

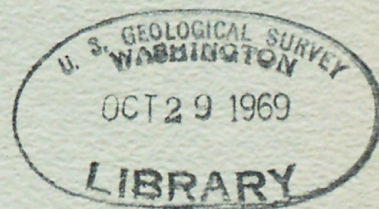
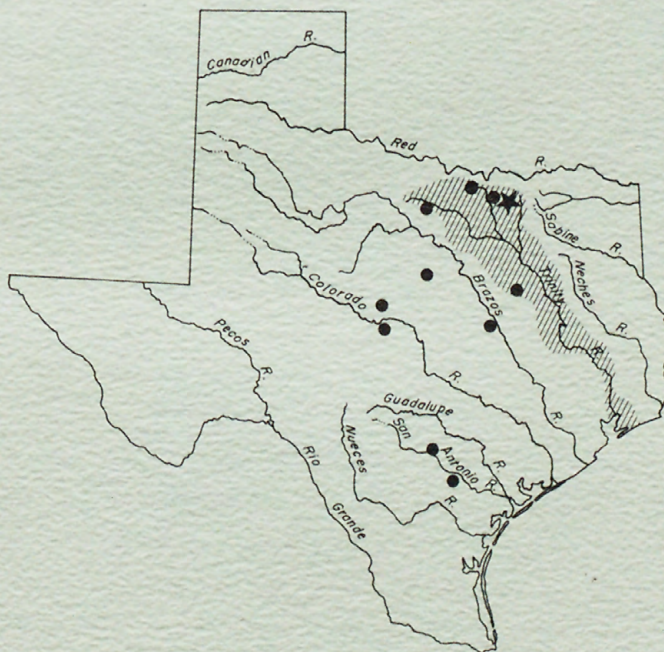
(206)  
WR 3ch h  
1967

# Compilation of Hydrologic Data Honey Creek, Trinity River Basin, Texas 1967

UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY-WATER RESOURCES DIVISION

Texas District

Trigg Twichell, District Chief



*Prepared in cooperation with Texas Water Development  
Board and Soil Conservation Service*





(200)  
WR3 *chk*  
1967

UNITED STATES DEPARTMENT OF THE INTERIOR  
Geological Survey - Water Resources Division

COMPILATION OF HYDROLOGIC DATA, HONEY CREEK  
TRINITY RIVER BASIN, TEXAS  
1967

Prepared by the U.S. Geological Survey in cooperation with  
the Texas Water Development Board  
and the Soil Conservation Service

Copies of this report may be obtained at  
U.S. Geological Survey  
Water Resources Division  
Federal Building, 300 East 8th Street  
Austin, Texas 78701

# CONTENTS

|   | Page |
|---|------|
| Introduction-----   | 1    |
| History of small watershed projects in Texas-----   | 1    |
| Objectives of small watershed projects in Texas-----  | 1    |
| Purpose and scope of this basic-data report-----  | 4    |
| Description of the watershed-----   | 6    |
| Floodwater-retarding structures-----  | 6    |
| Hydrologic instruments-----   | 8    |
| Rainfall-----   | 8    |
| Runoff and pool contents-----   | 8    |
| Summary of data for 1967 water year-----  | 8    |
| Annual-----   | 8    |
| Individual storms-----  | 9    |
| Appendix-----   | 11   |
| Station description and daily discharge, Honey Creek<br>subwatershed No. 11 near McKinney-----                    | 12   |
| Monthly and yearly inflow, in acre-feet, Honey Creek<br>subwatershed No. 11 near McKinney (9-220c)-----           | 13   |
| Monthly and yearly outflow, in acre-feet, Honey Creek<br>subwatershed No. 11 near McKinney (9-220c)-----          | 14   |
| Weighted monthly and yearly rainfall, in inches, Honey<br>Creek subwatershed No. 11 near McKinney (9-220c)-----   | 15   |
| Water budget of pools, annual summary in acre-feet,<br>Honey Creek subwatershed No. 11 near McKinney (A-74a)----- | 16   |
| Station description and daily discharge, Honey Creek<br>subwatershed No. 12 near McKinney-----                    | 17   |
| Monthly and yearly inflow, in acre-feet, Honey Creek<br>subwatershed No. 12 near McKinney (9-220c)-----           | 18   |
| Monthly and yearly outflow, in acre-feet, Honey Creek<br>subwatershed No. 12 near McKinney (9-220c)-----          | 19   |
| Weighted monthly and yearly rainfall, in inches,<br>Honey Creek subwatershed No. 12 near McKinney (9-220c)-----   | 20   |
| Water budget of pools, annual summary in acre-feet,<br>Honey Creek subwatershed No. 12 near McKinney (A-74a)----- | 21   |
| Station description and daily discharge, Honey Creek<br>near McKinney-----  | 22   |
| Monthly and yearly mean discharge, in cfs, Honey Creek<br>near McKinney (9-220c)-----                             | 23   |
| Weighted monthly and yearly rainfall, in inches, Honey<br>Creek near McKinney (9-220c)-----                       | 24   |
| Water budget of pools, 1967 annual summary in acre-feet<br>Site 8-C-----  | 25   |
| Site 8-D-----   | 26   |
| Site 8-E-----   | 27   |
| Site 8-F-----   | 28   |
| Site 8-G-----   | 29   |
| Site 8-H-----   | 30   |



# CONTENTS-Continued

|  | Page |
|--|------|
| Appendix-Continued   |      |
| Water budget of pools, 1967 annual summary<br>in acre-feet-Continued |      |
| Site 9-----  | 31   |
| Site 10-----   | 32   |
| Site 13-----   | 33   |
| Site 14-----   | 34   |
| Rainfall data summary, 1967 water year (A-88)-----                   | 35   |
| Storms of May 30, 30-31, 1967:                                       |      |
| At site 11   |      |
| Inflow and outflow computations (A-64)-----                          | 37   |
| Weighted-precipitation record (A-78)-----                            | 39   |
| Hydrographs and mass curves-----                                     | 41   |
| At site 12   |      |
| Inflow and outflow computations (A-64)-----                          | 43   |
| Weighted-precipitation record (A-78)-----                            | 45   |
| Hydrographs and mass curves-----                                     | 47   |
| At stream-gaging station   |      |
| Runoff computations (A-65)-----                                      | 49   |
| Weighted-precipitation record (A-78)-----                            | 50   |
| Hydrograph and mass curves-----                                      | 52   |
| Storms of Sept. 4-5, 5-6, 1967:                                      |      |
| At site 11   |      |
| Inflow and outflow computations (A-64)-----                          | 54   |
| Weighted-precipitation record (A-78)-----                            | 55   |
| Hydrograph and mass curves-----                                      | 57   |
| At site 12   |      |
| Inflow and outflow computations (A-64)-----                          | 59   |
| Weighted-precipitation record (A-78)-----                            | 61   |
| Hydrograph and mass curves-----                                      | 63   |
| At stream-gaging station   |      |
| Runoff computations (A-65)-----                                      | 65   |
| Weighted-precipitation record (A-78)-----                            | 66   |
| Hydrograph and mass curves-----                                      | 68   |

## ILLUSTRATIONS

Page

|           |   |   |
|-----------|---|---|
| Figure 1. | Map of Texas showing the location of Honey Creek study area-----  | 2 |
| 2.        | Map of Honey Creek study area showing the locations of floodwater-retarding structures and hydrologic instrument installations----- | 5 |

## TABLES

|          |  |    |
|----------|--|----|
| Table 1. | Small watershed study areas in Texas as of Sept. 30, 1967-----   | 3  |
| 2.       | Floodwater-retarding structure data, Honey Creek study area----- | 7  |
| 3.       | Storm rainfall-runoff data, 1967 water year-----                 | 10 |



COMPILATION OF HYDROLOGIC DATA, HONEY CREEK  
TRINITY RIVER BASIN, TEXAS  
1967

INTRODUCTION

History of Small Watershed Projects in Texas

The U.S. Soil Conservation Service is actively engaged in the installation of flood and soil erosion reducing measures in Texas under the authority of "The Flood Control Act of 1936 and 1944" and "Watershed Protection and Flood Prevention Act" (Public Law 566), as amended. The Soil Conservation Service has found a total of 3,438 floodwater-retarding structures to be physically and economically feasible in Texas. As of September 30, 1967, 1,196 of these structures had been built.

This watershed-development program will have varying but important effects on the natural surface- and ground-water resources of river basins, especially where a large number of the floodwater-retarding structures are built. Basic hydrologic data under natural and developed conditions are needed to appraise the effects of the structures on the yield and mode of occurrence of runoff.

Hydrologic investigations of these small watersheds, both developed and undeveloped, were begun by the Geological Survey in 1951 and are now being made in 11 areas (fig. 1). These studies are being made in cooperation with the Texas Water Development Board, the Soil Conservation Service, the San Antonio River Authority, the city of Dallas, and the Tarrant County Water Control and Improvement District No. 1. The 11 study areas were chosen to sample watersheds having different rainfall, topography, geology, and soils. In four of the study areas (North, Little Elm, Mukewater, and Pin Oak Creeks), streamflow and rainfall records were collected prior to construction of the floodwater-retarding structures, thus affording the opportunity for analyses of the conditions "before and after" development. Structures have now been built in three of these study areas. A summary of the development of the floodwater-retarding structures in each study area as of September 30, 1967, is shown in table 1.

Objectives of Small Watershed Projects in Texas

The purpose of these investigations is to collect sufficient data to meet the following objectives:

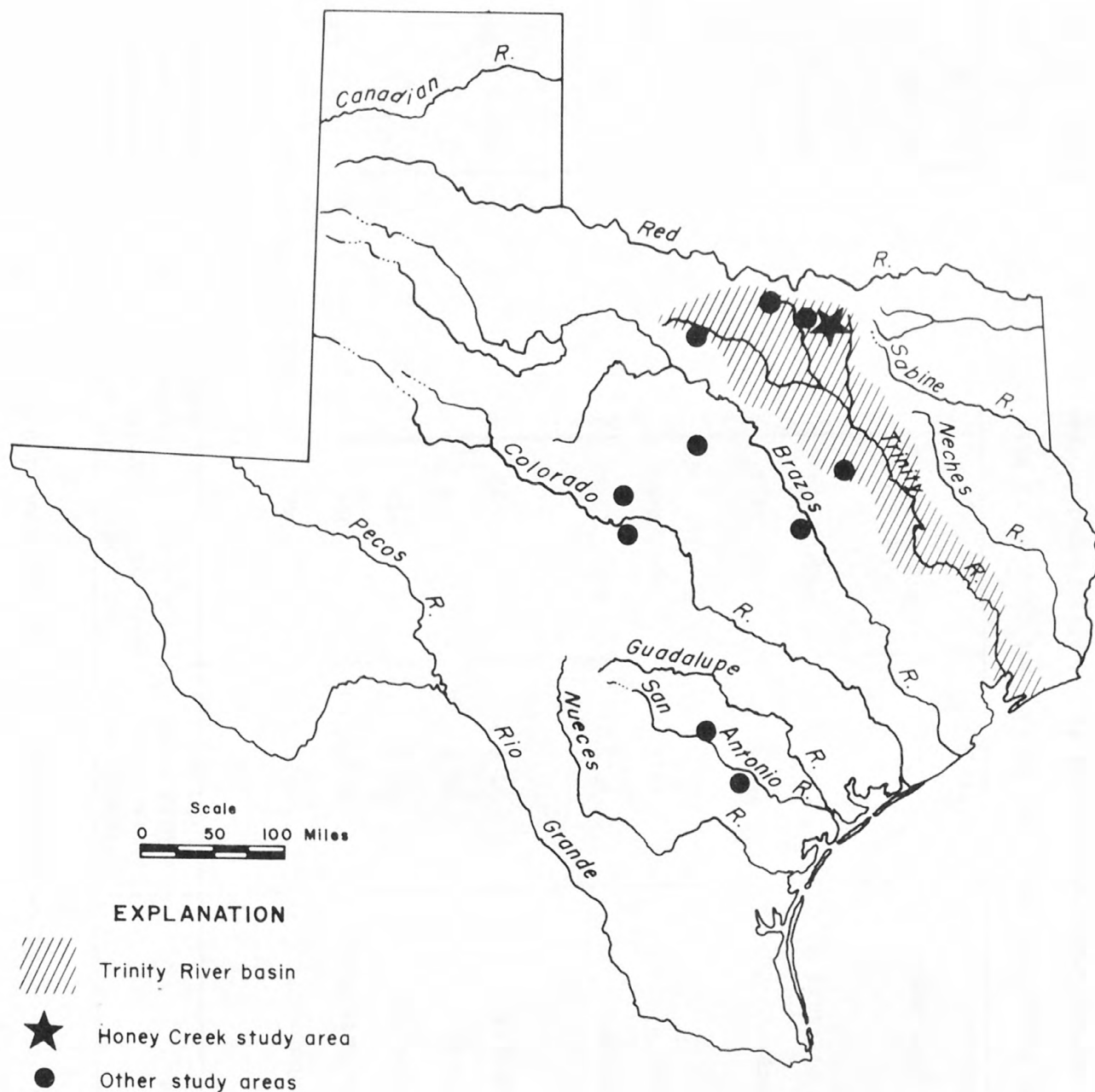


Figure 1.—Map of Texas showing the location of Honey Creek study area.



Table 1.--Small watershed study areas in Texas as of Sept. 30, 1967

| Watershed                            | Drainage area<br>above stream-<br>gaging station<br>(sq mi) | Hydrologic<br>data collection<br>began | Floodwater-retarding<br>structures above<br>stream-gaging<br>station | Period the<br>structures<br>were built |
|--------------------------------------|---|--|--|--|
| <u>Trinity River basin:</u>          |   |  |  |  |
| North Creek near Jacksboro           | 21.6  | Aug. 1956                              | None   | -                                      |
| Elm Fork Trinity River near Muenster | 46.0  | July 1956                              | 14   | 1954-57, 63                            |
| Little Elm Creek near Aubrey         | 75.5  | June 1956                              | 8  | 1966                                   |
| Honey Creek near McKinney            | 39.0  | July 1951                              | 12   | 1951-57                                |
| Pin Oak Creek near Hubbard           | 17.6  | Sept. 1956                             | 6  | 1962-63, 65                            |
| <u>Brazos River basin:</u>           |   |  |  |  |
| Green Creek near Alexander           | 45.5  | Oct. 1954                              | 8  | 1954-56                                |
| Cow Bayou near Mooreville            | 79.6  | Sept. 1954                             | 26   | 1955-58, 64-65                         |
| <u>Colorado River basin:</u>         |   |  |  |  |
| Deep Creek near Mercury              | *43.9   | June 1951                              | 5  | 1951-53                                |
| Mukewater Creek near Trickham        | 70.0  | Aug. 1951                              | 6  | 1961-62, 65                            |
| <u>San Antonio River basin:</u>      |   |  |  |  |
| Calaveras Creek near Elmendorf       | 77.2  | Aug. 1954                              | 9  | 1954-58                                |
| Escondido Creek at Kenedy            | **72.4  | July 1954                              | 10   | 1954-58                                |

\* 8.31 sq mi above Dry Prong Deep Creek near Mercury not included in this total.

\*\* 8.43 sq mi above Escondido Creek subwatershed No. 11 (Dry Escondido Creek) near Kenedy not included in this total.

1. To determine the net effect of floodwater-retarding structures on the regimen of streamflow at downstream points.
2. To determine the effect of the structures on the underlying ground-water reservoir in those areas where observation wells are available or can be installed.
3. To determine the effect of the structures on the sediment yield of the basin and to determine the trap efficiency of the structures.
4. To develop computation techniques that will provide more accurate estimates of runoff resulting from a given amount of rainfall on small watersheds.
5. To develop relationships between maximum rates of runoff and rainfall in small watersheds that will enable more accurate design of small storm-drainage structures.
6. To check the applicability of flood-routing procedures and techniques for small watersheds.
7. To determine the minimum instrumentation necessary to make reliable estimates of total storm inflow to the structures.
8. To determine the quality of the water, its suitability for use, and its flocculating characteristics as they affect the sediment-trap efficiency of the pools.

#### Purpose and Scope of this Basic-Data Report

This report contains the rainfall and runoff data collected during the 1967 water year for the 39.0-square-mile area above the stream-gaging station Honey Creek near McKinney, Texas. The location of floodwater-retarding structures and hydrologic instruments in the area are shown on figure 2. Under the present data-collection program in this watershed, statewide objectives 1, 3, 4, 5, 7, and 8 are being accomplished.

The investigation of the Honey Creek study area is scheduled to continue through a climatic cycle to define the various factors used in the analyses of rainfall-runoff relationships before and after floodwater-retarding structures are built.



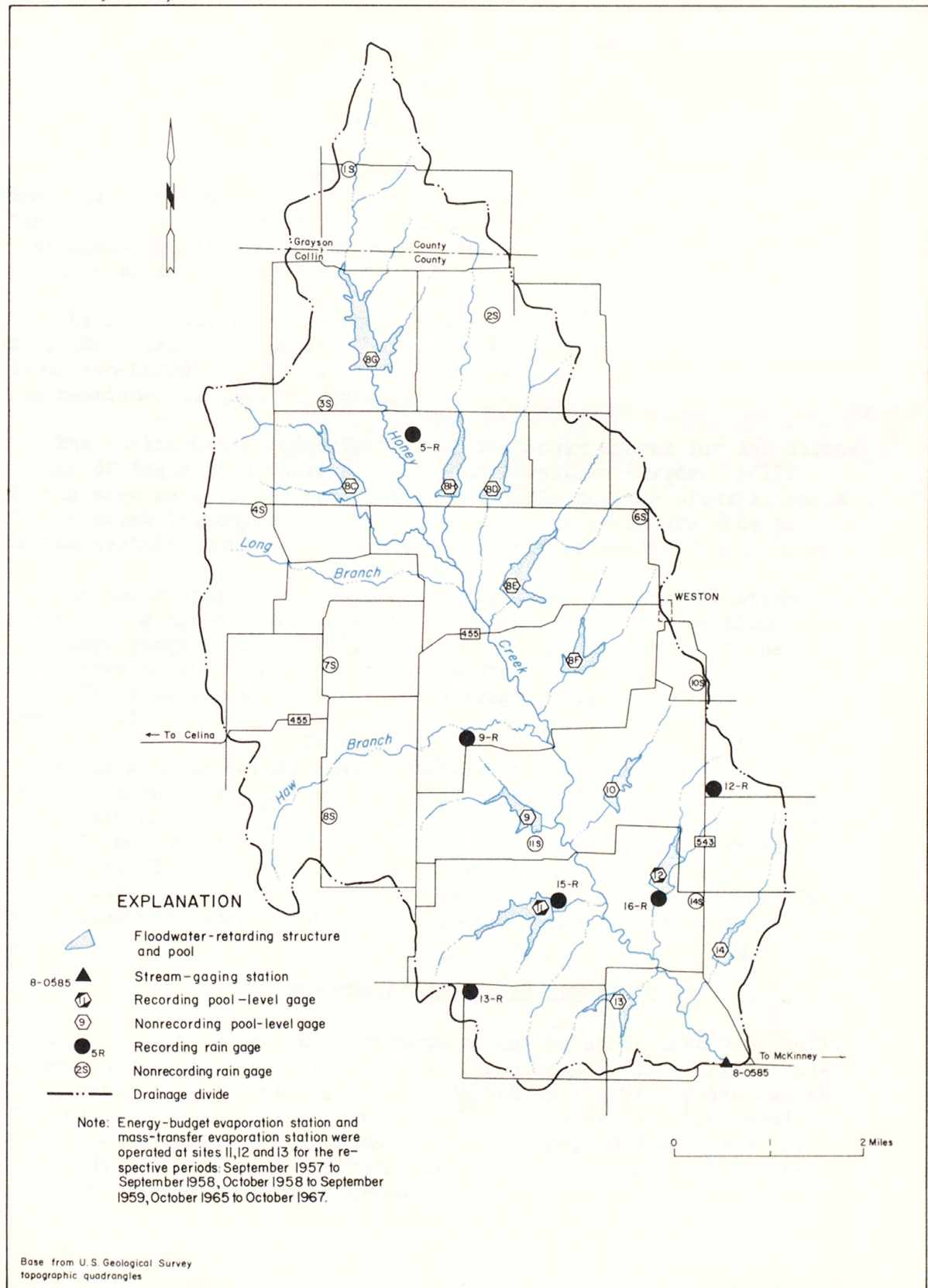


Figure 2 - Honey Creek study area showing locations of floodwater-retarding structures and hydrologic instrument installations

## DESCRIPTION OF THE WATERSHED

The headwaters of Honey Creek are near Gunter in Grayson County. The creek flows southeasterly for approximately 15 miles to its junction with the East Fork Trinity River. Honey Creek drains a rectangular basin with an average width of approximately 4 miles and a total area of 50.7 square miles.

The rural watershed economy is agricultural with cotton, grain sorghums, corn, and Johnson Grass hay being the predominant crops. About two-thirds of the total area is used for crop production; the remainder is used for pasture.

The Austin Chalk underlies all of the basin except for the narrow fringe of Eagle Ford Shale along the northwestern divide. Soils in the area have formed from chalks and marls and the alluvial soils in the creek bottoms are very productive. The soils are fine to medium textured and are slowly to moderately permeable.

The topography of the watershed ranges from moderately steep slopes along the divides to flat plains in the central section. Altitudes range from about 810 feet above mean sea level at the headwaters to about 525 feet at the mouth. The total length of Honey Creek is about 15 miles; the average gradient is about 19 feet per mile.

Climate of the study area is temperate and subhumid with a prevailing south wind. The annual rainfall at McKinney has ranged from a minimum of 20.76 inches in 1925 to a maximum of 76.12 inches in 1877, and the mean annual is 39.24 inches for the 58-year period of record. Tropical disturbances originating in the Gulf of Mexico often cause intense rainstorms on the basin. Occasionally intense thundershowers cause runoff; slow, gentle rains are rare.

## FLOODWATER-RETARDING STRUCTURE

Six floodwater-retarding structures in the study area were built between August 1951 and February 1952, and an additional six structures were completed between July 1955 and July 1957. These twelve structures have a combined capacity of 8,320 acre-feet (revised) at emergency spillway crests and partly control 20.9 square miles of the 39.0-square-mile drainage area. Pertinent information relating to each structure is given in table 2.



Table 2.--Floodwater-retarding structure data, Honey Creek study area

| Site Number | Drainage Area<br>(sq mi) | Date Dam<br>Completed | Date Gages<br>Established | Datum of Gage<br>above Mean<br>Sea Level | Emergency Spillway |                     |                     | Drop Inlet          |                         | Portholes or<br>weir notches |                                  |                         | Controlled<br>opening            |                         | Pipe Diameter<br>through dam (in.) | Inside Dimensions<br>of Drop Inlet Box | Inside Dimensions<br>of Orifice Plate | Range of Staff<br>Gages |
|-------------|--------------------------|-----------------------|---------------------------|--|--------------------|---------------------|---------------------|---------------------|-------------------------|------------------------------|----------------------------------|-------------------------|----------------------------------|-------------------------|------------------------------------|--|---------------------------------------|-------------------------|
|             |                          |                       |                           |  | Width (ft)         | Gage Height<br>(ft) | Contents<br>(ac-ft) | Gage Height<br>(ft) | Pool Content<br>(ac-ft) | Size (in.)                   | Gage Height<br>at Bottom<br>(ft) | Pool Content<br>(ac-ft) | Gage Height<br>at Bottom<br>(ft) | Pool Content<br>(ac-ft) |                                    |  |                                       |                         |
| 8-C         | 2.10                     | 9-15-56               | 3-18-57                   | 694.80                                   | 100                | 27.5                | 629                 | 18.00               | 152                     | -                            | -                                | -                       | 0.5                              | 1.0                     | 17                                 | 2.5' x 2.5'                            | 13"                                   | 6.8-<br>30.5            |
| 8-D         | 1.46                     | 7-18-57               | 11- 5-57                  | 679.70                                   | 100                | 26.9                | 464                 | 18.00               | 120                     | -                            | -                                | -                       | 6.0                              | 1.6                     | 17                                 | 2.5' x 2.5'                            | 12"                                   | 13.3-<br>27.1           |
| 8-E         | 1.93                     | 7-18-57               | 11- 5-57                  | 654.00                                   | 150                | 26.3                | 738                 | 16.00               | 220                     | -                            | -                                | -                       | 1.0                              | 10                      | 17                                 | 2.5' x 2.5'                            | 13"                                   | 10.2-<br>30.5           |
| 8-F         | 1.45                     | 7-21-55               | 9- 2-55                   | 651.19                                   | 150                | 24.0                | 550                 | 12.00               | 120                     | -                            | -                                | -                       | 6.3                              | 36                      | 12                                 | 2.5' x 2.5'                            | -                                     | 6.8-<br>27.1            |
| 8-G         | 3.96                     | 7-21-55               | 9-16-55                   | 706.26                                   | 250                | 26.5                | 1,276               | 12.00               | 195                     | 6"x30"                       | 11.5                             | 180                     | 2.5                              | 24                      | 17                                 | 2.5' x 2.5'                            | -                                     | 3.4-<br>30.5            |
| 8-H         | 2.18                     | 9-15-56               | 3-28-57                   | 677.00                                   | 150                | 28.2                | 748                 | 16.00               | 188                     | -                            | -                                | -                       | 6.5                              | 43                      | 17                                 | 2.5' x 2.5'                            | 14"                                   | 0.0-<br>27.1            |
| 9           | 1.37                     | 12-29-51              | 12- 9-54                  | 624.42                                   | 150                | 25.6                | 526                 | 12.00               | 119                     | -                            | -                                | -                       | 2.5                              | 28                      | 12                                 | 2.5' x 2.5'                            | -                                     | 3.4-<br>30.5            |
| 10          | 1.25                     | 1- 9-52               | 3-31-55                   | 635.86                                   | 140                | 26.1                | 429                 | 12.00               | 82                      | -                            | -                                | -                       | 2.5                              | 4.3                     | 12                                 | 2.5' x 2.5'                            | -                                     | 10.2-<br>27.1           |
| 11          | 2.14                     | 2- 9-52               | 9-11-52                   | 629.00                                   | 200                | 26.8                | 1,213               | 14.84               | 431                     | -                            | -                                | -                       | 4.8                              | 1.23                    | 12                                 | 2.5' x 2.5'                            | -                                     | 6.8-<br>30.5            |
| 12          | 1.26                     | 1-11-52               | 9-11-52                   | 623.00                                   | 150                | 27.0                | 507                 | 14.99               | 121                     | -                            | -                                | -                       | 5.0                              | 5.5                     | 12                                 | 2.5' x 2.5'                            | -                                     | 0.0-<br>29.9            |
| 13          | .89                      | 2- 9-52               | 12- 3-54                  | 612.06                                   | 80                 | 23.1                | 427                 | 12.00               | 140                     | -                            | -                                | -                       | 2.5                              | 28                      | 12                                 | 2.5' x 2.5'                            | -                                     | 3.4-<br>27.1            |
| 14          | .91                      | 8-30-51               | 12- 9-54                  | 618.12                                   | 100                | 24.1                | 350                 | 12.00               | 85                      | -                            | -                                | -                       | 2.5                              | 8.7                     | 12                                 | 2.5' x 2.5'                            | -                                     | 6.8-<br>27.1            |

## HYDROLOGIC INSTRUMENTS

Instruments to collect rainfall and stage data consist of rain gages, pool-level gages on each of the floodwater-retarding structures, and a stream-gaging station downstream from the floodwater-retarding structures. These instruments measure the stage, from which the integrated flow from the study area can be computed. Location of instruments is shown on figure 2.

### Rainfall

Six recording and ten nonrecording rain gages are located at points throughout the study area to define the total rainfall and rainfall intensities. Two additional recording gages were used this year. Measurements of rainfall at all rain gages are made at weekly intervals by Soil Conservation Service personnel.

### Runoff and Pool Contents

Two water-stage recording gages are operated on representative floodwater-retarding pools (sites 11 and 12), at which stage data are collected to compute the contents, surface area, inflow, and outflow. Records at these sites began September 11, 1952. Weekly readings of staff gages are made by Soil Conservation Service personnel at each of the remaining ten floodwater-retarding pools. These readings provide data to determine the quantity of water retained or released from the structures in the study area.

A water-stage recorder at the stream-gaging station on Honey Creek near McKinney records the stage, which with measurements of streamflow, is used in the computation of the total runoff from the study area. Streamflow records at this gage began July 23, 1951. Records of pool contents, inflow, and outflow, for the 1967 water year at sites 11 and 12 are shown in the appendix.

## SUMMARY OF DATA FOR 1967 WATER YEAR

### Annual

Average rainfall over the study area during the 1967 water year was 28.08 inches, which is 18 percent below the 14-year average. The long-term average (1931-60) rainfall recorded by the U.S. Weather Bureau at McKinney (6 miles southeast of the study area) is 39.24 inches per year. Rainfall was scattered throughout the year with every month receiving some rainfall. The months of May, September, and April had the greatest rainfall, 6.94, 5.58, and 4.73 inches, respectively. The total runoff for the year at the stream-gaging station was 7,740 acre-feet. This runoff represents an equivalent depth of 3.72 inches, or 13 percent of the rainfall.

Weighted-mean rainfall above subwatershed No. 11 was 28.88 inches or 16 percent below the 14-year average. Runoff above subwatershed No. 11 was 389 acre-feet, which represents an equivalent of 3.41 inches.

Weighted-mean rainfall above subwatershed No. 12 was 25.87 inches, or 24 percent below the 14-year average. Runoff above subwatershed No. 12 was 267 acre-feet, which represents an equivalent depth of 3.97 inches.

#### Individual Storms

A storm is defined as a period of rainfall separated by at least 6 hours from other rainfall. Storms are selected for detailed rainfall runoff computations on the basis of rainfall totals and distribution, the peak discharge produced from the rainfall at the stream-gaging station, and the assurance of good rainfall and runoff record for the storm periods selected.

The rainfall for the 1967 water year was about 18 percent below the 14-year average. The two selected storm-period analyses contain detailed time breakdown of rainfall and discharge computations. Hydrograph and mass curves are presented for illustration. The storms selected occurred on May 30-31, and September 5-6, 1967. A summary of rainfall-runoff data for each storm is shown in table 3. Computations and curves for each storm are shown in the appendix.

Table 3.--Storm rainfall-runoff data, water year 1967.

| Date of storm | Rainfall (inches)   |       |           | Maximum increment |           |  | Runoff<br>to<br>rainfall | Ratio<br>runoff to<br>rainfall | Maximum<br>discharge<br>(cfs) |
|---------------|---------------------|-------|-----------|-------------------|-----------|--|--------------------------|--------------------------------|-------------------------------|
|               | Duration<br>(hours) | Total | 15-minute | 30-minute         | 60-minute |  |                          |                                |                               |
|               |                     |       |           |                   |           |  |                          |                                |                               |

|   |      |      |      |      |      |        |       |       |  |
|---|------|------|------|------|------|--------|-------|-------|--|
| Honey Creek near McKinney, Tex.<br>(Drainage area 39.0 sq mi, of which 20.9 sq mi is above floodwater-retarding structures) |      |      |      |      |      |        |       |       |  |
| May 30, 1967  | 5.2  | 1.28 | 0.30 | 0.46 | 0.49 | 0.0009 | .0007 | 4.9   |  |
| May 30-31, 1967   | 19.0 | 3.43 | .49  | .75  | 1.23 | 1.36   | .40   | 2,880 |  |
| Sept. 4-5, 1967   | 1.2  | 1.03 | .22  | .40  | -    | -      | -     | -     |  |
| Sept. 5-6, 1967   | 13.0 | 4.17 | .29  | .69  | 1.07 | .09    | .02   | 253   |  |

|  |      |      |      |      |      |       |      |      |  |
|--|------|------|------|------|------|-------|------|------|--|
| Honey Creek subwatershed No. 11 near McKinney, Tex.<br>(Drainage area, 2.14 sq mi) |      |      |      |      |      |       |      |      |  |
| May 30, 1967   | 6.0  | 1.13 | 0.31 | 0.38 | 0.41 | 0.011 | .01  | 60.0 |  |
| May 30-31, 1967  | 12.0 | 4.54 | .62  | 1.23 | 1.84 | 1.41  | .31  | 560  |  |
| Sept. 4-5, 1967  | 22.2 | 1.37 | -    | .45  | .50  | .007  | .005 | 49.8 |  |
| Sept. 5-6, 1967  | 23.0 | 4.41 | .30  | .68  | .87  | .51   | .12  | 142  |  |

|  |      |      |      |      |      |       |       |      |  |
|--|------|------|------|------|------|-------|-------|------|--|
| Honey Creek subwatershed No. 12 near McKinney, Tex.<br>(Drainage area, 1.26 sq mi) |      |      |      |      |      |       |       |      |  |
| May 30, 1967   | 4.0  | 1.32 | -    | -    | -    | 0.02  | .01   | 11.6 |  |
| May 30-31, 1967  | 12.0 | 4.87 | 0.79 | 1.21 | 2.08 | 2.19  | .45   | 923  |  |
| Sept. 4-5, 1967  | 13.4 | .96  | .34  | .48  | -    | .0007 | .0007 | 25.2 |  |
| Sept. 5-6, 1967  | 20.0 | 4.2  | .15  | .47  | .93  | .79   | .19   | 127  |  |



A P P E N D I X

# TRINITY RIVER BASIN

8-0575. Honey Creek subwatershed No. 11 near McKinney, Tex.

Location.--Lat 33°18'12", long 96°41'22", near center of dam on unnamed tributary of Honey Creek, 1.5 miles west of Farm Road 543, and 8.4 miles northwest of McKinney, Collin County.

Drainage area.--2.14 sq mi.

Records available.--September 1952 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 629.00 ft above mean sea level, datum of 1929 (Soil Conservation Service bench mark).

Average inflow.--15 years, 781 acre-ft per year.

Average outflow.--15 years, 559 acre-ft per year.

Extremes.--Maximum outflow during year, 6.4 cfs May 31 (gage height, 17.21 ft); no outflow most of time.

Maximum inflow, 530 cfs (average for 5-minute interval) May 30, computed from outflow and change in pool contents, and adjusted for rainfall on pool surface during time of peak inflow.

1952-67: Maximum outflow, 716 cfs May 26, 1957 (gage height, 28.77 ft); no outflow most of time.

Maximum inflow, 3,360 cfs Apr. 30, 1966.

Remarks.--Records good. Dam completed Feb. 9, 1952, but no appreciable storage before April 1952. Outflow began Apr. 21, 1957. Rolled-fill earthen dam is 1,303 ft long with earthen spillway section at gage height 26.8 ft. Outlet structure is 2½-foot square concrete drop inlet, gage height at crest, 14.84 ft, and connected to a 12-inch concrete outlet pipe at gage height 4.8 ft. There is also an 8-inch controlled emergency outlet pipe connected to drop inlet at gage height 4.8 ft. Pool capacity, 1,210 acre-ft at spillway crest, 431 acre-ft at top of drop inlet structure, and 123 acre-ft at controlled outlet pipe. Dam built by Soil Conservation Service for flood control, conservation of stock water, and recreation. A rain gage network (2 recording and one nonrecording) are located in basin above station.

Pool water budget, in acre-feet, water year October 1966 to September 1967

|           | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May  | June | July | Aug. | Sept. |
|-----------|------|------|------|------|------|------|------|------|------|------|------|-------|
| Inflow 1/ | 1.5  | 7.2  | 5.8  | 5.2  | 3.6  | 11.8 | 42.2 | 177  | 14.4 | 4.4  | 30.3 | 65.3  |
| Outflow   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 14.9 | 102  | 0    | 0    | 26.2  |
| (††)      | 0.57 | 0.75 | 1.27 | 0.28 | 0.67 | 2.33 | 3.81 | 6.49 | 0.45 | 1.29 | 5.09 | 5.88  |

Calendar year 1966: Inflow 1,300 Outflow 1,130 †† 38.23

Water year 1966-67: Inflow 389 Outflow 143 †† 28.88

Peak inflow (base, 100 cfs).--May 30 (1810) \*530 cfs; Sept. 6 (0115) \*\*116 cfs.

\* 5-minute increment.

\*\* 15-minute increment.

1/ Inflow adjusted for rainfall on pool and pool losses.

†† Weighted mean rainfall, in inches.

## WATER RESOURCES DIVISION

Yearly inflow \_\_\_\_\_ of \_\_\_\_\_ Honey Creek  
Monthly and ~~annual~~ discharge, in acre-feet \_\_\_\_\_, of \_\_\_\_\_ Subwatershed No. 11 ~~Dixie~~<sup>McKinney</sup> near \_\_\_\_\_ McKinney, Tex.  
[Drainage area, \_\_\_\_\_ 2.14 \_\_\_\_\_ square miles]

16-26489-5 U. S. GOVERNMENT PRINTING OFFICE

[illegible]





## DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

Weighted yearly rainfall \_\_\_\_\_  
Monthly and ~~annual~~ discharge, in \_\_\_\_\_ inches \_\_\_\_\_  
\_\_\_\_\_ of Subwatershed No. 11 ~~lower~~ <sup>near</sup> McKinney  
[Drainage area, 2.14 square miles]

16-26489-5 U. S. GOVERNMENT PRINTING OFFICE

[illegible]

\* U. S. Weather Bureau station at McKinney

UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

1967 WATER YEAR

8-0575. Honey Creek subwatershed No 11 near McKinney, Tex Drainage Area 2.14 sq mi  
Continuous water-stage recorder: ratio 1.6. Date of last sediment survey April 1960.  
Maxima: gage height, 17.21; outflow, 6.4 cfs; surface area, 51.3 acres; contents, 544 acre-feet; on May 31.  
Minima: gage height, 12.81; surface area, 32.3 acres; contents, 347 acre-feet; on Apr. 10.  
Maximum inflow, 530 cfs (averaged for 5-min. interval and adjusted for rainfall on pool surface) on May 30.  
Averages: 15 water years, (1952-67); inflow, 781 acre-feet/year; outflow, 559 acre-feet/year; rainfall, 33.82 inches/year.

Pool water budget, in acre-feet, water year October 1966 to September 1967.

|                           | Oct   | Nov   | Dec  | Calendar year 1966 | Jan  | Feb  | Mar  | Apr   | May  | June | July  | Aug  | Sept  | Water year 1967 |
|---------------------------|-------|-------|------|--------------------|------|------|------|-------|------|------|-------|------|-------|-----------------|
| Total Inflow $\downarrow$ | 1.5   | 7.2   | 5.8  | 1,300              | 5.2  | 3.6  | 11.8 | 42.2  | 177  | 144  | 4.4   | 30.3 | 85.3  | 389             |
| Total Outflow             | 0     | 0     | 0    | 1,130              | 0    | 0    | 0    | 0     | 14.9 | 102  | 0     | 0    | 26.2  | 143             |
| Total Consumption         | 23.2  | 21.8  | 16.2 | 269                | 14.1 | 15.9 | 19.8 | 20.1  | 29.3 | 40.3 | 40.3  | 41.1 | 30.7  | 313             |
| †                         | -19.4 | -12.4 | -6.1 | +49.5              | -8.1 | -9.6 | -4   | +34.1 | +156 | -127 | -32.1 | +4   | +46.5 | +21.7           |
| †                         | 42.2  | 41.2  | 40.6 | 45.6               | 40.3 | 39.8 | 39.6 | 40.2  | 41.8 | 44.8 | 42.4  | 41.1 | 49.9  | 41.5            |
| ††                        | .57   | .75   | 1.27 | 38.23              | .28  | .67  | 2.33 | 3.81  | 6.49 | .45  | 1.29  | 5.09 | 5.88  | 28.88           |

$\downarrow$  Inflow adjusted for rainfall on pool and pool losses

† Change in contents, in acre-feet

† Mean surface area, in acres

†† Weighted mean rainfall, in inches

Peak inflow - (base, 100 cfs)

| Date | Time | Discharge | Date | Time | Discharge |
|------|------|-----------|------|------|-----------|
| 5-30 | 1810 | 530*      |      |      |           |
| 9-6  | 0115 | 116**     |      |      |           |

\* 5-minute increment.

\*\* 15- do

# TRINITY RIVER BASIN

8-0580. Honey Creek subwatershed No. 12 near McKinney, Tex.

Location.--Lat 33°18'20", long 96°40'12", near center of dam on unnamed tributary of Honey Creek, 0.5 mile west of Farm Road 543, and 7.8 miles northwest of McKinney, Collin County.

Drainage area.--1.26 sq mi.

Records available.--September 1952 to September 1967.

Gage.--Water-stage recorder and concrete drop inlet. Datum of gage is 623.00 ft above mean sea level, datum of 1929 (levels by Soil Conservation Service).

Average inflow.--15 years, 487 acre-ft per year.

Average outflow.--15 years, 396 acre-ft per year.

Extremes.--Maximum outflow during year, 8.0 cfs May 31 (gage height, 20.73 ft); no outflow most of year. Maximum inflow 907 cfs (average for 5-minute interval) May 30, computed from outflow and change in pool contents, and adjusted for rainfall on pool surface during time of peak inflow.

1952-67: Maximum outflow, 766 cfs May 26, 1957 (gage height, 29.23 ft); no outflow most of time. Maximum inflow, 1,490 cfs (average for 15-minute interval) May 21, 1957, computed and adjusted as above.

Remarks.--Records good. Dam completed Jan. 11, 1952, but no appreciable storage before April 1952. Outflow began May 12, 1954. Rolled-fill earthen dam is 1,253 ft long with earthen spillway section at gage height 27.0 ft. Outlet structure is 2.5-foot square concrete drop inlet, gage height of crest, 14.99 ft, connected to a 12-inch concrete outlet pipe at gage height 5.0 ft. There is also an 8-inch controlled outlet to drop inlet at gage height 5.0 ft. Pool capacity, 507 acre-ft at emergency spillway crest, 122 acre-ft at crest of drop inlet structure, and 5.5 acre-ft at controlled outlet pipe. Dam built by Soil Conservation Service for flood control and conservation. A rain gage network (two recording and one nonrecording) are located in basin above station.

Pool water budget, in acre-ft, water year October 1966 to September 1967

|   | Oct.       | Nov. | Dec.        | Jan. | Feb.     | Mar. | Apr. | May  | June | July | Aug. | Sept. |
|---|------------|------|-------------|------|----------|------|------|------|------|------|------|-------|
| Inflow 1/   | 3.7        | 2.8  | 4.4         | 4.5  | 1.8      | 8.7  | 13.0 | 154  | 2.0  | 2.9  | 2.4  | 66.5  |
| Outflow   | 0.9        | 0    | 0           | 0    | 0        | 0    | 4.0  | 20.3 | 125  | 0    | 0    | 43.3  |
| (††)  | 0.33       | 0.65 | 1.24        | 0.33 | 0.65     | 2.28 | 4.25 | 6.66 | 0.64 | 1.33 | 1.72 | 5.79  |
| Calendar year 1966:   | Inflow 786 |      | Outflow 733 |      | †† 37.85 |      |      |      |      |      |      |       |
| Water year 1966-67:   | Inflow 267 |      | Outflow 194 |      | †† 25.87 |      |      |      |      |      |      |       |
| Peak inflow (base, 100 cfs).--May 30 (1805) *907 cfs; Sept. 6 (0315) **121 cfs. |            |      |             |      |          |      |      |      |      |      |      |       |

\* 5-minute interval.

\*\* 15-minute interval.

1/ Inflow adjusted for rainfall on pool and pool losses.

†† Weighted mean rainfall, in inches.

[illegible]



[illegible]

Weighted yearly rainfall  
Monthly and ~~annual~~ discharge, in \_\_\_\_\_ inches

McKinney, Tex.

at near

[Drainage area, 1.26 square miles]

16-20489-5 U. S. GOVERNMENT PRINTING OFFICE

[illegible]

UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

8-0580. Honey Creek subwatershed No 12 near McKinney, Tex Drainage Area 1.26 sq mi  
1967 WATER YEAR

Continuous water-stage recorder: ratio 1:6. Date of last sediment survey April 1960

Maxima: gage height, 20.73; outflow, 8.0 cfs; surface area, 30.7 acres; contents, 263 acre-feet; on May 31

Minima: gage height, 13.58; surface area, 17.1 acres; contents, 96.0 acre-feet; on Sept. 4

Maximum inflow, 207 cfs (computed for 5-min. interval and adjusted for rainfall on pool surface) on May 30

Averages: 15 water years, 1952-67; inflow, 487 acre-feet/year; outflow, 396 acre-feet/year; rainfall, 33.37 inches/year

Pool water budget, in acre-feet, water year October 1966 to September 1967.

|                       | Oct         | Nov         | Dec         | Calendar year <u>1966</u> | Jan         | Feb         | Mar         | Apr         | May          | June         | July         | Aug         | Sept         | Water year <u>1967</u> |
|-----------------------|-------------|-------------|-------------|---------------------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|-------------|--------------|------------------------|
| Total Inflow <u>✓</u> | <u>3.7</u>  | <u>2.8</u>  | <u>4.4</u>  | <u>786</u>                | <u>4.5</u>  | <u>1.8</u>  | <u>8.7</u>  | <u>13.0</u> | <u>15.4</u>  | <u>2.0</u>   | <u>2.9</u>   | <u>2.4</u>  | <u>66.5</u>  | <u>267</u>             |
| Total Outflow         | <u>.9</u>   | <u>0</u>    | <u>0</u>    | <u>733</u>                | <u>0</u>    | <u>0</u>    | <u>0</u>    | <u>4.0</u>  | <u>20.3</u>  | <u>12.5</u>  | <u>0</u>     | <u>0</u>    | <u>43.3</u>  | <u>194</u>             |
| Total Consumption     | <u>8.1</u>  | <u>6.0</u>  | <u>4.7</u>  | <u>106</u>                | <u>5.7</u>  | <u>5.6</u>  | <u>10.3</u> | <u>9.5</u>  | <u>19.7</u>  | <u>15.3</u>  | <u>14.8</u>  | <u>14.9</u> | <u>8.9</u>   | <u>118</u>             |
| †                     | <u>-4.6</u> | <u>-2.3</u> | <u>+1.7</u> | <u>+21.4</u>              | <u>-.6</u>  | <u>-2.8</u> | <u>+2.3</u> | <u>+5.5</u> | <u>+13.1</u> | <u>-13.8</u> | <u>-10.1</u> | <u>-8.8</u> | <u>+22.2</u> | <u>-4.5</u>            |
| ††                    | <u>19.2</u> | <u>18.9</u> | <u>18.9</u> | <u>20.2</u>               | <u>18.9</u> | <u>18.8</u> | <u>18.8</u> | <u>19.0</u> | <u>19.5</u>  | <u>20.4</u>  | <u>18.5</u>  | <u>17.5</u> | <u>19.0</u>  | <u>19.0</u>            |
| †††                   | <u>.33</u>  | <u>.65</u>  | <u>1.24</u> | <u>37.85</u>              | <u>.33</u>  | <u>.65</u>  | <u>2.28</u> | <u>4.25</u> | <u>6.66</u>  | <u>.64</u>   | <u>1.33</u>  | <u>1.72</u> | <u>5.79</u>  | <u>25.87</u>           |

✓ Inflow adjusted for rainfall on pool and pool losses

† Change in contents, in acre-feet

†† Mean surface area, in acres

††† Weighted mean rainfall, in inches

\* 5-minute interval

\*\* 15-minute interval

Peak inflow - (base, 100 cfs)

| Date        | Time           | Discharge    | Date | Time | Discharge |
|-------------|----------------|--------------|------|------|-----------|
| <u>5-30</u> | <u>1805 hr</u> | <u>907*</u>  |      |      |           |
| <u>9-6</u>  | <u>0315</u>    | <u>121**</u> |      |      |           |



# TRINITY RIVER BASIN

8-0585. Honey Creek near McKinney, Tex.

Location.--Lat 33°16'42", long 96°39'27", on right bank at downstream side of bridge on county road, 4.5 miles downstream from Haw Branch, 5.6 miles upstream from mouth, and 6.0 miles northwest of McKinney, Collin County.

Drainage area.--39.0 sq mi.

Records available.--July 1951 to September 1967.

Gage.--Digital water-stage recorder and concrete control. Datum of gage is 563.68 ft above mean sea level, datum of 1929 (Soil Conservation Service reference mark). July 23, 1951, to May 3, 1965, graphic water-stage recorder at same site and datum.

Average discharge.--16 years, 16.4 cfs (11,870 acre-ft per year).

Extremes.--Maximum discharge during year, 2,880 cfs May 31 (gage height, 16.98 ft); no flow at times.

1951-67: Maximum discharge, 7,920 cfs May 26, 1957 (gage height, 20.29 ft); no flow at times.

Maximum stage since at least 1930, 23.0 ft in spring of 1950, from information by local resident.

Remarks.--Records good. Station operated as part of the Honey Creek basin hydrologic cooperative program of the Geological Survey and Soil Conservation Service to evaluate rainfall-runoff relations, and the effects of floodwater-retarding structures. At end of year, flow from 20.9 sq mi above this station was partly controlled by 12 floodwater-retarding structures with a total combined capacity of 8,320 acre-ft below the flood-spillway crests, of which 6,170 acre-ft is floodwater-retarding capacity and 2,150 acre-ft is sediment-pool capacity. The capacity in these pools allocated to sediment storage will be used for conservation storage until eliminated by sedimentation. Diversions for irrigation above station. Sixteen rain gages (10 standard and 6 recording) are operated in basin above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

| DAY                | OCT.      | NOV.  | DEC.      | JAN.  | FEB.      | MAR.   | APR.         | MAY      | JUNE     | JULY | AUG. | SEPT.  |
|--------------------|-----------|-------|-----------|-------|-----------|--------|--------------|----------|----------|------|------|--------|
| 1                  | 3.5       | .46   | C         | .85   | .68       | .48    | 6.6          | 25       | 223      | .85  | C    | 0      |
| 2                  | 1.6       | .26   | C         | .68   | .61       | .48    | 5.4          | 10       | 189      | .68  | C    | 0      |
| 3                  | 1.1       | .46   | C         | .48   | .61       | .45    | 2.7          | 6.7      | 176      | .46  | C    | 0      |
| 4                  | 1.6       | .54   | .C1       | .42   | .61       | .50    | 2.0          | 7.7      | 147      | .42  | C    | 0      |
| 5                  | 2.2       | .68   | .C6       | .42   | .68       | .64    | 1.6          | 7.2      | 101      | .46  | C    | 0      |
| 6                  | 1.1       | .61   | .C2       | .61   | .54       | 7.6    | 1.2          | 6.7      | 75       | .46  | C    | 54     |
| 7                  | .85       | .68   | .C3       | .48   | .54       | 3.4    | 1.1          | 4.7      | 59       | .46  | .48  | 26     |
| 8                  | .76       | .76   | .C3       | .26   | .54       | 1.8    | 1.1          | 3.6      | 56       | .42  | .85  | 7.8    |
| 9                  | .66       | .68   | .C3       | .36   | .54       | 1.4    | .91          | 2.7      | 43       | .26  | .26  | 2.7    |
| 10                 | .48       | .61   | .C3       | .36   | .68       | 1.1    | 2.1          | 2.1      | 31       | .14  | .62  | 1.3    |
| 11                 | .46       | .61   | .C3       | .48   | .76       | 1.0    | 10           | 1.7      | 21       | .C6  | C    | .61    |
| 12                 | .54       | .61   | .C3       | .54   | 1.3       | .96    | 6.8          | 1.4      | 10       | .C4  | C    | .48    |
| 13                 | .61       | .61   | .C6       | .54   | 1.4       | .92    | 10           | 1.4      | 11       | .36  | C    | .26    |
| 14                 | .54       | .46   | .C6       | .61   | .85       | .85    | 8.4          | 2.3      | 5.4      | .46  | C    | .22    |
| 15                 | .26       | .68   | .14       | .54   | .76       | .74    | 4.4          | 2.5      | 3.9      | .14  | C    | .61    |
| 16                 | .42       | .61   | .18       | .61   | .54       | .51    | 3.0          | 1.3      | 2.7      | .C6  | C    | .54    |
| 17                 | .76       | .68   | .C6       | .68   | .54       | .76    | 2.1          | 1.1      | 2.2      | .C6  | C    | .85    |
| 18                 | 1.0       | .61   | .31       | .61   | .54       | .67    | 1.8          | .89      | 2.5      | .C6  | C    | .68    |
| 19                 | .66       | .36   | 1.0       | .54   | .68       | .68    | 1.6          | .74      | 1.9      | .26  | C    | .76    |
| 20                 | .42       | .C2   | .54       | .54   | 1.1       | 1.5    | 95           | 21       | 1.5      | .36  | 1.8  | 1.9    |
| 21                 | .46       | .C1   | 1.0       | .76   | 1.4       | 1.6    | 222          | 43       | 1.4      | .31  | .14  | .94    |
| 22                 | .46       | .C1   | 1.0       | .85   | .54       | 1.1    | 95           | 19       | 1.2      | .26  | .26  | .61    |
| 23                 | .46       | .C1   | 1.1       | .54   | .76       | .88    | 65           | 9.7      | 1.2      | .11  | C    | .36    |
| 24                 | .46       | .C1   | 1.0       | .54   | .54       | .64    | 25           | 4.3      | 1.0      | C    | C    | .26    |
| 25                 | .46       | .C2   | .54       | 1.1   | .48       | 1.2    | 50           | 2.5      | .85      | C    | C    | .22    |
| 26                 | .46       | .C4   | 1.0       | 1.4   | .51       | 46     | 41           | 1.7      | .76      | C    | C    | .22    |
| 27                 | .68       | .C3   | 2.5       | 1.4   | .C2       | 15     | 15           | 1.2      | .76      | C    | C    | .54    |
| 28                 | .68       | C     | 3.1       | .85   | .56       | 8.9    | 13           | .91      | .61      | C    | C    | .68    |
| 29                 | .68       | C     | .76       | .68   | -----     | 7.8    | 12           | .96      | .48      | C    | C    | .26    |
| 30                 | .76       | C     | .61       | .76   | -----     | 5.7    | 16           | 435      | .42      | C    | C    | .03    |
| 31                 | .76       | ----- | .85       | .68   | -----     | 5.4    | -----        | 989      | -----    | C    | C    | -----  |
| TOTAL              | 26.08     | 11.18 | 17.32     | 21.07 | 20.31     | 127.32 | 729.51       | 1,622.00 | 1,170.78 | 7.29 | 3.81 | 143.23 |
| MEAN               | .84       | .37   | .56       | .68   | .73       | 4.11   | 24.3         | 52.3     | 39.0     | .24  | .12  | 4.77   |
| MAX                | 3.5       | .76   | 3.1       | 1.4   | 1.4       | .48    | 222          | 989      | 223      | .85  | 1.8  | .94    |
| MIN                | .26       | C     | 0         | .36   | .48       | .48    | .91          | .74      | .42      | C    | 0    | 0      |
| AC-FT              | 52        | 22    | 34        | 42    | 40        | 253    | 1,450        | 3,220    | 2,320    | 14   | 7.0  | 264    |
| (††)               | .58       | .71   | 1.56      | .33   | .81       | 2.66   | 4.73         | 6.94     | .78      | 1.41 | 1.99 | 5.58   |
| CAL YR 1966: TOTAL | 11,306.48 |       | MEAN 31.0 |       | MAX 1,750 | MIN 0  | AC-FT 22,430 | †† 38.24 |          |      |      |        |
| WAT YR 1967: TOTAL | 3,900.30  |       | MEAN 10.7 |       | MAX 989   | MIN 0  | AC-FT 7,740  | †† 28.08 |          |      |      |        |

†† Weighted mean rainfall, in inches.

Monthly and <sup>yearly mean</sup>~~annual~~ discharge, in cfs, of Honey Creek, ~~River~~<sup>Near</sup> Mc Kinney, Tex.  
[Drainage area, 39.0 square miles]

[illegible]

-24-

UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

1967 WATER YEAR

Honey Creek subwatershed No. 8-C near McKinney, Tex. Drainage Area 2.10 sq. mi.  
Staff Gage  
~~Continuous water-stage recorder~~ ratio — Date of last sediment survey September 1959

Maxima: gage height, 22.40 ft; outflow, 21.2 c.f.s.; surface area, 46.4 acres; contents, 293 acre-feet; on May 31, 1967.

Minima: gage height, 13.80 ft; surface area, 14.0 acres; contents, 78.8 acre-feet; on Sept. 27, 1967.

Maximum inflow, — c.f.s. (averaged for 5-min. interval and adjusted for rainfall on pool surface) on —.

Averages: — water years, ( — ); inflow, — acre-feet/year; outflow, — acre-feet/year; rainfall, — inches/year.

Pool water budget, in acre-feet, water year October 1966 to September 1967.

|                       | Oct         | Nov         | Dec.        | Calendar year <u>1966</u> | Jan.        | Feb.        | Mar.        | Apr.        | May           | June          | July         | Aug.         | Sept.       | Water year <u>1967</u> |
|-----------------------|-------------|-------------|-------------|---------------------------|-------------|-------------|-------------|-------------|---------------|---------------|--------------|--------------|-------------|------------------------|
| Total Inflow <u>1</u> | <u>0.4</u>  | <u>1.7</u>  | <u>5.0</u>  | <u>1,010</u>              | <u>6.4</u>  | <u>7.8</u>  | <u>63.9</u> | <u>46.6</u> | <u>232</u>    | <u>11.1</u>   | <u>0.1</u>   | <u>1.7</u>   | <u>0.7</u>  | <u>377</u>             |
| Total Outflow         | <u>0</u>    | <u>0</u>    | <u>0</u>    | <u>966</u>                | <u>0</u>    | <u>0</u>    | <u>48.0</u> | <u>50.0</u> | <u>50.0</u>   | <u>178</u>    | <u>0</u>     | <u>0</u>     | <u>0</u>    | <u>326</u>             |
| Total Consumption     | <u>8.4</u>  | <u>5.8</u>  | <u>3.4</u>  | <u>123</u>                | <u>6.6</u>  | <u>7.7</u>  | <u>12.3</u> | <u>9.8</u>  | <u>14.0</u>   | <u>18.4</u>   | <u>18.5</u>  | <u>15.0</u>  | <u>10.9</u> | <u>131</u>             |
| †                     | <u>-7.2</u> | <u>-3.0</u> | <u>+4.4</u> | <u>+3.4</u>               | <u>+0.4</u> | <u>+1.3</u> | <u>+7.3</u> | <u>-5.0</u> | <u>+180.9</u> | <u>-183.5</u> | <u>-16.6</u> | <u>-12.7</u> | <u>-4.3</u> | <u>-38.0</u>           |
| †                     | <u>17.5</u> | <u>17.0</u> | <u>16.8</u> | <u>—</u>                  | <u>17.4</u> | <u>17.4</u> | <u>18.1</u> | <u>18.1</u> | <u>17.9</u>   | <u>18.4</u>   | <u>16.5</u>  | <u>15.0</u>  | <u>14.3</u> | <u>—</u>               |
| ††                    | <u>.61</u>  | <u>.82</u>  | <u>1.96</u> | <u>37.74</u>              | <u>.49</u>  | <u>1.02</u> | <u>3.59</u> | <u>4.69</u> | <u>7.19</u>   | <u>81</u>     | <u>1.44</u>  | <u>.74</u>   | <u>5.00</u> | <u>28.36</u>           |

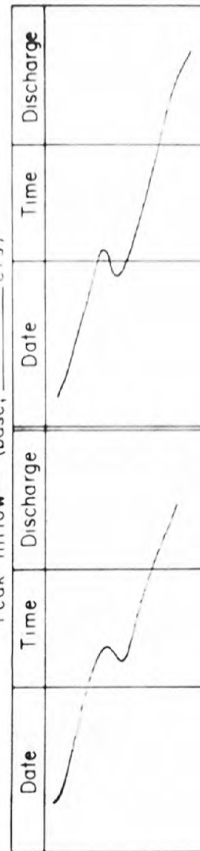
1 Inflow adjusted for rainfall on pool and pool losses.

† Change in contents, in acre-feet.

‡ Mean surface area, in acres.

†† Weighted mean rainfall, in inches.

Peak inflow - (base, — c.f.s.)



UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

1967 WATER YEAR

Honey Creek subwatershed No. B-D near McKinney, Tex. Drainage Area 1.46 sq. mi.  
Start Gage  
Continuous water-stage-feet ratio — Date of last sediment survey —  
Maxima: gage height, 23.10 ft; outflow, 12.0 cfs; surface area, 39.2 acres; contents, 281 acre-feet; on May 31, 1967  
Minima: gage height, 15.87 ft; surface area, 17.5 acres; contents, 75.4 acre-feet; on Sept. 5, 1967  
Maximum inflow, — cfs (averaged for 5-min. interval and adjusted for rainfall on pool surface) on —  
Averages: — water years, ( — ); inflow, — acre-feet/year; outflow, — acre-feet/year; rainfall, — inches/year.

Pool water budget, in acre-feet, water year October 1966 to September 1967.

|                        | Oct  | Nov  | Dec  | Calendar<br>year <u>1966</u> | Jan  | Feb  | Mar  | Apr  | May  | June | July  | Aug   | Sept  | Water<br>year <u>1967</u> |
|------------------------|------|------|------|------------------------------|------|------|------|------|------|------|-------|-------|-------|---------------------------|
| Total Inflow <u>1/</u> | 9.7  | 5.7  | 7.7  | 805                          | 6.2  | 1.0  | 30.6 | 37.0 | 232  | 61.7 | 2.8   | 23.8  | 26.4  | 445                       |
| Total Outflow          | 4.2  | 0    | 0    | 708                          | 0    | 0    | 17.3 | 35.0 | 87.4 | 194  | 0     | 36.7  | 0     | 375                       |
| Total Consumption      | 9.8  | 14.0 | 4.5  | 147                          | 5.8  | 6.2  | 10.7 | 12.3 | 17.4 | 18.4 | 18.6  | 15.0  | 12.8  | 146                       |
| †                      | -3.3 | -6.8 | +7.0 | +35.3                        | +1.2 | -3.6 | +8.2 | +0.8 | +142 | -148 | -13.4 | -27.1 | +22.4 | -20.7                     |
| †                      | 24.0 | 23.4 | 22.4 | —                            | 24.0 | 24.0 | 24.3 | 24.6 | 24.9 | 25.2 | 23.0  | 19.2  | 21.7  | —                         |
| ††                     | .62  | .75  | 2.04 | 39.98                        | 4.0  | .94  | 2.25 | 5.24 | 7.21 | 1.24 | 1.64  | .63   | 5.78  | 29.74                     |

1/ Inflow adjusted for rainfall on pool and pool losses.

† Change in contents, in acre-feet

† Mean surface area, in acres

†† Weighted mean rainfall, in inches

Peak inflow - (base, — cfs)





UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

1967 WATER YEAR

Honey Creek subwatershed No. B-E near McKinney, Tex. Drainage Area 1.93 sq mi.  
staff gage ratio —. Date of last sediment survey —.  
Maxima: gage height, 23.20 ft; outflow, 27.9 cfs; surface area, 57.7 acres; contents, 535 acre-feet; on May 31, 1967.  
Minima: gage height, 14.35 ft; surface area, 25.7 acres; contents, 174 acre-feet; on Sept. 5, 1967.  
Maximum inflow, — cfs (averaged for 5-min. interval and adjusted for rainfall on pool surface) on —.  
Averages: — water years, ( — ); inflow, — acre-feet/year; outflow, — acre-feet/year; rainfall, — inches/year.

Pool water budget, in acre-feet, water year October 1966 to September 1967.

|                           | Oct  | Nov   | Dec  | Calendar year 1966 | Jan  | Feb  | Mar   | Apr   | May  | June | July  | Aug   | Sept  | Water year 1967 |
|---------------------------|------|-------|------|--------------------|------|------|-------|-------|------|------|-------|-------|-------|-----------------|
| Total Inflow $\downarrow$ | 4.3  | 2.5   | 1.5  | 1,300              | 5.0  | 0.2  | 23.6  | 31.2  | 394  | 30.3 | 1.4   | 0.5   | 44.5  | 539             |
| Total Outflow             | 1.4  | 0     | 0    | 1,180              | 0    | 0    | 0     | 8.7   | 109  | 314  | 0     | 0     | 0     | 433             |
| Total Consumption         | 12.0 | 14.4  | 7.0  | 193                | 7.0  | 10.3 | 18.3  | 13.5  | 17.4 | 20.6 | 23.0  | 20.6  | 16.5  | 181             |
| †                         | -7.4 | -10.2 | -1.4 | +37.9              | -1.1 | -8.3 | +11.1 | +21.9 | +291 | -302 | -17.8 | -17.7 | +43.9 | +1.3            |
| ‡                         | 30.0 | 28.8  | 28.2 | —                  | 28.2 | 27.9 | 28.2  | 29.4  | 30.6 | 31.2 | 28.8  | 26.4  | 29.4  | —               |
| ††                        | .69  | .71   | 1.77 | 40.69              | .39  | .78  | 2.54  | 5.30  | 7.45 | .89  | 1.54  | 1.03  | 6.93  | 30.02           |

$\downarrow$  Inflow adjusted for rainfall on pool and pool losses.

† Change in contents, in acre-feet.

‡ Mean surface area, in acres.

†† Weighted mean rainfall, in inches

Peak inflow - (base, — cfs)



UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

1967 WATER YEAR

Honey Creek subwatershed No. 8-F near McKinney, Tex. Drainage Area 1.45 sq. mi.  
Start Gage  
~~Continuous water-stage recorder~~ ratio — Date of last sediment survey —

Maxima: gage height, 18.7 ft; outflow, 2.7 cfs; surface area, 36.5 acres; contents, 306 acre-feet; on May 31, 1967.

Minima: gage height, 10.45 ft; surface area, 16.9 acres; contents, 91.3 acre-feet; on Sept. 5, 1967.

Maximum inflow, — cfs (averaged for 5-min. interval and adjusted for rainfall on pool surface) on —.

Averages: — water years, ( — ); inflow, — acre-feet/year; outflow, — acre-feet/year; rainfall, — inches/year.

Pool water budget, in acre-feet, water year October 1966 to September 1967.

|                           | Oct  | Nov  | Dec  | Calendar year 1966 | Jan  | Feb  | Mar  | Apr  | May   | June  | July  | Aug   | Sept  | Water year 1967 |
|---------------------------|------|------|------|--------------------|------|------|------|------|-------|-------|-------|-------|-------|-----------------|
| Total Inflow $\downarrow$ | 9.2  | 6.7  | 6.5  | 1,030              | 7.4  | 0.2  | 13.6 | 4.6  | 21.3  | 21.9  | 4.5   | 0.1   | 27.4  | 315             |
| Total Outflow             | 0.1  | 0    | 0    | 259                | 0    | 0    | 0    | 2.5  | 40.3  | 191   | 0     | 0     | 0     | 234             |
| Total Consumption         | 12.0 | 9.8  | 5.7  | 129                | 8.9  | 5.0  | 10.5 | 8.4  | 11.3  | 13.6  | 18.3  | 13.1  | 9.6   | 126             |
| †                         | -2.0 | -2.0 | +3.0 | +292               | -1.0 | -3.7 | +6.1 | +2.2 | +17.5 | -18.1 | -11.5 | -11.4 | +24.3 | -2.4            |
| †                         | 20.0 | 19.6 | 19.8 | —                  | 19.8 | 19.8 | 19.8 | 20.0 | 20.5  | 21.3  | 18.9  | 17.2  | 19.1  | —               |
| ††                        | .61  | .69  | 1.54 | 39.73              | .33  | .74  | 2.18 | 5.21 | 7.02  | .71   | 1.49  | 1.17  | 5.71  | 27.40           |

$\downarrow$  Inflow adjusted for rainfall on pool and pool losses

† Change in contents, in acre-feet

† Mean surface area, in acres

†† Weighted mean rainfall, in inches

Peak inflow - (base, — cfs)



UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

1967 WATER YEAR

Honey Creek subwatershed No. 8-5 near McKinney, Tex. Drainage Area 3.96 sq. mi.  
Staff Gage ratio — Date of last sediment survey —

Maxima: gage height, 19.8 ft; outflow, 24.5 cfs; surface area, 16.6 acres; contents, 608 acre-feet; on May 31, 1967.

Minima: gage height, 2.84 ft; surface area, 23.1 acres; contents, 137 acre-feet; on Sept. 18, 30, 1967.

Maximum inflow, — cfs (averaged for 5-min. interval and adjusted for rainfall on pool surface) on —

Averages: — water years, ( — ); inflow, — acre-feet/year; outflow, — acre-feet/year; rainfall, — inches/year.

Pool water budget, in acre-feet, water year October 1966 to September 1967.

|                   | Oct   | Nov  | Dec. | Calendar year 1966 | Jan  | Feb. | Mar   | Apr  | May  | June | July  | Aug  | Sept  | Water year 1967 |
|-------------------|-------|------|------|--------------------|------|------|-------|------|------|------|-------|------|-------|-----------------|
| Total Inflow 1/   | 4.5   | 1.0  | 4.0  | 2,190              | 5.2  | 0.5  | 80.0  | 148  | 572  | 140  | 13.2  | 14.0 | 16.0  | 998             |
| Total Outflow     | 4.2   | 0    | 0    | 2,120              | 0    | 0    | 41.5  | 138  | 178  | 536  | 9.5   | 0    | 24.8  | 932             |
| Total Consumption | 15.8  | 8.3  | 7.1  | 198                | 8.2  | 8.0  | 14.0  | 14.3 | 18.6 | 26.3 | 24.3  | 24.8 | 16.5  | 186             |
| †                 | -14.0 | -5.5 | +1.4 | -0.7               | -1.9 | -5.4 | +32.7 | +7.3 | +400 | -420 | -17.6 | -9.9 | -15.9 | -49.1           |
| †                 | 28.8  | 27.6 | 27.2 | —                  | 27.2 | 26.8 | 28.0  | 31.0 | 31.0 | 35.1 | 27.6  | 26.1 | 23.6  | —               |
| ††                | .64   | .72  | 1.86 | 37.35              | .30  | 1.13 | 3.58  | 4.93 | 7.35 | 1.15 | 1.84  | .47  | 4.90  | 28.87           |

1/ Inflow adjusted for rainfall on pool and pool losses

† Change in contents, in acre-feet

† Mean surface area, in acres

†† Weighted mean rainfall, in inches

Peak inflow - (base, — cfs)



UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

1967 WATER YEAR

Staff Honey Creek subwatershed No 8-H near McKinney, Tex Drainage Area 2.18 sq mi.  
Continuous ~~water-stage recorder~~ ratio — Date of last sediment survey —  
Maxima: gage height, 21.8 ft; outflow, 24.9 cfs; surface area, 42.9 acres; contents, 390 acre-feet; on May 31, 1967  
Minima: gage height, 13.86 ft; surface area, 19.3 acres; contents, 140 acre-feet; on Sept. 30, 1967  
Maximum inflow, — cfs (averaged for 5-min. interval and adjusted for rainfall on pool surface) on —  
Averages: — water years, ( — ); inflow, — acre-feet/year; outflow, — acre-feet/year; rainfall, — inches/year.

Pool water budget, in acre-feet, water year October 1966 to September 1967.

|                   | Oct  | Nov  | Dec  | Calendar year 1966 | Jan  | Feb  | Mar   | Apr  | May  | June | July  | Aug   | Sept | Water year 1967 |
|-------------------|------|------|------|--------------------|------|------|-------|------|------|------|-------|-------|------|-----------------|
| Total Inflow 1/   | 2.0  | 4.2  | 7.7  | 1,270              | 6.6  | 2.5  | 36.2  | 37.8 | 284  | 92.4 | 1.0   | 2.3   | 0.6  | 477             |
| Total Outflow     | 0.6  | 0    | 0    | 1,140              | 0    | 0    | 13.3  | 37.1 | 108  | 264  | 0     | 0     | 0    | 423             |
| Total Consumption | 11.7 | 12.0 | 4.8  | 176                | 7.4  | 6.2  | 15.5  | 12.1 | 16.0 | 17.5 | 26.0  | 15.8  | 16.3 | 161             |
| †                 | -9.2 | -6.3 | +6.8 | +47.1              | 0    | -2.0 | +13.3 | +0.6 | +177 | -186 | -22.4 | -12.6 | -6.7 | -48.1           |
| †                 | 25.4 | 24.0 | 24.0 | —                  | 24.7 | 24.7 | 25.8  | 26.2 | 26.6 | 26.9 | 23.6  | 21.0  | 19.9 | —               |
| ††                | .64  | .75  | 2.08 | 40.17              | .40  | .99  | 3.47  | 5.16 | 7.33 | 1.29 | 1.74  | .58   | 5.64 | 30.07           |

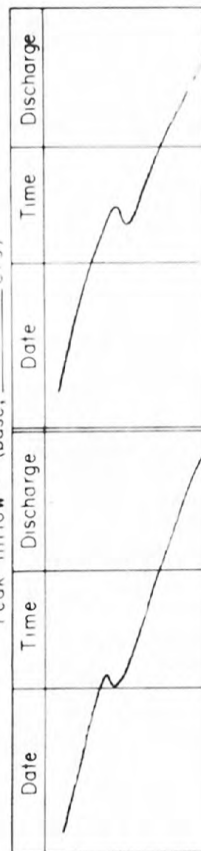
1/ Inflow adjusted for rainfall on pool and pool losses.

† Change in contents, in acre-feet.

† Mean surface area, in acres.

†† Weighted mean rainfall, in inches.

Peak inflow - (base, — cfs)



UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

1967 WATER YEAR

Stoff Hone Creek subwatershed No 9 near McKinney, Tex Drainage Area 1.37 sq. mi.  
~~Continuous water stage recorder~~ ratio — Date of last sediment survey —

Maxima: gage height, 16.9 ft; outflow, 12.0 c.f.s.; surface area, 24.5 acres; contents, 215 acre-feet; on May 31, 1967.

Minima: gage height, 9.62 ft; surface area, 12.4 acres; contents, 86.5 acre-feet; on Apr. 10, 1967.

Maximum inflow, — c.f.s. (averaged for 5-min. interval and adjusted for rainfall on pool surface) on —

Averages: — water years, ( — ); inflow, — acre-feet/year; outflow, — acre-feet/year; rainfall, — inches/year.

Pool water budget, in acre-feet, water year October 1966 to September 1967.

|                   | Oct  | Nov  | Dec  | Calendar year 1966 | Jan  | Feb  | Mar  | Apr   | May   | June  | July | Aug  | Sept  | Water year 1967 |
|-------------------|------|------|------|--------------------|------|------|------|-------|-------|-------|------|------|-------|-----------------|
| Total Inflow 1/   | 0.3  | 0.1  | 0.6  | 752                | 0.7  | 0.2  | 2.5  | 33.8  | 128   | 21.8  | 2.4  | 2.8  | 19.8  | 213             |
| Total Outflow     | 0    | 0    | 0    | 691                | 0    | 0    | 0    | 1.4   | 43.4  | 103   | 0    | 0    | 0     | 148             |
| Total Consumption | 8.3  | 5.4  | 3.8  | 104                | 3.1  | 3.6  | 5.7  | 6.0   | 8.7   | 12.9  | 11.6 | 12.7 | 10.4  | 92.2            |
| †                 | -7.4 | -4.5 | -1.8 | +19.5              | -2.1 | -2.7 | -0.9 | +31.7 | +85.6 | -93.7 | -7.7 | -5.2 | +16.7 | +8.0            |
| †                 | 13.8 | 13.4 | 13.0 | —                  | 12.9 | 12.7 | 12.6 | 13.4  | 15.5  | 15.7  | 14.1 | 13.4 | 14.9  | —               |
| ††                | .57  | .70  | 1.32 | 37.75              | .25  | .69  | 2.19 | 5.17  | 6.85  | .69   | 1.28 | 3.67 | 5.99  | 29.37           |

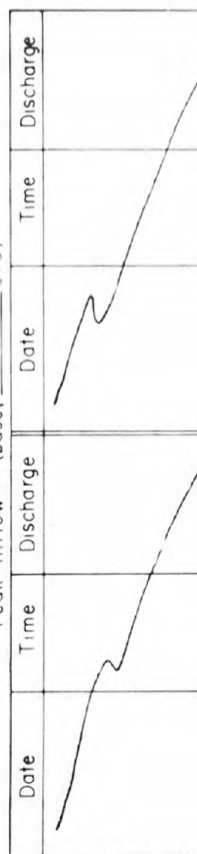
1/ Inflow adjusted for rainfall on pool and pool losses.

† Change in contents, in acre-feet.

† Mean surface area, in acres

†† Weighted mean rainfall, in inches.

Peak inflow - (base, — c.f.s.)





UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

1967 WATER YEAR

Honey Creek subwatershed No 10 near McKinney, Tex. Drainage Area 1.25 sq. mi.  
Staff Gage

Continuous water stage recorder: ratio — Date of last sediment survey —

Maxima: gage height, 19.6 ft; outflow, 10.2 cfs; surface area, 24.4 acres; contents, 219 acre-feet; on May 31, 1967.

Minima: gage height, 10.60 ft; surface area, 11.3 acres; contents, 64.8 acre-feet; on Sept. 5, 1967.

Maximum inflow, — cfs (averaged for 5-min. interval and adjusted for rainfall on pool surface) on —

Averages: — water years, ( — ); inflow, — acre-feet/year; outflow, — acre-feet/year; rainfall, — inches/year.

Pool water budget, in acre-feet, water year October 1966 to September 1967.

|                           | Oct  | Nov  | Dec  | Calendar year 1966 | Jan  | Feb  | Mar  | Apr  | May  | June | July | Aug  | Sept  | Water year 1967 |
|---------------------------|------|------|------|--------------------|------|------|------|------|------|------|------|------|-------|-----------------|
| Total Inflow $\downarrow$ | 8.8  | 5.7  | 8.6  | 919                | 6.0  | 2.2  | 11.3 | 11.9 | 191  | 60.4 | 0.2  | 4.4  | 20.2  | 331             |
| Total Outflow             | 4.2  | 0    | 4.6  | 853                | 1.6  | 0.2  | 5.4  | 9.4  | 55.2 | 192  | 0    | 0    | 3.2   | 276             |
| Total Consumption         | 6.8  | 5.7  | 4.1  | 91.1               | 5.1  | 4.2  | 6.4  | 6.5  | 8.4  | 9.6  | 11.2 | 9.8  | 8.9   | 86.7            |
| †                         | -1.9 | +0.7 | +1.2 | +25.2              | -0.4 | -1.5 | +1.9 | +0.6 | +136 | -140 | -9.6 | -4.0 | +14.3 | -2.7            |
| †                         | 12.8 | 12.7 | 12.8 | —                  | 12.8 | 12.8 | 12.8 | 12.8 | 13.0 | 13.4 | 12.2 | 11.5 | 12.7  | —               |
| ††                        | .50  | .68  | 1.33 | 39.51              | .29  | .69  | 1.92 | 4.95 | 6.60 | .61  | 1.42 | 1.30 | 4.79  | 25.08           |

$\downarrow$  Inflow adjusted for rainfall on pool and pool losses.

† Change in contents, in acre-feet.

† Mean surface area, in acres

†† Weighted mean rainfall, in inches

Peak inflow - (base, — cfs)



UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

1967 WATER YEAR

Honey Creek subwatershed No 13 near McKinney, Tex Drainage Area 0.89 sq. mi.  
Staff Gage ratio — Date of last sediment survey —

Maxima: gage height, 10.7 ft; outflow, — c.f.s.; surface area, 15.3 acres; contents, 119 acre-feet; on May 31, 1967.

Minima: gage height, 6.16 ft; surface area, 10.4 acres; contents, 60.7 acre-feet; on May 29, 30, 1967.

Maximum inflow, — c.f.s (averaged for 5-min. interval and adjusted for rainfall on pool surface) on —

Averages: — water years, ( — ); inflow, — acre-feet/year; outflow, — acre-feet/year; rainfall, — inches/year.

Pool water budget, in acre-feet, water year October 1966 to September 1967.

|                   | Oct  | Nov   | Dec  | Calendar<br>year 1966 | Jan  | Feb  | Mar  | Apr  | May   | June  | July  | Aug   | Sept | Water<br>year 1967 |
|-------------------|------|-------|------|-----------------------|------|------|------|------|-------|-------|-------|-------|------|--------------------|
| Total Inflow 1/   | 0.1  | 0.5   | 3.2  | 450                   | 1.0  | 0.7  | 0.6  | 2.9  | 52.2  | 0.1   | 4.2   | 7.6   | 0.7  | 73.8               |
| Total Outflow     | 0    | 0     | 0    | 353                   | 1.5  | 0    | 0    | 0    | 0     | 0     | 8.3   | 9.5   | 0    | 19.3               |
| Total Consumption | 9.0  | 13.7  | 4.7  | 150                   | 6.8  | 4.1  | 5.5  | 4.4  | 6.4   | 16.0  | 16.6  | 15.8  | 10.8 | 114                |
| †                 | -8.1 | -12.5 | 0    | -0.6                  | -6.9 | -2.7 | -2.5 | +1.6 | +54.0 | -15.3 | -19.3 | -16.3 | -4.0 | -32.0              |
| †                 | 13.2 | 12.4  | 11.8 | —                     | 11.3 | 11.0 | 10.7 | 10.6 | 10.7  | 14.4  | 13.4  | 11.3  | 10.8 | —                  |
| ††                | .58  | .76   | 1.35 | 38.67                 | .35  | .69  | 2.49 | 3.67 | 6.75  | .48   | 1.32  | 4.25  | 6.29 | 28.98              |

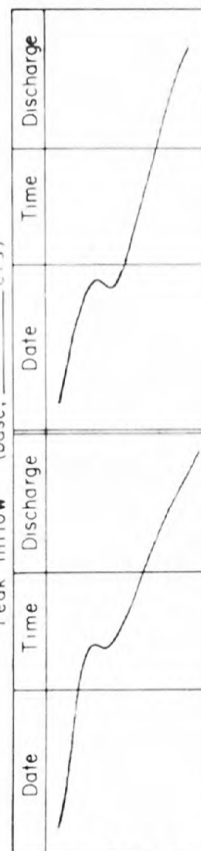
1/ Inflow adjusted for rainfall on pool and pool losses

† Change in contents, in acre-feet

† Mean surface area, in acres

†† Weighted mean rainfall, in inches

Peak inflow - (base, — c.f.s)



UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

1967 WATER YEAR

Florey Creek subwatershed No. 14 near McKinney, Tex. Drainage Area 0.91 sq. mi.  
Staff Gage ratio — Date of last sediment survey —

Maxima: gage height, 18.5 ft; outflow, 13.2 cfs; surface area, 22.0 acres; contents, 123 acre-feet; on May 31, 1967

Minima: gage height, 10.60 ft; surface area, 11.3 acres; contents, 68.4 acre-feet; on Sept. 5, 1967

Maximum inflow, — cfs (averaged for 5-min. interval and adjusted for rainfall on pool surface) on —

Averages: — water years, ( — ); inflow, — acre-feet/year; outflow, — acre-feet/year; rainfall, — inches/year.

Pool water budget, in acre-feet, water year October 1966 to September 1967.

|                           | Oct  | Nov  | Dec  | Calendar<br>year <u>1966</u> | Jan  | Feb  | Mar  | Apr  | May   | June  | July | Aug  | Sept  | Water<br>year <u>1967</u> |
|---------------------------|------|------|------|------------------------------|------|------|------|------|-------|-------|------|------|-------|---------------------------|
| Total Inflow $\downarrow$ | 0.6  | 0.4  | 2.4  | 705                          | 2.4  | 1.5  | 8.3  | 9.2  | 302   | 12.4  | 0.8  | 6.1  | 14.2  | 360                       |
| Total Outflow             | 0    | 0    | 0    | 659                          | 0    | 0    | 0    | 2.0  | 200   | 111   | 0    | 0    | 0     | 313                       |
| Total Consumption         | 4.3  | 3.6  | 3.6  | 75.9                         | 3.8  | 3.6  | 7.2  | 5.5  | 7.6   | 2.6   | 11.0 | 11.5 | 9.6   | 80.9                      |
| †                         | -3.0 | -2.5 | +0.3 | +15.7                        | -0.9 | -1.3 | +3.8 | +5.3 | +10.3 | -10.7 | -9.0 | -4.0 | +11.3 | -4.1                      |
| ‡                         | 12.3 | 12.0 | 12.0 | —                            | 12.0 | 12.0 | 12.0 | 12.3 | 12.7  | 12.6  | 11.9 | 11.5 | 12.0  | —                         |
| ††                        | .56  | .70  | 1.42 | 39.04                        | .41  | .77  | 2.58 | 3.80 | 7.10  | .57   | 1.27 | 1.46 | 6.53  | 27.17                     |

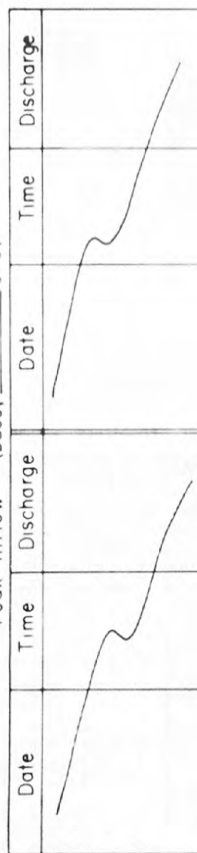
$\downarrow$  Inflow adjusted for rainfall on pool and pool losses.

† Change in contents, in acre-feet.

‡ Mean surface area, in acres.

†† Weighted mean rainfall, in inches.

Peak inflow - (base, — cfs)



STUDY AREA Honey Creek

## RAINFALL DATA SUMMARY

## RAIN GAGES

1967 WINTER YEAR

| Date of storm | 1-S  | 2-S  | 3-S  | 4-S  | 5-S  | 6-S  | 7-S  | 8-S  | 9-R  | 10-S | 11-S | 12-R | 13-R | 14-S | 15-R | 16-R | Total | Avg. | By $\checkmark$ |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|-----------------|
| Oct. 4 1966   | 0.18 | 0.20 | 0.21 | 0.22 | 0.23 | 0.31 | 0.32 | 0.27 | 0.25 | 0.26 | 0.27 | 0.16 | 0.28 | 0.35 | 0.36 | 0.24 |       |      |                 |
| 17            | .46  | .49  | .40  | .40  | 0.28 | .37  | .30  | .36  | .30  | .29  | .28  | .12  | .25  | .33  | .30  | .20  |       |      | JMS             |
| Oct. Totals   | .64  | .69  | .61  | .62  | .51  | .68  | .62  | .63  | .55  | .55  | .55  | .28  | .53  | .68  | .66  | .44  | 9.24  | .58  | JAN             |
| Nov. 9        | .06  | .08  | .07  | .08  | .07  | .09  | .09  | .09  | .06  | .06  | .06  | .06  | .07  | .09  | .05  | .00  |       |      |                 |
| 26            | .62  | .67  | .72  | .77  | .70  | .62  | .58  | .61  | .60  | .62  | .67  | .60  | .72  | .62  | .60  | .60  |       |      |                 |
| Nov. Totals   | .68  | .75  | .79  | .85  | .77  | .71  | .67  | .70  | .66  | .68  | .73  | .66  | .79  | .71  | .65  | .60  | 11.40 | .71  |                 |
| Dec. 4        | .02  | .01  | .01  | .02  | .00  | .03  | .02  | .02  | .00  | .02  | .00  | .00  | .00  | .03  | .00  | .00  |       |      |                 |
| 15-16         | .77  | .92  | .85  | .69  | .84  | .69  | .61  | .60  | .61  | .64  | .54  | .62  | .60  | .68  | .54  | .60  |       |      |                 |
| 27            | .80  | 1.03 | .90  | .92  | .93  | .84  | .78  | .60  | .65  | .60  | .53  | .49  | .47  | .66  | .48  | .50  |       |      |                 |
| 30            | .15  | .19  | .24  | .29  | .20  | .19  | .15  | .19  | .10  | .10  | .19  | .10  | .20  | .13  | .24  | .20  |       |      |                 |
| Dec. Totals   | 1.74 | 2.15 | 2.00 | 1.92 | 1.97 | 1.75 | 1.56 | 1.41 | 1.36 | 1.36 | 1.26 | 1.21 | 1.27 | 1.50 | 1.26 | 1.50 | 25.02 | 1.56 |                 |
| 1966 Cal Year |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |      |                 |
| Jan. 13 1967  | .00  | .00  | .00  | .00  | .00  | .01  | .01  | .01  | .01  | .01  | .03  | .02  | .02  | .02  | .00  | .00  |       |      |                 |
| 26            | .19  | .40  | .48  | .52  | .40  | .38  | .29  | .18  | .28  | .28  | .28  | .28  | .27  | .43  | .25  | .40  |       |      |                 |
| Jan. Totals   | .19  | .40  | .48  | .52  | .40  | .39  | .30  | .19  | .19  | .29  | .31  | .30  | .29  | .45  | .25  | .40  | 5.35  | .33  |                 |
| Feb. 11       | .57  | .44  | .42  | .61  | .35  | .32  | .34  | .31  | .29  | .26  | .30  | .28  | .29  | .30  | .30  | .24  |       |      |                 |
| 19-20         | .65  | .59  | .48  | .50  | .45  | .44  | .38  | .38  | .37  | .42  | .37  | .36  | .32  | .50  | .48  | .36  |       |      |                 |
| 27            | .03  | .02  | .03  | .03  | .02  | .02  | .03  | .03  | .02  | .02  | .02  | .02  | .01  | .01  | .02  | .02  |       |      |                 |
| Feb. Totals   | 1.25 | 1.05 | .93  | 1.14 | .82  | .78  | .75  | .72  | .68  | .70  | .69  | .66  | .62  | .81  | .80  | .62  | 13.02 | .81  |                 |
| Mar. 5-6      | 1.03 | 1.03 | .91  | .97  | 1.01 | 1.00 | 1.05 | .90  | 1.03 | .85  | .95  | 1.10 | 1.03 | 1.34 | .95  | 1.10 |       |      |                 |
| 20            | .49  | .60  | .63  | .56  | .48  | .52  | .49  | .51  | .57  | .48  | .49  | .46  | .54  | .50  | .50  | .50  |       |      |                 |
| 25            | 1.41 | 1.78 | 1.61 | 1.57 | .98  | .98  | .68  | .68  | .69  | .50  | .74  | .66  | .79  | .89  | .85  | .89  |       |      |                 |
| 31            | .63  | .93  | .42  | .62  | .30  | .02  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  |       |      |                 |
| Mar. Totals   | 3.56 | 3.74 | 3.57 | 3.72 | 2.77 | 2.52 | 2.22 | 2.09 | 2.29 | 1.83 | 2.18 | 2.22 | 2.36 | 2.73 | 2.30 | 2.49 | 42.59 | 2.66 |                 |
| Apr. 10       | 1.03 | .90  | .90  | .91  | .90  | .98  | .99  | 1.06 | .85  | .28  | .79  | .97  | .75  | 1.00 | .95  | .84  |       |      |                 |
| 13            | .56  | .64  | .55  | .55  | .60  | .61  | .59  | .59  | .45  | .55  | .45  | .48  | .50  | .49  | .40  | .48  |       |      |                 |
| 18            | .16  | .19  | .17  | .17  | .20  | .18  | .13  | .13  | .10  | .18  | .16  | .20  | .10  | .13  | .00  | .10  |       |      |                 |
| 20            | 1.60 | 1.89 | 1.66 | 1.71 | 2.00 | 1.78 | 1.90 | 2.27 | 2.40 | 1.75 | 1.99 | 1.35 | 1.30 | .88  | 1.10 | 1.20 |       |      |                 |
| 21            | .56  | .66  | .57  | .60  | .70  | .62  | .59  | .84  | .65  | .72  | .79  | .70  | .63  | .46  | .70  | .70  |       |      |                 |
| 25            | .90  | .61  | .55  | .61  | .80  | .85  | .77  | .42  | .40  | .37  | .28  | .20  | .20  | .19  | .20  | .25  |       |      |                 |
| 30            | .28  | .19  | .17  | .19  | .25  | .27  | .45  | .47  | .40  | .57  | .37  | .45  | .25  | .42  | .25  | .25  |       |      |                 |
| April Totals  | 5.09 | 5.08 | 4.57 | 4.74 | 5.45 | 5.29 | 5.42 | 5.78 | 5.25 | 5.12 | 4.83 | 4.35 | 3.73 | 3.57 | 3.60 | 3.82 | 75.69 | 4.73 |                 |



## RAINFALL DATA SUMMARY

STUDY AREA

Honey Creek

RAIN GAGES

1967

W. TER YEAR

| Date of storm   | 1-5  | 2-5  | 3-5  | 4-5  | 5-R  | 6-5  | 7-5  | 8-5  | 9-R  | 10-5 | 11-5 | 12-R | 13-R | 14-5 | 15-R | 16-R | Total  | Avg. | By |
|-----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------|------|----|
| May 3-4         | 0.27 | 0.41 | 0.38 | 0.25 | 0.20 | 0.22 | 0.15 | 0.24 | 0.25 | 0.92 | 0.32 | 0.30 | 0.20 | 0.33 | 0.20 | 0.20 |        |      |    |
| 14              | .84  | .73  | .70  | .73  | .49  | .34  | .45  | .44  | .40  | .37  | .42  | .42  | .50  | .62  | .45  | .40  |        |      |    |
| 19-20           | 1.28 | 1.55 | 1.26 | 1.41 | .86  | 1.07 | 1.20 | 1.07 | .60  | .49  | .72  | .42  | .77  | .44  | .40  | .35  |        |      |    |
| 20              | .29  | .35  | .29  | .32  | .20  | .25  | .38  | .40  | .25  | .39  | .41  | .50  | .27  | .52  | .65  | .48  |        |      |    |
| 21              | .16  | .19  | .15  | .17  | .10  | .13  | .17  | .20  | .10  | .09  | .14  | .08  | .14  | .09  | .10  | .10  |        |      |    |
| 29              | .12  | .10  | .12  | .12  | .08  | .16  | .16  | .16  | .11  | .10  | .00  | .18  | .10  | .00  | .02  | .02  |        |      |    |
| 30              | 1.41 | 1.38 | 1.38 | 1.37 | 1.47 | 1.72 | 1.22 | 1.25 | 1.19 | 1.25 | 1.20 | 1.30 | 1.15 | 1.38 | 1.10 | 1.30 |        |      |    |
| 30-31           | 3.01 | 2.94 | 2.92 | 2.90 | 3.13 | 3.64 | 3.13 | 3.75 | 3.77 | 3.54 | 3.40 | 3.60 | 3.36 | 3.84 | 3.50 | 3.50 |        |      |    |
| May totals      | 7.38 | 7.65 | 7.20 | 7.27 | 7.53 | 7.53 | 6.86 | 7.51 | 6.67 | 6.55 | 6.61 | 6.80 | 6.49 | 7.22 | 6.42 | 6.35 | 111.04 | 6.94 |    |
| June 12         | .96  | 1.00 | .60  | .66  | .88  | .64  | .90  | 1.25 | .46  | .59  | .52  | .69  | .46  | .52  | .40  | .50  |        |      |    |
| 21              | .32  | .35  | .22  | .09  | .32  | .22  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  |        |      |    |
| June totals     | 1.28 | 1.35 | .82  | .75  | 1.20 | .86  | .90  | 1.25 | .46  | .59  | .52  | .69  | .46  | .52  | .40  | .50  | 12.55  | .78  |    |
| July 1          | .31  | .29  | .27  | .32  | .27  | .32  | .32  | .40  | .41  | .51  | .51  | .52  | .50  | .50  | .45  | .50  |        |      |    |
| 4               | .71  | .35  | .26  | .25  | .22  | .19  | .10  | .08  | .12  | .18  | .11  | .15  | .10  | .10  | .08  | .08  |        |      |    |
| 13              | 1.04 | 1.25 | .70  | 1.01 | .72  | 1.00 | .90  | .81  | .70  | .70  | .61  | .67  | .75  | .60  | .50  | .55  |        |      |    |
| 20              | .05  | .05  | .05  | .04  | .05  | .05  | .02  | .04  | .05  | .05  | .02  | .05  | .02  | .02  | .02  | .00  |        |      |    |
| July totals     | 2.11 | 1.94 | 1.28 | 1.62 | 1.26 | 1.56 | 1.34 | 1.33 | 1.28 | 1.44 | 1.25 | 1.39 | 1.37 | 1.22 | 1.05 | 1.13 | 22.51  | 1.41 |    |
| Aug 4           | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .20  | .00  | .10  | .10  |        |      |    |
| 17              | .00  | .00  | .00  | .00  | .00  | .00  | .33  | 2.07 | 1.00 | .30  | 1.83 | .85  | 4.06 | .27  | 1.80 | .82  |        |      |    |
| 19              | .46  | .63  | .22  | 1.09 | .40  | 1.02 | 1.03 | 1.22 | 1.09 | .52  | 1.76 | .87  | 1.14 | .65  | .90  | 1.20 |        |      |    |
| 21              | .00  | .00  | .22  | .00  | .10  | .06  | .22  | .29  | .55  | .29  | .67  | .20  | .35  | .55  | .48  | .40  |        |      |    |
| Aug totals      | .46  | .63  | .44  | 1.09 | .50  | 1.08 | 1.58 | 3.58 | 2.64 | 1.11 | 4.26 | 1.42 | 5.75 | 1.47 | 3.28 | 2.52 | 31.81  | 1.99 |    |
| Sept 4-5        | .92  | 1.22 | .93  | .94  | 1.10 | 1.45 | .90  | 1.21 | 1.37 | .90  | 1.55 | 1.35 | 1.52 | 1.33 | 1.30 | 1.40 |        |      |    |
| 5-6             | 2.47 | 3.28 | 2.50 | 2.56 | 3.02 | 3.93 | 2.30 | 2.62 | 3.30 | 2.43 | 3.32 | 3.85 | 2.90 | 3.77 | 2.90 | 3.00 |        |      |    |
| 14              | .21  | .13  | .16  | .17  | .12  | .13  | .15  | .18  | .12  | .14  | .16  | .12  | .20  | .23  | .10  | .15  |        |      |    |
| 15              | .24  | .14  | .19  | .20  | .14  | .15  | .18  | .17  | .14  | .15  | .16  | .13  | .15  | .24  | .10  | .10  |        |      |    |
| 19              | .40  | .45  | .56  | .66  | .52  | .76  | .75  | 1.06 | .45  | .20  | .36  | .20  | .65  | .53  | .25  | .20  |        |      |    |
| 27              | .65  | .56  | .47  | .61  | .52  | .64  | .42  | .57  | .60  | .55  | .54  | .50  | .66  | .58  | .45  | .40  |        |      |    |
| Sept totals     | 4.79 | 5.80 | 4.81 | 5.14 | 5.42 | 7.06 | 4.70 | 5.81 | 5.98 | 4.37 | 6.09 | 6.15 | 6.08 | 6.68 | 5.10 | 5.25 | 89.23  | 5.58 |    |
| 1967 Water Year |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 28.08  |      |    |



## INFLOW AND OUTFLOW COMPUTATIONS

| 8-0575 Honey Creek subwatershed No. 11 near McKinney, Tex. D.A. 2.14 sq mi |                   |                  |                     |                      |      |                      |                |                        |                  |            |                  |            |               |                   |
|--|-------------------|------------------|---------------------|----------------------|------|----------------------|----------------|------------------------|------------------|------------|------------------|------------|---------------|-------------------|
| Date and time  | Gage height<br>ft | Storage<br>ac-ft | Time<br>int.<br>hrs | Change in<br>storage |      | Mean<br>G. Ht.<br>ft | Outflow<br>cfs | Total<br>inflow<br>cfs | Rainfall on Pool |            |                  | Net Inflow |               |                   |
|  |                   |                  |                     | ac-ft                | cfs  |                      |                |                        | in<br>ac         | area<br>ac | Storage<br>ac-ft | cfs        | Rate<br>in/hr | in                |
| 0000   | 13.60             | 378.45           | -                   | -                    | -    | -                    | -              | -                      | -                | -          | -                | -          | -             | -                 |
| 0200   | 13.60             | 378.45           | 2.0                 | 0                    | 0    | 13.60                | 0              | 0                      | 0                | 0          | 0                | 0          | 0             | 0                 |
| 0215   | 13.62             | 379.27           | .25                 | + .82                | 39.7 | 13.61                | 1              | 39.7                   | .24              | 41.1       | .82              | 39.7       | 0             | 0                 |
| 0230   | 13.63             | 379.69           |                     | + .42                | 20.3 | 13.63                |                | 20.3                   | .12              | 41.2       | .42              | 20.3       | 0             | 0                 |
| 0245   | 13.64             | 380.10           |                     | + .41                | 19.8 | 13.64                |                | 19.8                   | .12              | 41.2       | .41              | 19.8       | 0             | 0                 |
| 0300   | 13.64             | 380.10           |                     | 0                    | 0    | 13.64                |                | 0                      | .03              | 41.2       | .10              | 4.8        | 0             | 0                 |
| 0315   | 13.645            | 380.30           |                     | + .20                | 9.7  | 13.64                |                | 9.7                    | .06              | 41.2       | .20              | 9.7        | 0             | 0                 |
| 0330   | 13.65             | 380.51           |                     | + .21                | 10.2 | 13.65                |                | 10.2                   | .06              | 41.2       | .21              | 10.2       | 0             | 0                 |
| 0345   | 13.65             | 380.51           |                     | 0                    | 0    | 13.65                |                | 0                      | 0                | 0          | 0                | 0          | 0             | 0                 |
| 0400   | 13.65             | 380.51           |                     | 0                    | 0    | 13.65                |                | 0                      | 0                | 0          | 0                | 0          | 0             | 0                 |
| 0415   | 13.65             | 380.51           |                     | 0                    | 0    | 13.65                |                | 0                      | 0                | 0          | 0                | 0          | 0             | 0                 |
| 0430   | 13.65             | 380.51           |                     | 0                    | 0    | 13.65                |                | 0                      | 0                | 0          | 0                | 0          | 0             | 0                 |
| 0445   | 13.67             | 381.33           |                     | + .82                | 39.7 | 13.66                |                | 39.7                   | .24              | 41.2       | .82              | 39.7       | 0             | 0                 |
| 0500   | 13.70             | 382.57           | .25                 | + 1.24               | 60.0 | 13.68                |                | 60.0                   | .23              | 41.3       | .79              | 38.2       | 21.8          | .0158 .0040 .0040 |
| 0530   | 13.71             | 382.98           | .50                 | + .41                | 9.9  | 13.71                |                | 9.9                    | 0                | 0          | 0                | 0          | 9.9           | .0071 .0076 .0074 |
| 0600   | 13.72             | 383.40           | .50                 | + .42                | 10.2 | 13.72                |                | 10.2                   | 0                | 0          | 0                | 0          | 10.2          | .0074 .0037 .0113 |
| 0700   | 13.73             | 383.82           | 1.0                 | + .42                | 5.1  | 13.72                |                | 5.1                    | 0                | 0          | 0                | 0          | 5.1           | .0037 .0037 .0150 |
| 0800   | 13.735            | 384.02           | 1.0                 | + .20                | 2.4  | 13.73                |                | 2.4                    | 0                | 0          | 0                | 0          | 2.4           | .0017 .0017 .0167 |
| 1100   | 13.740            | 384.23           | 3.0                 | + .21                | .8   | 13.74                |                | .8                     | 0                | 0          | 0                | 0          | .8            | .0006 .0018 .0185 |
| 1700   | 13.745            | 384.43           | 6.0                 | + .20                | .4   | 13.74                |                | .4                     | 0                | 0          | 0                | 0          | .4            | .0003 .0018 .0203 |
| 1715   | 13.750            | 384.64           | .25                 | + .21                | 10.2 | 13.75                |                | 10.2                   | 0                | 0          | 0                | 0          | 10.2          | .0074 .0018 .0221 |
| 1730   | 13.85             | 388.80           |                     | + 4.16               | 201  | 13.80                |                | 201                    | .85              | 41.6       | 2.95             | 14.3       | 58.0          | .0420 .0105 .0326 |
| 1745   | 14.00             | 395.09           |                     | + 6.29               | 304  | 13.92                |                | 304                    | .45              | 41.9       | 1.57             | 76.0       | 228           | .1651 .0413 .0739 |
| 1800   | 14.19             | 409.14           | .25                 | + 8.05               | 390  | 14.10                |                | 390                    | .60              | 42.4       | 2.12             | 103        | 287           | .2079 .0520 .1259 |
| 1805   | 14.28             | 406.98           | .083                | + 3.84               | 558  | 14.24                |                | 558                    | .06              | 42.7       | .21              | 30.5       | 528           | .3824 .0317 .1576 |
| 1810   | 14.37             | 410.84           | .083                | + 3.86               | 560  | 14.32                |                | 560                    | .06              | 42.9       | .21              | 30.5       | 530           | .3839 .0319 .1895 |
| 1815   | 14.45             | 414.29           | .083                | + 3.45               | 501  | 14.41                |                | 501                    | .02              | 43.1       | .07              | 10.2       | 491           | .3556 .0295 .2190 |
| 1830   | 14.69             | 424.73           | .25                 | + 10.44              | 505  | 14.57                | 0              | 505                    | .01              | 43.5       | .04              | 1.9        | 503           | .3643 .0911 .3101 |
| 1900   | 15.10             | 442.93           | .50                 | + 18.20              | 440  | 14.90                | .48            | 440                    | .01              | 44.4       | .04              | 1.0        | 499           | .3180 .1590 .4691 |
| 1930   | 15.31             | 452.43           | .50                 | + 9.50               | 230  | 15.20                | 4.9            | 235                    | 0                | 0          | 0                | 0          | 235           | .1702 .0851 .5542 |
| 2000   | 15.39             | 456.07           | .50                 | + 3.64               | 88.1 | 15.35                | 5.5            | 236                    | 0                | 0          | 0                | 0          | 236           | .0678 .0339 .5881 |
| 2100   | 15.46             | 459.28           | 1.0                 | + 3.21               | 38.8 | 15.42                | 5.6            | 44.4                   | 0                | 0          | 0                | 0          | 44.4          | .0322 .0322 .6203 |

## INFLOW AND OUTFLOW COMPUTATIONS

Storm period May 30-31, 19678-0575 Honey Creek subwatershed No. 11 near McKinney, Tex. D.A. 2.14 sq mi

| Date and time   | Gage height ft | Storage ac-ft | Time int. hrs | Change in storage |       | Mean G. Ht. ft | Outflow cfs | Total Inflow cfs | Rainfall on Pool |               |      |       | Net Inflow |       |       |        |  |
|-----------------|----------------|---------------|---------------|-------------------|-------|----------------|-------------|------------------|------------------|---------------|------|-------|------------|-------|-------|--------|--|
|                 |                |               |               | ac-ft             | cfs   |                |             |                  | area in ac       | Storage ac-ft | cfs  | Rate  |            |       |       |        |  |
|                 |                |               |               |                   |       |                |             |                  |                  |               |      | cfs   | in/hr      |       |       |        |  |
| continue May 30 |                |               |               |                   |       |                |             |                  |                  |               |      |       |            |       |       |        |  |
| 2200            | 15.49          | 460.66        | .50           | +1.38             | 33.4  | 15.48          | 5.7         | 39.1             | 0                |               |      |       | 39.1       | .0283 | .0142 | .6345  |  |
| 2230            | 15.50          | 461.12        |               | + .46             | 11.1  | 15.50          | 5.8         | 16.9             | 0                |               |      |       | 16.9       | .0122 | .0061 | .6406  |  |
| 2300            | 15.55          | 463.43        |               | +2.31             | 55.9  | 15.52          | 5.8         | 61.7             | .40              | 46.1          | 1.54 | 37.3  | 24.4       | .0177 | .0088 | .6494  |  |
| 2330            | 15.64          | 467.60        |               | +4.17             | 101   | 15.60          | 5.8         | 107              | .38              | 46.3          | 1.47 | 35.16 | 71.4       | .0517 | .0258 | .6752  |  |
| 2400            | 15.85          | 477.42        | .50           | +9.82             | 238   | 15.74          | 5.9         | 244              | .16              | 46.7          | .62  | 15.0  | 22.9       | .1659 | .0830 | .7582  |  |
|                 |                |               |               |                   |       | 96             | 102.7       |                  |                  |               |      |       |            |       |       |        |  |
|                 |                |               |               |                   |       |                | 1.1         |                  |                  |               |      |       |            |       |       |        |  |
| May 31 1967     |                |               |               |                   |       |                |             |                  |                  |               |      |       |            |       |       |        |  |
| 0000            | 15.85          | 477.42        |               |                   |       |                |             |                  |                  |               |      |       |            |       |       |        |  |
| 0030            | 16.08          | 488.32        | .50           | +10.90            | 264   | 15.96          | 6.0         | 270              | .08              | 47.4          | .32  | 7.7   | 26.2       | .1898 | .0949 | .8531  |  |
| 0100            | 16.26          | 496.97        |               | + 8.65            | 209   | 16.17          | 6.1         | 215              | .10              | 48.0          | .40  | 9.7   | 20.5       | .1485 | .0742 | .9273  |  |
| 0130            | 16.40          | 503.76        |               | + 6.79            | 164   | 16.33          | 6.2         | 170              | .04              | 48.5          | .16  | 3.9   | 16.6       | .1202 | .0601 | .9874  |  |
| 0200            | 16.55          | 511.11        |               | + 7.35            | 178   | 16.48          | 6.2         | 184              | .08              | 49.0          | .33  | 8.0   | 17.6       | .1275 | .0638 | 1.0512 |  |
| 0230            | 16.69          | 518.02        |               | + 6.91            | 167   | 16.62          | 6.3         | 173              | .08              | 49.4          | .33  | 8.0   | 16.5       | .1195 | .0598 | 1.1110 |  |
| 0300            | 16.80          | 523.50        | .50           | + 5.48            | 133   | 16.74          | 6.3         | 139              | .03              | 49.8          | .12  | 2.9   | 13.6       | .0985 | .0492 | 1.1602 |  |
| 0400            | 16.93          | 530.02        | 1.00          | +6.52             | 78.9  | 16.86          | 6.4         | 85.3             | .08              | 50.2          | .33  | 4.0   | 8.13       | .0589 | .0219 | 1.2191 |  |
| 0500            | 17.04          | 535.59        |               | +5.57             | 67.4  | 16.98          | 6.4         | 73.8             | .01              | 50.6          | .04  | .5    | 7.33       | .0531 | .0272 | 1.2722 |  |
| 0600            | 17.11          | 539.15        |               | +3.56             | 43.1  | 17.08          | 6.4         | 49.5             | 0                |               | 0    | 0     | 49.5       | .0358 | .0358 | 1.3080 |  |
| 0700            | 17.15          | 541.20        |               | +2.05             | 24.8  | 17.13          | 6.4         | 31.2             |                  |               |      |       | 31.2       | .0226 | .0226 | 1.3306 |  |
| 0800            | 17.18          | 542.73        |               | +1.53             | 18.5  | 17.16          | 6.4         | 24.9             |                  |               |      |       | 24.9       | .0180 | .0180 | 1.3486 |  |
| 0900            | 17.19          | 543.24        |               | + .51             | 6.2   | 17.18          | 6.4         | 12.6             |                  |               |      |       | 12.6       | .0091 | .0091 | 1.3577 |  |
| 1000            | 17.20          | 543.75        |               | + .51             | 6.2   | 17.20          | 6.4         | 9.5              |                  |               |      |       | 9.5        | .0069 | .0069 | 1.3737 |  |
| 1100            | 17.20          | 544.01        |               | + .26             | 3.1   | 17.20          | 6.4         | 6.4              |                  |               |      |       | 6.4        | .0068 | .0068 | 1.3805 |  |
| 1200            | 17.21          | 544.26        | 1.00          | + .25             | 3.0   | 17.20          | 6.4         | 9.4              |                  |               |      |       | 9.4        | .0046 | .0046 | 1.3897 |  |
| 1400            | 17.21          | 544.26        | 2.0           | 0                 | 0     | 17.21          | 6.4         | 6.4              |                  |               |      |       | 6.4        | .0035 | .0035 | 1.3967 |  |
| 1600            | 17.20          | 544.01        |               | - .25             | - 1.5 | 17.21          | 6.4         | 4.9              |                  |               |      |       | 4.9        | .0024 | .0024 | 1.4015 |  |
| 1800            | 17.19          | 543.50        |               | - .51             | - 3.1 | 17.20          | 6.4         | 3.3              |                  |               |      |       | 3.3        | .0024 | .0024 | 1.4048 |  |
| 2000            | 17.18          | 542.98        |               | - .52             | - 3.1 | 17.19          | 6.4         | 3.3              |                  |               |      |       | 3.3        | .0013 | .0013 | 1.4089 |  |
| 2200            | 17.17          | 542.22        |               | - .76             | - 4.6 | 17.18          | 6.4         | 1.8              |                  |               |      |       | 1.8        | .0001 | .0001 | 1.4091 |  |
| 2400            | 17.15          | 541.20        | 2.0           | - 1.02            | - 6.2 | 17.16          | 6.4         | .2               |                  |               |      |       | .2         | .0001 | .0001 | 1.4091 |  |
|                 |                |               |               |                   |       | 48             | 305.9       |                  |                  |               |      |       |            |       |       |        |  |
|                 |                |               |               |                   |       |                | 6.4         |                  |                  |               |      |       |            |       |       |        |  |

UNITED STATES DEPARTMENT OF INTERIOR  
GEOLOGICAL SURVEY, SURFACE WATER BRANCH  
AUSTIN DISTRICT

## WEIGHTED PRECIPITATION RECORD

Area: Honey Creek subwatershed No. 11 near McKinney, Tex. Date of storage: May 30, 30-31, 1967

[illegible]
$$K = \frac{\sum \text{of Precipitation} \times \text{Weight Factor}}{\text{Total Recording Gages Weighted Precipitation}}$$



UNITED STATES DEPARTMENT OF INTERIOR  
GEOLOGICAL SURVEY, SURFACE WATER BRANCH  
AUSTIN DISTRICT

## WEIGHTED PRECIPITATION RECORD

Area: Honey Creek subwatershed No. 11 near McKinney, Tex. Date of storm: May 30, 30-31, 1967

| Honey Creek Subwatershed No. 11 near Nix Mine, Tex.     |               |                               |          |                                |          |                                |          |                                 |          | Date of storm May 30, 31, 1967                          |          |                                 |          |                                 |          |                                 |          |                                 |          |
|---|---------------|-------------------------------|----------|--------------------------------|----------|--------------------------------|----------|---------------------------------|----------|---|----------|---------------------------------|----------|---------------------------------|----------|---------------------------------|----------|---------------------------------|----------|
| Accumulated Precipitation is inches for Recording Gages |               |                               |          |                                |          |                                |          |                                 |          | Accumulated Precipitation is inches for Recording Gages |          |                                 |          |                                 |          |                                 |          |                                 |          |
| Weight Factor   |               | Gage 306<br>Recorded x Factor |          | Gage 15-R<br>Recorded x Factor |          | Gage 93-R<br>Recorded x Factor |          | Gage 100-R<br>Recorded x Factor |          | Gage 101-R<br>Recorded x Factor                         |          | Gage 102-R<br>Recorded x Factor |          | Gage 103-R<br>Recorded x Factor |          | Gage 104-R<br>Recorded x Factor |          | Gage 105-R<br>Recorded x Factor |          |
| Date & Time   | Weight Factor | Recorded                      | x Factor | Recorded                       | x Factor | Recorded                       | x Factor | Recorded                        | x Factor | Recorded  | x Factor | Recorded                        | x Factor | Recorded                        | x Factor | Recorded                        | x Factor | Recorded                        | x Factor |
| May 30, 1967 (continued)                                |               |                               |          |                                |          |                                |          |                                 |          |   |          |                                 |          |                                 |          |                                 |          |                                 |          |
| 1930  |               | 3.16                          | 0.97     | 3.07                           | 2.13     |                                |          |                                 |          |   |          |                                 |          |                                 |          |                                 |          |                                 |          |
| 2000  |               | 3.16                          | .97      | 3.07                           | 2.13     |                                |          |                                 |          |   |          |                                 |          |                                 |          |                                 |          |                                 |          |
| 2100  |               | 3.16                          | .97      | 3.07                           | 2.13     |                                |          |                                 |          |   |          |                                 |          |                                 |          |                                 |          |                                 |          |
| 2200  |               | 3.16                          | .97      | 3.07                           | 2.13     |                                |          |                                 |          |   |          |                                 |          |                                 |          |                                 |          |                                 |          |
| 30  |               | 3.16                          | .97      | 3.07                           | 2.13     |                                |          |                                 |          |   |          |                                 |          |                                 |          |                                 |          |                                 |          |
| 2300  |               | 3.56                          | 1.09     | 3.44                           | 2.39     |                                |          |                                 |          |   |          |                                 |          |                                 |          |                                 |          |                                 |          |
| 30  |               | 3.94                          | 1.21     | 3.81                           | 2.64     |                                |          |                                 |          |   |          |                                 |          |                                 |          |                                 |          |                                 |          |
| 2400  |               | 4.10                          | 1.26     | 3.95                           | 2.74     |                                |          |                                 |          |   |          |                                 |          |                                 |          |                                 |          |                                 |          |
| May 31, 1967  |               |                               |          |                                |          |                                |          |                                 |          |   |          |                                 |          |                                 |          |                                 |          |                                 |          |
| 0000  |               | 4.10                          | 1.26     | 3.95                           | 2.74     |                                |          |                                 |          |   |          |                                 |          |                                 |          |                                 |          |                                 |          |
| 30  |               | 4.18                          | 1.28     | 3.96                           | 2.75     |                                |          |                                 |          |   |          |                                 |          |                                 |          |                                 |          |                                 |          |
| 0100  |               | 4.28                          | 1.31     | 4.18                           | 2.90     |                                |          |                                 |          |   |          |                                 |          |                                 |          |                                 |          |                                 |          |
| 30  |               | 4.32                          | 1.32     | 4.29                           | 2.98     |                                |          |                                 |          |   |          |                                 |          |                                 |          |                                 |          |                                 |          |
| 0200  |               | 4.40                          | 1.35     | 4.36                           | 3.03     |                                |          |                                 |          |   |          |                                 |          |                                 |          |                                 |          |                                 |          |
| 30  |               | 4.48                          | 1.37     | 4.37                           | 3.03     |                                |          |                                 |          |   |          |                                 |          |                                 |          |                                 |          |                                 |          |
| 0300  |               | 4.51                          | 1.38     | 4.38                           | 3.04     |                                |          |                                 |          |   |          |                                 |          |                                 |          |                                 |          |                                 |          |
| 0400  |               | 4.59                          | 1.41     | 4.46                           | 3.10     |                                |          |                                 |          |   |          |                                 |          |                                 |          |                                 |          |                                 |          |
| 0500  |               | 4.60                          | 1.41     | 4.51                           | 3.13     |                                |          |                                 |          |   |          |                                 |          |                                 |          |                                 |          |                                 |          |
| 0600  |               | 4.60                          | 1.41     | 4.51                           | 3.13     |                                |          |                                 |          |   |          |                                 |          |                                 |          |                                 |          |                                 |          |
| Total Recording Gages Weighted Precipitation = 4.54     |               |                               |          |                                |          |                                |          |                                 |          |   |          |                                 |          |                                 |          |                                 |          |                                 |          |
| Total Recording Gages Weighted Precipitation = 4.54     |               |                               |          |                                |          |                                |          |                                 |          |   |          |                                 |          |                                 |          |                                 |          |                                 |          |

# HYDROGRAPH and MASS CURVES for

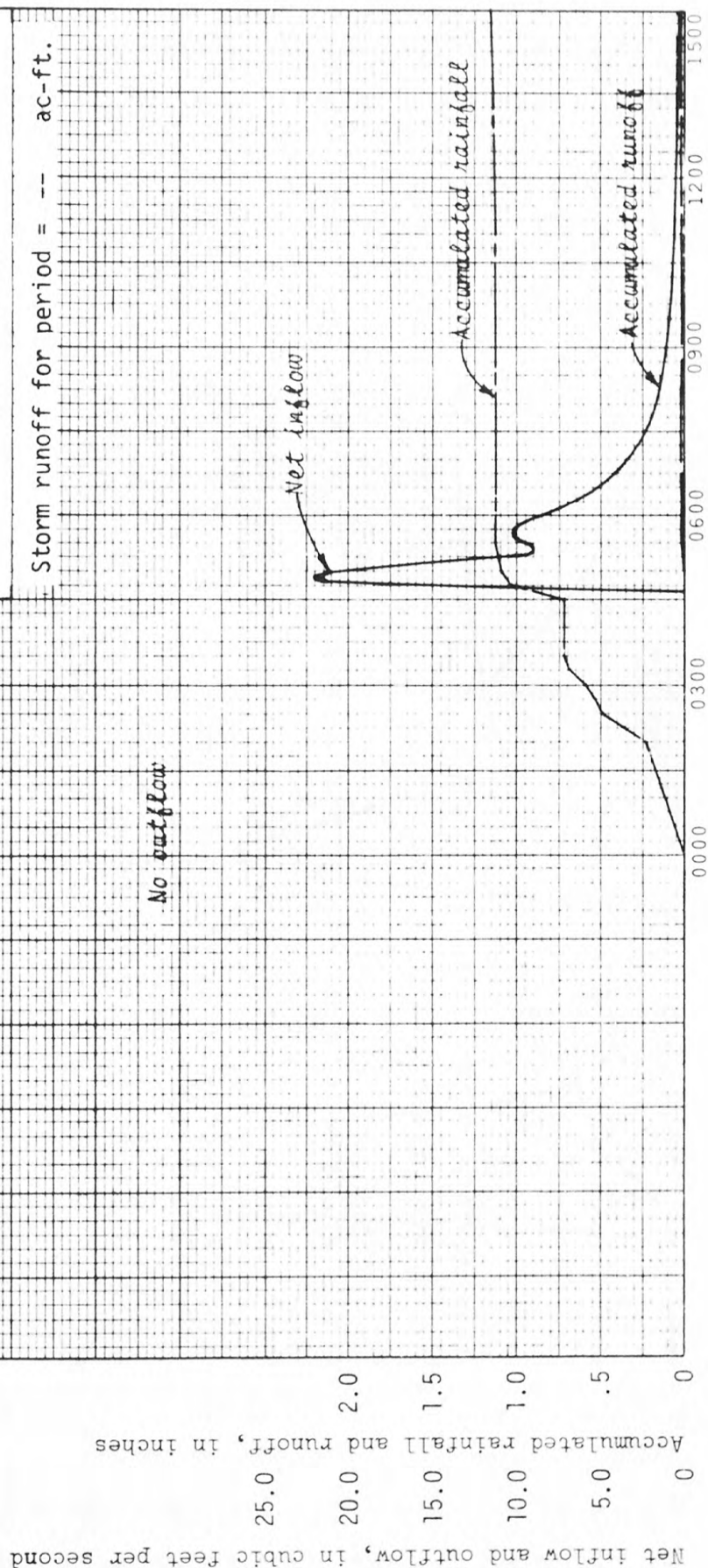
**STORM OF MAY 30, 1967**

at

HONEY CREEK SUBWATERSHED NO. 17  
NEAR MCKINNEY, TEX.

Drainage Area 2.14 sq mi

UNITED STATES GEOLOGICAL SURVEY  
WATER RESOURCES DIVISION  
TEXAS DISTRICT



May 30



600

550

500

450

400

350

300

250

200

150

100

50

0

Net inflow and outflow, in cubic feet per second

Accumulated rainfall and runoff, in inches

5.0

4.5

4.0

3.5

3.0

2.5

2.0

1.5

1.0

0.5

0

Net inflow

Accumulated rainfall

Accumulated runoff

Outflow

Storm runoff for period = 161 ac-ft.

HYDROGRAPH and MASS CURVES

for

STORM OF MAY 30-31, 1967

at

HONEY CREEK SUBWATERSHED NO. 11

NEAR MCKINNEY, TEX.

Drainage Area 2.14

UNITED STATES GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

TEXAS DISTRICT

May 30

May 31

## INFLOW AND OUTFLOW COMPUTATIONS

8-0580. Honey Creek subwatershed No. 12 near McKinney, Tex. D.A. 1.26 sq mi  
Storm period May 30-31, 1967

| Date and time | Gage height<br>ft | Storage<br>ac-ft | Time<br>int.<br>hrs | Change in<br>storage |        | Mean<br>G. Ht.<br>ft | Outflow<br>cfs | Total<br>inflow<br>cfs | Rainfall on Pool |            |                  | Net Inflow |      |        |       |
|---------------|-------------------|------------------|---------------------|----------------------|--------|----------------------|----------------|------------------------|------------------|------------|------------------|------------|------|--------|-------|
|               |                   |                  |                     | ac-ft                | cfs    |                      |                |                        | in               | area<br>ac | Storage<br>ac-ft | cfs        | Rate |        |       |
|               |                   |                  |                     |                      |        |                      |                |                        |                  |            |                  |            | -cfs | in/hr  | in    |
| May 30 1967   |                   |                  |                     |                      |        |                      |                |                        |                  |            |                  |            |      |        |       |
| 0000          | 14.80             | 118.01           | -                   | -                    | -      | -                    | -              | -                      | -                | -          | -                | -          | -    | -      | -     |
| 0200          | 14.80             | 118.01           | 2.0                 | 0                    | 0      | 14.80                | 0              | 0                      | 0                | 19.0       | 0                | 0          | 0    | 0      | 0     |
| 0400          | 14.87             | 119.35           | 2.0                 | + 1.34               | + 8.1  | 14.84                | 0              | 8.1                    | .80              | 19.1       | 1.27             | 7.7        | .4   | .0005  | .0010 |
| 0500          | 14.92             | 120.30           | 1.0                 | + .96                | + 11.5 | 14.90                | 0              | 11.5                   | .45              | 19.2       | .72              | 8.7        | 2.8  | .0034  | .0044 |
| 0600          | 14.97             | 121.26           | 1.0                 | + .96                | + 11.6 | 14.94                | 0              | 11.6                   | .05              | 19.2       | .08              | 1.0        | 10.6 | .0130  | .0174 |
| 0900          | 15.024            | 122.32           | 3.0                 | + 1.06               | + 4.3  | 15.00                | .01            | 4.3                    | 0                | 19.3       | 0                | 0          | 4.3  | .0053  | .0333 |
| 1200          | 15.04             | 122.62           | 3.0                 | + .30                | + 1.2  | 15.03                | .11            | 1.3                    | 0                |            | 0                | 0          | 1.3  | .0016  | .0048 |
| 1500          | 15.05             | 122.81           | 3.0                 | + .19                | + .77  | 15.04                | .17            | .94                    | 0                |            | 0                | 0          | .94  | .0012  | .0236 |
| 1700          | 15.05             | 122.81           | 2.0                 | 0                    | 0      | 15.05                | .24            | .24                    | 0                | 19.4       | 0                | 0          | .24  | .0003  | .0006 |
| 1715          | 15.074            | 123.30           | .25                 | + .49                | + 23.7 | 15.06                | .32            | 24.0                   | .41              | 19.4       | .66              | 32.1       | 0    | 0      | .0423 |
| 1730          | 15.22             | 126.12           |                     | + 2.82               | + 136  | 15.15                | 1.4            | 137                    | .78              | 19.5       | 1.27             | 61.5       | 75.5 | .0929  | .0832 |
| 1745          | 15.47             | 131.08           |                     | + 4.96               | + 240  | 15.34                | 5.1            | 245                    | .40              | 19.8       | .66              | 31.9       | 213  | .2620  | .0655 |
| 1800          | 16.10             | 143.99           | .25                 | + 12.91              | + 625  | 15.78                | 7.2            | 632                    | .46              | 20.5       | .79              | 38.2       | 594  | .7307  | .1827 |
| 1805          | 16.35             | 150.30           | .083                | + 6.31               | + 916  | 16.22                | 7.3            | 923                    | .06              | 21.2       | .11              | 16.0       | 907  | .1158  | .0926 |
| 1810          | 16.66             | 156.03           | .083                | + 5.73               | + 832  | 16.50                | 7.3            | 839                    | .05              | 21.7       | .09              | 13.1       | 826  | .10161 | .0843 |
| 1815          | 16.90             | 161.36           | .083                | + 5.33               | + 774  | 16.78                | 7.4            | 781                    | .04              | 22.2       | .07              | 10.7       | 770  | .9472  | .0786 |
| 1830          | 17.52             | 175.64           | .25                 | + 14.28              | + 691  | 17.21                | 7.4            | 698                    | 0                | 23.0       | 0                | 0          | 698  | .8587  | .2147 |
| 1845          | 18.00             | 187.26           |                     | + 11.62              | + 562  | 17.76                | 7.5            | 570                    | 0                |            | 0                | 0          | 570  | .7011  | .1753 |
| 1900          | 18.30             | 194.79           |                     | + 7.53               | + 364  | 18.15                | 7.6            | 372                    | 0                |            | 0                | 0          | 372  | .4576  | .1144 |
| 1915          | 18.45             | 198.63           |                     | + 3.84               | + 186  | 18.38                | 7.6            | 194                    | 0                |            | 0                | 0          | 194  | .2387  | .0597 |
| 1930          | 18.55             | 201.22           |                     | + 2.59               | + 125  | 18.50                | 7.6            | 133                    | 0                |            | 0                | 0          | 133  | .1636  | .0409 |
| 1945          | 18.60             | 202.52           |                     | + 1.30               | + 629  | 18.58                | 7.6            | 70.5                   | 0                |            | 0                | 0          | 70.5 | .0867  | .0217 |
| 2000          | 18.63             | 203.31           | .25                 | + .79                | + 38.2 | 18.62                | 7.6            | 45.8                   | 0                |            | 0                | 0          | 45.8 | .0563  | .0141 |
| 2030          | 18.674            | 204.48           | .50                 | + 1.17               | + 28.3 | 18.65                | 7.6            | 35.9                   | 0                |            | 0                | 0          | 35.9 | .0442  | .0221 |
| 2100          | 18.70             | 205.14           |                     | + .66                | + 16.0 | 18.68                | 7.6            | 23.6                   | 0                |            | 0                | 0          | 23.6 | .0290  | .0145 |
| 2130          | 18.71             | 205.40           |                     | + .26                | + 6.3  | 18.70                | 7.6            | 13.9                   | 0                |            | 0                | 0          | 13.9 | .0171  | .0086 |
| 2200          | 18.72             | 205.67           |                     | + .27                | + 6.5  | 18.72                | 7.7            | 14.2                   | 0                |            | 0                | 0          | 14.2 | .0175  | .0088 |
| 2230          | 18.72             | 205.67           |                     | 0                    | 0      | 18.72                | 7.7            | 7.7                    | 0                |            | 0                | 0          | 7.7  | .0095  | .0048 |
| 2300          | 18.76             | 206.72           | .50                 | + 1.05               | + 25.4 | 18.74                | 7.7            | 33.1                   | .23              | 26.4       | .51              | 12.3       | 20.8 | .0256  | .0128 |
| 2315          | 18.84             | 208.85           | .25                 | + 2.13               | + 103  | 18.80                | 7.7            | 111                    | .35              | 26.6       | .78              | 37.8       | 73.2 | .0900  | .0225 |
| 2330          | 18.98             | 212.60           | .25                 | + 3.75               | + 182  | 18.91                | 7.7            | 190                    | .14              | 26.8       | .31              | 15.0       | 175  | .2152  | .0538 |
| 2345          | 19.19             | 218.31           | .25                 | + 5.71               | + 276  | 19.08                | 7.7            | 284                    | .06              | 27.2       | .14              | 6.8        | 277  | .3407  | .0852 |

Storm period May 30-31, 1967

| Date<br>and<br>time | Gage<br>height<br>ft | Storage<br>ac-ft | Time<br>int.<br>hrs | Change in<br>storage |       | Mean<br>G. Ht.<br>ft | Outflow<br>cfs | Total<br>inflow<br>cfs | Rainfall on Pool |      |                |     | Net Inflow    |       |       |        |
|---------------------|----------------------|------------------|---------------------|----------------------|-------|----------------------|----------------|------------------------|------------------|------|----------------|-----|---------------|-------|-------|--------|
|                     |                      |                  |                     | ac-ft                | cfs   |                      |                |                        | in               | ac   | Storage<br>cfs | cfs | Rate<br>in/hr | in    |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
| 2400                | 19.39                | 223.83           | 25                  | +5.52                | 267   | 19.29                | 7.7            | 275                    | .05              | 27.6 | .12            | 5.8 | 269           | .3309 | .0827 | 1.5258 |
| May 31, 1967        |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
| 0000                | 19.39                | 223.83           |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
| 0030                | 19.65                | 231.15           | .50                 | +7.32                | 177   | 19.52                | 7.8            | 185                    | .07              | 28.1 | .16            | 3.9 | 181           | .2227 | .1114 | 1.6372 |
| 0100                | 19.85                | 236.87           |                     | +5.72                | 138   | 19.75                | 7.8            | 146                    | .10              | 28.6 | .24            | 5.8 | 140           | .1722 | .0861 | 1.7233 |
| 0130                | 20.03                | 242.09           |                     | +5.22                | 126   | 19.94                | 7.8            | 134                    | .14              | 29.0 | .34            | 8.2 | 126           | .1550 | .0775 | 1.8008 |
| 0200                | 20.20                | 247.09           |                     | +5.00                | 121   | 20.12                | 7.9            | 129                    | .07              | 29.4 | .17            | 4.1 | 125           | .1538 | .0769 | 1.8777 |
| 0230                | 20.36                | 251.85           |                     | +4.76                | 115   | 20.28                | 7.9            | 123                    | .03              | 29.8 | .07            | 1.7 | 121           | .1488 | .0744 | 1.9521 |
| 0300                | 20.45                | 254.56           | .50                 | +2.71                | 65.6  | 20.40                | 7.9            | 73.5                   | .02              | 30.0 | .05            | 1.2 | 72.3          | .0889 | .0444 | 1.9965 |
| 0400                | 20.55                | 257.58           | 1.00                | +3.02                | 36.5  | 20.50                | 7.9            | 44.4                   | .02              | 30.2 | .05            | .6  | 43.8          | .0539 | .0239 | 2.0504 |
| 0500                | 20.63                | 260.00           |                     | +2.42                | 29.3  | 20.59                | 7.9            | 37.2                   | .02              | 30.4 | .05            | .6  | 36.6          | .0450 | .0450 | 2.0954 |
| 0600                | 20.70                | 262.14           |                     | +2.14                | 25.9  | 20.66                | 7.9            | 33.8                   | .02              | 30.5 | 0              | 0   | 33.8          | .0416 | .0416 | 2.1370 |
| 0700                | 20.73                | 263.06           |                     | + .92                | 11.1  | 20.72                | 8.0            | 19.1                   |                  |      |                |     | 19.1          | .0235 | .0235 | 2.1605 |
| 0800                | 20.73                | 263.06           |                     | 0                    | 0     | 20.73                | 8.0            | 8.0                    |                  |      |                |     | 8.0           | .0098 | .0098 | 2.1703 |
| 0900                | 20.72                | 262.75           |                     | - .31                | - 3.8 | 20.72                | 8.0            | 4.2                    |                  |      |                |     | 4.2           | .0052 | .0052 | 2.1755 |
| 1000                | 20.71                | 262.45           |                     | - .30                | - 3.6 | 20.72                | 8.0            | 4.4                    |                  |      |                |     | 4.4           | .0054 | .0054 | 2.1809 |
| 1100                | 20.70                | 262.14           |                     | - .31                | - 3.8 | 20.70                | 8.0            | 4.2                    |                  |      |                |     | 4.2           | .0052 | .0052 | 2.1861 |
| 1200                | 20.68                | 261.53           | 1.00                | - .61                | - 7.4 | 20.69                | 8.0            | .6                     |                  |      |                |     | .6            | .0007 | .0007 | 2.1865 |
| 1400                | 20.64                | 260.31           | 2.00                | - 1.22               | - 7.4 | 20.66                | 7.9            | .5                     |                  |      |                |     | .5            | .0006 | .0012 | 2.1880 |
| 1800                | 20.56                | 257.88           | 4.00                | - 2.43               | - 7.4 | 20.60                | 7.9            | .5                     |                  |      |                |     | .5            | .0006 | .0024 | 2.1904 |
| 2400                | 20.42                | 253.65           | 6.00                | - 4.23               | - 8.5 | 20.49                | 7.9            | 0                      |                  |      |                |     | 0             |       |       | 2.1904 |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |
|                     |                      |                  |                     |                      |       |                      |                |                        |                  |      |                |     |               |       |       |        |

UNITED STATES DEPARTMENT OF INTERIOR  
GEOLOGICAL SURVEY, SURFACE WATER BRANCH  
AUSTIN DISTRICT

Comp. by: AUB  
Date: \_\_\_\_\_  
Check by: BCN  
Date: 8-29-68

## WEIGHTED PRECIPITATION RECORD

Area: Honey Creek subwatershed No. 12 near McKinney, Tex. Date of storms May 30, 30-31, 1967

[illegible]
$$K = \frac{\text{Sum of Precipitation} \times \text{Weight factor}}{\text{Total Recording Gages Weighted Precipitation}}$$



UNITED STATES DEPARTMENT OF INTERIOR  
GEOLOGICAL SURVEY, SURFACE WATER BRANCH  
AUSTIN DISTRICT

## WEIGHTED PRECIPITATION RECORD

Area: Honey Creek subwatershed No. 12 near McKinney, Tex. Date of storm May 30, 30-31, 1967

| Accumulated Precipitation in Inches for Recording Gages   |               |          |          |          |          |          |          |          |          |
|---|---------------|----------|----------|----------|----------|----------|----------|----------|----------|
| Date & Time   | Weight Factor | Gage     |          | Gage     |          | Gage     |          | Gage     |          |
|   |               | Recorded | x Factor | Recorded | x Factor | Recorded | x Factor | Recorded | x Factor |
| 1,000   |               |          |          |          |          |          |          |          |          |
| May 30 (continued)  |               |          |          |          |          |          |          |          |          |
| 2300  |               | 3.73     |          |          |          |          |          |          |          |
| 15  |               | 4.08     |          |          |          |          |          |          |          |
| 30  |               | 4.22     |          |          |          |          |          |          |          |
| 45  |               | 4.28     |          |          |          |          |          |          |          |
| 2400  |               | 4.33     |          |          |          |          |          |          |          |
| May 31, 1967  |               |          |          |          |          |          |          |          |          |
| 0000  |               | 4.33     |          |          |          |          |          |          |          |
| 30  |               | 4.40     |          |          |          |          |          |          |          |
| 0100  |               | 4.50     |          |          |          |          |          |          |          |
| 0130  |               | 4.64     |          |          |          |          |          |          |          |
| 0200  |               | 4.71     |          |          |          |          |          |          |          |
| 30  |               | 4.74     |          |          |          |          |          |          |          |
| 0300  |               | 4.76     |          |          |          |          |          |          |          |
| 0400  |               | 4.78     |          |          |          |          |          |          |          |
| 0500  |               | 4.80     |          |          |          |          |          |          |          |
| 0600  |               | 4.80     |          |          |          |          |          |          |          |
| 0700  |               | 4.80     |          |          |          |          |          |          |          |
| <div> <div> <div>10-S</div> <div>058</div> </div> <div> <div>12-R</div> <div>663</div> </div> <div> <div>16-R</div> <div>279</div> </div> </div> <div> <div>4.79</div> <div>4.90</div> <div>4.80</div> </div> <div> <div>0.28</div> <div>3.25</div> <div>1.34</div> </div> <div> <div>4.87</div> </div> |               |          |          |          |          |          |          |          |          |
| <div> <div> <div>10-S</div> <div>058</div> </div> <div> <div>12-R</div> <div>663</div> </div> <div> <div>16-R</div> <div>279</div> </div> </div> <div> <div>4.79</div> <div>4.90</div> <div>4.80</div> </div> <div> <div>0.28</div> <div>3.25</div> <div>1.34</div> </div> <div> <div>4.87</div> </div> |               |          |          |          |          |          |          |          |          |
| <div> <div> <div>10-S</div> <div>058</div> </div> <div> <div>12-R</div> <div>663</div> </div> <div> <div>16-R</div> <div>279</div> </div> </div> <div> <div>4.79</div> <div>4.90</div> <div>4.80</div> </div> <div> <div>0.28</div> <div>3.25</div> <div>1.34</div> </div> <div> <div>4.87</div> </div> |               |          |          |          |          |          |          |          |          |
| <div> <div> <div>10-S</div> <div>058</div> </div> <div> <div>12-R</div> <div>663</div> </div> <div> <div>16-R</div> <div>279</div> </div> </div> <div> <div>4.79</div> <div>4.90</div> <div>4.80</div> </div> <div> <div>0.28</div> <div>3.25</div> <div>1.34</div> </div> <div> <div>4.87</div> </div> |               |          |          |          |          |          |          |          |          |
| <div> <div> <div>10-S</div> <div>058</div> </div> <div> <div>12-R</div> <div>663</div> </div> <div> <div>16-R</div> <div>279</div> </div> </div> <div> <div>4.79</div> <div>4.90</div> <div>4.80</div> </div> <div> <div>0.28</div> <div>3.25</div> <div>1.34</div> </div> <div> <div>4.87</div> </div> |               |          |          |          |          |          |          |          |          |
| <div> <div> <div>10-S</div> <div>058</div> </div> <div> <div>12-R</div> <div>663</div> </div> <div> <div>16-R</div> <div>279</div> </div> </div> <div> <div>4.79</div> <div>4.90</div> <div>4.80</div> </div> <div> <div>0.28</div> <div>3.25</div> <div>1.34</div> </div> <div> <div>4.87</div> </div> |               |          |          |          |          |          |          |          |          |
| <div> <div> <div>10-S</div> <div>058</div> </div> <div> <div>12-R</div> <div>663</div> </div> <div> <div>16-R</div> <div>279</div> </div> </div> <div> <div>4.79</div> <div>4.90</div> <div>4.80</div> </div> <div> <div>0.28</div> <div>3.25</div> <div>1.34</div> </div> <div> <div>4.87</div> </div> |               |          |          |          |          |          |          |          |          |
| <div> <div> <div>10-S</div> <div>058</div> </div> <div> <div>12-R</div> <div>663</div> </div> <div> <div>16-R</div> <div>279</div> </div> </div> <div> <div>4.79</div> <div>4.90</div> <div>4.80</div> </div> <div> <div>0.28</div> <div>3.25</div> <div>1.34</div> </div> <div> <div>4.87</div> </div> |               |          |          |          |          |          |          |          |          |
| <div> <div> <div>10-S</div> <div>058</div> </div> <div> <div>12-R</div> <div>663</div> </div> <div> <div>16-R</div> <div>279</div> </div> </div> <div> <div>4.79</div> <div>4.90</div> <div>4.80</div> </div> <div> <div>0.28</div> <div>3.25</div> <div>1.34</div> </div> <div> <div>4.87</div> </div> |               |          |          |          |          |          |          |          |          |
| <div> <div> <div>10-S</div> <div>058</div> </div> <div> <div>12-R</div> <div>663</div> </div> <div> <div>16-R</div> <div>279</div> </div> </div> <div> <div>4.79</div> <div>4.90</div> <div>4.80</div> </div> <div> <div>0.28</div> <div>3.25</div> <div>1.34</div> </div> <div> <div>4.87</div> </div> |               |          |          |          |          |          |          |          |          |
| <div> <div> <div>10-S</div> <div>058</div> </div> <div> <div>12-R</div> <div>663</div> </div> <div> <div>16-R</div> <div>279</div> </div> </div> <div> <div>4.79</div> <div>4.90</div> <div>4.80</div> </div> <div> <div>0.28</div> <div>3.25</div> <div>1.34</div> </div> <div> <div>4.87</div> </div> |               |          |          |          |          |          |          |          |          |
| <div> <div> <div>10-S</div> <div>058</div> </div> <div> <div>12-R</div> <div>663</div> </div> <div> <div>16-R</div> <div>279</div> </div> </div> <div> <div>4.79</div> <div>4.90</div> <div>4.80</div> </div> <div> <div>0.28</div> <div>3.25</div> <div>1.34</div> </div> <div> <div>4.87</div> </div> |               |          |          |          |          |          |          |          |          |
| <div> <div> <div>10-S</div> <div>058</div> </div> <div> <div>12-R</div> <div>663</div> </div> <div> <div>16-R</div> <div>279</div> </div> </div> <div> <div>4.79</div> <div>4.90</div> <div>4.80</div> </div> <div> <div>0.28</div> <div>3.25</div> <div>1.34</div> </div> <div> <div>4.87</div> </div> |               |          |          |          |          |          |          |          |          |
| <div> <div> <div>10-S</div> <div>058</div> </div> <div> <div>12-R</div> <div>663</div> </div> <div> <div>16-R</div> <div>279</div> </div> </div> <div> <div>4.79</div> <div>4.90</div> <div>4.80</div> </div> <div> <div>0.28</div> <div>3.25</div> <div>1.34</div> </div> <div> <div>4.87</div> </div> |               |          |          |          |          |          |          |          |          |
| <div> <div> <div>10-S</div> <div>058</div> </div> <div> <div>12-R</div> <div>663</div> </div></div>   |               |          |          |          |          |          |          |          |          |

$$WPR = \frac{\text{Sum of Precipitation} \times \text{Weight Factor}}{\text{Total Recording Gages Weighted Precipitation}} = \frac{4.87 \times 4.80}{4.80} = 1.015$$

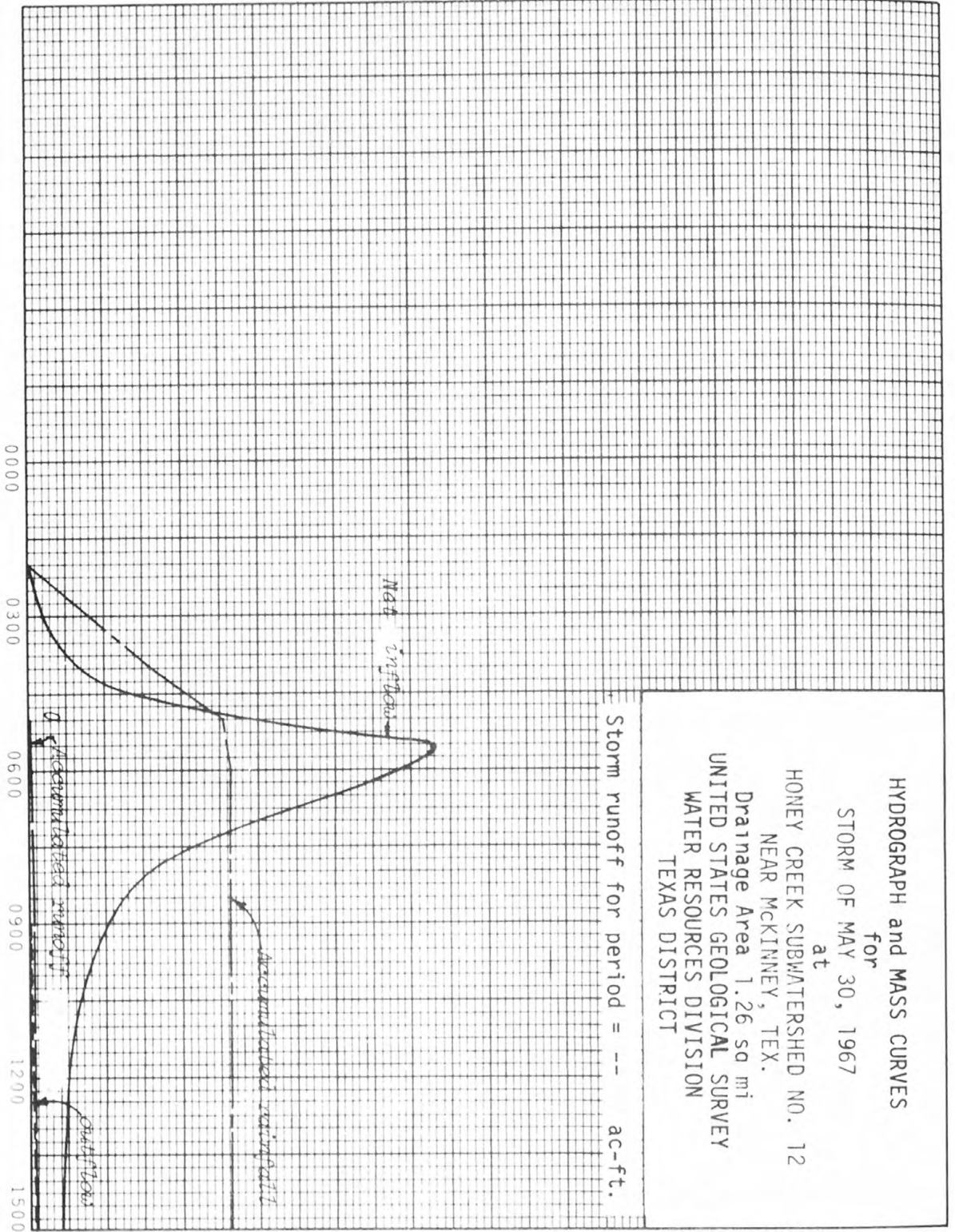


Net inflow and outflow, in cubic feet per second

0 2.0 4.0 6.0 8.0 10.0

Accumulated rainfall and runoff, in inches

0 .5 1.0 1.5



May 30

# HYDROGRAPH and MASS CURVES

for

STORM OF MAY 30-31, 1967

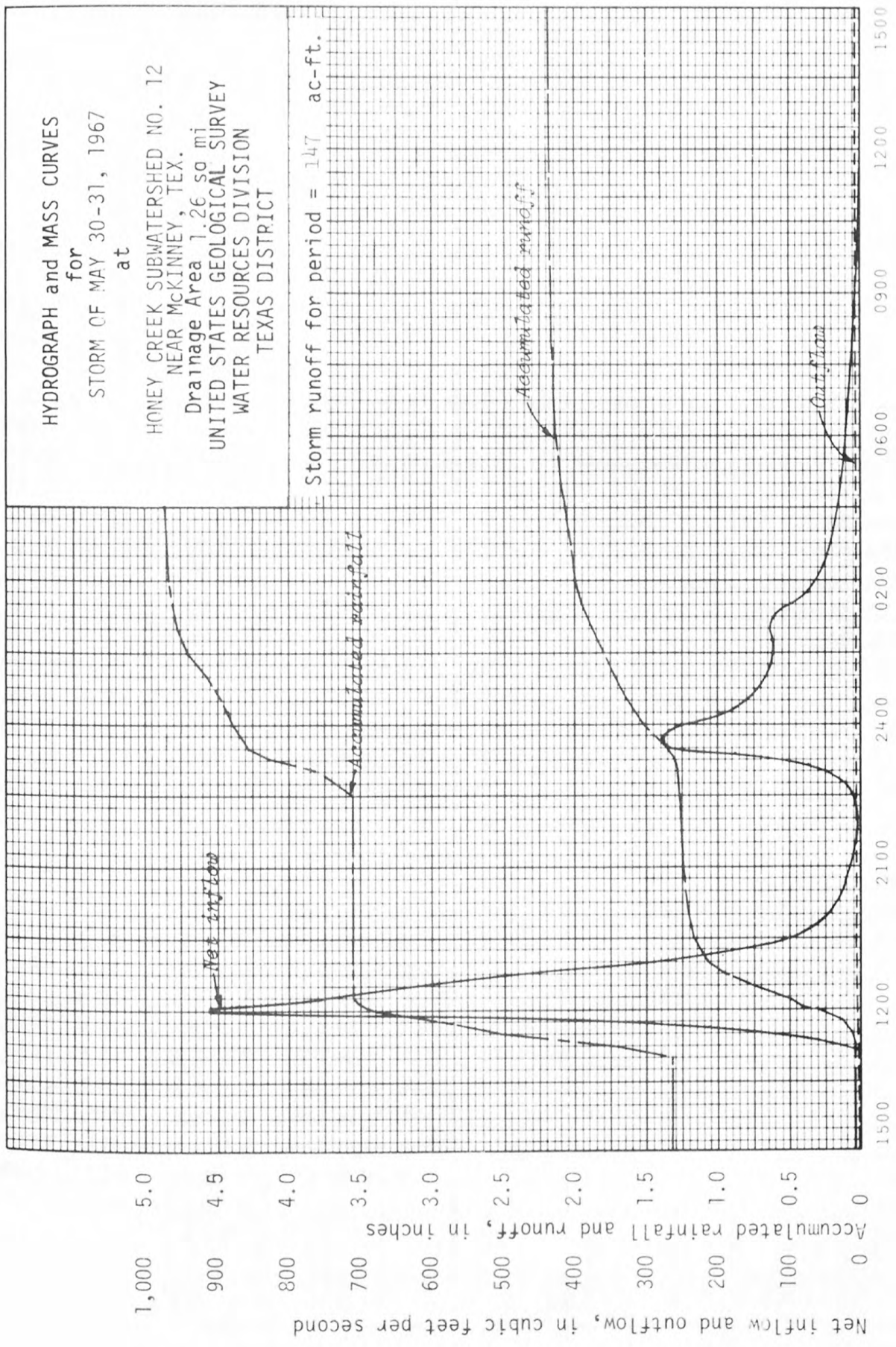
at

HONEY CREEK SUBWATERSHED NO. 12  
NEAR MCKINNEY, TEX.

Drainage Area 1.26 sq mi

UNITED STATES GEOLOGICAL SURVEY  
WATER RESOURCES DIVISION  
TEXAS DISTRICT

Storm runoff for period = 147 ac-ft.



May 30

May 31

UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY-AUSTIN DISTRICT

RUNOFF COMPUTATIONS

Station 8-0585. Honey Creek near McKinney, Tex.  
Period of Record May 30-31, 1967 Drainage Area 39.0 sq. mi.

| Time         | G. Ht.<br>Feet | Sh.<br>Adj. | Discharge |       |        | Runoff |              | Time      | G. Ht.<br>Feet | Sh.<br>Adj. | Discharge |      |        | Runoff |          |  |
|--------------|----------------|-------------|-----------|-------|--------|--------|--------------|-----------|----------------|-------------|-----------|------|--------|--------|----------|--|
|              |                |             | c.f.s.    | Inc.  | In/hr. | Inches | Acc. In.     |           |                |             | c.f.s.    | Inc. | In/hr. | Inches | Acc. In. |  |
| May 30, 1967 |                |             |           |       |        |        | May 31, 1967 |           |                |             |           |      |        |        |          |  |
| 0000         | 0.95           | -02         | 1.1       | 4     | 0      | 0      | 0            | 0000      | 12.27          | 0           | 1,310     | 1    | .0520  | .0130  | .4323    |  |
| 0200         | .95            | -02         | 1.1       | 8     | 0      | 0      | 0            | 0030      | 12.22          |             | 1,300     | 2    | .0516  | .0258  | .4581    |  |
| 0400         | 1.08           | -01         | 3.3       | 6     | .0001  | .0002  | .0002        | 0100      | 12.60          |             | 1,380     | 3    | .0548  | .0411  | .4992    |  |
| 0500         | 1.15           | -01         | 4.9       | 3     | .0002  | .0002  | .0004        | 0200      | 13.90          |             | 1,700     | 4    | .0675  | .0675  | .5667    |  |
| 0530         | 1.36           | 0           | 12        | 3     | .0005  | .0004  | .0008        | 0300      | 15.40          |             | 2,170     | 3    | .0862  | .0646  | .6313    |  |
| 0630         | 1.23           |             | 7.5       | 3     | .0003  | .0002  | .0010        | 0330      | 16.50          |             | 2,630     | 2    | .1045  | .0522  | .6835    |  |
| 0700         | 1.60           |             | 26        | 3     | .0010  | .0008  | .0018        | 0400      | 16.88          |             | 2,820     | 2    | .1120  | .0560  | .7375    |  |
| 0800         | 2.57           |             | 92        | 4     | .0037  | .0037  | .0055        | 0430      | 16.98          |             | 2,880     | 2    | .1144  | .0572  | .7967    |  |
| 0900         | 3.42           |             | 163       | 3     | .0065  | .0049  | .0104        | 0500      | 16.92          |             | 2,840     | 3    | .1128  | .0846  | .8813    |  |
| 0930         | 3.76           |             | 193       | 2     | .0077  | .0038  | .0142        | 0600      | 15.87          |             | 2,350     | 4    | .0934  | .0934  | .9747    |  |
| 1000         | 3.80           |             | 197       | 2     | .0078  | .0039  | .0181        | 0700      | 14.10          |             | 1,760     | 4    | .0699  | .0699  | 1.0446   |  |
| 1030         | 3.66           |             | 184       | 4     | .0073  | .0073  | .0254        | 0800      | 11.70          |             | 1,190     | 4    | .0473  | .0473  | 1.0919   |  |
| 1200         | 2.93           |             | 120       | 5     | .0048  | .0060  | .0314        | 0900      | 10.70          |             | 1,000     | 4    | .0397  | .0397  | 1.1316   |  |
| 1300         | 2.57           |             | 92        | 6     | .0037  | .0056  | .0370        | 1000      | 9.49           |             | 805       | 4    | .0320  | .0320  | 1.1636   |  |
| 1500         | 2.22           |             | 67        | 9     | .0027  | .0061  | .0431        | 1100      | 7.50           |             | 565       | 4    | .0225  | .0225  | 1.1861   |  |
| 1730         | 2.08           |             | 57        | 6     | .0023  | .0034  | .0465        | 1200      | 6.75           |             | 485       | 6    | .0193  | .0290  | 1.2151   |  |
| 1800         | 3.10           |             | 134       | 2     | .0053  | .0026  | .0491        | 1400      | 6.00           |             | 410       | 12   | .0163  | .0486  | 1.2637   |  |
| 1830         | 7.80           |             | 598       | 2     | .0238  | .0119  | .0610        | 1800      | 5.25           |             | 335       | 20   | .0133  | .0665  | 1.3302   |  |
| 1900         | 10.75          |             | 1,010     | 2     | .0401  | .0200  | .0810        | 2400      | 4.55           | 0           | 265       | 12   | .0105  | .0315  | 1.3617   |  |
| 1930         | 12.50          |             | 1,350     | 2     | .0537  | .0268  | .1078        | 96 24.930 |                |             |           |      |        |        |          |  |
| 2000         | 13.95          |             | 1,730     | 2     | .0688  | .0344  | .1422        | 989       |                |             |           |      |        |        |          |  |
| 2030         | 14.70          |             | 1,940     | 3     | .0771  | .0578  | .2000        |           |                |             |           |      |        |        |          |  |
| 2130         | 15.05          |             | 2,060     | 3     | .0819  | .0614  | .2614        |           |                |             |           |      |        |        |          |  |
| 2200         | 15.28          |             | 2,130     | 2     | .0846  | .0423  | .3037        |           |                |             |           |      |        |        |          |  |
| 2230         | 15.00          |             | 2,030     | 2     | .0807  | .0404  | .3441        |           |                |             |           |      |        |        |          |  |
| 2300         | 13.70          |             | 1,650     | 3     | .0656  | .0492  | .3933        |           |                |             |           |      |        |        |          |  |
| 2400         | 12.27          | 0           | 1,310     | 2     | .0520  | .0260  | .4193        |           |                |             |           |      |        |        |          |  |
| 96           |                |             | 42        | 188.2 |        |        |              |           |                |             |           |      |        |        |          |  |
|              |                |             | 432       |       |        |        |              |           |                |             |           |      |        |        |          |  |

Computed by GRD EEL Date FL Computed by GRD EEL Date FL

d - From digital record.  
a - Estimated.



Sheet 1 of 3  
 Comp. by: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Check by: FL  
 Date: 9-18-68

 UNITED STATES DEPARTMENT OF INTERIOR  
 GEOLOGICAL SURVEY, SURFACE WATER BRANCH  
 AUSTIN DISTRICT

## WEIGHTED PRECIPITATION RECORD

Area: Honey Creek near McKinney, Tex

Date of storm: May 30, 30-31, 1967

| Date & Time | Accumulated Precipitation in Inches for Recording Gages |          |                  |          |                  |          | Date of storm: May 30, 30-31, 1967 |          |                  |          |                  |          |
|-------------|---|----------|------------------|----------|------------------|----------|------------------------------------|----------|------------------|----------|------------------|----------|
|             | Gage<br>Recorded  | x Factor | Gage<br>Recorded | x Factor | Gage<br>Recorded | x Factor | Gage<br>Recorded                   | x Factor | Gage<br>Recorded | x Factor | Gage<br>Recorded | x Factor |
| 0045        | 0   | 0        | 0                | 0        | 0                | 0        | 0                                  | 0        | 0                | 0        | 0                | 0        |
| 0100        | 0   | 0        | 0                | 0        | 0                | 0        | 0                                  | 0        | 0                | 0        | 0                | 0        |
| 0145        | 0   | 0        | 0                | 0        | 0                | 0        | 0                                  | 0        | 0                | 0        | 0                | 0        |
| 0200        | 0   | 0        | 34               | 04       | 0                | 0        | 55                                 | 19       | 0                | 0        | 0                | 0        |
| 0215        | 24  | 01       | 42               | 04       | 40               | 12       | 95                                 | 34       | 15               | 03       |                  |          |
| 0230        | 36  | 02       | 55               | 06       | 47               | 14       | 98                                 | 35       | 20               | 04       |                  |          |
| 0245        | 48  | 03       | 58               | 06       | 60               | 17       | 98                                 | 35       | 37               | 07       |                  |          |
| 0300        | 51  | 03       | 62               | 07       | 65               | 19       | 98                                 | 35       | 45               | 09       |                  |          |
| 0315        | 57  | 03       | 69               | 07       | 74               | 22       | 100                                | 35       | 70               | 14       |                  |          |
| 0330        | 63  | 03       | 76               | 08       | 80               | 23       | 145                                | 51       | 85               | 17       |                  |          |
| 0430        | 63  | 03       | 76               | 08       | 80               | 23       | 150                                | 53       | 88               | 17       |                  |          |
| 0445        | 87  | 05       | 110              | 12       | 115              | 33       | 150                                | 53       | 110              | 21       |                  |          |
| 0500        | 110   | 06       | 114              | 12       | 125              | 36       | 150                                | 53       | 115              | 22       |                  |          |
| 0600        | 110   | 06       | 114              | 12       | 125              | 36       | 150                                | 53       | 115              | 22       |                  |          |
| 1200        | 110   | 06       | 114              | 12       | 130              | 38       | 150                                | 53       | 115              | 22       |                  |          |
| 1545        | 110   | 06       | 118              | 13       | 130              | 38       | 150                                | 53       | 115              | 22       |                  |          |
| 1600        | 110   | 06       | 118              | 13       | 130              | 38       | 195                                | 69       | 115              | 22       |                  |          |
| 1615        | 110   | 06       | 118              | 13       | 130              | 38       | 225                                | 80       | 115              | 22       |                  |          |
| 1630        | 110   | 06       | 118              | 13       | 130              | 38       | 265                                | 94       | 115              | 22       |                  |          |
| 1645        | 110   | 06       | 118              | 13       | 130              | 38       | 290                                | 103      | 115              | 22       |                  |          |
| 1700        | 110   | 06       | 118              | 13       | 130              | 38       | 290                                | 103      | 115              | 22       |                  |          |
| 1715        | 110   | 06       | 160              | 17       | 171              | 50       | 290                                | 103      | 140              | 27       |                  |          |
| 1730        | 195   | 10       | 202              | 22       | 249              | 72       | 290                                | 103      | 230              | 45       |                  |          |
| 1745        | 240   | 13       | 271              | 29       | 289              | 84       | 290                                | 103      | 250              | 49       |                  |          |
| 1800        | 300   | 16       | 300              | 32       | 335              | 97       | 290                                | 103      | 290              | 57       |                  |          |
| 1815        | 314   | 17       | 303              | 32       | 340              | 99       | 290                                | 103      | 300              | 58       |                  |          |
| 1830        | 315   | 17       | 304              | 33       | 340              | 99       | 295                                | 104      | 300              | 58       |                  |          |
| 2115        | 316   | 17       | 306              | 33       | 340              | 99       | 298                                | 105      | 300              | 58       |                  |          |
| 2130        | 316   | 17       | 306              | 33       | 340              | 99       | 325                                | 115      | 300              | 58       |                  |          |
| (continued) |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |
|             |   |          |                  |          |                  |          |                                    |          |                  |          |                  |          |

UNITED STATES DEPARTMENT OF INTERIOR  
GEOLOGICAL SURVEY, SURFACE WATER BRANCH  
AUSTIN DISTRICTComp. by: \_\_\_\_\_  
Date: \_\_\_\_\_  
Check by: FL  
Date: 9-18-68

## WEIGHTED PRECIPITATION RECORD

Area: Honey Creek near McKinney, Tex. Date of storms May 30, 30-31, 1967

| Weight Factor |  | Gage 15-R |  |  |  | Gage 16-R |  |  |  | Gage 17-R |  |  |  | Gage 18-R |  |  |  | Gage 19-R |  |  |  | Gage 20-R |  |  |  | Gage 21-R |  |  |  | Gage 22-R |  |  |  | Gage 23-R |  |  |  | Gage 24-R |  |  |  | Gage 25-R |  |  |  | Gage 26-R |  |  |  | Gage 27-R |  |  |  | Gage 28-R |  |  |  | Gage 29-R |  |  |  | Gage 30-R |  |  |  | Gage 31-R |  |  |  | Gage 32-R |  |  |  | Gage 33-R |  |  |  | Gage 34-R |  |  |  | Gage 35-R |  |  |  | Gage 36-R |  |  |  | Gage 37-R |  |  |  | Gage 38-R |  |  |  | Gage 39-R |  |  |  | Gage 40-R |  |  |  | Gage 41-R |  |  |  | Gage 42-R |  |  |  | Gage 43-R |  |  |  | Gage 44-R |  |  |  | Gage 45-R |  |  |  | Gage 46-R |  |  |  | Gage 47-R |  |  |  | Gage 48-R |  |  |  | Gage 49-R |  |  |  | Gage 50-R |  |  |  | Gage 51-R |  |  |  | Gage 52-R |  |  |  | Gage 53-R |  |  |  | Gage 54-R |  |  |  | Gage 55-R |  |  |  | Gage 56-R |  |  |  | Gage 57-R |  |  |  | Gage 58-R |  |  |  | Gage 59-R |  |  |  | Gage 60-R |  |  |  | Gage 61-R |  |  |  | Gage 62-R |  |  |  | Gage 63-R |  |  |  | Gage 64-R |  |  |  | Gage 65-R |  |  |  | Gage 66-R |  |  |  | Gage 67-R |  |  |  | Gage 68-R |  |  |  | Gage 69-R |  |  |  | Gage 70-R |  |  |  | Gage 71-R |  |  |  | Gage 72-R |  |  |  | Gage 73-R |  |  |  | Gage 74-R |  |  |  | Gage 75-R |  |  |  | Gage 76-R |  |  |  | Gage 77-R |  |  |  | Gage 78-R |  |  |  | Gage 79-R |  |  |  | Gage 80-R |  |  |  | Gage 81-R |  |  |  | Gage 82-R |  |  |  | Gage 83-R |  |  |  | Gage 84-R |  |  |  | Gage 85-R |  |  |  | Gage 86-R |  |  |  | Gage 87-R |  |  |  | Gage 88-R |  |  |  | Gage 89-R |  |  |  | Gage 90-R |  |  |  | Gage 91-R |  |  |  | Gage 92-R |  |  |  | Gage 93-R |  |  |  | Gage 94-R |  |  |  | Gage 95-R |  |  |  | Gage 96-R |  |  |  | Gage 97-R |  |  |  | Gage 98-R |  |  |  | Gage 99-R |  |  |  | Gage 100-R |  |  |  | Gage 101-R |  |  |  | Gage 102-R |  |  |  | Gage 103-R |  |  |  | Gage 104-R |  |  |  | Gage 105-R |  |  |  | Gage 106-R |  |  |  | Gage 107-R |  |  |  | Gage 108-R |  |  |  | Gage 109-R |  |  |  | Gage 110-R |  |  |  | Gage 111-R |  |  |  | Gage 112-R |  |  |  | Gage 113-R |  |  |  | Gage 114-R |  |  |  | Gage 115-R |  |  |  | Gage 116-R |  |  |  | Gage 117-R |  |  |  | Gage 118-R |  |  |  | Gage 119-R |  |  |  | Gage 120-R |  |  |  | Gage 121-R |  |  |  | Gage 122-R |  |  |  | Gage 123-R |  |  |  | Gage 124-R |  |  |  | Gage 125-R |  |  |  | Gage 126-R |  |  |  | Gage 127-R |  |  |  | Gage 128-R |  |  |  | Gage 129-R |  |  |  | Gage 130-R |  |  |  | Gage 131-R |  |  |  | Gage 132-R |  |  |  | Gage 133-R |  |  |  | Gage 134-R |  |  |  | Gage 135-R |  |  |  | Gage 136-R |  |  |  | Gage 137-R |  |  |  | Gage 138-R |  |  |  | Gage 139-R |  |  |  | Gage 140-R |  |  |  | Gage 141-R |  |  |  | Gage 142-R |  |  |  | Gage 143-R |  |  |  | Gage 144-R |  |  |  | Gage 145-R |  |  |  | Gage 146-R |  |  |  | Gage 147-R |  |  |  | Gage 148-R |  |  |  | Gage 149-R |  |  |  | Gage 150-R |  |  |  | Gage 151-R |  |  |  | Gage 152-R |  |  |  | Gage 153-R |  |  |  | Gage 154-R |  |  |  | Gage 155-R |  |  |  | Gage 156-R |  |  |  | Gage 157-R |  |  |  | Gage 158-R |  |  |  | Gage 159-R |  |  |  | Gage 160-R |  |  |  | Gage 161-R |  |  |  | Gage 162-R |  |  |  | Gage 163-R |  |  |  | Gage 164-R |  |  |  | Gage 165-R |  |  |  | Gage 166-R |  |  |  | Gage 167-R |  |  |  | Gage 168-R |  |  |  | Gage 169-R |  |  |  | Gage 170-R |  |  |  | Gage 171-R |  |  |  | Gage 172-R |  |  |  | Gage 173-R |  |  |  | Gage 174-R |  |  |  | Gage 175-R |  |  |  | Gage 176-R |  |  |  | Gage 177-R |  |  |  | Gage 178-R |  |  |  | Gage 179-R |  |  |  | Gage 180-R |  |  |  | Gage 181-R |  |  |  | Gage 182-R |  |  |  | Gage 183-R |  |  |  | Gage 184-R |  |  |  | Gage 185-R |  |  |  | Gage 186-R |  |  |  | Gage 187-R |  |  |  | Gage 188-R |  |  |  | Gage 189-R |  |  |  | Gage 190-R |  |  |  | Gage 191-R |  |  |  | Gage 192-R |  |  |  | Gage 193-R |  |  |  | Gage 194-R |  |  |  | Gage 195-R |  |  |  | Gage 196-R |  |  |  | Gage 197-R |  |  |  | Gage 198-R |  |  |  | Gage 199-R |  |  |  | Gage 200-R |  |  |  | Gage 201-R |  |  |  | Gage 202-R |  |  |  | Gage 203-R |  |  |  | Gage 204-R |  |  |  | Gage 205-R |  |  |  | Gage 206-R |  |  |  | Gage 207-R |  |  |  | Gage 208-R |  |  |  | Gage 209-R |  |  |  | Gage 210-R |  |  |  | Gage 211-R |  |  |  | Gage 212-R |  |  |  | Gage 213-R |  |  |  | Gage 214-R |  |  |  | Gage 215-R |  |  |  | Gage 216-R |  |  |  | Gage 217-R |  |  |  | Gage 218-R |  |  |  | Gage 219-R |  |  |  | Gage 220-R |  |  |  | Gage 221-R |  |  |  | Gage 222-R |  |  |  | Gage 223-R |  |  |  | Gage 224-R |  |  |  | Gage 225-R |  |  |  | Gage 226-R |  |  |  | Gage 227-R |  |  |  | Gage 228-R |  |  |  | Gage 229-R |  |  |  | Gage 230-R |  |  |  | Gage 231-R |  |  |  | Gage 232-R |  |  |  | Gage 233-R |  |  |  | Gage 234-R |  |  |  | Gage 235-R |  |  |  | Gage 236-R |  |  |  | Gage 237-R |  |  |  | Gage 238-R |  |  |  | Gage 239-R |  |  |  | Gage 240-R |  |  |  | Gage 241-R |  |  |  | Gage 242-R |  |  |  | Gage 243-R |  |  |  | Gage 244-R |  |  |  | Gage 245-R |  |  |  | Gage 246-R |  |  |  | Gage 247-R |  |  |  | Gage 248-R |  |  |  | Gage 249-R |  |  |  | Gage 250-R |  |  |  | Gage 251-R |  |  |  | Gage 252-R |  |  |  | Gage 253-R |  |  |  | Gage 254-R |  |  |  | Gage 255-R |  |  |  | Gage 256-R |  |  |  | Gage 257-R |  |  |  | Gage 258-R |  |  |  | Gage 259-R |  |  |  | Gage 260-R |  |  |  | Gage 261-R |  |  |  | Gage 262-R |  |  |  | Gage 263-R |  |  |  | Gage 264-R |  |  |  | Gage 265-R |  |  |  | Gage 266-R |  |  |  | Gage 267-R |  |  |  | Gage 268-R |  |  |  | Gage 269-R |  |  |  | Gage 270-R |  |  |  | Gage 271-R |  |  |  | Gage 272-R |  |  |  | Gage 273-R |  |  |  | Gage 274-R |  |  |  | Gage 275-R |  |  |  | Gage 276-R |  |  |  | Gage 277-R |  |  |  | Gage 278-R |  |  |  | Gage 279-R |  |  |  | Gage 280-R |  |  |  | Gage 281-R |  |  |  | Gage 282-R |  |  |  | Gage 283-R |  |  |  | Gage 284-R |  |  |  | Gage 285-R |  |  |  | Gage 286-R |  |  |  | Gage 287-R |  |  |  | Gage 288-R |  |  |  | Gage 289-R |  |  |  | Gage 290-R |  |  |  | Gage 291-R |  |  |  | Gage 292-R |  |  |  | Gage 293-R |  |  |  | Gage 294-R |  |  |  | Gage 295-R |  |  |  | Gage 296-R |  |  |  | Gage 297-R |  |  |  | Gage 298-R |  |  |  | Gage 299-R |  |  |  | Gage 300-R |  |  |  | Gage 301-R |  |  |  | Gage 302-R |  |  |  | Gage 303-R |  |  |  | Gage 304-R |  |  |  | Gage 305-R |  |  |  | Gage 306-R |  |  |  | Gage 307-R |  |  |  | Gage 308-R |  |  |  | Gage 309-R |  |  |  | Gage 310-R |  |  |  | Gage 311-R |  |  |  | Gage 312-R |  |  |  | Gage 313-R |  |  |  | Gage 314-R |  |  |  | Gage 315-R |  |  |  | Gage 316-R |  |  |  | Gage 317-R |  |  |  | Gage 318-R |  |  |  | Gage 319-R |  |  |  | Gage 320-R |  |  |  | Gage 321-R |  |  |  | Gage 322-R |  |  |  | Gage 323-R |  |  |  | Gage 324-R |  |  |  | Gage 325-R |  |  |  | Gage 326-R |  |  |  | Gage 327-R |  |  |  | Gage 328-R |  |  |  | Gage 329-R |  |  |  | Gage 330-R |  |  |  | Gage 331-R |  |  |  | Gage 332-R |  |  |  | Gage 333-R |  |  |  | Gage 334-R |  |  |  | Gage 335-R |  |  |  | Gage 336-R |  |  |  | Gage 337-R |  |  |  | Gage 338-R |  |  |  | Gage 339-R |  |  |  | Gage 340-R |  |  |  | Gage 341-R |  |  |  | Gage 342-R |  |  |  | Gage 343-R |  |  |  | Gage 344-R |  |  |  | Gage 345-R |  |  |  | Gage 346-R |  |  |  | Gage 347-R |  |  |  | Gage 348-R |  |  |  | Gage 349-R |  |  |  | Gage 350-R |  |  |  | Gage 351-R |  |  |  | Gage 352-R |  |  |  | Gage 353-R |  |  |  | Gage 354-R |  |  |  | Gage 355-R |  |  |  | Gage 356-R |  |  |  | Gage 357-R |  |  |  | Gage 358-R |  |  |  | Gage 359-R |  |  |  | Gage 360-R |  |  |  | Gage 361-R |  |  |  | Gage 362-R |  |  |  | Gage 363-R |  |  |  | Gage 364-R |  |  |  | Gage 365-R |  |  |  | Gage 366-R |  |  |  | Gage 367-R |  |  |  | Gage 368-R |  |  |  | Gage 369-R |  |  |  | Gage 370-R |  |  |  | Gage 371-R |  |  |  | Gage 372-R |  |  |  | Gage 373-R |  |  |  | Gage 374-R |  |  |  | Gage 375-R |  |  |  | Gage 376-R |  |  |  | Gage 377-R |  |  |  | Gage 378-R |  |  |  | Gage 379-R |  |  |  | Gage 380-R |  |  |  | Gage 381-R |  |  |  | Gage 382-R |  |  |  | Gage 383-R |  |  |  | Gage 384-R |  |  |  | Gage 385-R |  |  |  | Gage 386-R |  |  |  | Gage 387-R |  |  |  | Gage 388-R |  |  |  | Gage 389-R |  |  |  | Gage 390-R |  |  |  | Gage 391-R |  |  |  | Gage 392-R |  |  |  | Gage 393-R |  |  |  | Gage 394-R |  |  |  | Gage 395-R |  |  |  | Gage 396-R |  |  |  | Gage 397-R |  |  |  | Gage 398-R |  |  |  | Gage 399-R |  |  |  | Gage 400-R |  |  |  | Gage 401-R |  |  |  | Gage 402-R |  |  |  | Gage 403-R |  |  |  | Gage 404-R |  |  |  | Gage 405-R |  |  |  | Gage 406-R |  |  |  | Gage 407-R |  |  |  | Gage 408-R |  |  |  | Gage 409-R |  |  |  | Gage 410-R |  |  |  | Gage 411-R |  |  |  | Gage 412-R |  |  |  | Gage 413-R |  |  |  | Gage 414-R |  |  |  | Gage 415-R |  |  |  | Gage 416-R |  |  |  | Gage 417-R |  |  |  | Gage 418-R |  |  |  | Gage 419-R |  |  |  | Gage 420-R |  |  |  | Gage 421-R |  |  |  | Gage 422-R |  |  |  | Gage 423-R |  |  |  | Gage 424-R |  |  |  | Gage 425-R |  |  |  | Gage 426-R |  |  |  | Gage 427-R |  |  |  | Gage 428-R |  |  |  | Gage 429-R |  |  |  | Gage 430-R |  |  |  | Gage 431-R |  |  |  | Gage 432-R |  |  |  | Gage 433-R |  |  |  | Gage 434-R |  |  |  | Gage 435-R |  |  |  | Gage 436-R |  |  |  | Gage 437-R |  |  |  | Gage 438-R |  |  |  | Gage 439-R |  |  |  | Gage 440-R |  |  |  | Gage 441-R |  |  |  | Gage 442-R |  |  |  | Gage 443-R |  |  |  | Gage 444-R |  |  |  | Gage 445-R |  |  |  | Gage 446-R |  |  |  | Gage 447-R |  |  |  | Gage 448-R |  |  |  | Gage 449-R |  |  |  | Gage 450-R |  |  |  | Gage 451-R |  |  |  | Gage 452-R |  |  |  | Gage 453-R |  |  |  | Gage 454-R |  |  |  | Gage 455-R |  |  |  | Gage 456-R |  |  |  | Gage 457-R |  |  |  | Gage 458-R |  |  |  | Gage 459-R |  |  |  | Gage 460-R |  |  |  | Gage 461-R |  |  |  | Gage 462-R |  |  |  | Gage 463-R |  |  |  | Gage 464-R |  |  |  | Gage 465-R |  |  |  | Gage 466-R |  |  |  | Gage 467-R |  |  |  | Gage 468-R |  |  |  | Gage 469-R |  |  |  | Gage 470-R |  |  |  | Gage 471-R |  |  |  | Gage 472-R |  |  |  | Gage 473-R |  |  |  | Gage 474-R |  |  |  | Gage 475-R |  |  |  | Gage 476-R |  |  |  | Gage 477-R |  |  |  | Gage 478-R |  |  |  | Gage 479-R |  |  |  | Gage 480-R |  |  |  | Gage 481-R |  |  |  | Gage 482-R |  |  |  | Gage 483-R |  |  |  | Gage 484-R |  |  |  | Gage 485-R |  |  |  | Gage 486-R |  |  |  | Gage 487-R |  |  |  | Gage 488-R |  |  |  | Gage 489-R |  |  |  | Gage 490-R |  |  |  | Gage 491-R |  |  |  | Gage 492-R |  |  |  | Gage 493-R |  |  |  | Gage 494-R |  |  |  | Gage 495-R |  |  |  | Gage 496-R |  |  |  | Gage 497-R |  |  |  | Gage 498-R |  |  |  | Gage 499-R |  |  |  | Gage 500-R |  |  |  | Gage 501-R |  |  |  | Gage 502-R |  |  |  | Gage 503-R |  |  |  | Gage 504-R |  |  |  | Gage 505-R |  |  |  | Gage 506-R |  |  |  | Gage 507-R |  |  |  | Gage 508-R |  |  |  | Gage 509-R |  |  |  | Gage 510-R |  |  |  | Gage 511-R |  |  |  | Gage 512-R |  |  |  | Gage 513-R |  |  |  | Gage 514-R |  |  |  | Gage 515-R |  |  |  | Gage 516-R |  |  |  | Gage 517-R |  |  |  | Gage 518-R |  |  |  | Gage 519-R |  |  |  | Gage 520-R |  |  |  | Gage 521-R |  |  |  | Gage 522-R |  |  |  | Gage 523-R |  |  |  | Gage 524-R |  |  |  | Gage 525-R |  |  |  | Gage 526-R |  |  |  | Gage 527-R |  |  |  | Gage 528-R |  |  |  | Gage 529-R |  |  |  | Gage 530-R |  |  |  | Gage 531-R |  |  |  | Gage 532-R |  |  |  | Gage 533-R |  |  |  | Gage 534-R |  |  |  | Gage 535-R |  |  |  | Gage 536-R |  |  |  | Gage 537-R |  |  |  | Gage 538-R |  |  |  | Gage 539-R |  |  |  | Gage 540-R |  |  |  | Gage 541-R |  |  |  | Gage 542-R |  |  |  | Gage 543-R |  |  |  | Gage 544-R |  |  |  | Gage 545-R |  |  |  | Gage 546-R |  |  |  | Gage 547-R |  |  |  | Gage 548-R |  |  |  | Gage 549-R |  |  |  | Gage 550-R |  |  |  | Gage 551-R |  |  |  | Gage 552-R |  |  |  | Gage 553-R |  |  |  | Gage 554-R |  |  |  | Gage 555-R |  |  |  | Gage 556-R |  |  |  | Gage 557-R |  |  |  | Gage 558-R |  |  |  | Gage 559-R |  |  |  | Gage 560-R |  |  |  | Gage 561-R |  |  |  | Gage 562-R |  |  |  | Gage 563-R |  |  |  | Gage 564-R |  |  |  | Gage 565-R |  |  |  | Gage 566-R |  |  |  | Gage 567-R |  |  |  | Gage 568-R |  |  |  | Gage 569-R |  |  |  | Gage 570-R |  |  |  | Gage 571-R |  |  |  | Gage 572-R |  |  |  | Gage 573-R |  |  |  | Gage 574-R |  |  |  | Gage 575-R |  |  |  | Gage 576-R |  |  |  | Gage 577-R |  |  |  | Gage 578-R |  |  |  | Gage 579-R |  |  |  | Gage 580-R |  |  |  | Gage 581-R |  |  |  | Gage 582-R |  |  |  | Gage 583-R |  |  |  | Gage 584-R |  |  |  | Gage 585-R |  |  |  | Gage 586-R |  |  |  | Gage 587-R |  |  |  | Gage 588-R |  |  |  | Gage 589-R |  |  |  | Gage 590-R |  |  |  | Gage 591-R |  |  |  | Gage 592-R |  |  |  | Gage 593-R |  |  |  | Gage 594-R |  |  |  | Gage 595-R |  |  |  | Gage 596-R |  |  |  | Gage 597-R |  |  |  | Gage 598-R |  |  |  | Gage 599-R |  |  |  | Gage 600-R |  |  |  | Gage 601-R |  |  |  | Gage 602-R |  |  |  | Gage 603-R |  |  |  | Gage 604-R |  |  |  | Gage 605-R |  |  |  | Gage 606-R |  |  |  | Gage 607-R |  |  |  | Gage 608-R |  |  |  | Gage 609-R |  |  |  | Gage 610-R |  |  |  | Gage 611-R |  |  |  | Gage 612-R |  |  |  | Gage 613-R |  |  |  | Gage 614-R |  |  |  | Gage 615-R |  |  |  | Gage 616-R |  |  |  | Gage 617-R |  |  |  | Gage 618-R |  |  |  | Gage 619-R |  |  |  | Gage 620-R |  |  |  | Gage 621-R |  |  |  | Gage 622-R |  |  |  | Gage 623-R |  |  |  | Gage 624-R |  |  |  | Gage 625-R |  |  |  | Gage 626-R |  |  |  | Gage 627-R |  |  |  | Gage 628-R |  |  |  | Gage 629-R |  |  |  | Gage 630-R |  |  |  | Gage 631-R |  |  |  | Gage 632-R |  |  |  | Gage 633-R |  |  |  | Gage 634-R |  |  |  | Gage 635-R |  |  |  | Gage 636-R |  |  |  | Gage 637-R |  |  |  | Gage 638-R |  |  |  | Gage 639-R |  |  |  | Gage 640-R |  |  |  | Gage 641-R |  |  |  | Gage 642-R |  |  |  | Gage 643-R |  |  |  | Gage 644-R |  |  |  | Gage 645-R |  |  |  | Gage 646-R |  |  |  | Gage 647-R |  |  |  | Gage 648-R |  |  |  | Gage 649-R |  |  |  | Gage 650-R |  |  |  | Gage 651-R |  |  |  | Gage 652-R |  |  |  | Gage 653-R |  |  |  | Gage 654-R |  |  |  | Gage 655-R |  |  |  | Gage 656-R |  |  |  | Gage 657-R |  |  |  | Gage 658-R |  |  |  | Gage 659-R |  |  |  | Gage 660-R |  |  |  | Gage 661-R |  |  |  | Gage 662-R |  |  |  | Gage 663-R |  |  |  | Gage 664-R |  |  |  | Gage 665-R |  |  |  | Gage 666-R |  |  |  | Gage 667-R |  |  |  | Gage 668-R |  |  |  | Gage 669-R |  |  |  | Gage 670-R |  |  |  | Gage 671-R |  |  |  | Gage 672-R |  |  |  | Gage 673-R |  |  |  | Gage 674-R |  |  |  | Gage 675-R |  |  |  | Gage 676-R |  |  |  | Gage 677-R |  |  |  | Gage 678-R |  |  |  | Gage 679-R |  |  |  | Gage 680-R |  |  |  | Gage 681-R |  |  |  | Gage 682-R |  |  |  | Gage 683-R |  |  |  | Gage 684-R |  |  |  | Gage 685-R |  |  |  | Gage 686-R |  |  |  | Gage 687-R |  |  |  | Gage 688-R |  |  |  | Gage 689-R |  |  |  | Gage 690-R |  |  |  | Gage 691-R |  |  |  | Gage 692-R |  |  |  | Gage 693-R |  |  |  | Gage 694-R |  |  |  | Gage 695-R |  |  |  | Gage 696-R |  |  |  | Gage 697-R |  |  |  | Gage 698-R |  |  |  | Gage 699-R |  |  |  | Gage 700-R |  |  |  | Gage 701-R |  |  |  | Gage 702-R |  |  |  | Gage 703-R |  |  |  | Gage 704-R |  |  |  | Gage 705-R |  |  |  | Gage 706-R |  |  |  | Gage 707-R |  |  |  | Gage 708-R |  |  |  | Gage 709-R |  |  |  | Gage 710-R |  |  |  | Gage 711-R |  |  |  | Gage 712-R |  |  |  | Gage 713-R |  |  |  | Gage 714-R |  |  |  | Gage 715-R |  |  |  | Gage 716-R |  |  |  | Gage 717-R |  |  |  | Gage 718-R |  |  |  | Gage 719-R |  |  |  | Gage 720-R |  |  |  | Gage 721-R |  |  |  | Gage 722-R |  |  |  | Gage 723-R |  |  |  | Gage 724-R |  |  |  | Gage 725-R |  |  |  | Gage 726-R |  |  |  | Gage 727-R |  |  |  | Gage 728-R |  |  |  | Gage 729-R |  |  |  | Gage 730-R |  |  |  | Gage 731-R |  |  |  | Gage 732-R |  |  |  | Gage 733-R |  |  |  | Gage 734-R |  |  |  | Gage 735-R |  |  |  | Gage 736-R |  |  |  | Gage 737-R |  |  |  | Gage 738-R |  |  |  | Gage 739-R |  |  |  | Gage 740-R |  |  |  | Gage 741-R |  |  |  | Gage 742-R |  |  |  | Gage 743-R |  |  |  | Gage 744-R |  |  |  | Gage 745-R |  |  |  | Gage 746-R |  |  |  | Gage 747-R |  |  |  | Gage 748-R |  |  |  | Gage 749-R |  |  |  | Gage 750-R |  |  |  | Gage 751-R |  |  |  | Gage 752-R |  |  |  | Gage 753-R |  |  |  | Gage 754-R |  |  |  | Gage 755-R |  |  |  | Gage 756-R |  |  |  | Gage 757-R |  |  |  | Gage 758-R |  |  |  | Gage 759-R |  |  |  | Gage 760-R |  |  |  | Gage 761-R |  |  |  | Gage 762-R |  |  |  | Gage 763-R |  |  |  | Gage 764-R |  |  |  | Gage 765-R |  |  |  | Gage 766-R |  |  |  | Gage 767-R |  |  |  | Gage 768-R |  |  |  | Gage 769-R |  |  |  | Gage 770-R |  |  |  | Gage 771-R |  |  |  | Gage 772-R |  |  |  | Gage 773-R |  |  |  | Gage 774-R |  |  |  | Gage 775-R |  |  |  | Gage 776-R |  |  |  | Gage 777-R |  |  |  | Gage 778-R |  |  |  | Gage 779-R |  |  |  | Gage 780-R |  |  |  | Gage 781-R |  |  |  | Gage 782-R |  |  |  | Gage 783-R |  |  |  | Gage 784-R |  |  |  | Gage 785-R |  |  |  | Gage 786-R |  |  |  | Gage 787-R |  |  |  | Gage 788-R |  |  |  | Gage 789-R |  |  |  | Gage 790-R |  |  |  | Gage 791-R |  |  |  | Gage 792-R |  |  |  | Gage 793-R |  |  |  | Gage 794-R |  |  |  | Gage 795-R |  |  |  | Gage 796-R |  |  |  | Gage 797-R |  |  |  | Gage 798-R |  |  |  | Gage 799-R |  |  |  | Gage 800-R |  |  |  | Gage 801-R |  |  |  | Gage 802-R |  |  |  | Gage 803-R |  |  |  | Gage 804-R |  |  |  | Gage 805-R |  |  |  | Gage 806-R |  |  |  | Gage 807-R |  |  |  | Gage 808-R |  |  |  | Gage 809-R |  |  |  | Gage 810-R |  |  |  | Gage 811-R |  |  |  | Gage 812-R |  |  |  | Gage 813-R |  |  |  | Gage 814-R |  |  |  | Gage 815-R |  |  |  | Gage 816-R |  |  |  | Gage 817-R |  |  |  | Gage 818-R |  |  |  | Gage 819-R |  |  |  | Gage 820-R |  |  |  | Gage 821-R |  |  |  | Gage 822-R |  |  |  | Gage 823-R |  |  |  | Gage 824-R |  |  |  | Gage 825-R |  |  |  | Gage 826-R |  |  |  | Gage 827-R |  |  |  | Gage 828-R |  |  |  | Gage 829-R |  |  |  | Gage 830-R |  |  |  | Gage 831-R |  |  |  | Gage 832-R |  |  |  | Gage 833-R |  |  |  | Gage 834-R |  |  |  | Gage 835-R |  |  |  | Gage 836-R |  |  |  | Gage 837-R |  |  |  | Gage 838-R |  |  |  | Gage 839-R |  |  |  | Gage 840-R |  |  |  | Gage 841-R |  |  |  | Gage 842-R |  |  |  | Gage 843-R |  |  |  | Gage 844-R |  |  |  |  |  |  |  |
|---------------|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|--|--|--|--|
|---------------|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|-----------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|------------|--|--|--|--|--|--|--|



# HYDROGRAPH and MASS CURVES

for

STORM OF MAY 30, 1967

at

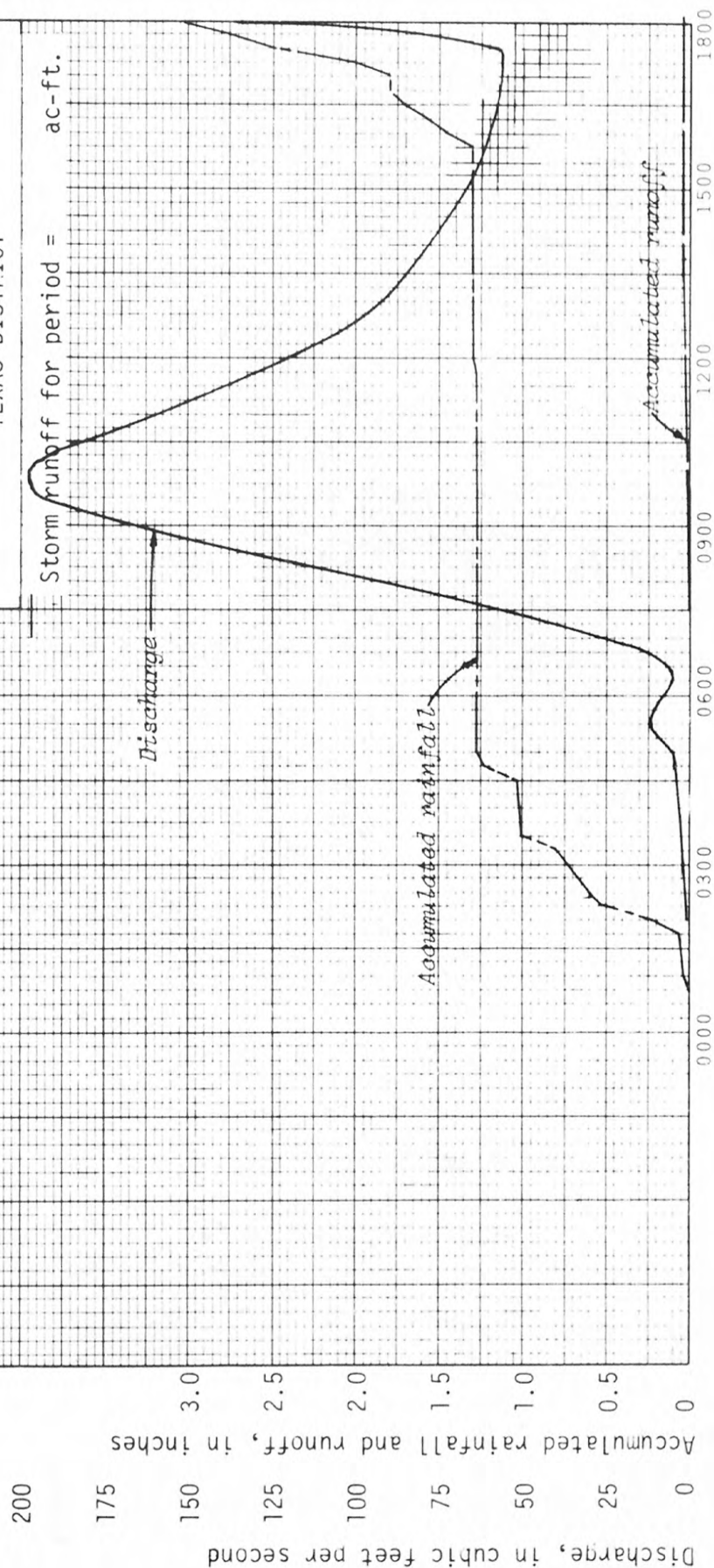
HONEY CREEK NEAR MCKINNEY, TEX.

Drainage Area 39.0

UNITED STATES GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

TEXAS DISTRICT



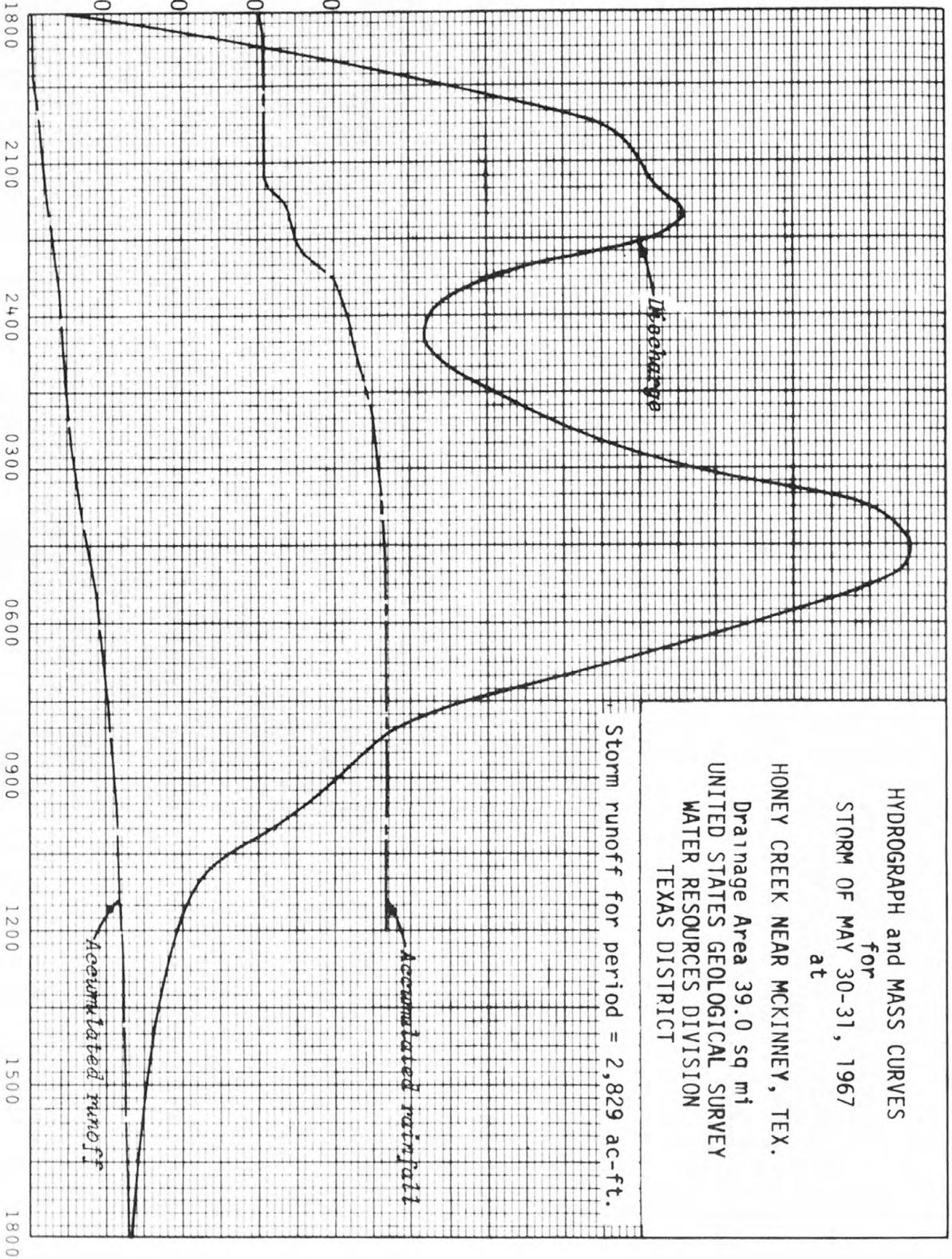
May 30

Discharge, in cubic feet per second

3,000  
2,500  
2,000  
1,500  
1,000  
500  
0

Accumulated rainfall and runoff, in inches

4.0  
3.0  
2.0  
1.0  
0



May 30

May 31

## INFLOW AND OUTFLOW COMPUTATIONS

8-0575 Honey Creek subwatershed No. 11 near McKinney, Tex. D.A. 2.14 sq mi  
Storm period Sept. 5-6, 1967

| Date and time        | Gage height<br>ft | Storage<br>ac-ft | Time<br>int.<br>hrs | Change in<br>storage<br>ac-ft | Mean<br>G. Ht.<br>ft | Outflow<br>cfs | Total<br>inflow<br>cfs | Rainfall on Pool |                  | Net Inflow  |       | Acc<br>in |
|----------------------|-------------------|------------------|---------------------|-------------------------------|----------------------|----------------|------------------------|------------------|------------------|-------------|-------|-----------|
|                      |                   |                  |                     |                               |                      |                |                        | in<br>ac         | Storage<br>ac-ft | Rate<br>cfs | in/hr |           |
| <u>Sept. 5, 1967</u> |                   |                  |                     |                               |                      |                |                        |                  |                  |             |       |           |
| 0000                 | 13.65             | 380.51           | -                   | -                             | -                    | -              | -                      | -                | -                | -           | -     | -         |
| 0030                 | 13.65             | 380.51           | .50                 | 0                             | 13.65                | 0              | 0                      | 0                | -                | -           | -     | -         |
| 0100                 | 13.70             | 382.57           | .50                 | +2.06                         | 13.68                | -              | 498                    | .40              | 1.38             | 33.3        | 16.5  | .0120     |
| 0200                 | 13.71             | 382.98           | 1.0                 | + .41                         | 13.70                | -              | 50                     | .18              | .62              | 7.5         | 0     | 0         |
| 0400                 | 13.71             | 383.19           | 2.0                 | + .21                         | 13.71                | -              | 1.3                    | .04              | .13              | .8          | .5    | .0004     |
| 1200                 | 13.73             | 383.82           | 8.0                 | + .63                         | 13.72                | -              | 1.0                    | .10              | .34              | .5          | .5    | .0004     |
| 1500                 | 13.74             | 384.23           | 3.0                 | + .41                         | 13.74                | -              | 1.7                    | .10              | .34              | 1.4         | .3    | .0002     |
| 2000                 | 13.74             | 384.23           | 5.0                 | 0                             | 13.74                | -              | 1.7                    | .10              | .34              | 1.4         | .3    | .0002     |
| 2300                 | 13.75             | 384.64           | 3.0                 | + .41                         | 13.74                | -              | 1.7                    | .10              | .34              | 1.4         | .3    | .0002     |
| 2400                 | 13.82             | 387.55           | 1.0                 | + 2.91                        | 13.78                | 0              | 35.2                   | .50              | 1.73             | 21.0        | 14.2  | .0103     |
| <u>Sept. 6</u>       |                   |                  |                     |                               |                      |                |                        |                  |                  |             |       |           |
| 0000                 | 13.82             | 387.55           | -                   | -                             | -                    | -              | -                      | -                | -                | -           | -     | -         |
| 0015                 | 13.89             | 390.47           | .25                 | + 2.92                        | 13.86                | 0              | 141                    | .25              | .87              | 42.1        | 98.9  | .0716     |
| 0030                 | 13.95             | 392.99           | -                   | + 2.52                        | 13.92                | -              | 122                    | .15              | .52              | 25.2        | 96.8  | .0701     |
| 0045                 | 14.02             | 395.93           | -                   | + 2.94                        | 13.98                | -              | 142                    | .24              | .84              | 40.7        | 101   | .0732     |
| 0100                 | 14.08             | 398.47           | -                   | + 2.54                        | 14.05                | -              | 123                    | .21              | .74              | 35.8        | 97.2  | .0704     |
| 0115                 | 14.14             | 401.01           | -                   | + 2.54                        | 14.11                | -              | 123                    | .04              | .14              | 6.8         | 116   | .0840     |
| 0130                 | 14.20             | 403.56           | -                   | + 2.55                        | 14.17                | -              | 123                    | .06              | .21              | 10.2        | 113   | .0818     |
| 0145                 | 14.25             | 405.70           | -                   | + 2.14                        | 14.22                | -              | 104                    | .05              | .18              | 8.7         | 95.3  | .0690     |
| 0200                 | 14.30             | 407.83           | .25                 | + 2.13                        | 14.28                | -              | 103                    | .05              | .18              | 8.7         | 94.3  | .0683     |
| 0300                 | 14.42             | 412.99           | 1.0                 | + 5.16                        | 14.36                | -              | 62.4                   | .16              | .54              | 6.5         | 53.9  | .0405     |
| 0400                 | 14.51             | 416.88           | 1.0                 | + 4.89                        | 14.46                | -              | 59.2                   | 0                | 0                | 0           | 59.2  | .0429     |
| 0600                 | 14.68             | 424.30           | 2.0                 | + 7.42                        | 14.60                | -              | 44.9                   | .55              | 2.00             | 12.1        | 32.8  | .0238     |
| 0700                 | 14.82             | 430.46           | 1.0                 | + 6.16                        | 14.75                | 0              | 74.5                   | .15              | .55              | 6.7         | 67.8  | .0491     |
| 0800                 | 14.94             | 435.78           | 1.0                 | + 5.32                        | 14.88                | .32            | 64.7                   | .20              | .74              | 8.9         | 55.8  | .0404     |
| 1000                 | 15.07             | 441.59           | 2.0                 | + 5.81                        | 15.00                | 1.50           | 36.7                   | .10              | .37              | 2.2         | 34.5  | .0250     |
| 1200                 | 15.12             | 443.83           | 2.0                 | + 2.24                        | 15.10                | 3.10           | 16.7                   | 0                | -                | -           | 16.7  | .0121     |
| 1400                 | 15.14             | 444.73           | 2.0                 | + .90                         | 15.13                | 4.00           | 9.4                    | -                | -                | -           | 9.4   | .0068     |
| 1600                 | 15.15             | 445.18           | 2.0                 | + .46                         | 15.14                | 4.25           | 7.0                    | -                | -                | -           | 7.0   | .0051     |
| 2400                 | 15.15             | 445.18           | 8.0                 | 0                             | 15.15                | 4.45           | 4.4                    | -                | -                | -           | 4.4   | .0032     |

UNITED STATES DEPARTMENT OF INTERIOR  
GEOLOGICAL SURVEY, SURFACE WATER BRANCH  
AUSTIN DISTRICT

## WEIGHTED PRECIPITATION RECORD

HOPEY Creek subwatershed No. 11 near McKinney, Tex. Date of storm Sept 4-5, 5-6, 1967

[illegible]



UNITED STATES DEPARTMENT OF INTERIOR  
GEOLOGICAL SURVEY, SURFACE WATER BRANCH  
AUSTIN DISTRICT

## WEIGHTED PRECIPITATION RECORD

| Locality  | Date of storm | Sept. 4-5, 5-6, 1967 | Accumulated<br>precipitation | Maximum<br>wind speed | Remarks |
|---|---------------|----------------------|------------------------------|-----------------------|---------|
| Loc. 1: Honey Creek subwatershed No. 11 near McKinney, Tex. |               |                      |                              |                       |         |

| Accumulated Precipitation in Inches for Recording Gages |               |          |          |          |          |          |          |          |          |
|---|---------------|----------|----------|----------|----------|----------|----------|----------|----------|
| Rain Gage   | Weight Factor | Gage     |          | Gage     |          | Gage     |          | Gage     |          |
|   |               | Recorded | x Factor | Recorded | x Factor | Recorded | x Factor | Recorded | x Factor |
| Date & Time   |               |          |          |          |          |          |          |          |          |
| 1900  |               |          |          |          |          |          |          |          |          |
| Sept. 6, 1967   |               |          |          |          |          |          |          |          |          |
| 0000  |               | 2.32     | 2.32     |          |          |          |          |          |          |
| 15  |               | 2.52     | 2.52     |          |          |          |          |          |          |
| 30  |               | 2.82     | 2.82     |          |          |          |          |          |          |
| 45  |               | 3.07     | 3.07     |          |          |          |          |          |          |
| 0100  |               | 3.20     | 3.20     |          |          |          |          |          |          |
| 15  |               | 3.27     | 3.27     |          |          |          |          |          |          |
| 30  |               | 3.37     | 3.37     |          |          |          |          |          |          |
| 45  |               | 3.42     | 3.42     |          |          |          |          |          |          |
| 0200  |               | 3.47     | 3.47     |          |          |          |          |          |          |
| 0300  |               | 3.57     | 3.57     |          |          |          |          |          |          |
| 0400  |               | 3.57     | 3.57     |          |          |          |          |          |          |
| 0600  |               | 4.12     | 4.12     |          |          |          |          |          |          |
| 0700  |               | 4.27     | 4.27     |          |          |          |          |          |          |
| 0800  |               | 4.37     | 4.37     |          |          |          |          |          |          |
| 1000  |               | 4.42     | 4.42     |          |          |          |          |          |          |
| 1200  |               | 4.42     | 4.42     |          |          |          |          |          |          |
| Total   |               |          |          |          |          |          |          |          |          |
| 4.41  |               |          |          |          |          |          |          |          |          |

RAIN = Sum of Precipitation x Weight Factor = 4.41

W.F. = 1.000

Total Recording Gages Weighted Precipitation = 4.41

4.41 / 4.42 = 0.998



# HYDROGRAPH and MASS CURVES for

STORM OF SEPT. 4-5, 1967  
at

HONEY CREEK SUBWATERSHED NO. 11  
NEAR MCKINNEY, TEX.

Drainage Area 2.14 sq mi  
UNITED STATES GEOLOGICAL SURVEY  
WATER RESOURCES DIVISION  
TEXAS DISTRICT

Storm runoff for period = -- ac-ft.

No outflow

Net inflow

Accumulated rainfall

Accumulated runoff

Accumulated rainfall and runoff, in inches

Net inflow and outflow, in cubic feet per second

Sept. 4

Sept. 5

120

110

100

90

80

70

60

50

40

30

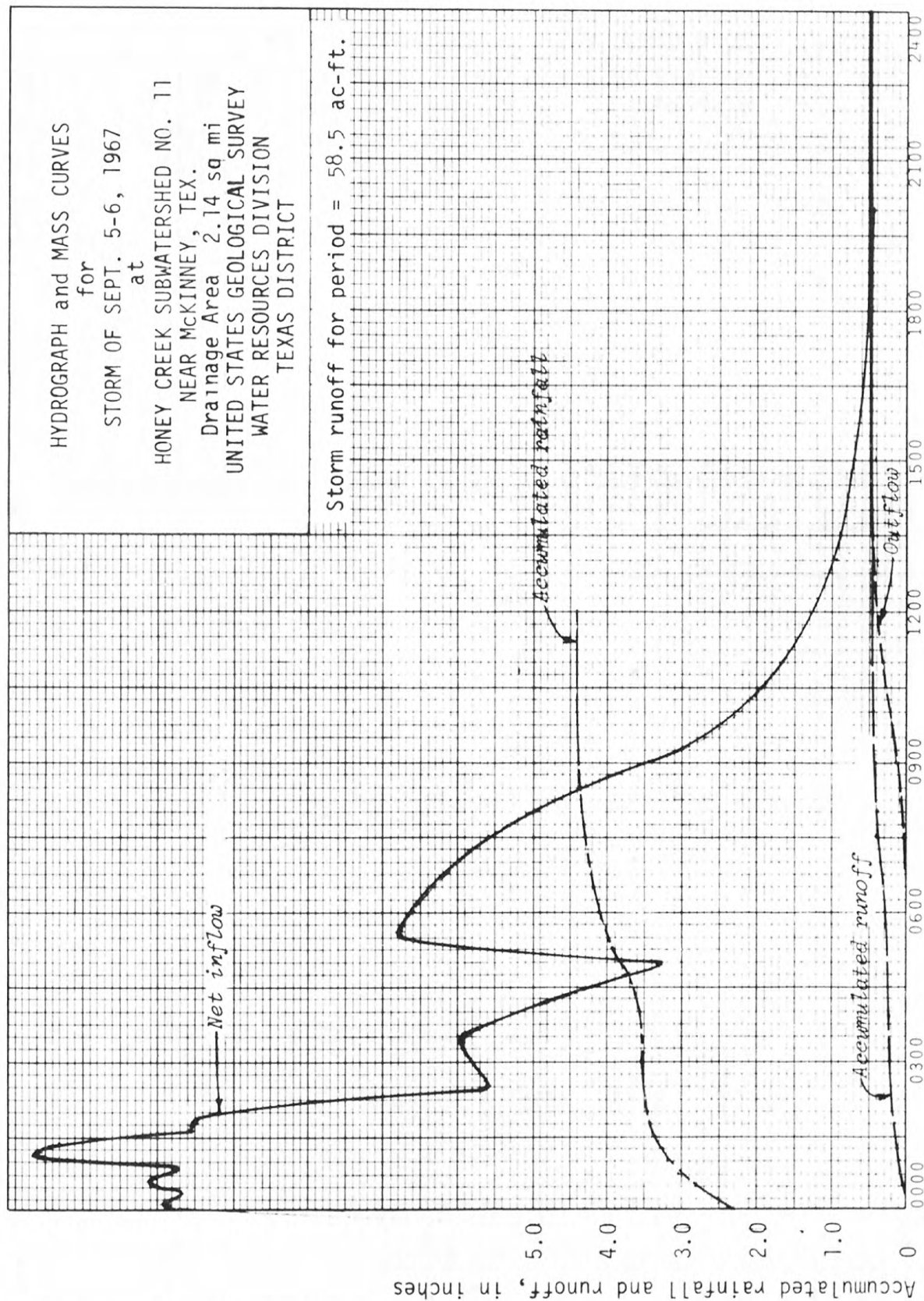
20

10

0

Net inflow and outflow, in cubic feet per second

Accumulated rainfall and runoff, in inches



Sept. 6

Storm period Sept. 5-6, 1967

Creek subwatershed No. 12 near McKinney, Tex. D.A. 1.26 sq mi

[illegible]

|             |  |
|-------------|--|
| Comp. by:   |  |
| Checked by: |  |

"a" day

Storm period Sept 6, 1967

0-0580 Honey

Honey

Creek subwatershed No.

12 near McKinney

\_\_\_\_\_, Tex. D.A. 1.26 sq mi

| Date and time | Gage height<br>ft | Storage<br>ac-ft | Time<br>int.<br>hrs | Change in storage |       | Mean<br>G. Ht.<br>ft | Outflow<br>cfs | Total<br>inflow<br>cfs | Rainfall on Pool |       |      |      | Net Inflow |       |       |
|---------------|-------------------|------------------|---------------------|-------------------|-------|----------------------|----------------|------------------------|------------------|-------|------|------|------------|-------|-------|
|               |                   |                  |                     | ac-ft             | cfs   |                      |                |                        | in               | ac-ft | cfs  | Rate |            |       |       |
|               |                   |                  |                     |                   |       |                      |                |                        |                  |       |      | cfs  | in/hr      |       |       |
| Sept. 6, 1967 |                   |                  |                     |                   |       |                      |                |                        |                  |       |      |      |            |       |       |
| 0000          | 13.73             | 98.56            |                     |                   |       |                      |                |                        |                  |       |      |      |            |       |       |
| 0100          | 13.86             | 100.83           | 1.0                 | +2.27             | +27.5 | 13.80                | 0              | 27.5                   | 90               | 17.4  | 1.30 | 15.7 | 11.8       | .0145 | .0269 |
| 0130          | 13.91             | 101.71           | .50                 | +1.88             | +21.3 | 13.88                |                | 21.3                   | 50               | 17.6  | .73  | 17.7 | 3.6        | .0044 | .0222 |
| 0145          | 13.98             | 102.95           | .25                 | +1.24             | +60.0 | 13.94                |                | 60.0                   | 32               | 17.7  | .47  | 22.7 | 37.3       | .0459 | .0115 |
| 0200          | 14.08             | 104.72           |                     | +1.77             | +85.7 | 14.03                |                | 85.7                   | 16               | 17.8  | .24  | 11.6 | 74.1       | .0912 | .0634 |
| 0215          | 14.17             | 106.34           |                     | +1.62             | +78.4 | 14.12                |                | 78.4                   | 12               | 17.9  | .18  | 8.7  | 69.7       | .0857 | .0848 |
| 0230          | 14.30             | 108.70           |                     | +2.36             | +114  | 14.24                |                | 114                    | 16               | 18.2  | .24  | 11.6 | 102        | .1255 | .1162 |
| 0245          | 14.43             | 111.08           |                     | +2.38             | +115  | 14.36                |                | 115                    | 06               | 18.3  | .09  | 4.4  | 111        | .1365 | .1503 |
| 0300          | 14.56             | 113.50           |                     | +2.42             | +117  | 14.50                |                | 117                    | 10               | 18.6  | .16  | 7.7  | 109        | .1341 | .1838 |
| 0315          | 14.70             | 116.12           |                     | +2.62             | +127  | 14.63                |                | 127                    | 08               | 18.7  | .12  | 5.8  | 121        | .1488 | .2210 |
| 0330          | 14.82             | 118.39           |                     | +2.27             | +110  | 14.76                |                | 110                    | 08               | 18.9  | .13  | 6.3  | 104        | .1279 | .0320 |
| 0345          | 14.93             | 120.50           |                     | +2.11             | +102  | 14.88                |                | 102                    | 08               | 19.2  | .13  | 6.3  | 95.7       | .1177 | .2824 |
| 0400          | 15.03             | 122.42           | .25                 | +1.92             | +92.9 | 14.98                | 0              | 92.9                   | 10               | 19.3  | .16  | 7.7  | 85.2       | .1048 | .0262 |
| 0430          | 15.23             | 126.32           | .50                 | +3.90             | +94.4 | 15.13                | 1.1            | 95.5                   | 14               | 19.5  | .23  | 5.6  | 89.9       | .1106 | .0553 |
| 0500          | 15.40             | 129.68           | .50                 | +3.36             | +81.3 | 15.32                | 4.6            | 85.9                   | 10               | 19.8  | .16  | 3.9  | 82.0       | .1009 | .0504 |
| 0600          | 15.71             | 135.92           | 1.0                 | +6.24             | +75.5 | 15.56                | 7.0            | 82.5                   | 08               | 20.1  | .13  | 1.6  | 80.9       | .0995 | .5138 |
| 0700          | 15.93             | 140.44           |                     | +4.52             | +54.7 | 15.82                | 7.2            | 61.9                   | 02               | 20.5  | .03  | .4   | 61.5       | .0757 | .5895 |
| 0800          | 16.08             | 143.57           |                     | +3.13             | +37.9 | 16.00                | 7.2            | 45.1                   | 0                |       |      |      | 45.1       | .0555 | .6450 |
| 0900          | 16.18             | 145.68           |                     | +2.11             | +25.5 | 16.13                | 7.3            | 32.8                   |                  |       |      |      | 32.8       | .0403 | .6853 |
| 1000          | 16.25             | 147.16           |                     | +1.48             | +17.9 | 16.22                | 7.3            | 25.2                   |                  |       |      |      | 25.2       | .0310 | .7163 |
| 1100          | 16.29             | 148.02           |                     | + .86             | +10.4 | 16.27                | 7.3            | 17.7                   |                  |       |      |      | 17.7       | .0218 | .7381 |
| 1200          | 16.30             | 148.23           |                     | + .21             | +2.5  | 16.30                | 7.3            | 9.8                    |                  |       |      |      | 9.8        | .0121 | .7502 |
| 1300          | 16.30             | 148.23           |                     | 0                 | 0     | 16.30                | 7.3            | 7.3                    |                  |       |      |      | 7.3        | .0090 | .7592 |
| 1400          | 16.28             | 147.80           | 1.0                 | -.43              | -5.2  | 16.29                | 7.3            | 2.1                    |                  |       |      |      | 2.1        | .0026 | .7618 |
| 1600          | 16.24             | 146.95           | 2.0                 | -.85              | -5.1  | 16.26                | 7.3            | 2.2                    |                  |       |      |      | 2.2        | .0027 | .7672 |
| 1800          | 16.20             | 146.10           | 2.0                 | -.85              | -5.1  | 16.22                | 7.3            | 2.2                    |                  |       |      |      | 2.2        | .0027 | .7726 |
| 2100          | 16.13             | 144.62           | 3.0                 | -1.48             | -6.0  | 16.16                | 7.3            | 1.3                    |                  |       |      |      | 1.3        | .0016 | .7774 |
| 2400          | 16.07             | 143.36           | 3.0                 | -1.26             | -5.1  | 16.10                | 7.3            | 2.2                    |                  |       |      |      | 2.2        | .0027 | .7855 |
|               |                   |                  |                     |                   |       |                      |                |                        |                  |       |      |      |            |       |       |
|               |                   |                  |                     |                   |       |                      |                |                        |                  |       |      |      |            |       |       |
|               |                   |                  |                     |                   |       |                      |                |                        |                  |       |      |      |            |       |       |
|               |                   |                  |                     |                   |       |                      |                |                        |                  |       |      |      |            |       |       |



Sheet 1 of 2  
 Comp. by: AWB  
 Date: 8-29-68  
 Check by: BCM  
 Date: 8-29-68

UNITED STATES DEPARTMENT OF INTERIOR  
 GEOLOGICAL SURVEY, SURFACE WATER BRANCH  
 AUSTIN DISTRICT

## WEIGHTED PRECIPITATION RECORD

Area: Honey Creek subwatershed No. 12 near McKinney, Tex. Date of storm Sept. 4-5, 5-6, 1967

| Accumulated Precipitation in Inches for Recording Gages               |                  |          |                  |          |                  |          |                  |          |                  |          |                  | Weighted Precipitation |                 | (Rec. Gages x K)<br>All Gages |                                  |  |
|---|------------------|----------|------------------|----------|------------------|----------|------------------|----------|------------------|----------|------------------|------------------------|-----------------|-------------------------------|----------------------------------|--|
| Weight Factor   | Gage<br>Recorded | x Factor | Gage<br>Recorded | x Factor | Gage<br>Recorded | x Factor | Gage<br>Recorded | x Factor | Gage<br>Recorded | x Factor | Gage<br>Recorded | x Factor               | Recording Gages | Precipitation                 | Precipitation x<br>Weight Factor |  |
| Date & Time   | Sept. 4, 1967    |          |                  |          |                  |          |                  |          |                  |          |                  |                        |                 |                               | Sept. 4-5                        |  |
| 0000  | 0                | 0        |                  |          |                  |          |                  |          |                  |          |                  |                        |                 | 0                             | 0                                |  |
| 1200  | .05              | .05      |                  |          |                  |          |                  |          |                  |          |                  |                        |                 | .05                           | .05                              |  |
| 1600  | .05              | .05      |                  |          |                  |          |                  |          |                  |          |                  |                        |                 | .05                           | .05                              |  |
| 1630  | .10              | .10      |                  |          |                  |          |                  |          |                  |          |                  |                        |                 | .10                           | .10                              |  |
| 1700  | .15              | .15      |                  |          |                  |          |                  |          |                  |          |                  |                        |                 | .15                           | .15                              |  |
| 30  | .20              | .20      |                  |          |                  |          |                  |          |                  |          |                  |                        |                 | .20                           | .20                              |  |
| 1800  | .30              | .30      |                  |          |                  |          |                  |          |                  |          |                  |                        |                 | .30                           | .30                              |  |
| 30  | .35              | .35      |                  |          |                  |          |                  |          |                  |          |                  |                        |                 | .35                           | .35                              |  |
| 1900  | .40              | .40      |                  |          |                  |          |                  |          |                  |          |                  |                        |                 | .40                           | .40                              |  |
| 2400  | .40              | .40      |                  |          |                  |          |                  |          |                  |          |                  |                        |                 | .40                           | .40                              |  |
| Sept. 5, 1967   |                  |          |                  |          |                  |          |                  |          |                  |          |                  |                        |                 |                               |                                  |  |
| 0000  | .40              | .40      |                  |          |                  |          |                  |          |                  |          |                  |                        |                 | .40                           | .40                              |  |
| 0100  | .40              | .40      |                  |          |                  |          |                  |          |                  |          |                  |                        |                 | .40                           | .40                              |  |
| 15  | .75              | .75      |                  |          |                  |          |                  |          |                  |          |                  |                        |                 | .75                           | .75                              |  |
| 30  | .90              | .90      |                  |          |                  |          |                  |          |                  |          |                  |                        |                 | .90                           | .90                              |  |
| 45  | 1.00             | 1.00     |                  |          |                  |          |                  |          |                  |          |                  |                        |                 | 1.00                          | 1.00                             |  |
| 0600  | 1.00             | 1.00     |                  |          |                  |          |                  |          |                  |          |                  |                        |                 | 1.00                          | 1.00                             |  |
| 0700  | 1.00             | 1.00     |                  |          |                  |          |                  |          |                  |          |                  |                        |                 | 1.00                          | 1.00                             |  |
| Sept. 5-6   |                  |          |                  |          |                  |          |                  |          |                  |          |                  |                        |                 |                               |                                  |  |
| 1100  | 1.00             | 1.00     |                  |          |                  |          |                  |          |                  |          |                  |                        |                 | 1.00                          | .96                              |  |
| 1200  | 1.10             | 1.10     |                  |          |                  |          |                  |          |                  |          |                  |                        |                 | 1.10                          | 1.05                             |  |
| 1800  | 1.20             | 1.20     |                  |          |                  |          |                  |          |                  |          |                  |                        |                 | 1.20                          | 1.15                             |  |
| 2300  | 1.30             | 1.30     |                  |          |                  |          |                  |          |                  |          |                  |                        |                 | 1.30                          | 1.24                             |  |
| 30  | 1.40             | 1.40     |                  |          |                  |          |                  |          |                  |          |                  |                        |                 | 1.40                          | 1.34                             |  |
| 2400  | 1.40             | 1.40     |                  |          |                  |          |                  |          |                  |          |                  |                        |                 | 1.40                          | 1.34                             |  |
| Total   |                  |          |                  |          |                  |          |                  |          |                  |          |                  |                        |                 |                               |                                  |  |
| K = $\frac{WMR}{\text{Total Recording Gages Weighted Precipitation}}$ |                  |          |                  |          |                  |          |                  |          |                  |          |                  |                        |                 |                               |                                  |  |
| WMR = Sum of Precipitation x Weight Factor                            |                  |          |                  |          |                  |          |                  |          |                  |          |                  |                        |                 |                               |                                  |  |
| WMR:  |                  |          |                  |          |                  |          |                  |          |                  |          |                  |                        |                 |                               |                                  |  |



UNITED STATES DEPARTMENT OF INTERIOR  
GEOLOGICAL SURVEY, SURFACE WATER BRANCH  
AUSTIN DISTRICT

## WEIGHTED PRECIPITATION RECORD

| Area | Subwatershed | No.                                     | Date of storm | Sept. 4-5, 5-6, 1967 | Accumulated |
|------|--------------|---|---------------|----------------------|-------------|
|      | Honey Creek  | subwatershed No. 12 near McKinney, Tex. |               |                      |             |

[illegible]

# HYDROGRAPH and MASS CURVES

for

STORM OF SEPT. 4-5, 1967

at

HONEY CREEK SUBWATERSHED NO. 12  
NEAR MCKINNEY, TEX.

Drainage Area 1.26 sq mi

UNITED STATES GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

TEXAS DISTRICT

Storm runoff for period = -- ac-ft.

Net inflow and outflow, in cubic feet per second  
Accumulated rainfall and runoff, in inches

18.0

16.0

14.0

12.0

10.0

8.0

6.0

4.0

2.0

0

2.0

1.5

1.0

.5

0

No outflow

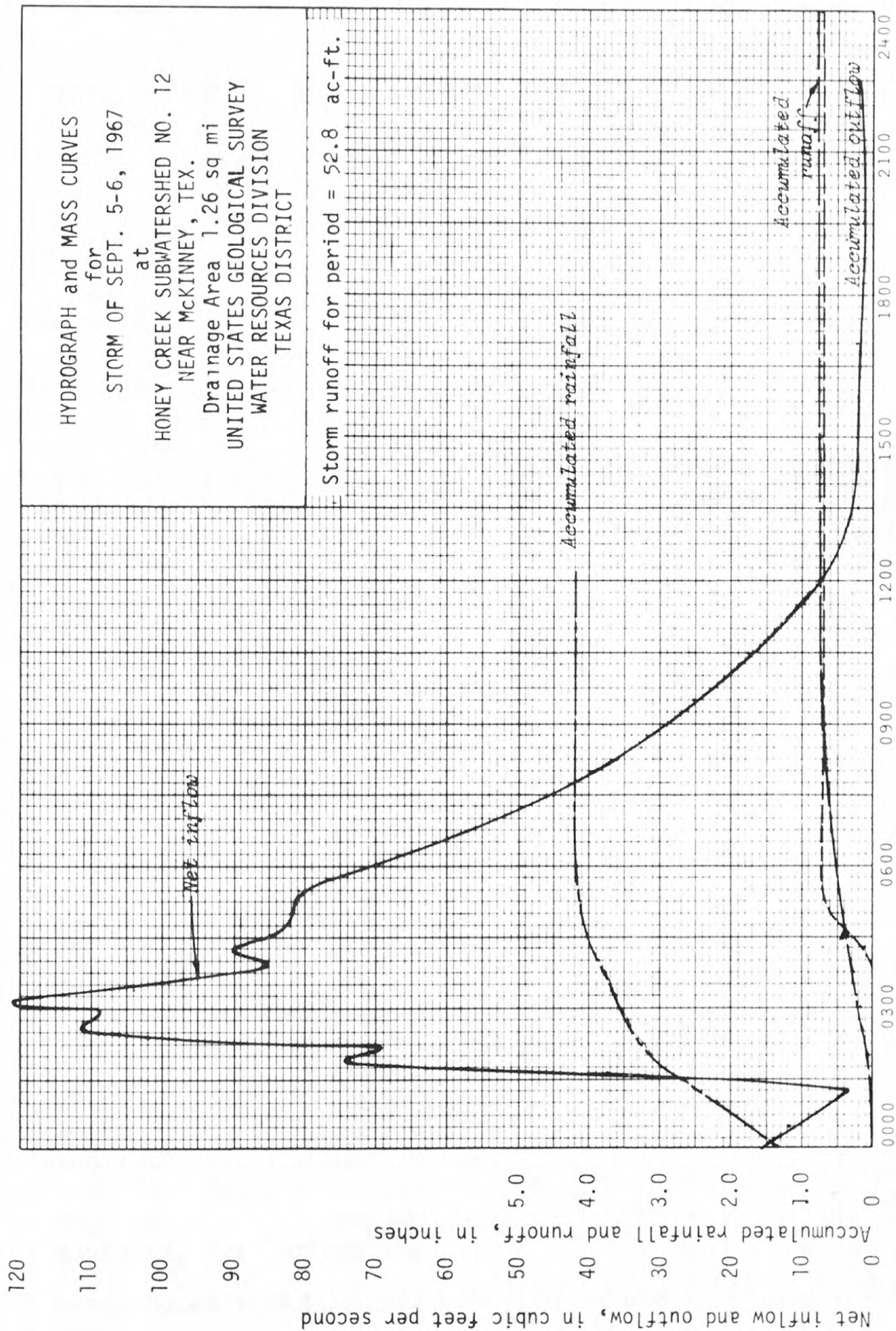
Accumulated rainfall

Accumulated runoff

Net inflow

Sept. 4

Sept. 5



Sept. 6

A-65  
(Rev. 6-63)

UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY-AUSTIN DISTRICT

RUNOFF COMPUTATIONS

Station 08-0585 Honey Creek near McKinney, Tex.

Period of Record Sept. 5, 6, 1967

Drainage Area 39.0 sq. mi.

| Time | G. Ht.<br>Feet | Sh.<br>Adj. | Discharge     |     | Runoff |          |
|------|----------------|-------------|---------------|-----|--------|----------|
|      |                |             | c.f.s.        | In. | In/hr. | Acc. In. |
|      |                |             | Sept. 5, 1967 |     |        |          |
| 0000 | 0.31           |             |               |     |        |          |
| 1200 | .31            |             |               |     |        |          |
| 1800 | .31            |             |               |     |        |          |
| 2230 | .31            |             |               |     |        |          |
| 2300 | .38            |             |               |     |        |          |
| 2330 | .68            |             |               |     |        |          |
| 2400 | .90            |             | .85           | .25 |        |          |
|      |                |             | .21           | .24 |        |          |
|      |                |             | .01           |     |        |          |
|      |                |             | Sept. 6, 1967 |     |        |          |
| 0000 | .90            |             | .85           | .25 | 0      | 0        |
| 0030 | 1.35           |             | 12            | .5  | .0004  | .0002    |
| 0100 | 1.40           |             | 14            | .5  | .0006  | .0003    |
| 0130 | 2.65           |             | 98            | .5  | .0039  | .0020    |
| 0200 | 3.80           |             | 197           | .5  | .0078  | .0039    |
| 0230 | 4.03           |             | 218           | .5  | .0087  | .0044    |
| 0300 | 4.22           |             | 235           | .5  | .0093  | .0046    |
| 0330 | 4.38           |             | 249           | .5  | .0099  | .0050    |
| 0400 | 4.42           |             | 253           | .5  | .0101  | .0050    |
| 0430 | 4.27           |             | 239           | .5  | .0095  | .0048    |
| 0500 | 3.92           |             | 208           | .75 | .0083  | .0062    |
| 0600 | 3.30           |             | 152           | 1.0 | .0060  | .0060    |
| 0700 | 3.05           |             | 130           | .75 | .0052  | .0039    |
| 0730 | 3.17           |             | 140           | .5  | .0056  | .0028    |
| 0800 | 3.34           |             | 156           | .5  | .0062  | .0031    |
| 0830 | 3.42           |             | 163           | .5  | .0065  | .0032    |
| 0900 | 3.43           |             | 164           | .75 | .0065  | .0049    |
| 1000 | 3.12           |             | 136           | 1.0 | .0054  | .0054    |
| 1100 | 2.70           |             | 102           | 1.0 | .0041  | .0041    |
| 1200 | 2.33           |             | 75            | 1.0 | .0030  | .0030    |

| Time | G. Ht.<br>Feet | Sh.<br>Adj. | Discharge |     | Runoff |          |
|------|----------------|-------------|-----------|-----|--------|----------|
|      |                |             | c.f.s.    | In. | In/hr. | Acc. In. |
| 1300 | 2.15           |             | 62        | 1.0 | .0025  | .0025    |
| 1400 | 2.06           |             | 56        | 1.0 | .0022  | .0022    |
| 1500 | 2.00           |             | 52        | 2.0 | .0021  | .0042    |
| 1800 | 1.88           |             | 44        | 4.5 | .0017  | .0076    |
| 2400 | 1.79           |             | 38        | 3.0 | .0015  | .0045    |
|      |                |             | 2262      | 24  |        |          |
|      |                |             | 94        |     |        |          |

Computed by Copied by BBH Date 9/23/68 Computed Checked by FL Date 9/23/68



UNITED STATES DEPARTMENT OF INTERIOR  
GEOLOGICAL SURVEY, SURFACE WATER BRANCH  
AUSTIN DISTRICT

## WEIGHTED PRECIPITATION RECORD

Loc.: Honey Creek near McKinney, Tex.

Date of storm Sept. 4-5, 5-6, 1967

[illegible]

$$K = \frac{\text{sum of precipitation} \times \text{weight factor}}{\text{Total Recording Gages Weighted Precipitation}}$$

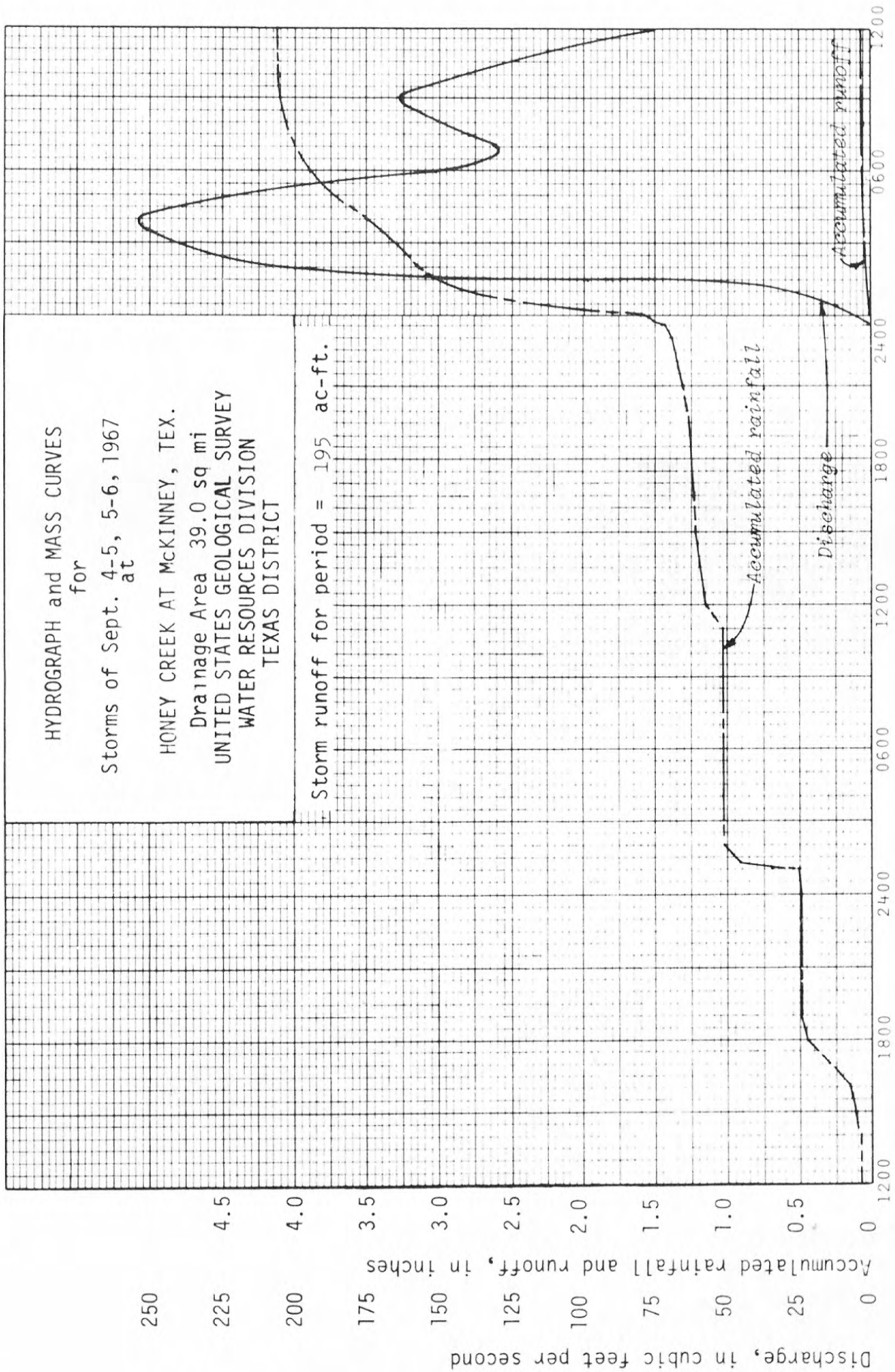
Sheet 2 of 2  
 Comp. by: 13BH  
 Date: 9-18-68  
 Check by: FL  
 Date: 9-18-68

UNITED STATES DEPARTMENT OF INTERIOR  
 GEOLOGICAL SURVEY, SURFACE WATER BRANCH  
 AUSTIN DISTRICT

## WEIGHTED PRECIPITATION RECORD

Area: Honey Creek near McKinney, Tex. Date of storm Sept 4-5, 5-6, 1967

| Weight Factor      |               | 0.129         |                                     |              |               | 0.313         |                                     |              |               | 0.528         |                                     |  |               | Accumulated Precipitation x Factor for Recording Gages |                                     |              |               | Accumulated<br>Precipitation<br>(Rec. Gages x K)<br>All Gages |                                     |  |  |
|--------------------|---------------|---------------|-------------------------------------|--------------|---------------|---------------|-------------------------------------|--------------|---------------|---------------|-------------------------------------|--|---------------|--|-------------------------------------|--------------|---------------|---|-------------------------------------|--|--|
| Rain<br>Gage       | Weight Factor | Precipitation | Precipitation<br>x<br>Weight Factor | Rain<br>Gage | Weight Factor | Precipitation | Precipitation<br>x<br>Weight Factor | Rain<br>Gage | Weight Factor | Precipitation | Precipitation<br>x<br>Weight Factor | Rain<br>Gage   | Weight Factor | Precipitation  | Precipitation<br>x<br>Weight Factor | Rain<br>Gage | Weight Factor | Precipitation   | Precipitation<br>x<br>Weight Factor |  |  |
| 1-S                | 0.666         | 3.39          | 0.23                                | 7-S          | 0.888         | 3.20          | 0.28                                | 13-R         | 0.591         | 4.42          | 0.26                                | Sept 5-6 cont.   |               |  |                                     |              |               |   |                                     |  |  |
| 2-S                | 0.715         | 4.50          | 0.32                                | 8-S          | 0.689         | 3.83          | 0.26                                | 14-S         | 0.620         | 5.10          | 0.32                                |  |               |  |                                     |              |               |   |                                     |  |  |
| 3-S                | 0.720         | 3.43          | 0.25                                | 9-R          | 0.854         | 4.67          | 0.40                                | 15-R         | 0.399         | 4.20          | 0.17                                |  |               |  |                                     |              |               |   |                                     |  |  |
| 4-S                | 0.600         | 3.50          | 0.21                                | 10-S         | 0.523         | 3.33          | 0.17                                | 16-R         | 0.310         | 4.40          | 0.14                                |  |               |  |                                     |              |               |   |                                     |  |  |
| 5-R                | 0.889         | 4.12          | 0.37                                | 11-S         | 0.477         | 4.87          | 0.23                                |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 6-S                | 0.695         | 5.38          | 0.37                                | 12-R         | 0.364         | 5.20          | 0.19                                |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
|                    |               |               |                                     |              |               |               |                                     |              |               |               |                                     | Total Recording Gages Weighted Precipitation = 4.17/4.56 = 0.914 |               |  |                                     |              |               |   |                                     |  |  |
|                    |               |               |                                     |              |               |               |                                     |              |               |               |                                     | K = 0.914  |               |  |                                     |              |               |   |                                     |  |  |
| Date & Time        |               |               |                                     |              |               |               |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| Sept 5 (continued) |               |               |                                     |              |               |               |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 2330               | 1.87          | 24            | 1.40                                | 44           | 1.60          | 89            |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 45                 | 2.05          | 26            | 1.40                                | 44           | 1.70          | 95            |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 2400               | 2.32          | 30            | 1.40                                | 44           | 1.75          | 98            |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| Sept 6, 1967       |               |               |                                     |              |               |               |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0000               | 2.32          | 30            | 1.40                                | 44           | 1.75          | 98            |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 15                 | 2.52          | 33            | 1.60                                | 50           | 2.10          | 1.17          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 30                 | 2.82          | 36            | 1.80                                | 56           | 2.50          | 1.40          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 45                 | 3.07          | 40            | 2.05                                | 64           | 2.80          | 1.56          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0100               | 3.20          | 41            | 2.30                                | 72           | 3.15          | 1.76          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 15                 | 3.27          | 42            | 2.50                                | 78           | 3.30          | 1.84          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 30                 | 3.37          | 43            | 2.80                                | 88           | 3.35          | 1.87          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 45                 | 3.42          | 44            | 3.12                                | 98           | 3.40          | 1.90          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0200               | 3.47          | 45            | 3.28                                | 1.03         | 3.55          | 1.98          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 30                 | 3.52          | 45            | 3.56                                | 1.11         | 3.70          | 2.06          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 45                 | 3.55          | 46            | 3.62                                | 1.13         | 3.75          | 2.09          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0300               | 3.57          | 46            | 3.73                                | 1.17         | 3.80          | 2.12          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 30                 | 3.57          | 46            | 3.90                                | 1.22         | 3.80          | 2.12          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0400               | 3.57          | 46            | 4.06                                | 1.27         | 3.80          | 2.12          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0500               | 3.85          | 50            | 4.30                                | 1.35         | 4.00          | 2.23          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0600               | 4.12          | 53            | 4.38                                | 1.37         | 4.25          | 2.37          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0700               | 4.27          | 55            | 4.40                                | 1.38         | 4.55          | 2.54          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0800               | 4.37          | 56            | 4.40                                | 1.38         | 4.62          | 2.58          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 1000               | 4.42          | 57            | 4.40                                | 1.38         | 4.67          | 2.61          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 1200               | 4.42          | 57            | 4.40                                | 1.38         | 4.67          | 2.61          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| Sept 6, 1967       |               |               |                                     |              |               |               |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0000               | 2.32          | 30            | 1.40                                | 44           | 1.75          | 98            |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 15                 | 2.52          | 33            | 1.60                                | 50           | 2.10          | 1.17          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 30                 | 2.82          | 36            | 1.80                                | 56           | 2.50          | 1.40          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 45                 | 3.07          | 40            | 2.05                                | 64           | 2.80          | 1.56          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0100               | 3.20          | 41            | 2.30                                | 72           | 3.15          | 1.76          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 15                 | 3.27          | 42            | 2.50                                | 78           | 3.30          | 1.84          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 30                 | 3.37          | 43            | 2.80                                | 88           | 3.35          | 1.87          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 45                 | 3.42          | 44            | 3.12                                | 98           | 3.40          | 1.90          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0200               | 3.47          | 45            | 3.28                                | 1.03         | 3.55          | 1.98          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 30                 | 3.52          | 45            | 3.56                                | 1.11         | 3.70          | 2.06          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 45                 | 3.55          | 46            | 3.62                                | 1.13         | 3.75          | 2.09          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0300               | 3.57          | 46            | 3.73                                | 1.17         | 3.80          | 2.12          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 30                 | 3.57          | 46            | 3.90                                | 1.22         | 3.80          | 2.12          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0400               | 3.57          | 46            | 4.06                                | 1.27         | 3.80          | 2.12          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0500               | 3.85          | 50            | 4.30                                | 1.35         | 4.00          | 2.23          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0600               | 4.12          | 53            | 4.38                                | 1.37         | 4.25          | 2.37          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0700               | 4.27          | 55            | 4.40                                | 1.38         | 4.55          | 2.54          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0800               | 4.37          | 56            | 4.40                                | 1.38         | 4.62          | 2.58          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 1000               | 4.42          | 57            | 4.40                                | 1.38         | 4.67          | 2.61          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 1200               | 4.42          | 57            | 4.40                                | 1.38         | 4.67          | 2.61          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| Sept 6, 1967       |               |               |                                     |              |               |               |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0000               | 2.32          | 30            | 1.40                                | 44           | 1.75          | 98            |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 15                 | 2.52          | 33            | 1.60                                | 50           | 2.10          | 1.17          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 30                 | 2.82          | 36            | 1.80                                | 56           | 2.50          | 1.40          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 45                 | 3.07          | 40            | 2.05                                | 64           | 2.80          | 1.56          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0100               | 3.20          | 41            | 2.30                                | 72           | 3.15          | 1.76          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 15                 | 3.27          | 42            | 2.50                                | 78           | 3.30          | 1.84          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 30                 | 3.37          | 43            | 2.80                                | 88           | 3.35          | 1.87          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 45                 | 3.42          | 44            | 3.12                                | 98           | 3.40          | 1.90          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0200               | 3.47          | 45            | 3.28                                | 1.03         | 3.55          | 1.98          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 30                 | 3.52          | 45            | 3.56                                | 1.11         | 3.70          | 2.06          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 45                 | 3.55          | 46            | 3.62                                | 1.13         | 3.75          | 2.09          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0300               | 3.57          | 46            | 3.73                                | 1.17         | 3.80          | 2.12          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 30                 | 3.57          | 46            | 3.90                                | 1.22         | 3.80          | 2.12          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0400               | 3.57          | 46            | 4.06                                | 1.27         | 3.80          | 2.12          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0500               | 3.85          | 50            | 4.30                                | 1.35         | 4.00          | 2.23          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0600               | 4.12          | 53            | 4.38                                | 1.37         | 4.25          | 2.37          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0700               | 4.27          | 55            | 4.40                                | 1.38         | 4.55          | 2.54          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0800               | 4.37          | 56            | 4.40                                | 1.38         | 4.62          | 2.58          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 1000               | 4.42          | 57            | 4.40                                | 1.38         | 4.67          | 2.61          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 1200               | 4.42          | 57            | 4.40                                | 1.38         | 4.67          | 2.61          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| Sept 6, 1967       |               |               |                                     |              |               |               |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0000               | 2.32          | 30            | 1.40                                | 44           | 1.75          | 98            |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 15                 | 2.52          | 33            | 1.60                                | 50           | 2.10          | 1.17          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 30                 | 2.82          | 36            | 1.80                                | 56           | 2.50          | 1.40          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 45                 | 3.07          | 40            | 2.05                                | 64           | 2.80          | 1.56          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0100               | 3.20          | 41            | 2.30                                | 72           | 3.15          | 1.76          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 15                 | 3.27          | 42            | 2.50                                | 78           | 3.30          | 1.84          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 30                 | 3.37          | 43            | 2.80                                | 88           | 3.35          | 1.87          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 45                 | 3.42          | 44            | 3.12                                | 98           | 3.40          | 1.90          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0200               | 3.47          | 45            | 3.28                                | 1.03         | 3.55          | 1.98          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 30                 | 3.52          | 45            | 3.56                                | 1.11         | 3.70          | 2.06          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 45                 | 3.55          | 46            | 3.62                                | 1.13         | 3.75          | 2.09          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0300               | 3.57          | 46            | 3.73                                | 1.17         | 3.80          | 2.12          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 30                 | 3.57          | 46            | 3.90                                | 1.22         | 3.80          | 2.12          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0400               | 3.57          | 46            | 4.06                                | 1.27         | 3.80          | 2.12          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0500               | 3.85          | 50            | 4.30                                | 1.35         | 4.00          | 2.23          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0600               | 4.12          | 53            | 4.38                                | 1.37         | 4.25          | 2.37          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0700               | 4.27          | 55            | 4.40                                | 1.38         | 4.55          | 2.54          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0800               | 4.37          | 56            | 4.40                                | 1.38         | 4.62          | 2.58          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 1000               | 4.42          | 57            | 4.40                                | 1.38         | 4.67          | 2.61          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 1200               | 4.42          | 57            | 4.40                                | 1.38         | 4.67          | 2.61          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| Sept 6, 1967       |               |               |                                     |              |               |               |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0000               | 2.32          | 30            | 1.40                                | 44           | 1.75          | 98            |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 15                 | 2.52          | 33            | 1.60                                | 50           | 2.10          | 1.17          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 30                 | 2.82          | 36            | 1.80                                | 56           | 2.50          | 1.40          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 45                 | 3.07          | 40            | 2.05                                | 64           | 2.80          | 1.56          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0100               | 3.20          | 41            | 2.30                                | 72           | 3.15          | 1.76          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 15                 | 3.27          | 42            | 2.50                                | 78           | 3.30          | 1.84          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 30                 | 3.37          | 43            | 2.80                                | 88           | 3.35          | 1.87          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 45                 | 3.42          | 44            | 3.12                                | 98           | 3.40          | 1.90          |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |
| 0200               | 3.47          | 45            | 3.28                                | 1.03         |               |               |                                     |              |               |               |                                     |  |               |  |                                     |              |               |   |                                     |  |  |



Sept. 4

Sept. 5

Sept. 6









USGS LIBRARY - RESTON



3 1818 00410365 9