



INSTRUCTION BOOKLET

2023 IRRIGATION AND WATER MANAGEMENT SURVEY



Completing the 2023 Questionnaire

Everyone who receives a questionnaire must fill out this form and return it, including nursery, greenhouse, and other horticultural crop producers.

Use a **black or blue** ball point pen.

Round to whole acres, unless otherwise noted.

If You Received More than One Questionnaire for the Same Operation

Duplicate form(s) — If you received extra questionnaires for the SAME farming operation, return all questionnaires in the same envelope as the completed report. Make all entries clear and easy to read.

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. Since the form 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 2023, complete the questionnaire for the portion of 2023 that you did farm. Write "Stopped farming in 2023" and the date you stopped farming below the address area. Mail the completed questionnaire in the return envelope.

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 Received 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 area in the open and under protection), pastureland, or rangeland in 2023, complete Sections 1 and 2 and then go to Section 16 on page 19 and complete the remainder of the questionnaire.

Section 1 - Acreage in 2023

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 2023, go to Section 18 on the back page and complete the remainder of the questionnaire.

Include all land, regardless of location or use. This should include all cropland, pastureland, rangeland, woodland, idle land, **greenhouses or other area under protection**, farmsteads, Conservation Reserve Program (CRP), Wetlands Reserve Program (WRP), Farmable Wetlands Program (FWP), and Conservation Reserve Enhancement Program (CREP), etc. 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 2023 by you and/or your spouse, or by the partnership, corporation, or organization identified on the questionnaire.

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 only for part of the year. **Exclude** land used on a per-head basis under a grazing permit or animal unit month (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**. After completing Section 1, if the acres in Item 4, Box A equal zero and you did not raise or own any livestock, aquaculture, or poultry in 2023, write a description of the land use in the space by item 4; then complete Section 18 and mail the questionnaire in the return envelope.

Section 2 - Land in 2023

Account for total acres in **this operation** in column 1, acres with access to irrigation equipment in column 2, and acres irrigated in column 3. If all acres that had access to irrigation were irrigated in 2023, then columns 2 and 3 will match. If the same land had more than one use in 2023, report that land only once in the first use that applies. Irrigation is the application of water by any artificial or controlled means, such as with sprinklers,

furrows and ditches, spreader dikes, flooding, hand watering, or subirrigation pipes. Include the area where lagoon waste water from livestock operations was distributed by a sprinkler or flood system.

Include both the acres in the open as well as the area under protection when reporting cropland. Under protection includes nursery, greenhouse, floriculture, mushrooms, vegetable seeds, and propagative materials grown under glass, rigid plastic, plastic film, shade cloth, fiberglass, "tunnel" protection, and hoop houses. Crops covered just temporarily only to be further grown in the open should not be recorded as area under protection but instead as acres in the open.

In addition to fully irrigated land, report as irrigated any land to which partial, supplemental, or semi-irrigation was applied in column 3. 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 used for irrigation. Include area under protection that was hand watered.

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 should be considered other pasture and grazing land. Except for disaster designation uses, almost all conservation program land will be reported in item 1c, cropland not harvested or grazed.

Item 1a - Include as cropland harvested in the open: field crops, hay and forage, land in vegetables, citrus groves, vineyards, berries, nuts, orchards (bearing and non-bearing), Christmas trees (whether harvested in 2023 or not), and short rotation woody crops. Also include nursery and other horticultural crops if they were grown in the open, such as bedding and garden plants, nursery stock, and propagative materials.

For winter wheat, report the 2023 acres harvested.

For double cropped acres if more than one crop was harvested from the same land in 2023, report those acres only once as cropland harvested.

Item 1b - Include nursery, greenhouse, and other horticulture crops grown under protection. Under protection means grown under glass, rigid plastic, plastic film, shade cloth, fiberglass, "tunnel" protection, and hoop houses. Crops covered only temporarily, such as for frost protection, to be further grown in the open should not be included as area under protection.

Item 1c - 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.

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 – Box B should equal the sum of all land uses reported in items 1 through 3. The acres in **Box B** must equal the acres reported in **Box A**. **Box C** must be greater than or equal to **Box D**.

Item 5 – This question helps determine if this operation irrigated any area in the open or under protection in 2023. 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 16 on page 19.

Section 3 – Ground Water From Wells

Data for water usage 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 approximately 326,000 gallons. Ground water is water from a well or wells located on this operation.

Item 1 - Report whether this operation irrigated any land with ground water from wells on this operation at any time during 2023.

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 2023.

Item 4a - Report the number of wells reported in item 4 above that used backflow prevention devices (check valves) in 2023. Report the number of acres and area under protection irrigated in 2023 with water pumped from wells with backflow prevention devices.

Item 4b - 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 2023 with water from wells with flow measurement devices.

Item 4c - Report the number of free flowing wells used in 2023. Free flowing wells do not require the use of a pump to lift 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 5 - Report the well characteristics for up to 3 primary wells pumped on this operation in 2023. **Note:** The 3 primary wells should include those wells with the greatest quantity of water pumped in 2023. Report the characteristics for each individual well even if these values are similar across wells. If less than 3 wells were pumped in 2023, then only report for those wells used. Do not include the characteristics of free flowing wells that did not use a well pump, reported in Item 4c.

Item 5a - If you used more than 3 wells in 2023, reported the average value for well characteristics for all other wells (excluding the 3 primary wells).

Item 6 – Check the best response for the change in depth to water. 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 2023.

Section 4 – On-Farm Surface Water

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 whether 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 2023.

Item 4a - Report the area on which one or more applications of recycled water for irrigation were made in 2023. Report the acres only once even if multiple applications were made to the same acreage.

Item 5 - Report whether this operation used reclaimed water from on-farm livestock to irrigate any crops in 2023. For the purposes of this survey, the total 2023 application of reclaimed water needs to be at least half an inch (0.5 inches) to be considered irrigation.

Item 5a - Report the area on which one or more applications of reclaimed water for irrigation were made in 2023. 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 2023. Report the quantity of reclaimed water in acre-feet or total gallons.

Section 5 – Off-Farm Water

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

Item 1 – Report whether this operation used water from off-farm sources for irrigation.

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 whether this operation paid for any off-farm water and total cost, if any was purchased. Report in whole dollars.

Item 5 - Report the supplier of off-farm water.

Item 6 - Report whether this operation used reclaimed water from an off-farm source to irrigate any crops in 2023. For the purposes of this survey, the total 2023 application of reclaimed water needs to be at least half an inch (0.5 inches) to be considered irrigation.

Item 6a - Report the area on which one or more applications of reclaimed water for irrigation were made in 2023. 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 2023. 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 Used for Irrigation and Pump Expenses

This section collects data on pumps used for pumping water from wells, surface water from rivers and streams, irrigation channels, ponds, and other water holding systems. Please include all pumps supplying irrigation to or through any distribution system, as well as any pumps moving water into tanks or reservoirs on the operation for irrigation purposes in 2023. Do not include any pumps used exclusively for non-irrigation applications such as home use or aquaculture or any pumps not owned or rented by this operation, such as pumps operated by a water company.

Item 1 – Report whether this operation used any pumps for irrigation during 2023.

Item 2 – Report the number of pumps for each use type alongside their average vertical lift, discharge capacity, and discharge operating pressure. Pumps used multiple times, whether on one source or on multiple sources, should only be counted once.

Vertical lift is the average surface-level feet-of-lift the pumps must raise the water 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.

Item 2a – Well Pumps – Report the number of pumps used to directly pump ground water from wells. The number of pumps reported should be equal to or less than the number of wells reported in Section 3 under item 4 (number of wells). Wells which used multiple pumps (generally in series) should report all extra pumps as relifting or boosting pumps.

Item 2b – Tailwater Pits – are pits that collect and hold water previously used for irrigation. Report the number of pumps used to directly pump water from tailwater pits. Only count the number of pumps directly pumping the water from the source. All additional pumps providing additional lift or boosting (in series) should be reported under relifting or boosting instead.

Item 2c – Ponds, lakes, reservoirs, rivers, canals, etc. – Report the number of pumps used to directly pump water from any surface source or storage reserve. Only count the number of pumps directly pumping the water from the source. All additional pumps providing additional lift or boosting (in series) should be reported under relifting or boosting instead.

Item 2d – Relifting and boosting water within system - Report the number of pumps which provided additional lift or boost for irrigation. No pumps which directly pull from a source should be reported as a relift or booster pump – they should instead be reported as one of the three prior types. Apart from artesian wells, most sources of water require a pump to utilize the source before it can use a relift or booster pump.

Item 3 - For each power source, report the number of pumps, the cost of the energy used to power the pumps (include the landlord's share of pumping costs), and the number of acres irrigated by water source. The sum of the pumps reported in Item 3 should be equal to the sum of the pumps in Item 2. 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 3, Box D. The difference should equal those acres irrigated using no pumps to supply water to the field.

Section 7 - Expenditures for Irrigation Infrastructure

For each expenditure type, report the cost of the expenditure in column 1, the irrigated acres affected in column 2, the primary purpose code of the expenditure in column 3, and the primary source code of the funding assistance in column 4. Primary purpose codes (column 3) and source of funding codes (column 4) can be found at the top of the page.

Section 8 - Method of Water Distribution in Fields in the Open

This section refers to the method used to distribute irrigation water.

Item 1 – Report whether this operation irrigated any fields in the open. If so, complete this section. 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 2 - 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 2a - Row crops are generally irrigated by water flowing down furrows.

Item 2b – 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 2c - 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 2d - Report acreage here if not reported in any of the above gravity system categories.

Item 3 - 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 3a - 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 3b - Linear move tower systems and other linear continuous move drive systems are self-propelled systems that travel in straight lines across the field.

Item 3c - Report for solid set and permanent systems. Exclude low-flow micro systems.

Item 3di - Mechanical move systems include side roll, wheel move, other mechanical move systems, and other discrete move systems.

Item 3dii - Big gun or traveler systems use large pulsating sprinklers and travel across the area being watered.

Item 3e - Hand-move systems are any non-self-propelled system which must be moved manually.

Item 3f - Report acreage here if not reported in any of the above sprinkler system categories.

Item 4 - 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 4a - Report acres on which on or above ground surface drip irrigation was used.

Item 4b - Report acres on which sub-surface or root zone drip was used.

Item 4c - 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 4d - Report acreage here if not reported in any of the above drip, trickle, or low-flow system categories.

Item 5 - Hydroponics is the cultivation of plants in nutrient-enriched water, with or without the mechanical support of an inert medium such as sand, gravel, or perlite.

The total acres, by method of water distribution, should be equal to or greater than Section 2, column 3, item 4, total acres irrigated, Box D. 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 Section 2, column 3, item 4, total acres irrigated, Box D.

Section 9 – Additional Practices for Irrigation Methods in Fields in the Open

This section refers to specific practices related to gravity irrigation.

Item 2 - If you reported gravity irrigation in Section 8, item 2, then report the number of gravity irrigated acres using the specific practices listed.

Surge Flow Irrigation – The intentional application of water to furrows or borders creating a series of on and off periods of constant or variable time spans.

Precision-Leveling – The practice of leveling land towards a completely flat state where the field will have a zero or near zero-degree incline across its surface. Leveling land is used to help distribute water and improve yields. Include all acres that were precision leveled, whether they were partially or completely leveled (also known as zero grade). Terraced acres can be precision-leveled and can reach a zero grade status since the individual fields on each terrace can be leveled.

Zero Grade – Acres which received precision-leveling (see above) to the point of achieving a zero-degree incline on the field. Not all acres that received precision-leveling reach a zero-grade state but all zero grade acres are precision-leveled.

Cablegation – an automated furrow irrigation system in which the irrigation set moves at a slow constant rate across the field.

Item 3 – Indicate whether this operation used any computer software to aid in the measuring or planning of the gravity irrigation system(s).

Section 10 - Acres Irrigated in the Open

Report the irrigated acres for each crop harvested as well as for non-harvested items such as orchards, nursery crops, pastureland, and all other land. Report acres of each crop harvested, even when multiple crops have been harvested off the same acres. If an irrigated commodity has failed acres, split the acres and report the failed acres under item 20. In addition, for each item, report the estimated average quantity of water applied per acre for the 2023 irrigation season. Report water applied in acre-feet or in inches per acre (but not both). Acre-feet should be reported to the nearest tenth (for example, 1.6 or 2.3 acre-feet), while inches 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 10 should be equal to or greater than Section 2, item 4, column 3, Box D, total acres irrigated.

Any irrigated crop grown in the open not pre-listed should be entered under item 15 'all other crops grown in the open.' Report the crop name(s) in the 'specify' area.

Section 11 - Field Water Distribution and Water Source Used in the Open

For each item with irrigated acres reported in Section 10, report the primary type of irrigation system in the first column by selecting the appropriate water distribution code from the water distribution 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 item, report the number of acres in which chemigation was applied through the irrigation system. Chemigation 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 item, an irrigated acre 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 10.

Section 12 - Irrigation for Nursery and Other Horticultural Crops Grown in the Open

Item 1 - Report whether this operation grew any nursery, floriculture, sod, propagative materials, Christmas trees, or other horticultural crops grown in the open in 2023. 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 acres. Irrigation refers to the application of water to land or crops by any artificial or controlled means.

Item 3 - Report total acres and irrigated 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 acres. 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 - annuals, herbaceous perennials, vegetable plants; cut flowers and cut florist greens; indoor foliage plants; potted flowering plants; hanging baskets
- b. Nursery crops - Nursery stock - ornamentals, shrubs, flowering trees, evergreens, live Christmas trees, fruit and nut trees and plants, vines, palms, ornamental grasses, bareroot herbaceous perennials; aquatic plants
- c. Sod
- d. Propagative materials - Bulbs, corms, rhizomes, tubers, cuttings, seedlings, liners, plugs, flower seeds, tobacco plants, vegetable transplants to farm fields
- 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 horticultural crops - If more than one crop was grown for this category, report the primary type of crop in the specify area.

Item 4 - Report the acres irrigated or watered for horticultural crops grown in the open in 2023 by irrigation method used on this operation. If more than one method was used, report acres 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. Hydroponics - the cultivation of plants in nutrient-enriched water, with or without the mechanical support of an inert medium such as sand, gravel, or perlite.

The total acres reported, by method used, should be equal to or greater than item 2, irrigated acres, code 0738 in section 12.

Item 5 - 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 water is surface or ground water from U.S. Bureau of Reclamation, other Federal agencies, or other suppliers.

Section 13 - Irrigation for Nursery, Greenhouse, and Other Horticultural Crops Grown Under Protection

Item 1 - Report whether this operation grew 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. Crops covered only temporarily to be further grown in the open should not be included for area under protection.

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 total area and irrigated area, in square feet, for each category listed. Report the area of each crop, even when multiple crops were harvested off the same area. 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.

Report crops grown on this operation in the appropriate category:

- a. Floriculture and bedding crops - Bedding/garden plants - annuals, herbaceous perennials, vegetable plants; cut flowers and cut florist greens; indoor foliage plants; potted flowering plants; hanging baskets
- b. Nursery crops - Nursery stock - ornamentals, shrubs, flowering trees, evergreens, live Christmas trees, fruit and nut trees and plants, vines, palms, ornamental grasses, bareroot herbaceous perennials; aquatic plants
- c. Propagative materials - Bulbs, corms, rhizomes, tubers, cuttings, seedlings, liners, plugs, flower seeds, tobacco plants, vegetable seeds, vegetable transplants to farm fields
- d. Food crops grown under protection - Tomatoes, other vegetables and fresh cut herbs, fruits and berries.
- e. Mushrooms

- f. Other horticultural crops - 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 2023 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. Hydroponics - the cultivation of plants in nutrient-enriched water, with or without the mechanical support of an inert medium such as sand, gravel, or perlite.

The total area reported, by method used, should be equal to or greater than item 2, irrigated area, code 0629 in section 13.

Item 5 - 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 14 – Irrigation and Water Management Practices

Item 1 - Report on the method(s) or approach(es) used to decide when to schedule water applications in 2023. Mark all that apply.

Item 2 - Report whether this operation had to discontinue irrigation in 2023 long enough to affect crop yield.

Item 2a - Report the number of acres in which irrigation was discontinued long enough to reduce crop yields. Only consider the acres which received irrigation during 2023. Do not include acres that received no irrigation.

Item 2b - 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.

Item 3 - Report the sources that this operation relied on for guidance in reducing irrigation costs or to conserve water. Mark all that apply.

Item 4 - Indicate whether this operation participated in any groundwater recharge efforts.

Recharge - the practice of increasing the amount of water that enters an aquifer through human-controlled means. This can be done by injecting water directly into the subsurface through injection wells or by intentionally applying extra water to the ground for the purpose of replenishing the aquifer.

Item 5 - Report any issues which prevented you from implementing improvements to existing irrigation systems during the past five years. Mark all that apply.

Item 6 - If you made irrigation and/or drainage improvements above regular maintenance in the past five years, then mark item 6 'Yes'.

Items 7 and 7a - If you received any technical or financial assistance for irrigation and/or drainage improvements, mark yes to item 7 and indicate the sources you received technical or financial assistance from in item 7a. Mark all that apply. If no assistance was received, do not mark any check box.

Section 15 – Labor Used for Irrigation

Report the total hours and average hourly wage for irrigation labor in item 1. Report contract labor expenses for irrigation activities in item 2. Contract labor expenses pertain only to the operation and maintenance of the irrigation systems and facilities. Include the landlord's share of irrigation labor costs. Exclude cost for custom work and contract labor for harvesting.

Section 16 – No Irrigated Land or Land with Unused Irrigation Systems

Complete this section if you did not irrigate any land in 2023 or if you only irrigated part of your equipped acres. If you irrigated all of your equipped acres then proceed to Section 17.

Item 2 - Report whether any land on this operation had access to irrigation systems or equipment in 2022, regardless of usage rights and/or availability of source water.

Item 3 - Report whether any land on this operation was irrigated in 2022.

Item 4 - Report the reasons for not irrigating in 2023. Mark all that apply and if 'other' is marked, report the reason(s) in the "specify" response area.

Item 5 - Report whether the discontinuance of irrigation is permanent.

Section 17 - Value of Sales in 2023

Item 1 - Select the appropriate range of the gross value of sales of all agricultural products sold from this operation in 2023. 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 18 - Person Completing this Form

Please print the name of the person completing this form, the date completed, telephone number, and e-mail address.