
Appendix B.

General Explanation and Report Form

DEVELOPMENT OF THE REPORT FORM

Planning for the 2013 Farm and Ranch Irrigation Survey (FRIS) started in 2009 with the closeout of the 2008 FRIS. Extensive correspondence, discussions, and meetings took place with representatives of the Economic Research Service (ERS) regarding 2013 FRIS content. Evaluations from NASS staff of the 2008 FRIS were reviewed. The decision was made to design a single report form version to collect the irrigation data from farm and ranch operators and horticultural producers; a change from the two separate report forms used in the 2008 FRIS. Having one form allowed the same questions to be asked of every producer.

The U.S. Department of Agriculture (USDA) Water Initiative Team, along with individuals from government organizations and universities with expertise in agricultural irrigation and the irrigation industry, were solicited for input on the new report form content and design. A draft of the report form was developed in headquarters for pretesting. FRIS team members administered the pretest to local operations. The pretest had several objectives. The first objective was to find out whether respondents were able to correctly interpret the questions and whether or not they were able to answer them. Since the FRIS report form was intended to be self-administered, another objective was to determine whether respondents could easily navigate through the report form. This was a critical component to the pretest, since horticultural producers would not have a tailored version like the one they received in the 2008 FRIS. Results of the pretest lead to a redesign of the report form.

DATA CHANGES

Information concerning the data changes from 2003, 2008, and 2013 are described here.

Publication Changes

2003: Data were published for irrigating farms and ranches and included data for horticultural operations that reported less than \$10,000 in sales in the 2002 Census of Agriculture. The 2003 FRIS table structure is similar to 2008 FRIS Chapter 1 tables.

2008: Two report forms were used – one for farm and ranch operations and another for horticultural operations with any sales in 2008. Data for farm and ranch operations were published in Chapter 1, Tables 1 through 43 (General Data). Horticultural operations data were published in Chapter 2, Tables 1 through 9 (Horticultural Operations Data). To bridge the 2003 tables with the 2008 Chapter 1 tables, the 2003 U.S. data were adjusted in the 2008 publication by removing data for horticultural operations with less than \$10,000 in sales.

2013: A single report form was used to collect data from irrigating farm and ranch operations and from horticultural operations with any level of sales. Data published in Tables 2 through 39 (Entire Farm Data) are for all irrigating operations – farms and ranches and horticultural operations combined. Data are not comparable between the 2013 and 2008 surveys because horticultural operations' data were reported separately in 2008 (Chapter 2). The 2013 horticultural operations data in Tables 40 through 45 are comparable with their corresponding 2008 Chapter 2 tables. To provide a measure of comparability in the 2013 tables, the 2008 U.S. data were adjusted, where possible, to include the 2008 horticultural operations data. In many of the first 27 tables, 2008 U.S. data were omitted.

Table Assignment Changes Between 2008 and 2013 - The table order has changed from 2008 to 2013. The table below provides a general guide as to

where similar data are available in the two FRIS publications.

2013 Tables	Correlated 2008 Tables
1	Chapter 1, table 1
2	Chapter 1, table 2
3	Chapter 1, table 3
4	Chapter 1, table 11
5	Chapter 1, table 11
6	Chapter 1, table 12
7	Chapter 1, table 14
8	Chapter 1, tables 15 and 16
9	Chapter 1, table 17
10	Chapter 1, table 18
11	Chapter 1, table 19
12	Chapter 1, table 20
13	Chapter 1, table 21
14	Chapter 1, table 22
15	Chapter 1, table 23
16	Chapter 1, table 25
17	Chapter 1, table 26
18	Chapter 1, table 32
19	Chapter 1, table 33
20	Chapter 1, table 34
21	Chapter 1, table 35
22	Chapter 1, table 36
23	Chapter 1, table 38
24	Chapter 1, table 39
25	Chapter 1, table 41
26	Chapter 1, table 42
27	Chapter 1, table 43
28	Chapter 1, table 4
29	Chapter 1, table 5
30	Chapter 1, table 6
31	Chapter 1, table 7
32	Chapter 1, table 8
33	Chapter 1, table 9
34	Chapter 1, table 10
35	Chapter 1, table 27
36	Chapter 1, table 28
37	Chapter 1, table 29
38	Chapter 1, table 30
39	Chapter 1, table 37
40	Chapter 2, table 1
41	Chapter 2, table 2
42	Chapter 2, table 3
43	Chapter 2, table 4
44	Chapter 2, table 8
45	Chapter 2, table 9

Several tables were affected by changes to the report form sections. Some tables that appeared in the 2008

FRIS are not published in the 2013 FRIS, including Chapter 1 tables 13, 24, 31, and 40 and Chapter 2 tables 5, 6, and 7. Table 3 was updated to reflect changes that were made to the land use categories in Section 2 of the FRIS report form; specifically the types of pasture – permanent, woodland pastured, and other pasture. The change was made to align FRIS with the 2012 census.

The subirrigation method of water distribution for acres in the open was not included on the 2013 FRIS report form. This change affected Tables 28, 31, 32, and 39. The data for this method are now reported in the Other gravity item. In 2008 data were collected for five categories of Uncontrolled flooding and Other gravity methods and were published in Table 7. Only data for the total acres of each of these conveyance systems were collected and published in 2013.

Wells capable of being used, irrigation water transfers, and other uses of irrigation water are no longer published. Crops with small acreages have high variability because of the sample size. Sugarbeets, barley, and tobacco were removed as individual items in the field crops sections. Respondents reported these in the Other small grains or Other crops categories on the report form.

Water management practices for gravity irrigation were combined into four categories in Table 39.

DEFINITIONS AND EXPLANATIONS

This section provides definitions and explanations of specific terms and phrases used on the reports forms or in the tables. Items in the publication tables that carry the note “see text” also are explained.

Acre-feet of water. An acre-foot of water is the quantity of water required to cover one acre to a depth of one foot. This is equivalent to 43,560 cubic feet or 325,851 gallons.

Acres and quantity harvested. If two or more crops were harvested from the same land during the year (double cropping), the acres were counted for each crop. Therefore, the total acres of all crops harvested generally exceeded the acres of cropland harvested. An exception to this procedure was hay crops.

When more than one cutting of hay was taken from the same acres, the acres were counted only once, but the quantity harvested includes all cuttings. For interplanted crops or “skip-row” crops, acres were reported according to the portion of the field occupied, whether by a crop or whether it was idle land.

If a crop was interplanted in an orchard or vineyard and harvested, then the entire orchard or vineyard acreage was reported under land in bearing and non-bearing fruit orchards, citrus or other groves, vineyards, and nut trees and the interplanted estimated crop acreage was reported under the appropriate crop.

Acres of land in bearing and non-bearing fruit orchards, citrus or other groves, vineyards, and nut trees were included in cropland harvested whether the crop was harvested or not.

Acres irrigated. Acres or area irrigated are the acres of agricultural land to which water was applied by any artificial or controlled means such as sprinklers, flooding, furrows, ditches, gated pipe, hand watered, capillary mats, trough irrigation, ebb-and-flood irrigation, subirrigation, and spreader dikes including preplanted, partial, and supplemental irrigation. Land flooded was to be included as irrigated only if the water was diverted to agricultural land by dams, canals, or other works. Table 1 provides a comparison with the 2013 FRIS data and the 2012 Census of Agriculture data. Table A in this appendix also provides census data for the leading irrigation States for 2002, 2007, and 2012.

Acres irrigated affected by expenditure. This is a new item in 2013. It is the number of acres which were affected by the reported cost of the expenditures. It is not comparable with Acres irrigated in the expenditure tables in the 2008 and earlier FRIS publications.

Acres irrigated on farms with any hired or contract labor. This is a new item for 2013. This is the total acres irrigated on the operation. On some operations hired labor or contract labor were paid for work on all the acres in the operation. On other operations hired labor or contract labor were paid for work on only part of the total acres irrigated in the operation.

All other crops. Data relate to any non-vegetable crops not having a specified code on the 2013 Farm and Ranch Irrigation report form. Crops such as grass seed, sunflower seed, sugarcane, etc. were included in other field crops. Data are comparable.

All other land. This category includes farmsteads, buildings, livestock facilities, ponds, roads, ditches, wasteland, etc. It includes those acres in the farm operation not classified as cropland, woodland, pastureland, or rangeland.

Application of commercial fertilizers or pesticides in irrigation water. This inquiry was intended to measure the number of farms and acres on which fertilizer and pesticides were distributed through irrigation systems.

Area in the open - acres irrigated. Acres in the open irrigated is the total area irrigated for horticultural crops grown in the open, whether harvested or not.

Area under protection - square feet irrigated. The total area used to grow horticultural crops under protection, whether harvested or not.

Artesian wells. Artesian or flowing wells are wells which flow freely and provide water used for irrigation without pumping during the irrigation season. All flowing or artesian wells were excluded from data for pumped wells.

Average hours of operation. The average hours of operation for pumped wells was calculated from the reported hours operated for up to three individual wells and the average hours for the remaining wells, if any. Artesian wells were not included in the average hours calculation.

Average operating pressure. The average operating pressure for pumped wells was reported for up to three individual wells and as the average operating pressure for the remaining wells, if any. Artesian wells are not included as wells pumped. The average operating pressure was calculated using these reported data.

Average pumping capacity. The average pumping capacity for pumped wells was reported for up to three individual wells and as the average pumping

capacity for the remaining wells, if any. Artesian wells are not included as wells pumped. The average pumping capacity was calculated using these reported data.

Barriers to making improvements to reduce energy use or conserve water. This item shows the barriers to implementing improvements that might reduce energy and/or conserve water. Respondents were asked to report for the period covering 2009 to 2013. The information was tabulated as reported. No imputation was made for a blank response.

Cropland harvested. This category includes land from which crops were harvested and hay was cut, land used to grow short-rotation woody crops, and land in orchards, citrus groves, Christmas trees, vineyards, nurseries, and greenhouses. Land from which two or more crops were harvested was counted only once. Land in tapped maple trees was included in woodland.

Cropland not harvested or grazed. This category includes acreage which could have been used for crops without any additional improvement and which was not reported as cropland harvested or other pasture or grazing land that could have been used for crops without additional improvements. This category includes:

1. Land used for cover crops or soil improvement but not harvested or grazed.
2. Land in Federal or State conservation programs that was not hayed or grazed in 2013.
3. Land occupied with growing crops for harvest in 2014 or later years (except fruit or nuts in an orchard, grove, or vineyard or berries being maintained for production). Example is acreage planted in winter wheat for harvest in 2014 and no crop was harvested from these acres in 2013.
4. Land in summer fallow in 2013.
5. Land with crops that failed and no crop was harvested on the acreage in 2013.

Crops unit of measurement. Crop units were preprinted on the report forms and respondents were instructed to report crops in these units.

Discharge capacity. See Average operating pressure.

Discharge operating pressure. See Average pumping capacity.

Estimated quantity of water applied. Most water used for irrigation is not metered or measured accurately. The quantity of water data are based on the best estimates provided by irrigators. Generally, in areas with water shortages, such as southern California and Arizona, irrigators are more likely to provide actual quantities of water used than in Mountain States where water shortages may be less of a problem or precise measuring methods are not readily available. In the Mountain States where water from snow-melt is diverted for use in season, the amount of water used may be a rough estimate, seldom a measured figure.

Expenditures for irrigation facilities and equipment. There are six categories of expenditures. The expenditures purposes include; new expansion, water conservation, energy conservation, and scheduled replacement or maintenance. The expenditures are also grouped by primary source of funding.

Farms using off-farm water. Respondents were asked to report the amount (none, some, or all) of off-farm water supplied by the U.S. Bureau of Reclamation, other federal agencies, and all other suppliers. However, many respondents did not answer this question. Instead, the computer edit set the entry to unknown. The number of farms using water from the U.S. Bureau of Reclamation, other federal agencies, and all other suppliers may be understated.

Flowing wells. See Artesian wells.

Gross value of agricultural products sold. See Market value of agricultural products sold.

Horticultural crops. The horticultural data are published in the following categories:

Christmas trees and short rotation woody crops. Includes all trees to be cut in 2013 or later years. Irrigated live Christmas trees were reported in nursery crops.

Floriculture and bedding crops. Includes annual bedding/garden plants, herbaceous perennials, cut flowers and cut cultivated greens, foliage plants for indoor or patio use, potted flowering plants, and other floriculture type crops.

Food crops grown under protection. Includes all food crops that were grown in a greenhouse or under some sort of structure that regulated light, shade, temperature, etc. No food crops grown in open fields were reported for this crop type.

Mushroom crops. Includes all mushroom species that were irrigated in 2008. Logs were converted to and reported in square feet.

Nursery crops. Includes deciduous shade and flowering trees, broadleaf and coniferous evergreens, live Christmas trees for sale as potted trees or balled and burlapped, fruit and nut plants, ornamental grasses, palms for landscaping, shrubs, vines, aquatic plants, and other woody ornamentals.

Propagative materials. Includes dry bulbs, corms, tubers, and rhizomes; cuttings, seedlings, liners, and plugs; flower seeds; vegetable seeds; vegetable transplants; and tobacco transplants.

Sod. Includes all irrigated sod, sprigs, or plugs.

Other horticultural crops. This category includes all crops that are primarily considered ornamental or horticultural and are not listed. Fruit, nut, and vegetable crops grown in the open are not considered horticultural crops.

Institutional, research, and experimental farms. In the 2012 and 2007 Censuses of Agriculture, data for these farms were combined with American Indian reservation farms into one category. However, in the 2013 and 2008 Farm and Ranch Irrigation Surveys, only American Indian reservation farms were included in the sample while institutional, research, and experimental farms were excluded.

Irrigated farms. Irrigated farms or ranches are those with any agricultural land irrigated by any artificial or controlled means in the specific calendar year. The acreage irrigated may vary from a very small portion of the total acreage in the farm or

ranch to irrigation of all agricultural land in the farm or ranch. This includes reclaimed water and livestock lagoon wastewater distributed by sprinkler or flood systems.

Irrigated land. Irrigated land is defined as “all land watered by artificial or controlled means.” No attempt was made to define the degree or intensity of irrigation. Therefore, the data for irrigated land include land with as little as one-half inch of water applied as well as land with several acre-feet of water applied.

Irrigation pumps. The inventory data for number of irrigation pumps include well pumps and pumps other than well pumps used for irrigation on the operation.

Land in farms. The acreage designated as “land in farms” consists primarily of agricultural land used for crops, pasture, or grazing. It also includes woodland and wasteland not actually under cultivation or used for pasture or grazing, provided it was part of the farm operator’s total operation. Large acreages of woodland or wasteland held for nonagricultural purposes were removed from individual reports during the data review process. Land in farms includes idle cropland, cropland not harvested, and land in government conservation programs.

Land in farms is an operating unit concept and includes land owned and operated as well as land rented from others. Land used rent free was reported as land rented from others. All grazing land, except land used under government permits on a per-head basis (AUM), was included as land in farms provided it was part of a farm or ranch. All land in American Indian reservations used for growing crops or grazing livestock was included as land in farms. Land in reservations not reported by individual American Indians or non-Native Americans was reported in the name of the cooperative group that used the land. In some instances, an entire American Indian reservation was reported as one farm.

Market value of agricultural products sold. This category represents the gross market value before taxes and production expenses of all agricultural products sold or removed from the place during the survey year, regardless of who received the payment.

It includes sales by the operators as well as the value of any shares received by partners, landlords, contractors, or others associated with the operation. It represents the sum of all crops, including nursery products, and livestock and poultry and their products. Market value of agricultural products sold does not include payments received for participation in federal farm programs. Also, it does not include income from farm-related sources such as customwork and other agricultural services, or income from nonfarm sources.

Nonirrigated crop yields. The nonirrigated crop yield averages are for nonirrigated crops harvested from irrigated farms and are not comparable with nonirrigated crop yield averages for total farms in the State.

North American Industry Classification System. The North American Industry Classification System (NAICS) classifies economic activities. It was jointly developed by Mexico, Canada, and the U.S. The NAICS makes it possible to produce comparable industrial statistics for Mexico, Canada, and the U.S. Farms were classified by NAICS code based on their 2012 census report(s). Establishments primarily engaged in crop production are classified in major group 111. Establishments primarily engaged in production of livestock and animal specialties are classified in major group 112. Establishments are further classified into the appropriate six-digit code for the commodity or commodities which account for one-half of the establishment's agricultural production.

Off-farm water supply. Off-farm water supply is water from off-farm water suppliers, such as the U.S. Bureau of Reclamation; irrigation districts; mutual, private, cooperative, or neighborhood ditches; commercial companies; or community water systems. It includes reclaimed water from off-farm livestock facilities, municipal, industrial, and other reclaimed water sources

On-farm surface supply. On-farm surface supply is water from a surface source not controlled by a water supply organization. It includes sources such as streams, drainage ditches, lakes, ponds, reservoirs, and on-farm livestock lagoons on or adjacent to the operated land.

Other drip, trickle, or low-flow micro systems. This category is for any drip, trickle, or low-flow micro systems that were not included in the other three specific descriptions.

Other or unspecified discontinuance. This category is for any discontinuance reason that was not specified on the report form.

Other pasture and grazing land that could have been used for crops without additional improvements. This category includes land used only for pasture or grazing that could have been used for crops without additional improvement. Also included are acres of crops hogged or grazed but not harvested prior to grazing. However, cropland that was pastured before or after crops were harvested was included as harvested cropland rather than cropland for pasture or grazing. In 2008 this item was referred to as Cropland used only for pasture or grazing; data are comparable.

Other small grains (barley, oats, rye, etc.). This category is not comparable with 2008 or earlier FRIS publications. In previous report forms, barley had its own specific code. In 2013 it did not have a specific code and is included with Other small grains.

Other sprinkler systems. This is a new category for 2013. It includes any sprinkler system that was not listed on the report form.

Permanent pasture and rangeland. This land use category encompasses grazable land that does not qualify as woodland pasture or cropland pasture. It may be irrigated or dry land. In some areas, it can be a high quality pasture that could not be cropped without improvements. In other areas, it is barely able to be grazed and is only marginally better than wasteland. In 2008 this category was referred to as Other pastureland and rangeland; data are comparable.

Primary source of funding assistance. Respondents were instructed to only report the primary source of funding assistance for expenditures. Nonresponses to this item were summarized as "No funding assistance."

Pumps by average operating pressure. See Average operating pressure.

Pumps by average discharge operating pressure.

This category is the average pressure of pumps, other than well pumps, used on the operation.

Reason for discontinuance of irrigation since 2012.

These data reflect the expanded number of operations that irrigated in 2012 but not in 2013 and the acres or area irrigated in the previous census year. The data also show the reason for discontinuance. Some respondents reported multiple reasons, while others gave no specific reason.

Reclaimed water. Reclaimed water is wastewater that has been treated for non-potable reuse purposes. Sources include municipal, industrial, off-farm livestock operations, and other reclaimed water sources. Water from off-farm livestock facilities, municipal, industrial, and other reclaimed water sources were reported as off-farm supplies. While reclaimed water from on-farm livestock facilities were reported as on-farm surface water.

Recycled water. Recycled water is the reuse of surface or ground water that has already been used to irrigate a crop on the operation. Recycled water use was reported as on-farm surface water.

Solar pumps. The data were not published at the State level because of low data reliability at the State level. There are few operations with solar pumps in the population.

Sources of irrigation information. These data show which sources were used by farmers to help them make irrigation decisions. The information for this item was tabulated as reported. No imputation was made for a blank response.

Sprinkler systems. Center pivot systems are published as either high-pressure delivery with water delivered at 60 psi or more, medium pressure delivery with water delivered at 30 to 59 psi, or low pressure delivery with water delivered at less than 30 psi. Linear move tower and solid set or permanent systems are published as medium to high pressure at 30 psi or more or low pressure, less than 30 psi. The mechanical-move systems are further classified as either linear move, side roll, wheel move, or big gun where the sprinkler device is moved across the field either by self-propelled methods or by tractor.

Hand move systems include any distribution systems which are moved without mechanical assistance.

Other sprinkler systems include any other system not listed on the report form.

Tailwater pits. Irrigation water is captured after the initial application of irrigation water. The water drains into a collection pit and is returned through an irrigation system to irrigate the same field or other fields.

Total cropland. This category includes cropland harvested, cropland used only for pasture or grazing, cropland idle or used for cover crops or soil improvement but not harvested and not pastured or grazed, cropland on which all crops failed or were abandoned, and cropland in cultivated summer fallow.

Water management practices. These practices refer to gravity irrigation systems only. The respondent reported whether they used any of the techniques listed on the report form and the number of acres on which they applied this technique. Some respondents answered "Yes" to the screening question, item 1 in Section 17, but did not indicate which technique they used or the number of acres for any technique. No imputation was made for a blank response.

Water Resources Regions (WRR). Data from FRIS were tabulated by WRR. Boundaries of these areas are shown on the map on page 1. Geographic descriptions of the areas used to approximate water resources region are as follows:

01 New England Region. The drainage within the United States that ultimately discharges into the Bay of Fundy and the Atlantic Ocean. These points of discharge are located within and between Maine and Connecticut; Long Island Sound and the St. Francis River, a tributary of the St. Lawrence River.

02 Middle Atlantic Region. The drainage within the United States that ultimately discharges into the Atlantic Ocean, whose point of discharge is located within and between New York and Virginia, and the Richelieu River, a tributary of the St. Lawrence River.

03 South Atlantic-Gulf Region. The drainage that ultimately discharges into the Atlantic Ocean, whose point of discharge is located within and between North Carolina and Florida; and the Gulf of Mexico, whose point of discharge is located within and between Florida and Mississippi, including the Pearl River.

04 Great Lakes Region. The drainage within the United States that discharges into the Great Lakes system, including the Lakes' surfaces; and the St. Lawrence River as far east as, but excluding the Richelieu River.

05 Ohio Region. The drainage of the Ohio River, excluding that of the Tennessee River.

06 Tennessee Region. The drainage of the Tennessee River.

07 Upper Mississippi Region. The drainage of the Mississippi River above the mouth of the Ohio River, excluding drainage of the Missouri River above a point immediately below the mouth of the Gasconade River.

08 Lower Mississippi River. The drainage of the Mississippi River below the mouth of the Ohio River, but excluding the drainage of the Arkansas, White, and Red Rivers and above the points of highest backwater affects of the Mississippi River in those parts; and the coastal streams, other than the Mississippi River, that discharge into the Gulf of Mexico from the boundaries of, but excluding the Pearl and Sabine Rivers.

09 Souris-Red-Rainy Region. The drainage within the United States of the Souris, Red, and Rainy Rivers.

10 Missouri Region. The drainage within the United States of the Missouri River above a point immediately below the mouth of the Gasconade River and the Saskatchewan River.

11 Arkansas-White-Red Region. The drainage of the Arkansas River above the point of highest backwater affect of the Mississippi River, the Red River above the point of highest backwater affect of the Mississippi River, and the White River above the point of highest backwater affect of the Mississippi

River near Peach Orchard Bluff, AR.

12 Texas-Gulf Region. The drainage that discharges into the Gulf of Mexico from and including Sabine Pass to, but excluding, the Rio Grande and the Lower Rio Grande Valley.

13 Rio Grande Region. The drainage within the United States of the Rio Grande; the San Luis Valley, North Plains, San Augustine Plains, Mimbres, Estancia Jonado del Muerto, Tularosa, Salt, and various smaller closed basins; and the Lower Rio Grande Valley.

14 Upper Colorado Region. The drainage of the Colorado River above the Lee Ferry Compact Point, which is about 1 mile below the mouth of the Paria River; and the Great Divide closed basin.

15 Lower Colorado Region. The drainage within the United States of the Colorado River below the Lee Ferry Compact Point, which is about 1 mile below the mouth of the Paria River; the Rios Yaqui, Magdalena, Sonoita, and other lesser streams that ultimately discharge into the Gulf of California; and the Animas Valley, Wilcox Playa, El Dorado Valley, and other smaller closed basins.

16 Great Basin Region. The drainage of the Great Basin that ultimately discharges into Utah and Nevada.

17 Pacific-Northwest Region. The drainage within the United States that ultimately discharges into the Straits of Georgia and Juan de Fuca and the Pacific Ocean. The point of discharge is within Washington and Oregon, including the Columbia River.

18 California Region. The drainage within the United States that ultimately discharges into the Pacific Ocean, whose point of discharge is within California, which includes the Central Valley; and that portion of the Great Basin and other closed basins in California.

19 Alaska. Entire State.

20 Hawaii. Entire State.

Woodland not pastured. These acres were included in All other land. Woodland includes

natural or planted woodlots or timber tracts and cutover and deforested land with young growth which has or will have value for wood products and woodland pastured. Land planted for Christmas tree production and short rotation woody crops was reported in Cropland harvested.

Woodland pastured. This category includes all woodland used for pasture or grazing during the census year. Woodland or forest land pastured under a per-head grazing permit was not counted as land in farms and, therefore, was not included in woodland pastured.

Table A. Leading Irrigation States: 2012, 2007, and 2002 Censuses

[For meaning of abbreviations and symbols, see introductory text]

Geographic area	Irrigated Area			Rank			2012 cumulative percent of United States total
	2012	2007	2002	2012	2007	2002	
United States	55,822,231	56,599,305	55,311,236	(X)	(X)	(X)	100.0
20 Leading States	50,714,404	51,745,677	50,812,487	(X)	(X)	(X)	90.8
Nebraska	8,296,573	8,558,559	7,625,170	1	1	2	14.9
California	7,861,964	8,016,159	8,709,353	2	2	1	28.9
Arkansas	4,803,902	4,460,682	4,149,766	3	4	4	37.6
Texas	4,489,163	5,010,416	5,074,638	4	3	3	45.6
Idaho	3,365,292	3,299,889	3,288,522	5	5	5	51.6
Kansas	2,881,292	2,762,748	2,678,277	6	7	6	56.8
Colorado	2,516,785	2,867,957	2,590,654	7	6	7	61.3
Montana	1,903,019	2,013,167	1,976,111	8	8	8	64.7
Mississippi	1,651,978	1,368,661	1,175,530	9	13	13	67.7
Washington	1,633,571	1,735,917	1,823,155	10	10	10	70.6
Oregon	1,629,735	1,845,194	1,907,627	11	9	9	73.5
Florida	1,493,320	1,552,118	1,815,174	12	11	11	76.2
Wyoming	1,435,710	1,550,723	1,541,688	13	12	12	78.8
Missouri	1,180,886	1,199,981	1,032,973	14	14	15	80.9
Georgia	1,125,355	1,017,773	870,810	15	16	18	82.9
Utah	1,104,257	1,134,144	1,091,011	16	15	14	84.9
Louisiana	1,092,881	954,353	938,841	17	17	16	86.8
Arizona	880,613	876,158	931,735	18	18	17	88.4
Nevada	687,790	691,030	746,653	19	20	20	89.6
New Mexico	680,318	830,048	844,799	20	19	19	90.8

2013 FARM AND RANCH IRRIGATION SURVEY

Form Number: 13-A621 (09/10/2013)	13-A621		
 National Agricultural Statistics Service			
Return your completed report to: Census of Agriculture 1201 East 10th Street Jeffersonville, IN 47132			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%; padding: 2px;">OFFICE USE ONLY</td> <td style="width: 20%; padding: 2px;">0010</td> </tr> </table>	OFFICE USE ONLY	0010	<i>Make corrections to name, address, and ZIP Code if necessary.</i>
OFFICE USE ONLY	0010		

- **February 10, 2014** – Everyone who receives a form must return one by this date.
- **www.agcounts.usda.gov** – Use this website to report via the Internet.
- **Horticultural crops in the open or under protection** – Report these crops on this form.
- Use **blue or black ballpoint pen** to complete this form.
- **Duplicate form(s)** – If you received extra report forms for the SAME farming operation, return all report forms in the same envelope as the completed report.
- **Questions** – Call us toll-free at 1-888-424-7828. Thank you for your cooperation.

SECTION 1 ACREAGE IN 2013

Report land owned, rented, or used by you, your spouse, or by the partnership, corporation, or organization named on the label above. Round to whole acres. Include ALL LAND, regardless of location or use – cropland, pastureland, rangeland, woodland, idle land, **greenhouses or other area under protection**, farmsteads, Conservation Reserve Program (CRP) land, etc.

		None		Number of Acres
1. All land owned	0025	<input type="checkbox"/>		
2. All land rented or leased from others , including land worked by you on shares, used rent free, in exchange for services, payment of taxes, etc. Include Federal, State and railroad land leased on a per-acre basis. Exclude leased land (e.g., private, Federal, State, railroad) used on a per-head or animal unit month (AUM) basis under a grazing permit	0026	<input type="checkbox"/>	+	
3. All land rented or leased to others , including land worked on shares by others and land subleased.	0027	<input type="checkbox"/>	-	
4. TOTAL ACRES in this operation (Items 1 + 2 - 3 = BOX A)	0028	<input type="checkbox"/>	=	BOX A

NOTICE: Response to this inquiry is required by law (Title 7, U.S. Code). By the same law and Public Law 107-347, YOUR REPORT IS CONFIDENTIAL and will only be used for statistical purposes. Your report CANNOT be used for purposes of taxation, investigation, or regulation. The law also provides that copies retained in your files are immune from legal process. http://www.agcensus.usda.gov/About_the_Census/Regulations_Guiding_NASS/index.asp

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a valid OMB control number. The valid OMB number is 0535-0234. The time required to complete this information collection is estimated to average 45 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

21303011

SECTION 2 LAND IN 2013

Of the acres reported in **Box A** on the previous page, report how all the land was used in **column 1** below. Round to whole acres. If the same land had more than one use in 2013, report that land only one time in items 1 through 3. The total acres in **BOX B** must equal the total acres reported in **BOX A**. **Include area under protection.** (Under protection includes horticultural crops grown under glass, rigid plastic, and plastic film, including "tunnel" protection and hoop houses.)

Irrigated acres in column 2 – Report irrigated land in this operation in items 1 and 2 and the total irrigated land in **BOX C**. Include the irrigated area under protection and round all entries to the nearest whole acre. Include as irrigated any land to which partial, supplemental, or preplant irrigation water was applied. Hayland, pastureland, or rangeland should be reported as irrigated only if water was spread by canals, ditches, spreader dikes, pipes, or other man-made works.

1. **Cropland – Exclude cropland used only for pasture.**

a. Cropland harvested – Include all land from which crops were harvested or hay was cut. Include acreage in orchards, citrus groves, vineyards, berries, Christmas trees, short-rotation woody crops, and **nursery and greenhouse crops in the open and under protection.**.....

None		Column 1 Number of Acres	None		Column 2 Acres Irrigated
<input type="checkbox"/>	0029		<input type="checkbox"/>	0030	

b. Cropland not harvested or grazed – Include cropland on which all crops failed, cropland idle, cropland used for cover crops or CRP, and cropland in summer fallow

<input type="checkbox"/>	0033		<input type="checkbox"/>	0034	
--------------------------	------	--	--------------------------	------	--

2. **Pasture**

a. Permanent pasture and rangeland

<input type="checkbox"/>	0135		<input type="checkbox"/>	0136	
--------------------------	------	--	--------------------------	------	--

b. Woodland pastured

<input type="checkbox"/>	0137				
--------------------------	------	--	--	--	--

c. Other pasture and grazing land (including rotational pasture) that could have been used for crops without additional improvements.....

<input type="checkbox"/>	0107		<input type="checkbox"/>	0108	
--------------------------	------	--	--------------------------	------	--

3. **All other land** – Include land not reported above. Include woodland not pastured, farmsteads, home, buildings, livestock facilities, ponds, roads, wasteland, etc.

<input type="checkbox"/>	0039				
--------------------------	------	--	--	--	--

Total Acres
on this Operation

Total Acres
Irrigated

4. **TOTAL ACRES** – Add acres in each column and enter the totals.....

None		BOX B	None		BOX C
<input type="checkbox"/>	0041		<input type="checkbox"/>	0042	

(**BOX B** should be the same as **BOX A** on page 1.)

5. Was any area in the open or under protection irrigated on this operation in 2013? Include irrigated field crops; irrigated hay; and irrigated nursery, floriculture, greenhouse, mushrooms, and propagative materials grown under protection.

0003 1 **Yes** - Continue

3 **No** - Go to Section 22 on back page

6. What State had the majority of irrigated acres on this operation in 2013?.....

State
0951

SECTION 3 GROUND WATER FROM WELLS USED ON THIS OPERATION IN 2013

1. Did this operation irrigate with ground water from wells on this operation in 2013?

0760 1 Yes - Continue 3 No - Go to Section 4

If exact amounts are not available, provide your best estimate for quantity of water applied. If total area irrigated in the open is less than one acre, report as one acre in item 2. If the wells are not on the operation, such as a municipal or rural water system, report this as off-farm water in Section 5.

2. Report acres in the open irrigated with ground water and amount of water applied in 2013. Include irrigated horticultural crops grown in the open and irrigated pastureland

Acres in the Open Irrigated by Ground Water		Quantity of Ground Water Applied		Unit of Measure [Enter unit code] 1 Total Acre Feet 2 Total Gallons 3 Inches/Acre	
0444		0446		0447	

3. Report the area under protection irrigated with ground water in 2013. (Note: The amount of ground water applied to the area under protection will be reported in a later section.)

None

Square Feet Under Protection Irrigated with Ground Water	
0455	

4. How many wells on this operation were used in 2013?

None

Number of Wells	
0460	

a. Of the (item 4) wells, how many were free flowing (artesian wells)?

None

0486	
------	--

b. Of the (item 4) wells, how many used backflow prevention devices (check valves) and how many acres and/or square feet under protection were irrigated with these wells in 2013?

None

Number of Wells		Acres in the Open		Square Feet Under Protection	
0770		0771		0679	

c. Of the (item 4) wells, how many had flow meters or other flow measurement devices and how many acres and/or square feet under protection were irrigated with these wells in 2013?

None

0683		0772		0680	
------	--	------	--	------	--

5. Report for the first three primary wells pumped in 2013.

WELL #	Depth of Well (Feet)	Depth to Water at Start of Irrigation Season (Feet)	Depth to Bowls or Impellers (Feet)	Pump Capacity – Discharge From Well (GPM)	Operating Pressure at Well Head (PSI)	Size of Engine for All Motors, Including Electric (HP)	Total Hours Operated in 2013
1	0461	0462	0463	0464	0676	0761	0762
2	0465	0466	0467	0468	0677	0763	0764
3	0469	0470	0471	0472	0678	0765	0766

a. Report for all other wells pumped in 2013.

OTHER WELLS	Average Depth of Well(s) (Feet)	Average Depth to Water at Start of Irrigation Season (Feet)	Average Depth to Bowls or Impellers (Feet)	Average Pump Capacity – Discharge From Well (GPM)	Average Operating Pressure at Well Head (PSI)	Average Size of Engine for All Motors, Including Electric (HP)	Average Hours Operated in 2013
	0481	0482	0483	0484	0681	0767	0768

6. For the wells used on this operation, what is the best description for the depth to water over the last five years? Mark (X) one.

0487 1 Depth to water did not change 2 Depth to water increased 3 Depth to water decreased

21303037

SECTION 4 ON-FARM SURFACE WATER USED ON THIS OPERATION IN 2013

1. Did this operation irrigate with on-farm surface water including recycled water and on-farm reclaimed water in 2013?

Recycled water is the reuse of surface or groundwater that was previously used to irrigate a crop (e.g. water from a tailwater reuse pit used for irrigation).

On-farm reclaimed water is on-farm livestock wastewater that has been treated for non-potable reuse purposes. (For the purposes of this irrigation survey, to be considered an irrigation application of reclaimed water, at least 0.5 inches of reclaimed water must be applied on the area during the growing season.)

0438 1 **Yes** - Continue 3 **No** - Go to Section 5

If exact amounts are not available, provide your best estimate for quantity of water applied. If total area irrigated in the open is less than one acre, report as one acre in item 2.

2. Report acres in the open irrigated with on-farm surface water and amount of water applied in 2013. Include irrigated horticultural crops grown in the open and irrigated pastureland.

Acres in the Open Irrigated by On-Farm Surface Water		Quantity of On-Farm Surface Water Applied		Unit of Measure [Enter unit code]	
				1 Total Acre Feet	
				2 Total Gallons	
				3 Inches/Acre	
0449		0451		0452	

3. Report the area under protection irrigated with on-farm surface water in 2013. (Note: The amount of on-farm surface water applied to the area under protection will be reported in a later section.)

Square Feet Under Protection Irrigated with On-Farm Surface Water	
None <input type="checkbox"/>	0458

4. Did this operation use on-farm recycled water to irrigate any crops, including horticultural crops, grown during 2013?

0600 1 **Yes** - Continue 3 **No** - Go to Item 5 below

a. How many acres in the open and square feet under protection were irrigated with on-farm recycled water during 2013?

Acres in the Open		Square Feet Under Protection	
0601		0936	

5. Did this operation use reclaimed water from on-farm livestock facilities to irrigate any crops, including horticultural crops, grown during 2013? (For the purposes of this irrigation survey, to be considered an irrigation application of reclaimed water, at least 0.5 inches of reclaimed water must be applied on the area during the growing season. If this minimum amount is not met, mark (X) "No" below.)

0543 1 **Yes** - Continue 3 **No** - Go to Section 5

a. How many acres in the open and/or square feet under protection were irrigated with one or more applications of reclaimed water from on-farm livestock facilities during 2013?

Acres in the Open		Square Feet Under Protection	
0587		0588	

b. How much reclaimed water from on-farm livestock facilities was used for irrigation during 2013?

Acre-Feet		OR	Gallons	
0599			0561	

21303045

SECTION 5 OFF-FARM WATER FROM ALL SUPPLIERS USED ON THIS OPERATION IN 2013

1. Did this operation irrigate with off-farm water in 2013?

INCLUDE

- acres in the open and area under protection irrigated with off-farm water from all suppliers
- all off-farm surface water, municipal water, and rural water suppliers
- area irrigated with reclaimed water from off-farm sources such as municipal reclaimed water, industrial, off-farm livestock operations, or other off-farm sources

0457 1 **Yes** - Continue 3 **No** - Go to Section 6

If exact amounts are not available, provide your best estimate for quantity of water applied. If total area irrigated in the open is less than one acre, report as one acre in item 2. **Off-farm reclaimed water** is wastewater that has been treated for non-potable reuse purposes.

2. Report acres in the open irrigated with off-farm water and amount of water applied in 2013. Include irrigated horticultural crops grown in the open and irrigated pastureland

Acres in the Open Irrigated by Off-Farm Water		Quantity of Off-Farm Water Applied		Unit of Measure [Enter unit code]	
				1 Total Acre Feet 2 Total Gallons 3 Inches/Acre	
0454		0968		0969	

3. Report the area under protection irrigated with off-farm surface water in 2013. (Note: The amount of off-farm water applied to the area under protection will be reported in a later section.)

Square Feet Under Protection Irrigated with Off-Farm Water	
None <input type="checkbox"/>	0428

4. Did you pay for the off-farm water received on this operation?

0675 1 **Yes** - Report the total dollars paid for the off-farm water
3 **No** - Continue

Dollars	
0456	\$.00

5. How much of this operation's off-farm water was supplied, delivered, or transferred through a project financed, constructed, or managed by –

- a. U.S. Bureau of Reclamation? Include reclamation water delivered through a local district.
0664 1 None 2 Some 3 All
- b. Other Federal agencies such as the U.S. Army Corp of Engineers, Bureau of Indian Affairs, and USDA small watershed project?
0665 1 None 2 Some 3 All
- c. All other suppliers? Specify → 1012
0666 1 None 2 Some 3 All

6. Did this operation use **reclaimed water from off-farm sources** such as municipal reclaimed water, industrial, off-farm livestock operations, or other off-farm sources to irrigate any crops in 2013? (For the purposes of this irrigation survey, to be considered an irrigation application of reclaimed water, at least 0.5 inches of reclaimed water must be applied on the area during the growing season. If this minimum amount is not met, mark (X) "No" below.)

0602 1 **Yes** - Continue 3 **No** - Go to Section 6

a. How many acres in the open and/or square feet under protection were irrigated with one or more applications of **reclaimed water from off-farm sources** during 2013?

Acres in the Open		Square Feet Under Protection	
0597		0598	

b. How much **reclaimed water from off-farm sources** was used for irrigation during 2013?

Acre-Feet		Gallons	
0644		0645	

OR

c. What sources of reclaimed water were used on this operation in 2013? Mark (X) all that apply.

- 1001 Municipal 1002 Industrial 1005
- 1003 Off-farm livestock operation 1004 Other - Specify →

21303052

SECTION 6 PUMPS, OTHER THAN WELL PUMPS, USED FOR IRRIGATION ON THIS OPERATION IN 2013

Report for all surface water source pumps used on this operation for irrigation during 2013.

	None	Number of Pumps Used	Vertical Lift (Average Feet)	Discharge Capacity (Average GPM)	Discharge Operating Pressure (Average PSI)	Average Hours Operated in 2013
		0490	0774	0491	0687	0661
1. Tailwater pits.....	<input type="checkbox"/>					
		0492	0775	0493	0688	0662
2. Ponds, lakes, reservoirs, rivers, canals, etc.....	<input type="checkbox"/>					
		0494	0776	0777	0778	0663
3. Relifting or boosting water within system	<input type="checkbox"/>					

SECTION 7 ENERGY EXPENSE BY POWER SOURCE FOR ALL WELL AND OTHER IRRIGATION PUMPS USED ON THIS OPERATION IN 2013

Report the energy expense by power source. Report the fuel and power expense used for pumping irrigation water for the well pumps used in Section 3 and other pumps used in Section 6 above. Report energy expense for acres in the open and area under protection. If irrigated acres in the open were less than one acre, round to one acre. Include the cost of any additional charges such as the fuel adjustment charge or any other type of charge which was based on the amount of power or fuel purchased. Include landlord's share.

POWER SOURCE	None	Number of Wells and Other Pumps Used <i>(Reported in Sections 3 & 6)</i>	Cost of Energy Used to Power Pumps (Dollars)	Area Irrigated with Water Pumped from Wells		Area Irrigated with Pumped Surface Water (Both on- and off-farm)	
				Acres in the Open (Whole Acres)	Square Feet Under Protection	Acres in the Open (Whole Acres)	Square Feet Under Protection
		0495	0496	0497	0124	0781	0537
1. Electricity.....	<input type="checkbox"/>		\$.00				
		0498	0499	0500	0125	0782	0538
2. Natural gas	<input type="checkbox"/>		\$.00				
		0501	0502	0503	0126	0783	0539
3. LP gas, propane, or butane.....	<input type="checkbox"/>		\$.00				
		0504	0505	0506	0127	0784	0540
4. Diesel and biodiesel fuel	<input type="checkbox"/>		\$.00				
		0507	0508	0509	0128	0890	0541
5. Gasoline, ethanol, and blends.....	<input type="checkbox"/>		\$.00				
		0779		0780	0129	0786	0542
6. Solar and other pumps without direct energy expense.....	<input type="checkbox"/>						

21303060

SECTION 8 METHOD OF WATER DISTRIBUTION IN FIELDS IN THE OPEN ON THIS OPERATION IN 2013

Report acres irrigated by each type of FIELD distribution or delivery system listed below. If the same land was irrigated by more than one method of distribution, report acres irrigated by each method used. Report information for the field distribution system, NOT for the delivery system used to convey water from the source to the field, if different. Include acres of horticultural crops grown in the open. Exclude crops grown under protection: glass, rigid plastic, plastic film, including "tunnel" protection. (Methods for crops grown under protection will be reported in Section 13.)

		Acres in the Open Irrigated by Gravity System (Field Water Conveyance System)					
		Total	Unlined Open Ditch	Lined Open Ditch	Poly Pipe (or other single-year use, lay-flat tubing)	Above Ground Pipe (except poly pipe) ¹	Underground Pipe ²
1. Gravity irrigation	None	0855	0859	0857	0056	0057	0858
a. Down rows or furrows	<input type="checkbox"/>						
		0865	0869	0867	0066	0067	0868
b. Controlled flooding (between borders or within basins)	<input type="checkbox"/>						
		0875					
c. Uncontrolled flooding (rangeland, pastureland, etc.)	<input type="checkbox"/>						
		0885					
d. Other gravity systems	<input type="checkbox"/>						

¹ Include gated pipe and riser or hydrant systems connected to above ground pipe.
² Include riser or hydrant systems connected to underground pipe.

		Acres In the Open Irrigated by Sprinkler System			
		Very Low Pressure (Under 15 PSI)	Low Pressure (15 to 29 PSI)	Medium Pressure (30 to 59 PSI)	High Pressure (60 PSI or more)
2. Sprinkler irrigation – Inlet pressure	None	0569	0576	0575	0570
a. Center pivot systems (circle)	<input type="checkbox"/>				
		0571	0577	0578	0579
b. Linear move tower systems (and other linear continuous move drive systems)	<input type="checkbox"/>				
		0568	0565	0566	0567
c. Solid set or permanent systems (except low-flow micro systems)	<input type="checkbox"/>				

		Acres Irrigated (all pressures)	
d. Mechanical move systems	None		
(i) Side roll, wheel move, or other mechanical move systems and other discrete move systems	<input type="checkbox"/>	0240	
(ii) Big gun or traveler systems	<input type="checkbox"/>	0241	
e. Hand-move systems, including hand watered horticultural crops grown in the open	<input type="checkbox"/>	0242	
f. Other sprinkler systems	<input type="checkbox"/>	0243	

		Acres Irrigated (all pressures)	
3. Drip, trickle, or low-flow micro irrigation	None		
a. Surface drip (on or above ground)	<input type="checkbox"/>	0248	
b. Sub-surface drip (root zone)	<input type="checkbox"/>	0246	
c. Low-flow micro sprinklers or sprays (apply water at low pressure and are not self-propelled or easily moved)	<input type="checkbox"/>	0247	
f. Other drip, trickle, or low-flow micro systems	<input type="checkbox"/>	0249	

21303078

SECTION 9 ACRES HARVESTED IN THE OPEN AND CROP YIELDS ON THIS OPERATION IN 2013

For each crop listed, report separately the harvested irrigated land and the harvested non-irrigated land. For selected crops, report the average yield from irrigated land and non-irrigated land. Report harvested crops as irrigated if any water was artificially applied either before planting or during the crop's growing season in 2013. Report the crop as irrigated if water was applied to supplement rainfall, even if the amount of water applied was not sufficient to obtain maximum yields. **Include horticultural crops grown in the open in item 16.**

Crops		Irrigated Land Include preplant and supplemental or semi-irrigation						Non-Irrigated Land			
		Irrigated Acres Harvested	Average Yield per Irrigated Acre Harvested		Average Estimated Quantity of Water Applied per Acre			Non-Irrigated Acres Harvested	Average Yield per Non-Irrigated Acre Harvested		
					Acre-Feet	Tenths	OR		Inches		
1. Corn for grain or seed – Exclude popcorn and sweet corn	None <input type="checkbox"/>	0050	0051		0052			0053	0054	0055	
				Bu.							Bu.
2. Corn for silage or greenchop – Exclude popcorn and sweet corn.	<input type="checkbox"/>	0060	0061	Tenths	0062			0063	0064	0065	Tenths
				Tons							Tons
3. Sorghum for grain or seed	<input type="checkbox"/>	0070	0071		0072			0073	0074	0075	
				Bu.							Bu.
4. Wheat for grain or seed	<input type="checkbox"/>	0080	0081		0082			0083	0084	0085	
				Bu.							Bu.
5. Soybeans for beans	<input type="checkbox"/>	0106	0101		0102			0103	0104	0105	
				Bu.							Bu.
6. Beans, dry edible	<input type="checkbox"/>	0110	0111		0112			0113	0114	0115	
				Cwt.							Cwt.
7. Rice – Include post harvest water applied to improve residue decomposition	<input type="checkbox"/>	0120	0121		0122			0123			
				Cwt.							
8. Other small grains (barley, oats, rye, etc.)	<input type="checkbox"/>	0130			0132			0133	0134		
9. Alfalfa and alfalfa mixtures (dry hay, greenchop, and silage)	<input type="checkbox"/>	0140	0141	Tenths	0142			0143	0144	0145	Tenths
				Tons, dry							Tons, dry
10. All other hay and haylage including small grain, other tame, and wild hay (dry hay, greenchop, and silage)	<input type="checkbox"/>	0150	0151	Tenths	0152			0153	0154	0155	Tenths
				Tons, dry							Tons, dry

SECTION 9 Continued –

Crops		Irrigated Land Include preplant and supplemental or semi-irrigation						Non-Irrigated Land		
		Irrigated Acres Harvested	Average Yield per Irrigated Acre Harvested		Average Estimated Quantity of Water Applied per Acre			Non-Irrigated Acres Harvested	Average Yield per Non-Irrigated Acre Harvested	
					Acres-Feet	Tenths	OR			
11. Peanuts	None <input type="checkbox"/>	0550	0551		0552			0553	0554	0555
	<input type="checkbox"/>			Lbs.						Lbs.
12. Cotton	<input type="checkbox"/>	0160	0161		0162			0163	0164	0165
	<input type="checkbox"/>			Lbs. lint						Lbs. lint
13. All land from which vegetables, potatoes, and melons were harvested	<input type="checkbox"/>	0186	Tenths		0187			0188	0189	Tenths
	<input type="checkbox"/>									
a. Sweet corn	<input type="checkbox"/>	0850	Tenths	0851	0852			0853	0854	Tenths
	<input type="checkbox"/>			Cwt.						Cwt.
b. Tomatoes in the open ...	<input type="checkbox"/>	0860	Tenths	0861	0862			0863	0864	Tenths
	<input type="checkbox"/>			Cwt.						Cwt.
c. Lettuce and romaine	<input type="checkbox"/>	0870	Tenths	0871	0872			0873	0874	Tenths
	<input type="checkbox"/>			Cwt.						Cwt.
d. Potatoes – Exclude sweet potatoes ...	<input type="checkbox"/>	0190	Tenths	0191	0192			0193	0194	Tenths
	<input type="checkbox"/>			Cwt.						Cwt.
14. All berries	<input type="checkbox"/>	0560	Tenths		0562			0563	0564	Tenths
	<input type="checkbox"/>									
15. Land in bearing and non-bearing fruit orchards, citrus or other groves, vineyards, and nut trees	<input type="checkbox"/>	0210	Tenths		0212			0213	0214	Tenths
	<input type="checkbox"/>									
16. All other crops grown in the open and not listed – Include horticultural crops grown in the open (Note: Horticultural crops grown under protection will be reported in a later section.) Specify below ☒	<input type="checkbox"/>	0220			0222			0223	0224	
	0221 <input type="checkbox"/>									
17. Pastureland, all types	<input type="checkbox"/>	0230			0232			0233		
	<input type="checkbox"/>									

21303094

SECTION 10 PRIMARY METHOD OF FIELD WATER DISTRIBUTION, WATER SOURCE, AND ACREAGE OF CHEMIGATION IN IRRIGATION WATER FOR CROPS IRRIGATED IN THE OPEN IN 2013

WATER DISTRIBUTION I.D. CODES

PRESSURE SYSTEMS

- 01 = Hand-move system
- 02 = Solid set or permanent system
- 03 = Side roll or wheel line system
- 04 = Big gun or traveling gun system
- 05 = Linear move system (under 15 PSI)
- 06 = Linear move system (15 to 29 PSI)
- 07 = Linear move system (30 to 59 PSI)
- 08 = Linear move system (60 PSI or more)
- 09 = Center pivot system (under 15 PSI)
- 10 = Center pivot system (15 to 29 PSI)
- 11 = Center pivot system (30 to 59 PSI)
- 12 = Center pivot system (60 PSI or more)
- 13 = Low-flow irrigation (drip, trickle, or micro sprinkler system)
- 14 = Other pressure system – Specify below ☒

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GRAVITY SYSTEMS

- 15 = Down rows or furrows from unlined open ditches
- 16 = Down rows or furrows from lined open ditches
- 17 = Down rows or furrows from poly pipe, lay-flat tubing, or above ground or underground pipe
- 18 = Controlled flooding within field borders from unlined open ditches
- 19 = Controlled flooding within field borders from lined open ditches
- 20 = Controlled flooding within field borders from poly pipe, lay-flat tubing, or above ground pipe
- 21 = Controlled flooding within field borders from underground pipe
- 22 = Uncontrolled flooding (rangeland, pastureland, etc.) including open discharge from a well or pump
- 23 = Other gravity system – Specify below ☒

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Report for irrigated acres in the open. For each irrigated crop in the open, report separately the primary field distribution method, acres irrigated by water source, and acres on which chemigation was used in the irrigation system. Refer to the table above for the water distribution I.D. codes.

Irrigated Crops	None	Primary method of field water distribution (Enter I.D. code from above.)	Water source (Column totals may exceed irrigated crop acres reported in Section 9 when more than one water source was used.)			Acres on which chemigation was applied through the irrigation system	
			Ground Water from Wells (Acres)	On-Farm Surface Water ¹ (Acres)	Off-Farm Water (All Suppliers) ² (Acres)	Commercial Fertilizer (Acres)	Pesticide Application (Acres)
1. Corn for grain or seed – Exclude popcorn and sweet corn	<input type="checkbox"/>	0250	0255	0254	0256	0252	0253
		I.D.					
2. Corn for silage or greenchop – Exclude popcorn and sweet corn	<input type="checkbox"/>	0260	0265	0264	0266	0262	0263
		I.D.					
		0270	0275	0274	0276	0272	0273
		I.D.					
3. Sorghum for grain or seed.	<input type="checkbox"/>	0280	0285	0284	0286	0282	0283
		I.D.					
4. Wheat for grain or seed.	<input type="checkbox"/>	0300	0305	0304	0306	0302	0303
		I.D.					
5. Soybeans for beans.	<input type="checkbox"/>	0310	0315	0314	0316	0312	0313
		I.D.					
6. Beans, dry edible.	<input type="checkbox"/>	0320	0325	0324	0326	0322	0323
		I.D.					
7. Rice	<input type="checkbox"/>	0330	0335	0334	0336	0332	0333
		I.D.					
8. Other small grains (barley, oats, rye, etc.)	<input type="checkbox"/>	0340	0345	0344	0346	0342	0343
		I.D.					
9. Alfalfa and alfalfa mixtures (dry hay, greenchop, and silage).	<input type="checkbox"/>	0350	0355	0354	0356	0352	0353
		I.D.					
10. All other hay including small grain, other tame, and wild hay (dry hay, greenchop, and silage)	<input type="checkbox"/>						
		I.D.					

¹ On-farm water source includes recycled water and reclaimed water from on-farm livestock operations.
² Off-farm water supplies may include water purchased from the U.S. Bureau of Reclamation; a State, county, or local district; mutual, private, cooperative, or neighborhood ditches; or commercial or municipal water systems.

SECTION 10 Continued –

Irrigated Crops	Primary method of field water distribution (Enter I.D. code from previous page.)	Water source (Column totals may exceed irrigated crop acres reported in Section 9 when more than one water source was used.)						Acres on which chemigation was applied through the irrigation system			
		Ground Water from Wells (Acres)		On-Farm Surface Water ¹ (Acres)		Off-Farm Water (All Suppliers) ² (Acres)		Commercial Fertilizer (Acres)		Pesticide Application (Acres)	
	None	0580	0585	0584	0586	0582	0583				
11. Peanuts	<input type="checkbox"/>	I.D.									
		0360	0365	0364	0366	0362	0363				
12. Cotton	<input type="checkbox"/>	I.D.									
13. All acres in the open from which vegetables, potatoes, and melons were harvested.	<input type="checkbox"/>	0474	0479 Tenths	0478 Tenths	0480 Tenths	0476 Tenths	0477 Tenths				
	<input type="checkbox"/>	I.D.									
a. Sweet corn	<input type="checkbox"/>	0900	0905 Tenths	0904 Tenths	0906 Tenths	0902 Tenths	0903 Tenths				
	<input type="checkbox"/>	I.D.									
b. Tomatoes in the open ...	<input type="checkbox"/>	0910	0915 Tenths	0914 Tenths	0916 Tenths	0912 Tenths	0913 Tenths				
	<input type="checkbox"/>	I.D.									
c. Lettuce and romaine ...	<input type="checkbox"/>	0920	0925 Tenths	0924 Tenths	0926 Tenths	0922 Tenths	0923 Tenths				
	<input type="checkbox"/>	I.D.									
d. Potatoes – Exclude sweet potatoes...	<input type="checkbox"/>	0390	0395 Tenths	0394 Tenths	0396 Tenths	0392 Tenths	0393 Tenths				
	<input type="checkbox"/>	I.D.									
14. All berries	<input type="checkbox"/>	0590	0595 Tenths	0594 Tenths	0596 Tenths	0592 Tenths	0593 Tenths				
	<input type="checkbox"/>	I.D.									
15. Land in bearing and non-bearing fruit orchards, citrus or other groves, vineyards, and nut trees ...	<input type="checkbox"/>	0410	0415 Tenths	0414 Tenths	0416 Tenths	0412 Tenths	0413 Tenths				
	<input type="checkbox"/>	I.D.									
16. All other crops grown in the open and not listed – Include horticultural crops grown in the open (Note: Horticultural crops grown under protection will be reported in a later section.) Specify below		0420	0425	0424	0426	0422	0423				
0419 <input type="text"/>	<input type="checkbox"/>	I.D.									
		0430	0435	0434	0436	0432	0433				
17. Pastureland, all types	<input type="checkbox"/>	I.D.									

¹ On-farm water source includes recycled water and reclaimed water from on-farm livestock operations.
² Off-farm water supplies may include water purchased from the U.S. Bureau of Reclamation; a State, county, or local district; mutual, private, cooperative, or neighborhood ditches; or commercial or municipal water systems.

SECTION 11 IRRIGATION AREA, METHODS, AND WATER APPLIED TO HORTICULTURAL CROPS GROWN IN THE OPEN IN 2013

1. Were any irrigated floriculture, nursery, sod, propagative materials, Christmas trees, or other horticultural crops grown in the open (including natural shade) on this operation in 2013?

0751 1 **Yes - Continue** 3 **No - Go to Section 13**

2. Report total acres and irrigated acres for horticultural crops grown in the open (including natural shade).....

Acres in the Open				
Total Acres		Tenths	Irrigated Acres	
0737			0738	

3. For horticultural crops in the open, enter the total acres and irrigated acres by horticultural crop category on this operation in 2013.

HORTICULTURAL CROPS IN THE OPEN

- a. Floriculture and bedding crops.....
- b. Nursery crops.....
- c. Sod.....
- d. Propagative materials.....
- e. Christmas trees and short rotation woody crops

		Total Acres	Tenths	Irrigated Acres		Tenths
	<input type="checkbox"/>	0739		0740		
	<input type="checkbox"/>	0741		0742		
	<input type="checkbox"/>	0743		0744		
	<input type="checkbox"/>	0745		0746		
	<input type="checkbox"/>	0747		0748		

f. Other horticultural crops - Specify

1010

0749		0750	
------	--	------	--

4. For horticultural crops in the open, report area irrigated or watered in 2013 by method used. If more than one method was used on the same area, report for all methods that apply. Report quantity of water in the unit or units of measure most often used on this operation. If total quantity of water (column 2a) and the unit of measure (column 2b) are known, then skip column 3.

IRRIGATION METHODS	None	1			2			3		
		Total Acres Irrigated or Watered	Tenths	Quantity of Water Applied	Unit of Measure [Enter unit code] 1 Acre Feet 2 Gallons/Acre 3 Inches/Acre	Average Flow Rate (Gallons per Minute)	Number of Hours per Week Used in 2013	Number of Weeks Used in 2013		
	<input type="checkbox"/>	0796		0797	0798	0799	0800	0801		
a. Hand watered.....	<input type="checkbox"/>	0802		0803	0804	0805	0806	0807		
b. Gravity irrigation.....	<input type="checkbox"/>	0808		0809	0810	0811	0812	0813		
c. Sprinkler.....	<input type="checkbox"/>	0814		0815	0816	0817	0818	0819		
d. Drip, trickle, or low-flow micro irrigation.....	<input type="checkbox"/>	0820		0821	0822	0823	0824	0825		
e. Subirrigation (including hydroponic)...	<input type="checkbox"/>									

SECTION 12 IRRIGATION OF HORTICULTURAL CROPS GROWN IN THE OPEN BY WATER SOURCE IN 2013

1. For each method used to irrigate or water horticultural crops in the open, report water sources by percent of source applied. If more than one source was used, report all that apply. For example, if the only source for hand-watered crops was ground water, then report 100 percent in column 1. If this operation used gravity irrigation and half of the water came from ground water and half came from on-farm surface water, then report 50 percent in column 1, row b and 50 percent in column 2, row b.

		Water Source			
		1 Ground Water from Wells (Percent)	2 On-Farm Surface Water (Percent)	3 Off-Farm Water (All Suppliers) (Percent)	Total
IRRIGATION METHODS	None	0832	0833	0834	
	a. Hand watered.....	<input type="checkbox"/>			100%
		0835	0836	0837	
	b. Gravity irrigation.....	<input type="checkbox"/>			100%
		0838	0839	0840	
	c. Sprinkler.....	<input type="checkbox"/>			100%
		0841	0842	0843	
	d. Drip, trickle, or low-flow micro irrigation.....	<input type="checkbox"/>			100%
		0844	0845	0846	
	e. Subirrigation (including hydroponic).....	<input type="checkbox"/>			100%

For each irrigation method used, columns 1 + 2 + 3 must equal 100 percent.

SECTION 13 IRRIGATION AREA, METHODS, AND WATER APPLIED TO HORTICULTURAL CROPS GROWN UNDER PROTECTION IN 2013

1. Were any irrigated nursery, greenhouse, floriculture, mushrooms, propagative materials, or other horticultural crops grown under protection on this operation in 2013? Include horticultural crops grown under glass, rigid plastic, and plastic film, including "tunnel" protection and hoop houses.

0627 1 **Yes** - Continue 3 **No** - Go to Section 15

	Square Feet Under Protection	
	Total Area	Irrigated Area
2. Report total area and irrigated area for horticultural crops grown under protection	0628	0629

3. For horticultural crops under protection, enter the total area and irrigated area by horticultural crop category on this operation in 2013.

HORTICULTURAL CROPS UNDER PROTECTION	None	Total Area (Square Feet)	Irrigated Area (Square Feet)
a. Floriculture and bedding crops.....	<input type="checkbox"/>	0630	0631
b. Nursery crops.....	<input type="checkbox"/>	0632	0633
c. Propagative materials.....	<input type="checkbox"/>	0636	0637
d. Food crops grown under protection.....	<input type="checkbox"/>	0638	0639
e. Mushroom crops.....	<input type="checkbox"/>	0640	0641
f. Other horticultural crops - Specify ☒			
1011	<input type="checkbox"/>	0642	0643

4. For horticultural crops under protection, report area irrigated or watered in 2013 by method used. If more than one method was used on the same area, report for all methods that apply. Report quantity of water in the unit or units of measure most often used on this operation. If total quantity of water (column 2a) and the unit of measure (column 2b) are known, then skip column 3.

IRRIGATION METHODS	None	1		2		OR	3		
		Total Area Irrigated or Watered (Square Feet)	a. Quantity of Water Applied	b. Unit of Measure [Enter unit code] 1 Acre Feet 2 Gallons 3 Gallons/Sq Ft 4 Inches/Sq Ft	a. Average Flow Rate (Gallons per Minute) Tenth		b. Number of Hours per Week Used in 2013	c. Number of Weeks Used in 2013	
		0701	0702	0703	0704	0705	0706		
a. Hand watered	<input type="checkbox"/>	0707	0708	0709	0710	0711	0712		
b. Gravity irrigation	<input type="checkbox"/>	0713	0714	0715	0716	0717	0718		
c. Sprinkler	<input type="checkbox"/>	0719	0720	0721	0722	0723	0724		
d. Drip, trickle, or low-flow micro irrigation	<input type="checkbox"/>	0725	0726	0727	0728	0729	0730		
e. Subirrigation (including hydroponic) ...	<input type="checkbox"/>								

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SECTION 14 IRRIGATION OF HORTICULTURAL CROPS GROWN UNDER PROTECTION BY WATER SOURCE IN 2013

1. For each method used to irrigate or water horticultural crops under protection, report water sources by percent of source applied. If more than one source was used, report all that apply. For example, if the only source for hand-watered crops was ground water, then report 100 percent in column 1. If this operation used gravity irrigation and half of the water came from ground water and half came from on-farm surface water, then report 50 percent in column 1, row b and 50 percent in column 2, row b.

		Water Source			
		1 Ground Water from Wells (Percent)	2 On-Farm Surface Water (Percent)	3 Off-Farm Water (All Suppliers) (Percent)	Total
IRRIGATION METHODS	None	0646	0647	0648	
	a. Hand watered.....	<input type="checkbox"/>			100%
		0649	0650	0651	
	b. Gravity irrigation.....	<input type="checkbox"/>			100%
		0652	0653	0654	
	c. Sprinkler.....	<input type="checkbox"/>			100%
		0655	0656	0657	
	d. Drip, trickle, or low-flow micro irrigation.....	<input type="checkbox"/>			100%
		0658	0659	0660	
	e. Subirrigation (including hydroponic).....	<input type="checkbox"/>			100%

For each irrigation method used, columns 1 + 2 + 3 must equal 100 percent.

SECTION 15 EXPENDITURES FOR IRRIGATION FACILITIES AND EQUIPMENT ON THIS OPERATION IN 2013

I.D. CODES

PRIMARY PURPOSE OF EXPENDITURE	PRIMARY SOURCE OF FUNDING ASSISTANCE
1 = New expansion	1 = No funding assistance
2 = Water conservation	2 = EQIP
3 = Energy conservation	3 = Other USDA financial assistance
4 = Scheduled replacement or maintenance	4 = Non-USDA financial assistance

Report the 2013 expenditure cost, acres affected (rounded to the nearest acre), primary purpose of expenditure, and primary source of funding assistance by expenditure category. Include the portion of the expenditures made by or shared with others (landlords or government agencies), including programs such as Environmental Quality Incentive Program (EQIP). Refer to the table above for I.D. codes for the last two columns.

EXPENDITURE TYPE	None	Total Cost of Expenditure (Include amount financed)	Irrigated Acres Affected by Expenditure	Primary Purpose of Expenditure (Enter I.D. code from above.)	Primary Source of Funding Assistance (Enter I.D. code from above.)
		(Acres)	(Acres)		
1. Purchase of new or replacement irrigation equipment and machinery – Include sprinklers, pipes, siphons, nozzles, pumps, engines, motors, filtration equipment, etc. Exclude computers, computer control panels, and software	<input type="checkbox"/>	0511 \$.00	0514	0512 I.D.	0513 I.D.
2. New well construction or deepening of existing wells – Include drilling costs, cost of casing, and any costs to prepare well for installation of pump. Exclude cost of pumps or motors	<input type="checkbox"/>	0515 \$.00	0518	0516 I.D.	0517 I.D.
3. Construction or improvement of permanent storage and distribution systems – Include dams, ponds, reservoirs, permanent ditches, canals, flumes, etc.	<input type="checkbox"/>	0519 \$.00	0522	0520 I.D.	0521 I.D.
4. Computers, control panels, computer controlled valves, software, and software controlled hardware for irrigation water management.	<input type="checkbox"/>	0544 \$.00	0547	0545 I.D.	0546 I.D.
5. Clearing or leveling non-irrigated land for new irrigation acres (the primary purpose is expansion of irrigation acres).	<input type="checkbox"/>	0548 \$.00	0526		0549 I.D.
6. Land leveling of previously irrigated land (the primary purpose cannot be new expansion).	<input type="checkbox"/>	0556 \$.00	0559	0557 I.D.	0558 I.D.

SECTION 16 BARRIERS TO IMPLEMENTING IMPROVEMENTS TO REDUCE ENERGY USE OR CONSERVE WATER IN THIS OPERATION'S IRRIGATION SYSTEM DURING THE PAST FIVE YEARS

1. Did any of the following prevent you from implementing improvements that would have reduced energy and/or conserved water in your irrigation system during the past five years? Mark (X) all that apply –

- 1070 Investigating improvements is not a priority at this time
- 1071 Risk of reduced yield or poorer quality crop from not meeting water needs
- 1072 Physical field or crop conditions limit system improvements
- 1073 Improvements will reduce costs, but not enough to recover implementation costs
- 1074 Cannot finance improvements
- 1075 Landlord(s) will not share cost of improvements
- 1076 Uncertainty about future availability of water
- 1077 Will not be farming this operation long enough to justify new improvements
- 1078 Improvements will increase management time or cost

SECTION 17 WATER MANAGEMENT PRACTICES FOR GRAVITY IRRIGATION SYSTEMS IN THE OPEN

1. Did this operation use gravity irrigation systems to irrigate any acres in the open on this operation (Section 8, item 1) in 2013?

- 0403 1 **Yes - Continue** 3 **No - Go to Section 18**

2. On how many acres in the open did you use the following practices?

	None	Number of Acres	
a. Capture irrigation runoff in tailwater pits, restrict runoff by diking end of the field, limit irrigation set times or number of irrigations, or irrigate only alternative rows.	<input type="checkbox"/>	0404	
b. Use a surge-flow or cablegation system, applying mulch or other types of row covers	<input type="checkbox"/>	0405	
c. Use precision-leveling or zero-grading.	<input type="checkbox"/>	0406	
d. Shorten the furrow length; use water-soluble polyacrylamide (PAM); or use special furrowing practices such as wide-spaced bed furrowing, compacted furrows, or furrow diking.	<input type="checkbox"/>	0409	

SECTION 18 IRRIGATION PRACTICES IN 2013

1. How did you decide when to schedule water use in 2013? Mark (X) all that apply –
- 1020 Condition of crop (observation or experience)
 - 1021 Feel of the soil
 - 1022 Use of soil moisture-sensing devices (moisture blocks, tensiometers, capacitance, other electronic sensors)
 - 1023 Use of plant moisture-sensing devices such as pressure (chamber) bombs or infrared (IR) thermometer
 - 1024 Use of irrigation scheduling service, including commercial and government
 - 1025 Reports on daily crop-water evapo-transpiration (ET) use (Internet, newspapers, radio, TV, fax, or email)
 - 1026 When water was delivered or available by irrigation water supplier (no choice by water user)
 - 1027 Personal calendar schedule
 - 1028 Computer simulation models (not from a commercial service)
 - 1029 When neighbors began to irrigate

2. Did you have to discontinue irrigation during 2013 long enough to affect crop yields?

- 0669 1 **Yes** - Continue 3 **No** - Go to Section 19

a. What were the reasons for discontinuing irrigation? Mark (X) all that apply –

- 1030 Shortage of surface water (water from reservoirs, lakes, streams, water supply organizations, etc.)
- 1031 Shortage of ground water (lowering water level of wells or depletion of ground water)
- 1032 Irrigation equipment failure
- 1033 Energy price increases or energy shortage
- 1034 Water salinity too high
- 1035 Loss of water rights not due to voluntary transfers
- 1036 Cost of purchased water
- 1037 Other – Specify → ¹⁰³⁸

SECTION 19 LABOR USED FOR IRRIGATION ON THIS OPERATION IN 2013

1. Did you have any paid labor for the irrigation portion of your operation in 2013?

- 0731 1 **Yes** - Continue 3 **No** - Go to Section 20

a. Report total hours and average hourly wage for hired irrigation labor. (Exclude contract labor.) None

	Total Hours of Paid Irrigation Labor		Average Hourly Wage	Cents
0732		0733	\$	

b. Report contract irrigation labor expenses on this operation in 2013. None

	Total Expenses for Contract Irrigation Labor			
0788		0788	\$	

SECTION 20 SOURCES OF IRRIGATION INFORMATION

1. What sources of information does this operation rely on for guidance in reducing irrigation costs or to conserve water used for irrigation? Mark (X) all that apply –

- 1040 Extension agents or university specialists
- 1041 Private irrigation specialists or crop consultants hired by owner or operator
- 1042 Irrigation equipment dealers
- 1043 Local irrigation district employees or others hired by the water supplier
- 1044 Government specialists from the Natural Resources Conservation Service, local conservation district, Bureau of Reclamation, or other Federal or State agencies
- 1045 Media reports or information in the press
- 1046 Neighboring farmers
- 1047 Electronic information services (Internet, DTN, Internet links to private or public data sources, etc.)

SECTION 21 TECHNICAL AND FINANCIAL ASSISTANCE RECEIVED DURING THE PAST FIVE YEARS

1. Has this operation made irrigation and/or drainage improvements above regular maintenance in the **past five years**?

- 0209 1 **Yes** - Continue 3 **No** - Go to Section 23

2. Did you receive any technical or financial assistance for these irrigation and/or drainage improvements?

- 0211 1 **Yes** - Continue 3 **No** - Go to Section 23

a. From which of the following sources did you receive technical or financial assistance for these improvements? Mark (X) all that apply –

Source of Assistance	Technical Assistance	Financial Assistance
USDA programs for water conservation and environmental improvements (CTA, EQIP, AWEP, WHIP, CIG)	0215 <input type="checkbox"/>	0216 <input type="checkbox"/>
Other USDA programs for stewardship (CSP) or easements (CRP, WRP, GRP, FRPP)	0217 <input type="checkbox"/>	0218 <input type="checkbox"/>
Non-USDA Federal programs (Bureau of Reclamation, EPA, or other programs)	0219 <input type="checkbox"/>	0235 <input type="checkbox"/>
State programs (including CREP), local water management, or water supply districts	0236 <input type="checkbox"/>	0237 <input type="checkbox"/>
Private businesses such as equipment dealers, bankers, or lenders	0238 <input type="checkbox"/>	0239 <input type="checkbox"/>

SECTION 22 IRRIGATED LAND IN 2012

Complete this section ONLY if you DID NOT irrigate any land in 2013

1. Was any land irrigated on this operation in 2012?

- 0528 1 **Yes** - Continue 3 **No** - Go to Section 23

2. What were the reasons for not irrigating in 2013? Mark (X) all that apply –

- | | |
|---|---|
| 1050 <input type="checkbox"/> Sufficient soil moisture – no irrigation needed | 1057 <input type="checkbox"/> Sold or leased irrigated land or irrigated area under protection to others and did not irrigate during 2013 |
| 1052 <input type="checkbox"/> Shortage of surface water (water from reservoirs, lakes, streams, water supply organizations, etc.) | 1058 <input type="checkbox"/> Restrictions on water use |
| 1053 <input type="checkbox"/> Shortage of ground water (lowering water level of wells or depletion of ground water) | 1059 <input type="checkbox"/> Converted to non-agricultural use |
| 1054 <input type="checkbox"/> Irrigation uneconomical due to high fuel and power costs and/or low commodity prices | 1060 <input type="checkbox"/> Converted to an agricultural enterprise not requiring irrigation |
| 1055 <input type="checkbox"/> Loss of water rights (not due to voluntary transfers) | 1061 <input type="checkbox"/> Available surface water too salty |
| 1056 <input type="checkbox"/> Sold or leased water rights or annual water allocation | 1062 <input type="checkbox"/> Other - Specify <input type="checkbox"/> |

1063

3. Do you consider your discontinuance of irrigation to be permanent?

- 0530 1 **Yes** 3 **No**

SECTION 23 VALUE OF SALES IN 2013

1. What was the gross value of all agricultural products sold from this operation in 2013 including landlord's share? Mark (X) only one –

- 0980 1 \$0 - \$9,999 2 \$10,000 - \$24,999 3 \$25,000 - \$49,999 4 \$50,000 - \$99,999
 5 \$100,000 - \$249,999 6 \$250,000 - \$499,999 7 \$500,000 - \$999,999 8 \$1,000,000 and over

2. What percent of total sales were from **irrigated** crop sales, including irrigated horticultural crops?
 3. What percent of total sales were from **non-irrigated** crop sales and livestock sales?

Percent	
0981	<input style="width: 100%;" type="text"/>
0982	<input style="width: 100%;" type="text"/>
100%	

SECTION 24 PERSON COMPLETING THIS FORM – Please print

Name Area Code and Phone Number Date (MM DD YY)

Survey Results: To receive the complete results of this survey on the release date, go to www.agcensus.usda.gov.

- Would you rather have a brief summary mailed to you at a later date? 0099 1 **Yes** 3 **No**

Thank you for your response

OFFICE USE

Response	Respondent	Mode	Enum.	Eval.	R. Unit	Change	Optional Use			
1-Comp 2-R 3-Inac	9901 1-Op/Mgr 2-Sp 3-Acct/Bkpr 4-Partner 9-Oth	9902 1-Mail 2-Tel 3-Face-to-Face	9903 0098	0100	0921	0785	0407	0408	9906	9916
S/E Name										

21303201



INSTRUCTION SHEET
2013 FARM AND RANCH IRRIGATION SURVEY (FRIS)
Your report is due February 10, 2014



Completing the 2013 FRIS Questionnaire

Make all entries clear and easy to read. Use a **blue** or **black** ball point pen.

General

Refer to the instructions below for completing your questionnaire. The enclosed census follow-on questionnaire was mailed to producers and growers throughout the United States. Because it is meant for use in all parts of the country, it may contain items and inquiries which do not apply to your operation. In this case, mark the "No" or "None" box and go on to the next item or section.

Partial Year Operation

If you stopped farming during 2013, complete the questionnaire for the portion of 2013 that you did farm. Write "Stopped farming in 2013" and the date you stopped farming below the address area. Mail the completed questionnaire in the return envelope.

If You Receive More Than One Questionnaire for the Same Operation

Return any duplicate questionnaire(s) in the same envelope with the completed questionnaire. In the address area of the questionnaire you complete, write the 11-digit ID number from the label of the extra questionnaire(s).

Partnership Operations

Complete only ONE questionnaire for a partnership operation and include all partners' shares on the same questionnaire. If two or more questionnaires were received for the partnership, see instruction on "If You Receive More Than One Questionnaire for the Same Operation" above.

How to Enter Your Responses on the Questionnaire

Please enter your answers in the spaces provided and in the units requested, i.e., number of acres, dollars, percent, etc. Mark all applicable Yes/No boxes with an "X".

Instructions by Section

Complete Sections 1 and 2 of the questionnaire. If you did not irrigate or water any cropland (including nursery and greenhouse acreage in the open and under protection), pastureland, or rangeland in 2013, go to Section 22 on the back page and complete the remainder of the questionnaire.

Section 1 – Acreage in 2013

Report land owned, rented, or used by the respondent, spouse, partnership, corporation, or organization identified on the questionnaire. If you did not operate any land in 2013, go to Section 24 on the back page and complete the remainder of the questionnaire.

Include all land, regardless of location or use; cropland, pastureland, rangeland, woodland, idle land, **greenhouses or other area under protection**, Conservation Reserve Program (CRP), Wetlands Reserve Program (WRP), Farmable Wetlands Program (FWP), Conservation Reserve Enhancement Program (CREP), and house lots. All responses in this section should be rounded to whole acres. Area under protection less than one acre should be reported as one acre. **Exclude** land used under a grazing permit.

Item 1 - Report all land owned in 2013 by you and/or your spouse, or by the partnership, corporation, or organization named on the questionnaire. Include all fields and tracts of cropland, pastureland, woodland, wasteland, idle land, and farmsteads.

Item 2 - Report all land rented or leased from others on shares, cash rent, used rent-free, in exchange for services, for taxes, etc., regardless of location, even if used for part of the year. **Exclude** land used on a per head basis under a grazing permit or animal unit (AUM) basis.

Item 3 - Report all land rented or leased to others regardless of the purpose. Include land that was rented and subleased to others.

Item 4 - The acres in item 4, **Box A**, should equal item 1 plus item 2 minus item 3. All responses to this questionnaire should refer to these **total acres in this operation**. It is important that this number is correct as it is used to establish consistency throughout the questionnaire. The acreage of this operation must equal the acreage reported in Section 2, item 4, column 1, **Box B**.

Section 2 – Land in 2013

Account for total acres in **this operation** in column 1 and irrigated land in **this operation** in column 2. If the same land had more than one use in 2013, report that land only once in the first use that applies. Irrigation refers to the one or more applications of water to land or crops by any artificial or controlled means.

In addition to fully irrigated land, report as irrigated any land to which partial, supplemental, or semi-irrigation was applied in column 2. Also include any acreage which received only preplant irrigation (watered before planting). Hayland, pastureland or rangeland should be reported as irrigated if spring flood water was spread by man-made canals, ditches, spreader dikes, pipes, or other water works. Include acres where lagoon wastewater from livestock operations was distributed by a sprinkler or flood system.

For conservation program land, if the operator was allowed to cut conservation program land for hay, then this land should be considered cropland harvested; if it was grazed it is other pasture and grazing land. Except for disaster designation uses, almost all conservation program land will be reported in item 1b, cropland not harvested or grazed.

Item 1a - Include as cropland harvested: hay and forage, land in groves, vineyards, berries, orchards, Christmas trees (whether harvested in 2013 or not), short rotation woody crops, nursery and greenhouse crops.

For winter wheat, report the 2013 acres harvested.

For double cropped acres if more than one crop was harvested from the same land in 2013, report those acres only once as cropland harvested.

Item 1b - Include cropland used for cover crops, cropland on which all crops failed, idle cropland, cropland in summer fallow, and cropland in government programs, including conservation program land unless used for grazing, hay, or forage. Land on which sugarcane and pineapples were grown but not harvested in 2013, are reported as other cropland.

Item 2a - Exclude land used under a grazing permit.

Item 2b - Report woodland pastured.

Item 2c - Include any pastured land other than cropland and woodland pastured. Include rotation pasture and grazing land that could have been used for crops without additional improvements.

Item 3 - Any land that does not fit into one of the above categories. Include land in roads, buildings, farmsteads, woodland not pastured, and wasteland.

Item 4 - This should equal the sum of all land uses reported in items 1 through 3. Also, **Box B** acres must equal acres in "this operation" reported in Section 1, item 4, **Box A**. Anyone who irrigated any land in 2013 should complete the entire report form.

Item 5 - This question helps determine if this operation irrigated any area in the open or under protection in 2013. If the answer to this question is 'Yes', then continue completing the form. If you did not irrigate any area in the open or under protection, check the 'No' box and go to Section 22 on the back page.

Item 6 - Report the state with the largest amount of irrigated land for "this operation." If you irrigate in more than one state and the acres irrigated happens to be the same, then report the state that includes your farmstead.

Section 3 – Ground Water From Wells Used on This Operation in 2013

Water usage for this survey will be published in acre-feet. An acre-foot is the quantity of water needed to cover one acre to the depth of one foot, or 326,000 gallons. Ground water is water from a well or wells located on this operation.

Item 1 - Report if this operation irrigated any land with ground water from wells on this operation at any time during 2013.

Item 2 - Report acres in the open irrigated with ground water from wells and the estimated quantity of ground water used in one of the following units:

- total acre-feet; or
- total gallons; or
- average inches applied per acre

Item 3 - Report the area under protection irrigated with ground water in square feet. Report the area only once, regardless of how many crops were grown for sale from the same area.

Item 4 - Report the total number of wells used on this operation in 2013.

Item 4a - Report the number of free-flowing (artesian) wells used in 2013. Free flowing wells do not require pumping the water to the surface. Water flows to the surface under natural pressure. These are most commonly found in Florida and some western states.

Item 4b - Report the number of wells reported in item 4 above that used backflow prevention devices (check valves) in 2013. Report the number of acres and area under protection irrigated in 2013 with water pumped from wells with backflow prevention devices.

Item 4c - Report how many wells reported in item 4 above used flow meters or flow measuring devices. Report the number of acres and area under protection irrigated in 2013 with water from wells with flow measurement devices.

Item 5 - Report the well characteristics for up to 3 primary wells pumped on this operation in 2013. **Note:** The 3 primary wells should include those wells with the greatest quantity of water pumped in 2013. Report the characteristics for each individual well even if these values are similar across wells. If less than 3 wells were pumped in 2013, then only report for those wells used.

Item 5a - If you used more than 3 wells in 2013, then for all other wells (excluding the 3 primary wells), report the average value for well characteristics.

Item 6 - Change in depth to water is defined as a change in the depth of water from the well-head to the water table level that has occurred over the last five years prior to 2013.

Section 4 – On-Farm Surface Water Used on This Operation in 2013

On farm surface water is a water supply not controlled by a water supply organization and includes water from a stream, drainage ditch, lake, pond, spring, or reservoir on or adjacent to your farm.

Item 1 - Report if this operation used any on-farm surface water including recycled and reclaimed water. For this survey, recycled water is the reuse of irrigation water that was previously used to irrigate a crop on the operation. Reclaimed water is treated wastewater used for irrigation.

Item 2 - Report acres in the open on this operation irrigated with on-farm surface water and the estimated quantity used in one of the following units:

- total acre-feet; or
- total gallons; or
- average inches applied per acre

Item 3 - Report the total area under protection irrigated with on-farm surface water in square feet. Report the area only once, regardless of how many crops were grown for sale from the same area.

Item 4 - Report whether this operation used recycled water to irrigate any crops in 2013.

Item 4a - Report the area on which one or more applications of recycled water for irrigation were made in 2013. Report the acres only once even if multiple applications were made to the same acreage.

Item 5 - Report whether this operation used reclaimed water to irrigate any crops in 2013.

Item 5a - Report the area on which one or more applications of reclaimed water for irrigation were made in 2013. Report the acres only once even if multiple applications were made to the same acreage.

Item 5b - Report how much reclaimed irrigation water was used on this operation in 2013. Report the quantity of reclaimed water in acre-feet or total gallons.

Section 5 – Off-Farm Water From All Suppliers Used on This Operation in 2013

Off-farm surface water is surface or ground water from U.S. Bureau of Reclamation, other Federal agencies, or other suppliers.

Item 1 - Report if this operation used any water from off-farm sources.

Item 2 - Report acres in the open on this operation irrigated with off-farm water and the estimated quantity used in one of the following units:

- total acre-feet; or
- total gallons; or
- average inches applied per acre

Item 3 - Report the total area under protection irrigated with off-farm water in square feet. Report the area only once, regardless of how many crops were grown for sale from the same area.

Item 4 - Report if this operation received any off-farm water and total cost, if any was purchased. Report in whole dollars.

Item 5 - Report the supplier of off-farm water, if any was received.

Item 6 - Report whether this operation used reclaimed water to irrigate any crops in 2013.

Item 6a - Report the area on which one or more applications of reclaimed water for irrigation were made in 2013. Report the acres only once even if multiple applications were made to the same acreage.

Item 6b - Report how much reclaimed irrigation water was used on this operation in 2013. Report the quantity of reclaimed water in acre-feet or total gallons.

Item 6c - Identify the source(s) of reclaimed water used on this operation by marking an 'X' in all the sources that apply.

Section 6 – Pumps, Other Than Well Pumps, Used For Irrigation on This Operation in 2013

These are pumps that were used for pumping surface water from rivers and streams, irrigation channels, ponds and other water holding systems. Tailwater pits hold water that was recovered from irrigated land for recycling.

Some irrigation systems using water from wells may also have pumps in places other than their well pumps to provide additional lift, especially on farms with large distribution systems or irregular terrain. These pumps are often referred to as booster pumps. Include these booster pumps in Section 6.

Vertical lift refers to the average surface-level feet-of-lift the pumps must raise the water in order to distribute the water through the field irrigation system. Discharge capacity refers to average pumping capacity in gallons per minute (GPM). Discharge operating pressure refers to the average operating pressure in pounds per square inch at the point of discharge.

Section 7 – Energy Expense By Power Source for All Well and Other Irrigation Pumps Used On This Operation in 2013

For each energy source report the number of well pumps and other pumps, the cost of the energy used to power pumps (include the landlord's share of pumping costs), and the number of acres irrigated by water source. The sum of acres irrigated across all energy types may be less than the total acres irrigated for the operation reported in Section 2, item 4, column 2, Box C. The difference should equal those acres irrigated using no pumps to supply water to the field.

Section 8 – Method of Water Distribution in Fields in the Open on this Operation in 2013

This section refers to the method used to distribute irrigation water. Report the acres of land irrigated by each of the distribution systems listed. If the same land was irrigated by more than one method, then report acres irrigated by each method used. **Note:** Do not report information for the delivery system used to convey water from the source to the field. Report the method only for the field distribution system.

Item 1 - Gravity irrigation refers to the free flowing application of water across a field. The water is distributed across a field using either pipes or open ditches near the head of the field from which water is released to flow down furrows or to flood the field.

Item 1a - Row crops are generally irrigated by water flowing down furrows.

Item 1b - Report the controlled flooding acreage for crops such as rice or cranberries which are flooded across the entire field with the water contained within borders or basins.

Item 1c - Uncontrolled flooding is often used to water pasture or rangeland. Water is directed to the area by artificial or controlled means but there are no furrows or borders within the field when uncontrolled flooding is used.

Item 1d - Report acreage here if not reported in any of the above gravity system categories.

Item 2 - Sprinkler irrigation is separated into six categories: center pivot, linear move tower, solid set and permanent systems, mechanical move systems, hand move systems, and other sprinkler systems. Use nozzle pressure for the pressure categories.

Item 2a - A center pivot system uses a boom half the width of the field. It is anchored at the center of the field and sweeps in a circle.

Item 2b - Linear move tower systems and other linear continuous move drive systems are self-propelled systems that travel in straight lines across the field.

Item 2c - Report for solid set and permanent systems. Exclude low-flow micro systems.

Item 2di - Mechanical move systems include side roll, wheel move, other mechanical move systems, and other discrete move systems.

Item 2dii - Big gun or traveler systems use large pulsating sprinklers and travel across the area being watered.

Item 2e - Hand move systems are any non-self-propelled system which must be moved manually.

Item 2f - Report acreage here if not reported in any of the above sprinkler system categories.

Item 3 - Drip, trickle or low-flow micro irrigation water is generally distributed by tubes or tapes which meter out small amounts of water at low pressure.

Item 3a - Report acres on which on or above ground surface drip irrigation was used.

Item 3b - Report acres on which sub-surface or root zone, drip was used.

Item 3c - Report acres on which low-flow micro sprinklers were used. This refers to micro sprinklers that apply water at low pressure and are not self-propelled or easily moved.

Item 3d - Report acreage here if not reported in any of the above drip, trickle, or low-flow system categories.

The total acres, by method of water distribution, should be equal to or greater than Section 2, column 2, item 4, total acres irrigated, Box C. Every acre reported as irrigated in Section 2 needs to be reported by method of irrigation in Section 8. If you use multiple methods of water distribution for the same acres, this sum may be larger than item code 0042.

Section 9 – Acres Harvested in the Open and Crop Yields on This Operation in 2013

Report the acres of each crop harvested and its corresponding average yield per acre separately for irrigated acres and for non-irrigated acres. Report acres of each crop harvested, even when multiple crops have been harvested off the same land. In addition, for each irrigated crop harvested, report the estimated average quantity of water applied per acre for the 2013 irrigation season. Report water applied in average acre-feet per acre or in inches per acre (but not both). Acre-feet per acre should be reported to the nearest tenth of a foot (for example, 1.6 or 2.3 acre-feet per acre), while acreinches per acre should be reported to the nearest whole inch (for example, 19 or 28 inches per acre).

The sum of irrigated acres harvested in Section 9 should be equal to or greater than Section 2, item 4, column 2, Box C, total acres irrigated.

Any harvested crop grown in the open not pre-listed should be entered under item 19 'all other crops.' Report the crop name in the 'specify' area. **Note:** For winter wheat, report the acres harvested in 2013.

Section 10 – Primary Method of Field Water Distribution, Water Source, and Acreage of Chemigation in Irrigation Water for Crops Irrigated in the Open in 2013

For each crop with irrigated acres harvested reported in Section 9, report the primary type of irrigation system in the first column by selecting the appropriate water distribution ID code from the water distribution ID code list above the table. Report the number of acres irrigated from each water source (ground, on-farm surface, and off-farm suppliers).

Then, for each irrigated crop, report the number of acres that were irrigated applying chemigation, that is, the application of fertilizers or pesticides through the irrigation water. Report the acres of commercial fertilizer application and acres for pesticide application separately.

Note: For each crop, an irrigated acre harvested may be reported in both the fertilizer and pesticide columns. Therefore, for each crop, the sum of chemigation acres may total more than the corresponding irrigated harvested acres reported for that crop in column 1 of section 9.

Report the acres of the irrigated crop by water source.

Section 11 – Irrigation Area, Methods, and Water Applied to Horticultural Crops in the Open in 2013

Report whether this operation irrigated any nursery, greenhouse, floriculture, mushrooms, propagative materials, or other horticultural crops grown in the open in 2013. If any horticultural crops on your operation were grown in the open, then complete this section.

Item 2 - Report the total acres and irrigated acres for horticulture crops grown in the open to the nearest tenth acre. Report the acres only once even when multiple crops were harvested off the same land. Irrigation refers to the application of water to land or crops by any artificial or controlled means.

Item 3 - Report acres for each horticulture crop listed to the nearest tenth acre. Report acres of each crop harvested, even when multiple crops were harvested off the same land. For example, if annual bedding plants

and a nursery crop were harvested from the same 2 acres, enter 2.0 acres in the Floriculture and bedding crops category and 2.0 acres in the Nursery crop category. For each category, enter the total acres grown in the open and irrigated acres.

Report for each crop category grown on this operation the total acres in the open and irrigated acres in the appropriate category:

- a. Floriculture and bedding crops - bedding/garden plants, cut flowers and cut florist greens, indoor foliage plants, potted flowering plants
- b. Nursery crops - ornamentals, shrubs, shade trees, fruit and nut trees, vines, palms, ornamental grasses, evergreens not for Christmas trees, deciduous trees and shrubs, aquatic plants
- c. Sod
- d. Propagative materials - bulbs, corms, rhizomes, and tubers; cuttings, seedlings, linings, and plugs; flower and vegetable seeds; tobacco transplants; vegetable transplants
- e. Christmas trees and short rotation woody crops - A short rotation woody crop is a tree that grows from seed to a mature tree in 10 years or less.
- f. Other - If more than one crop was grown for this category, report the primary type of crop in the specify area.

Item 4 - Report the area irrigated or watered for horticultural crops grown in the open in 2013 by irrigation method used on this operation. If more than one method was used, report area in all methods that apply. Report quantity of water in the unit of measure most used for each method. If the total quantity of water, column 2a, and the unit of measure, column 2b, is known, then skip column 3.

Report for the following irrigation methods:

- a. Hand Watered
- b. Gravity Irrigation - refers to the free-flowing application of water.
- c. Sprinkler - Exclude hand-held sprinklers.
- d. Drip, trickle, or low-flow micro irrigation - the water is distributed down the rows by tapes which meter out small amounts of water at low pressure near the plant's roots.
- e. Subirrigation - this is sometimes referred to as water seepage. It is used to maintain a water table at a predetermined depth. Normally these systems are permanently in place below the rootline. Water is usually applied by using emitters. Include hydroponic in this category.

The total area reported, by method used, should be equal to or greater than item 2, irrigated area, code 0738.

Section 12 – Irrigation of Horticultural Crops Grown in the Open by Water Source in 2013

Report the water source percentage for each irrigation method listed. The percentage for ground water, on-farm water, and off-farm water should add to 100% for each method (row).

Section 13 – Irrigation Area, Methods, and Water Applied to Horticultural Crops Under Protection in 2013

Report whether this operation irrigated any nursery, greenhouse, floriculture, mushrooms, propagative materials, or other horticultural crops grown under protection. Under protection includes horticultural crops grown under glass, rigid plastic, plastic film, including "tunnel" protection and hoop houses. If any horticultural crops on your operation were grown under protection, then complete this section.

Item 2 - Report the total area and irrigated area under protection in square feet. Report the area only once, regardless of how many crops were grown for sale from the same area. Irrigation refers to one or more applications of water to land or crops by any artificial or controlled means.

Item 3 - Report the area irrigated in square feet for each horticultural category listed. Report the area of each horticulture crop, even when multiple crops were harvested off the same land. For example, if two crops of annual bedding plants were grown from 1,000 square feet, enter 1,000 in the Floriculture and Bedding Crops category. If 500 square feet of food crops were also grown in the same area, then also report 500 in the Food crops grown under protection category. For each category, enter the total area under protection that was irrigated.

Report crops grown on this operation in the appropriate category:

- a. Floriculture and bedding crops - Bedding/garden plants, cut flowers and cut florist greens, indoor foliage plants, potted flowering plants
- b. Nursery crops - Ornamentals, shrubs, shade trees, fruit and nut trees, vines, palms, ornamental grasses, evergreens not for Christmas tree production, deciduous trees and shrubs, aquatic plants
- c. Propagative materials - Bulbs, corms, rhizomes, and tubers; cuttings, seedlings, linings, and plugs; flower and vegetable seeds; tobacco transplants; vegetable transplants.
- d. Food crops grown under protection
- e. Mushrooms
- f. Other - If more than one crop was grown for this category, report the primary type of crop in the specify area.

Item 4 - Report the area irrigated or watered for horticultural crops grown under protection in 2013 by irrigation method used on this operation.

If more than one method was used, report area in all methods that apply. Report quantity of water in the unit of measure most used for each method. If the total quantity of water, column 2a, and the unit of measure, column 2b, is known, then skip column 3.

Report for the following irrigation methods:

- a. Hand Watered
- b. Gravity Irrigation - refers to the free-flowing application of water.
- c. Sprinkler - Exclude hand-held sprinklers.
- d. Drip, trickle, or low-flow micro irrigation - the water is distributed down the rows by tapes which meter out small amounts of water at low pressure near the plant's roots.
- e. Subirrigation - this is sometimes referred to as water seepage. It is used to maintain a water table at a predetermined depth. Normally these systems are permanently in place below the rootline. Water is usually applied by using emitters. Include hydroponic in this category.

The total area reported, by method used, should be equal to or greater than item 2, irrigated area, code 0629.

Section 14 – Irrigation of Horticultural Crops Grown Under Protection by Water Source in 2013

Report the water source percentage for each irrigation method listed. The percentage for ground water, on-farm water, and off-farm water should add to 100% for each method (row).

Definitions of Water Sources

Ground water is water from a well or wells located on this farm.

On farm surface water is a water supply not controlled by a water supply organization and includes water from a stream, drainage ditch, lake, pond, spring, or reservoir on or adjacent to your farm.

Off-farm surface water is surface or ground water from U.S. Bureau of Reclamation, other Federal agencies, or other suppliers.

Section 15 – Expenditures for Irrigation Facilities and Equipment on This Operation in 2013

For the construction and improvement categories report the cost of the expenditure in column 1, the irrigated acres affected in column 2, the primary purpose ID code of the expenditure in column 3, and the primary source ID code of the funding assistance in column 4 if any were received.

Section 16 – Barriers to Implementing Improvements to Reduce Energy Use or Conserve Water in this Operation’s Irrigation System During the Past Five Years

Report any issues which prevented you from implementing improvements to existing irrigation systems during the past five years. Mark all that apply.

Section 17 – Water Management Practices for Gravity Irrigation Systems in the Open

If you reported gravity irrigation in Section 8, then complete this section. For each item a through d, report the number of gravity irrigated acres using the specific practice.

Section 18 – Irrigation Practices in 2013

Item 1 - Report on the method or approach used to decide when to schedule water applications in 2013. Mark all that apply.

Item 2 - Report in item 2 whether this operation had to discontinue irrigation in 2013 long enough to affect crop yield. Report the reason(s) if irrigation was discontinued. Mark all that apply. If “other,” is marked, report the reason for discontinuing irrigation in the “specify” response area.

Section 19 – Labor Used for Irrigation on this Operation in 2013

If you paid any labor cost for the irrigation activities, report total hours and average hourly wage in item 1a and report contract labor expenses for irrigation activities in item 1b. Labor costs here should pertain only to the operation and maintenance of the irrigation system and facilities. **Include** the landlord’s share of irrigation labor costs. **Exclude** cost for custom work and contract labor for harvesting.

Section 20 – Sources of Irrigation Information

Mark all that apply.

Section 21 – Technical and Financial Assistance Received During the Past Five Years

If you made irrigation and/or drainage improvements above regular maintenance in the past five years, then mark item 1 ‘Yes’. If you received any technical or financial assistance for these improvements, you should mark all that apply.

Section 22 – Irrigated Land in 2012

Complete this section **ONLY** if you did not irrigate in 2013.

This section references both 2012 and 2013 irrigation. Report in item 1 whether any land was irrigated on this operation in 2012. Report in item 2, the reasons for not irrigating in 2013. Mark all that apply in item 2 and if ‘other’ is marked, report the reason in the “specify” response area. In item 3, report whether the discontinuance of irrigation is permanent.

Section 23 – Value of Farm Sales in 2013

Item 1 - Select the appropriate category for the gross value of sales of all agricultural products sold from this operation in 2013. Agricultural products include all crops and livestock sold from this operation.

Item 2 - Report the percent of the total gross value of sales that were from irrigated crops.

Item 3 - Report the percent of the total gross value of sales that were from **non-irrigated crop** or **livestock** sales. The sum of items 2 and 3 should equal 100 percent.

Section 24 – Person Completing this Form

Please print the name of the person completing this form, the date completed, and telephone number. Please indicate if you would like a free summary of the survey results in the mail.