) Irrigation depletion A.F./Ac. - 2.23'  
(j) Reservoir Change-in-Storage not reflected in computation.



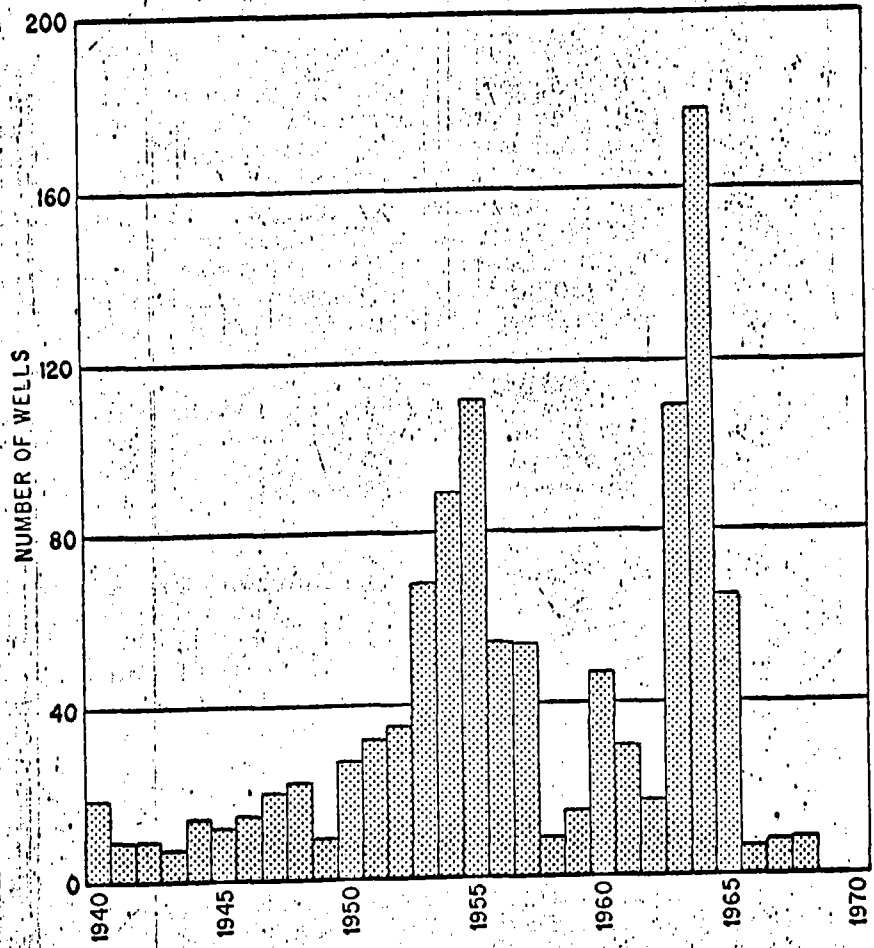
UNDERGROUND WATER  
IRRIGATION DIVISION #2

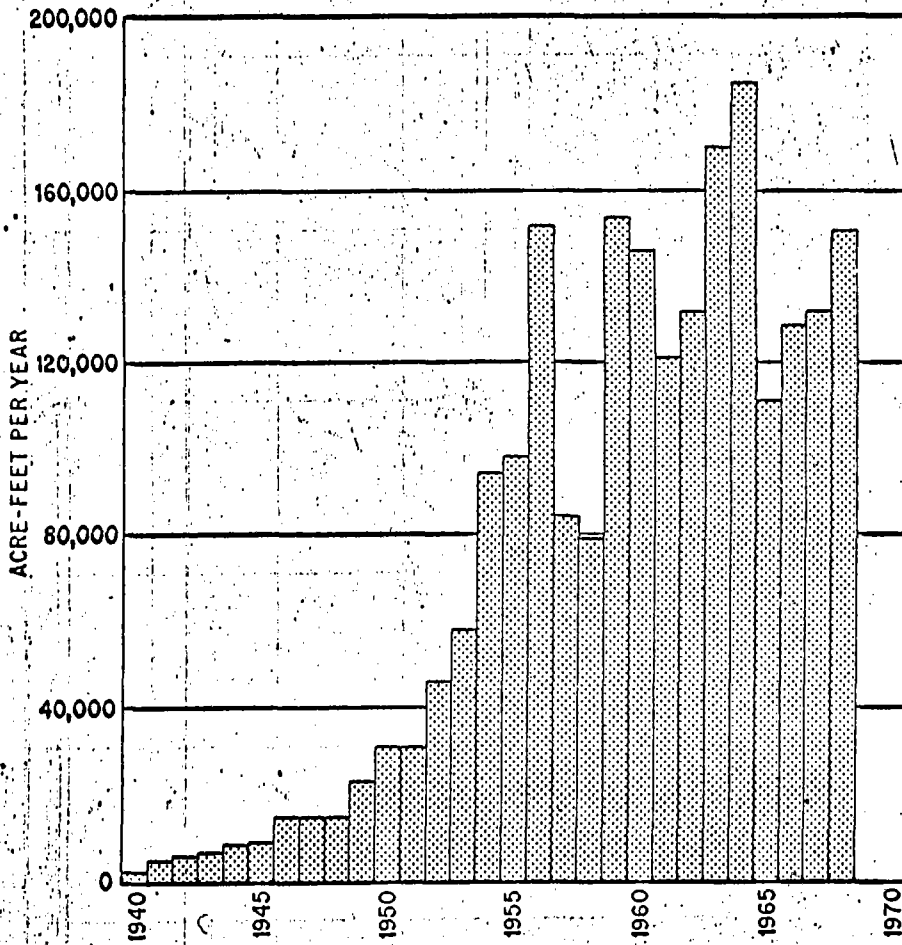
Irrigation Division #2 composed of Water Districts 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 66 and 67 has, of this date, 13,166 wells of all types in operation. Types of use are domestic, stock, domestic and stock, commercial, industrial, irrigation, irrigation and stock, and, lastly, municipal. Tabulation, showing the number of each type of well in each district is illustrated by a following table.

The principal aquifer area extends thru a 150 mile reach of the Arkansas River valley extending from Pueblo to the Kansas State line. This is a valley-fill aquifer which is adjacent to, underlies, and is in hydraulic connection with the Arkansas River. The aquifer consists of unconsolidated deposits of gravel, sand, silt and clay. It ranges from one to 14 miles in width and covers an area of about 500 square miles in parts of Pueblo, Otero, Crowley, Bent and Prowers Counties. The aquifer fills a "U-shaped" trough cut into the bedrock, which consists of shale, limestone, and sandstone of Cretaceous age. About two million acre feet of water is stored in the valley-fill deposits. Summary of the hydrologic character is shown below:

| <u>UNIT</u>          | <u>THICKNESS</u> | <u>PHYSICAL CHARACTER</u>  | <u>HYDROLOGIC CHARACTER</u>  |
|----------------------|------------------|--|--|
| Dune sand            | 0 - 100'         | Very fine to coarse, poorly sorted sand.   | Commonly not saturated, but transmits water readily from the surface to underlying aquifers. Source of water for a few domestic and stock wells.   |
| Valley-fill deposits | 0 - 300'         | Boulders, cobbles, gravel, sand, silt, and clay. Generally grades from fine sand near the surface to coarse sand and gravel at the base. | Principal source of water for irrigation, public supply, and industrial wells. Irrigation-well yields are as much as 3,150 gpm (gallons per minutes) and average 650 gpm. Aquifer furnishes water to 1,348 irrigation wells. |
| Pierre Shale         | 0 - 2,200'       | Shale and sandy shale.   | Low-permeability confining bed; acts as a barrier to vertical movement of ground water. Not known to yield water to wells.   |
| Niobrara Formation   | 0 - 700'         | Chalky and marly limestone and calcareous shale.   | Low-permeability to confining bed; acts as a barrier to vertical movement of ground water. A few stock wells tapping fractured limestone yield less than 5 gpm.  |

| <u>UNIT</u>         | <u>THICKNESS</u> | <u>PHYSICAL CHARACTER</u>                     | <u>HYDROLOGIC CHARACTER</u>   |
|---------------------|------------------|---|---|
| Carlile Shale       | 0 - 200'         | Calcareous shale, limestone, and sandstone.   | Low-permeability confining bed; acts as a barrier to vertical movement of ground water. Not known to yield water to wells.  |
| Greenhorn Limestone | 0 - 150'         | Limestone and chalky shale.                   | Low-permeability confining bed; acts as a barrier to vertical movement of ground water. A few stock wells tapping fractured limestone yield less than 5 gpm.  |
| Graneros Shale      | 0 - 200'         | Gypsiferous shale and sandstone.              | Low-permeability confining bed; acts as a barrier to vertical movement of ground water. Not known to yield water to wells.  |
| Dakota Sandstone    | 75 - 235'        | Sandstone, sandy shale, siltstone, and shale. | Important source of water for domestic, stock, and public supply wells. Restricts vertical movement of water to and from the valley-fill deposits. Wells yield as much as 100 gpm and average 20 gpm. |





SUMMARY OF WELLS  
IRRIGATION DIVISION #2

WATER DISTRICT

| <u>NO.</u> | <u>TYPE OF USE</u> |       |     |     |     |       |     |     | <u>TOTAL</u> |
|------------|--------------------|-------|-----|-----|-----|-------|-----|-----|--------------|
|            | 1                  | 2     | 3   | 4   | 5   | 6     | 7   | 8   |              |
| 10         | 2000               | 79    | 54  | 51  | 11  | 197   | 7   | 83  | 2482         |
| 11         | 609                | 8     | 0   | 44  | 6   | 25    | 5   | 14  | 711          |
| 12         | 289                | 47    | 18  | 10  | 13  | 40    | 2   | 7   | 426          |
| 13         | 57                 | 26    | 6   | -   | -   | 30    | 10  | -   | 129          |
| 14         | 1070               | 290   | 82  | 46  | 35  | 804   | 61  | 37  | 2425         |
| 15         | 345                | 38    | 17  | 3   | 1   | 105   | 13  | 13  | 535          |
| 16         | 102                | 128   | 12  | 4   | 21  | 61    | 3   | -   | 331          |
| 17         | 378                | 483   | 87  | 32  | 24  | 953   | 38  | 55  | 2050         |
| 18         | 13                 | 37    | 2   | -   | -   | 10    | 12  | 7   | 81           |
| 19         | 40                 | 144   | 12  | -   | 12  | 16    | 7   | 3   | 234          |
| 66         | 64                 | 207   | 24  | 7   | 11  | 451   | 7   | 12  | 783          |
| 67         | 108                | 1089  | 387 | 29  | 9   | 1257  | 8   | 92  | 2979         |
| 5,075      |                    | 2,576 | 701 | 226 | 143 | 3,949 | 173 | 323 | 13,166       |

TYPE OF USE

- (1) DOMESTIC
- (2) STOCK
- (3) DOMESTIC & STOCK
- (4) COMMERCIAL
- (5) INDUSTRIAL
- (6) IRRIGATION
- (7) IRRIGATION & STOCK
- (8) MUNICIPAL

Ground-water withdrawal from the  
valley-fill aquifer by irrigation wells

(acre-feet per year)

| County        | 1964    | 1965    | 1966    | 1967    | 1968    |
|---------------|---------|---------|---------|---------|---------|
| Pueblo        | 25,000  | 16,000  | 23,000  | 19,000  | 21,000  |
| Otero-Crowley | 53,000  | 36,000  | 50,000  | 48,000  | 50,000  |
| Bent          | 33,000  | 15,000  | 23,000  | 23,000  | 26,000  |
| Prowers       | 74,000  | 45,000  | 34,000  | 42,000  | 55,000  |
| Total         | 185,000 | 112,000 | 130,000 | 132,000 | 152,000 |

TRANSMOUNTAIN DIVERSIONS  
 DIVISION NO. 2  
 Tabulation 1971

| <u>Name</u>         | <u>Source</u>                                 | <u>Recipient</u>                          | <u>Amount Diverted</u><br><u>10-1-1970 to 9-30-1971</u> |
|---------------------|---|---|---|
| Homestake Tunnel    | Middle Fork<br>Homestake Creek<br>Division #5 | Cities of Colorado<br>Springs and Aurora  | 43,155 AF   |
| Wurtz Ditch         | Eagle River<br>Division #5                    | City of Pueblo                            | 3,630 AF  |
| Ewing Ditch         | Piney Creek<br>Division #5                    | City of Pueblo                            | 1,480 AF  |
| Columbine Ditch     | Eagle River<br>Division #5                    | City of Pueblo                            | 944 AF  |
| Twin Lakes Tunnel   | Roaring Fork River<br>Division #5             | Twin Lakes Reservoir<br>and Canal Company | 52,090 AF   |
| Busk Ivanhoe Tunnel | Ivanhoe Creek<br>Division #5                  | Highline Canal Co.                        | 7,500 AF  |
| Larkspur Ditch      | Tomici Creek<br>Division #4                   | Catlin Canal Co.                          | 528 AF  |
| <u>Total</u>        |   |   | <u>109,327 AF</u>                                       |

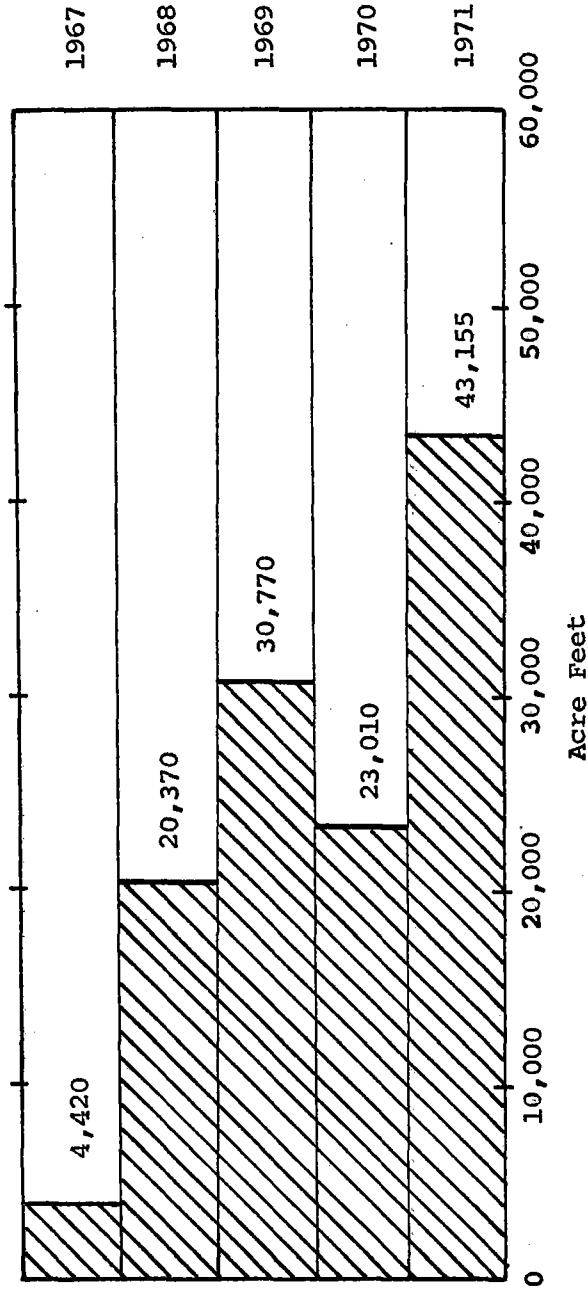
TRANSMOUNTAIN DIVERSION  
DIVISION NO. 2

HOMESTAKE TUNNEL 1971

SOURCE: Middle Fork Homestake Creek Division #5

RECIPIENT: Cities of Colorado Springs and Aurora

TOTAL AMOUNT DIVERTED IN 1971; 10-1-1970 to 9-30-1971: 43,155 AF



5 YEAR COMPARISON

Lile



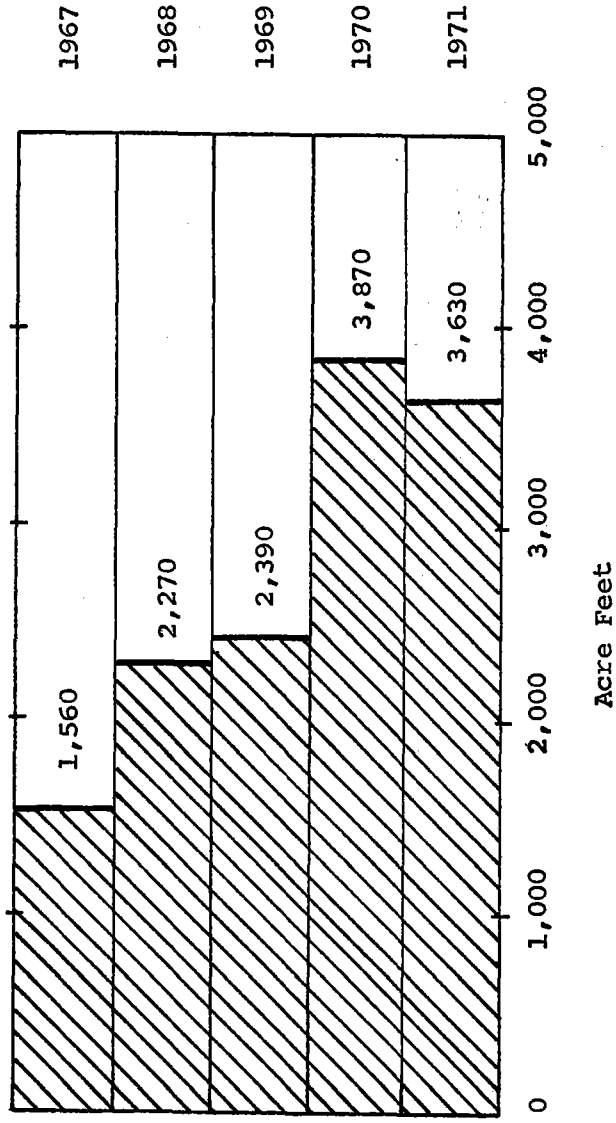
TRANSMOUNTAIN DIVERSION  
DIVISION NO. 2

WURTZ DITCH 1971

SOURCE: Eagle River Division #5

RECIPIENT: City of Pueblo

TOTAL AMOUNT DIVERTED IN 1971: 10-1-1970 to 9-30-1971: 3,630 AF



5 YEAR COMPARISON

file

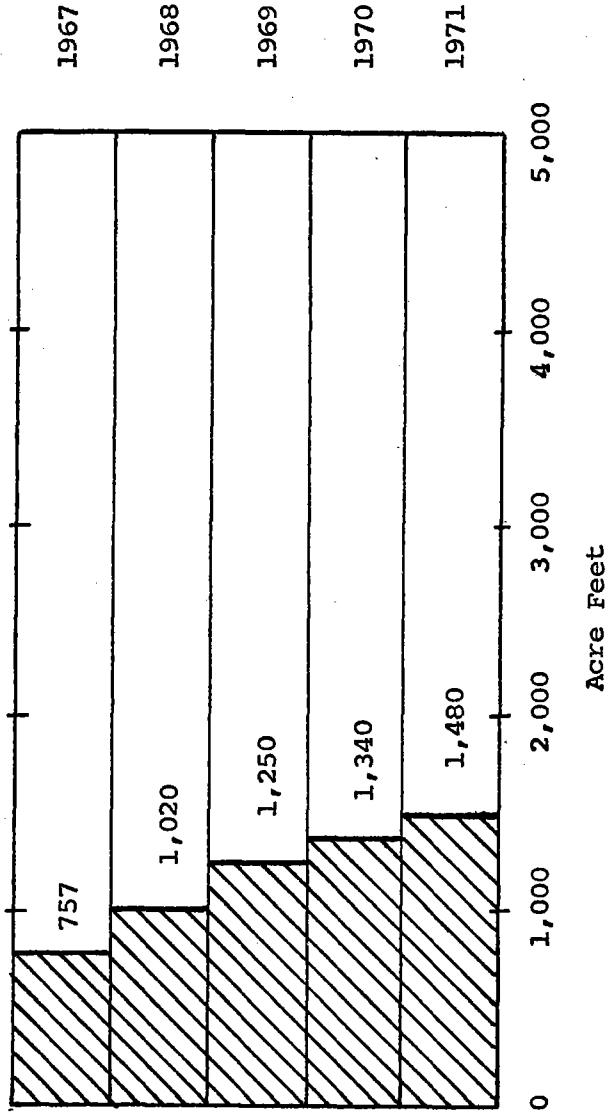
TRANSMOUNTAIN DIVERSION  
DIVISION NO. 2

EWING DITCH 1971

SOURCE: Piney Creek Division #5

RECIPIENT: City of Pueblo

TOTAL AMOUNT DIVERTED IN 1971: 10-1-1970 to 9-30-1971: 1,480 AF



5 YEAR COMPARISON

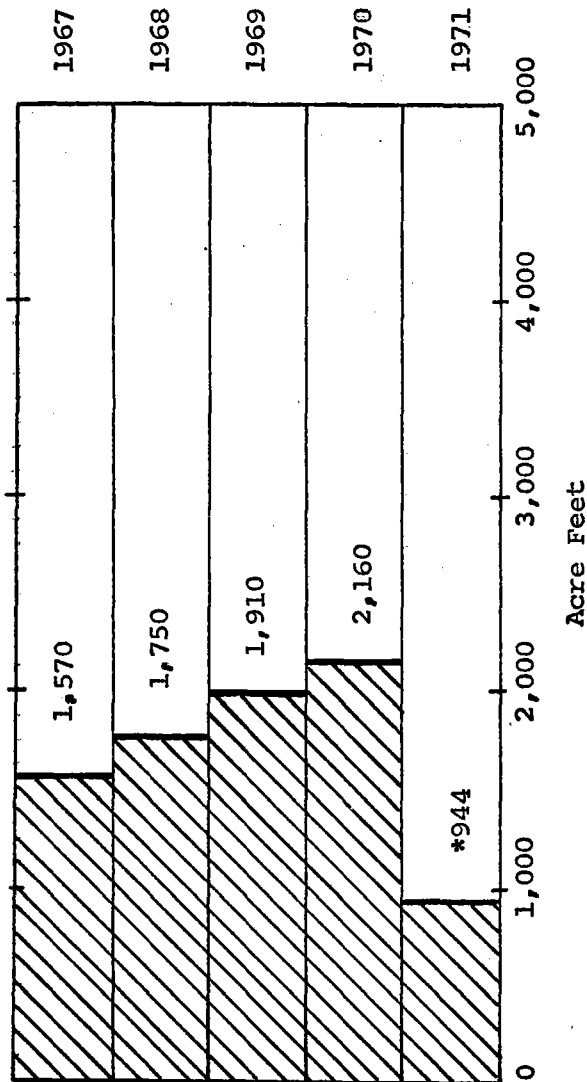
TRANSMOUNTAIN DIVERSION  
DIVISION NO. 2

COLUMBINE DITCH 1971

SOURCE: Eagle River, Division #5

RECIPIENT: City of Pueblo

TOTAL AMOUNT DIVERTED in 1971: 10-1-1970 to 9-30-1971: 944 AF



\* Ditch out for Repairs.

5 YEAR COMPARISON

File

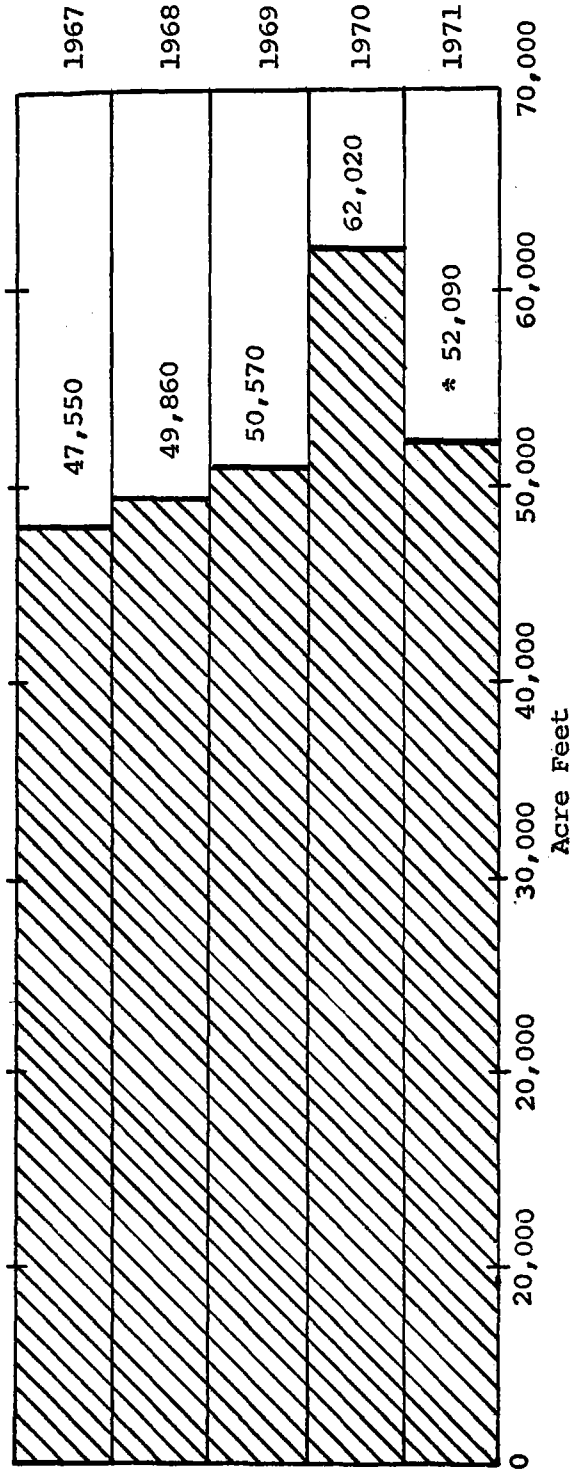
TRANSMOUNTAIN DIVERSION  
DIVISION NO. 2

SOURCE: Roaring Fork River Division #5

RECIPIENT: Twin Lakes Reservoir and Canal Company

TOTAL AMOUNT DIVERTED IN 1971: 10-1-1970 to 9-30-1971: 52,090 AF

TWIN LAKES TUNNEL 1971



5 YEAR COMPARISON

\* Tunnel under repair during winter.

Life

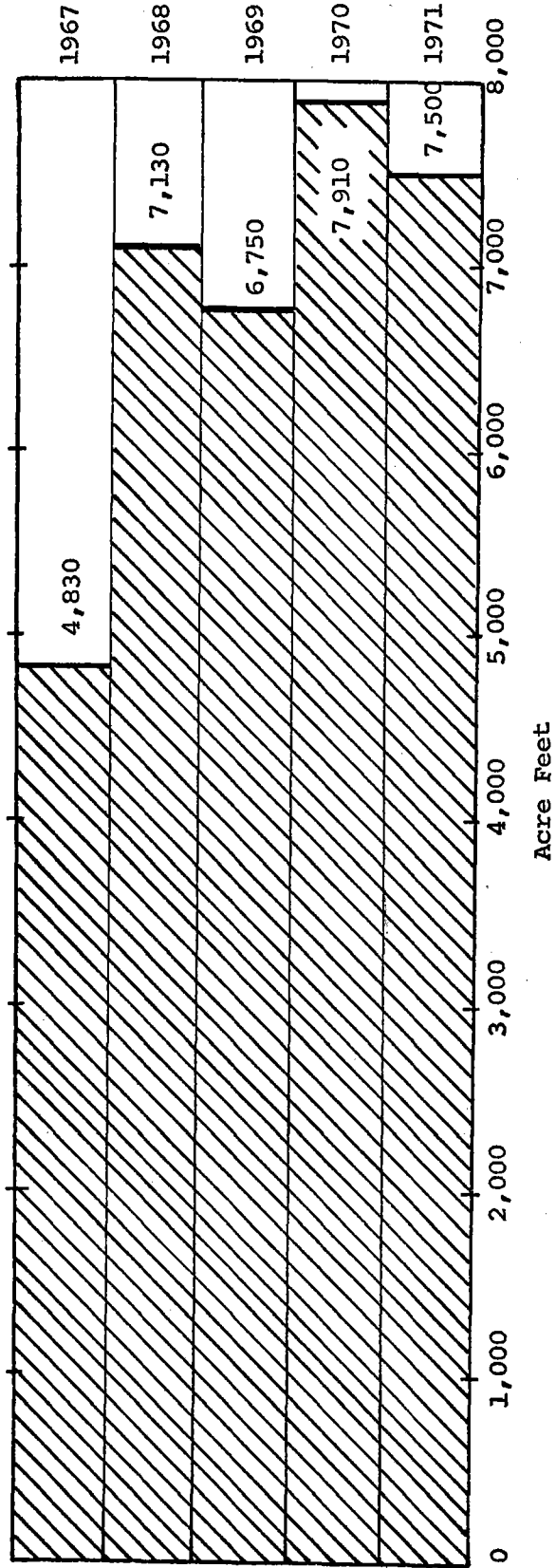
TRANSMOUNTAIN DIVERSION  
DIVISION NO. 2

SOURCE: Ivanhoe Creek Division #5

RECIPIENT: Highline Canal Co.

TOTAL AMOUNT DIVERTED IN 1971: 10-1-1970 to 9-30-1971: 7,500 AF

BUSK IVANHOE 1971



5 YEAR COMPARISON

Lile

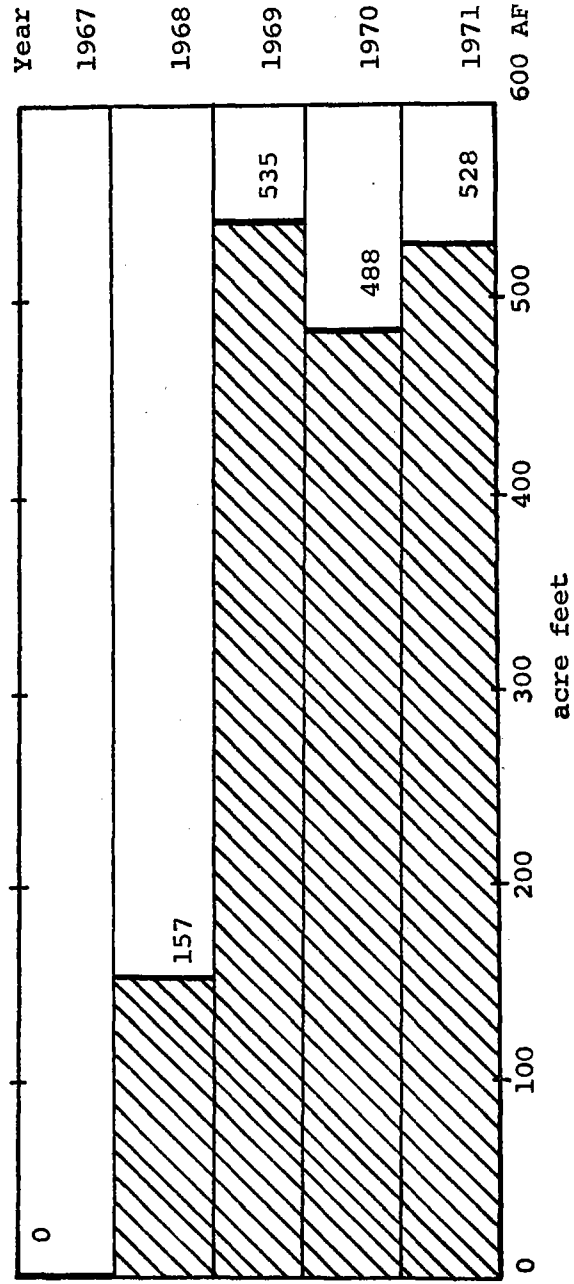
TRANSMOUNTAIN DIVERSION  
DIVISION NO. 2

LARKSPUR DITCH 1971

SOURCE: TOMICI CREEK DIVISION #4

RECIPIENT: CATLIN CANAL COMPANY

TOTAL AMOUNT DIVERTED 10-1-1970 to 9-30-1971: 528 AF

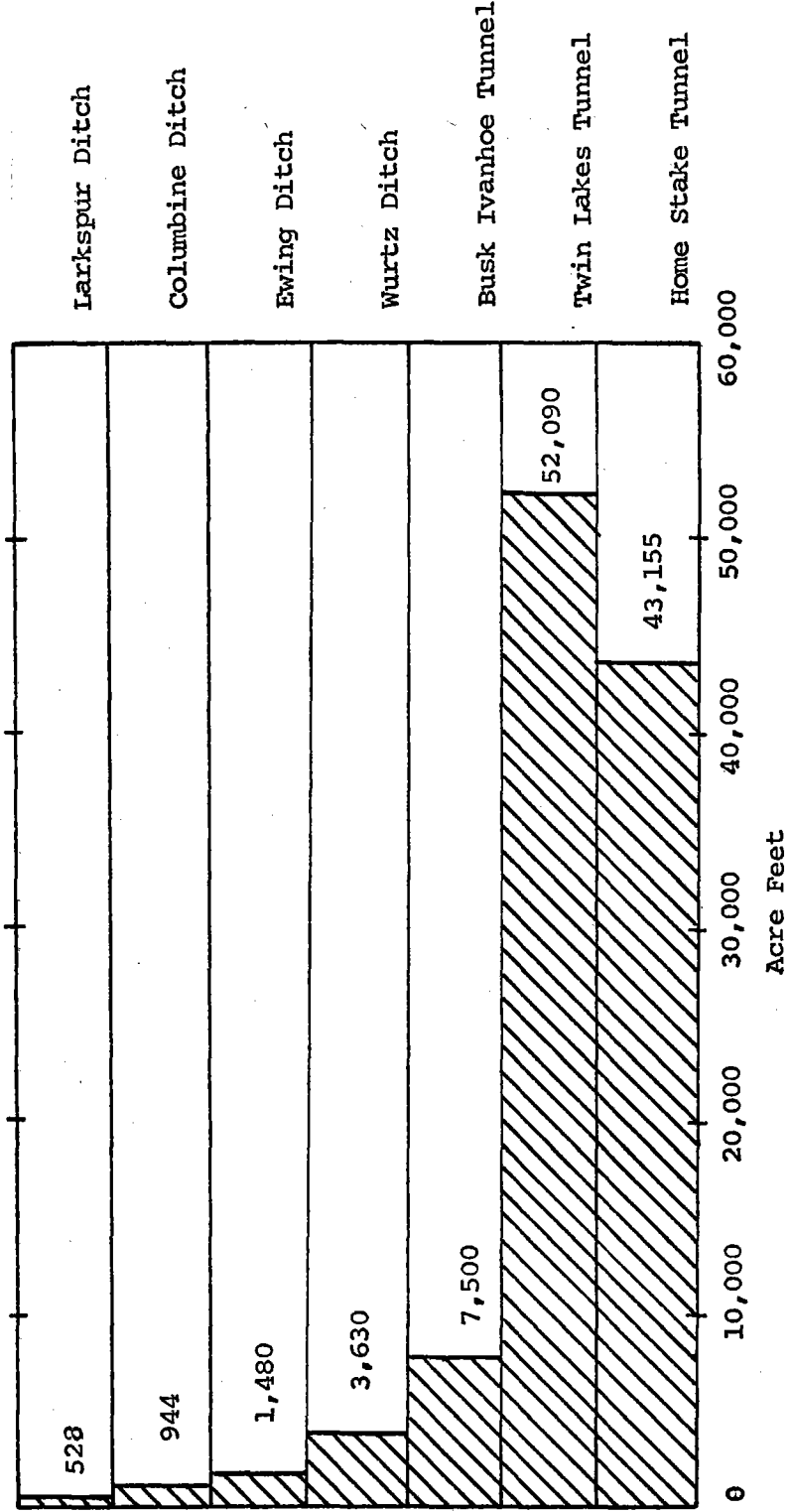


FIVE YEAR COMPARISON

Lile

TRANSMOUNTAIN DIVERSION  
DIVISION NO. 2

SUMMARY OF DIVERSION FOR  
WATER YEAR 1971



Total Amount Imported: 109,327 AF

RESERVOIR STORAGE  
IRRIGATION DIVISION #2

| NAME OF RESERVOIR       | SOURCE               | AMOUNT OF ACRE FEET |               | AMOUNT OF ACRE FEET |                  |
|-------------------------|----------------------|---------------------|---------------|---------------------|------------------|
|                         |                      | NOVEMBER 1, 1971    | APRIL 1, 1971 | APRIL 1, 1971       | OCTOBER 31, 1971 |
| Ambler Reservoir No. 2  | Unnamed springs      | 0                   | 0             | 0                   | 0                |
| Austin Bluff            | West Monument Creek  | 242                 | 250           | 250                 | 250              |
| Crystal Creek Reservoir | Crystal Creek        | 1,711               | 1930          | 2146                | 2146             |
| Lake Moraine Storage    | Ruxton Creek         | 506                 | 616           | 636                 | 636              |
| Manitou Reservoir       | No. Br. French Creek | 119                 | 176           | 176                 | 176              |
| Mesa Reservoir          | So. Fork Cheyenne    | 215                 | 225           | 231                 | 231              |
| North Catamount         | No. Fork Catamount   | 11,463              | 8192          | 9690                | 9690             |
| North Field No. 5       |                      | 24,686              | 21,597        | 1,6033              | 1,6033           |
| South Catamount         | So. Catamount        | 2,511               | 1,030         | 1,748               | 1,748            |
| Upper South Ruxton      | So. Ruxton Creek     | 514                 | 378           | 556                 | 556              |
| Callahan Reservoir      | Fountain             | 491                 | 550           | 620                 | 620              |
| Fountain Valley No. 2   | Fountain             | 1,887               | 4997          | 4402                | 4402             |
| Fountain Valley No. 3   | Fountain             | 0                   | 0             | 0                   | 0                |
| Spring Run 2            | Spring Run           | 1,650               | 227           | 275                 | 275              |
| Monutmen State          | Monument Creek       | 243                 | 250           | 250                 | 250              |
| Sugar Loaf Reservoir    | Lake Fork Creek      | 43,804              | 42,846        | 37,669              | 37,669           |
| O'Haver                 | Grays Creek          | No Diversion        |               | 197                 | 197              |
| Twin Lakes Reservoir    | Lake Creek           | 41,740              | 35,211        | 29,173              | 29,173           |
| Clear Creek Reservoir   | Clear Creek          | 1,126               | 10,150        | 8,720               | 8,720            |
| Colorado Springs No. 2  | Beaver Creek         | 541                 | 541           | 541                 | 541              |
| Colorado Springs No. 4  | Beaver Creek         | 1,820               | 1,965         | 1,965               | 1,965            |
| Colorado Springs No. 5  | Beaver Creek         | 1,900               | 1,934         | 1,934               | 1,934            |
| Colorado Springs No. 7  | Beaver Creek         | 164                 | 191           | 191                 | 191              |
| Colorado Springs No. 8  | Beaver Creek         | 533                 | 669           | 669                 | 669              |
| Lake Moraine            | Beaver Creek         | 667                 | 667           | 667                 | 667              |
| Rosemont Renrose        | Beaver Creek         | 2,307               | 2,456         | 2,508               | 2,508            |
| Brush Hollow            | Beaver Creek         | 861                 | 4,127         | 3,780               | 3,780            |
| Skaguay                 | Beaver Creek         | 1,593               | 1,593         | 1,593               | 1,593            |
| Mt. Pisgah              | Four Mile Creek      | 869                 | 2,338         | 2,338               | 2,338            |
| DeWeese Dye             | Grape Creek          | 2,621               | 4,456         | 3,384               | 3,384            |
| Curiton                 | Springs              | 6.80                | 6.80          | 6.80                | 6.80             |
| H.O.P.                  | Springs              | 40.0                | 40.0          | 40.0                | 40.0             |
| Greenview               | Fountain             | 0                   | 19.70         | 0                   | 0                |



NAME OF RESERVOIR      SOURCE      AMOUNT OF ACRE FEET NOVEMBER 1, 1971      AMOUNT OF ACRE FEET APRIL 1, 1971      AMOUNT OF ACRE FEET OCTOBER 31, 1971

| NAME OF RESERVOIR   | SOURCE                 | AMOUNT OF ACRE FEET NOVEMBER 1, 1971 | AMOUNT OF ACRE FEET APRIL 1, 1971 | AMOUNT OF ACRE FEET OCTOBER 31, 1971 |
|---------------------|------------------------|--------------------------------------|-----------------------------------|--------------------------------------|
| Lake Minnequa       | St. Charles            | 1,008                                | 1,071                             | 995                                  |
| Reservoir No. 2     | St. Charles            | 2,513                                | 2,330                             | 2,419                                |
| Reservoir No. 3     | St. Charles            | 7,497                                | 7,590                             | 6,987                                |
| Hayden (Beckwith)   | Greenhorn              | 543                                  | 846                               | 771                                  |
| Arnold Flood Water  | Santa Clara            | 30.00                                | 30.00                             | 50.00                                |
| Bressan No. 1       | Unnamed Arroya         | 8.00                                 | 8.00                              | 8.00                                 |
| Bressan No. 2       | Unnamed Arroya         | 6.00                                 | 6.00                              | 6.00                                 |
| Brunelli No. 1 & 2  | Bear Creek             | 30.00                                | 60.00                             | 50.00                                |
| Butte               | Cucharas               | 22.00                                | 22.00                             | 22.00                                |
| Chicosa No. 4 & 5   | Huerfano               | -                                    | 150.00                            | 0                                    |
| Coler (Martin Lake) | Cucharas               | 1,734                                | 2,292                             | 2,205                                |
| Cucharas Valley     | Cucharas               | 796                                  | 1,960                             | 485                                  |
| Holita              | Cucharas               | 111                                  | 305                               | 150                                  |
| Huerfano Valley     | Huerfano               | 1,529                                | 556                               | 1,529                                |
| La Joy              | Cucharas               | 50                                   | 175                               | 175                                  |
| Maria-Stevens       | Cucharas               | 1,500                                | 1,500                             | 1,500                                |
| Mosco               | Poison Canon           | 300                                  | 300                               | 300                                  |
| Sharps Orchard      | Cucharas               | 75                                   | 75                                | 75                                   |
| Sierra Blanca       | Decker Creek           | 150                                  | 150                               | 150                                  |
| Sunnyside           | Santa Clara            | 70                                   | 70                                | 70                                   |
| Valdez              | Santa Clara            | 1,500                                | 1,800                             | 1,500                                |
| Vories              | Cucharas               | 12                                   | 12                                | 12                                   |
| Wilson              | Sheep Creek            | 35                                   | 35                                | 35                                   |
| Zan                 | Apache Creek           | 0                                    | 200                               | 200                                  |
| Meredith            | Arkansas River         |                                      | 25,400                            | 8,521                                |
| Adobe Creek         | Arkansas River         | 14,590                               | 40,884                            | 24,138                               |
| Dye                 | Arkansas River         | 0                                    | 1,595                             | 2,196                                |
| Henry               | Arkansas River         | 0                                    | 7,326                             | 2,895                                |
| Holbrook            | Arkansas River         | 0                                    | 6,160                             | 1,124                                |
| Horse Creek         | Arkansas River         | 0                                    | 9,331                             | 3,206                                |
| Model               | Arkansas River         | 95                                   | 1,300                             | 1,154                                |
| North               | Purgatoire             | 3,709                                | 3,709                             | 3,798                                |
| Monument            | Middle Fork Purgatoire | 1,674                                | 1,675                             | 1,674                                |
| Russel              | Chanley Arroya         | 60                                   | 70                                | 60                                   |
| Hermosa             | San Francisco Creek    | 0                                    | 0                                 | 0                                    |
| Great Plains        | Arkansas River         | 22,736                               | 106,682                           | 92,667                               |
| Nee Skah            | Arkansas River         | 9,170                                | 19,172                            | 9,801                                |
| Thurston            | Arkansas River         | 2,592                                | 2,872                             | 2,592                                |
| John Martin         | Arkansas River         | 0                                    | 29,526                            | 2,691                                |
| Two Buttes          | Two Butte Creek        | 11,322                               | 12,180                            | 13,962                               |
| Total               |                        | 317,488                              | 424,582                           | 238,304                              |

AGRICULTURE  
IRRIGATION DIVISION #2

| COUNTY     | LAND AREA (1000 A) | NO. OF FARMS | LAND IN FARMS (1000 A) |           | LAND IRRIGATED ACRES | WHEAT   |        | OATS  | BARLEY |
|------------|--------------------|--------------|------------------------|-----------|----------------------|---------|--------|-------|--------|
|            |                    |              | TOTAL                  | CROP LAND |                      | FARMS   | WINTER |       |        |
| Alameda    | 1,642              | 750          | 1,430                  | 847       | 56,910               | 42,000  | 250    | -     | 600    |
| Bent       | 971                | 450          | 917                    | 145       | 45,292               | 9,000   | 50     | 230   | 370    |
| Chaffee    | 665                | 170          | 160                    | 24        | 16,126               | -       | -      | 200   | 100    |
| Crowley    | 514                | 400          | 490                    | 105       | 25,010               | 1,150   | 80     | 90    | 80     |
| Huster     | 472                | 180          | 280                    | 28        | 15,930               | 160     | 50     | 650   | 210    |
| El Paso    | 1,381              | 750          | 1,050                  | 200       | 13,630               | 17,000  | 450    | 1,800 | 600    |
| Remont     | 1,000              | 550          | 493                    | 30        | 14,920               | 550     | 30     | 80    | 270    |
| Huerfano   | 1,010              | 280          | 800                    | 48        | 11,453               | 3,300   | 10     | 220   | 250    |
| Iowa       | 1,147              | 350          | 1,080                  | 600       | 5,127                | 38,000  | 300    | -     | -      |
| Kit Carson | 1,389              | 840          | 1,340                  | 776       | 56,576               | 165,000 | 300    | 900   | 1,400  |
| Lake       | 243                | 17           | 28                     | 6         | 6,036                | -       | -      | -     | -      |
| Las Animas | 3,068              | 600          | 2,781                  | 130       | 19,463               | 3,940   | 70     | 290   | 140    |
| Otero      | 811                | 690          | 630                    | 87        | 57,675               | 3,400   | 100    | 460   | 720    |
| Prowers    | 1,041              | 729          | 1,030                  | 530       | 93,044               | 30,500  | -      | 130   | 710    |
| Queblo     | 1,537              | 800          | 1,362                  | 151       | 35,749               | 11,000  | 160    | 350   | 1,250  |
| Seller     | 355                | 70           | 155                    | 8         | 865                  | -       | -      | -     | -      |

| CORN         |       | SORGHUMS     |        | SUGAR BEETS | DRY BEANS | POTATOES | BROOM CORN | ALFALFA | HAY      |       | ALL HA |
|--------------|-------|--------------|--------|-------------|-----------|----------|------------|---------|----------|-------|--------|
| GRAIN SILAGE |       | GRAIN SILAGE |        |             |           |          |            |         | WILD HAY |       |        |
| 10,500       | 200   | 90,000       | 49,500 | 640         | 100       | 100      | 35,700     | 2,100   | 100      | 100   | 7,900  |
| 1,100        | 1,000 | 17,500       | 7,300  | 460         | -         | 40       | -          | 23,500  | 250      | 250   | 25,150 |
| -            | -     | -            | -      | -           | -         | -        | -          | 5,800   | 480      | 480   | 9,280  |
| 1,700        | 2,900 | 9,600        | 740    | 550         | 750       | 20       | -          | 12,500  | 650      | 650   | 13,750 |
| -            | 50    | -            | 130    | -           | -         | -        | -          | 2,300   | -        | -     | 28,300 |
| 3,300        | 4,000 | 3,400        | 2,100  | -           | 2,900     | -        | -          | 12,500  | 3,500    | 3,500 | 22,900 |
| 280          | 280   | 100          | 170    | -           | -         | -        | -          | 5,000   | 850      | 850   | 8,350  |
| 50           | 110   | -            | 280    | -           | -         | 10       | -          | 5,100   | 800      | 800   | 7,400  |
| 190          | 110   | 38,000       | 15,600 | 50          | -         | -        | -          | 800     | 500      | 500   | 10,000 |
| 27,300       | 9,100 | 15,000       | 22,300 | 2,200       | 1,900     | -        | -          | 5,200   | 1,300    | 1,300 | 20,500 |
| -            | -     | -            | -      | -           | -         | -        | -          | -       | 1,300    | 1,300 | 1,900  |
| 270          | 660   | 1,000        | 4,720  | -           | -         | -        | 200        | 12,000  | 950      | 950   | 13,850 |
| 4,600        | 5,700 | 3,800        | 1,660  | 1,530       | 1,100     | 660      | -          | 14,500  | 50       | 50    | 15,150 |
| 1,100        | 1,500 | 95,600       | 41,010 | 3,430       | 50        | 20       | 100        | 35,500  | -        | -     | 37,200 |
| 4,900        | 1,800 | 7,400        | 4,790  | 3,390       | 12,600    | 100      | -          | 13,500  | 350      | 350   | 17,950 |
| -            | -     | -            | -      | -           | -         | -        | -          | 50      | 550      | 550   | 2,000  |

ARKANSAS RIVER COMPACT  
Irrigation Division #2

- A. The general principle of this Compact is the division of the benefits of the reservoir storage on the basis of the maximum rates of flow, 750 C.F.S. or 60% to Colorado and 500 C.F.S. or 40% to Kansas, out of available storage water in the reservoir. Colorado having an advantage of using all accretions and return flow at the State line to make up Kansas' 40% share at the State line (i.e., assuming Kansas called for 500 C.F.S. release of stored water and there was 250 C.F.S. of other water crossing the State line, then only a sufficient flow necessary to develop a flow of 500 C.F.S. need be released from storage. Consequently, if each State continued to call for maximum releases at the same time, Colorado would always have the advantage of such return flow and accretions at the State line, which would actually result in Colorado's share being larger than 60% and Kansas less than 40%.
- B. Reservoir operation is divided into two general periods:
- (1) Winter storage from November 1 to March 31, period during which all water flowing into the reservoir shall be stored up to the conservation capacity limit. Exception is that Colorado may call up to 100 C.F.S. limited to the river flow entering the reservoir for stock pond and other winter uses.
  - (2) Summer storage from April 1 to October 31, when all water entering the reservoir up to conservation capacity limit shall be stored, provided that if river volume flow is sufficient, Colorado can call the first 500 C.F.S. but Kansas is limited to what river flow may be available in excess of Colorado's maximum, but in no event more than 250 C.F.S. Again, Colorado has the advantage of using return flow and accretions at the State line to make up Kansas share of such river flow.
- C. Releases of stored water are limited to the summer storage period of April 1 to October 31 and the following criteria is to be observed:
- (1) Releases may be made simultaneously upon the demands of either/or both States.
  - (2) Water released upon concurrent/separate demands shall be applied promptly to beneficial use unless downstream storage is authorized.
  - (3) There shall be no allowance or accumulation of credits or debits for or against either State.
  - (4) Releases, excepting periods when all Colorado water users are operating under decreed priorities, shall not impose any call on Colorado water users that divert from the river above the Reservoir.

- D. When storage water is available in the reservoir, Colorado shall not administer diversions on a decreed priority basis, but user above the reservoir may divert without regard to the decreed priorities in Colorado below the reservoir and at the same time users in Colorado below the reservoir may divert in accordance with any distribution agreement in effect at that time.
- E. Whenever the reservoir becomes empty, the river administration will revert back to the decreed priority basis as though the reservoir had never been constructed. Kansas shall not be entitled to any portion of the river flow entering the reservoir.
- F. If usable quantity and availability for use of the Arkansas River waters in Colorado Water District No. 67 and Kansas will be materially depleted or adversely affected then;
- (1) Present decreed priority rights in Water District No. 67 shall not be transferred to other water districts or to any points of diversion above the reservoir.
  - (2) Present ditch diversions in Water District No. 67 and Kansas shall not be increased beyond the total present rights without administration findings of fact that no depletion or adverse effect will result from such proposed transfer or increase.
- G. There are no particular problems in the operation of the Compact, however, it should be mentioned that the presence of the reservoir on the main Arkansas River provides for poor management on the river during periods that the reservoir is dry. Due to the necessity of passing large volumes of water from Water District No. 17 thru a large, sandy, dry reservoir bed to deliver a small amount of water into Water District No. 67 causes an enormous waste. There should, in some manner, be established in John Martin Reservoir some type of a permanent pool and, also, a debit-credit system for Water District No. 67 water users.

DAMS  
IRRIGATION DIVISION #2

| WATER DISTRICT | NAME OF RESERVOIR          | STREAM          | DAM HEIGHT | INSPECTION |
|----------------|----------------------------|-----------------|------------|------------|
| 10             | Fountain Valley #2         | Fountain        | Over 35'   | None       |
|                | Fountain Valley #3         | Fountain        | Over 35'   | None       |
|                | Monument                   | Monument Crk.   | Over 35'   | None       |
|                | Manitou                    | French Crk.     | Over 35'   | None       |
|                | Mesa #1                    | North Cheyenne  | Over 35'   | None       |
|                | Mesa #2                    | North Cheyenne  | Over 35'   | None       |
| 11             | Sugar Loaf                 | Lake Fork       | Over 35'   | None       |
|                | Twin Lakes                 | Lake Crk.       | Over 35'   | None       |
|                | Clear Creek                | Clear Crk.      | Over 35'   | Yes        |
| 12             | Mt. Pisgah                 | Four Mile       | Over 35'   | None       |
|                | Skaguay                    | Beaver Crk.     | Over 35'   | None       |
|                | Brush Hollow               | Brush Hollow    | Over 35'   | None       |
| 13             | DeWeese Dye                | Grape Crk.      | Over 35'   | None       |
| 14             | *See Water District No. 17 |                 |            |            |
| 15             | Hayden                     | Greenhorn       | Over 35'   | None       |
|                | Beckwith                   | Greenhorn       | Over 35'   | None       |
| 16             | Cucharas                   | Cucharas        | Over 35'   | None       |
|                | Coler                      | Cucharas        | 10' - 20'  | None       |
|                | Holita                     | Cucharas        | 10' - 20'  | None       |
|                | Horseshoe                  | Cucharas        | 20' - 35'  | None       |
|                | Orlando                    | Huerfano        | 10' - 20'  | None       |
|                | Huerfano Valley            | Huerfano        | 10' - 20'  | None       |
|                | Dotson                     | Huerfano        | 10' - 20'  | None       |
| 17             | Henry                      | Arkansas        | 10' - 20'  | Yes        |
|                | Meridith                   | Arkansas        | Over 35'   | None       |
|                | Horse Creek                | Arkansas        | Over 35'   | None       |
|                | Adobe                      | Arkansas        | 20' - 35'  | None       |
|                | Dye                        | Arkansas        | 20' - 35'  | None       |
|                | Holbrook                   | Arkansas        | 20' - 35'  | None       |
| 18             | *There are none.           |                 |            |            |
| 19             | Model                      | Las Animas      | 20' - 35'  | None       |
|                | North                      | North Fork      | 20' - 35'  | None       |
| 67             | John Martin                | Arkansas        | Over 35'   | None       |
|                | Nee No She                 | Arkansas        | Over 35'   | None       |
|                | Nee Skah                   | Arkansas        | Over 35'   | None       |
|                | Thurston                   | Arkansas        | 10' - 20'  | None       |
|                | Two Buttes                 | Two Buttes Crk. | Over 35'   | None       |

DAMS

1. There were no dam failures in Irrigation Division II during the past year.
  
2. There is only one "stop order" presently in effect in Irrigation Division II;
  1. Orlando Reservoir  
Water District 16
  
3. There are presently four "requests for plans and specifications" in Irrigation Division II;
  1. Harvey Brothers Reservoir and Tallahassee Reservoir  
Water District 12
  2. Cache Creek Reservoir  
Water District 11
  3. Lee Lake  
Water District 10
  4. Spanish Peaks Ranch  
Water District 18

LIVESTOCK WATER TANKS

APPLICATIONS FILED AND APPROVED:

|                   |       |           |
|-------------------|-------|-----------|
| WATER DISTRICT 10 | ----- | 4         |
| WATER DISTRICT 11 | ----- | 1         |
| WATER DISTRICT 12 | ----- | 16        |
| WATER DISTRICT 13 | ----- | 2         |
| WATER DISTRICT 14 | ----- | 1         |
| WATER DISTRICT 15 | ----- | 3         |
| WATER DISTRICT 16 | ----- | 8         |
| WATER DISTRICT 17 | ----- | 2         |
| WATER DISTRICT 18 | ----- | 11        |
| WATER DISTRICT 19 | ----- | 51        |
| WATER DISTRICT 66 | ----- | 2         |
| WATER DISTRICT 67 | ----- | 1         |
| TOTAL             |       | ----- 102 |

All stock pond permits or applications are forwarded to our district Water Commissioners for site investigation and then, approval.

Problems encountered in issuing stock tank permits are;

1. A. S. C. offices, and particularly the Las Animas County office, tend, in many instances, to allow construction of stock tanks prior to receiving final approval from the State Engineers Office.
2. In many instances, stock ponds are being constructed under the "Stock Pond Act" and are really being utilized as fish ponds and in some cases are actually being adjudicated.
3. The "Stock Pond Act", in my opinion has served its purpose and should be eliminated.



WATER RIGHTS  
TABULATION

Tabulation of water rights in Irrigation Division II are progressing very satisfactorily; all Water Districts (10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 66 and 67) have been tabulated manually and all transfers, etc. have been entered into the tabulation. Southern Colorado State College is now in the process of key punching and verifying a new set of cards. They estimate they will be completed by the 15th of December 1971 and estimating a month for further checking, the Division II tabulation should be ready for publication during the month of February 1972.

There are several items within the tabulation which will arise as problems requiring attention and in some cases, a Court decision. The items are:

- (1) With regard to the necessity of having an original card for each decree in which there is involved a transfer; the system will fail if there is a second transfer from a first transfer as there will be no original card for the first transfer.
- (2) In many instances, and in some water districts, water has been delivered, not only out of priority, but out of adjudication. These decrees have been tabulated strictly according to adjudication and within the adjudication, according to appropriation date. They have not been tabulated as to the method of present administration. I am of the opinion that we should select an ideal situation with a view towards a possible Court test.
- (3) With respect to the first adjudication for purposes other than irrigation, I am of the opinion that any such adjudication that did not occur specifically in 1903 then the position of that adjudication in the overall tabulation is determined strictly by its adjudication date with respect to all other adjudications.

REFEREE'S FINDINGS AND DECREES

1. The Division II Water Court is located at 308 Judicial Building, Pueblo, Colorado, and is staffed by Water Clerk Priscilla Lucero, Referees Wallace Doe and Robert Harrison and Judge William Gobin.
2. Applications for the period 1 November 1970 (Table 1) and the period 1 November 1970 to 22 November 1971 (Table 2) are tabulated below;

| <u>Type of Application</u>   | <u>Table 1</u> | <u>Table 2</u> | <u>Total</u> |
|------------------------------|----------------|----------------|--------------|
| 1. Underground Water Rights  | 20             | 275            | 295          |
| 2. Change of Water Right     | 8              | 40             | 48           |
| 3. Plan of Augmentation      | 0              | 1              | 1            |
| 4. Water Right               | 26             | 40             | 66           |
| 5. Diligence (Cond. Decrees) | 15             | 0              | 15           |
| 6. Water Storage Rights      | 14             | 36             | 50           |
| 7. Complaints                | <u>0</u>       | <u>2</u>       | <u>2</u>     |
| TOTAL                        | 83             | 394            | 477          |

As of 22 November 1971, we have received 451 applications of all types. The total of 451 applications varies from the 477 shown above due to the fact that some applications are asking for more than one type of of decree, i.e., application for an underground water right and a storage right.

Applications for Underground Water Rights far exceed the other types of applications as indicated above; however, this is primarily due to well owners adjudicating domestic wells. There are very few large, irrigation wells being adjudicated. Plans for Augmentation presented to-date is one (1) and it has been presented by the Gates Development Company for a housing development south and adjacent to the City of Colorado Springs. Applications for Water Rights (Surface) are those primarily from applicants wishing to adjudicate springs. Applications for Water Storage Rights are primarily applicants desiring to store domestic well decrees and spring decrees for the purpose of creating "fish ponds." Complaints have been filed by the Division Engineers Office in two instances; one for illegal diversion and one for illegal diversion and storage.

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3. COMMENTS ON WATER COURT OPERATIONS

The Water Referee's seem to be operating under the illusion that they have to approve all applications irregardless of requests contained within the application.

Consultation between the Water Referee and the Division Engineer is a joke, Referee's rulings are completed before any consultations are held and furthermore; objections by the Division Engineer are not fully considered in the Referee's rulings. The system, as presently being carried out, is a waste of time and money both on the part of the Division Engineer and the Water Court.

Money expended by the Division Engineers Office and/or the State Engineers Office in implementing Senate Bill 81 with regard to the operations of the Water Court should be charged to the Judicial Branch and not taken from the budget of either the Division Engineers Office and/or the State Engineers Office.

The position of Water Referee is classified as a Grade 39 while the job of the Division Engineer is a Grade 36; it is incomprehensible that such a spread between these grades exists since the Division Engineer performs exactly the same duties as the Water Referee with the exception of writing the rulings which in any event are performed by the Water Clerk. In addition, the Division Engineer is charged with his regular duties of administration of an entire Division. This matter should be brought to the attention of both the Civil Service Commission and the Legislature.

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On two occasions, the Division Engineers Office has found it necessary to file charges against two separate water users for illegal diversions and illegal storage and dam construction; and in attempting to bring the matter into Court in accordance with the provisions of Senate Bill 81 we have become thoroughly disenchanted with the required procedure. Senate Bill 81 should be amended in such a manner that would permit the Division Engineers Office to resolve such an occurrence within several days and not the 4-5 months as we have witnessed.

There should be designed a new index card for use in indexing all the pertinent data of each decree, both past, present and future, and the indexing should be at a rate equal to the decrees now being issued by the Water Court. To date, with 477 filed water cases, we have not indexed a single decree.

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James E. Wagner, No. 1 Cedar Hills, Lamar, Colorado 81052

J. Selby Young, 2915 Marilyn Road, Colorado Springs, Colorado 80909

PURGATOIRE RIVER WATER  
CONSERVANCY DISTRICT  
901 Park  
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John Monteleone, Jansen, Colorado 81048

John Myers, Hoehney, Colorado 81046

Arthur G. Winter, Trinidad, Colorado 81082

WATER RELATED ORGANIZATIONS

IRRIGATION DIVISION NO. 2  
Pueblo, Colorado

A.J. Anderson Irrigation Company, Charles Haberman, Rt. 1, La Junta, Colorado 81050  
Avondale Water & Sanitation District, Mrs. Gloria Vialpando, President, P.O. Box 77,  
Avondale, Colorado 81022  
Beaver Park Water Company, Nick Goodell, Penrose, Colorado 81240  
Beehive Water Association, John F. Watters, Cheraw, Colorado 81030  
Bent's Fort Water Association, Walter V. Henning, President, 105 Ash, La Junta,  
Colorado 81050  
Bessemer Irrigating Ditch Company, A.N. Dallimore, 711 Thatcher Building, Pueblo,  
Colorado 81003  
Booth-Orchard Grove Ditch Company, Elbert L. Hawkind, Superintendent, 202 Neilson,  
Pueblo, Colorado 81004  
Canon City Oil Creek Ditch Company, L. Peterson, President, Canon City, Colorado 81212  
Canon Heights Irrigation Company, E.B. Woodford, Secretary, 609 River, Canon City,  
Colorado 81212  
Canon City Hydraulic Irrigating Company, E. Carpenter, President, Harrison Building,  
Canon City, Colorado 81212  
Catlin Canal Company, Wayne W. Whittaker, P.O. Box 352, Rocky Ford, Colorado 81067  
Collier Ditch Company, John Stahl, Rt. 1, Box 26, Boone, Colorado 81025  
Crowley County Water Association, Harley Ruscher, President, P.O. Box 487, Ordway,  
Colorado 81063  
DeWeese Dye Ditch Company, William McDermott, 1675 Chesnut, Canon City, Colorado 81212  
East End Water Company, Harry Froese, Secretary, Rt. 2, La Junta, Colorado 81050  
Eureka Water Company, Ralph Read, P.O. Box 5, Rocky Ford, Colorado 81067  
Excelsior Ditch Company, G.C. Van Galder, Superintendent, Rt. 2, Box 231, Pueblo,  
Colorado 81004  
Fayette Water Association, John Schweizer, Jr., Secretary, Rt. 1, Box 311, Rocky  
Ford, Colorado 81067  
Fort Lyons Canal Company, Perry Hill, Rt. 2, Las Animas, Colorado 81054  
Fremont County Ditch Company, Lola McBeth, 106 S. Pikes Peak Avenue, Florence,  
Colorado 81226  
Hasty Water Company, Earl Eckerett, Hasty, Colorado 81044  
Highland Water & Supply Company, Frank Vance, President, Blende, Pueblo, Colorado 81004  
Hilltop Water Company, Jerry Clevenger, Secretary, Rocky Ford, Colorado 81067  
Holbrook Center Soft Water, J.B. Shenk, Secretary, Cheraw, Colorado 81030  
Holbrook Mutual Irrigation Company, Neal Marlin, Rt. 2, La Junta, Colorado 81050  
Las Animas Consolidated Ditch Company, Delbert Wallace, Rt. 1, Box 19, Las Animas,  
Colorado 81054  
Lombard Village Water Association, Levi Martinez, Attorney at Law, Thatcher Building,  
Pueblo, Colorado 81003  
May Valley & Pleasant Valley Water Association, Leonard Courkamp, Wiley, Colorado 81092  
McClave Water Association, Harold Falconburg, McClave, Colorado 81057  
Newdale-Grand Valley Company, Ernest P. Campbell, President, Rt. 2, Box 292, Rocky  
Ford, Colorado 81067  
Otero Canal Company, Earl Beegles, Box 980, La Junta, Colorado 81050  
Oxford-Farmers Ditch Company, George Henrie, Fowler, Colorado 81039

Park Center Water District, George Smith, P.O. Box 860, Canon City, Colorado 81212  
Patterson Valley Water Company, David E. Smith, Treasurer, Rt. 1, Rocky Ford,  
Colorado 81067  
Penrose Water District, Orlin Fields, Secretary-Treasurer, 1102 South S Street,  
Penrose, Colorado 81240  
96 Pipeline Company, Warren B. Arbuthnot, President, Ordway, Colorado 81063  
Pueblo Board of Water Works, Foster Burba, Executive Director, P.O. Box 400,  
Pueblo, Colorado 81002  
Riverside Water Company, Edward T. Jung, Secretary, Rt. 1, Box 100, Rocky Ford,  
Colorado 81067  
Rocky Ford Ditch Company, George A. Watson, Rt. 1, Manzanola, Colorado 81058  
Salt Creek Water & Sanitary District, Endelegio Garcia, 1022 Palo Alto Street,  
Pueblo, Colorado 81004  
Security Water District, Thomas K. Remple, 231 Security Blvd., Security, Colorado 80911  
South Canon Ditch Company, John Griffin, President, P.O. Box 213, Canon City,  
Colorado 81212  
Southside Water Association, John Evers, President, RR 2, La Junta, Colorado 81050  
South Swink Water Company, Fred Trimble, Secretary, La Junta, Colorado 81050  
St. Charles Mesa Water Association, Lee Simpson, Manager, Roselawn Road, Pueblo,  
Colorado 81004  
Stratmoor Hills, J. Fred Abrahamson, 311 Catilima Drive, Stratmoor Hills, Colorado  
80901  
Sugar City Pipeline Company, Henry Herman, Jr., Secretary, Sugar City, Colorado 81076  
Twin Lakes Reservoir & Canal Company, Thomas McCurdy, Rt. 1, Box 165, Olney Springs,  
Colorado 81062  
Union Ditch Company, Erick A. Roberts, 106 E. Main, Florence, Colorado 81226  
Valley Water Company, Albert Stover, Secretary, Manzanola, Colorado 81058  
Vroman Water Company, Albert Stover, Secretary, Manzanola, Colorado 81058  
West Grand Valley Water, Inc., Blaine Malott, Box 182, Rocky Ford, Colorado 81067  
West Holbrook Pipeline Company, Roy Wadleigh, Secretary, Rt. 2, Box 302, La Junta,  
Colorado 81050  
West Pueblo Ditch Company, Bob Prendengast, Superintendent, Hyde Park Dairy, P.O.  
Box 397, Pueblo, Colorado 81002  
Widefield Homes Water & Sanitation, James C. Perry, Sr., 3 Widefield, Widefield,  
Colorado 80911

SUMMARY-WATER COMMISSIONERS ANNUAL REPORTS  
IRRIGATION DIVISION II  
1971

| WATER DISTRICT NUMBER | TOTAL DIVERTED ACRE FEET | RESERVOIR STORAGE 1 NOVEMBER 1971 | TOTAL ACRES IRRIGATED | NUMBER OF DITCHES | NUMBER OF RESERVOIRS | AVERAGE DEMAND AF/ACRE |
|-----------------------|--------------------------|-----------------------------------|-----------------------|-------------------|----------------------|------------------------|
| 10                    | 60,450                   | 46,342 AF                         | 22,525                | 184               | 79                   | 2.68                   |
| 11                    | 132,103                  | 88,317 AF                         | 20,334                | 309               | 6                    | 6.50                   |
| 12*                   | 319,210                  | 11,255 AF                         | 18,415                | 335               | 14                   | 17.30                  |
| 13                    | 37,000                   | 2,621 AF                          | 21,228                | 529               | 1                    | 1.74                   |
| 14                    | 322,223                  | 47 AF                             | 109,931               | 244               | 25                   | 2.93                   |
| 15**                  | 39,937                   | 11,561 AF                         | 5,541                 | 133               | 7                    | 7.20                   |
| 16                    | REPORT NOT AVAILABLE     |                                   |                       |                   |                      |                        |
| 17                    | 500,207                  | 14,590 AF                         | 204,310               | 139               | 63                   | 2.45                   |
| 18                    | 2,454                    | 0 AF                              | 2,262                 | 54                | 1                    | 1.08                   |
| 19                    | 33,412                   | 5,538 AF                          | 12,387                | 213               | 20                   | 2.70                   |
| 66                    | 1,150                    | 0 AF                              | 312                   | 15                | 0                    | 3.68                   |
| 67                    | 229,974                  | 11,322 AF                         | 67,840                | 157               | 20                   | 3.39                   |
| TOTAL                 | 1,678,120                | 191,593 AF                        | 485,085               | 2,312             | 236                  | 3.46                   |

\* The amount diverted includes 167,319 AF for Power and Industrial Use. 151,891 AF could be considered as being applied to land which yields 8.20 AF/acre.

\*\* The amount diverted includes 17,996 AF for Industrial Use. 21,941 AF could be considered as being applied to land which yields 3.96 AF/acre.