



# Iowa Farm<sup>\*</sup>A<sup>\*</sup>Syst

*A Farmstead Assessment System*

Assessing your **Farmstead Characteristics**

## What is Iowa Farm A Syst?

Iowa Farm\*A\*Syst is a farmstead assessment system developed to assist rural residents in protecting their water resources, particularly their drinking water. Individuals can tailor the Iowa Farm\*A\*Syst program to meet their needs by choosing specific topics that fit their farmstead or acreage. The Iowa Farm\*A\*Syst program is based on a series of 11 units. Each unit provides information on the subject area and an assessment worksheet to evaluate on-farm practices affecting water quality. Also included in the units are references to Iowa environmental laws and technical assistance contact information.

## How will I know which unit will help me?

You will be able to identify the most useful Iowa Farm\*A\*Syst units by asking yourself the following questions.

Do you...	Review/print this Iowa Farm*A*Syst unit
Get your drinking water from a private well?	Water Well Condition & maintenance
Have any unused or abandoned wells on the farm?	Water Well Condition & maintenance
Have a private system to dispose of bathroom and kitchen wastewater?	Household Wastewater Management
Have feedlots or barnyards?	Open Feedlot Manure Management
Raise livestock in confinement?	Confinement Livestock Manure Management
Dispose of dead animals on your farm?	Dead Animal Management
Use or store pesticides?	Pesticide Storage & Management
Use or store fertilizer?	Fertilizer Storage & Management
Use or store petroleum products?	Petroleum Storage & Management
Use or store hazardous materials such as chemicals, batteries, or petroleum products?	Hazardous Materials Storage & Management
Have a manure storage unit?	Assessing Your Emergency Response Planning for Manure Spills

## How do I start assessing my farmstead?

The 11 Iowa Farm\*A\*Syst units are each designed to be stand-alone units. However, the first step to assessing your farmstead should be to draw a map of the area and label any potential sources of contamination. Every farmstead is unique. You need to evaluate your farmstead's site characteristics to determine the potential for groundwater and surface water contamination. This unit can help you get started. After you have mapped your farmstead, consider what management decisions may be affecting the quality of your water resources. This process will help you to prioritize which of the other Iowa Farm\*A\*Syst assessments you may want to complete.

For more information or to download additional Iowa Farm\*A\*Syst units, visit [www.iowafarmasyst.com](http://www.iowafarmasyst.com) or Contact **Rick Robinson**, Iowa Farm Bureau (515) 225-5432

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## Is Your Farmstead Susceptible to Contamination?

A farmstead's potential for groundwater contamination is similar to a person's risk of developing heart disease. Two people may make the same lifestyle choices, such as diet and exercise, but a different genetic makeup may make one person more vulnerable to heart disease. It's the same with the farmstead. Two farmsteads may have similar household sewage or livestock manure storage practices, but potential for groundwater contamination may be different because of site characteristics such as the type of soil, slope, landscape and depth to groundwater.

Every farmstead is unique. You cannot change the features of your farmstead, but once you are aware of them you can modify your activities to minimize the risk for groundwater contamination. You need to evaluate your farmstead's site characteristics to determine the potential for groundwater and surface water contamination.

This publication is designed to help you gather basic information about your farmstead. The information about your farmstead also will be used in other Farm\*A\*Syst publications. This publication contains instructions on how to diagram your farmstead and a short evaluation of your farmstead's site characteristics. Finally, you are encouraged to use the Confidential Plan of Action worksheet found on page 14. This worksheet will help you plan changes in your management practices that will reduce the risks of contaminating your water resources.

This section deals with some of the primary factors that affect groundwater and surface water pollution potential. There are numerous other smaller factors that affect this potential. You should always strive to use practices which reduce pollution potential. Those practices are described in other Iowa Farm\*A\*Syst publications.

## What is groundwater?

Groundwater is rain water or water from surface water bodies, like lakes or streams, which soaks into the soil and bedrock and is stored underground in the tiny spaces between rocks and particles of soil. Groundwater can be close to the land surface or deep underground. Groundwater pollution occurs when hazardous substances come into contact with the water that has soaked into the soil. Groundwater can move in any direction; down, sideways, and even up. It can move as slowly as a few inches per year or as fast as several feet per day. In geological areas where water soluble limestone and similar rock formations occur, water can move more quickly. These areas of karst topography are found in Iowa's northeastern counties, where sinkholes, tunnels and caves exist, and where surface contaminants can quickly move into groundwater. Because water can move so quickly, people who live in areas with karst topography should be even more cautious about protecting their drinking water.

Seventy-five percent of Iowans get their drinking water from groundwater... that's why it is so important to protect our groundwater supplies!

## "Why should I draw a map of my farmstead?"

Drawing a map of your farmstead will help you understand its pollution risks. Although your property has physical features you cannot change, there are things you can do to minimize threats to water quality. Your map will help you identify areas where you can focus your efforts. To create your map:

**Step 1:** Study the sample map on page 10.

**Step 2:** Draw a map to scale of your farmstead on the blank grid found on page 11. To accurately show the foot print of your farmstead on the grid, think of each square on the grid as ten feet by ten feet, or an alternate scale. For example, if your house is 40 feet long and 50 feet wide, you could draw your house 4 squares long and 5 squares wide.

You should start by drawing in landmarks and important structures. Make the map as detailed as you can. Label the map so that someone who doesn't know your farm could find a specific structure or location.

**The diagrams should include:**

- An outline of the farm and the farmstead perimeter.
- All buildings, such as houses, barns, machine sheds, etc.
- Wells, both in use and abandoned.
- Household septic system, include septic tank/leach field /discharge area locations.
- Cisterns and dry wells, both in use and abandoned.
- Livestock yards, both in use and abandoned.
- Manure storage areas.
- Aboveground and underground petroleum storage tanks.
- Pesticide and fertilizer storage, handling and mixing areas.
- Dairy wastewater disposal system.
- Farm and household dump areas.
- Known sinkholes.
- Vehicle and farm machinery maintenance areas.
- Tile lines, surface intakes, and open ditches.
- Landscape features such as prominent hills and constructed features such as driveways.
- Surface water, such as ponds and streams.
- Direction of land slope (direction of surface water flow). Use arrows to show the direction.
- Seasonal changes such as wet areas in the spring, which may indicate a high water table.
- Potential sources of water well contamination, such as nearby farm fields, dumps, factories, livestock yards, etc.

Hint: Use two different grid sheets to map your entire farm. Use one grid sheet to diagram the details of your farmstead. Use the other grid sheet to map other critical areas on your farm such water bodies, water wells in fields, and oil storage or transfer areas.

**Your county soil survey contains information about the physical characteristics of your farmstead. Contact your local Natural Resources Conservation Service Office for more information.**

**Step 3:** On your map, note the areas where you store and use chemicals and other potential hazards by using single letter codes. Make up your own code letters or symbols as needed. Examples are:

F = Fuel tanks for gasoline or heating oil.

A = Automotive products such as motor oil and antifreeze.

H = Hazardous products like solvents, acids, paints and thinners.

L = Livestock and manure storage facilities.

D = Dead animal storage areas.

P = Pesticide (herbicides, insecticides, fungicides) storage and mixing areas.

FT = Fertilizer storage and loading areas.

**Step 4:** You will need a copy of your county's soil survey report to finish the farmstead assessment. The soil survey is available at your Soil and Water Conservation District (SWCD)/ Natural Resources Conservation Service (NRCS) office or can be found on-line. The NRCS Staff can help you find what you need in the soil survey and can also provide you with a topographic map that shows the landscape of your farmstead. You may want to electronically access the USDA NRCS Web Soil Survey website, which contains archived soil surveys and data in an interactive web mapping format.

Look up the soil series for your farmstead and find the texture of the A and B soil horizons. Record this information on your farmstead diagram. The section labeled Soil Survey Appendix found on page 8 gives step-by-step instructions on how to find this information in the soil survey. For help in learning how to access soil survey information on-line, refer to the section labeled Web Soil Survey.

**Step 5:** Write down the distance between potential pollution sources (livestock facilities, pesticide storage, petroleum storage, private septic system, etc.) and your water wells. Other Farm\*A\*Syst publications will tell you how far apart your well should be from these potential pollution sources. On your diagram, use arrows to indicate which direction from the well the land slopes on your farmstead. Is your well down slope from any potential pollution sources?

You will use the farmstead diagram to help you complete the assessment found in this publication and in subsequent publications. Identify any activities or structures on your farmstead that have the potential for groundwater or surface water contamination.

## **“How do the physical characteristics of my farmstead affect the quality of my groundwater?”**

Different soils have different properties that permit contaminants to percolate, or move through the soil or run off at variable rates. Soil properties such as texture, structure, porosity, organic matter content and land slope, depth to groundwater and underlying materials can affect where contaminants go and how water moves. Knowing your soil properties and understanding how contaminants move through soil will help you recognize the pollution potential of your farmstead.

Soil is a great filter. Contaminants carried by water are generally filtered by the soil before they reach groundwater. The more quickly water moves through or across soil, the less filtration takes place. The landscape, or topography, and the type of soils on your farmstead are two variables that influence how effectively contaminants are filtered.

### **Topography**

Understanding your farmstead’s topography, or landscape, is important. For example, it is important that your well not be located downslope from possible contamination sources. Contaminants can be carried by water across the ground surface into a poorly constructed well and into surface water bodies, such as ponds, lakes, streams and rivers. Since water infiltrates through coarse-textured soils faster than through medium and fine-textured soils, runoff is more likely to take place on farmsteads with medium-and fine-textured soils. Your local NRCS office staff can provide you with topographic maps of your farmstead. Topographic maps also are available from the DNR.

Adsorption occurs when contaminants physically stick to soil particles.

### **Soil texture**

Soil is grouped into three basic textures based on particle size: 1) sand/gravel is large; 2) silt/loam is medium; and 3) clay is fine. You can get a good estimate of soil texture by rubbing a moistened sample between two fingers. Is it sticky like clay, gritty and crumbly like sand, or somewhere in between like loam? The ratio of sand, silt and clay is used to classify soil texture.

Coarse-textured soils contain much sand and have large pore spaces between the particles. That makes it the least effective soil for filtration because liquid moves quickly through it. Large particles, such as sand and gravel, provide relatively little surface area with few sites for adsorption. When fewer contaminants stick to soil particles, filtration is less effective. Because large amounts of water or rainfall move quickly through these soils, the effective filtration of contaminants is reduced when sand is present. On the other hand, water infiltration is faster, reducing the potential for runoff. As a result, contaminants are less likely to reach surface water.

Medium- and fine-textured soils, such as loams, silt loam, and clay, have small pore spaces between the individual particles, making them more effective for filtering contaminants. Contaminants stick more tightly to these soil particles because there is more surface area and more sites for adsorption. When more contaminants stick to soil particles, the effective filtration is increased. The smaller pore spaces between soil particles slow water movement, allowing contaminants more time to adsorb to soil particles, eventually breaking down contaminants before reaching groundwater. On the other hand, since water infiltration is slower in these soils, there is a higher potential for runoff and contaminants are more likely to reach surface water.

Heavy rain can overload the filtering capability of soil, increasing the risk of groundwater contamination.

Your county soil survey contains soil texture information for your farmstead.

Large spaces between soil particles, or macropores, can change the filtering capabilities of finer textured soils that contain much clay. Examples of macropores are root channels, cracks, fractures in the soil and worm holes. During a high-intensity rain, contaminants may quickly leach to groundwater through the macropores, allowing little or no filtration to occur.

### Organic matter

Some contaminants held by soil particles are broken down by soil organisms, such as bacteria, and by chemical reactions with minerals and other naturally occurring chemicals in the soil.

The amount of organic matter in the soil affects its ability to filter contaminants. The higher the amount of organic matter, the higher the adsorption capacity and the more likely contaminants will break down before reaching groundwater.

The soil's ability to purify water is limited. Under extreme conditions, such as a heavy rain or a chemical spill, even the best filtering soils can become overloaded. When soil becomes overloaded, the chance for groundwater contamination increases.

Your county soil survey lists average soil organic matter for various soil series. The organic matter is listed in the "Physical and Chemical Properties of Soils" table in the Soil Survey.

### Depth to water table

As a general rule, the deeper the water table is below the surface, the farther contaminants must travel through the soil before reaching groundwater. This improves the chance for filtration. Contact the Iowa Geological and Water Survey to learn how deep the water table is in your area. Contact information is located on page 12 of this publication.

### Depth to aquifer

The depth and type of soil covering the aquifer are factors in determining the pollution potential to a bedrock aquifer. In general, if there is less than 25 feet of soil covering a bedrock aquifer, the risk for aquifer contamination is high. Highly fractured bedrock, such as limestone, or highly-permeable bedrock, such as sandstone, has a greater potential for groundwater pollution than non-fractured bedrock, such as shale. Based on local well drilling records, the Iowa Geological Survey website can provide you with information on bedrock aquifers, depth to bedrock, type of bedrock and general characteristics of aquifers in your area.

For more information, refer to the **Farm\*A\*Syst publication on Water Well Condition and Maintenance**.

## How do I know if I have sinkholes in my land?

Sinkholes are common in areas where limestone is near the surface and susceptible to being dissolved by infiltrating water. A sinkhole is a circular depression resulting from the collapse of underlying soil or bedrock into a cavity. All sinkholes will carry water into their subsurface and as a result, their presence can have an impact on groundwater quality. Sinkholes can guide rainwater and melting snow into underlying caves like a funnel. This is important environmentally because this can easily allow sewage, animal waste, pesticides and other pollutants into the groundwater supply.

Sinkholes exist in large numbers in the following Iowa counties: Allamakee, Clayton, Fayette, Jackson, Winneshek, Bremer, Butler, Floyd, Mitchell, Chickasaw, and Dubuque.

Locations of known sinkholes can be found in county Soil Surveys and are mapped on the [interactive AFO Siting Atlas, found on the Iowa DNR website](#).

## “There are ag drainage wells near my farm. Why should I be concerned?”

Many of Iowa’s rich agricultural soils, particularly those in north-central Iowa, are poorly drained and at times contain excess water that can interfere with field operations or even ruin crops. In these areas, farm fields are often artificially drained by buried tile lines leading to drainage ditches or to streams. A less commonly used drainage method is the agricultural drainage well, a drilled shaft that funnels drainage water into the underlying bedrock.

Ag drainage wells pose a threat to groundwater quality in Iowa, as they provide a direct route for contaminants such as nitrate, pesticides, bacteria and sediment to enter the underlying aquifers. There are nearly 300 ag drainage wells currently registered in Iowa, and nearly all were constructed between 1900 and 1950. From a statewide perspective, these wells are relatively uncommon. However, over 90% of the known ag drainage wells in Iowa are concentrated in four counties: Floyd, Humboldt, Pocahontas and Wright.

There are specific laws regulating ag drainage wells in Iowa. This publication does not address these regulations. To learn more about laws concerning and potential closure of ag drainage wells contact the Iowa Department of Agriculture and Land Stewardship, Water Resources Bureau. Contact information is located on page 12 of this publication.

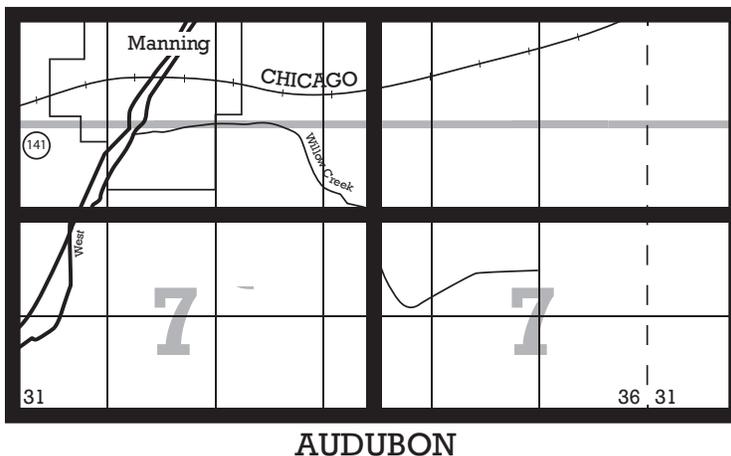
## “Should I be concerned if I live in an area that floods?”

Floods often can threaten the safety of drinking water. Shallow water wells and water wells in poor condition are at highest risk of contamination during floods. If flood waters come near the well or cover the well, you should consider the water unsafe for drinking, cooking or bathing. For your safety, you should contact a DNR certified well contractor to inspect the well for damage. Testing your water well after a flood is the only way to know that the water is safe to drink. Contact your county health department if you have experienced flooding. Until you are able to test your drinking water, only use water from a safe source, such as bottled water or a safe community water supply. You also should be aware that hazardous materials, pesticides, fertilizers, petroleum and manure stored on your farm increase the risk that your water well may become contaminated. For more information, refer to other Farm\*A\*Syst publications on these topics.

## How to use the soil survey

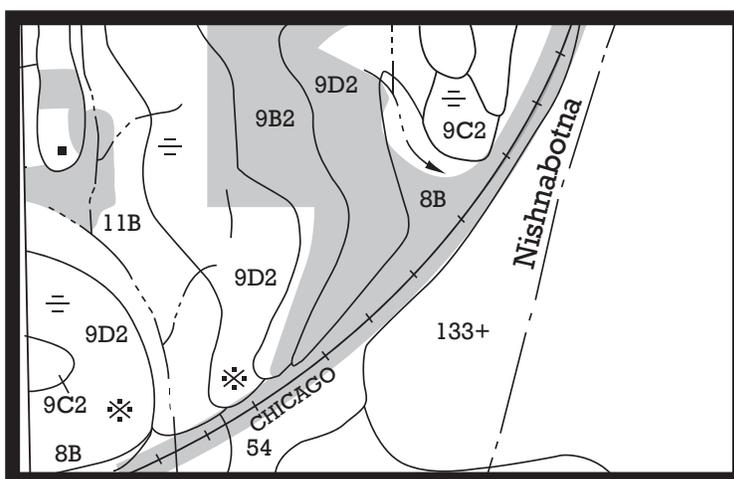
This Soil Survey Appendix will explain how to use your county soil survey to find the information needed to complete your Farm\*A\*Syst site assessment. The soil survey is available through your county's Natural Resources Conservation Service (NRCS) office. If you find the instructions unclear, or have more questions, please contact the NRCS office where trained technicians will assist you.

- Near the aerial photos, you will find a page marked Index to Map Sheets, which folds out. On this map, find the township and section in which your farmstead is located. Note the number of the map sheet indicated by the large number in the gray box.



- Go to the appropriate aerial photo map sheet. The sheet numbers are located at the top of the page of the aerial photos. Each photo contains approximately six sections. On the aerial photo, locate your section and then your farmstead. Note that building sites are identified with a small black square:

- Write down the soil mapping units representing the soil under your farmstead. The soil mapping units are numbers, often in combination with letters. If your farmstead is located on two or more soil series, note all map units. On the back side of the Index to Map Sheets page, find the Soil Legend that translates the soil mapping unit numbers to the soil series name. Write down the soil series names found on your farmstead.



- Look up your soil series name in the "Description of the Soils" – it may be called the "Classification of Soils" in some soil surveys. The page numbers for each of the soil series descriptions are usually listed in the table of contents.

- The soil horizon description contains information on depth, color and texture of the soil. You need to find the texture of soil in both the A and B horizons. If there is no B horizon, then use the texture in the C horizon. This information will be used in the assessment.

NOTE: The current soil survey reports for Iowa counties were released over many years. Over time, the organization and content changed slightly, therefore you will find slight differences in the report you are using and the following instructions. Care has been taken to verify the instructions. However, you will need to refer to the Soil Survey table of contents for the exact location of the various sections needed to complete this assessment.

### symbol

138C2

138 = Clarion loam,  
C = slope range (5 to 9 percent)

2 = erosion phase (moderate)

The slope is indicated by the letter associated with the numerical soil symbol.

A = 0 - 2% slope

B = 2 - 5% slope

C = 5 - 9% slope

D = 9 - 14% slope

E = 14 - 18% slope

F = 18 - 25% slope

G = greater than 25% slope

## Texture of A horizon

Ap—0 to 7 inches; black (10 YR 2/1) heavy loam; weak fine granular structure; friable; slightly acid; abrupt smooth boundary.

A12- 7 to 10 inches; black (10 YR 2/1) heavy loam; weak very fine and fine subangular blocky structure; friable; neutral; clear smooth boundary.

A3—10 to 16 inches; dark brown (10 YR 3/3) heavy loam; thick very dark gray (10 YR 3/1) coats on peds; weak very fine and fine subangular blocky structure; friable; neutral; clear smooth boundary.

## Texture of B horizon

B21—16 to 24 inches; brown (10 YR 4/3) heavy loam; thin very dark grayish brown (10 YR 3/2) coats on peds; weak very fine and fine subangular blocky structure; friable; neutral; clear smooth boundary. etc...

- The soil drainage class is given in the first sentence of the Description of the Soils — also called the Classification of Soils in some books, as illustrated below.

## Soil drainage class

Clarion Series

The Clarion series consists of well drained, moderately permeable soils on convex upland slopes.

## Using the Web Soil Survey

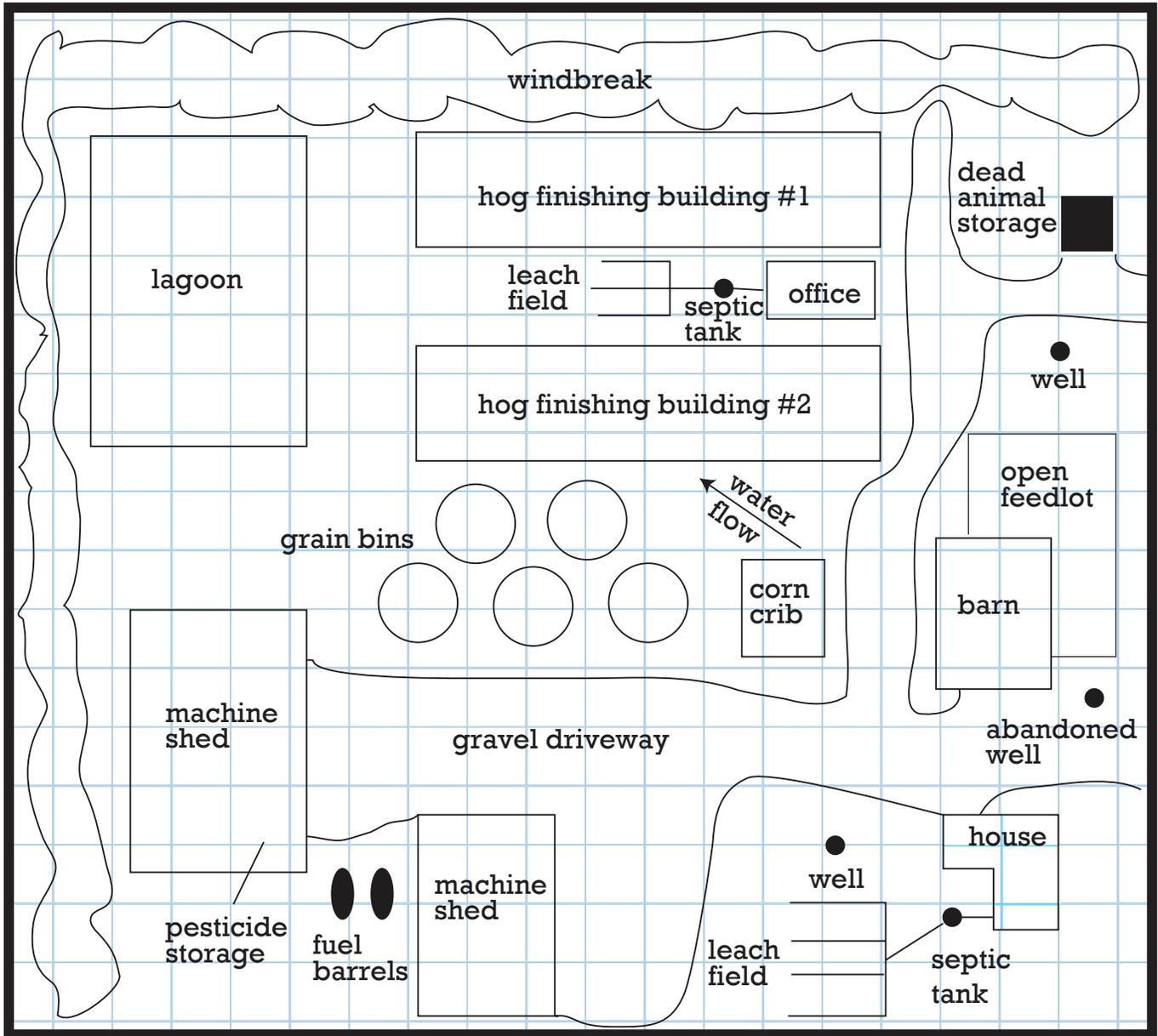
The Web Soil Survey (<http://websoilsurvey.nrcs.usda.gov/app/>) is operated by the USDA Natural Resources Conservation Service and provides access to the most comprehensive natural resource information in the U.S. Use the Web Soil Survey on-line mapping system to customize, save, and print reports for your farm or farmstead. Web Soil Survey provides an on-line help menu if you have difficulty navigating the website.

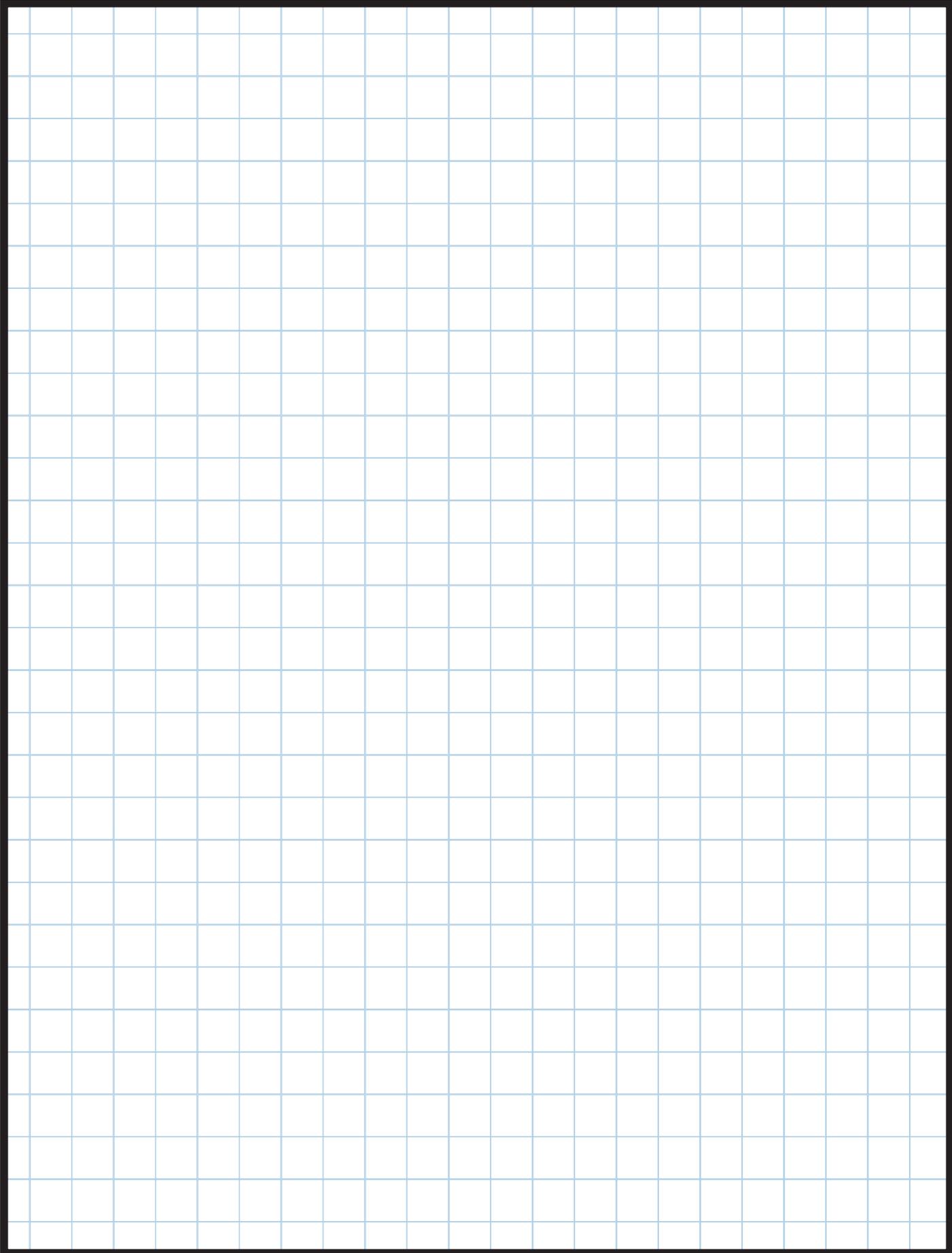
On the Web Soil Survey internet homepage, begin by clicking on “Start WSS” (Web Soil Survey). Next, click on the tab “Area of Interest (AOI)” and enter the location of your farmstead either by address, longitude/latitude, state and county, or PLSS (Section, Township and Range). Use the interactive map tools to zoom to your farmstead and define your farmstead as the “AOI” on the map.

Click on the “Soil Map” tab to see a list of soil types found within your Area of Interest. To find the soil properties for each soil type, click on each soil type, one at a time. A “Map Unit Description Report” will pop up and display the soil properties including soil drainage class, slope percent and soil horizons (soil layers).

## Sample site map

If you have potential pollution areas on your farm or acreage, such as storage of petroleum, pesticide, fertilizer, automotive maintenance supplies, livestock facilities, manure storage or dead animal storage, please refer to the appropriate Farm\*A\*Syst publications. If these potential pollution sources are within 100 feet, or upslope from your water well, your groundwater and therefore your drinking water may be in danger of contamination. A complete list of the available Farm\*A\*Syst publications are found on the inside front cover.





## For more information

### **Natural Resources Conservation Service**

Web: [www.ia.nrcs.usda.gov](http://www.ia.nrcs.usda.gov) Phone: [515-284-4769](tel:515-284-4769)

Contact your local NRCS/SWCD (Soil and Water Conservation District) office located in your county.

<http://offices.sc.egov.usda.gov/locator/app?state=ia>

- Assists with county soil survey.
- Provides topographic maps.
- Provides water quality information.

### **Iowa Department of Natural Resources Information**

Web: [www.iowadnr.gov](http://www.iowadnr.gov) Phone: [515-725-8206](tel:515-725-8206)

Maintains Interactive Mapping website that shows locations of sinkholes and ag drainage wells.

### **Iowa Geological Survey**

Web: [www.iihr.uiowa.edu/igs/](http://www.iihr.uiowa.edu/igs/) Phone: [319-335-1575](tel:319-335-1575)

- Provides information about Iowa's geologic formations.
- Provides well logs and depth to bedrock information.
- Provides aquifer characteristics and well forecasts.

### **County Sanitarian (County Environmental Health Official)**

If the listing in this publication is not current, contact your county courthouse or board of supervisors for contact information

- Assists with site assessment and county soil survey.

### **Iowa State University Extension**

Contact your county extension office. The county director may be able to answer your questions and direct you to other Extension specialists.

- Provides publications on a variety of topics that are available at Iowa State University Extension county offices, or from the Publication Distribution Center, Ames, [515-294-5247](tel:515-294-5247). Many of the publications are available online at [www.extension.iastate.edu/store/](http://www.extension.iastate.edu/store/)

### **Iowa Department of Agriculture and Land Stewardship (IDALS) Division of Soil Conservation**

Web: [www.agriculture.state.ia.us](http://www.agriculture.state.ia.us) Phone: [515-281-5851](tel:515-281-5851)

- Provides information on ag drainage wells and sinkhole protection.
- Provides technical information on water quality.
- Provides support to local Soil and Water Conservation Districts.

### **U.S. Environmental Protection Agency (EPA) Office of Water**

Web: <http://water.epa.gov/>

- Provides resources about drinking water and ground water.

## Assessment: Farmland Characteristics

Now you are ready to begin to evaluate your potential for having unsafe drinking water as it relates to the characteristics on your farmstead. You will use this evaluation and your farmstead diagram when you look at other potential hazards to your water resources such as water well condition, septic system maintenance, manure control and pesticide and fertilizer storage.

The evaluation areas are in the shaded "Risk" column. Choose the risk category that best fits your situation. Note how likely you are to have drinking water problems, as indicated by "low risk," "moderate risk," or "high risk."

Risk	Low Risk	Moderate Risk	High Risk
<b>Soil Texture</b>			
<b>Texture of Surface (A horizon)*</b>	○ Clay, silty clay, clay loam and silty clay loam soils.	○ Loam, silt and silt loam soils.	○ Sand, loamy sand, sandy loam, sandy clay loam and sandy clay soils.
<b>Texture of Subsoil (B horizon—if there is no B horizon, use the C horizon)*</b>	○ Clay, silty clay, clay loam and silty clay loam soils.	○ Loam, silt and silt loam soils.	○ Sand, loamy sand, sandy loam, sandy clay loam and sandy clay soils.
<b>Organic Matter</b>	○ Clay, silty clay, clay loam and silty clay loam soils.	○ Loam, silt and silt loam soils.	○ Sand, loamy sand, sandy loam, sandy clay loam and sandy clay soils.
<b>Flooding</b>	○ No flooding occurs		○ Some flooding occurs
<b>Ag drainage wells and sinkholes</b>	○ No ag drainage wells or sinkholes are present within my watershed.	○ All ag drainage wells within my watershed have been properly closed AND ○ The surface water from my farmstead drains away from all sinkholes.	○ There are open ag drainage wells located within my watershed OR ○ The surface water from my farmstead drains in the direction of a sinkhole.

\*See "Classification of the Soils" in your county soil survey

## Iowa Farm A Syst Plan of Action "People protecting Iowa's drinking water"

Directions: This worksheet will help you to plan and prioritize changes that can be made on your farmstead to reduce the risk of contaminating your water resources. Fill out this worksheet after completing any of the Iowa Farm\*A\*Syst risk assessments. Pay special attention to areas on your farmstead that you rated as a "high" or "moderate" risk. Note the areas of the Iowa Farm\*A\*Syst risk assessment worksheet that are marked to indicate a violation of Iowa law or a critical evaluation point. It may be helpful to make note of target dates for completion and anticipated costs.

Date of assessment: 4/2/12

Area of Concern	Circle	Planned Actions...	Scheduled Completed
<b>Changes to be made within 3 months...</b>			
Bolts on well cap loose	 	Tighten bolts and contact county sanitarian to test well water for bacteria.	Today 4/2/12
Anti-backsiphoning device not in use	 	Purchase vacuum breakers and install on all hydrants	This week 4/6/12
No emergency contact numbers posted for spill prevention	 	Identify people to call in case of an oil or chemical spill. Let everyone know where the list is posted.	Next week 4/13/12
	 		
	 		
	 		
<b>Changes to be made within one year...</b>			
Feedlot no longer in use for livestock	 	Scrap off manure within 6 months, grade the surface and plant grass	9/12
Septic tank not pumped since we put it in 10 yrs ago	 	Contact a licensed septic tank pumper to pump out the tank	7/12
<b>Changes to be made within five years...</b>			
Old manure storage does not have 2 ft of freeboard	 	Set up a schedule to inspect and monitor manure storage weekly, especially during rainy periods. Have emergency plan in place to prevent manure from moving off site if storage over-flows. Evaluate feasibility of building second storage facility.	Inspect ASAP and weekly. Emergency plan - 4/12. Second facility Summer 2015

\*Changes to be made within five years should be re-evaluated each year until completed.

-  - Violates Iowa Code
-  - Critical Evaluation Point

## Iowa Farm A Syst Plan of Action

Directions: Fill out this worksheet after completing any of the Iowa Farm\*A\*Syst risk assessments. Pay special attention to areas on your farmstead that you rated as a "high" or "moderate" risk.

Note the areas of the Iowa Farm\*A\*Syst risk assessment worksheet that are marked to indicate a violation of Iowa law or a critical evaluation point and circle the appropriate symbol. It may be helpful to make note of anticipated costs and available resources.

Date of assessment: \_\_\_\_\_

Area of Concern	Circle	Planned Actions...	Scheduled Completed
<b>Changes to be made within 3 months...</b>			
	 		
	 		
	 		
	 		
	 		
	 		
<b>Changes to be made within one year...</b>			
	 		
	 		
<b>Changes to be made within five years...</b>			
	 		
	 		

\*Changes to be made within five years should be re-evaluated each year until completed.

-  - Violates Iowa Code
-  - Critical Evaluation Point

## Environmental Health Sanitarians County Contact List

COUNTY	CONTACT NAME	PHONE #			
Adair	Steve Patterson	<u>641/747-8320</u>	Johnson	James Lacina	<u>319/356-6040</u>
Adams	Carl Goodson	<u>641/322-3410</u>	Jones	Paula Hart	<u>319/462-4715</u>
Allamakee	Laurie Moody	<u>563/568-4104</u>	Keokuk	Eric Dursky	<u>641-660-3419</u>
Appanoose	Steve Prevo	<u>641/724-3511</u>	Kossuth	Steve Anderson	<u>515/295-3813</u>
Audubon	Steve Patterson	<u>641/747-8320</u>	Lee	Rose Hankedahl	<u>319/372-5225</u>
Benton	Marc Greenlee	<u>319/472-3119</u>	Linn	Heidi Peck	<u>319/892-6000</u>
Black Hawk	Jon McNamee	<u>319/291-2413</u>	Louisa	Andrew Beaver	<u>319/523-3981</u>
Boone	John Roosa	<u>515/433-0591</u>	Lucas	Sherry Lutz	<u>641/724-3511</u>
Bremer	Randy McKenzie	<u>319/352-0332</u>	Lyon	Joel Moser	<u>712/472-8230</u>
Buchanan	Chad Beatty	<u>319/334-2873</u>	Madison	Elton Root	<u>515/462-2636</u>
Buena Vista	Kim Johnson	<u>712/749-2555</u>	Mahaska	Eric Dursky	<u>641-660-3419</u>
Butler	Misty Kroeze	<u>319/267-2964</u>	Marion	Cory Frank	<u>641/828-2243</u>
Calhoun	Shelly Schossow	<u>712/297/8323</u>	Marshall	John Kunc	<u>641/754-6370</u>
Carroll	Carey Kersey	<u>712/792-9532</u>	Mills	Mike Sukup	<u>712/527-9699</u>
Cass	Steve Patterson	<u>641/747-8320</u>	Mitchell	Mark Ross	<u>641/832-3943</u>
Cedar	Phil LaRue	<u>563/886-2248</u>	Monona	Sandy Bubke	<u>712/423-3400</u>
Cerro Gordo	Brian Hanft	<u>641/421-9340</u>	Monroe	Sherry Lutz	<u>641/724-3511</u>
Cherokee	Justin Pritts	<u>712/225-6721</u>	Montgomery	Bev McAlpin	<u>712/623-4753</u>
Chickasaw	Ken Rasing	<u>641/394-2406</u>	Muscatine	Jim Schaapveld	<u>563/263-0482</u>
Clarke	Allan Mathias	<u>641/342-6654</u>	O'Brien	Jonathon Hintz	<u>712/757-0105</u>
Clay	Tammy McKeever	<u>712/262-8165</u>	Osceola	Steve Van Kley	<u>712/754-3765</u>
Clayton	Janet Ott	<u>563/245-2451</u>	Page	Benjamin Roed	<u>712/542-3864</u>
Clinton	Shane McClintock	<u>563/659-8148</u>	Palo Alto	Joe Neary	<u>712/852-3058</u>
Crawford	Carey Kersey	<u>712/792-9532</u>	Plymouth	Noel Ahmann	<u>712/546-7516</u>
Dallas	Ted Trewin	<u>515/993-5803</u>	Pocahontas	Dave Stall	<u>712/335-4142</u>
Davis	Steve Prevo	<u>641/724-3511</u>	Polk	David Williamson	<u>515/286-3726</u>
Decatur	Allan Mathias	<u>641/342-6654</u>	Pottawattamie	Kay Mocha	<u>712/328-5792</u>
Delaware	Dennis Lyons	<u>563/927-5925</u>	Poweshiek	J.D. Griffith	<u>641/623-3762</u>
Des Moines	Jim Holley	<u>319/753-8217</u>	Ringgold	Allan Mathias	<u>641/342-6654</u>
Dickinson	David Kohlhaase	<u>712/336-2770</u>	Sac	Sherrie Wilson	<u>712/662-7929</u>
Dubuque	Bonnie Brimeyer	<u>563/557-7396</u>	Scott	Eric Bradley	<u>563/326-8618</u>
Emmett	Amiee Devereaux	<u>712/362-5702</u>	Shelby	Terri Daringer	<u>712/755-2609</u>
Emmett	Joe Neary	<u>712/852-3058</u>	Sioux	Ken Oldenkamp	<u>712/737-2248</u>
Fayette	Catherine Miller	<u>563/422-3767</u>	Story	Margaret Jaynes	<u>515/382-7240</u>
Floyd	Jeff Sherman	<u>641/257-6145</u>	Tama	Todd Apfel	<u>641/484-4788</u>
Franklin	Earl Kalkwarf	<u>515/532-3461</u>	Taylor	Angela Green	<u>712/523-2556</u>
Fremont	John Travis	<u>712/374-3355</u>	Union	Amanda Husband	<u>641/782-7803</u>
Greene	Tim Healy	<u>515/386-8343</u>	Van Buren	Gerald Hannam	<u>319/293-3431</u>
Grundy	Carie Sager	<u>319/824-1212</u>	Wapello	Ross Glosser	<u>641/684-5425</u>
Guthrie	Steve Patterson	<u>641/747-8320</u>	Warren	Curt Coghlan	<u>515/961-1062</u>
Hamilton	Al Haberman	<u>515/832-9510</u>	Washington	Jennine Wolf	<u>319/653-7782</u>
Hancock	Steve Anderson	<u>515/295-3813</u>	Wayne	Dave Rhodes	<u>641/872-1903</u>
Hardin	Nancy Bunt	<u>641/939-8444</u>	Webster	Kari Prescott	<u>515/573-4107</u>
Harrison	Matt Pitt	<u>712/644-2302</u>	Winnebago	Ron Kvale	<u>641/903-9214</u>
Henry	Jodi Sutter	<u>319/385-6724</u>	Winneshiek	Doug Groux	<u>563/387-4120</u>
Howard	LaCinda Altman	<u>563/547-9209</u>	Woodbury	Ron Brandt	<u>712/279-6119</u>
Humboldt	Dave Stull	<u>712/335-4142</u>	Worth	Chris Maier	<u>641/845-2200</u>
Ida	Don McLain	<u>712/364-3498</u>	Wright	Sandy McGrath	<u>515/532-3461</u>
Iowa	Cheryl Andresen	<u>319/828-4401</u>			
Jackson	Richard Heller	<u>563/652-5658</u>			
Jasper	Frank Frieberg	<u>641/792-7603</u>			
Jefferson	Kevin Luetters	<u>641/472-2561</u>			
	Dan Miller				

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