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## EC98-754 Farm\*A\*Syst Nebraska's System for Assessing Water Contamination Risk Worksheet 7: Hazardous Materials and Waste Management

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# Farm\*A\*Syst

WORKSHEET 7

## Nebraska's System for Assessing Water Contamination Risk

### Hazardous Materials and Waste Management

#### Why should I be concerned?

Consider the variety of products commonly used in households, on acreages and on farms: paints, solvents, oils, cleaners, wood preservatives, batteries, adhesives, and pesticides. Also consider the amount of these products which goes unused or is thrown away. Some common disposal practices can create an unsafe environment around the home and may contaminate groundwater. Additionally, many of these common disposal practices violate Nebraska law.

Small, unusable amounts of these materials are often spilled, buried, dumped or flushed on site. Minimizing the amounts of these substances used, along with practicing proper disposal procedures, can reduce health risks, liability, and the potential for groundwater contamination. Farmers and their families are generally familiar with the hazards of pesticides commonly used in the farm operation, but they and other rural residents may be less aware of the hazards of other chemicals that make many tasks around the home, acreage and farm easier or more efficient.

Improper use of hazardous products may result in toxic health effects. Improper storage may allow chemicals to leak, causing potentially dangerous chemical reactions, toxic health effects, or groundwater contamination. Improper disposal may allow these chemicals to eventually enter into drinking water through surface water or groundwater.

Your drinking water is least likely to be contaminated by wastes if you buy only the products you need and properly manage the use, storage, and disposal of them. Completely use up the products, reuse, or recycle them whenever possible, and remember that proper disposal practices are essential to avoid contamination that could affect the water supplies and the health of your family, neighbors, pets and farm animals.

**The goal of Farm\*A\*Syst is to help you protect the groundwater that supplies your drinking water.**

#### How will this worksheet help me protect my drinking water?

- It will take you step-by-step through your waste

management practices.

- It will evaluate your activities according to how they might affect the groundwater that provides your drinking water supplies.
- It will provide you with easy-to-understand "risk level scores" that will help you analyze the relative safety of your waste management practices.
- It will help you determine which of your practices are reasonably safe and effective, and which practices might require modification to better protect your drinking water.

#### How do I complete the worksheet?

Follow the directions at the top of the chart on page 3. It should take you 15 to 30 minutes to complete this worksheet and determine your risk level.

Information derived from Farm\*A\*Syst worksheets is intended to provide general information and recommendations to rural residents regarding their own practices. It is not the intent of this educational program to keep records of individual results.



# Glossary

These terms may help you make more accurate assessments when completing *Worksheet 7*. They may also help clarify some of the terms used in *Fact Sheet 7*.

**Burn barrel:** On-site system of burning in a barrel (see incinerator).

**Conditionally exempt generators:** Produce less than 220 pounds of hazardous materials per month or have less than 2,200 pounds accumulated at any time.

**Community hazardous materials collection program:** Program sponsored by community groups, county, or city governments to collect hazardous materials for proper disposal using professional hazardous materials contractors.

**Dump:** An unlicensed/unpermitted local site or disposal area that is not designed to prevent migration of contaminated water out of the waste and offers little groundwater or environmental protection. This may also include on-site dumps. Unpermitted community dumps and private on-site dumps are illegal under Nebraska law.

**EPA:** United States Environmental Protection Agency.

**Hazardous waste contractor:** A hazardous waste collection service offered by businesses with properly trained employees and vehicles licensed to transport hazardous waste to permitted hazardous waste facilities.

**Household quantities:** Quantities of a product found in small amounts. Typically these are quantities available in local lawn and garden shops, hardware stores, or lumber yards.

**Incinerator (on-site):** Any home-built incinerator or any incinerator purchased for home, acreage, or farm use.

**NDA:** Nebraska Department of Agriculture.

**NDEQ:** Nebraska Department of Environmental Quality.

**On-site disposal:** Any legal method of burning, land disposal, or land spreading of wastes on the site. Also includes use of the septic system for disposal of liquids.

**Permitted landfill:** A landfill specifically designed to protect groundwater through the use of a high quality clay or a clay/impermeable film liner, accompanied by a system of buried pipes to collect any liquids generated. Meets current state standards.

**Recycling:** Reusing waste materials to develop another product.

**Regulated quantities:** Quantities of hazardous materials that are regulated by EPA or NDEQ. Hazardous materials are regulated at 220 pounds or about half of a 55 gallon barrel. For acutely hazardous materials, the regulations are for 2.2 pounds or about 1 quart. A complete list of hazardous and acutely hazardous materials is available from the Nebraska Department of Environmental Quality.

**Solvent recycler collection service:** A pick-up service provided by businesses that reprocess used solvents into usable products.

**Waste exchange:** A program that allows a business to acquire waste from another business for reuse, recovery, or re-refinement.

# Hazardous Materials and Waste Management: Assessing the Risk of Surface Water and Groundwater Contamination

1. Use a pencil. You may want to make changes.
2. For each category listed on the left that is appropriate to your site, read across to the right and circle the statement that best matches practices on your site. (Skip and leave blank any categories that don't apply.)
3. Look above the description you circled to find your "risk level" (4, 3, 2, or 1) and enter that number in the blank under "YOUR RISK."
4. Allow about 15 to 30 minutes to complete the worksheet and determine your risk for hazardous materials and waste disposal practices.

	HIGH RISK (risk 4)	HIGH-MODERATE RISK (risk 3)	MODERATE-LOW RISK (risk 2)	LOW RISK (risk 1)	YOUR RISK
<b>ASH DISPOSAL</b>					
From site burn barrel or incinerator	<b><i>Disposal of ash from mixed trash on site or at dump.</i></b>	<b><i>Disposal of ash from dry combustibles only, on site or spread on fields.</i></b>	Store ash for disposal at permitted landfill or transfer station at a later time.	Ash collected and routinely disposed of at permitted transfer station or landfill.	
<b>BUILDING/WOOD MAINTENANCE PRODUCTS</b>					
Adhesives, such as caulk and solvent-based glues	<b><i>Disposal on site or at dump.</i></b>	Liquid safely evaporated in open air. Sludge or leftover product taken to transfer station or landfill.	Safely stored in preparation for community hazardous materials collection program.	Used up or shared with someone else. Leftover adhesives taken to community hazardous material collection program.	
Paint brush or spray gun cleaners (solvent based)	<b><i>Disposal of leftover or used cleaning solvents on site or at dump.</i></b>	Cleaned in contained, ventilated area. Filtered cleaning solvents reused or safely evaporated in open air. Sludge taken to permitted transfer station or landfill approved by NDEQ for special wastes.	Cleaned in contained ventilation area. Filtered cleaning solvents reused or safely evaporated in open air. Sludge safely stored for future collection program	Cleaned in contained, ventilated area. Leftover or used solvent taken to community hazardous material collection program or solvent recycling collection service used for leftover cleaners.	
Lead-based paint (use of leaded pigment in paint was banned in 1973)	<b><i>Disposal of sludge or paint on site or at dump.</i></b>	Liquid evaporated in open air. Paint or sludge taken to permitted transfer station or landfill.	Liquid evaporated in open air. Safely stored for future collection program.	Leftover paint taken to community hazardous material collection program.	

**Bold Italic type:** These actions are not legal for wastes generated in Nebraska. If you are unsure of how to dispose of specific wastes, contact your local University of Nebraska Cooperative Extension office or the Nebraska Department of Environmental Quality.

	HIGH RISK (risk 4)	HIGH-MODERATE RISK (risk 3)	MODERATE-LOW RISK (risk 2)	LOW RISK (risk 1)	YOUR RISK
<b>BUILDING/WOOD MAINTENANCE PRODUCTS (continued)</b>					
Paint or stain (no lead)	<b><i>Disposal of oil-based paints, latex paints, or stains on site or at dump.</i></b>	Liquid evaporated in open air. Solidified paint or sludge taken to permitted transfer station or landfill.	Liquid evaporated in open air. Safely stored for future hazardous materials collection program.	Used up or shared with someone else. Leftover paint or stain taken to community paint swap or hazardous material collection program.	
Stripper or thinner for paint/finish	<b><i>Disposal of sludge, stripper, or thinner on site or at dump.</i></b>	Liquid evaporated in open air. Stripper or stripper sludge taken to permitted transfer station or landfill.	Liquid evaporated in open air. Safely stored for future hazardous materials collection program.	Spills contained. Unused products used up. Community hazardous material collection program used for leftover stripper or thinner.	
Surface cleaners (solvent based deck wash, fence wash, etc.)	<b><i>Disposal of sludge or cleaners on site or at dump.</i></b>	Liquid cleaners evaporated in open air. Solidified cleaners or sludge taken to permitted transfer station or landfill	Liquid cleaners evaporated in open air. Safely stored for future hazardous materials collection program.	Used up or shared with someone else. Community hazardous material collection program used for leftover cleaners.	
<b>CONTAINER DISPOSAL</b>					
Paper/cardboard pesticide container	<b><i>Disposal of partially filled or empty container on site. Container incinerated when not recommended by label instructions.</i></b>	Burned in field where pesticides were used, if recommended by label instructions.	Empty container taken to permitted transfer station or landfill for recycling or disposal after cleaning as directed on label instructions or safely stored for future recycling opportunity.	Returned to supplier or community hazardous material collection program. Followed label instructions.	
Plastic pesticide container from business	<b><i>Disposal of partially filled or empty unrinsed containers on site or at dump. Disposal or reuse of tripled-rinsed container on site.</i></b>	<b><i>Unrinsed containers safely stored for future disposal at permitted transfer station or landfill.</i></b> OR burned in field where pesticides were used, if recommended by label instructions.	<b><i>Routinely dispose of unrinsed containers at permitted transfer station or landfill.</i></b> OR triple-rinsed containers safely stored for future disposal at permitted transfer station or landfill.	Triple rinsed container returned to retail store for reuse, or taken to local pesticide container recycling program or permitted transfer station or landfill. Rinsate applied to appropriate crop.	

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	HIGH RISK (risk 4)	HIGH-MODERATE RISK (risk 3)	MODERATE-LOW RISK (risk 2)	LOW RISK (risk 1)	YOUR RISK
<b>CONTAINER DISPOSAL (continued)</b>					
Plastic pesticide container from household	<b><i>Disposal of partially filled or empty unrinsed containers on-site or at dump.</i></b>	Unrinsed containers safely stored for future disposal at permitted transfer station or landfill.	Empty containers rinsed and safely stored for future disposal at permitted transfer station. Rinse water used as part of pest management.	Empty containers rinsed and routinely disposed of at permitted transfer station or landfill. Rinse water used as part of pest management.	
Container for oil or other vehicle product (antifreeze, brake fluid, etc.)	<b><i>Disposal of partially filled or empty container on site or at dump. Reuse of triple rinsed container on site.</i></b>	Any remaining ingredients evaporated in safe conditions. Empty container taken to permitted transfer station or landfill approved by NDEQ for special wastes. OR burned if recommended by label instructions.	Any remaining ingredients evaporated in safe conditions. Container recycled or stored for future recycling.	Product used up and container recycled or stored for future recycling.	
Hazardous household product containers	<b><i>Disposal of partially filled or empty container on site or at dump.</i></b>	Disposal of partially filled or empty container at permitted transfer station or landfill.	Empty container taken to recycling facility or stored for future recycling opportunity	Empty or partially filled container taken to community hazardous material collection program.	
Old barrels and containers — unlabeled and contents unknown	<b><i>Disposal of partially filled or empty container on site or at dump.</i></b>	Disposal of partially filled or empty container at permitted transfer station or landfill.	Identify contents of partially filled containers and take to community hazardous material collection program.	Identify previous contents of empty container. Properly dispose of empty container.	
<b>PESTICIDES</b>					
Unwanted or banned pesticides	<b><i>Disposal of unused pesticides on site or at dump.</i></b>	<b><i>Taken to permitted transfer station or landfill.</i></b>	Pesticides sold for restricted or general purposes, used up in accordance with label. Pesticide stored for future collection opportunity.	Routine participation in EPA or NDA pesticide collection program. Unused pesticides returned to place of purchase. Community hazardous material collection program used.	

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	HIGH RISK (risk 4)	HIGH-MODERATE RISK (risk 3)	MODERATE-LOW RISK (risk 2)	LOW RISK (risk 1)	YOUR RISK
<b>VEHICLE/METAL EQUIPMENT MAINTENANCE PRODUCTS</b>					
Used antifreeze	<b><i>Disposal on site or at dump.</i></b>	Taken to permitted transfer station or landfill.	Collected and disposed of at municipal sewage treatment plant with permission of municipality.	Saved and taken to antifreeze recycling facility, or distilled and mixed with fresh antifreeze for use in other radiators.	
Used oil and grease	<b><i>Disposal on site or at dump.</i></b>	<b><i>Collected and disposed of at permitted transfer station or landfill.</i></b>	Reused for lubrication. Burned for heat in an approved used-oil fired space heater or stored for future collection opportunity.	Routinely taken to used oil collection tank for energy recovery or recycling.	
Used oil sludge (leftover after burning in oil-fired space heater)	<b><i>Disposal on site or at dump.</i></b>	Collected and disposed of at permitted transfer station or landfill approved by NDEQ for special wastes.	Safely stored for future collection opportunity.	Routinely taken to community hazardous material collection program.	
Spent organic solvent/parts cleaner	<b><i>Disposal of solvents or sludge on site or at dump.</i></b>	Evaporated in open air. Sludge taken to permitted transfer station or landfill approved by NDEQ for special wastes.	Process filtered or distilled in ventilated area and reused. Sludge taken to permitted transfer station or landfill approved by NDEQ for special wastes.	Solvent recycling collection service routinely used for leftover cleaners.	
Rust removal products	<b><i>Disposal of used or leftover product on site or at dump.</i></b>	Disposal at permitted transfer station or landfill.	Safely stored for future collection opportunity.	Used up or shared with someone else. Routinely taken to community hazardous material collection program.	
Lead acid battery	<b><i>Disposal on site or at dump.</i></b>	<b><i>Used batteries taken to permitted transfer station or landfill.</i></b>	Batteries safely stored away from well.	Batteries routinely taken to recycling center or battery store.	

**Bold Italic type:** These actions are not legal for wastes generated in Nebraska. If you are unsure of how to dispose of specific wastes, contact your local University of Nebraska Cooperative Extension office or the Nebraska Department of Environmental Quality.



	HIGH RISK (risk 4)	HIGH-MODERATE RISK (risk 3)	MODERATE-LOW RISK (risk 2)	LOW RISK (risk 1)	YOUR RISK
<b>VEHICLE/METAL EQUIPMENT MAINTENANCE PRODUCTS (continued)</b>					
Vehicle maintenance drips and spills	Flushing onto on-site property.	Contained on paved area with sawdust or oil dry material. <b><i>Contaminated sawdust disposed of on site or at dump.</i></b>	Contained on paved area with sawdust or oil dry material. <b><i>Contaminated sawdust spread on site.</i></b>	Contained on paved area with sawdust or oil dry material. Contaminated sawdust disposed of at licensed transfer station or landfill. Larger quantities may be considered "regulated quantities."	
<b>WOOD PRESERVING (creosote, chromated copper Arsenate (CCA), osmose K-33, pentachlorophenol, or methyl isothiocyanate)</b>					
Application drips and spills	Application without containment within 100 feet of well. <b><i>Applicator and drop cloths disposed of on site or at dump.</i></b>	Application without containment more than 100 feet from well. <b><i>Applicator and drop cloths disposed of on site or at dump.</i></b>	Application with containment within 100 feet of well. Drips and spills contained. Applicator and drop cloths disposed of at permitted transfer station or landfill.	Application with containment more than 100 feet of well. Drips and spills contained. Applicator and drop cloths disposed of at permitted transfer station or landfill.	
Disposal of unused preservatives	<b><i>Disposal on site or at dump.</i></b>	<b><i>Disposal at permitted transfer station or landfill.</i></b>	_____	Used up or shared with someone else if not a banned product. Community hazardous material collection program used for leftover preservatives.	

**Bold Italic type:** These actions are not legal for wastes generated in Nebraska. If you are unsure of how to dispose of specific wastes, contact your local University of Nebraska Cooperative Extension office or the Nebraska Department of Environmental Quality.

**Your groundwater vulnerability score from *Worksheet 2* was \_\_\_\_\_**

Note: If the surface texture, subsurface texture, or depth to groundwater used to calculate this score are not characteristic of the site conditions present for the activities/practices discussed in this worksheet, calculate a new vulnerability score for this site.

If your groundwater vulnerability score is:

- 1 to 1.4: your site has a LOW VULNERABILITY to pollution reaching groundwater.
- 1.5 to 2.4: your site has a MODERATE-LOW VULNERABILITY to pollution reaching groundwater.
- 2.5 to 3.4: your site has a HIGH-MODERATE VULNERABILITY to pollution reaching groundwater.
- 3.5 to 4.0: your site has a HIGH VULNERABILITY to pollution reaching groundwater.

**Your surface water vulnerability score from *Worksheet 2* was \_\_\_\_\_**

Note: If the surface texture, slope toward surface water, or distance from surface water used to calculate this score are not characteristic of the site conditions present for the activities/practices discussed in this worksheet, calculate a new vulnerability score for this site.

If your surface water vulnerability score is:

- 1 to 1.4: your site has a LOW VULNERABILITY to pollution reaching surface water.
- 1.5 to 2.4: your site has a MODERATE-LOW VULNERABILITY to pollution reaching surface water.
- 2.5 to 3.4: your site has a HIGH-MODERATE VULNERABILITY to pollution reaching surface water.
- 3.5 to 4.0: your site has a HIGH VULNERABILITY to pollution reaching surface water.

**Look over your worksheet scores for individual activities:**

- **Low risk** practices (1's): are ideal and should be your goal regardless of your site's vulnerability to pollution reaching ground or surface water. Cost and other factors may make it difficult to achieve a low risk rating for all activities.
- **Moderate-low risk** practices (2's): provide reasonable water quality protection unless your site's vulnerability to pollution reaching ground or surface water is moderate-high or high.
- **High-moderate risk** practices (3's): do not provide adequate protection in many circumstances, especially if your site's vulnerability to pollution reaching ground or surface water is high or high-moderate. They may provide reasonable water quality protection if your site's vulnerability to pollution reaching ground or surface water is low to moderate-low.
- **High risk** practices (4's): pose a serious danger of polluting water, especially if your site's vulnerability to pollution reaching ground or surface water is high, high-moderate, or moderate-low. Some high risk activities may not immediately threaten water quality if your site's vulnerability to pollution reaching ground or surface water is low, but still pose a threat over time if not corrected.

Read ***Fact Sheet 7 Improving Hazardous Materials and Waste Management*** and consider how you might modify your practices to better protect your drinking water supply and other ground and surface water supplies. Some concerns you can take care of right away; others could be major or costly projects requiring planning and prioritizing before you take action.

## Summary Evaluation for Hazardous Materials and Waste Management Worksheet

Summarize your potential high risk activities in the following table and consider the response options you can take to reduce the potential for water quality contamination.

[illegible]



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## NOTES