2007 Agricultural Water Use Survey

Interviewer's Manual

Project Code 0706

Statistics Canada Statistique Canada

Canada

2007 Agricultural Water Use Survey

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CHAPTER 1

General Information

In this chapter This chapter contains:

General Information

Introduction

This chapter contains general information regarding this survey, as well as:

- the survey's background,
- Purpose,
- sample selection,
- your role as an interviewer and the
- resources available to you.

Schedule

Activity	Date
Load application in R.O.	January 21, 2008 to January 25, 2008
Interviewer Training	January 28, 2008 to February 1, 2008
Collection	February 4, 2008 to March 2, 2008

Collection Method

This survey will be collected using a computer assisted telephone interviewer (CATI) system called Blaise

Target Response Rate

The target response rate is 80% for this survey.

Collection Number

English: STC/AGR-462-75429
French: SQC/AGR-462-75429

Voluntary

This survey is being collected on a voluntary basis.

Survey Objectives

Introduction

It is essential that you understand the purpose of the survey, how the results are going to be used and how the sample was selected, for these are the main reasons why respondents choose not to participate. Your ability to convey this information helps increase the response rate, increasing the quality of the data collected.

Background Information

Agricultural irrigation and other agricultural water uses have become important features of the impact of human activities on the environment. Nationally irrigation or the artificial watering of land, represents by far the largest agricultural water use of water.

Purpose of the survey

The objective of the 2007 Agricultural Water Use Survey is to collect quality data on

- water demands/use for various crops;
- irrigation methods being used on Canadian farms; and
- water sources for irrigation, water quality, and water treatment practices.

Who will use the survey data

The results from this survey have many uses. The reported information will help governments, producer organizations and farm operators gain a better understanding of the demand for water on Canadian farm operations.

- Statistics Canada will use the information to produce statistics on water use and water consumption by industry. All statistics are subject to strict confidentiality procedures to protect individual information.

- The information will support the ongoing reporting of the Canadian Environmental Sustainability Initiative (CESI), which contains a national water quality indicator. (CESI is a joint project of Statistics Canada, Environment Canada and Health Canada for reporting on the health of the environment in Canada, and includes the co-operation and input of all provinces and territories).

- The information will be used by Agriculture and Agri-Food Canada to report on the environmental performance of the agriculture sector, and to inform future water use policy and program development to support Canadian irrigators.

- The information will help to develop agri-environmental indicators and develop policies and programs to help manage the water supply and to help operators use this resource more efficiently.

- Federal and provincial governments, including Environment Canada, will be able to analyze water treatment practices.

Survey Sample

Target Population

For this survey, agricultural operations were selected depending on irrigation and water use data collected by the 2006 Census of Agriculture. 17,000 respondents reported either using or owning irrigation equipment in the 2006 Census of Agriculture. From that, 2,000 respondents were selected for this survey. To determine who would be included in the sample, respondents were randomly selected depending on water use and location.

Who is excluded

The following are excluded from the survey:

- institutional farms (e.g., government, university and prison farms)
- Indian reserve farms
- farms with less than $10,000 gross farm revenues
- community pasture
- only Christmas trees
- pure hatchery
- Farms in the Territories: Yukon, Northwest Territories and Nunavut.
- Provincial statistician.

Sample Distribution

The following is the sample distribution of respondents throughout Canada:

Province	Total for Collection
Newfoundland-Labrador	43
Prince Edward Island	59
Nova Scotia	105
New Brunswick	77
Quebec	251
Ontario	354
Manitoba	106
Saskatchewan	216
Alberta	374
British Columbia	410
Canada	**1,995**

Your Role as an Interviewer

Interviewer's Responsibility

Your role as an interviewer is not strictly confined to interviewing respondents.

Interviewer's Role

The following table outlines the activities you will be responsible for.

Activity	What you have to do
Collection Preparation	Interviewers are responsible for: • The training outlined in "Training" at the end of this chapter
Collection Work	• Tracing respondents • Understanding and explaining the purpose and importance of this survey, in order to increase respondent participation. • Collecting survey data • Ensuring data quality
Contact Respondent	• Verify the farm operator information • Verify the farm operation information • Collect survey data
Final Checks	Before closing the case: • Ensure all information is complete and accurate • Ensure all comments are complete, comprehensible and in the correct location
Debriefing Questionnaires	The completion of debriefing questionnaires • Debriefing questionnaires are an important feedback mechanism that enables us to improve your training and reference material, plus any subject matter issues. • They help us to identify bugs and errors in the application.

Resources

Your supervisor

Your supervisors are there to guide and assist you throughout the survey period. They are there to answer your questions and help you with any difficult situations encountered during interviewing.

Monitoring

To ensure the accuracy and quality of data collection, monitoring activities are conducted on all surveys.

Supervisors will monitor interviews, in accordance with the monitoring guidelines.

The supervisors will provide regular feedback to the interviewers.

Resources

Head office will provide you with the following supplies:

- Interviewer's manual
- Debriefing questionnaires
- Examples of all material mailed out to respondents

Regional office will provide you with the following supplies:

- Infodirect
- CD Pro-phone
- Phone books
- Internet access
- Pens, paper and other necessary supplies

Training

Training

You will be responsible for completing the following training.

Type	Description
Home Study	Prior to the classroom training session, you will be responsible for reading this manual, completing the quiz at the end, and preparing any questions you have for your trainers and/or supervisors.
Classroom Training	During the classroom training session, you will • review the manual with your trainers; • ask any question you may have; and • conduct mock interviews designed to improve your knowledge and ability to handle various situations. The mock interviews will expose you to the BLAISE application, the survey questions and the question flows.

CHAPTER 2

Guidelines and Regulations

In this Chapter This chapter contains:

Confidentiality and Privacy

Introduction

Statistics Canada places the highest importance on safeguarding the privacy and confidentiality of all respondents, and the security of the information contained in our surveys.

Respondents need to understand that the information they are providing is kept strictly confidential and there is legislation to guarantee confidentiality and privacy.

It is your responsibility to ensure all information you collect is kept confidential.

This chapter highlights the policies and guidelines Statistics Canada follow.

What does confidentiality mean?

All information collected under the authority of the *Statistics Act*, either by surveys, the census or any other source, is considered confidential. Statistics Canada does not release any information that identifies a specific individual, business, or organization.

The Statistics Act

The Agricultural Water Use Survey is a voluntary survey that collects information under the authority of the *Statistics Act*.

The *Statistics Act*

- guarantees that all personal business information will be kept strictly confidential, and
- prohibits the disclosure of any information regarding an individual business.

The Privacy Act

The respondent has the right under the Privacy Act to expect that any personal information will be kept private.

This Act protects the privacy of individuals with respect to personal information about themselves held by a government institution and to provide individuals with a right of access to their information.

Confidentiality and Privacy, continued

Special confidentiality provisions

The confidentiality provisions of the *Statistics Act* are not affected by

- the *Access to Information Act*, or
- Any other legislation.

No other government institution, not even the RCMP or the Canada Revenue Agency, has the right to see the answers given in confidence to Statistics Canada.

Oath and Affirmation of Office and Secrecy

All Statistics Canada employees are required to take an Oath or Affirmation of Office and Secrecy. By taking this oath, employees agree to never disclose any respondent information.

Your responsibility

The *Statistics Act* prohibits you from disclosing any information. You must ensure that all information you collect is kept confidential and private.

Additional guidelines

The office of the Privacy Commissioner of Canada has requested that additional guidelines be implemented to ensure confidentiality.

If you recognize the telephone number of a case as belonging to a relative, friend, co-worker, etc.:

- do not dial the number;
- record the CaseID;
- make an appointment to return it to the scheduler; and
- provide your supervisor with the CaseID immediately.

If you did not recognize the telephone number but discover that you know the respondent, you must offer the respondent the option of having another interviewer call to collect the data.

Penalties

Section 30 of the Statistics Act makes it a criminal offence for any person having taken the Oath or Affirmation of Office and Secrecy to:

- Willfully make a false declaration or statement on survey documents.
- Obtain or seek to obtain information that the person is not duly authorized to obtain.
- Fail to keep secret the information gathered.

A person convicted of an offence is liable, on summary conviction, to a fine of up to $1,000, to a prison term of up to six months, or both a fine and imprisonment.

Penalties for refusing

Never discuss penalties for refusing to participate with the respondent.

Refer to your "*Introduction to Interviewing*" booklet for examples on how to deal with questions from respondents concerning penalties.

Remember, our objective is to collect reliable information. For this we depend on the cooperation and goodwill of all respondents

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Refusal Policy

Interviewers and Regional Office staff must adhere to Statistics Canada's Refusal Policy.

After providing two clear refusals, this policy states that a respondent shall not be contacted again. A clear refusal happens when a respondent directly informs an interviewer that they do not want to participate in the survey. This can be provided at the time of the interview or in a call/letter to the Regional Office.

Security Guidelines

Introduction

The security of data is very important to Statistics Canada.

Security guidelines

The following are Security Guidelines that ensure respondent information is kept confidential.

Do	Do Not
• Log off your computer when unattended • Store confidential data in a locked container when unattended. • Identify printouts, diskettes, CD ROMs or files as confidential by labeling it "protected". • Report missing confidential data to your supervisor immediately. • Receive data by fax, **only** when respondent consent is given.	• Discuss any information about your interviews with any unauthorized persons (e.g. family, friends, and neighbours). • Delegate any of your work as an interviewer to another person. • Permit any unauthorized person to have access to confidential material.

Official Language Responsibilities

Introduction	Statistics Canada has the responsibility to ensure language rights are respected in all public interactions.
The Official Languages Act	The *Official Languages Act* ensures that residents of Canada receive services in the official language (English or French) of their choice.
Respondent language of choice.	If you are unable to conduct an interview in the official language of a respondent's choice, make an appointment for an interviewer to call back in the requested language.

CHAPTER 3

How to Prepare for an Interview

In this chapter This chapter contains:

Preparing For the Call

Introduction

You will be telephoning respondents to complete the survey or to schedule an appointment for a later date.

If you schedule a call for a later date take the opportunity to explain to the respondent what documents and information you require and prepare the respondent for your next call.

Procedures Manual

Make sure that you have your Procedures Manual ready and in front of you when you call the respondent.

Contact Information

You may have to update contact information in the Farm Register. Refer to the Appendix C.

When leaving a message with the respondent

When leaving a message with the respondent, always leave the reference number (AgOpID).

This will save time and cause less confusion when the respondent calls back.

Interviewing Procedures

Introduction

Interviewing procedures are techniques used for obtaining and conducting the telephone interview.

Common Sense Practices

To avoid disclosure, or the perception of disclosure, of confidential information obtained from respondents, follow these guidelines.

Do	Do Not
• Make sure you are speaking with the appropriate respondent prior to discussing the survey.	• Reveal the name of the survey or any survey specific details until you are speaking with the appropriate contact.
• Ensure that you adhere to the confidentiality provisions under the *Statistics Act*.	• Discuss respondent information where individually identifiable data may be overheard by anyone who is not a Statistics Canada employee.

Do not Anticipate Responses

Do not answer for the respondent. A reply that appears obvious must still be confirmed by the respondent.

Be Tactful

Do not enter into a discussion about politics or other controversial topics. If necessary, inform the respondent of this restriction.

Probing Techniques

Introduction

Interviewing is not just a matter of asking questions and obtaining answers.

Sometimes respondents may not know how to answer a question, or the information they give may not be the information that is needed.

In these situations, probing is a technique that experienced interviewers often use to obtain the required information.

Why Probe?

You will probe to obtain specific information or to have a respondent elaborate on or clarify a response.

Probing motivates the respondent to provide the type of information needed to answer the question. A good probe must be controlled and neutral.

You are encouraging the respondent to provide more information and must be very careful how you do it.

Types of Probes

The table below lists the four basic types of probes and their desired results.

Type of Probe	Desired Result
The pause	The pause informs a respondent that he/she hasn't answered the question satisfactorily and that you are waiting for an appropriate answer.
Re-reading the question	Sometimes a respondent will not understand a question, will get off topic or will not give you an appropriate response. Re-reading the question, emphasizing the important words is the simplest way of getting the required information.
Asking for more information	Respondents may not always know how much or what kind of information is required. They need you to let them know how detailed their answers should be. In this situation, simply ask: "Can you tell me a little more about that?"
Zeroing In	You can help them zero-in on the answer by asking questions like: "Does the number reflect only the livestock for this farm?"

Effective Interviewing Skills

Introduction

Using effective interviewing skills can help you remove barriers to communication. It is vital to build a good relationship with the respondent and create a comfortable environment.

Establish a rapport

It is important to put the respondent at ease and gain their confidence. You must set up a friendly atmosphere with the respondent and get him/her to cooperate in giving you the required information. A respondent usually reacts more to the rapport with the interviewer than to the content of the questions being asked.

A positive, professional and receptive attitude on your part will create an atmosphere conducive to the collection of accurate, complete and relevant answers to questions.

Minimizing Call-backs

Avoid questions that can be answered "No" since such questions set you up for refusals. Ask questions positively.

- Approach each interview as though it will take place immediately.
- Tell the respondent how long the interview will take.
- Never assume the respondent is too busy.
- Arrange to call at a more convenient time only if the respondent suggests this.
- When you make an appointment, you suggest the time and day and make sure you call back at the agreed time.

Answer Respondent Questions

It is important to listen to respondents and answer only what he/she has asked. Unsolicited information may bore the respondent, may be misunderstood, or may be interpreted as "justifying".

Practice active listening and let them know you are listening. Use words like "I see". Your self confidence, the ability to make known the importance of the survey, and your belief in your role are all sensed by the respondent and will influence your control of the interview.

Minimizing Refusals

Introduction

You may encounter difficult situations where respondents do not want to cooperate or participate in the survey. You must make every effort to ensure that you secure an interview with each respondent. In order to be prepared you need to know your material well.

Respondent refuses to participate

When respondents refuse to participate in the survey, it is usually because they do not have enough information about the survey or the timing is wrong.

You must be well prepared to answer questions about the survey and about Statistics Canada.

You need to be sensitive to the respondent and apologize for bad timing and suggest a call-back time.

Respondent is not interested

In cases where the respondent is not interested, pick a topic and begin to discuss it. The topic could be time, confidentiality, the purpose, or the importance of the survey. This usually encourages the respondent to express a more specific concern which you can deal with directly.

Speak directly to the respondent

You must ensure that you are talking to the selected respondent. Do not accept anyone else's word that this person is unwilling to participate.

Listen carefully

Be a good listener. Find a common ground so that you can relate to the respondent. Focus on the respondent's concern and determine the reason why he/she does not want to participate.

Negotiate

Suggest that you will ask a few questions so that the respondent gets a feel for the type of questions in the survey. Once the interview begins, the respondent will be more at ease and may be more willing to cooperate.

Contact with a Respondent

Introduction

All agricultural operations in Canada are registered in the Farm Register. This register is an important tool used by many Statistics Canada surveys. This survey will correct or change information contained in the Farm Register.

What you will do

When you contact the respondent

- Introduce yourself,
- Confirm the farm is still in operation,
- Give the reason for your call and ask for the contact person,
- Confirm the introductory letter was received,
- Verify the farm's information
    - Legal name
    - Farm operating name
    - Is the location still in operation?
- Verify the contact information, and
- Conduct the interview, or
- Set up an appointment for a later date.

Introducing yourself to the Respondent

Introduction

Your objective is to collect the data. You will first introduce yourself to the respondent and confirm that you have contacted the correct person.

Confirming the farm's information

Once you have introduced yourself to the respondent, you will confirm the farm's name.

What you will say	What you will do
Hello, this is YOUR NAME from Statistics Canada. Is this [contact's name]?	• Introduce yourself as a Statistics Canada employee, • Verify the farm operation name.
If	**Then**
The contact confirms you have reached the correct farm operation	Confirm if this respondent is the "Best person to provide information on irrigation practices and water use".
If the contact indicates you have not reached the correct farm operation	Thank the respondent for their co-operation.

Most knowledgeable person to provide information

After you have confirmed that you have reached the correct farm operation, you will

- explain the purpose of your call, and
- determine if you are speaking with the most knowledgeable person to provide information about irrigation methods and water use practices.

If the respondent	Then
Is the best person to provide information	Continue with the interview
Is not the best person to provide information	Ask for the name of the alternate operator. If that person is not available make an appointment to call back later (if possible). If that person is available, continue with the interview.

Refer to Chapter 4 'Confirming the most knowledgeable respondent' for more information.

Introducing yourself to the Respondent, continued

Respondent must be a farm operator

Only a farm operator can complete this survey. If a farm operator is not most knowledgeable about water and irrigation methods used on the operation, you are not able to complete this survey.

EXAMPLE: If the farm operator contracted his irrigation out to another farm/company.

Speaking to the best person

To confirm that you have reached the correct respondent follow the process outlined in the table below.

If	Then
The right person is available and they take the call.	Reintroduce yourself and the survey.
If the right person is not able to take the call	Make an appointment to call back.

Purpose of your call and additional questions

Once you have the right contact person on the phone. You will explain the purpose of your call and ask the respondent to answer some additional questions regarding the operations for their farm.

What you will say	What you will do
The purpose of this phone call is to collect information on the Agricultural Water Use Survey. All the information you provide will remain strictly confidential.	Give the respondent the purpose of the phone call.
If the respondent	**Then**
Is willing to answer your questions	Continue with the interview.
Cannot answer questions now	Make an appointment to call back.

When to make an appointment to call back

If you determined that it is not possible to speak with the right person to provide information about the farm's operations:

You must make an appointment for a mutual time to call back.

Introducing yourself to the Respondent, continued

Thank you for your cooperation

You have determined that the best person to provide information about the farm you have contacted is not available.

You will thank the respondent and make an appointment to speak with the person who can provide that information.

Not involved in the farm industry (out of scope)

If a respondent answers “No” to question 1 (In 2007, did this operation produce or grow field crops, hay, improved pasture, vegetables, fruits, nursery products or sod?), the BLAISE application will skip all water use questions and proceed to the agreement to share section of the survey.

CHAPTER 4

Conducting an Interview

In this Chapter This chapter contains:

Continued on the next page

GIRO

Introduction

This chapter is designed to help familiarize you with the BLAISE application and the steps and procedures involved in conducting an interview.

BLAISE is the computer application used by Statistics Canada to collect survey data.

How to access the BLAISE application

GIRO is part of the BLAISE application.

The following is a list of steps required when logging into GIRO and selecting a case:

Step	Action
Step 1	Click on the following icon in order to open the Blaise application: 
Step 2	Select a language by clicking on either ‘English’ or ‘French’
Step 3	Select an Environment. Click on either ‘Training’ or ‘Production’, then ‘Start’.
Step 4	Select a Survey Name. In this case select ‘Agricultural Water Use Survey’, then ‘Select’.
Step 5	Select the method for which you want to select a case. **If you select** — **Then** CATI — The scheduler will select a case that needs to be called Get Case — A screen will appear that will allow you to enter the case number of your choice.

Once a case as been selected, the make dial screen appears and you are now ready to conduct an interview.

The Make Dial Screen

The Make Dial Screen

The 'Make Dial Screen' contains all relevant information regarding each case. It contains

- the contact's phone number, name and address,
- the time zone and time difference,
- the language,
- the case status and
- notes left by other interviewers.

Zoom

The ‘Zoom’ button is located on the bottom right hand corner of the Make Dial Screen.

By clicking on ‘Zoom’, you will be able to see more information regarding previous calls.

You will see

- when and if an appointment has been made,
- which interviewer called last,
- the date of that call,
- the time that call took place and
- the result of that call.

Entering a Case

To enter a case, click ‘OK’ on the Make Dial Screen.

The Call

Making a Call

The following is a list of screens that require information before you can start an actual survey questions:

Screen	Purpose
Screen 1	Asks you to select the telephone number you wish to dial.
Screen 2	Asks you to select the out come of that call. E.g. Operator is available, or it's the wrong number.
Screen 3	Asks you to confirm if the contact is the MAIN operator.

Once you have established that you are speaking with the best person to complete the questionnaire, the application will ask you to confirm all of the operator and operation information (update the Farm Register).

The Most Knowledgeable Respondent

Confirming the most knowledgeable respondent

The best person to complete this survey may not be the main farm operator.

The Intro.Intro_1 screen confirms if the respondent is most knowledgeable about water use.

"This survey asks details about water use and irrigation methods used for crops on this operation in 2007.

Are you able to answer detailed questions on water use and irrigation methods for this operation such as: volume or rate of application of water used on crops and irrigation methods used in 2007?"

If	Then
The respondent answers "Yes"	Complete the interview with this respondent.
The respondent answers "No"	• Probe to confirm if the operator can obtain the information or if another operator would be able to provide this information • The CONFKNOW Screen will appear

The CONFKNOW screen

The CONFKNOW Screen confirms if the most knowledgeable contact is another operator.

"If not the most knowledgeable about water use:

Is there another operator who would be able to provide this information on irrigation methods and water use for crops on this operation?"

If	Then
The respondent answers "Yes"	Refer to "Another operator most knowledgeable".
The respondent answers "No"	Refer to "No knowledgeable operator available".

Another operator most knowledgeable

If the respondent answers “Yes” at the CONFKNOW Screen, follow the process below.

Situation	Action
If the most knowledgeable operator is available at that moment	Suppress the edit by clicking ‘Suppress’ on the edit screen and continue the interview with the respondent.
If the most knowledgeable operator is not available but you are able to confirm an appointment time/date	• Close the edit • Enter the new contact information in the notes (F4) and set up an appointment using the new contact’s information.
If the most knowledgeable operator is not available and you are not able to confirm an appointment time/date	• Close the edit • Enter the new contact information in the notes (F4) and suspend the case in order to exit. • To suspend the case click the Suspended_Interupted tab.

Refer to Chapter 3 ‘Most knowledgeable respondent to provide information’ and ‘Respondent must be a farm operator’ for more information.

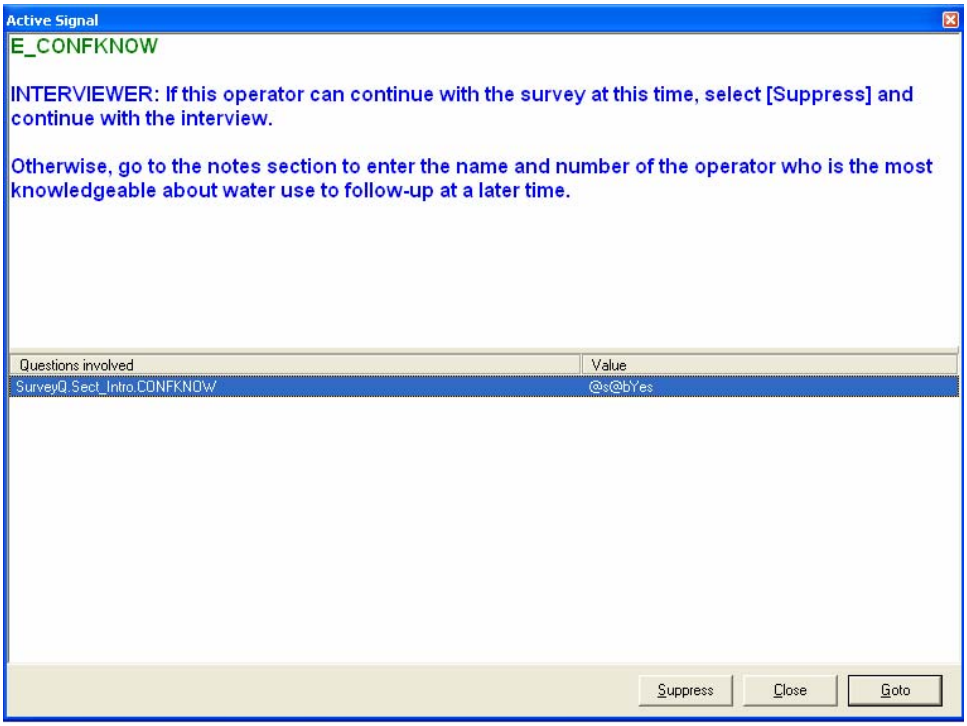
No knowledgeable operator available

The following table outlines the steps to take when no knowledgeable operator is available to do the survey.

Step	Action	
1.	Select the “No” option on the CONFKNOW screen. Result: a hard edit is displayed.	
2.	Confirm if the respondent is able to obtain the irrigation data before the end of the survey.	
	If	**Then**
	The respondent can obtain the irrigation data before the end of the survey	Continue to step 3.
	The respondent cannot obtain the irrigation data before the end of the survey	Go to step 5.
3.	• Determine when the respondent can obtain the data. • Ask the respondent if they would like another respondent letter faxed to them to assist them in obtaining the data.	
	If	**Then**
	The respondent wants the respondent letter faxed to them	Arrange to have the questionnaire faxed to the respondent. Continue to step 4.
	If the respondent does not want the questionnaire faxed to them	Continue to step 4.
4.	• Click ‘Close’. • Make a note of why you cannot collect the data immediately (F4). • Make an appointment to call back the respondent. • Exit the case.	
5.	Highlight the “Screen3_Intr.Intr” option on the edit message.	
6.	Click ‘GoTo’.	
7.	Select Option 6 “No contact for the duration of the survey” option on the Screen3_Intr.Intr screen.	
8.	Make a note of why you cannot collect the data (F4)	
9.	Exit the case.	

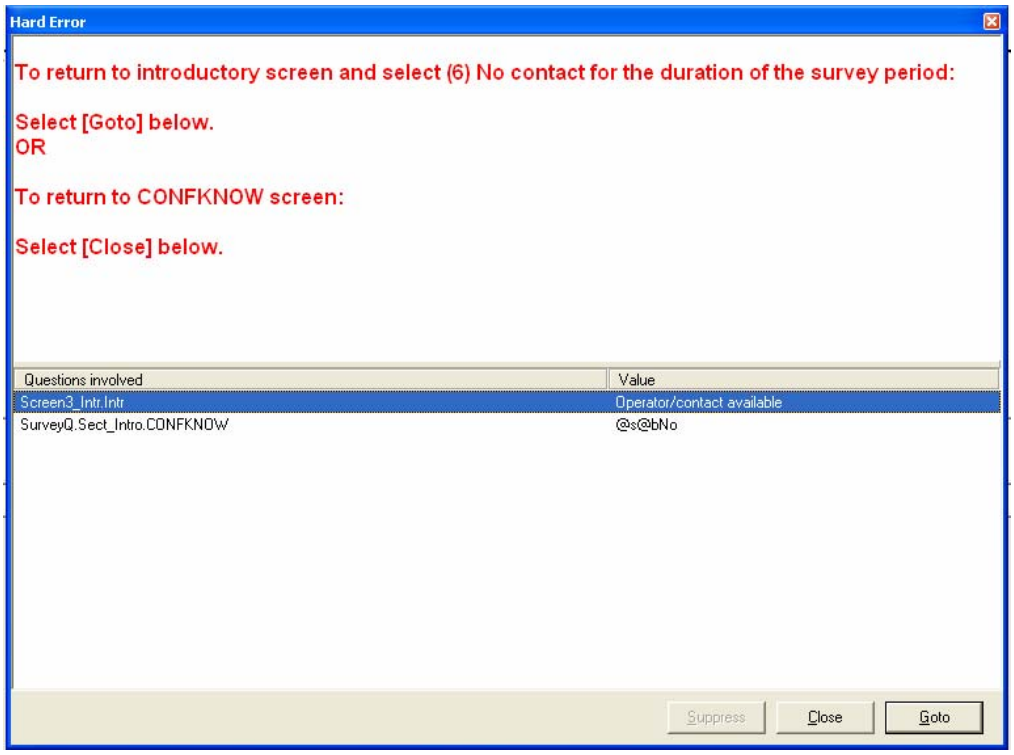
Edit: CONFKNOW response is "Yes"

If a respondent answers "Yes" to the CONFKNOW screen, the following edit will trigger.



Edit: CONFKNOW response is "No"

If a respondent answers "No" to the CONFKNOW screen the following edit will trigger.



Updating the Farm Register

Updating the farm Register

When confirming the operator and operation's information, only make changes when the information on the screen is incorrect.

The current farm information will be located on the left side of your screen. Enter any updates to the right hand side of the screen.

If	Then
There is no need to update the information	Press enter to move to the next item
The information needs updating	Enter the new information on the right hand side of the screen, directly across from the old information.

If the contact is not the main operator

If the contact for this survey is someone other than the main operator, do not enter the new contact information into the Farm Register.

Follow this table if the contact for this survey is someone other than the main operator.

Step	Action	
Step 1	Enter the new contact information in the interviewer notes	
Step 2	**If**	**Then**
	the new contact is available	Continue with the interview
	the new contact is not available	Schedule an appointment to call back later.

Duplicate: definition

When multiple AgOpID's have the same operation information.

What to do with a duplicate

If you confirm that there is a duplicate case, select option 8 at the display screen (screen 2): 'Duplicate Record'. If the duplicate has been surveyed, enter the AgOpID and follow the screens until you exit the case. If the duplicate has not been surveyed already, complete the interview and code the other AgOpID as a duplicate.

Warning

Cases can often be mistaken as duplicates when multiple operations are run by the same operator. This does not constitute a duplicate.

If an operator operates more than one operation	Then
And only one operation is in this survey sample	Ensure that the collected data only refers to the operation selected by this survey.
And has multiple operations in this survey sample	Collect separate data for each operation.

More information

For more information on updating the Farm Register refer to Appendix C.

Survey Text

Text

Throughout the survey, the following procedures are to be followed:

Text in **BOLD BLACK -** To be read exactly as it appears**.**

- If a respondent does not understand a question, repeat the question. If the respondent still doesn't understand the question, you can paraphrase the question or give an example provided you do not change the meaning of the question, or suggest an answer.
- Refer to the Help Text if definitions are required in order to better explain a question.

Text in REGULAR BLACK – only to be read if necessary

Text in BLUE **-** Messages to the interviewer or crop/unit of measurement/irrigation methods list/Yes, No responses**.**

- Not to be read to respondents.
- Always follow the instructions when reading the questions.

All response categories in black font are to be read to the respondent.

Comments should be used to clarify complicated answers. Refer to Chapter 5.

If a respondent does not have specific data about a particular question, ask for their best estimate.

Help Text

The Help Text contains definitions for the terminology used in this survey. You can access the Help Text by hitting the F1 key.

Making Appointments

Introduction

Make an appointment when a respondent is not able to complete the interview at the time of the call.

Appointment Sections

The appointment screen is comprised of three sections:

- date,
- time, and
- summary.

Date Section

In this section, select the date requested by the respondent. You have four date options:

- exact date
- no date
- period
- weekday

NOTE**:** If you select Exact Date, double click the selected date.

Time Section

In this section you will select the time of the appointment requested by the respondent. You have three options;

- exact time
- day part
- no time

Summary section

This section will highlight the appointment date and time, and it will notify you if the appointment is invalid due to time zone differences.

Steps for setting up an appointment

The following table outlines the steps for scheduling an appointment.

Step	Action
Step 1	Open the appointment screen by selecting the Appointment Tab
Step 2	Select a date 'type'
Step 3	Highlight a date, or group of dates as per the respondent's request
Step 4	Select a time 'type'
Step 5	Enter a time, or time frame as per the respondent's request
Step 6	Press okay, closing the appointment screen
Step 7	Confirm which number should be used when calling back. It can either be a number already listed or a new number
Step 8	Confirm to whom the appointment should be sent. It can be sent back to anyone within your group, or if you prefer, it can be sent back to yourself
Step 9	The next screen provides you with the opportunity to enter the reason for the appointment.
Step 10	Hit enter until you scroll down to the line called 'acf91'
Step 11	Enter 1 in this field in order to save your notes.

Time Zones

Blaise automatically adjusts the time zones so that the interviewer does not have to calculate time zone differences.

EXAMPLE: If someone in Ottawa calls a respondent in Alberta, and the respondent requests that he or she call back at 2 pm, when setting the appointment, the appointment should be set for 2 pm.

Office Hours

When setting an appointment be aware of office hours. If a respondent requests a call outside Statistics Canada's office hours, a new time needs to be negotiated.

Edits

Introduction

The BLAISE application has edits that check for omissions and inconsistencies with in the information being entered.

It is important to ensure that the data transmitted to head office are accurate and complete, and that any irregularities are explained.

This chapter will help you ensure that the data is as accurate as possible.

Edits

Edits are quality checks performed by the BLAISE application to ensure that data collected is valid and consistent with previously entered data.

Resolving Edits during Collection

Purpose

The edits ensure that all data provided during the interview meets quality standards set for the survey. Every attempt should be made to ensure all edits are confirmed or resolved before the case can be coded as complete and transmitted to head office.

Note

If the respondent is unable to provide data for a particular question, enter comments in the survey data comments tab explaining the situation. These comments are sent to head office and will help when the data are analyzed.

Procedure

If an edit appears, confirm the data with the respondent using the process outlined in the table below.

If	Then
The response is accurate	Select ‘suppress’ then ‘confirm’
The response is incorrect	Select the question with the error, click ‘go to’ and correct the incorrect data.

Enter comments to explain edits that are confirmed instead of corrected.

Exiting the Blaise System

Exiting the Blaise system

To prevent problems with the BLAISE application you must be certain to exit the application properly. The following table outlines the proper steps for exiting the BLAISE application.

Step	Action
Step 1	At the Make Dial screen, **CANCEL** the new questionnaire
Step 2	**EXIT** the Blaise Data Entry page
Step 3	**CLOSE** the Select a Function screen
Step 4	**CLOSE** the Select a Survey screen, and
Step 5	Select **QUIT** from the Settings screen

If you exit in any other way, the system will freeze and you will have to contact your supervisor in order to correct the situation.

Warning

When exiting in the middle of a case, avoid suspending the case (F10).

Doing this will cause the case to be coded as either a 'Partial' or 'Refusal'.

Senior interviewers will then only have once chance to complete these cases before the case is sent to head office.

Make an appointment in order to exit while inside a case.

CHAPTER 5

Comments

In this chapter This chapter contains:

Overview

Introduction

Comments are a tool used to explain complicated situations within the survey data.

Head office uses comments to understand complicated and complex survey data. To assist in this, please ensure all comments are complete, comprehendible and in the correct location.

This chapter highlights the 3 different comment areas used to complete Agricultural surveys.

Different comment areas

The three different areas to record comments are the

- Farm Register comments,
- Survey data comments and
- Shuttle comments

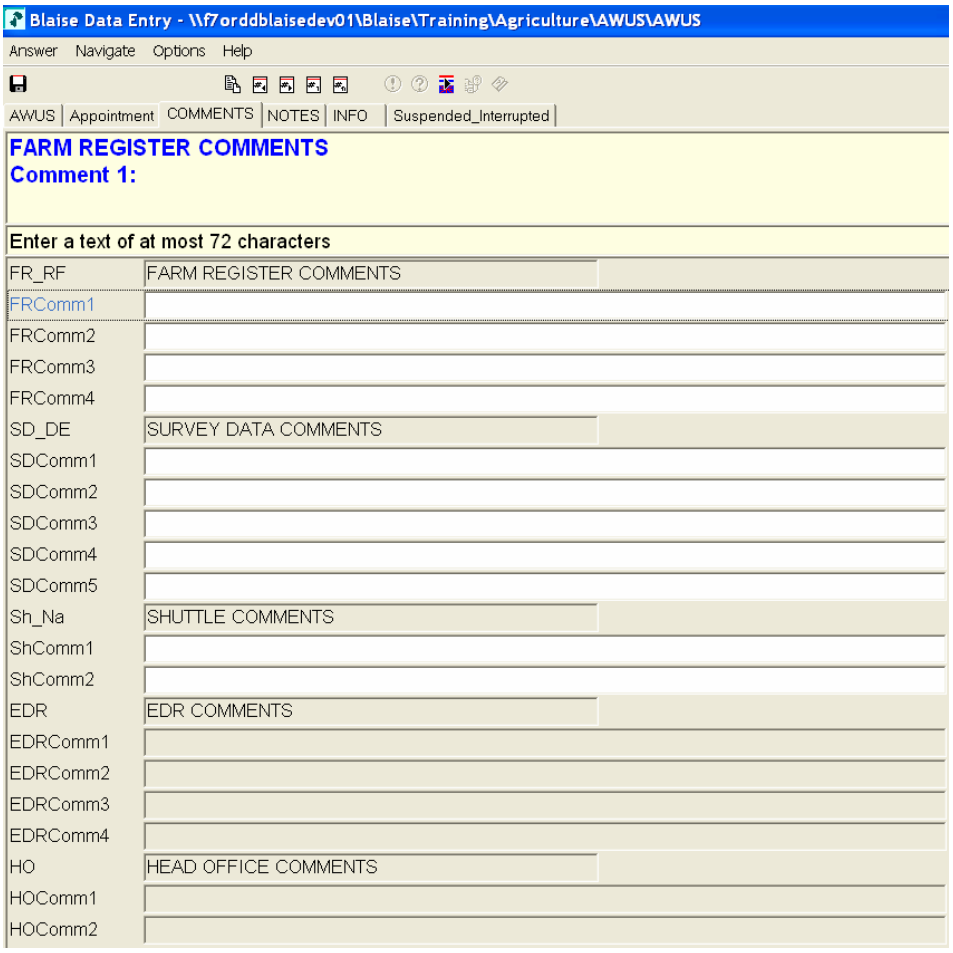
Comments must be specific

When entering a comment regarding a specific question or cell number, make sure you include the specific question and/or cell number in the comment.

Where to Record Comments

Image of the three comment areas

The following image is a screen shot of the comments tab.



Warning

It is very important that you enter comments in their appropriate area. Once the survey is sent back to head office, the comments are separated and sent to different sections.

Reviewing the three comment areas

The following table describes what type of information should be entered in each comment area.

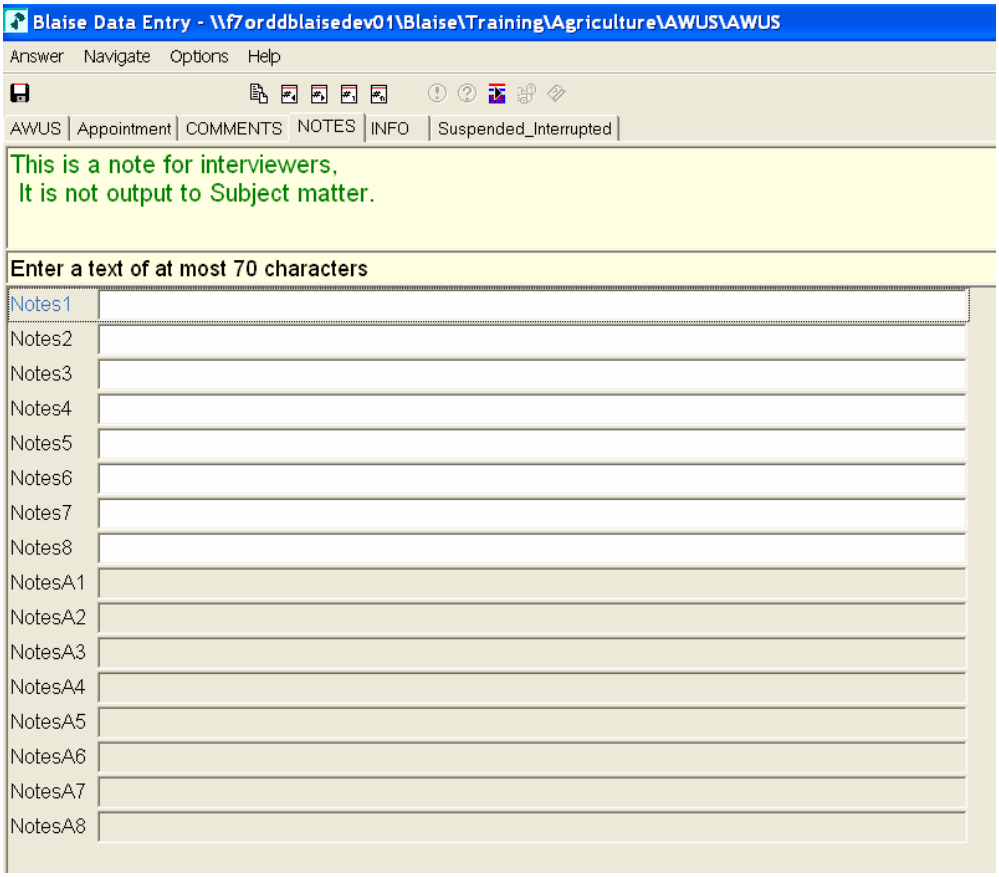
Comment area	Purpose
Farm Register	To help update the Farm Register with changes in operating status and administrative updates, including name, address and telephone number. Information you should enter in the Farm Register Comments include • changes in operating status, • refusals, • amalgamations, • duplicates or • untraceable units. EXAMPLE: If an operation has a new operator or phone number, the new information should be entered in the Farm Register Comments Area.
Survey Data	To help the Agriculture Division understand complicated data. EXAMPLE: Respondent's irrigation equipment broke down, therefore total water use is only for two months, instead of four months.
Shuttle comments	Shuttle comments are permanent comments that stay with a unit or case from one agricultural survey to the next. They are used to explain respondent related information to future interviewers. Situations where you enter data in the Shuttle Comments include • the best time to call; • the name of the person to be called; • call the telephone number in the barn; or • any pertinent information that might be helpful for a subsequent interviewer. EXAMPLE: If a respondent is only available in the early afternoons, or requires you to speak slowly and loudly, this information should be entered in the Shuttle Comments Area.

Notes to interviewers

Notes to the interviewers are for the duration of the survey only and are erased automatically at the end of the survey.

An example of a typical interviewer note would be, “Respondent will return from holidays next Monday”.

Interviewer notes should not be entered using the comments tab. You can access and enter interviewer notes by selecting the “Notes” tab on the BLAISE screen.



CHAPTER 6

Questionnaire Status

In this chapter This chapter contains:

Overview

Introduction

This chapter will define the various Final Status Codes for this survey.

Final Status Code

All questionnaires are assigned a final status code. The BLAISE application automatically assigns a final status code based on the entries made for each case.

Outcome Codes

The questionnaire status classifies the questionnaire according to the outcome of the interview:

- Complete (QCC = 1)
- Refusal (QCC = 2)
- No Contact (QCC = 3)
- Partial (QCC = 4)

Status Codes

Complete

The survey is considered a "**Complete**" when

- you contacted a knowledgeable operator and have completed the questionnaire.

The following situations define a completed questionnaire:

- Question 1: In 2007, did this operation produce or grow field crops, hay, improved pasture, vegetables, fruits, nursery products or sod?

  Answer: No (3)

  OR

- Question 2a: In the 2007 growing season, did this operation use or apply water for irrigation or watering of crops? AND question 2b: In the 2007 growing season, did this operation use or apply water for increasing soil moisture content?

  Answer: Both equal No (3)

  OR

- All of question 7 OR question 9 are complete with valid answers and question 20 is not blank.

Refusal

The survey is considered a "**Refusal**" when the respondent

- refuses to provide any information about the farm,
- does not answer questions 1 – 3 or
- is unwilling to complete the questionnaire.

NOTE: A respondent has to refuse twice before a case can be considered a refusal. Refer to 'Refusal Policy' in Chapter 2 for more information on refusals.

Converting refusals

The following table outlines when a respondent might refuse to do the survey and what you should do to attempt to convert that refusal.

If	Then
At the beginning of the interview, the respondent refuses to provide any information,	• Try to gain the respondent's cooperation, by asking why he or she is refusing. Often respondent refuse because they don't see the relevance in participating. Explain the purpose of the survey and the importance of their participation. (see chapter 1 for this information)
During the interview, the respondent refuses to provide any further information,	• Try to persuade the respondent to continue by emphasizing the importance of complete information. • If close to the end, inform the respondent that the interview is almost finished if you could just have a few more minutes of their time. • If necessary, offer to reschedule
The respondent refuses to answer a specific question,	• Explain to the respondent the importance of full and accurate information.

If the respondent is unwilling to participate, provide comments in the Farm Register Comments Area. Refer to "Reviewing the three comment areas" in chapter 5.

Reasons why respondents refuse to participate

The following is a list of commonly stated reasons for refusing to participate:

- Farm operator is too busy to answer any questions.
- Farm operator refused to answer any questions without partner's consent. Partner is away until after the survey period.
- Farm operator feels he has done too many surveys.
- Farm operator refused to do the survey over the telephone; he says he's on a party-line.

No Contact

A survey is coded "**No Contact**" when you are unable to contact the operator or any other eligible respondent throughout the survey period.

EXAMPLES:

- Everyone in the household was temporarily away during the survey period;
- You were unable to contact any knowledgeable person;
- Unusual circumstances (e.g., death, illness, fire, language problems) made the interview impossible;
- The telephone number was no longer in service and a new listing could not be traced.

Partial

The survey is coded a "**Partial**" when you have started an interview, but are not able to complete it.

Partial cases are only followed up once by a senior interviewer and if not completed, will be coded as refusals.

CHAPTER 7

Frequently Asked Questions

In this Chapter This chapter contains:

Overview

Introduction

Respondent relations play a crucial role in achieving our target response rate of 80%. It is important for respondents to know the importance of their participation both for the quality of data and for themselves as members of the Agriculture sector. As an interviewer, the better you understand the survey the more confidence you'll have to answer respondent questions and the better prepared you'll be to explain the importance of the survey.

This chapter gives you examples of questions commonly asked by respondents. Familiarize yourself with the answers so that you can encourage participation and successfully complete your interviews.

Respondent Relations

Respondent relations are key to a successful survey. The more knowledgeable and comfortable you are with the survey concepts and purpose, the better you'll be able to explain the importance of this survey. The more you understand the survey, the better the response rate and quality.

- Your knowledge increases the respondents' knowledge.
- Respondent knowledge increases response quality.
- Response quality increases the overall survey quality.
- Survey quality means better information for respondents and policy makers.
- Better information increases respondent trust and co-operation.

Frequently Asked Questions

What is the purpose of the survey?

The objective of the 2007 Agricultural Water Use Survey is to collect quality data on:

- Water demands/use for various crops;
- Irrigation methods being used on Canadian farms;
- Water sources for irrigation, water quality, and water treatment practices.

Who uses this information?

The results from the proposed survey have many uses. The reported information will help governments, interest groups and farm operators gain a better understanding of the demand for water on Canadian farm operations.

- Statistics Canada will use the information to produce statistics on water use and water consumption by industry. All statistics are subject to strict confidentiality procedures to protect individual information.
- The information will support the ongoing reporting of the Canadian Environmental Sustainability Initiative (CESI), which contains a national water quality indicator. (CESI is a joint project of Statistics Canada, Environment Canada and Health Canada for reporting on the health of the environment in Canada, and includes the co-operation and input of all provinces and territories).
- The information will be used by Agriculture and Agri-food Canada to report on the environmental performance of the agriculture sector, and to inform future water use policy and program development to support Canadian irrigators.
- The information will help to develop agri-environmental indicators and develop policies and programs to help manage the water supply and to help operators use this resource more efficiently.
- Federal and provincial governments, including Environment Canada, will be able to analyse water treatment practices.

Frequently Asked Questions, continued

How will I benefit from the survey?

The data will benefit agricultural producers: the survey results will be used to estimate the current and future water needs of the agricultural industry; to develop programs and management practices to help operators use this resource more efficiently; and to develop water use indicators to assess how the agricultural industry uses water.

Will the information I provide be used for regulatory activities?

The confidentiality of the data collected by Statistics Canada under the authority of the Statistics Act (RSC 1985) is fully guaranteed. The Statistics Act also dictates that data provided by respondents will be used for statistical purposes only.

Also, the Agriculture Water Survey is subject to Section 12 of the Statistics Act which allows for sharing of survey information with other agencies where respondents agree to share their information, in order to reduce costs and duplication of surveys. The use of the data by Agriculture and Agri-food Canada, provincial agriculture departments and Environment Canada is subject to the same provisions of the Statistics Act, and therefore all information will be used for statistical purposes only and not for regulatory activities.

Am I obligated to take part in the survey?

Your participation in this survey is voluntary, however your cooperation is important to ensure that the information collected in this survey is as accurate and as comprehensive as possible.

Our objective is the collection of reliable accurate information on Canadian growers' water use. For accurate information on Water Use practices, we need the co-operation of growers, like you.

What is the penalty for refusing to co-operate?

There is no penalty for refusing to co-operate, but we would appreciate your co-operation in completing the survey.

What if I refuse to co-operate?

There is no penalty for refusing to co-operate, but we would appreciate your co-operation in completing the survey.

Frequently Asked Questions, continued

Is the information I give you kept confidential?

Yes. Stringent precautions are taken during the collection and processing of survey information to ensure that your answers remain strictly confidential.

Once processed, your answers are combined with others and the results are issued in a summary format such as graphs, charts and statistical tables. Your answers cannot be traced back to you as an individual.

All information collected will be protected by the Statistics Act and will be subject to Statistics Canada's confidentiality policies; therefore, no information that can identify the source will be released.

Who has access to this information?

Your specific questionnaire will not be released to anyone outside Statistics Canada without your consent. Strict precautions are taken in the collection, processing and dissemination of survey information to ensure that your answers remain strictly confidential. Your data will only be published in combination with data obtained from other farm operators in the survey in the form of graphs, charts and statistical tables and cannot be linked back to you.

Agriculture and Agri-Food Canada, provincial departments of agriculture, and Environment Canada have entered into data sharing agreements with Statistics Canada to receive data files once identifiers have been removed, for respondents who agree to share their information.

Statistics Canada and the other agencies are obligated to guarantee the confidentiality of your data. The names and addresses of individual farmers are not shared with the other agencies.

When will the survey results be available?

The data will be made available initially through a data availability announcement in *The Daily* in the summer of 2008.

Frequently Asked Questions, continued

How was I chosen for this survey?

You have been randomly selected by Statistics Canada to participate in this important initiative.

A sample of about 2,000 farm operations was selected from those that reported irrigating or owning irrigation equipment in the 2006 Census of Agriculture. Your information is important, as you represent many other crop growers, and cannot be left out or replaced if the survey is to be truly representative.

Where did you get my name and telephone number?

We obtained your name and telephone number from our Farm Register. This list is protected by the Statistics Act and is accessible only to employees at Statistics Canada who need access to fulfil their job requirements.

Can't you get this information from another source?

The information we seek must be up to date and representative of your farm operation and other farms with similar characteristics in the sample during a given time period. The Information we are asking on water used for irrigation is not available from other sources.

Why so many agricultural surveys?

Agriculture is a very important aspect of the economy at the national, provincial and local levels. As a leading industry, it is not surprising that many surveys are conducted by organizations on agriculture other than Statistics Canada.

While Statistics Canada makes every effort possible to keep the number of contacts with a farm operator to a minimum, some surveys need to be conducted on a regular basis because of the effect that quick or unexpected changes in the industry can have on the economy.

How do I know you are who you say you are?

You can call the National Help desk for Statistics Canada toll free at 1-800- 236-1136 to confirm that this is a legitimate survey and that I am an employee of Statistics Canada. Your call will be forwarded to the regional office responsible for the survey collection in your area to verify that I am a Statistics Canada employee. Or call my supervisor directly: _____.

Refer to Collection Number:

English: STC/AGR-462-75429

French: SQC/AGR-462-75429

I don't like doing surveys over the phone. Can you please send me a paper questionnaire?	Yes there is a paper version of this questionnaire that can be mailed or faxed. However, due to the complexity of the survey questions, reporting the data using the computer assisted telephone interviewing (CATI) method greatly simplifies the questionnaire and reduces the amount of time required to complete the questionnaire.
What is computer-assisted surveying all about?	The survey is scheduled to be conducted starting February 4, 2008 by computer assisted telephone interview (CATI). This system allows interviewers to input responses at the beginning of the survey (i.e. crop type) that can be referred to in later questions, therefore increasing producer recall and improving the flow of the questionnaire.

CHAPTER 8

The Questionnaire

In this Chapter This chapter contains:

Continued on the next page

Overview

Introduction

This chapter will take you through the survey questions and provide you with the necessary information in order to collect the most accurate data.

Note

All questions refer to the 2007 growing season.

Sections

There are 5 sections to this survey:

Section	Subject
Introduction Screens	Survey introduction and contact confirmation
Section A	Type of Operation and Land Area
Section B	Crop Land and Irrigation in 2007
Section C	Irrigation Practices and Water Sources
Section D	Agreement to share with AAFC and certain provinces

Section A: Type of Operation and Land Area

Introduction

This section of the survey introduces the survey and determines whether or not an operation irrigates or not.

Entry Screen

Hello, I'm (*your name)* from Statistics Canada. May I speak with (*respondent's name)?*

NOTE: If operator is not available try to speak to someone knowledgeable about the operation, otherwise make an appointment.

I am calling you regarding the Agricultural Water Use Survey.

This voluntary survey is being conducted by Statistics Canada to gather information on water use, irrigation methods, sources and quality of water, and water treatment practices for Canadian farms. The data will be used to support the Canadian Environmental Sustainability Indicators Initiative.

The information collected is kept strictly confidential and used only for statistical purposes.

The survey is collected under the authority of the Statistics Act and my supervisor may listen in to evaluate the survey.

INTRO Screen

This survey asks details about water use and irrigation methods used for crops on this operation in 2007.

Are you able to answer detailed questions on water use and irrigation methods for this operation such as: volume or rate of application of water used on crops and irrigation methods used in 2007?

CONFKNOW screen

If the first respondent is unable to answer the questionnaire (answers 'No' to the INTRO screen), the following screen appears:

Is there another operator who would be able to provide this information about irrigation methods and water use for crops on this operation?

Refer to Chapter 4 'The most knowledgeable respondent' for the procedures regarding this question.

Section A: Type of Operation and Land Area, continued

Introduction

This section of the survey determines an operation's water/irrigation practices.

Question 1

Please refer to the 2007 GROWING SEASON when answering the following questions.

In 2007, did this operation produce or grow field crops, hay, improved pasture, vegetables, fruits, nursery products or sod?

EXCLUDE: Greenhouses, mushroom barns and Christmas trees

NOTE: Greenhouses exclude any agricultural or nursery products grown INDOORS.

If a respondent answers "No" to this question, they will be asked to complete the data sharing agreement questions. Even though they have only provided a response for question 1, data has been collected and are important to the survey results.

When the response to question 1 is "No", include a comment in the Survey Data Comments indicating why the farm is not producing field crops, hay, improved pasture, vegetables, fruits, nursery products or sod.

Question 2a

In the 2007 growing season, did this operation use or apply water for irrigation or watering of crops?

Question 2b

(*In the 2007 growing season*), did this operation use or apply water for increasing soil moisture content (e.g., pre-planting or post harvest)?

NOTE: If the response for 2a AND 2b are "No", the application will only ask questions 12 to 14 and the data sharing agreement question(s) after asking Question 2c.

Section A: Type of Operation and Land Area, continued

Question 2c (*In the 2007 growing season*), did this operation use or apply water for... ?

Answer Categories:
Spraying fungicide, herbicide, insecticide or fertilizer
Cleaning farm buildings or equipment
Reducing salinity of the soil (leaching)
Cooling of produce (e.g. broccoli)
Frost protection
Harvesting (e.g. cranberries)
Processing and packaging (e.g. washing vegetables)
Watering livestock
Other (specify)

NOTE: If a respondent does not use water for any of these reasons, select "Other" and enter "Not Applicable" in the specify section.

Section B: Cropland and Irrigation in 2007

Introduction

This section of the survey discusses cropland and irrigation practices.

Question 3

Will you be reporting land area in acres or hectares?

NOTES:

1) Arpents will be included in this question when surveying an operation located in Quebec.
2) Once a unit of measure has been selected, all information must be collected using the same unit of measure.

EXAMPLE: If a respondent selects acres, yield and all other land area answers must be reported in acres.

Question 4

In the 2007 growing season, what was the total area of cropland and improved pasture of this operation?

INCLUDE:

• all land, producing and non-producing, used for fruits, vegetables, field crops, nursery products, sod, hay and improved pasture

• land rented or leased FROM OTHERS

• irrigated and non-irrigated land

NOTE: Non-producing is a common term used for certain fruit and vegetable crops. Agricultural producers may continue to irrigate non-producing or non fruit bearing trees or types of crops i.e., non-producing asparagus, or apple trees.

EXCLUDE:

• land owned and rented or leased TO OTHERS

• summerfallow

NOTE**:** If the response is a fraction, round the response to nearest whole number.

EXAMPLE**:** If a respondent says 50.5 acres, enter 51 acres.

Section B: Cropland and Irrigation in 2007, continued

Question 5a

Which of the following crop types did you produce or grow on this operation in the 2007 growing season?

Mark all that apply

Answer Categories:

Field crops
Fruits
Vegetables
Nursery products
Sod
Hay
Improved pasture

NOTES:

1) Potatoes may be entered in either field crops OR vegetables.
2) Nursery products are any plants grown OUT DOORS. Exclude all greenhouse products.
3) Hay includes all types of hay including alfalfa and timothy.

Question 5b

What *(crops)* did you grow or produce on this operation (*in the 2007 growing season*)?

INCLUDE: producing and non-producing crops

NOTES:

1) There will be a different crop list for field crops, fruit crops and vegetable crops. Each list will only be displayed if the respondent selects the related crop type.
2) There are two field crops lists. Only one list will be displayed and depends on the location of the operation.

Question 6 Of those crops reported, which ones used the most water in the 2007 growing season?

IMPORTANT: First enter crops that are irrigated (order them from those that require the most water to those that require the least), followed by the crops with the largest crop area.

If the respondent has	Then
less than 6 irrigated crops	Enter the crops starting with those that use the most water, down to those that use the least, then enter the crops with the largest land areas
more than 6 irrigated crops	Enter the 6 crops that use the most water

Section B: Cropland and Irrigation in 2007, continued

Introduction

The following questions are about the crop area, yield and irrigation methods used on this operation in the 2007 growing season.

INCLUDE: Irrigated and non-irrigated land for total area of crops and yields reported

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Question 7a

What was the total area of *(the reported crop)*?

NOTE: Question 7 will be repeated for each crop reported in question 6.

Question 7.b_1

How will you report average yield per (*acre/hectare/arpent*) for the *(reported crop)*, e.g., imperial tons per (*acre/hectare/arpent*) or bushels per (*acre/hectare/arpent*)?

EXCLUDE: improved pasture

NOTES:

1) If the 'reported crop' is improved pasture, the application will skip to question 7d.
2) If the 'reported crop' is hay, count different cuts of Hay for the same area only once.
3) Respondents may report either a second harvest or a second unit of measure for one harvest for fruits and vegetables. If more than one harvest/unit of measure, report the second harvest yield in question 7.b_2 (otherwise, select option 13 'No second yield' in 7.b_2).

EXAMPLE:

1) A respondent may report a different yield for fresh produce market vs. processed produce market.

REMINDER: Responses should be captured in the same unit of measure reported in Q3; acres or hectares (or arpents - Quebec only).

Continued on the next page

Question 7.b_1, *continued*

Answer Categories:

Bushels
Kilograms
Metric Tonnes
Imperial Tons
Pounds
Hundred Weight
Pints
Quarts
Masters or baskets (about 20 lbs)
Square feet
Square metres
Other (please specify)
Not applicable (no yield or no second yield)

Question 7.c_1

What was the average (*yield measurement*) per (*acre /hectare/ arpent*) obtained for the *(reported crop)*?

Question 7.b_2

If you have a second yield for the same crop, how will you report it?

EXCLUDE: improved pasture

NOTES:

1) If there is no second yield, enter 13 - not applicable (no yield or no 2nd yield reported)
2) This question will only be asked for Fruit and Vegetable crops.

Question 7.c_2

What was the average (*yield measurement)* per (*acre/ hectare/ arpent*) obtained for the (*reported crop)*?

Question 7.d

Was (or were) the (*reported crop)* irrigated in 2007?

NOTE: Include water used to increase soil moisture content e.g., pre-planting or post-harvest.

Question 7.e What was the (first) method of irrigation used for the (*reported crop)*?

NOTES:

1) Respondents may report up to three (3) methods of irrigation for the same crop.
2) If more than one method was used for the same crop, and the respondent asks which one to report first, choose the irrigation method that used the most water in the 2007 growing season.

Answer Categories:

SPRINKLER:
Hand Move (portable system; partial coverage)
Solid or Permanent Set (full coverage)
Side Roll, Wheel Line, Wheel Move or Wheel Roll
Traveler, Volume Gun, Travelling Gun, Walker, Overhead or Circler
Linear move < 25 psi
Linear move 25 – 50 psi
Linear move >50 psi
Centre pivot < 25 psi
Centre Pivot 25 – 50 psi
Centre Pivot >50 psi

MICRO:
Surface drip
Sub-surface Drip
Micro-sprinkler
Bubblers
Microjet
Hand watering

SURFACE:
Down rows
Furrows
Corrugations
Border dyke
Level basins
Uncontrolled flooding (wild flooding)
Back flooding

Other irrigation method (specify)
NOT APPLICABLE (no 2nd or 3rd method)

Section B: Cropland and Irrigation in 2007, continued

Question 7.f

What was the total area of (*reported crop)* irrigated with the *(selected)* irrigation method?

REMINDER: Responses should be captured in the same unit of measure reported in Q3; acres or hectares (or arpents - Quebec only).

Question 7.g

The next questions ask about Volume (or Flow Rate) of water used (in the 2007growing season).

How will you report volume of water applied on the (*reported crop)* using the (*selected)* irrigation method: e.g., inches, gallons, litres?

Answer Categories:

Water depth per surface area

Inches per acre (NOTE: May also be referred to as Acre-inches)

Millimetres per hectare

OR

Total volume

Total acre-feet

Total gallons

Total litres

Total cubic feet

Total cubic metres

OR

Volume per surface area

Acre-feet per acre

Gallons per acre

Litres per hectare

Cubic feet per acre

Cubic metres per hectare

Other volume, specify

OR

Flow rate (per second, minute, hour, day)

Gallons

Litres

Cubic feet

Cubic metres

Pounds

Other flow rate, specify

Continued on the next page

Question 7.g *continued*

NOTES:

1) Total volume measurements refer to the total volume of water used for the entire growing season.
2) If the response is by Flow rate, Q7i will ask to specify per second, minute, hour or day.

Question 7. h

How many (*units)* of water were applied on the *(reported crop)* using the (*selected*) irrigation method?

If a flow rate unit of measure was selected, the following instruction will appear;

"Please report flow rate at system nozzle. If not available, report rate at pump"

NOTE: If a volume unit of measure was selected, 7i to 7m will be skipped.

If a flow rate unit of measure was selected, 7i to 7m will be asked.

Question 7.i

Were the (*units)* applied per second, minute, hour or day (for the (*reported crop*) with the (*selected*) irrigation method)?

Question 7.j

Was this at the system nozzle or pump?

Question 7.k

What was the total number of days or weeks that this system ran (for the (*reported crop*) with the (*selected*) irrigation method)?

NOTE: If a respondent is unable to provide a total, ask for an estimate. If the respondent is unable to provide an estimate, enter don't know and record any helpful details in the survey data comments area.

EXAMPLE: If the respondent says that they irrigate every day in June and ever third day in July ask for an estimate. If the respondent is unable to provide an estimate, enter this information in the survey data comments area and enter 'Don't Know' in this cell.

Question 7.l (Was it days or weeks?)

NOTE: This question only needs to be read if the answer was not already stated with the answer for Q7k.

EXAMPLE: 15 weeks

Question 7.m What was the total number of hours per (*day/week)* that this system ran (for the (*reported crop*) (*selected*) irrigation method)?

NOTES:

1) If a respondent is unable to provide a total, ask for an estimate.
2) Round numbers to the nearest whole number.

Question 7e_2 If you have a second irrigation method, how will you report it?

NOTES:

1) If there is no other irrigation method, then enter: 0 - NOT APPLICABLE (no 2nd or 3rd method)
2) If more than one method was used for the same crop, and the respondent asks which one to report next, choose the irrigation method that used the next most water in the 2007 growing season.
3) The irrigation method list will be the same as Q7e
4) Questions 7f to 7m repeat for second irrigation method.

Question 7e_3 If you have a third irrigation method, how will you report it?

NOTES:

1) If there is no other irrigation method, then enter: 0 - NOT APPLICABLE (no 2nd or 3rd method)
2) The irrigation method list will be the same as Q7e.
3) Questions 7f to 7m repeat for third irrigation method.

Section B: Cropland and Irrigation in 2007, continued

Note

Question 8 and 9 will only be asked to respondents who have 6 or more irrigated crops or who were unable to fully answer question 7.

Question 9 is a repetition of question 7, but at the farm level. The information collected in question 7 is at the crop level. The purpose of this question is to obtain information on all irrigated crop land.

Refer to question 7 for notes pertaining to question 9 (as the questions are the same; 9a to 9i are the same as 7e to 7m).

For Question 9, Respondents can provide information on up to 3 irrigation methods.

Question 8

The following questions ask about TOTAL irrigation for this operation for the total cropland area in the 2007 growing season.

Of the total (*area)* of cropland, how many (*acres/hectares/arpents*) were irrigated (in the 2007 growing season)?

INCLUDE: producing and non-producing crop land

Question 9.a

What was the (first) irrigation method used?

NOTE: If more than one method was used for the same crop, and the respondent asks which one to report first, choose the irrigation method that used the most water in the 2007 growing season.

Question 9.b

What was the total area irrigated with the (*selected*) irrigation method?

Question 9.c

How will you report volume of water applied using the (*selected*) irrigation method: e.g., inches, gallons, litres?

Question 9.d

How many (*units*) of water were applied using the (*selected*) irrigation method?

Section B: Cropland and Irrigation in 2007, continued

Question 9.e Were the (*units)* applied per second, minute, hour or day?

Question 9.f Was this at the system nozzle or pump?

Question 9.g What was the total number of days or weeks that this system ran?

NOTE: If a respondent is unable to provide a total, ask for an estimate. If the respondent is still unable provide an estimate, enter don't know and record any helpful details in the survey data comments area.

Question 9.h (Was it days or weeks?)

Question 9.i What was the total number of hours per (*day/week*) that this (selected) system ran?

NOTE: If a respondent is unable to provide a total, ask for an estimate.

Section C: Irrigation Practices and Water Sources

Introduction

The following questions ask about irrigation practices AND water sources for the operation during the 2007 growing season.

Question 10

Which of the following practices were used for the purpose of water or energy conservation?

Mark all that apply.

Answer Categories:

Wind breaks
Leaving stubble on fields (e.g., minimum tillage, direct seeding)
Watering at night or in the morning
Pressure reduction
Water or energy saving nozzles
Other energy saving methods or devices (specify)
No practices done

NOTE: If a respondent has another 'water saving method or device' select "other energy saving methods or devices" and enter "See comments", then enter this method in the survey data comments area.

Question 11

Which of the following factors or tools helped this operation determine when to irrigate?

Mark all that apply.

Answer Categories:

Crop condition or crop stage (observation including disease)
Use of soil moisture sensors (e.g., moisture blocks or tensiometers)
Use of plant sensors (e.g. infrared thermometers)
Feel and appearance of the soil
Weather forecasts (meteorological reports)
Water availability
Use of an irrigation scheduling consultant (commercial and/or government)
Planned irrigation schedule
Rain gauge
Other (specify)

Section C: Irrigation Practices and Water Sources, continued

Question 12

In 2007, did this operation have to stop irrigating OR not irrigate for any reason, such as equipment failure, weather or water shortage?

If the response is “No”, the application will skip to question 14

Question 13

Why was irrigation stopped or not done?

Mark all that apply.

Answer Categories:
Shortage of surface water
Shortage of underground water (include shallow wells and deep wells)
Equipment failure
Poor water quality
Cost of water
Weather (e.g., excess rain, heat, frost, wind, hail, lightning)
Water ban
Crop did not require irrigation
Labour shortage
Fuel cost or energy cost
Other (specify)

Question 14

Did this operation use a drainage system (e.g., land tiles or tiling)?

Section C: Irrigation Practices and Water Sources, continued

Question 15

The next questions deal with possible sources of water used on this operation.

Did this OPERATION use any of the following…?

EXCLUDE: water for personal use.

Mark all that apply.

Answer Categories:

Underground or well water (include shallow wells and deep wells)

ON-FARM lakes, rivers, creeks or streams, ponds or dugouts i.e. direct access (surface water)

Water from a rain collection system (e.g., cistern or rain barrel)

OFF-FARM water transported TO THE FARM e.g., via pipeline, canal system or vehicle

Other (specify)

NOTE: Questions 16 and 17 will only be asked if OFF-FARM water was selected.

Question 16

Which of the following OFF-FARM WATER sources did this operation use?

Mark all that apply.

Answer Categories:

Tap water (e.g., drinking water or municipal water)

Treated wastewater

Provincial water sources (irrigation district, group project)

Private sources

Other sources (specify)

Section C: Irrigation Practices and Water Sources, continued

Question 17 Why did this operation need to obtain water from an OFF-FARM source?

Mark all that apply.

Answer Categories:
No water or not enough water available ON THE FARM (for irrigation)
Poor quality of ON-FARM water
Other reason (specify)

Question 18 Water may be treated to improve its overall quality.

Does this operation treat water prior to farm use?

NOTE: If the response is “No”, the application will skip to question 20.

Question 19 Which of the following water treatment practices were used by this operation in 2007?

Mark all that apply.

Answer Categories:
Treatment to kill bacteria or other foreign bodies (i.e. disinfection)
Treatment to equalize pH levels
Treatment to remove solids (i.e. filtration)
Treatment to prevent or to clear mineral fouling
Treatment to prevent corrosion
Treatment to reduce water hardness
Treatment to reduce salinity (salt content)
Other treatment to purify water (specify)

REMINDER: this question refers to water used for agricultural purposes only.

Question 20

In 2007, how did this operation deal with its wastewater

e.g.: water used when cleaning equipment and produce, excess water from fertilizer or pesticide use?

EXCLUDE: household wastewater and irrigation runoff.

Mark all that apply.

Answer Categories:

Returned to soil

Drained into body of water or wetland

Drained to sewer / septic tank

Drained to settling basin / holding bin

Collected for reuse

Other (specify)

NOTE: If respondents indicate that they do not have wastewater, make sure they understand what is meant by the term. All agricultural operations should have wastewater.

DEFINITION OF WASTEWATER: Water used to wash produce, milk houses, pens or facilities, silage leakage and run-off water from livestock.

Section D: Agreements to Share with AAFC, EC and Certain Provinces

Introduction

This section asks respondents if they would be willing to share their data with different organizations.

Question 21

To reduce survey duplication and to ensure more uniform statistics, Statistics Canada has entered into agreements under Section 12 of the Statistics Act, for the sharing of information from this survey with Agriculture and Agri-food Canada and Environment Canada.

Statistics Canada will not share your farm name, address or other identifying information. All agreements require that the information you provide be kept confidential and be used only for statistical or research purposes.

Do you agree to share the information on this survey with:
Agriculture and Agri-Food Canada?

Question 22

Do you agree to share the information on this survey with:
Environment Canada?

Question 23

The following question is asked for PEI, NB, MB, SK, AB and BC:

Similarly, Statistics Canada has entered into an agreement, under Section 12 of the Statistics Act, with your province for the sharing of information from the survey respondents.

Do you agree to share the information on this survey with:
(*Provincial organization)?*

For Quebec, the agreement will include sharing of identifying information, so the question wording for ISQ will be:

Do you agree to share the information on this survey, including your farm name, address and other identifying information with:

The Institut de la statistique du Québec?

CHAPTER 9

Definitions

In this Chapter This chapter contains:

Continued on the next page

Continued on the next page

Water Use Content Definitions

Introduction

This chapter will provide you with the definitions required to understand the various terminology related to the Agricultural Water Use Survey.

Definitions

The following are definitions for the terms used in this survey.

Acre

An acre is a measure of land equal to:
43,560 square feet
4,047 square meters
160 square rods
4,840 square yards

Acre-feet

The volume of water necessary to cover one acre of surface area to a depth of one foot. Unit of measure for volume commonly used in the United States in reference to large-scale water resources, such as reservoirs
One acre-foot is equal to almost 326,000 gallons.

Aeration

The process of adding or pumping air containing oxygen to a material such as water, liquid manure or compost.

Arpent

An arpent is a measure often used in Quebec. One arpent is equal to 0.845 acres (approximately 5/6 of an acre).

Back flooding

Surface irrigation system where water is applied to ditches or pipes until the water table is high enough to wet the soil.

Barley

An annual cereal grain which serves as a major animal feed crop with smaller amounts used for malting and in health food.

Water Use Content Definitions, continued

Bio-bed	A lined permeable or non-permeable cover over a 1 metre deep hole in the ground, which is typically filled with a mix of 50% volume straw, 25% soil and 25% peat-free compost. Spraying and washing of farm equipment and sump draining is done over the cover which allows for the disposal of wastewater and excess pesticides.
Border dyke	Water is applied to ditches surrounded by dyke.
Bubblers	Sprinklers flooding a small area before it is shutoff. Bubblers typically apply water on a “per plant” basis.
Bushel	Unit of measure used for volumes of dry commodities, not liquid; 1 US bushel=35.23907 litres.
Borage seed	Annual plant used medicinally as an anti-inflammatory for treating arthritis as well as certain skin conditions and respiratory inflammation
Canary seed	Annual canary grass which is a major component of feed mixtures for caged and wild birds. Common types are hairless (canario) and regular.
Caraway seed	Biennial plant used as a spice in breads, most commonly rye bread.
Centre Pivot	An automated sprinkler that rotates around a pivot point.
Chemfallow	A type of summerfallow; the practice of leaving cultivated land free of vegetation for one growing season and using only herbicides to control weeds.

Water Use Content Definitions, continued

Chick Peas	An edible legume often used as an alternative protein source for meat. The two most popular types are desi and kabuli.
Cistern	A small covered tank for storing water and/or collecting rain and usually placed underground.
Containment Bin/Basin	A container (usually metal or plastic) in which water is stored or collected.
Conversion Factors for land area	1 hectare = 2.471 acres 1 acre = 0.405 hectare 1 arpent = 0.342 hectare
Coriander seed	Annual herb, commonly called cilantro, which is most commonly used in cooking.
Corn for grain	Corn that is left to mature in the field, then harvested for grain rather than silage. The grain, generally removed from the cob, may be dry or harvested as “high moisture corn’ and stored in a silo.
Corrosion	Destruction of a metal by chemical or electrochemical reaction with its environment.
Corrugation	Artificial irrigation system in which small channels (usually galvanized sheet iron or sheet steel formed into alternating ridges and grooves) are used to guide water through the field.
Cover Crop	A crop, such as red clover, fall rye, etc., seeded in the fall to protect the soil from water and wind erosion during the winter and from heavy rains and run-off in the spring.

Water Use Content Definitions, continued

Crop land	A portion of farmland that is used for crop production as well as summerfallow. NOTE: Summerfallow is excluded from this survey.
Cropland, non-producing	A portion of farmland that is not used for crop production due to various reasons, such as crop growing schedules, poor soil quality or crop failures. Non-producing is a common term used for certain fruit and vegetable crops. Agricultural producers may continue to irrigate non-producing or non fruit bearing trees or types of crops i.e., non-producing asparagus, or apple trees.
Cubic metre	Unit of measure for volume equal to 1,000 litres
Down rows	Down rows uses the principle of gravity as a method of irrigation. Water flows down along the crop.
Drainage	Constructed surface water channels or tile drainage in subsurface that allow the flow of water retained into soil with excess moisture
Drainage System	A designed series of pipes, gutters, channels, and accessories used to provide good water run-off from a parcel of land
Environmental Indicators	Variables or measures that supply information about what is happening in the environment when it is not possible to monitor/measure every component. Environmental indicators normally include physical, biological and chemical measures. Indicators provide a faster, easier and more economical way to find out what is happening than if researchers attempt to measure and record every variable in the environment. For example, a town may monitor air quality along with water quality and count the number of rare species of birds to estimate the health of the environment in their area.

Water Use Content Definitions, continued

Evaporation	The process by which water returns to air. Higher temperatures speed the process of evaporation
Fertigation	A form of irrigation in which liquid fertilizer is added to irrigation water and thus fed directly to the crops.
Fertilizer	Any organic or inorganic material of natural or synthetic origin that is added to soil to supply certain elements essential to the crop growth.
Field Crops	Field crops include annual field crops, tame forages, and improved pasture. Includes barley; borage seed; buckwheat; canary seed; canola; caraway seed; chick peas; coriander seed; corn (grain and silage); dry field beans (white, red and other beans); dry field peas (green, yellow and other); flaxseed; forage seed; hay and improved pasture (alfalfa mixtures); lentils; linola (solin); mixed grains; mustard seed; oats; potatoes; rye (fall and spring); safflower; soybeans; sugar beets; sunflower seeds; tobacco; triticale; wheat (spring, durum, winter). NOTE: For the purpose of this survey, hay, alfalfa and alfalfa mixtures will be recorded as part of the 'Hay Crop Type'. Do not include hay as a field crop.
Filtration	Process of using a filter to mechanically separate a mixture of solids and fluids. It will improve the taste and appearance of water.
Flow rate for irrigation	Time required for a given quantity of water to travel a measured distance (e.g. cubic metres per second or gallons per second, gallons per minute). *Table 3: this rate of irrigation captures the unit of water measurement per time unit
Fodder Corn	Corn grown to be cut and used for animal feed. The whole plant is used rather than just the grain and is stored in upright or bunker silos or plastic bags.

Water Use Content Definitions, continued

Forage	Grass or legume crop grown to provide livestock feed. May be stored dry as hay or under moist conditions as silage, plowed into the soil as green manure or grazed.
Frost protection	Method to protect plants from damage from freezing temperatures. Most growers rely on sprinkler irrigation for frost protection. When water from sprinklers turns to ice, the heat released protects the plant from injury. As long as a thin layer of water is present, on the bloom or on the ice, the blossom is protected. (This is important. It's not the layer of ice that provides the protection. It's the water constantly freezing that keeps the temperature above the critical point.)
Fungicides	Inputs applied to cropland for the purpose of controlling disease-causing fungus.
Furrow	Small channels or trenches in the earth made by a plow for conveying irrigation water across the field
Gauges	Measuring instrument for measuring and indicating a quantity, or for testing conformity with a standard.
Greenhouse	An agricultural operation that produces greenhouse products intended for sale. It is the area under glass, plastic or other covering used for growing plants for sale or transplantation (cut flowers, bedding, potted plants, greenhouse vegetables, cuttings, tree seedlings, etc.) REMINDER: Greenhouse products are grown indoors or under covers and are out of scope for this survey.
Green manure crops	Young green plants, such as buckwheat and red clover, incorporated into the soil to improve fertility. Usually grown only to improve the soil.

Water Use Content Definitions, continued

Growing season	The period in which the average daily temperature is above 5°C. It is not identical to the frost-free period*; it begins three to five weeks earlier, and ends three to six weeks later. Even though the daily minimum temperature may fall below 0°C, causing frost, daily maximum temperatures may be sufficiently high to make plant growth possible, although it would be expected to be slower than during the frost-free period. *Frost-free period: the number of days between the last occurrence of frost in the spring and the first occurrence of frost in the fall. The timing of spring and fall frosts is critical for agriculture, especially when scheduling planting.
Hand Move - Irrigation Method	Portable sprinkler system in which lightweight pipeline sections are moved manually for successive irrigation sets of 40 to 60 feet.
Harvesting	The gathering in (reaping) of an agricultural crop ripened to produce food
Hay	Any cultivated grass or legume crop which has been (or will be) cut and dried principally for hay or ensilage. Common examples are clover and alfalfa.
Hectare	A hectare is a metric measurement of land; one hectare is equal to a square piece of land measuring 100 metres on each side (roughly 2.5 acres).
Herbicides	Inputs applied to cropland for the purpose of weed control
Hundred Weight	Unit of measure equal to 45.359237 kg (100 pounds)

Water Use Content Definitions, continued

Imperial Tons	Unit of measure equal to 1016.04691 kg (2240 pounds).
Improved pasture	Land that has been altered from its natural state by seeding, draining, irrigating, fertilizing or brush- or weed-control measures. In Eastern Canada, there is more improved pasture as a percentage of total pasture than in Western Canada
Insecticides	Inputs applied to cropland for the purpose of controlling unwanted insect populations.
Irrigation	The application of water to cropland to compensate water shortfall and sustain plant growth.
Irrigation Method	The manner in which water is artificially applied to an area
Kilograms	Unit of measure equal to 1,000 grams (2.2046 pounds).
Leaching	(i.e. irrigation reducing salinity) The removal in solution of nutritive or harmful constituents (such as mineral salts and organic matter) from an upper to a lower soil horizon by the action of percolation water, either naturally (by rainwater) or artificially (by irrigation).
Lentil	An edible legume which is grown for its seeds and commonly used for soup.
Level basins	Irrigation by flooding areas of land surrounded by dykes.
Linola	A trademark name for solin, a mutant strain of flax developed to provide a source of edible linseed oil.

Water Use Content Definitions, continued

Linear move	Automated sprinkler system with streams of water which are all going in the same direction and at the same speed.
Masters	A form of packaging where a number of baskets are placed in a larger box equivalent to approximately 20 lbs
Metric tonnes	Unit of measure equal to 1,000 kilograms (2,205 pounds).
Microjet	Sprinklers giving out small streams of water
Micro-sprinklers	Sprinklers which cover small areas with small streams of water.
Micro system	Irrigation system with low pressure and low volume spray using a small system.
Mineral fouling	Formation of deposits other than salt or scale
Mixed Grains	Two or more grains sown together
Moisture block	A block of gypsum or nylon which is able to absorb water and is buried in the soil to indicate when to irrigate land. It can be referred to as a soil moisture sensor
Mulch	A protective cover placed over the soil to control weeds and conserve soil moisture. It is usually a coarse organic material such as leaves, compost or bark

Water Use Content Definitions, continued

Mustard seed	Small seeds of various mustard plants commonly used as spices. Most common types are yellow, brown and oriental
Natural land for pasture	Areas used for pasture that have not been cultivated and seeded, or drained, irrigated or fertilized
Non-workable land	Includes natural pastureland, woodland, wetlands, ponds, bogs, sloughs, etc., barnyards, lanes, etc., and land on which farm buildings are located
Nursery	An agricultural operation that produces nursery products intended for sale. Nursery products include sod under cultivation for sale, shrubs, trees, vines, ornamentals, bulbs, etc**.** NOTE: Nursery products are grown outdoors. Any products grown by a nursery inside or under a cover should not be included in this survey.
Oats	A cereal grain which serves an animal feed crop and used for baking.
Oilseeds	Flaxseed, canola, soybeans and sunflower seeds are oilseeds, grown and harvested for the extraction of oil
Pasture	Area covered by forage (e.g. grass) to be eaten by livestock.
Pint	Unit of measure for volume, liquid or dry and equal to 568 mL (20 fluid ounces).
Planned Irrigation Schedule	An ordered list of times and dates to apply water to the crops.

Water Use Content Definitions, continued

Pound	Unit of measure equal to 0.453539237 kg
Pressure Reduction	The reduction of pressure in the pump or nozzle used to conserve water.
Private source	Source of water originating from an off-farm business or private source.
Quart	Unit of measure for volume, liquid or dry and equal to 1.1365225 litre
Return Flow	Surface and subsurface water that leaves the field following application of irrigation water.
Reverse Osmosis	A separation process that uses pressure to force a solvent (substance) through a membrane that retains the solute on one side and allows the pure solvent to pass to the other side
Side Roll or Wheel Line	High volume sprinkler (gun) mounted on wheels having a diameter of four to ten feet. The sprinkler is moved through the field.
Safflower	A thistle-like annual plant which is cultivated mainly for vegetable oil
Sod	A matting of grass and soil which is cut just below the roots and then used on a new site to provide quick grass cover.
Soil moisture recharge	The end of the dry season when precipitation begins to replenish the soil moisture. Irrigation can also be used to recharge soil moisture.

Water Use Content Definitions, continued

Soil Saturation Measurement	The evaluation of the volume of water in the soil to prevent over or under irrigation. It can be measured by taking soil samples, using neutron probes, radio-frequency waves or waveguides (stainless steel rods inserted in the soil).
Solid or permanent set	Sprinkler system which covers all the irrigated area
Spring rye	Rye seeded in the spring and harvested in the fall. This type of rye is grown only in areas that are too cold for fall seeding (e.g. northern Prairies).
Sprinkler pressure system	Irrigation system that sprinkles water under pressure
Sub-surface drip	Irrigation system wherein very low volume of water is constantly applied close to plant roots.
Sugar beets	Plant whose root contains high concentration of sucrose. It is grown primarily for sugar
Summerfallow	Summerfallow is used as part of the crop rotation system in Western Canada. It is the practice of keeping normally cultivated land free of vegetation throughout one growing season by cultivating (ploughing, discing, etc.) and/or applying chemicals to destroy weeds, insects, soil-borne diseases and to allow a buildup of soil moisture reserves
Summerfallow land	Land on which no crops will be grown during the year, but will be cultivated or worked for weed control and/or moisture conservation. Also includes land on which green manure crops such as sweet clover or buckwheat have been (or will be) ploughed under.

Water Use Content Definitions, continued

Surface drip	Irrigation system where a very low volume of water is constantly applied to the soil surface.
Surface system	Irrigation system which uses gravity to move water through the field
Surface water	Water which flows over, or rests on, the surface of a land mass.
Tame or seeded pasture	Grazeable land that has been improved from its natural state by seeding, draining, irrigating, fertilizing or weed control. Do not include areas of land harvested for hay, silage or seed
Tap water	Drinking water pumped to homes from the municipality NOTE: For the purpose of this survey, this term is used only when discussing water used for agricultural purposes only.
Tensiometer	A device used to determine soil moisture tension and used in irrigation scheduling to determine when to water. It can be refered to as a soil moisture sensor.
Thermometer	A device used to measure temperature. It can be refered to as a plant sensor
Total Land Area	The sum of all land areas on agricultural operations

Water Use Content Definitions, continued

Traveler or Volume Gun	Large rotating sprinkler mounted on a trailer that is towed through the field.
Triticale	An artificial hybrid of rye and wheat. It is grown mostly for forage, but can be found in cereals
Treated Wastewater	Municipal waste water that has been treated sufficiently to safely be applied on crops or fed to livestock.
Uncontrolled (wild) flooding	Surface irrigation system where water is released at high points in the field and distribution is uncontrolled
Underground water	Water within the earth that supplies wells and springs. These water sources can usually be recovered via underground channels or formations.
Volume	Amount of space that a substance occupies, such as water, measured in cubic units.
Wastewater	Water to wash produce, milkhouse, pens or facilities, silage leakage and run-off water from livestock.
Wastewater Management	Supervising and controlling day-to-day operations of wastewater systems to ensure proper disposal.
Water Purveyor	A public or municipal company that delivers drinking water to customers.
Wetland	Non-workable areas such as ponds, bogs, marshes and sloughs..

Water Use Content Definitions, continued

Windbreaks or shelterbelts	Rows of trees or hedges planted along field edges that stop prevailing winds from causing erosion, trap snow and provide an improved microclimate for growing crops by reducing evapotranspiration
Woodlands	Non-workable land such as woodlots, sugarbushes, tree windbreaks, and bush that is not used for grazing.
Workable land	All arable or cleared lands including area in hay, crops, summerfallow, and tame or seeded pasture land.
Yield	A term used in agriculture to measure the quantity of a product resulting from cultivation or growth: for example, 30 bushels of wheat per acre

Appendix A

Yield Units of Measure

Code	Term	Definitions
1	Bushel	Unit of measure used for volumes of dry commodities, not liquid; 1 US bushel=35.23907 litres.
2	Kilograms	Unit of measure equal to 1,000 grams (2.2046 pounds).
3	Metric Tonnes	Unit of measure equal to 1,000 kilograms (2,205 pounds).
4	Imperial Tons	Unit of measure equal to 1016.04691 kg (2240 pounds).
5	Pounds	Unit of measure equal to 0.453539237 kg
6	Hundred Weight	Unit of measure equal to 45.359237 kg (100 pounds)
7	Pints	Unit of measure for volume, liquid or dry and equal to 568 mL (20 fluid ounces).
8	Quarts	Unit of measure for volume, liquid or dry and equal to 1.1365225 litre
9	Masters	A form of packaging where a number of baskets are placed in a larger box equivalent to approximately 20 lbs
11	Square metre	Unit of measure equal to about 10.763911 square feet

Appendix B

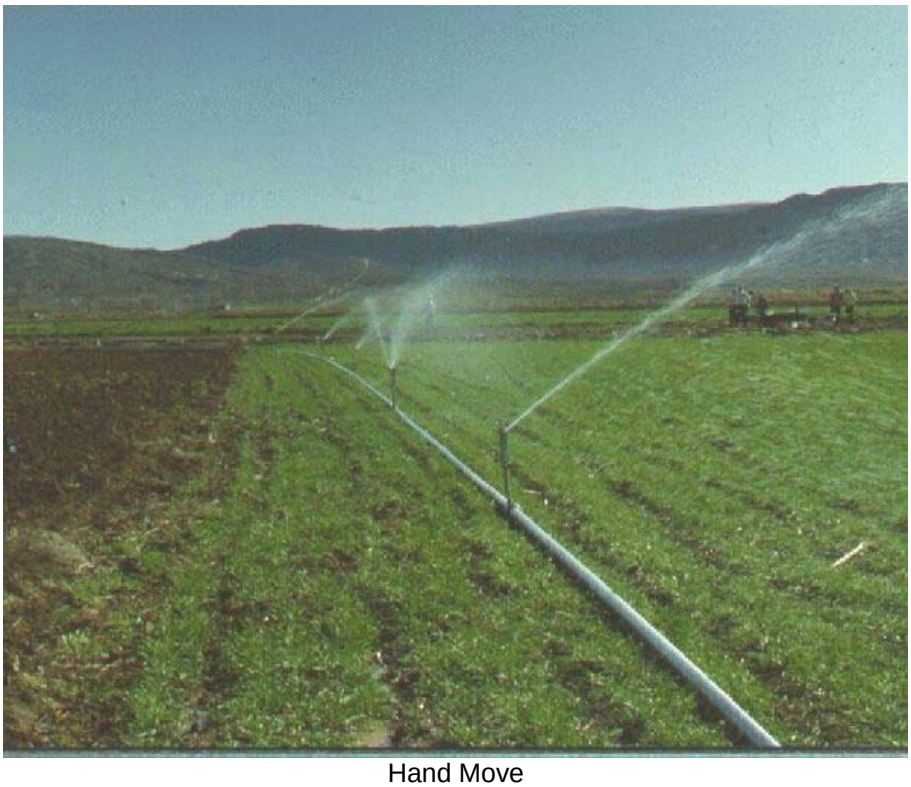
Irrigation Methods

SPRINKLER

Code	Term	Definition
01	Hand Move	Portable sprinkler system in which lightweight pipeline sections are moved manually for successive irrigation sets of 40 to 60 feet.
02	Solid or Permanent Set	Sprinkler system which covers all the irrigated area
03	Side Roll, Wheel Line, Wheel Move or Wheel Roll	High volume sprinkler (gun) mounted on wheels having a diameter of four to ten feet. The sprinkler is moved through the field.
04	Traveler, Volume Gun, Walker, Overhead or Circler	Large rotating sprinkler mounted on a trailer that is towed through the field.
05	Linear Move (less than 25 psi)	Automated sprinkler system with streams of water which are all going in the same direction and at the same speed.
06	Linear Move (between 25 and 50 psi)	Automated sprinkler system with streams of water which are all going in the same direction and at the same speed.
07	Linear Move (more than 50 psi)	Automated sprinkler system with streams of water which are all going in the same direction and at the same speed.
08	Centre Pivot (less than 25 psi)	An automated sprinkler that rotates around a pivot point.
09	Centre Pivot (between 25 and 50 psi)	An automated sprinkler that rotates around a pivot point.
10	Centre Pivot (more than 50 psi)	An automated sprinkler that rotates around a pivot point.

Appendix B

Sprinkler Images



Hand Move

Permanent Set

Appendix B

Sprinkler Images

Side Roll

Traveler Gun

Appendix B

Sprinkler Images

Linear Move

Centre Pivot

Appendix B

MICRO

Code	Term	Definition
20	Surface Dip	Irrigation system where a very low volume of water is constantly applied to the soil surface.
21	Sub-Surface Dip	Irrigation system wherein very low volume of water is constantly applied close to plant roots.
22	Micro-sprinkler	Sprinklers which cover small areas with small streams of water.
23	Bubblers	Sprinklers that flood a small area, typically applying water on a “per plant” basis.
24	Microjet	Sprinklers giving out small streams of water
25	Hand Watering	

Appendix B

Micro Images

Surface Drip

Micro Sprinkler

Appendix B

SURFACE

Code	Term	Definition
30	Down Rows	Down rows uses the principle of gravity as a method of irrigation. Water flows down along the crop.
31	Furrows	Small channel for conveying irrigation water across the field
32	Corrugations	An irrigation system in which small channels are used to guide water through the field.
33	Border Dyke	Water is applied to ditches surrounded by dyke.
34	Level Basins	Irrigation by flooding areas of land surrounded by dykes.
35	Uncontrolled Flooding (wild flooding)	Surface irrigation system where water is released at high points in the field and distribution is uncontrolled
36	Back Flooding	Surface irrigation system where water is applied to ditches or pipes until the water table is high enough to wet the soil.

Appendix B

Surface Images

Furrows

Level Basin

Appendix C

Making Updates to the Farm Register

When confirming the Farm Register information with the respondent, the interviewers are to confirm all the information set out at the Farm Register screens of the BLAISE CATI application and make all the required updates directly in the relevant cells of the Farm Register screens.

- When updating the Farm Register, the interviewers enter the information that has changed and/or any new information the respondent provides.
- If the information in the Farm Register is unchanged, **do not** retype it when updating. (Exception: *Please* see the Example 1 scenario; this is a situation where the telephone number is re-entered even though it does not change.)

Using the word "idem" (without the quotes) when "Making Updates to the Farm Register":

For a number of situations where the Farm Register information is being updated, **it is not always necessary for the interviewers to re-type the entire information in the right-hand side of the Farm Register screens.**

Procedure: In these situations, the interviewers are simply to enter the word "**idem**" (without the quotes) at the relevant cell(s) of the Farm Register screens.

Appendix C

Making Updates to the Farm Register

EXAMPLE 1:

1. The respondent, (former Operator_1), informs the interviewer that he sold his farm to his son.
2. He indicates that all the FR information concerning the address and telephone number remains identical.

Note: Not all FR cells/fields are presented hereunder. This is simply to show you how to make use of the word "**idem**". - - The interviewer proceeds as follows at the Farm Register screens:

Con_FamilyName	Enters the Family Name of the new Contact.
Con_FirstName	Enters the First Name of the new Contact.
Con_Address	Enters **idem**
Con_Town	
Con_Province	
Con_PostalCode	
Con_MainTelephone	Re-enters the new Contact's telephone number even though it remains unchanged.

In Example 1, it is unnecessary to enter a Farm Register comment.

- When the Farm Register Section sees "**idem**" at the address field, the officer will know that the full address appearing on the left-side of the FR screens remains identical.
- Even though the telephone number didn't change, it is necessary to re-enter the telephone number.

ACTION TO BE TAKEN BY FARM REGISTER SECTION:

In Example 1, the Farm Register Section will update the Farm Register database with the information provided.

Appendix C

Making Updates to the Farm Register

EXAMPLE 2: How to update the Farm Register when the MAIN Operator remains the same.

The respondent, (Main Operator), informs the interviewer that:

1. he changed his address;
2. he still has the same telephone number.

Note: Not all FR cells/fields are presented. - - In Example 2, the interviewer proceeds as follows at the Farm Register screens:

a) The interviewer confirms the Family Name of the Contact and Operator_1.
→ (Do not retype.)
b) The interviewer confirms the First Name of the Contact and Operator_1.
→ (Do not retype.)
c) The interviewer **enters the new Address *** of the Contact and Operator_1.
***** Address; Town; Province; Postal Code.

d) The interviewer confirms the Main Telephone number of the Contact and Operator_1.
→ (Do not retype.)
e) The interviewer asks if there is a second telephone (AltTelephone) number.
f) The interviewer asks for the contact's e-mail address (Con_Email).

ACTION TO BE TAKEN BY FARM REGISTER SECTION:

In Example 2, the Farm Register Section will update the Farm Register database with the information provided.

Appendix C

Making Updates to the Farm Register

EXAMPLE 3: How to update the Farm Register when there is a "Change Main of Operator".

The respondent informs the interviewer that he sold his agricultural operation and provides the following information:

1. the new owner's (Operator_1) name;
2. the address remains the same;
3. the new owner's (Operator_1) telephone number.

Note: Not all FR cells/fields are presented. - - In Example 3, the interviewer proceeds as follows at the Farm Register screens:

a) The interviewer **enters** the Family Name of the new Contact and Operator_1.
b) The interviewer **enters** the First Name of the new Contact and Operator_1.
c) The interviewer **enters idem** at the Address field of the FR screens for the new Contact and Operator_1.
d) The interviewer **enters** the new Contact and Operator_1 telephone number.

ACTION TO BE TAKEN BY FARM REGISTER SECTION:

In Example 3, the Farm Register Section will update the Farm Register database with the information provided.

Appendix C

Making Updates to the Farm Register

EXAMPLE 4: "INCOMPLETE" updates to the Farm Register when there is a "Change of Main Operator".

The respondent informs the interviewer that he sold his agricultural operation. He provides the new owner's (Operator_1) name; the address remains the same; he **doesn't have** the new Operator's telephone number.

In Example 4, the interviewer proceeds as follows at the Farm Register screens:

a) The interviewer **enters** the Family Name of the new Contact and Operator_1.
b) The interviewer **enters** the First Name of the new Contact and Operator_1.
c) The interviewer **enters** "0000000000**"** at the Main Telephone number field to delete the telephone number for the previous Contact and Operator_1

In the Farm Register Comments area, the interviewer enters the following information:

FRComm1: Farm sold to new operator.

ACTION TO BE TAKEN BY FARM REGISTER SECTION:

In Example 4, the Farm Register Section will NOT update the Farm Register database as the interviewer didn't provide the necessary information to allow the FR officers to do so, i.e. ONLY the name was entered. - - As indicated previously, the Farm Register Section cannot *assume* that the address and telephone number remain the same.

As a result, the former Operator will continue to be contacted for surveys until the necessary information is obtained. Only then will the Farm Register Section officers be in a position to update the Farm Register database.

Also, in this example, the Farm Register Comment entered doesn't provide any *essential* information that will clarify or add information that will assist the Farm Register Section.

How to resolve the problem presented in Example 4.

At the Farm Register screens, the interviewer should have proceeded as follows at the address field:

- **Enter idem** at the Address field of the FR screens for the new Contact and Operator_1.

In the Farm Register Comments area, the interviewer enters the following information:

FRComm1: The respondent does not have the telephone number of the new operator.

The FR Comment entered indicates "why" the telephone number for the new operator wasn't provided.

Appendix D

BLAISE Function Keys

KEY	OPTION	FUNCTION
F1	**Help**	Provides question specific help dealing with the content of the question/screen on which the function was requested.
F2	**Language**	Changes the language of the survey questions from one official language to the other.
F3	**Unit Info**	Activates the "Info tab" which displays information directly related to the agricultural operation.
F4	**Notes**	"Notes" relevant to the case or question on screen from which the function was activated. Notes to the Interviewers are valid for the duration of the survey period only. (You can read and/or enter "Notes".) → Do not confuse with "Comments".
F5	**Refuse**	A refusal to a question can be recorded by pressing the <F5> function key; an exclamation mark (!) will be displayed in the response cell. NOTE: "Refuse" is not available for mandatory questions.
F6	**Don't Know**	When "Don't Know" is answered for a question, a question mark (?) will be displayed in the response cell. NOTE: "Don't Know" is not available for mandatory questions.
F8	**History**	Activates the "History tab" which displays the "Record of calls" for the case. • This window shows the date and the time of all calls for that particular case. • It displays the outcome of the call (answering machine; not available; wrong number; appointment; etc.) as well as the name of the interviewers. The "History tab" window is automatically updated by the system each time a call is made.
F10	**Suspended/ Interrupted**	To "suspend/interrupt" the interview by immediately exiting the component and the case.
F11	**Comments**	You can read and/or enter "Farm Register Comments", "Survey Data Comments" and "Shuttle Comments" for the current case. → When done, use <Ctrl+F11> to return where you left off.
Ctrl+F11	**Survey**	Allows you to access the "Survey tab" which takes you back to the survey component where you left off.
Ctrl+S	**Sub Forms**	Opens the "Parallel Blocks" window which allows you to access other functions. For example, you may enter comments, notes, schedule appointments, suspend the interview, etc.

Navigation in the Component

FUNCTION	DESCRIPTION
Home	The <Home> key will move the cursor to the first question in the component.
End	The <End> key will move the cursor to the last answered question in the component.
Page Up	The <Page Up> key controls movement from the current location of the cursor to the top of the previous block (*previous page*) of questions. → Can go back screen by screen through the application.
Previous Page	Performs the same function as the <Page Up> key. → Accessed from the <Navigate> drop-down menu.
Page Down	The <Page Down> key controls movement from the current location of the cursor to the top of the next block (*next page*) of questions. Note: <Page Down> will only function if the current page has been completed.
Next Page	Performs the same function as the <Page Down> key. → Accessed from the <Navigate> drop-down menu.
First Page	Selecting the <First Page> option from the <Navigate> drop-down menu moves the cursor back to the first page of the "active component".
Last Page	After having interrupted an interview to correct or verify a previously answered question, select the <Last Page> option from the <Navigate> drop-down menu to reposition the cursor at the next question to be completed in the question flow.
Up Arrow	The <Up Arrow> controls movement to the previously completed questions in the questionnaire flow.
Down Arrow	The <Down Arrow> controls movement to the next completed question field in the question flow. Movement to the next question in the flow will function only if the current question has been completed.
Left Arrow	The <Left Arrow> controls movement to the completed question field located directly to the left of the current question field when multiple columns exist in the "Form pane". When there is only one column of question fields in the "Form pane", the <Left Arrow> has the same functionality as the <Up Arrow> key. → Move back one field at a time.
Right Arrow	The <Right Arrow> controls movement to the completed question field located directly to the right of the current question field for multiple columns in the "Form pane". When there is only one column of question fields in the "Form pane", the <Right Arrow> has the same functionality as the <Down Arrow> key. → Move forward one field at a time.
Enter	Pressing the <Enter> key saves the current valid response and moves the cursor to the next question in the flow.

Quiz

Question 1

What is the purpose of the *2007 Agricultural Water Use Survey?*

Question 2

Who uses the information collected from the *2007 Agricultural Water Use Survey*?

Question 3

If you are in a case that you can not complete, how should you exit the case?

Question 4

What crops do you enter in Question 6: "Of those crops reported, which ones used the most water in the 2007 growing season?"?

Question 5

What is the definition of a greenhouse? Should greenhouses be included in this survey?

Question 6

Under what circumstances will questions 8 and 9 be asked?

Question 7

DO NOT confuse Shuttle Comments with Notes to the Interviewers.
***What are* "NOTES TO THE INTERVIEWERS"?**

Question 8

Comments are extremely important in assessing the information we receive. There are three areas for comments:

- **Farm Register Comments**
- **Survey Data Comments**
- **Shuttle Comments**

In which comment area would you enter the following comments?

A. When an interviewer is given additional information concerning the farm that is deemed *essential* for the Farm Register Unit to fully understand a particular case or situation, e.g. change in operating status, amalgamations, duplicates, etc. this information should go in:

B. When an interviewer is given information concerning the irrigation equipment, bad weather, etc., this information should go in :

C. When an interviewer is given information concerning the operator, such as best time to contact respondent, call the telephone number in the barn, respondent cannot hear very well, speak slowly and loudly, etc., this information should go in:

Question 9

What is the definition for irrigation?

Question 10

What do you do if the main operator is not the best contact for this survey?

Question 11

Is water for personal use to be included in the answers for questions 15-20?

Agriculture Division

2007 Agricultural Water Use Survey

CONFIDENTIAL when completed
Collected under the authority of the Statistics Act, Revised Statutes of Canada, 1985, Chapter S19.

For interviewer use only

Fully completed	005	1	
Partial	005	4	
Refusal	005	2	
No contact	005	3	
In operation	004	00	
Change of operator	004	12	
Out of business	004	13	
Out of scope	004	99	

This is a voluntary survey conducted under Section 8 of the Statistics Act. Your cooperation is important to ensure that the information collected in this survey is as accurate as possible.

All information will be kept confidential under the Statistics Act.

Please refer to the calendar year 2007 when answering the questions.

La version française de ce questionnaire est disponible.

Review the information on the label. If any information is incorrect or missing, please make the necessary corrections in the boxes below.

FRM
Farm Name (if applicable)
Area Code

NA 1
Surname or Family Name
Telephone

Usual First Name and Initial

ADR
R.R. Box No. Number and Street Name

Postal Code Post Office (name of city, town or village where mail is received)

EML
E-mail Address (if applicable)
Area Code

NA 3
Partner's Name (if applicable)
Telephone

NA 4
Partner's Name (if applicable)
Area Code

COR
Corporation Name (if applicable)
Telephone

Statistics Canada Statistique Canada

Canada

Section A. Type of Operation and Land Area

Please refer to the **2007 GROWING SEASON** when answering the following questions.

1. In 2007, did this operation produce or grow field crops, hay, improved pasture, vegetables, fruits, nursery products or sod? (C101)

EXCLUDE: greenhouses, mushroom barns and Christmas trees.

Yes ○ 01 No ○ 03 Go to Q21, last page.

2. a) In the 2007 growing season, did this operation use or apply water for irrigation or watering crops? (C201)

Yes ○ 01 No ○ 03

2. b) In the 2007 growing season, did this operation use or apply water for increasing soil moisture content e.g., pre-planting or post harvest? (C202)

Yes ○ 01 No ○ 03

2. c) In the 2007 growing season, did this operation use or apply water for any of the following activities?

(Mark all that apply)

(C203) ☐ Spraying fungicide, herbicide, insecticide or fertilizer

(C204) ☐ Cleaning farm buildings or equipment

(C205) ☐ Reducing salinity of the soil (leaching)

(C206) ☐ Cooling of produce (e.g. broccoli)

(C207) ☐ Frost protection

(C208) ☐ Harvesting (e.g. cranberries)

(C209) ☐ Processing and packaging (e.g., washing vegetables)

(C210) ☐ Watering livestock

(C211) ☐ Other (specify) (C212) _____

If answers to Q2a and 2b are both No, then go to Q12, page 29.

Section B. Cropland and Irrigation in 2007

The next questions are about land area operated in the **2007 GROWING SEASON**.

3. Will you be reporting land area in acres or hectares (or arpents)? (C301)

01 ◯ Acres 03 ◯ Hectares 05 ◯ Arpents (Quebec only)

4. In the 2007 growing season, what was the total area of cropland and improved pasture of this operation?

Include:
- all land, producing and non-producing, used for fruits, vegetables, field crops, nursery products, sod, hay and improved pasture land rented or leased **FROM OTHERS**
- irrigated and non-irrigated land

Exclude:
- land owned and rented or leased **TO OTHERS**
- summerfallow

(C401) _____ total area of cropland and pasture (producing and non-producing)

5. Which of the following crop types did you produce or grow on this operation (in the 2007 growing season)?

(Mark all that apply)

(C501) ☐ Field crops

(C502) ☐ Fruits

(C503) ☐ Vegetables

(C504) ☐ Nursery products

(C505) ☐ Sod

(C506) ☐ Hay

(C507) ☐ Improved pasture

The following questions are about the crop area, yield and irrigation methods used on this operation in the 2007 growing season.
Include irrigated and non-irrigated land for total area of crops and yield reported.

Enter up to six crops in the table below. First enter those crops that are irrigated (order them from those that require the most water to those that require the least) followed by the crops with the largest land area.

	Crop 1	Crop 2	Crop 3
Crop Name			
6. What crops did you produce or grow on this operation (in the 2007 growing season)? Include producing and non-producing crops.	(C601)	(C602)	(C603)
7.a What was the total area of the crop? acres/hectares (or arpents Quebec)	(C701)	(C745)	(C789)
7.b How will you report average yield of the crop? Yield 1 Mark only one (per crop). Exclude improved pasture.	(C702) **acre / hectare / arpent** 01 ◯ Bushels 02 ◯ Kilograms 03 ◯ Metric Tonnes 04 ◯ Imperial Tons 05 ◯ Pounds 06 ◯ Hundred Weight 07 ◯ Pints 08 ◯ Quarts 09 ◯ Masters or baskets (about 20 lbs) 10 ◯ Square feet 11 ◯ Square metres 12 ◯ Other (specify) (C703) _____ 13 ◯ Not applicable (no yield) If Not applicable, go to Q7d for the crop	(C746) **acre / hectare / arpent** 01 ◯ Bushels 02 ◯ Kilograms 03 ◯ Metric Tonnes 04 ◯ Imperial Tons 05 ◯ Pounds 06 ◯ Hundred Weight 07 ◯ Pints 08 ◯ Quarts 09 ◯ Masters or baskets (about 20 lbs) 10 ◯ Square feet 11 ◯ Square metres 12 ◯ Other (specify) (C747) _____ 13 ◯ Not applicable (no yield) If Not applicable, go to Q7d for the crop	(C790) **acre / hectare / arpent** 01 ◯ Bushels 02 ◯ Kilograms 03 ◯ Metric Tonnes 04 ◯ Imperial Tons 05 ◯ Pounds 06 ◯ Hundred Weight 07 ◯ Pints 08 ◯ Quarts 09 ◯ Masters or baskets (about 20 lbs) 10 ◯ Square feet 11 ◯ Square metres 12 ◯ Other (specify) (C791) _____ 13 ◯ Not applicable (no yield) If Not applicable, go to Q7d for the crop
7.c What was the average yield? Average Yield 1	(C704)	(C748)	(C792)
If you have a second yield how will you report average yield of the crop? Yield 2	(C705) **acre / hectare / arpent** 01 ◯ Bushels 02 ◯ Kilograms 03 ◯ Metric Tonnes 04 ◯ Imperial Tons 05 ◯ Pounds 06 ◯ Hundred Weight 07 ◯ Pints 08 ◯ Quarts 09 ◯ Masters or baskets (about 20 lbs) 10 ◯ Square feet 11 ◯ Square metres 12 ◯ Other (specify) (C706) _____ 13 ◯ Not applicable (no 2nd yield) If no second yield continue to Q7d.	(C749) **acre / hectare / arpent** 01 ◯ Bushels 02 ◯ Kilograms 03 ◯ Metric Tonnes 04 ◯ Imperial Tons 05 ◯ Pounds 06 ◯ Hundred Weight 07 ◯ Pints 08 ◯ Quarts 09 ◯ Masters or baskets (about 20 lbs) 10 ◯ Square feet 11 ◯ Square metres 12 ◯ Other (specify) (C750) _____ 13 ◯ Not applicable (no 2nd yield) If no second yield continue to Q7d.	(C793) **acre / hectare / arpent** 01 ◯ Bushels 02 ◯ Kilograms 03 ◯ Metric Tonnes 04 ◯ Imperial Tons 05 ◯ Pounds 06 ◯ Hundred Weight 07 ◯ Pints 08 ◯ Quarts 09 ◯ Masters or baskets (about 20 lbs) 10 ◯ Square feet 11 ◯ Square metres 12 ◯ Other (specify) (C794) _____ 13 ◯ Not applicable (no 2nd yield) If no second yield continue to Q7d.
What was the average yield? Average Yield 2	(C707)	(C751)	(C795)

The following questions are about the crop area, yield and irrigation methods used on this operation in the 2007 growing season.
Include irrigated and non-irrigated land for total area of crops and yield reported.

Enter up to six crops in the table below. First enter those crops that are irrigated (order them from those that require the most water to those that require the least) followed by the crops with the largest land area.

	Crop 4	Crop 5	Crop 6
Crop Name			
6. What crops did you produce or grow on this operation (in the 2007 growing season)? Include producing and non-producing crops.	(C604)	(C605)	(C606)
7.a What was the total area of the crop? acres/hectares (or arpents Quebec)	(C7133)	(C7177)	(C7221)
7.b How will you report average yield of the crop? Yield 1 **Mark only one (per crop).** **Exclude improved pasture.**	(C7134) **acre / hectare / arpent** 01 ◯ Bushels 02 ◯ Kilograms 03 ◯ Metric Tonnes 04 ◯ Imperial Tons 05 ◯ Pounds 06 ◯ Hundred Weight 07 ◯ Pints 08 ◯ Quarts 09 ◯ Masters or baskets (about 20 lbs) 10 ◯ Square feet 11 ◯ Square metres 12 ◯ Other (specify) (C7135) _____ 13 ◯ Not applicable (no yield) If Not applicable, go to Q7d for the crop	(C7178) **acre / hectare / arpent** 01 ◯ Bushels 02 ◯ Kilograms 03 ◯ Metric Tonnes 04 ◯ Imperial Tons 05 ◯ Pounds 06 ◯ Hundred Weight 07 ◯ Pints 08 ◯ Quarts 09 ◯ Masters or baskets (about 20 lbs) 10 ◯ Square feet 11 ◯ Square metres 12 ◯ Other (specify) (C7179) _____ 13 ◯ Not applicable (no yield) If Not applicable, go to Q7d for the crop	(C7222) **acre / hectare / arpent** 01 ◯ Bushels 02 ◯ Kilograms 03 ◯ Metric Tonnes 04 ◯ Imperial Tons 05 ◯ Pounds 06 ◯ Hundred Weight 07 ◯ Pints 08 ◯ Quarts 09 ◯ Masters or baskets (about 20 lbs) 10 ◯ Square feet 11 ◯ Square metres 12 ◯ Other (specify) (C7223) _____ 13 ◯ Not applicable (no yield) If Not applicable, go to Q7d for the crop
7.c What was the average yield? Average Yield 1	(C7136)	(C7180)	(C7224)
If you have a second yield how will you report average yield of the crop? Yield 2	(C7137) **acre / hectare / arpent** 01 ◯ Bushels 02 ◯ Kilograms 03 ◯ Metric Tonnes 04 ◯ Imperial Tons 05 ◯ Pounds 06 ◯ Hundred Weight 07 ◯ Pints 08 ◯ Quarts 09 ◯ Masters or baskets (about 20 lbs) 10 ◯ Square feet 11 ◯ Square metres 12 ◯ Other (specify) (C7138) _____ 13 ◯ Not applicable (no 2nd yield) If no second yield continue to Q7d.	(C7181) **acre / hectare / arpent** 01 ◯ Bushels 02 ◯ Kilograms 03 ◯ Metric Tonnes 04 ◯ Imperial Tons 05 ◯ Pounds 06 ◯ Hundred Weight 07 ◯ Pints 08 ◯ Quarts 09 ◯ Masters or baskets (about 20 lbs) 10 ◯ Square feet 11 ◯ Square metres 12 ◯ Other (specify) (C7182) _____ 13 ◯ Not applicable (no 2nd yield) If no second yield continue to Q7d.	(C7225) **acre / hectare / arpent** 01 ◯ Bushels 02 ◯ Kilograms 03 ◯ Metric Tonnes 04 ◯ Imperial Tons 05 ◯ Pounds 06 ◯ Hundred Weight 07 ◯ Pints 08 ◯ Quarts 09 ◯ Masters or baskets (about 20 lbs) 10 ◯ Square feet 11 ◯ Square metres 12 ◯ Other (specify) (C7226) _____ 13 ◯ Not applicable (no 2nd yield) If no second yield continue to Q7d.
What was the average yield? Average Yield 2	(C7139)	(C7183)	(C7227)

Enter crops from pages 4 and 5 (crop 1 to crop 6). Include water used to increase soil moisture content e.g., pre-planting or post harvest.

	Crop 1	Crop 2	Crop 3
Crop Name			
7.d Was/were the crop(s) irrigated in 2007?	(C708) 01 ◯ Yes 03 ◯ No	(C752) 01 ◯ Yes 03 ◯ No	(C796) 01 ◯ Yes 03 ◯ No

If the crop was not irrigated, go to next crop. If no more crops irrigated, go to page 24.

The following questions (7e to 7m) are asked for up to three irrigation methods per crop. The questions are asked for the first method, then repeated for the second then third methods.

7.e What was the first method of irrigation used for the crop? **Method 1** **Mark only one (per crop).**	(C709)	(C753)	(C797)
	Sprinkler	Sprinkler	Sprinkler
	01 ◯ Hand Move	01 ◯ Hand Move	01 ◯ Hand Move
	02 ◯ Solid or Permanent Set	02 ◯ Solid or Permanent Set	02 ◯ Solid or Permanent Set
	03 ◯ Side Roll, Wheel Line, Wheel Move or Wheel Roll	03 ◯ Side Roll, Wheel Line, Wheel Move or Wheel Roll	03 ◯ Side Roll, Wheel Line, Wheel Move or Wheel Roll
	04 ◯ Traveler, Volume Gun, Travelling Gun, Walker, Overhead or Circler	04 ◯ Traveler, Volume Gun, Travelling Gun, Walker, Overhead or Circler	04 ◯ Traveler, Volume Gun, Travelling Gun, Walker, Overhead or Circler
	05 ◯ Linear move < 25 psi	05 ◯ Linear move < 25 psi	05 ◯ Linear move < 25 psi
	06 ◯ Linear move 25 - 50 psi	06 ◯ Linear move 25 - 50 psi	06 ◯ Linear move 25 - 50 psi
	07 ◯ Linear move >50 psi	07 ◯ Linear move >50 psi	07 ◯ Linear move >50 psi
	08 ◯ Centre pivot < 25 psi	08 ◯ Centre pivot < 25 psi	08 ◯ Centre pivot < 25 psi
	09 ◯ Centre Pivot 25 - 50 psi	09 ◯ Centre Pivot 25 - 50 psi	09 ◯ Centre Pivot 25 - 50 psi
	10 ◯ Centre Pivot >50 psi	10 ◯ Centre Pivot >50 psi	10 ◯ Centre Pivot >50 psi
	Micro	Micro	Micro
	20 ◯ Surface drip	20 ◯ Surface drip	20 ◯ Surface drip
	21 ◯ Sub-surface Drip	21 ◯ Sub-surface Drip	21 ◯ Sub-surface Drip
	22 ◯ Micro-sprinkler	22 ◯ Micro-sprinkler	22 ◯ Micro-sprinkler
	23 ◯ Bubblers	23 ◯ Bubblers	23 ◯ Bubblers
	24 ◯ Microjet	24 ◯ Microjet	24 ◯ Microjet
	25 ◯ Hand watering	25 ◯ Hand watering	25 ◯ Hand watering
	Surface	Surface	Surface
	30 ◯ Down rows	30 ◯ Down rows	30 ◯ Down rows
	31 ◯ Furrows	31 ◯ Furrows	31 ◯ Furrows
	32 ◯ Corrugations	32 ◯ Corrugations	32 ◯ Corrugations
	33 ◯ Border dyke	33 ◯ Border dyke	33 ◯ Border dyke
	34 ◯ Level basins	34 ◯ Level basins	34 ◯ Level basins
	35 ◯ Uncontrolled flooding (wild flooding)	35 ◯ Uncontrolled flooding (wild flooding)	35 ◯ Uncontrolled flooding (wild flooding)
	36 ◯ Back flooding	36 ◯ Back flooding	36 ◯ Back flooding
	40 ◯ Other method (specify) (C710) _____	40 ◯ Other method (specify) (C754) _____	40 ◯ Other method (specify) (C798) _____
7.f What was the total area of the crop irrigated with the first irrigation method?	(C711)	(C755)	(C799)

Enter crops from pages 4 and 5 (crop 1 to crop 6). Include water used to increase soil moisture content e.g., pre-planting or post harvest.

	Crop 4	Crop 5	Crop 6
Crop Name			
7.d Was/were the crop(s) irrigated in 2007?	(C7140) 01 ◯ Yes 03 ◯ No	(C7184) 01 ◯ Yes 03 ◯ No	(C7228) 01 ◯ Yes 03 ◯ No

If the crop was not irrigated, go to next crop. If no more crops irrigated, go to page 24.

The following questions (7e to 7m) are asked for up to three irrigation methods per crop. The questions are asked for the first method, then repeated for the second then third methods.

7.e What was the first method of irrigation used for the crop?

Method 1

Mark only one (per crop).

	Crop 4 (C7141)	Crop 5 (C7185)	Crop 6 (C7229)
Sprinkler			
01	Hand Move	Hand Move	Hand Move
02	Solid or Permanent Set	Solid or Permanent Set	Solid or Permanent Set
03	Side Roll, Wheel Line, Wheel Move or Wheel Roll	Side Roll, Wheel Line, Wheel Move or Wheel Roll	Side Roll, Wheel Line, Wheel Move or Wheel Roll
04	Traveler, Volume Gun, Travelling Gun, Walker, Overhead or Circler	Traveler, Volume Gun, Travelling Gun, Walker, Overhead or Circler	Traveler, Volume Gun, Travelling Gun, Walker, Overhead or Circler
05	Linear move < 25 psi	Linear move < 25 psi	Linear move < 25 psi
06	Linear move 25 - 50 psi	Linear move 25 - 50 psi	Linear move 25 - 50 psi
07	Linear move >50 psi	Linear move >50 psi	Linear move >50 psi
08	Centre pivot < 25 psi	Centre pivot < 25 psi	Centre pivot < 25 psi
09	Centre Pivot 25 - 50 psi	Centre Pivot 25 - 50 psi	Centre Pivot 25 - 50 psi
10	Centre Pivot >50 psi	Centre Pivot >50 psi	Centre Pivot >50 psi
Micro			
20	Surface drip	Surface drip	Surface drip
21	Sub-surface Drip	Sub-surface Drip	Sub-surface Drip
22	Micro-sprinkler	Micro-sprinkler	Micro-sprinkler
23	Bubblers	Bubblers	Bubblers
24	Microjet	Microjet	Microjet
25	Hand watering	Hand watering	Hand watering
Surface			
30	Down rows	Down rows	Down rows
31	Furrows	Furrows	Furrows
32	Corrugations	Corrugations	Corrugations
33	Border dyke	Border dyke	Border dyke
34	Level basins	Level basins	Level basins
35	Uncontrolled flooding (wild flooding)	Uncontrolled flooding (wild flooding)	Uncontrolled flooding (wild flooding)
36	Back flooding	Back flooding	Back flooding
40	Other method (specify) (C7142)	Other method (specify) (C7186)	Other method (specify) (C7230)

7.f What was the total area of the crop irrigated with the first irrigation method?	(C7143)	(C7187)	(C7231)

Enter crops from pages 4 and 5 (crop 1 to crop 6).

	Crop 1	Crop 2	Crop 3
Crop Name			
7.g The next questions ask about volume (or flow rate) of water used (in the 2007 growing season). **How will you report volume of water used: e.g., inches, gallons, litres for the crop?** **Method 1** **If the response is by Flow rate, Q7i will ask to specify per second, minute, hour or day.**	(C712) Unit of water **Water depth per surface area** 01 ◯ Inches per acre 02 ◯ Millimetres per hectare **OR** **Total volume** 03 ◯ Total acre-feet 04 ◯ Total gallons 05 ◯ Total litres 06 ◯ Total cubic feet 07 ◯ Total cubic metres **OR** **Volume per surface area** 08 ◯ Acre-feet per acre 09 ◯ Gallons per acre 10 ◯ Litres per hectare 11 ◯ Cubic feet per acre 12 ◯ Cubic metres per hectare 14 ◯ Other Volume, specify (C713) _____ **OR** **Flow rate** 20 ◯ Gallons (per unit of time) 21 ◯ Litres (per unit of time) 22 ◯ Cubic feet (per unit of time) 23 ◯ Cubic metres (per unit of time) 24 ◯ Pounds (per unit of time) 26 ◯ Other Flow Rate (per unit of time), specify (C714) _____	(C756) Unit of water **Water depth per surface area** 01 ◯ Inches per acre 02 ◯ Millimetres per hectare **OR** **Total volume** 03 ◯ Total acre-feet 04 ◯ Total gallons 05 ◯ Total litres 06 ◯ Total cubic feet 07 ◯ Total cubic metres **OR** **Volume per surface area** 08 Acre-feet per acre 09 ◯ Gallons per acre 10 ◯ Litres per hectare 11 ◯ Cubic feet per acre 12 ◯ Cubic metres per hectare 14 ◯ Other Volume, specify (C757) _____ **OR** **Flow rate** 20 ◯ Gallons (per unit of time) 21 ◯ Litres (per unit of time) 22 ◯ Cubic feet (per unit of time) 23 ◯ Cubic metres (per unit of time) 24 ◯ Pounds (per unit of time) 26 ◯ Other Flow Rate (per unit of time), specify (C758) _____	(C7100) Unit of water **Water depth per surface area** 01 ◯ Inches per acre 02 ◯ Millimetres per hectare **OR** **Total volume** 03 ◯ Total acre-feet 04 ◯ Total gallons 05 ◯ Total litres 06 ◯ Total cubic feet 07 ◯ Total cubic metres **OR** **Volume per surface area** 08 Acre-feet per acre 09 ◯ Gallons per acre 10 ◯ Litres per hectare 11 ◯ Cubic feet per acre 12 ◯ Cubic metres per hectare 14 ◯ Other Volume, specify (C7101) _____ **OR** **Flow rate** 20 ◯ Gallons (per unit of time) 21 ◯ Litres (per unit of time) 22 ◯ Cubic feet (per unit of time) 23 ◯ Cubic metres (per unit of time) 24 ◯ Pounds (per unit of time) 26 ◯ Other Flow Rate (per unit of time), specify (C7102) _____
7.h How many units (i.e., reported in Q7g) of water were applied on the crop using the first irrigation method?	(C715)	(C759)	(C7103)

If possible please report flow rate at system nozzle. If not available, give rate at pump.

If any in 7g is answered by flow rate (20 to 26) then continue to 7i for that crop. If another irrigation method was used for a crop, continue to method 2 for that crop. If no more crop irrigation to report, go to Q8 (page 24).

Enter crops from pages 4 and 5 (crop 1 to crop 6).

	Crop 4	Crop 5	Crop 6
Crop Name			
7.g The next questions ask about volume (or flow rate) of water used (in the 2007 growing season). **How will you report volume of water used: e.g., inches, gallons, litres for the crop?** **Method 1** **If the response is by Flow rate, Q7i will ask to specify per second, minute, hour or day.**	(C7144) Unit of water **Water depth per surface area** 01 ◯ Inches per acre 02 ◯ Millimetres per hectare **OR** **Total volume** 03 ◯ Total acre-feet 04 ◯ Total gallons 05 ◯ Total litres 06 ◯ Total cubic feet 07 ◯ Total cubic metres **OR** **Volume per surface area** 08 ◯ Acre-feet per acre 09 ◯ Gallons per acre 10 ◯ Litres per hectare 11 ◯ Cubic feet per acre 12 ◯ Cubic metres per hectare 14 ◯ Other Volume, specify (C7145) _____ **OR** **Flow rate** 20 ◯ Gallons (per unit of time) 21 ◯ Litres (per unit of time) 22 ◯ Cubic feet (per unit of time) 23 ◯ Cubic metres (per unit of time) 24 ◯ Pounds (per unit of time) 26 ◯ Other Flow Rate (per unit of time), specify (C7146) _____	(C7188) Unit of water **Water depth per surface area** 01 ◯ Inches per acre 02 ◯ Millimetres per hectare **OR** **Total volume** 03 ◯ Total acre-feet 04 ◯ Total gallons 05 ◯ Total litres 06 ◯ Total cubic feet 07 ◯ Total cubic metres **OR** **Volume per surface area** 08 Acre-feet per acre 09 ◯ Gallons per acre 10 ◯ Litres per hectare 11 ◯ Cubic feet per acre 12 ◯ Cubic metres per hectare 14 ◯ Other Volume, specify (C7189) _____ **OR** **Flow rate** 20 ◯ Gallons (per unit of time) 21 ◯ Litres (per unit of time) 22 ◯ Cubic feet (per unit of time) 23 ◯ Cubic metres (per unit of time) 24 ◯ Pounds (per unit of time) 26 ◯ Other Flow Rate (per unit of time, specify (C7190) _____	(C7232) Unit of water **Water depth per surface area** 01 ◯ Inches per acre 02 ◯ Millimetres per hectare **OR** **Total volume** 03 ◯ Total acre-feet 04 ◯ Total gallons 05 ◯ Total litres 06 ◯ Total cubic feet 07 ◯ Total cubic metres **OR** **Volume per surface area** 08 Acre-feet per acre 09 ◯ Gallons per acre 10 ◯ Litres per hectare 11 ◯ Cubic feet per acre 12 ◯ Cubic metres per hectare 14 ◯ Other Volume, specify (C7233) _____ **OR** **Flow rate** 20 ◯ Gallons (per unit of time) 21 ◯ Litres (per unit of time) 22 ◯ Cubic feet (per unit of time) 23 ◯ Cubic metres (per unit of time) 24 ◯ Pounds (per unit of time) 26 ◯ Other Flow Rate (per unit of time, specify (C7234) _____
7.h How many units (i.e., reported in Q7g) of water were applied on the crop using the first irrigation method?	(C7147)	(C7191)	(C7235)

If possible please report flow rate at system nozzle. If not available, give rate at pump.

If any in 7g is answered by flow rate (20 to 26) then continue to 7i for that crop. If another irrigation method was used for a crop, continue to method 2 for that crop. If no more crop irrigation to report, go to Q8 (page 24).

Enter crops from pages 4 and 5 (crop 1 to crop 6).

	Crop 1	Crop 2	Crop 3
Crop Name			
7.i Were the units applied per second, minute, hour or day? **Method 1**	(C716) 01 ◯ Per second 02 ◯ Per minute 03 ◯ Per hour 04 ◯ Per day	(C760) 01 ◯ Per second 02 ◯ Per minute 03 ◯ Per hour 04 ◯ Per day	(C7104) 01 ◯ Per second 02 ◯ Per minute 03 ◯ Per hour 04 ◯ Per day
7.j Was this at the system nozzle or pump? **Method 1**	(C717) 01 ◯ System nozzle 03 ◯ Pump	(C761) 01 ◯ System nozzle 03 ◯ Pump	(C7105) 01 ◯ System nozzle 03 ◯ Pump
7.k What was the total number of days or weeks that this system ran? **Method 1**	(C718) _____ days or weeks	(C762) _____ days or weeks	(C7106) _____ days or weeks
7.l Was it days or weeks? **Method 1**	(C719) 01 ◯ Days 03 ◯ Weeks	(C763) 01 ◯ Days 03 ◯ Weeks	(C7107) 01 ◯ Days 03 ◯ Weeks
7.m What was the total number of hours (per day/week) that this system ran? **Method 1**	(C720) _____ hours	(C764) _____ hours	(C7108) _____ hours

If another irrigation method was used for a crop, continue to method 2 for that crop. If no more crop irrigation to report, go to Q8 (page 24).

Enter crops from pages 4 and 5 (crop 1 to crop 6).

	Crop 4	Crop 5	Crop 6
Crop Name			
7.i Were the units applied per second, minute, hour or day? **Method 1**	(C7148) 01 ◯ Per second 02 ◯ Per minute 03 ◯ Per hour 04 ◯ Per day	(C7192) 01 ◯ Per second 02 ◯ Per minute 03 ◯ Per hour 04 ◯ Per day	(C7236) 01 ◯ Per second 02 ◯ Per minute 03 ◯ Per hour 04 ◯ Per day
7.j Was this at the system nozzle or pump? **Method 1**	(C7149) 01 ◯ System nozzle 03 ◯ Pump	(C7193) 01 ◯ System nozzle 03 ◯ Pump	(C7237) 01 ◯ System nozzle 03 ◯ Pump
7.k What was the total number of days or weeks that this system ran? **Method 1**	(C7150) _____ days or weeks	(C7194) _____ days or weeks	(C7238) _____ days or weeks
7.l Was it days or weeks? **Method 1**	(C7151) 01 ◯ Days 03 ◯ Weeks	(C7195) 01 ◯ Days 03 ◯ Weeks	(C7239) 01 ◯ Days 03 ◯ Weeks
7.m What was the total number of hours (per day/week) that this system ran? **Method 1**	(C7152) _____ hours	(C7196) _____ hours	(C7240) _____ hours

If another irrigation method was used for a crop, continue to method 2 for that crop. If no more crop irrigation to report, go to Q8 (page 24).

Enter crops from pages 4 and 5 (crop 1 to crop 6). Include water used to increase soil moisture content e.g., pre-planting or post harvest.

	Crop 1	Crop 2	Crop 3
Crop Name			
7.e What was the second method of irrigation used for the crop? **Method 2** **Mark only one (per crop).**	(C721)	(C765)	(C7109)
	Sprinkler	Sprinkler	Sprinkler
	01 ○ Hand Move	01 ○ Hand Move	01 ○ Hand Move
	02 ○ Solid or Permanent Set	02 ○ Solid or Permanent Set	02 ○ Solid or Permanent Set
	03 ○ Side Roll, Wheel Line, Wheel Move or Wheel Roll	03 ○ Side Roll, Wheel Line, Wheel Move or Wheel Roll	03 ○ Side Roll, Wheel Line, Wheel Move or Wheel Roll
	04 ○ Traveler, Volume Gun, Travelling Gun, Walker, Overhead or Circler	04 ○ Traveler, Volume Gun, Travelling Gun, Walker, Overhead or Circler	04 ○ Traveler, Volume Gun, Travelling Gun, Walker, Overhead or Circler
	05 ○ Linear move < 25 psi	05 ○ Linear move < 25 psi	05 ○ Linear move < 25 psi
	06 ○ Linear move 25 - 50 psi	06 ○ Linear move 25 - 50 psi	06 ○ Linear move 25 - 50 psi
	07 ○ Linear move >50 psi	07 ○ Linear move >50 psi	07 ○ Linear move >50 psi
	08 ○ Centre pivot < 25 psi	08 ○ Centre pivot < 25 psi	08 ○ Centre pivot < 25 psi
	09 ○ Centre Pivot 25 - 50 psi	09 ○ Centre Pivot 25 - 50 psi	09 ○ Centre Pivot 25 - 50 psi
	10 ○ Centre Pivot >50 psi	10 ○ Centre Pivot >50 psi	10 ○ Centre Pivot >50 psi
	Micro	Micro	Micro
	20 ○ Surface drip	20 ○ Surface drip	20 ○ Surface drip
	21 ○ Sub-surface Drip	21 ○ Sub-surface Drip	21 ○ Sub-surface Drip
	22 ○ Micro-sprinkler	22 ○ Micro-sprinkler	22 ○ Micro-sprinkler
	23 ○ Bubblers	23 ○ Bubblers	23 ○ Bubblers
	24 ○ Microjet	24 ○ Microjet	24 ○ Microjet
	25 ○ Hand watering	25 ○ Hand watering	25 ○ Hand watering
	Surface	Surface	Surface
	30 ○ Down rows	30 ○ Down rows	30 ○ Down rows
	31 ○ Furrows	31 ○ Furrows	31 ○ Furrows
	32 ○ Corrugations	32 ○ Corrugations	32 ○ Corrugations
	33 ○ Border dyke	33 ○ Border dyke	33 ○ Border dyke
	34 ○ Level basins	34 ○ Level basins	34 ○ Level basins
	35 ○ Uncontrolled flooding (wild flooding)	35 ○ Uncontrolled flooding (wild flooding)	35 ○ Uncontrolled flooding (wild flooding)
	36 ○ Back flooding	36 ○ Back flooding	36 ○ Back flooding
	40 ○ Other method (specify) (C722) _____	40 ○ Other method (specify) (C766) _____	40 ○ Other method (specify) (C7110) _____
7.f What was the total area of the crop irrigated with the second irrigation method?	(C723)	(C767)	(C7111)

Enter crops from pages 4 and 5 (crop 1 to crop 6). Include water used to increase soil moisture content e.g., pre-planting or post harvest.

	Crop 4	Crop 5	Crop 6
Crop Name			
7.e What was the second method of irrigation used for the crop? **Method 2** **Mark only one (per crop).**	(C7153) Sprinkler 01 ○ Hand Move 02 ○ Solid or Permanent Set 03 ○ Side Roll, Wheel Line, Wheel Move or Wheel Roll 04 ○ Traveler, Volume Gun, Travelling Gun, Walker, Overhead or Circler 05 ○ Linear move < 25 psi 06 ○ Linear move 25 - 50 psi 07 ○ Linear move >50 psi 08 ○ Centre pivot < 25 psi 09 ○ Centre Pivot 25 - 50 psi 10 ○ Centre Pivot >50 psi Micro 20 ○ Surface drip 21 ○ Sub-surface Drip 22 ○ Micro-sprinkler 23 ○ Bubblers 24 ○ Microjet 25 ○ Hand watering Surface 30 ○ Down rows 31 ○ Furrows 32 ○ Corrugations 33 ○ Border dyke 34 ○ Level basins 35 ○ Uncontrolled flooding (wild flooding) 36 ○ Back flooding 40 ○ Other method (specify) (C7154)_____	(C7197) Sprinkler 01 ○ Hand Move 02 ○ Solid or Permanent Set 03 ○ Side Roll, Wheel Line, Wheel Move or Wheel Roll 04 ○ Traveler, Volume Gun, Travelling Gun, Walker, Overhead or Circler 05 ○ Linear move < 25 psi 06 ○ Linear move 25 - 50 psi 07 ○ Linear move >50 psi 08 ○ Centre pivot < 25 psi 09 ○ Centre Pivot 25 - 50 psi 10 ○ Centre Pivot >50 psi Micro 20 ○ Surface drip 21 ○ Sub-surface Drip 22 ○ Micro-sprinkler 23 ○ Bubblers 24 ○ Microjet 25 ○ Hand watering Surface 30 ○ Down rows 31 ○ Furrows 32 ○ Corrugations 33 ○ Border dyke 34 ○ Level basins 35 ○ Uncontrolled flooding (wild flooding) 36 ○ Back flooding 40 ○ Other method (specify) (C7198)_____	(C7241) Sprinkler 01 ○ Hand Move 02 ○ Solid or Permanent Set 03 ○ Side Roll, Wheel Line, Wheel Move or Wheel Roll 04 ○ Traveler, Volume Gun, Travelling Gun, Walker, Overhead or Circler 05 ○ Linear move < 25 psi 06 ○ Linear move 25 - 50 psi 07 ○ Linear move >50 psi 08 ○ Centre pivot < 25 psi 09 ○ Centre Pivot 25 - 50 psi 10 ○ Centre Pivot >50 psi Micro 20 ○ Surface drip 21 ○ Sub-surface Drip 22 ○ Micro-sprinkler 23 ○ Bubblers 24 ○ Microjet 25 ○ Hand watering Surface 30 ○ Down rows 31 ○ Furrows 32 ○ Corrugations 33 ○ Border dyke 34 ○ Level basins 35 ○ Uncontrolled flooding (wild flooding) 36 ○ Back flooding 40 ○ Other method (specify) (C7242)_____
7.f What was the total area of the crop irrigated with the second irrigation method?	(C7155)	(C7199)	(C7243)

Enter crops from pages 4 and 5 (crop 1 to crop 6).

	Crop 1	Crop 2	Crop 3
Crop Name			
7.g The next questions ask about volume (or flow rate) of water used (in the 2007 growing season). **How will you report volume of water used: e.g., inches, gallons, litres for the crop?** **Method 2** **Mark only one (per crop).** **If the response is by Flow rate, Q7i will ask to specify per second, minute, hour or day.**	(C724) Unit of water **Water depth per surface area** 01 ○ Inches per acre 02 ○ Millimetres per hectare **OR** **Total volume** 03 ○ Total acre-feet 04 ○ Total gallons 05 ○ Total litres 06 ○ Total cubic feet 07 ○ Total cubic metres **OR** **Volume per surface area** 08 ○ Acre-feet per acre 09 ○ Gallons per acre 10 ○ Litres per hectare 11 ○ Cubic feet per acre 12 ○ Cubic metres per hectare 14 ○ Other Volume, specify (C725) _____ **OR** **Flow rate** 20 ○ Gallons (per unit of time) 21 ○ Litres (per unit of time) 22 ○ Cubic feet (per unit of time) 23 ○ Cubic metres (per unit of time) 24 ○ Pounds (per unit of time) 26 ○ Other Flow Rate (per unit of time), specify (C726) _____	(C768) Unit of water **Water depth per surface area** 01 ○ Inches per acre 02 ○ Millimetres per hectare **OR** **Total volume** 03 ○ Total acre-feet 04 ○ Total gallons 05 ○ Total litres 06 ○ Total cubic feet 07 ○ Total cubic metres **OR** **Volume per surface area** 08 Acre-feet per acre 09 ○ Gallons per acre 10 ○ Litres per hectare 11 ○ Cubic feet per acre 12 ○ Cubic metres per hectare 14 ○ Other Volume, specify (C769) _____ **OR** **Flow rate** 20 ○ Gallons (per unit of time) 21 ○ Litres (per unit of time) 22 ○ Cubic feet (per unit of time) 23 ○ Cubic metres (per unit of time) 24 ○ Pounds (per unit of time) 26 ○ Other Flow Rate (per unit of time), specify (C770) _____	(C7112) Unit of water **Water depth per surface area** 01 ○ Inches per acre 02 ○ Millimetres per hectare **OR** **Total volume** 03 ○ Total acre-feet 04 ○ Total gallons 05 ○ Total litres 06 ○ Total cubic feet 07 ○ Total cubic metres **OR** **Volume per surface area** 08 Acre-feet per acre 09 ○ Gallons per acre 10 ○ Litres per hectare 11 ○ Cubic feet per acre 12 ○ Cubic metres per hectare 14 ○ Other Volume, specify (C7113) _____ **OR** **Flow rate** 20 ○ Gallons (per unit of time) 21 ○ Litres (per unit of time) 22 ○ Cubic feet (per unit of time) 23 ○ Cubic metres (per unit of time) 24 ○ Pounds (per unit of time) 26 ○ Other Flow Rate (per unit of time), specify (C7114) _____
7.h How many units (i.e., reported in Q7g) of water were applied on the crop using the second irrigation method?	(C727)	(C771)	(C7115)

If possible please report flow rate at system nozzle. If not available, give rate at pump.

If any in 7g is answered by flow rate (20 to 26) then continue to 7i for that crop. If another irrigation method was used for a crop, continue to method 3 for that crop. If no more crop irrigation to report, go to Q8 (page 24).

Enter crops from pages 4 and 5 (crop 1 to crop 6).

	Crop 4	Crop 5	Crop 6
Crop Name			
7.g The next questions ask about volume (or flow rate) of water used (in the 2007 growing season). **How will you report volume of water used: e.g., inches, gallons, litres for the crop?** **Method 2** **Mark only one (per crop).** **If the response is by Flow rate, Q7i will ask to specify per second, minute, hour or day.**	(C7156) Unit of water **Water depth per surface area** 01 ○ Inches per acre 02 ○ Millimetres per hectare **OR** **Total volume** 03 ○ Total acre-feet 04 ○ Total gallons 05 ○ Total litres 06 ○ Total cubic feet 07 ○ Total cubic metres **OR** **Volume per surface area** 08 ○ Acre-feet per acre 09 ○ Gallons per acre 10 ○ Litres per hectare 11 ○ Cubic feet per acre 12 ○ Cubic metres per hectare 14 ○ Other Volume, specify (C7157) _____ **OR** **Flow rate** 20 ○ Gallons (per unit of time) 21 ○ Litres (per unit of time) 22 ○ Cubic feet (per unit of time) 23 ○ Cubic metres (per unit of time) 24 ○ Pounds (per unit of time) 26 ○ Other Flow Rate (per unit of time), specify (C7158) _____	(C7200) Unit of water **Water depth per surface area** 01 ○ Inches per acre 02 ○ Millimetres per hectare **OR** **Total volume** 03 ○ Total acre-feet 04 ○ Total gallons 05 ○ Total litres 06 ○ Total cubic feet 07 ○ Total cubic metres **OR** **Volume per surface area** 08 Acre-feet per acre 09 ○ Gallons per acre 10 ○ Litres per hectare 11 ○ Cubic feet per acre 12 ○ Cubic metres per hectare 14 ○ Other Volume, specify (C7201) _____ **OR** **Flow rate** 20 ○ Gallons (per unit of time) 21 ○ Litres (per unit of time) 22 ○ Cubic feet (per unit of time) 23 ○ Cubic metres (per unit of time) 24 ○ Pounds (per unit of time) 26 ○ Other Flow Rate (per unit of time), specify (C7202) _____	(C7244) Unit of water **Water depth per surface area** 01 ○ Inches per acre 02 ○ Millimetres per hectare **OR** **Total volume** 03 ○ Total acre-feet 04 ○ Total gallons 05 ○ Total litres 06 ○ Total cubic feet 07 ○ Total cubic metres **OR** **Volume per surface area** 08 Acre-feet per acre 09 ○ Gallons per acre 10 ○ Litres per hectare 11 ○ Cubic feet per acre 12 ○ Cubic metres per hectare 14 ○ Other Volume, specify (C7245) _____ **OR** **Flow rate** 20 ○ Gallons (per unit of time) 21 ○ Litres (per unit of time) 22 ○ Cubic feet (per unit of time) 23 ○ Cubic metres (per unit of time) 24 ○ Pounds (per unit of time) 26 ○ Other Flow Rate (per unit of time), specify (C7246) _____
7.h How many units (i.e., reported in Q7g) of water were applied on the crop using the second irrigation method?	(C7159)	(C7203)	(C7247)

If possible please report flow rate at system nozzle. If not available, give rate at pump.

If any in 7g is answered by flow rate (20 to 26) then continue to 7i for that crop. If another irrigation method was used for a crop, continue to method 3 for that crop. If no more crop irrigation to report, go to Q8 (page 24).

Enter crops from pages 4 and 5 (crop 1 to crop 6).

	Crop 1	Crop 2	Crop 3
Crop Name			
7.i Were the units applied per second, minute, hour or day? **Method 2**	(C728) 01 ◯ Per second 02 ◯ Per minute 03 ◯ Per hour 04 ◯ Per day	(C772) 01 ◯ Per second 02 ◯ Per minute 03 ◯ Per hour 04 ◯ Per day	(C7116) 01 ◯ Per second 02 ◯ Per minute 03 ◯ Per hour 04 ◯ Per day
7.j Was this at the system nozzle or pump? **Method 2**	(C729) 01 ◯ System nozzle 03 ◯ Pump	(C773) 01 ◯ System nozzle 03 ◯ Pump	(C7117) 01 ◯ System nozzle 03 ◯ Pump
7.k What was the total number of days or weeks that this system ran? **Method 2**	(C730) _____ days or weeks	(C774) _____ days or weeks	(C7118) _____ days or weeks
7.l Was it days or weeks? **Method 2**	(C731) 01 ◯ Days 03 ◯ Weeks	(C775) 01 ◯ Days 03 ◯ Weeks	(C7119) 01 ◯ Days 03 ◯ Weeks
7.m What was the total number of hours (per day/week) that this system ran? **Method 2**	(C732) _____ hours	(C776) _____ hours	(C7120) _____ hours

If another irrigation method was used for a crop, continue to method 3 for that crop. If no more crop irrigation to report, go to Q8 (page 24).

Enter crops from pages 4 and 5 (crop 1 to crop 6).

	Crop 4	Crop 5	Crop 6
Crop Name			
7.i Were the units applied per second, minute, hour or day? **Method 2**	(C7160) 01 ◯ Per second 02 ◯ Per minute 03 ◯ Per hour 04 ◯ Per day	(C7204) 01 ◯ Per second 02 ◯ Per minute 03 ◯ Per hour 04 ◯ Per day	(C7248) 01 ◯ Per second 02 ◯ Per minute 03 ◯ Per hour 04 ◯ Per day
7.j Was this at the system nozzle or pump? **Method 2**	(C7161) 01 ◯ System nozzle 03 ◯ Pump	(C7205) 01 ◯ System nozzle 03 ◯ Pump	(C7249) 01 ◯ System nozzle 03 ◯ Pump
7.k What was the total number of days or weeks that this system ran? **Method 2**	(C7162) _____ days or weeks	(C7206) _____ days or weeks	(C7250) _____ days or weeks
7.l Was it days or weeks? **Method 2**	(C7163) 01 ◯ Days 03 ◯ Weeks	(C7207) 01 ◯ Days 03 ◯ Weeks	(C7251) 01 ◯ Days 03 ◯ Weeks
7.m What was the total number of hours (per day/week) that this system ran? **Method 2**	(C7164) _____ hours	(C7208) _____ hours	(C7252) _____ hours

If another irrigation method was used for a crop, continue to method 3 for that crop. If no more crop irrigation to report, go to Q8 (page 24).

Enter crops from pages 4 and 5 (crop 1 to crop 6). Include water used to increase soil moisture content e.g., pre-planting or post harvest.

	Crop 1	Crop 2	Crop 3
Crop Name			
7.e What was the third method of irrigation used for the crop? **Method 3** **Mark only one (per crop).**	(C733) Sprinkler 01 ○ Hand Move 02 ○ Solid or Permanent Set 03 ○ Side Roll, Wheel Line, Wheel Move or Wheel Roll 04 ○ Traveler, Volume Gun, Travelling Gun, Walker, Overhead or Circler 05 ○ Linear move < 25 psi 06 ○ Linear move 25 - 50 psi 07 ○ Linear move >50 psi 08 ○ Centre pivot < 25 psi 09 ○ Centre Pivot 25 - 50 psi 10 ○ Centre Pivot >50 psi Micro 20 ○ Surface drip 21 ○ Sub-surface Drip 22 ○ Micro-sprinkler 23 ○ Bubblers 24 ○ Microjet 25 ○ Hand watering Surface 30 ○ Down rows 31 ○ Furrows 32 ○ Corrugations 33 ○ Border dyke 34 ○ Level basins 35 ○ Uncontrolled flooding (wild flooding) 36 ○ Back flooding 40 ○ Other method (specify) (C734)_____	(C777) Sprinkler 01 ○ Hand Move 02 ○ Solid or Permanent Set 03 ○ Side Roll, Wheel Line, Wheel Move or Wheel Roll 04 ○ Traveler, Volume Gun, Travelling Gun, Walker, Overhead or Circler 05 ○ Linear move < 25 psi 06 ○ Linear move 25 - 50 psi 07 ○ Linear move >50 psi 08 ○ Centre pivot < 25 psi 09 ○ Centre Pivot 25 - 50 psi 10 ○ Centre Pivot >50 psi Micro 20 ○ Surface drip 21 ○ Sub-surface Drip 22 ○ Micro-sprinkler 23 ○ Bubblers 24 ○ Microjet 25 ○ Hand watering Surface 30 ○ Down rows 31 ○ Furrows 32 ○ Corrugations 33 ○ Border dyke 34 ○ Level basins 35 ○ Uncontrolled flooding (wild flooding) 36 ○ Back flooding 40 ○ Other method (specify) (C778)_____	(C7121) Sprinkler 01 ○ Hand Move 02 ○ Solid or Permanent Set 03 ○ Side Roll, Wheel Line, Wheel Move or Wheel Roll 04 ○ Traveler, Volume Gun, Travelling Gun, Walker, Overhead or Circler 05 ○ Linear move < 25 psi 06 ○ Linear move 25 - 50 psi 07 ○ Linear move >50 psi 08 ○ Centre pivot < 25 psi 09 ○ Centre Pivot 25 - 50 psi 10 ○ Centre Pivot >50 psi Micro 20 ○ Surface drip 21 ○ Sub-surface Drip 22 ○ Micro-sprinkler 23 ○ Bubblers 24 ○ Microjet 25 ○ Hand watering Surface 30 ○ Down rows 31 ○ Furrows 32 ○ Corrugations 33 ○ Border dyke 34 ○ Level basins 35 ○ Uncontrolled flooding (wild flooding) 36 ○ Back flooding 40 ○ Other method (specify) (C7122)_____
7.f What was the total area of the crop irrigated with the third irrigation method?	(C735)	(C779)	(C7123)

Enter crops from pages 4 and 5 (crop 1 to crop 6). Include water used to increase soil moisture content e.g., pre-planting or post harvest.

	Crop 4	Crop 5	Crop 6
Crop Name			
7.e What was the third method of irrigation used for the crop? **Method 3** **Mark only one (per crop).**	(C7165) Sprinkler 01 ○ Hand Move 02 ○ Solid or Permanent Set 03 ○ Side Roll, Wheel Line, Wheel Move or Wheel Roll 04 ○ Traveler, Volume Gun, Travelling Gun, Walker, Overhead or Circler 05 ○ Linear move < 25 psi 06 ○ Linear move 25 - 50 psi 07 ○ Linear move >50 psi 08 ○ Centre pivot < 25 psi 09 ○ Centre Pivot 25 - 50 psi 10 ○ Centre Pivot >50 psi Micro 20 ○ Surface drip 21 ○ Sub-surface Drip 22 ○ Micro-sprinkler 23 ○ Bubblers 24 ○ Microjet 25 ○ Hand watering Surface 30 ○ Down rows 31 ○ Furrows 32 ○ Corrugations 33 ○ Border dyke 34 ○ Level basins 35 ○ Uncontrolled flooding (wild flooding) 36 ○ Back flooding 40 ○ Other method (specify) (C7166) _____	(C7209) Sprinkler 01 ○ Hand Move 02 ○ Solid or Permanent Set 03 ○ Side Roll, Wheel Line, Wheel Move or Wheel Roll 04 ○ Traveler, Volume Gun, Travelling Gun, Walker, Overhead or Circler 05 ○ Linear move < 25 psi 06 ○ Linear move 25 - 50 psi 07 ○ Linear move >50 psi 08 ○ Centre pivot < 25 psi 09 ○ Centre Pivot 25 - 50 psi 10 ○ Centre Pivot >50 psi Micro 20 ○ Surface drip 21 ○ Sub-surface Drip 22 ○ Micro-sprinkler 23 ○ Bubblers 24 ○ Microjet 25 ○ Hand watering Surface 30 ○ Down rows 31 ○ Furrows 32 ○ Corrugations 33 ○ Border dyke 34 ○ Level basins 35 ○ Uncontrolled flooding (wild flooding) 36 ○ Back flooding 40 ○ Other method (specify) (C7210) _____	(C7253) Sprinkler 01 ○ Hand Move 02 ○ Solid or Permanent Set 03 ○ Side Roll, Wheel Line, Wheel Move or Wheel Roll 04 ○ Traveler, Volume Gun, Travelling Gun, Walker, Overhead or Circler 05 ○ Linear move < 25 psi 06 ○ Linear move 25 - 50 psi 07 ○ Linear move >50 psi 08 ○ Centre pivot < 25 psi 09 ○ Centre Pivot 25 - 50 psi 10 ○ Centre Pivot >50 psi Micro 20 ○ Surface drip 21 ○ Sub-surface Drip 22 ○ Micro-sprinkler 23 ○ Bubblers 24 ○ Microjet 25 ○ Hand watering Surface 30 ○ Down rows 31 ○ Furrows 32 ○ Corrugations 33 ○ Border dyke 34 ○ Level basins 35 ○ Uncontrolled flooding (wild flooding) 36 ○ Back flooding 40 ○ Other method (specify) (C7254) _____
7.f What was the total area of the crop irrigated with the third irrigation method?	(C7167)	(C7211)	(C7255)

Enter crops from pages 4 and 5 (crop 1 to crop 6).

	Crop 1	Crop 2	Crop 3
Crop Name			
7.g The next questions ask about volume (or flow rate) of water used (in the 2007 growing season). **How will you report volume of water used: e.g., inches, gallons, litres for the crop?** **Method 3** **Mark only one (per crop).** **If the response is by Flow rate, Q7i will ask to specify per second, minute, hour or day.**	(C736) Unit of water **Water depth per surface area** 01 ◯ Inches per acre 02 ◯ Millimetres per hectare **OR** **Total volume** 03 ◯ Total acre-feet 04 ◯ Total gallons 05 ◯ Total litres 06 ◯ Total cubic feet 07 ◯ Total cubic metres **OR** **Volume per surface area** 08 ◯ Acre-feet per acre 09 ◯ Gallons per acre 10 ◯ Litres per hectare 11 ◯ Cubic feet per acre 12 ◯ Cubic metres per hectare 14 ◯ Other Volume, specify (C737) _____ **OR** **Flow rate** 20 ◯ Gallons (per unit of time) 21 ◯ Litres (per unit of time) 22 ◯ Cubic feet (per unit of time) 23 ◯ Cubic metres (per unit of time) 24 ◯ Pounds (per unit of time) 26 ◯ Other Flow Rate (per unit of time), specify (C738) _____	(C780) Unit of water **Water depth per surface area** 01 ◯ Inches per acre 02 ◯ Millimetres per hectare **OR** **Total volume** 03 ◯ Total acre-feet 04 ◯ Total gallons 05 ◯ Total litres 06 ◯ Total cubic feet 07 ◯ Total cubic metres **OR** **Volume per surface area** 08 Acre-feet per acre 09 ◯ Gallons per acre 10 ◯ Litres per hectare 11 ◯ Cubic feet per acre 12 ◯ Cubic metres per hectare 14 ◯ Other Volume, specify (C781) _____ **OR** **Flow rate** 20 ◯ Gallons (per unit of time) 21 ◯ Litres (per unit of time) 22 ◯ Cubic feet (per unit of time) 23 ◯ Cubic metres (per unit of time) 24 ◯ Pounds (per unit of time) 26 ◯ Other Flow Rate (per unit of time), specify (C782) _____	(C7124) Unit of water **Water depth per surface area** 01 ◯ Inches per acre 02 ◯ Millimetres per hectare **OR** **Total volume** 03 ◯ Total acre-feet 04 ◯ Total gallons 05 ◯ Total litres 06 ◯ Total cubic feet 07 ◯ Total cubic metres **OR** **Volume per surface area** 08 Acre-feet per acre 09 ◯ Gallons per acre 10 ◯ Litres per hectare 11 ◯ Cubic feet per acre 12 ◯ Cubic metres per hectare 14 ◯ Other Volume, specify (C7125) _____ **OR** **Flow rate** 20 ◯ Gallons (per unit of time) 21 ◯ Litres (per unit of time) 22 ◯ Cubic feet (per unit of time) 23 ◯ Cubic metres (per unit of time) 24 ◯ Pounds (per unit of time) 26 ◯ Other Flow Rate (per unit of time), specify (C7126) _____
7.h How many units (i.e., reported in Q7g) of water were applied on the crop using the third irrigation method?	(C739)	(C783)	(C7127)

If possible please report flow rate at system nozzle. If not available, give rate at pump.

If any in 7g is answered by flow rate (20 to 26) then continue to 7i for that crop. If no more crop irrigation to report, go to Q8 (page 24).

Enter crops from pages 4 and 5 (crop 1 to crop 6).

	Crop 4	Crop 5	Crop 6
Crop Name			
7.g The next questions ask about volume (or flow rate) of water used (in the 2007 growing season). **How will you report volume of water used: e.g., inches, gallons, litres for the crop?** **Method 3** **Mark only one (per crop).** **If the response is by Flow rate, Q7i will ask to specify per second, minute, hour or day.**	(C7168) Unit of water **Water depth per surface area** 01 ◯ Inches per acre 02 ◯ Millimetres per hectare **OR** **Total volume** 03 ◯ Total acre-feet 04 ◯ Total gallons 05 ◯ Total litres 06 ◯ Total cubic feet 07 ◯ Total cubic metres **OR** **Volume per surface area** 08 ◯ Acre-feet per acre 09 ◯ Gallons per acre 10 ◯ Litres per hectare 11 ◯ Cubic feet per acre 12 ◯ Cubic metres per hectare 14 ◯ Other Volume, specify (C7169) _____ **OR** **Flow rate** 20 ◯ Gallons (per unit of time) 21 ◯ Litres (per unit of time) 22 ◯ Cubic feet (per unit of time) 23 ◯ Cubic metres (per unit of time) 24 ◯ Pounds (per unit of time) 26 ◯ Other Flow Rate (per unit of time), specify (C7170) _____	(C7212) Unit of water **Water depth per surface area** 01 ◯ Inches per acre 02 ◯ Millimetres per hectare **OR** **Total volume** 03 ◯ Total acre-feet 04 ◯ Total gallons 05 ◯ Total litres 06 ◯ Total cubic feet 07 ◯ Total cubic metres **OR** **Volume per surface area** 08 Acre-feet per acre 09 ◯ Gallons per acre 10 ◯ Litres per hectare 11 ◯ Cubic feet per acre 12 ◯ Cubic metres per hectare 14 ◯ Other Volume, specify (C7213) _____ **OR** **Flow rate** 20 ◯ Gallons (per unit of time) 21 ◯ Litres (per unit of time) 22 ◯ Cubic feet (per unit of time) 23 ◯ Cubic metres (per unit of time) 24 ◯ Pounds (per unit of time) 26 ◯ Other Flow Rate (per unit of time), specify (C7214) _____	(C7256) Unit of water **Water depth per surface area** 01 ◯ Inches per acre 02 ◯ Millimetres per hectare **OR** **Total volume** 03 ◯ Total acre-feet 04 ◯ Total gallons 05 ◯ Total litres 06 ◯ Total cubic feet 07 ◯ Total cubic metres **OR** **Volume per surface area** 08 Acre-feet per acre 09 ◯ Gallons per acre 10 ◯ Litres per hectare 11 ◯ Cubic feet per acre 12 ◯ Cubic metres per hectare 14 ◯ Other Volume, specify (C7257) _____ **OR** **Flow rate** 20 ◯ Gallons (per unit of time) 21 ◯ Litres (per unit of time) 22 ◯ Cubic feet (per unit of time) 23 ◯ Cubic metres (per unit of time) 24 ◯ Pounds (per unit of time) 26 ◯ Other Flow Rate (per unit of time), specify (C7258) _____
7.h How many units (i.e., reported in Q7g) of water were applied on the crop using the third irrigation method?	(C7171)	(C7215)	(C7259)

If possible please report flow rate at system nozzle. If not available, give rate at pump.

If any in 7g is answered by flow rate (20 to 26) then continue to 7i for that crop. If no more crop irrigation to report, go to Q8 (page 24).

Enter crops from pages 4 and 5 (crop 1 to crop 6).

	Crop 1	Crop 2	Crop 3
Crop Name			
7.i Were the units applied per second, minute, hour or day? **Method 3**	(C740) 01 ◯ Per second 02 ◯ Per minute 03 ◯ Per hour 04 ◯ Per day	(C784) 01 ◯ Per second 02 ◯ Per minute 03 ◯ Per hour 04 ◯ Per day	(C7128) 01 ◯ Per second 02 ◯ Per minute 03 ◯ Per hour 04 ◯ Per day
7.j Was this at the system nozzle or pump? **Method 3**	(C741) 01 ◯ System nozzle 03 ◯ Pump	(C785) 01 ◯ System nozzle 03 ◯ Pump	(C7129) 01 ◯ System nozzle 03 ◯ Pump
7.k What was the total number of days or weeks that this system ran? **Method 3**	(C742) _____ days or weeks	(C786) _____ days or weeks	(C7130) _____ days or weeks
7.l Was it days or weeks? **Method 3**	(C743) 01 ◯ Days 03 ◯ Weeks	(C787) 01 ◯ Days 03 ◯ Weeks	(C7131) 01 ◯ Days 03 ◯ Weeks
7.m What was the total number of hours (per day/week) that this system ran? **Method 3**	(C744) _____ hours	(C788) _____ hours	(C7132) _____ hours

If no more crop irrigation to report, go to Q8 (page 24).

Enter crops from pages 4 and 5 (crop 1 to crop 6).

	Crop 4	Crop 5	Crop 6
Crop Name			
7.i Were the units applied per second, minute, hour or day? **Method 3**	(C7172) 01 ◯ Per second 02 ◯ Per minute 03 ◯ Per hour 04 ◯ Per day	(C7216) 01 ◯ Per second 02 ◯ Per minute 03 ◯ Per hour 04 ◯ Per day	(C7260) 01 ◯ Per second 02 ◯ Per minute 03 ◯ Per hour 04 ◯ Per day
7.j Was this at the system nozzle or pump? **Method 3**	(C7173) 01 ◯ System nozzle 03 ◯ Pump	(C7217) 01 ◯ System nozzle 03 ◯ Pump	(C7261) 01 ◯ System nozzle 03 ◯ Pump
7.k What was the total number of days or weeks that this system ran? **Method 3**	(C7174) _____ days or weeks	(C7218) _____ days or weeks	(C7262) _____ days or weeks
7.l Was it days or weeks? **Method 3**	(C7175) 01 ◯ Days 03 ◯ Weeks	(C7219) 01 ◯ Days 03 ◯ Weeks	(C7263) 01 ◯ Days 03 ◯ Weeks
7.m What was the total number of hours (per day/week) that this system ran? **Method 3**	(C7176) _____ hours	(C7220) _____ hours	(C7264) _____ hours

If no more crop irrigation to report, go to Q8 (page 24).

Total Water Use by Irrigation Method

If you have completed the crop level irrigation questions, go to Q10 (page 28).

8. The following questions ask about TOTAL irrigation for this operation for the total cropland area (as reported in question 4), in the 2007 growing season.

Of the total area of cropland, how many (acres/hectares/arpents) were irrigated (in the 2007 growing season)?

Include water applied to increase soil moisture content, e.g., pre-planting or post-harvest.
Include both producing and non-producing cropland.

(C801) _____ total land irrigated

	Method 1	Method 2	Method 3
9.a What irrigation method(s) did you use? **Enter up to three (3) irrigation methods.** **Mark one only for each method.**	(C901) Sprinkler 01 ○ Hand Move 02 ○ Solid or Permanent Set 03 ○ Side Roll, Wheel Line, Wheel Move or Wheel Roll 04 ○ Traveler, Volume Gun, Travelling Gun, Walker, Overhead or Circler 05 ○ Linear move < 25 psi 06 ○ Linear move 25 - 50 psi 07 ○ Linear move >50 psi 08 ○ Centre pivot < 25 psi 09 ○ Centre Pivot 25 - 50 psi 10 ○ Centre Pivot >50 psi Micro 20 ○ Surface drip 21 ○ Sub-surface Drip 22 ○ Micro-sprinkler 23 ○ Bubblers 24 ○ Microjet 25 ○ Hand watering Surface 30 ○ Down rows 31 ○ Furrows 32 ○ Corrugations 33 ○ Border dyke 34 ○ Level basins 35 ○ Uncontrolled flooding (wild flooding) 36 ○ Back flooding 40 ○ Other method (specify) (C902)_____ _____ Continue to 9.b	(C913) Sprinkler 01 ○ Hand Move 02 ○ Solid or Permanent Set 03 ○ Side Roll, Wheel Line, Wheel Move or Wheel Roll 04 ○ Traveler, Volume Gun, Travelling Gun, Walker, Overhead or Circler 05 ○ Linear move < 25 psi 06 ○ Linear move 25 - 50 psi 07 ○ Linear move >50 psi 08 ○ Centre pivot < 25 psi 09 ○ Centre Pivot 25 - 50 psi 10 ○ Centre Pivot >50 psi Micro 20 ○ Surface drip 21 ○ Sub-surface Drip 22 ○ Micro-sprinkler 23 ○ Bubblers 24 ○ Microjet 25 ○ Hand watering Surface 30 ○ Down rows 31 ○ Furrows 32 ○ Corrugations 33 ○ Border dyke 34 ○ Level basins 35 ○ Uncontrolled flooding (wild flooding) 36 ○ Back flooding 40 ○ Other method (specify) (C914)_____ _____ 00 ○ Not aplicable (no 2nd or 3rd method) If not applicable, go to Q10 (page 28).	(C925) Sprinkler 01 ○ Hand Move 02 ○ Solid or Permanent Set 03 ○ Side Roll, Wheel Line, Wheel Move or Wheel Roll 04 ○ Traveler, Volume Gun, Traveling Gun, Walker, Overhead or Circler 05 ○ Linear move < 25 psi 06 ○ Linear move 25 - 50 psi 07 ○ Linear move >50 psi 08 ○ Centre pivot < 25 psi 09 ○ Centre Pivot 25 - 50 psi 10 ○ Centre Pivot >50 psi Micro 20 ○ Surface drip 21 ○ Sub-surface Drip 22 ○ Micro-sprinkler 23 ○ Bubblers 24 ○ Microjet 25 ○ Hand watering Surface 30 ○ Down rows 31 ○ Furrows 32 ○ Corrugations 33 ○ Border dyke 34 ○ Level basins 35 ○ Uncontrolled flooding (wild flooding) 36 ○ Back flooding 40 ○ Other method (specify) (C926)_____ _____ 00 ○ Not aplicable (no 2nd or 3rd method) If not applicable, go to Q10 (page 28).
9.b What was the total area irrigated with the irrigation method(s)?	(C903)	(C915)	(C927)

	Method 1	Method 2	Method 3
9.c How will you report volume of water used: e.g., inches, gallons, litres? **Mark one only for each method.** **If the response is by Flow rate, Q9e will ask to specify per second, minute, hour or day.**	(C904) Unit of water **Water depth per surface area** 01 ◯ Inches per acre 02 ◯ Millimetres per hectare **OR** **Total volume** 03 ◯ Total acre-feet 04 ◯ Total gallons 05 ◯ Total litres 06 ◯ Total cubic feet 07 ◯ Total cubic metres **OR** **Volume per surface area** 08 ◯ Acre-feet per acre 09 ◯ Gallons per acre 10 ◯ Litres per hectare 11 ◯ Cubic feet per acre 12 ◯ Cubic metres per hectare 14 ◯ Other Volume, specify (C905) _____ **OR** **Flow rate** 20 ◯ Gallons (per unit of time) 21 ◯ Litres (per unit of time) 22 ◯ Cubic feet (per unit of time) 23 ◯ Cubic metres (per unit of time) 24 ◯ Pounds (per unit of time) 26 ◯ Other Flow Rate (per unit of time), specify (C906) _____	(C916) Unit of water **Water depth per surface area** 01 ◯ Inches per acre 02 ◯ Millimetres per hectare **OR** **Total volume** 03 ◯ Total acre-feet 04 ◯ Total gallons 05 ◯ Total litres 06 ◯ Total cubic feet 07 ◯ Total cubic metres **OR** **Volume per surface area** 08 ◯ Acre-feet per acre 09 ◯ Gallons per acre 10 ◯ Litres per hectare 11 ◯ Cubic feet per acre 12 ◯ Cubic metres per hectare 14 ◯ Other Volume, specify (C917) _____ **OR** **Flow rate** 20 ◯ Gallons (per unit of time) 21 ◯ Litres (per unit of time) 22 ◯ Cubic feet (per unit of time) 23 ◯ Cubic metres (per unit of time) 24 ◯ Pounds (per unit of time) 26 ◯ Other Flow Rate (per unit of time), specify (C918) _____	(C928) Unit of water **Water depth per surface area** 01 ◯ Inches per acre 02 ◯ Millimetres per hectare **OR** **Total volume** 03 ◯ Total acre-feet 04 ◯ Total gallons 05 ◯ Total litres 06 ◯ Total cubic feet 07 ◯ Total cubic metres **OR** **Volume per surface area** 08 ◯ Acre-feet per acre 09 ◯ Gallons per acre 10 ◯ Litres per hectare 11 ◯ Cubic feet per acre 12 ◯ Cubic metres per hectare 14 ◯ Other Volume, specify (C929) _____ **OR** **Flow rate** 20 ◯ Gallons (per unit of time) 21 ◯ Litres (per unit of time) 22 ◯ Cubic feet (per unit of time) 23 ◯ Cubic metres (per unit of time) 24 ◯ Pounds (per unit of time) 26 ◯ Other Flow Rate (per unit of time), specify (C930) _____
9.d How many units were applied using the irrigation method?	(C907)	(C919)	(C931)

If possible please report flow rate at system nozzle. If not available, give rate at pump.

If any in 9d is answered by flow rate (20 to 26) then continue to 9e. If no more irrigation to report go to Q10 (page 28).

	Method 1	Method 2	Method 3
9.e Were the units applied per second, minute, hour or day?	(C908) 01 ◯ Per second 02 ◯ Per minute 03 ◯ Per hour 04 ◯ Per day	(C920) 01 ◯ Per second 02 ◯ Per minute 03 ◯ Per hour 04 ◯ Per day	(C932) 01 ◯ Per second 02 ◯ Per minute 03 ◯ Per hour 04 ◯ Per day
9.f Was this at the system nozzle or pump?	(C909) 01 ◯ System nozzle 03 ◯ Pump	(C921) 01 ◯ System nozzle 03 ◯ Pump	(C933) 01 ◯ System nozzle 03 ◯ Pump
9.g What was the total number of days or weeks that this system ran?	(C910) _____ days or weeks	(C922) _____ days or weeks	(C934) _____ days or weeks
9.h Was it days or weeks?	(C911) 01 ◯ Days 03 ◯ Weeks	(C923) 01 ◯ Days 03 ◯ Weeks	(C935) 01 ◯ Days 03 ◯ Weeks
9.i What was the total number of hours (per day/week) that this system ran?	(C912) _____ hours	(C924) _____ hours	(C936) _____ hours

Irrigation Practices and Water Sources

The following questions ask about irrigation practices AND water sources for the operation during the 2007 growing season.

10. Which of the following practices were used for the purpose of water or energy conservation?

(Mark all that apply)

(C1001) ☐ Wind breaks

(C1002) ☐ Leaving stubble on fields (e.g., minimum tillage, direct seeding)

(C1003) ☐ Watering at night or in the morning

(C1004) ☐ Pressure reduction

(C1005) ☐ Water or energy saving nozzles

(C1006) ☐ Other energy saving methods or devices (specify) (C1008) _____

(C1007) ☐ No practices done

11. Which of the following factors or tools <u>helped this operation determine when to irrigate</u>?

(Mark all that apply)

(C1101) ☐ Crop condition or crop stage (observation including disease)

(C1102) ☐ Use of soil moisture sensors (e.g., moisture blocks or tensiometers)

(C1103) ☐ Use of plant sensors (e.g. infrared thermometers)

(C1104) ☐ Feel and appearance of the soil

(C1105) ☐ Weather forecasts (meteorological reports)

(C1106) ☐ Water availability

(C1107) ☐ Use of an irrigation scheduling consultant (commercial and/or government)

(C1108) ☐ Planned irrigation schedule

(C1109) ☐ Rain gauge

(C1110) ☐ Other factors or tools (specify) (C1111) _____

12. In 2007, did this operation have to stop irrigating OR not irrigate for any reason, such as equipment failure, weather, or water shortage? (C1201)

Yes ○ 01 No ○ 03

Go to Question 14

13. Why was irrigation stopped or not done?

(Mark all that apply)

(C1301) ☐ Shortage of surface water

(C1302) ☐ Shortage of underground water (include shallow wells and deep wells)

(C1303) ☐ Equipment failure

(C1304) ☐ Poor water quality

(C1305) ☐ Cost of water

(C1306) ☐ Weather (e.g., excess rain, heat, frost, wind, hail, lightning)

(C1307) ☐ Water ban

(C1308) ☐ Crop did not require irrigation

(C1309) ☐ Labour shortage

(C1310) ☐ Fuel or energy cost

(C1311) ☐ Other reason (specify) (C1312) _____

14. Did this operation use a drainage system (e.g., land tiles or tiling)? (C1401)

Yes ○ 01 No ○ 03

If there was no irrigation (answers to Q2a and Q2b are both No), go to page 32.
Else continue to next page.

The next questions deal with possible sources of water used on this operation.
Exclude water for personal use.

15. Did this operation use any of the following …?

(Mark all that apply)

(C1501) ☐ Underground water or well water (include shallow wells and deep wells)

(C1502) ☐ ON-FARM lakes, rivers, creeks or streams, ponds or dugouts i.e. direct access (surface water)

(C1503) ☐ Water from a rain collection system (e.g., cistern or rain barrel)

(C1504) ☐ OFF-FARM water transported TO THE FARM e.g., via pipeline, canal system or vehicle

(C1505) ☐ Other (specify) (C1506) _____

If off-farm water is selected, then go to question 16.
Else go to question 18.

16. Which of the following OFF-FARM water sources did this operation use?

(Mark all that apply)

(C1601) ☐ Tap water (drinking water or municipal water)

(C1602) ☐ Treated wastewater

(C1603) ☐ Provincial water sources (irrigation district, group project)

(C1604) ☐ Private sources

(C1605) ☐ Other sources (specify) (C1606) _____

17. Why did this operation need to obtain water from an OFF-FARM source?

(Mark all that apply)

(C1701) ☐ No water or not enough water available ON THE FARM (for irrigation)

(C1702) ☐ Poor quality of ON-FARM water

(C1703) ☐ Other reason (specify) (C1704) _____

18. Water may be treated to improve its overall quality.

Does this operation treat water prior to farm use? (C1801)

Yes ○ 01 No ○ 03

Go to Question 20

19. Which of the following water treatment practices were used by this operation?

(Mark all that apply)

(C1901) ☐ Treatment to kill bacteria or other foreign bodies (i.e. disinfection)

(C1902) ☐ Treatment to equalize pH levels

(C1903) ☐ Treatment to remove solids (i.e. filtration)

(C1904) ☐ Treatment to prevent or to clear mineral fouling

(C1905) ☐ Treatment to prevent corrosion

(C1906) ☐ Treatment to reduce water hardness

(C1907) ☐ Treatment to reduce salinity (salt content)

(C1908) ☐ Other treatment to purify water (specify) (C1909) _____

20. In 2007, how did this operation deal with its wastewater e.g., water used when cleaning equipment and produce, excess water from fertilizer or pesticide use?

Exclude household wastewater and irrigation runoff.

(Mark all that apply)

(C2001) ☐ Returned to soil

(C2002) ☐ Drained into body of water or wetland

(C2003) ☐ Drained to sewer / septic tank

(C2004) ☐ Drained to settling basin / holding bin

(C2005) ☐ Collected for reuse

(C2006) ☐ Other (specify) (C2007) _____

Data Sharing Agreement

Thank you for taking the time to participate in our survey. To reduce survey duplication and to ensure more uniform statistics, Statistics Canada has entered into an agreements under Section 12 of the Statistics Act, for the sharing of information from this survey with Agriculture and Agri-food Canada and Environment Canada.

Statistics Canada will not share your farm name, address or other identifying information. All agreements require that the information you provide be kept confidential and be used only for statistical or research purposes.

21. Do you agree to share the information on this survey with: (C2101)

Agriculture and Agri-Food Canada

Yes ◯ 01 No ◯ 03

22. Do you agree to share this information on this survey with: (C2201)

Environment Canada?

Yes ◯ 01 No ◯ 03

Similarly, Statistics Canada has entered into an agreement, under Section 12 of the Statistics Act, with your province for the sharing of information from the survey respondents in your province.

23. Do you agree to share this information on this survey with: (C2301)

Prince Edward Island Department of Agriculture?

Yes ◯ 01 No ◯ 03

New Brunswick Department of Agriculture and Aquaculture?

Yes ◯ 01 No ◯ 03

Manitoba Agriculture, Food and Rural Initiatives?

Yes ◯ 01 No ◯ 03

Saskatchewan Ministry of Agriculture?

Yes ◯ 01 No ◯ 03

Alberta Agriculture and Food?

Yes ◯ 01 No ◯ 03

British Columbia Ministry of Agriculture and Lands?

Yes ◯ 01 No ◯ 03

Do you agree to share the information on this survey, including your farm name, address and other identifying information, with:

The Institut de la statistique du Québec?

Yes ◯ 01 No ◯ 03

Thank you for your co-operation.
End of interview

Agricultural Water Use Survey 2007

Some information in preparation for the interview:

You will be asked to report information about your operation for up to six (6) crops grown in the 2007 season.

If you had more than six crops, we ask you to identify

- first those requiring the most water,
- then those with the largest land areas, including: field crops, fruits, vegetables, nursery products, sod, hay and improved pasture.

For each of the crops identified we will collect information about:

- the crop land area and average yield;
- the type of irrigation systems used;
- the area irrigated;
- the volume of water used (e.g. total acre feet or inches per acre), or the flow rate (pump capacity).

Statistics Canada Statistique Canada

Canada

January 2008

Dear Madam/Sir:

Statistics Canada is conducting the ***2007 Agricultural Water Use Survey***. This survey will collect information on water use and water management practices from about 2,000 agricultural operators across Canada.

The results will help governments, farm operators and the Canadian public gain a better understanding of the demand for water and how it is used on Canadian farm operations, and will:

- Help measure current and future water needs of the agricultural industry;
- Support the development of programs and management practices to help operators use this resource more efficiently; and
- Contribute to national water use indicators that assess how the agricultural industry uses water.

Participation in this survey is voluntary; however your cooperation is very important to ensure the quality of the data. This survey is conducted under the authority of the *Statistics Act*, and under this same law, all information that you provide is strictly confidential and will be used only for statistical purposes.

To minimize survey duplication, Statistics Canada has entered into an agreement to share the information from this survey with Agriculture and Agri-Food Canada, Environment Canada, and some provincial departments of agriculture. Additional details concerning the data sharing agreement will be provided to you at the time of the interview.

An interviewer will contact you soon to complete a telephone interview. Please refer to the respondent instructions included with the letter to help you prepare for the interview. If you have any questions, please call Dan McGrath 902-426-1364 or 1-800-565-1685. To access the TTY service (teletype), please call 1-866-753-7083.

We thank you in advance for your cooperation.

Sincerely,

Director
XXXXX Region

January 2008

Dear Madam/Sir:

Statistics Canada is conducting the ***2007 Agricultural Water Use Survey***. This survey will collect information on water use and water management practices from about 2,000 agricultural operators across Canada.

The results will help governments, farm operators and the Canadian public gain a better understanding of the demand for water and how it is used on Canadian farm operations, and will:

- Help measure current and future water needs of the agricultural industry;
- Support the development of programs and management practices to help operators use this resource more efficiently; and
- Contribute to national water use indicators that assess how the agricultural industry uses water.

Participation in this survey is voluntary; however your cooperation is very important to ensure the quality of the data. This survey is conducted under the authority of the *Statistics Act*, and under this same law, all information that you provide is strictly confidential and will be used only for statistical purposes.

To minimize survey duplication, Statistics Canada has entered into an agreement to share the information from this survey with Agriculture and Agri-Food Canada, Environment Canada, and some provincial departments of agriculture. Additional details concerning the data sharing agreement will be provided to you at the time of the interview.

An interviewer will contact you soon to complete a telephone interview. Please refer to the respondent instructions included with the letter to help you prepare for the interview. If you have any questions, please call Gilles Philippon at 819-564-5500 or, toll-free, at 1 877 992-3999. To access the TTY service (teletype), please call 1-866-753-7083.

We thank you in advance for your cooperation.

Sincerely,

Guy Oddo
Director
Eastern Region

Dear Madam/Sir:

Statistics Canada is conducting the ***2007 Agricultural Water Use Survey***. This survey will collect information on water use and water management practices from about 2,000 agricultural operators across Canada.

The results will help governments, farm operators and the Canadian public gain a better understanding of the demand for water and how it is used on Canadian farm operations, and will:

- Help measure current and future water needs of the agricultural industry;
- Support the development of programs and management practices to help operators use this resource more efficiently; and
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To minimize survey duplication, Statistics Canada has entered into an agreement to share the information from this survey with Agriculture and Agri-Food Canada, Environment Canada, and some provincial departments of agriculture. Additional details concerning the data sharing agreement will be provided to you at the time of the interview.

If you have any questions about your participation in this survey, please do not hesitate to call us at (204) 983-7004 or, toll-free, at 1-800-665-3393. To access the TTY service (teletype), please call 1-866-753-7083.

We thank you in advance for your cooperation.

Sincerely,

C. Jerry Page
Director
Western Region and Northern Territories