

Protecting Private Drinking Water Supplies: Hazardous Materials and Waste Management

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This publication is one of six in a series designed to help rural families protect their private drinking water supplies. The greatest protection of drinking water supplies can be achieved by applying principles from all publications in the series.

Consider the variety of products commonly used in households and on acreages, farms, and ranches — paints, solvents, oils, cleaners, wood preservatives, batteries, adhesives, pesticides, fertilizers, and more. Minimizing the amounts of these substances used, along with practicing proper storage and disposal procedures can reduce the potential for contamination of groundwater, the source of drinking water.

Careful management of hazardous materials and waste on your property will minimize the risk of groundwater contamination. Implementing good storage, use, and disposal practices will help keep the groundwater safe for drinking.

Hazardous waste generated on your rural property might fall into one of three categories. Typical hazardous waste that might be generated in any home — rural or urban — will most likely be classified as “household hazardous waste.” If you produce hazardous waste associated with a business operation, including farming, and you generate quantities at or less than 220 pounds in a calendar month, you are classified as a “Conditionally Exempt Small Quantity Generator (CESQG).” The following assessment, and the management/disposal recommendations given apply for either household hazardous waste or CESQG-generated waste. Pesticides and fertilizers are addressed in another publication in this series.

The assessment and the management/disposal recommendations given below do not apply to hazardous waste associated with a business operating on your property if you generate more than 220 pounds of hazardous waste in a calendar month. If you fall into this category, contact the Nebraska Department of Environmental Quality, (402) 471-8308, for

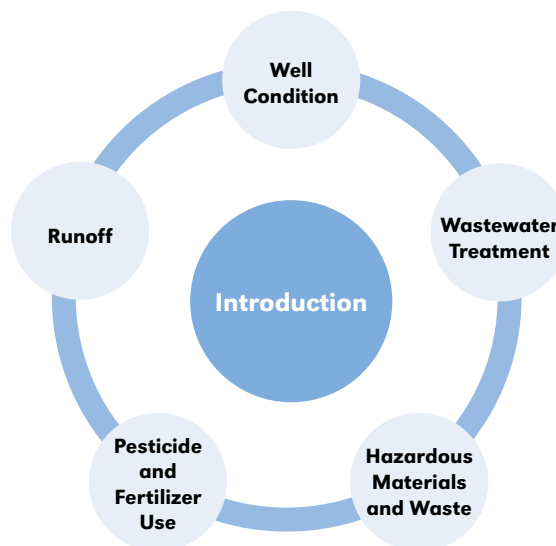


Figure 1. This NebGuide is one of six in a series designed to help rural families protect their drinking water supplies. All are available on the UNL Extension Publications website under the topic Water Management.

information on the proper management and disposal of your hazardous waste.

Begin by completing the following assessment.

Respond to the following statements. Check only those statements that accurately describe your household and CESQG hazardous materials and waste management practices. Unchecked statements indicate factors associated with your management of hazardous materials and waste that could put your drinking water supply at risk of contamination. Although voluntary, risk factors should be addressed. Attempt to eliminate risk factors when possible.

Following the assessment is additional information on each of the topic areas, to help you understand the associated risks.

Building/Wood Maintenance Products

- ___ Adhesives are used up, shared, or taken to community hazardous material collection program.
- ___ Paint brush or spray gun cleaners (solvent-based) are cleaned in contained area. Used solvent is taken to community hazardous material collection program or solvent recycling collection service.
- ___ Paint or stain is used up, shared, or taken to community paint swap or hazardous material collection program.
- ___ Stripper or thinner for paint/finish is used up, shared, or taken to community paint swap or hazardous material collection program.
- ___ Surface cleaners (solvent-based deck wash, fence wash, etc.) are used up, shared, or taken to community hazardous material collection program.
- ___ Wood preservatives are used up, shared, or taken to a community hazardous material collection program.
- ___ Wood preservatives are not applied within 100 feet of well, or are applied within 100 feet of well using containment cloths for drips and spills.

Vehicle/Metal Maintenance Products

- ___ Used antifreeze are saved and taken to antifreeze recycling facility or distilled and mixed with fresh antifreeze for use in other radiators.
- ___ Waste oil and grease are routinely taken to used oil collection tank for energy recovery or recycling.
- ___ Waste oil sludge (leftover after burning in oil-fired space heater) is routinely taken to community hazardous material collection program.
- ___ Spent organic solvent/parts-cleaning fluids are routinely taken to solvent recycling collection service.
- ___ Rust removal products are used up, shared, or taken to community hazardous material collection program.
- ___ Lead acid batteries routinely are taken to recycling center or battery store.
- ___ Vehicle maintenance drips and spills are contained on paved areas with sawdust or oil-dry material. Contaminated material is disposed of at licensed transfer station or landfill.

Other Products

- ___ Ash from a burn barrel or incinerator is collected and routinely disposed of at a permitted transfer station or landfill.
- ___ Old barrels and containers — unlabeled and contents unknown — are taken to community hazardous material collection program.

Building/Wood Maintenance Products

This category of potentially hazardous substances includes solvent-based building and wood cleaners, wood preservatives, wood stain, wood paint, wood varnishes, paint thinner, paint and varnish stripper, brush or spray gun cleaning products, adhesives, caulk, and other maintenance products. Disposing of these products by dumping them on the ground or in a septic system could allow hazardous substances to leach to groundwater. If you must purchase and use these materials, the best management is to purchase only what you need, use up leftovers, or share unused products with others when safe to do so. If this is not possible, the next best option is to dispose of leftover products at a community hazardous material collection program.

In some cases, unused amounts of products such as paints or adhesives may be mixed with cat litter. Place the mixture in open air, away from children, pets, and flames. Some of the hazardous materials will evaporate and some will be absorbed by the cat litter. Dispose of the solidified material at a permitted transfer station or landfill.

Because of the volume of these products used on rural property, even spills and drips can add up to a problem for groundwater. If possible, avoid maintenance activities within 100 feet of your well. If maintenance activities must be conducted near a well, contain drips and spills by using drop cloths. Evaporate collected drips and dispose of the resulting sludge or hardened material in a permitted transfer station or landfill.

Vehicle/Metal Maintenance Products

This category of potentially hazardous substances includes antifreeze, oil, grease, solvents for oil and grease removal, engine parts cleaners, lubricants, rust removers, paints, and lead acid batteries. Oils, fuels, and solvents used for cleaning metal parts can include toxic ingredients. Fortunately, recycling opportunities exist for both solvents and waste oil. Consider contracting with a solvent recycler to rent a parts washer. Old solvents are picked up by the recycler, and you are provided with clean solvent. Oil can be collected from the site by several companies or you can take your oil to a collection tank. Burning your own used oil for heating using a specially designed oil burner is an option. Dumping waste oil is prohibited.

Oil filters should be drained 12 to 24 hours so that they contain no free liquids. The filter should be punctured, crushed, or dismantled and drained. Oil filters should be kept separate from other waste and disposed of at a permitted transfer station or landfill as a separate waste, or recycled where possible.

Use up old fuels (leftover quantity stored for several months) whenever possible and safe to do so. Dilute one part old fuel with five parts new fuel to protect your engine.

Antifreeze may be recycled. It may be diluted and disposed of, if allowed, in a municipal sewer system. Contact a nearby city to find the closest acceptable location. Do not dump antifreeze into any drain which flows to a septic system or residential lagoon. It may kill the beneficial organisms that

the system depends on to treat wastewater, and may contaminate your groundwater.

If you paint vehicles or other equipment frequently, use a paint booth. Some booths are structured to collect excess paint and spray gun cleaners for later disposal with a solvent recycler.

Design and location of the equipment maintenance area is important. Some people use a grease pit. Others allow drips and spills to collect on the shed floor. In both cases, the area is generally “cleaned” through periodic flushing. The flushing system should provide for containment of waste liquids so they do not flush onto soil. Flushing to a paved outdoor area and evaporating the materials is one method of disposal. Using sawdust, cat litter, or other absorbents to soak up drips and spills is another common practice. Evaporate volatile chemicals in a protected outdoor area with good ventilation and take the absorbent material to a permitted transfer station or landfill. Burning any of these substances can produce air emission deposits that have the potential to contaminate groundwater.

Vehicle batteries should be recycled. Local battery dealers often collect used batteries or should be able to put you in contact with recyclers.

Other Products

All dumping of wastes outside a permitted transfer station or landfill is illegal. Landowners should survey their property to locate any old dump sites. If any are found, contact the Nebraska Department of Environmental Quality, (402) 471-8308 for further direction.

Laws Regulating Disposal of Wastes

Disposal of regulated hazardous wastes from rural property falls under federal statutes in the RCRA Subtitle C, and in Nebraska under Title 128 – Rules and Regulations Governing Hazardous Waste Management in Nebraska enforced by Nebraska Department of Environmental Quality. Title

132 – Integrated Solid Waste Management Regulations and RCRA Subtitle D provides restrictions for land burial of solid waste. Open burning and incineration of trash are regulated in Nebraska under Title 129 – Nebraska Air Quality Regulations. Other laws dealing with waste disposal in Nebraska include the Nebraska Integrated Solid Waste Management Act, Title 117 – Nebraska Surface Water Quality Standards, the Federal Clean Water Act, and the Federal Clean Air Act.

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