APPENDIX—IRRIGATION SCHEDULES
### FORM 18-230

**DEPARTMENT OF COMMERCE—BUREAU OF THE CENSUS**  
**WASHINGTON**  

**FIFTEENTH CENSUS OF THE UNITED STATES: 1930**  

**IRRIGATION-1**

This schedule is to be used ONLY for irrigation enterprises serving LESS than FIVE farms, in the following States:

<table>
<thead>
<tr>
<th>State</th>
<th>Arizona</th>
<th>Kansas</th>
<th>New Mexico</th>
<th>Texas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arkansas</td>
<td>Louisiana</td>
<td>North Dakota</td>
<td>Utah</td>
<td></td>
</tr>
<tr>
<td>California</td>
<td>Montana</td>
<td>Oklahoma</td>
<td>Washington</td>
<td></td>
</tr>
<tr>
<td>Colorado</td>
<td>Nebraska</td>
<td>Oregon</td>
<td>Wyoming</td>
<td></td>
</tr>
<tr>
<td>Idaho</td>
<td>Nevada</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### I.—MANAGEMENT AND LOCATION OF ENTERPRISE

1. **Name of canal or enterprise:**
   
2. **Individual, partnership, or company controlling enterprise:**
   
3. **Post-office address:**
   
4. **Location of enterprise:**
   
5. **Location of head of canal, well, spring, or reservoir:**
   
6. **Person furnishing information:**

#### II.—SOURCE OF WATER SUPPLY

7. **Indicate class by X: (if more than one class, mark each)**
   
   - Stream
   - Pumped well
   - Flowing well
   - Lake
   - Sewage
   - Ditches basin
   - Ditches ground water
   - Other

#### III.—WATER RIGHTS

8. **Indicate class by X: (if more than one class, mark each)**
   
   - Nation held and posted
   - Right adjudicated by court
   - Permit from State
   - Appropriation and use

#### IV.—CLASS OF ENTERPRISE

9. **Indicate class of enterprise at the present time by X:**
   
   - Individual or partnership
   - Cooperative

#### ENUMERATOR'S RECORD

- **State:**
- **County:**
- **Supervisor's District No.:**
- **Enumeration District No.:**
- **Enumerated by me on:**
- **1930:**

**EXPLANATIONS AND INSTRUCTIONS**

**Legal requirement—** A report of every irrigation enterprise in the United States is required by the Statistical Census Act of Congress, approved June 18, 1929.

**Definition of an irrigation enterprise—** An irrigation enterprise, for the purpose of this schedule, is a canal or a canal system, pumping plant, or reservoir supplying water for irrigation, or any combination of these operated under a single management by either an individual, a partnership, a company, or other organization.

- **Land should be classified as irrigated which has water supplied to it for agricultural purposes by artificial means, whether by canals, reservoirs, or pumped wells, but land which has natural ground-water sufficiently near the surface to support plant life should not be classified as irrigated.**
- **Land which is flooded during high-water periods should be classified as irrigated if water is carried to flow over it by ditches, canals, or otherwise, and should not be classified as irrigated if the overflow is due to natural causes alone.**

This schedule is to be used by enumerators to report irrigation enterprises serving less than five farms. Reports for larger enterprises will be secured by enumerators only when they are specifically instructed by their supervisors to do so, and enumerators will be asked to use schedule Irrigation-2. However, enumerators are cautioned to return reports for all pumping plants, wells, canals, or reservoirs operated by individuals or small groups of farmers who also obtain water from enterprises serving more than four farms.

The General Farm Schedule (Questions 122 to 139) shows that the farm was irrigated, the enumerator should ask whether the irrigation enterprise reported under Question 124 serves less than five farms in all; if the answer is "Yes," he should obtain the names of all the farms involved, and from one of them (or other reliable source), obtain the information needed to fill out this Irrigation Schedule. Unless, upon further inquiry, he is told that an Irrigation Schedule has already been received from the Census Bureau, if such a schedule has been received, he should ask whether it has been filled out and returned. If the answer to this question is "Yes," the enumerator should make an entry to that effect on his daily report. The enumerator should satisfy himself, however, that it was actually a United States Census Irrigation Schedule, and not some other form of schedule, which was received and filled out, and that the irrigation enterprise it described was none other than the one about which he is inquiring.

- **If the enterprise has received an Irrigation Schedule by mail and has not filled it out, or has filled it out but has not returned it, the enumerator should obtain it. Only a few schedules will have been received by enterprises serving less than five farms, these being individual farmers or farm groups or partnerships in selected sections, or enterprises whose names are not definitely known by the Bureau of the Census.**

**All inquiries are to be answered.—** If exact information is not available, get the best estimate possible and write "Est." beside the answer. Use the margin of the schedule or a separate sheet when additional space is necessary to make the answers clear, definite, and complete.

- **Section I.—** If a farm is supplied with water by more than one canal and these canals supply water to more than three other farms, a schedule should be made out for each canal; but if a farm is supplied by water by one canal and these canals supply no other farm or farms, all such canals should be indicated on a single schedule, the name of the canal being written on the blank lines under Question 2.

- **Section II.—** If water is secured from more than one source, each should be marked and the principal source indicated by underlining.

- **"Irrigation water" refers to reservoirs filled by storing storm water from channels that carry water only during storms and are not classified as streams. When water is obtained from a reservoir filled by a stream, the stream should be given as the source.**

- **Section III.—** These questions relate to the rights of the enterprise to take water from the stream or other source from which it is obtained. Some enterprises have several rights, each of which should be shown; and many enterprises will fall in more than one of the classes named. In cases where the right should be reported in the class in which it stands at the time of the enumeration.

- **"Individual or partnership" enterprises are those having no individual farmers or farm groups of farmers associated in the formal organization. "Cooperative" enterprises are controlled by the water users in some organized form of cooperation under State laws. Most cooperative forms being the stock company, the stock of which is owned by the water users.**

(CYTH) 411-1929
V.—DESCRIPTION OF WORKS

12. General description of system: ...........................................

13. Date of construction: (a) Begun (b) Finished (Year) (Year)

14. Diversion dams: (a) Number (b) Material: A-1-3

15. Storage dams: (a) Number (b) Material: A-3-4

16. Main canals: (a) Capacity (cubic feet per second) (b) Number (c) Length (miles) (d) (b) Number (c) Length (miles) (d)

17. Lateral canals (contour farm laterals): (a) Number (b) Length (miles)

18. Pipe lines: (a) Size (inches) (b) Length (miles) (c) Material

19. Reservoirs: (a) Number (b) Capacity (c) Location

20. Flowing wells: (a) Number (b) Capacity (c) Location

21. Pumped wells: (a) Number (b) Capacity

22. Pumping plants: (a) Number (b) Kind of power (c) Capacity (horsepower) (d) Kind of pumps (e) Number of pumps (f) Capacity of pumps (gallons per minute) (g) Average lift (feet)

VI.—LANDS

23. Number of farms supplied with water by this enterprise in 1952: Number

24. Total irrigable acreage the project will cover when completed: Acres

25. Area which existing canals are capable of supplying water in 1930: Acres

26. Acre actually irrigated in 1929: Acres

27. Lands available for settlement covered or to be covered by this enterprise: Acres

28. Average cost of preparing land for irrigation (per acre): $ (Unit cost)

VII.—CAPITAL INVESTED IN ENTERPRISE

29. Irrigation works and equipment: $ (Total cost)

30. If works are not completed, estimate additional investment required for completion: $ (Total cost)

31. Water rights: $ (Unit cost)

VIII.—MAINTENANCE AND OPERATION

32. Cost of maintenance and operation in 1929 (or was that year unusual): $ (Total cost)

33. Area for which drains have been installed: Acres

34. Additional area in need of drainage: (a) Total (b) Wholly unproductive (c) Available for pasture only (d) Producing partial crop

IX.—DRAINAGE OF IRRIGATED LANDS

35. Area for which drains have been installed: Acres

36. Additional area in need of drainage: (a) Total (b) Wholly unproductive (c) Available for pasture only (d) Producing partial crop

EXPLANATIONS AND INSTRUCTIONS—Continued

Section V.—Under "General description" give the character of the water supply; the type of diverting, conveying, storing, or water-lifting works and their relation to each other. Report also any important items of equipment not called for specifically in the list.

A lateral canal or any irrigation channel conveying water from the source of supply to the land to be irrigated. A lateral canal is a branch of a main canal conveying water from a main canal to one or more farms. Farm laterals, which distribute the water within the boundaries of the individual farm, should not be reported.

If "size" lines of more than one size are used, the length of pipe of each should be given, by writing between the lines on the schedule, or on an extra sheet.

If the capacity of a reservoir is not known, it should be estimated by multiplying the area of the water surface when reservoir is full, expressed in acres, by the average depth above the level of the bottom of the outlet, expressed in feet.

If capacities of either flowing or pumped wells are not known, get the best estimates possible. In the case of pumped wells, the capacities are not known and have not been determined beyond the capability of the pumps used. The capacities of the pumps should be given as the capacities of the wells.

Under "Kind of power" state whether pumps are run by wind, water, steam, electricity, or internal-combustion engine. If electric power is obtained from a power company, report electricity, regardless of how the power is developed. If windmills are used, under "Capacity" give diameters of wheels rather than horsepower.

Under "Kind of pumps" state whether pumps are centrifugal, rotary, plunger, or other kind. If some unusual type of pump or other water-lifting device is used, describe briefly under "Description of works." Enter data for wells or on a separate sheet to be attached to the schedule.

Under "Average lift" give the average vertical distance between the level of the water in the source of supply when the pumps are running and the point at which the water is lifted. Do not consider friction and velocity heads or horizontal distances.

Section VI.—Under "Total irrigable acreage the project will cover when completed," only the acreage in the fields to be irrigated by water other than water to be supplied by this enterprise or by the enterprise to which the owners of this enterprise do not contract. It is not necessary to report the acreage of canals, ditches, or roads.

The answer to Question 27 should include all land to which the enterprise is ready and able to supply water, whether land is farmed or not. The "Acre actually irrigated in 1929" should be limited to land to which water was actually supplied and not irrigated in 1929.

If the same land received water from more than one enterprise (as in the case of a pumping plant serving land also served by the canals of an irrigation district or other large-scale enterprise), allow the total acreage served by the enterprise to which the owners of this enterprise do not contract. It is not necessary to report the acreage of canals, ditches, or roads.

The answer to Question 27 should be limited to land for which water is available or is to be made available, and which is not yet settled. Land already settled should not be included even if it is for sale, unless the buildings, structures, and other improvements on such holdings are to be sold for new farms should be reported as available for settlement. The management of an enterprise is itself farming land pending its settlement, the land should be reported as available for settlement.

The answer to Question 28 should be the best estimate obtainable from the officials of the enterprise being reported or from farmers operating under the enterprise.

Section VII—In answering Question 29, include the original cost of the irrigation works plus the cost of extensions and improvements; all the cost of equipment, buildings, and labor used for maintenance and operation, but not water rights. If works are not completed, give estimates to December 31, 1929. If there are no replacement costs, or if the owners have done all or part of the construction, the best estimate of cost obtainable should be reported, including the estimated value of the work done by the owners. If drainage works have been built, do not include their cost in the answer to Question 29.

Under "Water rights" include Slating and legal fees paid by the enterprise in acquiring them; and if they were purchased by the enterprise give the purchase price.

Section VIII.—In answering Question 30, report only the cost of maintenance, operation, and ordinary cleaning and repairs.

Section IX.—This section relates only to lands which have been irrigated or are to be irrigated by this enterprise. The "Additional area in need of drainage" and the area of this land under the subheading "Additional area in need of drainage" will not necessarily be the same. It should be the best estimate possible, based on information furnished by the officials of the enterprise and by others in the community, and on their own observations, but they should not attempt to make extended observations.

The sum of the answers to Questions 34(a) to 34(d) must be the answer to Question 34(c).
**CONFIDENTIAL**—The information given in this report is strictly confidential and will not be used as a basis of taxation nor communicated to any tax official.

**Form 15-147**  
**DEPARTMENT OF COMMERCE—BUREAU OF THE CENSUS**  
**WASHINGTON**  

**FIFTEENTH CENSUS OF THE UNITED STATES: 1880**  

**IRRIGATION—2**

This schedule is to be used only in the following States:

<table>
<thead>
<tr>
<th>Arizona</th>
<th>Kansas</th>
<th>New Mexico</th>
<th>Texas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arkansas</td>
<td>Louisiana</td>
<td>North Dakota</td>
<td>Utah</td>
</tr>
<tr>
<td>California</td>
<td>Montana</td>
<td>Oregon</td>
<td>Washington</td>
</tr>
<tr>
<td>Colorado</td>
<td>Idaho</td>
<td>Nevada</td>
<td>South Dakota</td>
</tr>
</tbody>
</table>

**I.—MANAGEMENT AND LOCATION OF ENTERPRISE**

1. Name of canal or enterprise:

2. Individual or company controlling enterprise:

3. Post-office address:

4. Location of enterprise:

5. Location of head of canal, well, spring, or reservoir:

6. Person furnishing information:

7. Date:

8. Signature:

**II.—SOURCE OF WATER SUPPLY**

6. Indicate class by X: (If more than one class mark each)

- Stream
- Spring
- Pumped well
- Stored storm water
- Flowing well
- City water
- Lake
- Sewage

7. Name of stream or other source:

8. Diversions basin:

9. Indicate class by X:

**III.—WATER RIGHTS**

9. Notice filed and posted:

- Riparian right
- Certificate or license by court
- Permit from State

10. Dates and amounts of rights:

**EXPLANATIONS AND INSTRUCTIONS**

**Legal requirement.**—A report of every irrigation enterprise in the United States is required by the Reciprocal Censorship Act of Congress, approved June 16, 1896.

Enterprises which fail to report to the Bureau of the Census will not be visited by field representatives unless the reports are incomplete or have been delayed.

**Definition of irrigation enterprise.**—An irrigation enterprise, for the purpose of the census, is a canal or a canal system, pumping plant, or reservoir supplying water for irrigation, or any combination of these operated under a single management by either an individual, a partnership, a company, or other organization. For classification of enterprises see note under Section IV.

Land should be classed as irrigated which has water supplied to it for agricultural purposes by artificial means or by seepage from canals, reservoirs, or irrigated lands, but land which has natural ground-water sufficiently near the surface to support plant life should not be classed as irrigated. Land which is flooded during high-water periods should be classed as irrigated if water is caused to flow over the land by ditches, canals, or otherwise, but should not be classed as irrigated if the overflow is due to natural causes alone.

**All questions are to be answered.**—If exact information is not available, give the best estimate possible and write "Est." beside the answer. Use the margin of the schedule or a separate sheet when additional space is necessary to make the answers clear, definite, and complete.

**IV.—CLASS OF ENTERPRISE**

**NOTE.**—The types of enterprises recognized by the Census are as follows:

- Individual or partnership enterprises, which belong to individuals or to groups of farmers associated without formal organization. It is not always possible to distinguish between these and the cooperative enterprises, but as the difference is slight this is unimportant.
- Cooperative or mutual enterprises, which are controlled by the water users, organized under some form of cooperation, and operating for the benefit of the users themselves. They are operated on a not-for-profit basis.
- Land which is flooded during high-water periods should be classed as irrigated if water is caused to flow over the land by ditches, canals, or otherwise, but should not be classed as irrigated if the overflow is due to natural causes alone.

- United States Indian Service enterprises, established under various acts of the Congress providing for the construction by that service of works for the irrigation of land in Indian reservations.
- State enterprises. In a few instances the States themselves have carried out irrigation enterprises under special legislation.

- City water or sewage disposal enterprises. This class is self-explanatory.

**II. Indicate class of enterprise at the present time by X:**

- Individual or partnership
- Cooperative
- Irrigation district
- Carey Act
- Commercial

Many enterprises were organized under one form and later changed to another form. In such cases state the facts on the blank lines below:

**III. Dates and amounts of rights:**

- Notice filed and posted
- Riparian right
- Certificate or license by court
- Permit from State
- Appropriation and use

**Signature:**

[Signature]
### V.—DESCRIPTION OF WORKS

**Note:** This form is intended to collect information about the irrigation system, including the type of water supply, the method of water distribution, and the performance of the system. It is particularly useful for irrigation projects and is divided into several sections for clarity.

<table>
<thead>
<tr>
<th>SCHEDULE NO.</th>
<th>SOURCE OF SUPPLY CODE</th>
<th>DRAINAGE BASIN CODE</th>
<th>CLASS CODE</th>
<th>DATE BEGIN CODE</th>
<th>WATER RIGHTS CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12. General description of system:

13. Date of construction: (a) Begun: ______________________ (b) Finished: ______________________ (Year)

14. Dams: (a) Number: ______________________ (b) Material: ______________________

15. Reservoirs: (a) Number: ______________________ (b) Material: ______________________

16. Main canals: (a) Capacity (cubic feet per second): ______________________ (b) Number: ______________________ (c) Length (miles): ______________________

17. Lateral canals (containing laterals): (a) Number: ______________________ (b) Length (miles): ______________________

18. Pipe lines: (a) Size (inches): ______________________ (b) Length (miles): ______________________ (c) Material: ______________________

19. Pumps: (a) Number: ______________________ (b) Capacity (gallons per minute): ______________________

### VII.—CAPITAL INVESTED IN ENTERPRISE

<table>
<thead>
<tr>
<th>Description of Works</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irrigation works and equipment</td>
<td>$________</td>
</tr>
<tr>
<td>Water right</td>
<td>$________</td>
</tr>
<tr>
<td>Total</td>
<td>$________</td>
</tr>
</tbody>
</table>

### VIII.—MAINTENANCE AND OPERATION

<table>
<thead>
<tr>
<th>Description of Works</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of maintenance and operation</td>
<td>$________</td>
</tr>
</tbody>
</table>

### IX.—DRAINAGE OF IRRIGATED LANDS

<table>
<thead>
<tr>
<th>Description of Works</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area for which drains have been installed</td>
<td>Acres: ______________________</td>
</tr>
<tr>
<td>Area for which drains are needed</td>
<td>Acres: ______________________</td>
</tr>
<tr>
<td>Area for which drains are available</td>
<td>Acres: ______________________</td>
</tr>
</tbody>
</table>

### X.—COST OF WATER TO FARMERS

<table>
<thead>
<tr>
<th>Description of Works</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of water to farmers</td>
<td>$________</td>
</tr>
<tr>
<td>Cost of water to farmers per acre</td>
<td>$________</td>
</tr>
</tbody>
</table>

### VI.—LANDS

<table>
<thead>
<tr>
<th>Description of Works</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area of lands irrigated by this enterprise</td>
<td>Acres: ______________________</td>
</tr>
<tr>
<td>Average cost per acre irrigated</td>
<td>$________</td>
</tr>
</tbody>
</table>

### XI.—QUANTITY OF WATER USED IN 1929

<table>
<thead>
<tr>
<th>Description of Works</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average volume of water entering main canal during season of 1929 (cubic feet per second)</td>
<td>(Yard or Ft)</td>
</tr>
<tr>
<td>Length of season during which water was used for irrigation in 1929:</td>
<td>From: ______________________ to: ______________________</td>
</tr>
<tr>
<td>Average head of water delivered per individual irrigator in 1929 (cubic feet per second)</td>
<td>(Yard or Ft)</td>
</tr>
<tr>
<td>Total quantity of water delivered to irrigators during season of 1929</td>
<td>(Yard or Ft)</td>
</tr>
</tbody>
</table>