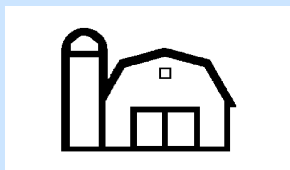


OMB No. - 0535-0234
Approval Expires - 11/30/01
Form 98-A62
Project Code 643

NOTICE: Response to this inquiry is required by law (*Title 7, U.S. Code*). By the same law, YOUR REPORT IS CONFIDENTIAL and it 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 processes.

U.S. DEPARTMENT OF AGRICULTURE
NATIONAL AGRICULTURAL
STATISTICS SERVICE



1998 FARM AND RANCH IRRIGATION SURVEY

Please return your completed report in the enclosed postage paid envelope, or to
U.S. Department of Agriculture
Rm 5805, South Building
1400 Independence Avenue, S.W.
Washington, D.C. 20250-2000

Please correct errors in name, address and ZIP Code. ENTER street and number if not shown.

**THANK YOU FOR YOUR RESPONSE TO THE 1997 QUESTIONNAIRE.
YOU CAN HELP US AGAIN BY COMPLETING THIS SURVEY.
PLEASE RETURN AS SOON AS POSSIBLE**

Why am I receiving this survey?

We are asking for your cooperation in providing information for the 1998 Farm and Ranch Irrigation Survey, which we are sending to a small sample of farm and ranch irrigators.

What is the purpose of this survey?

Because of increased competition for surface water supplies and dwindling ground water reserves in some areas, there is an urgent need for up-to-date information on irrigation methods and practices. You are the only source from which all the necessary information for this significant survey can be obtained. Your report, when combined with others, is needed for us to provide totals on irrigation methods and practices in 1998.

What if I did not irrigate in 1998 or do not consider myself a farmer or rancher?

Even if you have no irrigation items, please complete items 1 through 3 and item 19, and return the survey. Your information will help to accurately measure the number of addresses on our list that are not farms or ranches.

Is my response required?

Yes, by law (*Census of Agriculture Act of 1997, Public Law 105-113*).

Will my answers be kept confidential?

Yes, by the same law (*Census of Agriculture Act of 1997, Public Law 105-113*) your response to the NASS 1998 Farm and Ranch Irrigation Survey is kept confidential. It can only be used to prepare statistical summaries that will not reveal information about you as an individual.

When is the questionnaire due?

We need your response within 15 days. Please fill out the enclosed survey and return it in the postage paid envelope provided. **IF EXACT FIGURES ARE NOT AVAILABLE, PLEASE GIVE YOUR BEST ESTIMATES.** If some questions on the report do not apply to your operation, please skip these questions by following the instructions on the form.

We need to receive your report. The statistical sampling procedures we follow do not allow other farms or ranches to take your place in this survey. If you have any questions about this report call us on our toll-free number **1-888-4AG-STAT.**

Thank you for taking part in this effort to improve the quality of agricultural statistics.

Sincerely,

A handwritten signature in cursive script that reads "Rich Allen".

Rich Allen, Chairperson
Agricultural Statistics Board

Continue On Next Page

Item 1:	ACREAGE IN 1998		
		None	NUMBER OF ACRES
a. All land owned	<input type="checkbox"/>		025
b. All land rented or leased from others	<input type="checkbox"/>		026
c. All land rented or leased to others	<input type="checkbox"/>		027
d. TOTAL ACRES IN "THIS PLACE" - (items a + b - c =)	—————→		028

Item 2:	LAND USE IN 1998		
	<p>Distribute all acres in "THIS PLACE" in column 1 and all irrigated land in "THIS PLACE" in column 2, items a through d. If the same land had more than one use in 1998, report that land only once in the first use listed below that applies.</p> <p>In addition to fully irrigated land, report as irrigated any land to which partial, supplemental, or semi-irrigation was applied. Also include any acreage which received only preplant irrigation (<i>watered before planting</i>). Hayland, pastureland or rangeland should be reported as irrigated if spring flood water was spread by canals, ditches, spreader dikes, pipes, or other works.</p>		
a. Cropland		1	2
		TOTAL NUMBER OF ACRES	NUMBER OF ACRES IRRIGATED IN 1998
(1) Cropland harvested - <i>Include all land from which crops were harvested or hay was cut, and all land in orchards, citrus groves, and vineyards</i>	None <input type="checkbox"/>	029	030
(2) Cropland used only for pasture or grazing - <i>Include rotation pasture and grazing land that could have been used for crops without additional improvements</i>	<input type="checkbox"/>	031	032
(3) Other cropland - <i>Include cropland used for cover crops, cropland on which all crops failed, cropland in cultivated summer fallow, and cropland idle</i>	<input type="checkbox"/>	033	034
b. Woodland - <i>Include woodland pastured and woodland not pastured</i>	<input type="checkbox"/>	035	
c. Other pastureland and rangeland - <i>Include any pastureland other than cropland and woodland pastured</i>	<input type="checkbox"/>	037	038
d. All other land - <i>Include any land not reported above. Include land in house lots, barn lots, corrals, ponds, roads, wasteland, etc.</i>	<input type="checkbox"/>	039	
e. TOTAL ACRES - <i>Add columns 1 and 2 and enter the totals in these spaces. (Acres in "THIS PLACE" should be equal to item 1d above.)</i>	—————→		IRRIGATED
		"THIS PLACE" 041	042
f. How many of the irrigated acres have been laser leveled?	None <input type="checkbox"/>		540

Item 3:	Was any land on the farm or ranch you operated irrigated at any time in 1998?	
	<p>1 <input type="checkbox"/> YES - Please complete items 4 through 18, and item 20.</p> <p>2 <input type="checkbox"/> NO - Go to item 19.</p>	
024		

Item 4:

METHOD OF WATER DISTRIBUTION IN 1998

Report acres irrigated by each type of FIELD distribution or delivery system listed below. If same land was irrigated by more than one method, report acres irrigated by each method used.

DO NOT report information for the delivery system used to convey water from the source to the field, instead report information for the FIELD distribution system.

a. GRAVITY IRRIGATION

ACRES IRRIGATED BY GRAVITY IRRIGATION				
TOTAL	ABOVE GROUND PIPE, INCLUDING GATED PIPE	OPEN SURFACE DITCHES		UNDER GROUND PIPE
		LINED	UNLINED	
855	856	857	859	858
865	866	867	869	868
875	876	877	879	878
885	886	887	889	888

- (1) Down rows or furrows None
- (2) Between borders or within basins . . .
- (3) Uncontrolled flooding
- (4) Other

b. SPRINKLER IRRIGATION - pressure at nozzle

ACRES IRRIGATED			
	LOW PRESSURE (UNDER 30 PSI)	MEDIUM PRESSURE (30 TO 59 PSI)	HIGH PRESSURE (60 PSI OR MORE)
576	575	570	
577	578	579	
565	566	567	

- (1) Center pivot None
- (2) Mechanical-move
 - (a) Linear move tower (and other linear continuous move drive systems)
 - (b) Side roll, wheel move, or other mechanical move systems (and other discrete move systems)

- (c) Traveller or big gun (any type) None
- (3) Hand move
- (4) Solid set and permanent systems (except for low-flow micro sprinklers)

ACRES IRRIGATED	
<input type="checkbox"/> None	573
<input type="checkbox"/>	243
<input type="checkbox"/>	244

c. DRIP OR TRICKLE IRRIGATION, include: surface drip, subsurface drip, and low-flow micro sprinklers that apply water at a low pressure, and are not self-propelled or easily moved . . .

<input type="checkbox"/> None	248
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d. SUBIRRIGATION water seepage, maintenance of water table at a predetermined depth (Excluding methods reported above.)

<input type="checkbox"/>	249
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Item 5:

ACRES IRRIGATED and ESTIMATED QUANTITY OF WATER USED IN 1998 BY SOURCE

Report quantity of water in the unit or units of measure most convenient for you. If measurements are not available, give your best estimate for quantity of water used. If average acre-feet cannot be estimated, give combined pumping capacity and duration in days, or total depth of water applied.

a. Ground water from a well or wells located on this farm or another farm None ACRES IRRIGATED
444

Estimated quantity of water used in 1998 - *Report in unit most convenient for you*

(1) Average acre-feet per acre irrigated
(one acre-foot covers one acre one foot deep) /10

OR

(2) Gallons of water applied and duration Total gallons per minute
 No. of 24-hour day equivalents water was applied

OR

(3) Average inches applied per acre -
Include all applications

b. On farm surface supply not controlled by a water supply organization
(stream, drainage ditch, lake, pond, spring, or reservoir on or adjacent to this farm) None ACRES IRRIGATED
449

Estimated quantity of water used in 1998 - *Report in unit most convenient for you*

(1) Average acre-feet per acre irrigated
(one acre-foot covers one acre one foot deep) /10

OR

(2) Gallons of water applied and duration Total gallons per minute
 No. of 24-hour day equivalents water was applied

OR

(3) Average inches applied per acre-
Include all applications

c. Off-farm water suppliers
(U.S. Bureau of Reclamation; irrigation district; mutual, private, cooperative,
or neighborhood ditches; commercial company or municipal or community water system) None ACRES IRRIGATED
454

(1) How much water was received? Total acre feet

(2) Total cost of water received - *Include all assessments, fees, or charges paid to water suppliers and landlord's share* Dollars only
 \$ • 00

If water was received at no cost, check No cost

(3) Did you allow any of your regular allocation of water to be used by others in 1998?
 457 YES NO

(a) If YES (item 5c(3)), enter number of acre-feet NUMBER OF ACRE-FEET

(4) Did you rent or lease water to municipal or industrial users either directly, or through your irrigation water provider?
 459 YES NO

Item 6:

ACRES HARVESTED and CROP YIELDS -

For each crop harvested, report separately the acreage and 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 growing season in 1998. 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.

		IRRIGATED CROP <i>Include preplant and supplemental or semi-irrigation</i>					NON-IRRIGATED CROP				
		IRRIGATED ACRES HARVESTED	ESTIMATED QUANTITY OF WATER APPLIED PER ACRE			NON-IRRIGATED ACRES HARVESTED	AVERAGE YIELD PER NON-IRRIGATED ACRE HARVESTED				
			AVERAGE YIELD PER IRRIGATED ACRE HARVESTED	AVERAGE ACRE-FEET	or		TOTAL INCHES				
a.	Corn (field) for grain or seed <input type="checkbox"/>	050	051	Bushels, Shelled	052	/10	or	053	054	055	Bushels, Shelled
b.	Corn (field) for silage or green chop <input type="checkbox"/>	060	061	Tons, green	062	/10	or	063	064	065	Tons, green
c.	Sorghum for grain or seed <input type="checkbox"/>	070	071	Bushels	072	/10	or	073	074	075	Bushels
d.	Wheat for grain <input type="checkbox"/>	080	081	Bushels	082	/10	or	083	084	085	Bushels
e.	Barley for grain <input type="checkbox"/>	090	091	Bushels	092	/10	or	093	094	095	Bushels
f.	Soybeans for beans <input type="checkbox"/>	100	101	Bushels	102	/10	or	103	104	105	Bushels
g.	Beans, dry edible <input type="checkbox"/>	110	111	Cwt.	112	/10	or	113	114	115	Cwt.
h.	Rice <input type="checkbox"/>	120	121	Cwt.	122	/10	or	123			
i.	Other small grains (oats, rye, etc.) <input type="checkbox"/>	130			132	/10	or	133	134		
j.	Alfalfa and alfalfa mixtures for hay or dehydrating <input type="checkbox"/>	140	141	Tons, /10 dry	142	/10	or	143	144	145	Tons, /10 dry
k.	All other hay, including wild native hay <input type="checkbox"/>	150	151	Tons, /10 dry	152	/10	or	153	154	155	Tons, /10 dry
l.	Peanuts <input type="checkbox"/>	550	551	Pounds	552	/10	or	553	554	555	Pounds
m.	Cotton <input type="checkbox"/>	160	161	Lbs. lint	162	/10	or	163	164	165	Lbs. lint
n.	Sugarbeets for sugar <input type="checkbox"/>	170	171	Tons	172	/10	or	173	174	175	Tons
o.	Tobacco, all types <input type="checkbox"/>	180	/10 181	Pounds	182	/10	or	183	184	/10 185	Pounds
p.	Potatoes <input type="checkbox"/>	190	/10 191	Cwt.	192	/10	or	193	194	/10 195	Cwt.
q.	All land from which vegetables were harvested <input type="checkbox"/>	200			202	/10	or	203	204	/10	
	Sweet corn <input type="checkbox"/>	850	/10		852	/10	or	853	854	/10	
	Tomatoes <input type="checkbox"/>	860	/10		862	/10	or	863	864	/10	
	Lettuce & romaine <input type="checkbox"/>	870	/10		872	/10	or	873	874	/10	
r.	Berries <input type="checkbox"/>	560			562	/10	or	563	564		
s.	Land in bearing and non-bearing fruit orchards, citrus or other groves, vineyards, and nut trees <input type="checkbox"/>	210	/10		212	/10	or	213	214	/10	
t.	All other crops - Specify <input type="checkbox"/>	220			222	/10	or	223	224		
u.	Pastureland, all types <input type="checkbox"/>	230			232	/10	or	233			

Item 7:

METHOD OF WATER DISTRIBUTION, IRRIGATION FREQUENCY, and APPLICATION OF COMMERCIAL FERTILIZERS and PESTICIDES IN IRRIGATION WATER BY SELECTED CROPS IN 1998

Pesticides include chemicals used to control insects, weeds, nematodes, and diseases. Check the appropriate box if ANY commercial fertilizers or pesticides were used on a crop, even if only a portion of the crop was treated.

Report the maximum number of times any field crop was irrigated. Include the number of preplant irrigation applications in this figure.

		<i>Mark (X) all boxes that apply</i>									
		METHOD OF WATER DISTRIBUTION				Application of fertilizer or pesticides in irrigation water (chemigation)		HOW MANY TIMES WERE CROPS IRRIGATED?			
		Sprinkler	Gravity	Drip or Trickle	Sub-Irrigation	Commercial Fertilizer	Pesticide Application	Less than 3	3 TO 7	8 or more	
a.	Corn (field) for grain or seed	<input type="checkbox"/>	250 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	600 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
b.	Corn (field) for silage or green chop	<input type="checkbox"/>	260 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	603 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
c.	Sorghum for grain or seed	<input type="checkbox"/>	270 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	606 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
d.	Wheat for grain	<input type="checkbox"/>	280 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	609 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
e.	Barley for grain	<input type="checkbox"/>	290 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	612 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
f.	Soybeans for beans	<input type="checkbox"/>	300 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	615 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
g.	Beans, dry edible	<input type="checkbox"/>	310 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	618 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
h.	Rice	<input type="checkbox"/>	320 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	621 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
i.	Other small grains (Oats, rye, etc.)	<input type="checkbox"/>	330 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	624 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
j.	Alfalfa and alfalfa mixtures for hay or dehydrating	<input type="checkbox"/>	340 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	627 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
k.	All other hay including wild or native hay	<input type="checkbox"/>	350 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	630 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
l.	Peanuts for nuts	<input type="checkbox"/>	580 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	633 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
m.	Cotton	<input type="checkbox"/>	360 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	636 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
n.	Sugarbeets for sugar	<input type="checkbox"/>	370 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	639 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
o.	Tobacco, all types	<input type="checkbox"/>	380 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	642 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
p.	Potatoes	<input type="checkbox"/>	390 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	645 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
q.	All land from which vegetables were harvested	<input type="checkbox"/>	400 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	648 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
	Sweet corn	<input type="checkbox"/>	900 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	907 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
	Tomatoes	<input type="checkbox"/>	910 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	917 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
	Lettuce and romaine	<input type="checkbox"/>	920 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	927 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
r.	Berries	<input type="checkbox"/>	590 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	651 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
s.	Land in bearing and nonbearing fruit orchards, citrus or other groves, vineyards, and nut trees	<input type="checkbox"/>	410 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	654 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
t.	All other crops	<input type="checkbox"/>	420 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	657 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
u.	Pastureland, all types	<input type="checkbox"/>	430 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	660 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>

Item 8: NUMBER OF IRRIGATION WELLS ON "THIS PLACE" IN 1998, WELL DEPTH, and PUMPING CAPACITY

a. Wells used in 1998 689 None 460 **NUMBER OF WELLS USED**

		NUMBER OF FEET			Pump capacity (Discharge from well) GPM	Operating pressure PSI
		Depth of well	Depth to water at start of irrigation season	Depth to bowls or impellers		
(1) For places with 5 or less wells pumped in 1998, report the following information--	Well number 1 . . .	461	462	463	464	676
	Well number 2 . . .	465	466	467	468	677
	Well number 3 . . .	469	470	471	472	678
	Well number 4 . . .	473	474	475	476	679
	Well number 5 . . .	477	478	479	480	680
(2) For places with more than 5 wells pumped in 1998, report the average for all wells		Average depth of well	Average depth to water at start of irrigation season	Average Depth to bowls or impellers	Average pump capacity (Discharge from well) GPM	Average operating pressure PSI
All wells		481	482	483	484	681

b. Wells not used in 1998, but capable of being used (Exclude abandoned wells.) None 485 **NUMBER OF WELLS NOT USED**

c. Does any part of your system contain back-flow prevention devices? 663 YES NO

d. Number of wells with meters or other flow measurement devices 690 None 683 **NUMBER OF WELLS METERED**

e. Has depth to water increased in any well in the last five years? 487 YES NO

f. How many of the wells are free flowing? 489 None 486 **NUMBER**

Item 9: PUMPS, OTHER THAN WELL PUMPS, USED FOR IRRIGATION ON "THIS PLACE" IN 1998

Report all pumps on "This Place", whether they are in use or not, USED FOR--

	Number of pumps	Average discharge capacity per pump GPM	Average operating pressure per pump PSI
a. Tailwater pits <input type="checkbox"/> None <input type="checkbox"/>	490	491	687
b. Ponds, lakes, reservoirs, rivers, etc. <input type="checkbox"/>	492	493	688
c. Relifting or boosting water within system <input type="checkbox"/>	494		

Item 10:

ENERGY USE ON "THIS PLACE" IN 1998 FOR PUMPING IRRIGATION WATER BY POWER SOURCE

Report the expenditures for fuel and power used in 1998 for irrigation pumping by each type of energy used on "THIS PLACE". Include in the cost figures any additional charges such as the "fuel adjustment charge" or any other type of additional charge which is based on the amount of power or fuel purchased. Include landlord's share.

	None	Number of wells or pumps powered by type of energy used	Total cost of fuel used		Acres irrigated by type of energy used
			DOLLARS	CENTS	
a. Electricity	<input type="checkbox"/>	495	496 \$	00	497
b. Natural gas	<input type="checkbox"/>	498	499 \$	00	500
c. LP gas, propane, or butane	<input type="checkbox"/>	501	502 \$	00	503
d. Diesel fuel	<input type="checkbox"/>	504	505 \$	00	506
e. Gasoline and gasohol	<input type="checkbox"/>	507	508 \$	00	509

Item 11:

MAINTENANCE and REPAIR COSTS FOR IRRIGATION EQUIPMENT and FACILITIES ON "THIS PLACE" IN 1998

Report all expenses in 1998 for keeping irrigation equipment and facilities in working order. Include expenses for tune-ups, oil changes, and repairs to pumps, motors, pipes, canals, sprinkler systems, ditch and canal cleanout, etc.

Amount spent for maintenance and repairs of irrigation equipment and facilities in 1998 including maintenance of on-farm ditches (Include landlord's share - Give estimate if actual figures are unavailable).	682	DOLLARS	CENTS
	None <input type="checkbox"/>	510 \$	00

Item 12:

EXPENDITURES FOR IRRIGATION FACILITIES AND EQUIPMENT ON "THIS PLACE" IN 1998

Report expenditures made in 1998 for the construction of irrigation facilities and purchase of irrigation equipment and machinery on "THIS PLACE". Include estimates of expenditures made or shared with others (landlords, government agencies, etc.). Report the cost of maintenance and repairs in item 11.

	None	TOTAL EXPENDITURES		PURPOSE OF EXPENDITURE Mark (X) principal purpose		
		DOLLARS	CENTS	REPLACEMENT	CONSERVATION	NEW EXPANSION
a. Purchase of new or replacement irrigation equipment and machinery- (Include sprinklers, pipes, siphons, nozzles, pumps, motors, engines, etc., at net cost. Do not include computers.)	<input type="checkbox"/>	511 \$	00	512 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
b. New well construction or deepening of existing wells- (Include drilling costs, cost of casing, and any costs to prepare well for installation of pump. DO NOT include cost of pumps or motors.)	<input type="checkbox"/>	515 \$	00	516 1 <input type="checkbox"/>		3 <input type="checkbox"/>
c. Construction or improvement of permanent storage and distribution systems- (dams, ponds, reservoirs, permanent ditches, canals, flumes, etc.)	<input type="checkbox"/>	519 \$	00	520 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
d. Land clearing and leveling for irrigation purposes	<input type="checkbox"/>	523 \$	00		524 2 <input type="checkbox"/>	3 <input type="checkbox"/>
e. Computers for irrigation, water management, water distribution software, etc	<input type="checkbox"/>	544 \$	00	545 1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>

Item 13: IRRIGATION PRACTICES IN 1998

a. How did you decide when to apply water in 1998? - *Mark (X) all that apply.*

- 527
- 1 Condition of crop (observation)
 - 2 Feel of the soil
 - 3 Use of soil moisture sensing devices such as moisture blocks or tensiometers
 - 4 Use of commercial scheduling service
 - 5 Media reports on crop-water needs (newspapers, radio, and TV)
 - 6 Water delivered by irrigation organization in turn (no choice by water user)
 - 7 By calendar schedule
 - 8 Computer simulation models
 - 9 Other - *Specify*

b. Did you have to discontinue irrigation during 1998 long enough to effect crop yields?
(*Mark (X) all that apply.*)

- 669
- 1 YES - *If "Yes", answer the following.* 2 NO - *Go to item 14.*
- 670 (*Mark (X) all that apply.*)
- 1 Shortage of surface water (water from reservoirs, lakes, streams, water supply organizations, etc.)
 - 2 Shortage of ground water (lowering water level of wells or depletion of ground water)
 - 3 Irrigation equipment failure
 - 4 Energy price increases or energy shortage
 - 5 Poor water quality
 - 6 Loss of water rights
 - 7 Cost of purchased water
 - 8 Other - *Specify*

Item 14: OTHER USES OF IRRIGATION WATER ON "THIS PLACE" IN 1998

Was irrigation used for any of the following secondary purposes?

	None	ACRES ON WHICH APPLIED
a. Prevent freeze damage	<input type="checkbox"/>	440
b. Crop cooling to delay early budding, blooming, or to reduce heat stress	<input type="checkbox"/>	441
c. Leaching to remove salts from the soil (salinity control)	<input type="checkbox"/>	442
d. Land disposal of liquid livestock waste.	<input type="checkbox"/>	488
e. Other - <i>Specify</i> <input style="width: 200px;" type="text"/>	<input type="checkbox"/>	443

Item 15: WATER MANAGEMENT PRACTICES FOR OPERATORS USING GRAVITY IRRIGATION

Did you use gravity irrigation to irrigate any land in 1998 (*acres reported in item 4a*)

- 671
- 1 YES - *If "Yes", answer the following.* 2 NO - *Go to item 16.*

On how many acres did you use these techniques?

	None	NUMBER OF ACRES
a. Irrigation water captured for further use (tailwater pits)	<input type="checkbox"/>	672
b. Surge flow or cablegation technique	<input type="checkbox"/>	673
c. Shortening of furrow length	<input type="checkbox"/>	684
d. Limited irrigation set time or number of irrigations, to reduce water applied	<input type="checkbox"/>	685
e. Alternate row irrigation	<input type="checkbox"/>	686
f. Use of any special furrowing techniques, such as wide-spaced bed furrowing, compacted furrowing, or furrow diking - <i>Specify technique used</i> <input style="width: 150px;" type="text"/>	<input type="checkbox"/>	674
g. Use of water-soluble polyacrylamide (<i>PAM</i>)	<input type="checkbox"/>	699

Item 16: GOVERNMENT PROGRAMS

- a. During 1998, did you receive a Market Transition Payment from USDA's Production Flexibility Contract Programs, or did you participate in any Federal program that provided a marketing loan or used a quota program?

691
1 YES

2 NO

- b. In the past 5 years have you received cost-share payments for irrigation or drainage improvements from any organization? - *Mark (X) all that apply.*

698
1 USDA -- Environmental Quality Incentive Program (EQIP) or previous cost-share programs

2 Non-USDA Federal programs -- Include EPA, Bureau of Reclamation, or other programs

3 State programs, local water management or supply district programs

4 Other - *Specify*

Item 17: IMPROVEMENTS TO IRRIGATION SYSTEMS THAT REDUCE ENERGY and/or CONSERVE WATER USED IN IRRIGATION

Consider as an improvement, changes in equipment or management or management practices. For example - retrofitting a sprinkler system for low pressure operation or adopting irrigation scheduling as a management practice.

- a. Have you implemented improvements for your irrigation system on existing irrigated acres since 1994?

693
1 YES - *If "Yes", go to item b.*

2 NO - *Go to item c.*

- b. What were the results of these improvements *on a per acre basis?* - *Mark (X) all that apply.*

694
1 Improved crop yield or quality

2 Reduced energy costs

3 Reduced water applied

4 Reduced labor costs

5 None of the above

6 More time needed to evaluate improvements

- c. What are barriers to implementing improvements that might reduce energy and/or conserve water in your irrigation system? - *Mark (X) all that apply.*

695
1 Have not investigated improvements

2 Risk of reduced yield or poorer quality crop yields from not meeting water needs

3 Physical field/crop conditions limit system improvements

4 Improvement(s) will reduce costs, but not enough to cover the installation costs

5 Cannot finance the improvements, even if they reduce costs

6 Landlord(s) will not share in cost of improvements

7 Uncertainty about future availability of water

9 Will not be farming this place long enough to justify new improvements

8 Other - *Specify*

Item 18: SOURCES OF IRRIGATION INFORMATION

What are the sources of information that you rely on for guidance in reducing irrigation costs or to conserve water used for irrigation? - *Mark (X) all that apply.*

- 696
- 1 Extension agents or university specialists
 - 2 Government specialists from the Natural Resources Conservation Service (*formerly SCS*), Conservation District, or other agencies
 - 3 Irrigation equipment dealers
 - 4 Local irrigation district employees or others hired by the water supplier
 - 5 Private irrigation specialists or consultants hired by owner or operator
 - 6 Media reports or information in the press
 - 7 Neighboring farmers
 - 9 Electronic information services (*World Wide Web, DTN, Internet links to private or public data sources, etc.*)
 - 8 Other - *Specify*

Item 19: IRRIGATED LAND IN 1997

a. Was any land irrigated on "THIS PLACE" in 1997?
DO NOT answer this item if you irrigated any land in 1998.

- 528
- 1 YES - *Go to item b & c.*
 - 2 NO - *Go to item 20.*

b. Reasons for not irrigating in 1998 - *Mark (X) all that apply.*

- 529
- 1 Sufficient soil moisture - no irrigation needed
 - 2 Shortage of surface water (water from reservoirs, lakes, streams, water supply organizations, etc.)
 - 3 Shortage of ground water (lowering water level of wells or depletion of ground water)
 - 4 Irrigation uneconomical due to high fuel and power costs and/or low commodity prices
 - 5 Loss of water rights
 - 6 Sold or leased water rights or annual water allocation
 - 7 Converted to non-agricultural use
 - 9 Converted to an agricultural enterprise that does not require irrigation
 - 8 Other - *Specify*

c. Do you consider your discontinuance of irrigation to be permanent

- 530
- 1 YES
 - 2 NO

Item 20: PERSON COMPLETING THIS FORM - *Please print*

Name			Date
Telephone	Area code	Number	
_____	____	____ - _____	

WHY A FARM and RANCH IRRIGATION SURVEY?

The purpose of this survey is to provide current data about irrigation not presently available from other sources for use by-

- Legislators and policymakers for preparing irrigation-related legislation and project funding.
- The irrigation industry in determining irrigation equipment and service needs.
- Economists and farmers in studies of the economics of irrigation.
- Planners in estimating future demands on the Nation's fresh water supply.
- Hydrologists in studies of water usage.
- Forecasters in estimating future food supplies, as well as irrigation needs.

Irrigation is one of the principal uses of water in the U.S. In many areas, water is a critical factor in economic growth.

Irrigation accounts for more than 80 percent of all water consumed.

Future competition for scarce water, especially in the Western States, will be greater than ever. Since irrigation accounts for such a large proportion of total water consumed, national problems concerning water resources, such as allocation, conservation, and water quality, will have an impact on irrigation.

Your Response is Confidential

Your response to this survey is required by law (*Title 7, United States Code*). More importantly, the same law makes your report form confidential. It may be seen only by sworn National Agricultural Statistics Service employees and may be used only to tabulate totals for your county, your State, and the Nation.

Do You Need Help?

Do not hesitate to contact the National Agricultural Statistics Service if you need more help. Please use our Toll Free number 1-888-4AG-STAT.

Your Estimates Are Acceptable

Remember, in completing your report, that reasonable estimates are acceptable if records are incomplete or unavailable.

We Thank You Very Much

For the prompt return of your completed survey.

Would you like to receive a summary of the results of this survey in the mail?⁰⁹⁹
 Results will also be available on the Internet at <http://www.usda.gov/nass/>, in the fall of 1999 1 YES 2 NO

OFFICE USE	010	012	014	016	018	020	021	022
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OFFICE USE							
Respondent	Response Code	Enum.	Eval.				
1-Op/Ptnr/Mgr	930	2-Tele	931	933	011	013	015
2-Spouse		3-Int					
3-Acct/Bkpr		7-TR					
4-Other		8-IR					
		9-Inac					
S/E Name							