

Updated Drinking Water Source Protection Plan

Replacement Well and 2010 Well

Prepared for:
Fayette Town
100 East 90 South
P.O. Box 300564
Fayette, UT 84630

December 22, 2022

Prepared by:
Sunrise Engineering, Inc.





Salt Lake City Office

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December 22, 2022

Mayor Jed Martholomew
Fayette Town
100 East 90 South
P.O. Box 300564
Fayette, UT 84630

RE: Updated Drinking Water Source Protection Plan
Replacement Well and 2010 Well (Water System No.: 20002)

Honorable Mayor Martholomew:

Submitted herewith is the Updated Drinking Water Source Protection (DWSP) Plan for the above referenced wells. This Updated DWSP Plan has been prepared in accordance with Utah DWSP Rule R309-600.

The information in this report relates only to the subject wells and should not be extrapolated or construed to apply to any other water sources. The information, recommendations and conclusions provided herein apply to the subject well as it existed at the time this Updated DWSP Plan was prepared.

We appreciate the opportunity to provide hydrogeological services to you for this project. Should you have any questions about the report, or if we may be of further service in any way, please contact us at (801) 523-0100.

Prepared by:



Dao Yang, P.E.
Project Engineer/Hydrogeologist

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EXECUTIVE SUMMARY

In compliance with Utah Drinking Water Source Protection (DWSP) Rule R309-600, Sunrise Engineering, Inc. has prepared an Updated Drinking Water Source Protection Plan for the Replacement Well and 2010 Well in the Fayette Town Water System (Water System No. 20002).

A site inspection was conducted and the inventory for the potential contamination sources (PCSs) was updated.

1 INTRODUCTION

In compliance with Utah Drinking Water Source Protection (DWSP) Rule R309-600, Sunrise Engineering, Inc. (Sunrise) has prepared an Updated DWSP Plan for the Replacement Well and 2010 Well in the Fayette Town Water System (Water System No. 20002).

1.1 System Information

The Fayette Town Water System information is summarized in **Table 1**.

Table 1: Water System Information

Water System Name	Fayette Town
Water System Number	20002
Address	100 East 90 South P.O. Box 300564, Fayette, UT 84630
Type of System	Public Community System

1.2 Source Information

The well information is summarized in **Table 2**.

Table 2: Source Information Summary

Source Name	Source Number	Description of Approximate Well Locations (SLM)
Replacement Well	WS003	612' South 577' West from East Quarter Corner of Sec. 19, T18S, R1E
2010 Well	WS002	710' South 550' West from East Quarter Corner of Sec. 19, T18S, R1E

1.3 Designated Person

Name: Jed Bartholomew
Address: P.O. Box 300564
Fayette, UT 84630
Telephone: (435) 528-5882

2 DELINEATION OF DWSP ZONES

There are no changes.

3 INVENTORY OF POTENTIAL CONTAMINATION SOURCES

3.1 List of Potential Contamination Sources (PCSs)

3.1.1 PCSs to Be Deleted from Inventory of PCSs

No PCSs are to be deleted from the Inventory of PCSs for the wells.

3.1.2 PCSs to Be Added to Inventory of PCSs

No PCSs are to be added to the Inventory of PCSs for the wells.

All PCSs are shown in **Figure 2** and summarized in **Table 3**.

Table 3: Summary of PCSs

PCS Description	Location	Contact Information
Irrigation Well	Zone 2	Jed Bartholomew P.O. Box 300564 Fayette, UT 84630 Telephone: (435) 528-5882
Well A (Town Spring)	Zone 2	
Gravel Roads	Zone 2	
One Residential House with Septic System	Zone 2	Jason Christensen Telephone: (435) 528-5162

3.2 Hazard Identification

Identified activities and hazards associated with the PCSs found in the protection zones for the well are summarized in **Table 4**.

Table 4: Hazard Identification

Name of PCS	Identified Activity	PCS # in DDW Guidance for Activity	Identified Hazards
Residential House	Residential pesticide, herbicide and fertilizer storage, use, filing and mixing areas	37	Toxic, nitrate, biologic, corrosive and explosive
Septic System	Single family septic tank/drain-field system	44	Toxic, nitrate, biologic, corrosive and explosive

Name of PCS	Identified Activity	PCS # in DDW Guidance for Activity	Identified Hazards
Wells	Active and abandoned wells	1	Potential conduit for contamination migration
Gravel Roads	Transport of Chemicals	39	Toxic, ignitable, corrosive, explosive and radioactive

3.3 Prioritized Inventory

The PCSs were prioritized in Table 5 on the nature of the potential contaminant, volume of the potential contaminant and distance of the PCSs from the wells.

Table 5: Prioritized Inventory of PCSs

PCS Description	Priority #	Rationale
Septic Systems	1	Wastewater discharges underground everyday
Wells	2	If not properly maintained, contaminants can be introduced into the aquifer directly.
Residential Household Hazardous Waste	3	Household chemical use aboveground everyday
Gravel Roads	4	The gravel road is not passable for commercial trucks.

4 IDENTIFICATION AND ASSESSMENT OF CURRENT CONTROL

There are four types of hazard controls: regulatory, best management and pollution prevention practices (BMPs), physical, and negligible quantity controls. Hazards of PCSs identified within the DWSP zones for the subject well were assessed in **Table 6** as to the adequacy of the identified controls for each PCS hazard type. All PCSs will need to be reassessed on a 6-year basis.

Table 5: Assessment of PCS Hazard Controls

PCS Name	Controls	Control Adequacy
Wells	<p>Regulatory controls are applicable to the PCSs. The Utah Division of Water Rights (DWR) and DDW are in charge of enforcement of the following rules:</p> <p>R655-4, UAC - Water Well Rule. All wells within the capture zones are subject to State laws regulating drilling, repairing and pollution prevention.</p> <p>R655-4-12, UAC - As part of the Water Well Rules.</p> <p>Abandoned wells are to be capped and properly decommissioned.</p>	Adequately controlled

PCS Name	Controls	Control Adequacy
	<p>R309-113, UAC - Utah Drinking Water Source Protection Rules. The rules set forth minimum requirements to establish a uniform, state-side program for implementation by public water systems to protect their groundwater sources of drinking water.</p> <p>The purpose of these rules is to assist in the orderly development of underground water; insure that minimum construction standards are achieved in the drilling and repairing of water wells; prevent pollution of aquifers within the state; prevent wasting of water from flowing wells; obtain accurate records of well drilling operations; insure compliance with the state engineer's authority for appropriating water; and protect drinking water sources.</p>	
Residential Chemical Use	<p>Regulatory Controls -UAC R68-7: Pesticide Control Rules.</p> <p>Best Management Practices (BMPs): Follow recommended storage, use and disposal instructions provided on chemical packages (Appendix A).</p>	Not adequately controlled
Septic Systems	<p>Regulatory Controls – UAC R317-4 through R317-8: Onsite wastewater Disposal Systems.</p> <p>BMPs: Follow the instructions in the septic tank system fact sheet (Appendix A).</p>	Not adequately controlled
Gravel Roads	<p>Regulatory Controls are applicable to these PCSs for general use.</p> <p>Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA commonly called Superfund) – Sections 19-6-301 through 19-6-325 of the Utah Code Annotated: The Hazardous Substances Mitigation Act authorizes the executive director of the Department of Environmental Quality (DEQ) to regulate hazardous substances releases by making rules consistent with the substantive requirements of CERCLA, to establish the requirements for remedial investigation studies and remedial action plans.</p> <p>40 CFR Part 300 of the Code Federal Regulations: The National Oil and Hazardous Substances Pollution Contingency Plan establishes the organizational structure and specifies the procedures for remediating pollution when oil or hazardous substances are discharged or released into the environment.</p> <p>40 CFR Part 355 of the Code of Federal Regulations: SARA Title III provides early comprehensive emergency planning for responding to potential releases of toxic chemicals.</p> <p>The U.S. Department of Transportation and Environmental Protection Agency have established controls and restrictions for transportation of hazardous chemicals.</p>	Adequately controlled

PCS Name	Controls	Control Adequacy
	Accidental spills are covered in the Contingency Plan for the system contained in the DWSP Plan for Well A.	

5 MANAGEMENT PROGRAM FOR EXISTING POTENTIAL CONTAMINATION SOURCES

Public education materials (**Appendix A**) will be mailed to the one household within the wells' protection zone 2 according to the implementation schedule in Section 7.

6 MANAGEMENT PROGRAM FOR FUTURE POTENTIAL CONTAMINATION SOURCES

There are no changes to this section.

7 IMPLEMENTATION SCHEDULE

The education materials contained in **Appendix A** will be mailed or hand-delivered to the owner of the residential home within the protection zones of the wells once every six years. The materials will next be mailed or hand-delivered to the owner in July 2023 when the annual consumer confidence report is mailed.

8 RESOURCE EVALUATION

There are no changes to this section.

9 RECORDKEEPING

All records have been and will be kept in the office of Fayette Town and are updated on an as-needed basis. Each land management strategy that is implemented according to the list in the Implementation Schedule must be documented in this section of the plan. Actual copies of any ordinances, codes, permits, memoranda of understanding, public education programs, bill stuffers, newsletters, training session agendas, minutes of meetings, memoranda for files, etc. are required to document the implementation of these management strategies. Additionally, actual copies must be submitted in the recordkeeping section of the Updated Plans that are due every six years.

NOTES: _____

1. The most recent public education material distribution occurred in January 2019 when the public education material was mailed to the residential home with a septic system in the protection zones of the wells.

10 CONTINGENCY PLAN

There are no changes.

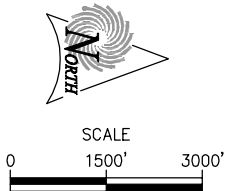
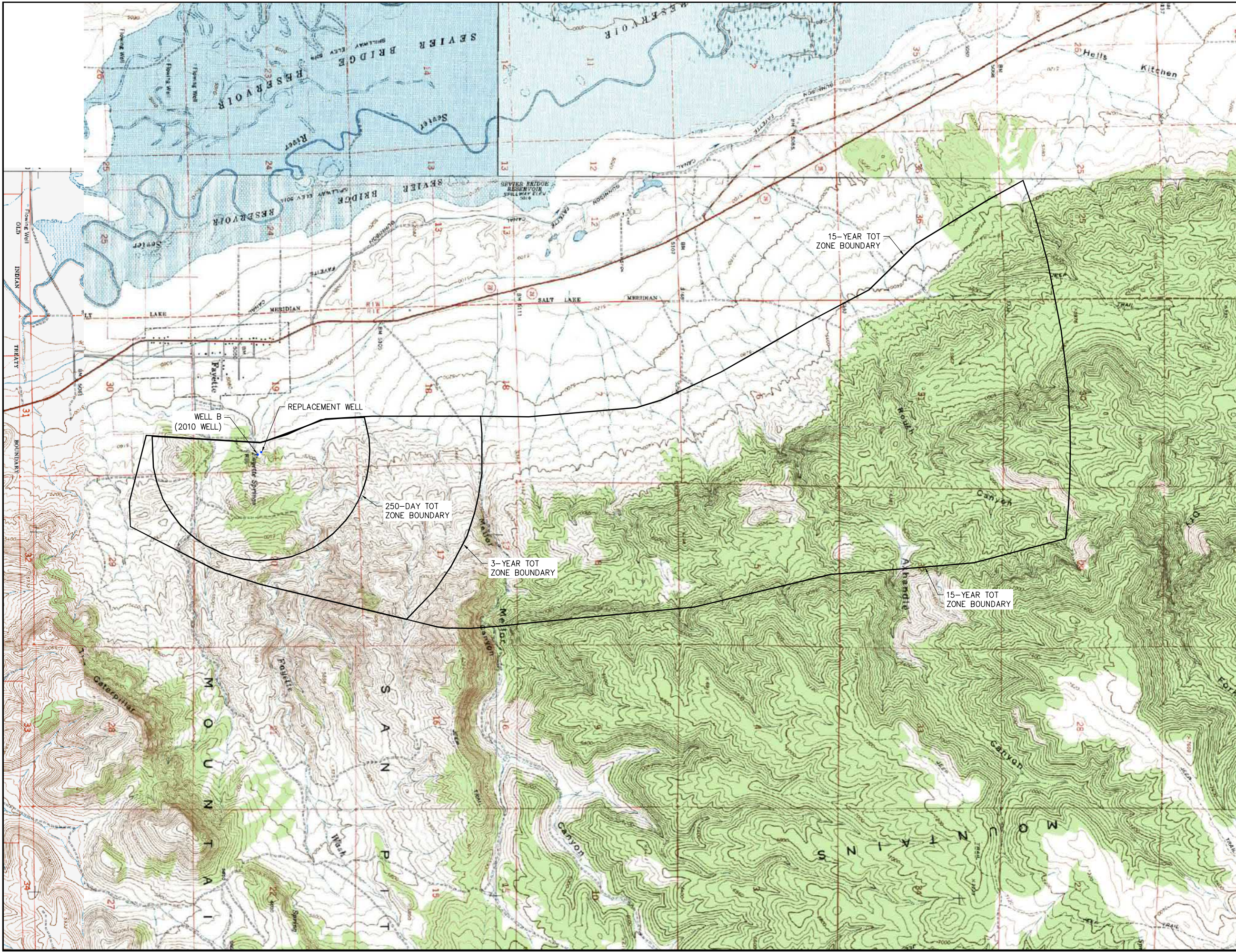
11 PUBLIC NOTIFICATION

There is no change to this section.

12 PESTICIDE AND VOC MONITORING WAIVERS

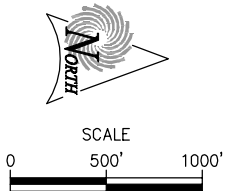
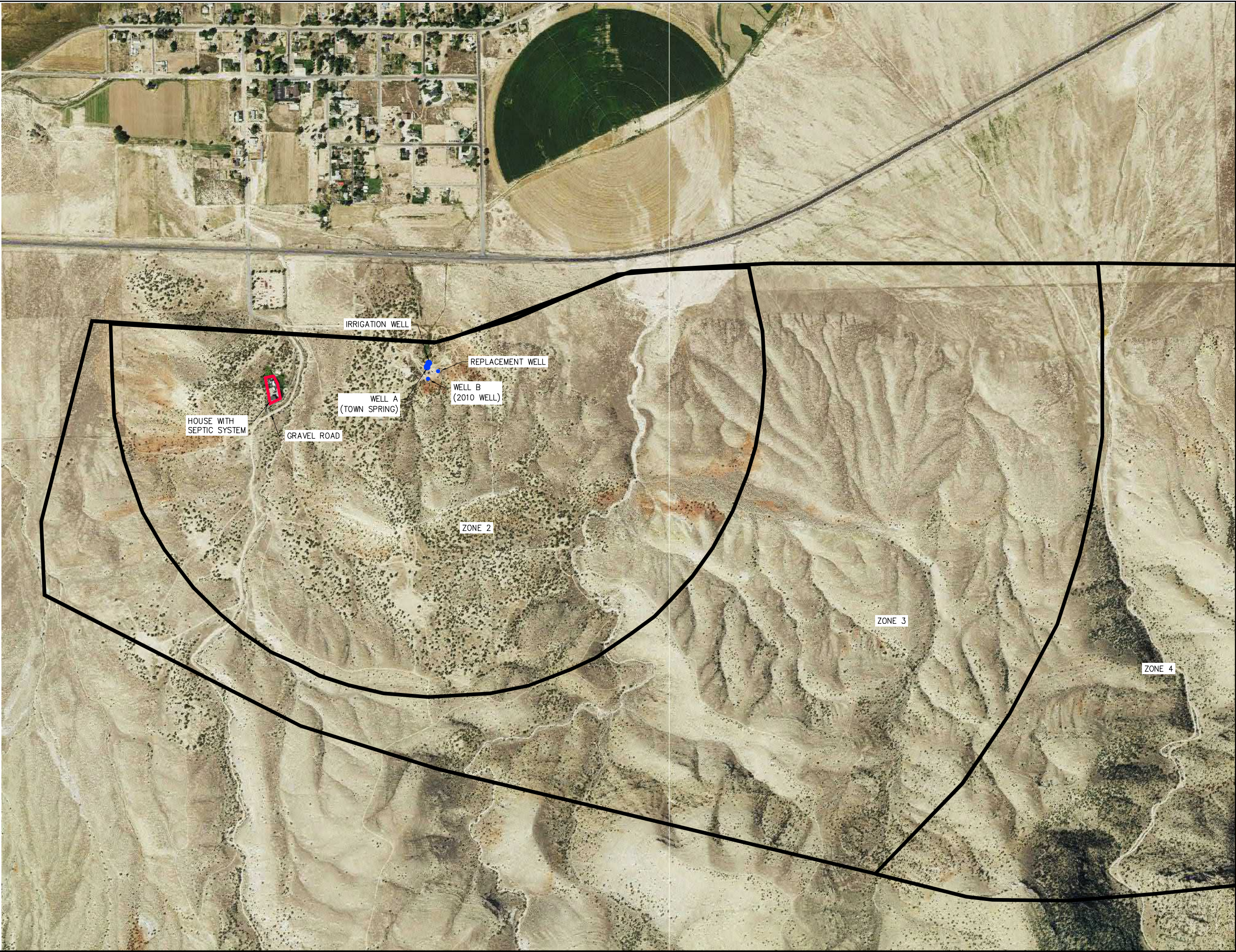
The two wells do not qualify for use or susceptibility waivers for volatile organic chemicals and pesticides.

Figures




REV. NO.	COMMENT	DATE
<div><div>FOR REVIEW ONLY NOT FOR CONSTRUCTION DATE</div><div>SUNRISE ENGINEERING 6875 SOUTH 900 EAST SALT LAKE CITY, UTAH 84047 TEL 801.523.0100 • FAX 801.523.0990 www.sunrise-eng.com</div></div>		
FAYETTE TOWN		
UPDATED DWSP PLAN REPLACEMENT WELL & 2010 WELL DWSP ZONE MAP		
SEI NO. 09047	DESIGNED DY	DRAWN DY
CHECKED DQY	SHEET NO. 01 of 02	FIG. 1

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REV. NO.	COMMENT	DATE

**SUNRISE
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DATE

FAYETTE TOWN
UPDATED DWSP PLAN
REPLACEMENT WELL & 2010 WELL
POTENTIAL CONTAMINATION SOURCE MAP

SEI NO. 09047	DESIGNED DY	DRAWN DY	CHECKED DQY	SHEET NO. 02 of 02	FIG. 2
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Appendix A

Education Materials



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Utah Department of Environmental Quality

Pesticides Fact Sheet

What Are The Potential Hazards?

Pesticides applied to plants during crop, lawn, and garden maintenance may leach into the ground water and cause contamination. Proper storage, mixing, application, spill cleanup, watering, and disposal procedures should be included in pesticide best management practices.

Storing Pesticides

The fewer pesticides you buy, the fewer you will have to store. Therefore, only purchase the amount and kind of pesticide that is needed. Pesticides should always be stored in sound, properly labeled, original containers. *Sound containers are the first defense against spills and leaks.*

- ☐ Ensure that there are no holes, tears, or weak seams in the containers and that the label is readable.
- ☐ Pesticides should be stored in locked, dry cabinets.
- ☐ Be sure to store dry products above liquids to prevent wetting from spills.
- ☐ Storage and mixing areas should not be located near floor drains of any kind.
- ☐ Storage facilities should have secondary containment, such as a berm or dike, which will hold spills or leaks at:
 1. 10% of the total volume of the containers, or
 2. 110% of the volume of the largest container, whichever is larger.

Mixing Pesticides

- ☐ Mix pesticides on an impermeable surface, such as concrete, so any spills will be contained.
- ☐ Mix only the amount that you will use:
 1. Measure the total square feet you intend to treat.
 2. Read the label on the pesticide container and follow the instructions. (These are often given in terms of amount of pesticide to use per thousand square feet.)
 3. By properly measuring and calculating, there should be little or no pesticide left in the spray tank when the job is finished and it will be applied at the recommended rate.

Applying Pesticides

Pesticides are used to kill or control weeds (herbicides), insects (insecticides) and fungi (fungicides) that attack plants. Some of these pesticides can move through the soil and into the ground water. Guidelines for the safe use of pesticides are listed below:

- ☐ Be willing to accept a low level of weed, insect, and plant disease infestation.

- Use pesticides only when absolutely necessary.
- Identify pests correctly. Use the proper pesticides.
- Read and follow the directions printed on the container labels. Remember, *the label is the law*.
- Calibrate your spreader and sprayer to keep from applying too much pesticide.
- Do not spray or apply pesticides near irrigation wells. Wells are conduits to the ground water.
- Do not spray or apply pesticides near your walks and driveway. This prevents them from washing off into the storm drain system.

Cleaning Up Spills

- Dry formulated pesticide spills should be swept up and applied to crops, lawns, and gardens at the rate specified on the label.
- Liquid pesticide spills should be soaked up using absorbent material (such as, soil, sawdust, and cat litter). The contaminated absorbent material should then be put in a sealed container and taken to a household hazardous waste collection site.

Watering

Over-watering your plants can cause excess water to move through the soil. This water can carry pesticides that can contaminate the ground water. The best way to avoid over-watering is simply to measure how much you are adding. Contact your county Extension Service to determine the best way to calculate how much water your plants need and how to measure the amount you are applying.

Disposing of Pesticides

If the pesticide was properly measured and mixed, there should be little or no spray left in the tank. The little that may be left can be safely sprayed over the area that was treated until it is gone. Disposal of "empty" pesticide containers and unused pesticides should be handled as follows:

- If you are using liquid pesticides, rinse the container three times. Be sure to pour the rinsing into your sprayer and not down a drain or onto the ground. Containers which have been emptied and rinsed can be discarded in the trash.
- Unused pesticides in their original containers can be recycled at household hazardous waste collection sites.

For More Information, Contact:

Division of Drinking Water, Source Protection Program - (801) 536-4200
 Department of Agriculture - (801) 538-7100
 Environmental Hotline - 1-800-458-0145
 Sonja Wallace, Pollution Prevention Coordinator - (801) 536-4477



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Utah Department of Environmental Quality

Household Hazardous Waste Fact Sheet

What is Household Hazardous Waste?

Many hazardous products and chemicals such as cleaners, oils and pesticides are used in the home every day. When discarded, these products are called household hazardous waste (HHW). HHWs are discarded materials and products that are ignitable, corrosive, reactive, toxic or otherwise listed as hazardous by the EPA. Products used and disposed of by a typical residence may contain more than 100 hazardous substances including:

- | | |
|---|--|
| <input type="radio"/> Batteries | <input type="radio"/> Medicines |
| <input type="radio"/> Cleaners | <input type="radio"/> Motor oil and automotive supplies |
| <input type="radio"/> Cosmetics | <input type="radio"/> Paints, thinners, stains and varnishes |
| <input type="radio"/> Fluorescent light bulbs | <input type="radio"/> Polishes |
| <input type="radio"/> Glues | <input type="radio"/> Swimming pool chemicals |
| <input type="radio"/> Heating oil | <input type="radio"/> Smoke detectors |
| <input type="radio"/> Insecticides and pesticides | <input type="radio"/> Thermometers |
| <input type="radio"/> Ink | <input type="radio"/> Fuel |

HHW is a Serious Threat

The U.S. Environmental Protection Agency estimates the average American household generates 20 pounds of HHW each year. As much as 100 pounds of HHW can accumulate in the home and remain there until the resident moves or undertakes a thorough "spring cleaning."

Since the chemicals found in HHW can cause soil and groundwater contamination, generate hazardous emissions at landfills and disrupt water treatment plants, it is important to dispose of HHW properly. Many solid waste treatment facilities are currently required to screen for HHW to avoid operating under restrictive hazardous waste laws. Furthermore, many communities may be required to establish a HHW collection program in order to qualify for permits to manage storm water.

Safe Handling Tips

The best way to handle household hazardous materials is to completely use the product before disposing of the container. If this is not possible, then the next alternative is to return unused portions to your community household hazardous waste clean-up day. Keep products in their original package with all labels intact. If the container is leaking, place it in a thick plastic bag. Pack the products in a plastic-lined cardboard box to prevent leaks and breakage.

Household hazardous waste clean-up days are for household wastes only. No industrial or commercial wastes and no containers larger than five gallons are accepted. Explosives, radioactive

material and medical wastes are also unacceptable.

HHW can be dangerous to people and pets who come in contact with them. HHW can endanger water supplies, damage sewage treatment systems, and cause other environmental damage. Only use the products as directed. **DO NOT:**

- ☐ Flush HHWs down the toilet
- ☐ Pour HHWs down the sink
- ☐ Pour HHWs down a storm drain
- ☐ Pour HHWs on the ground

Contact your local health department or the Division of Solid and Hazardous Waste to determine whether your community has a household hazardous waste collection program.

Identify HHW

Reduce the amount of potentially hazardous products in your home and eliminate what you throw away by following these easy steps:

1. Before you buy:

- ☐ Read the labels and be aware of what they mean.
- ☐ Look for these words on labels; they tell you what products may need special handling or disposal.

Caution
Combustible
Corrosive
Danger
Explosive

Flammable
Poison
Toxic
Volatile
Warning

- ☐ Select a product best suited for the job.
- ☐ Buy only what you can use entirely.

2. After you buy:

- ☐ Read label precautions and follow directions for safe use.
- ☐ Recycle/dispose of empty containers properly.
- ☐ Share what you can't use with friends or neighbors.
- ☐ Store properly.
- ☐ Use recommended amounts; more is not necessarily better.
- ☐ Use the child-resistant closures and keep them on tightly.

For More Information, Contact:

Division of Solid & Hazardous Waste - (801) 538 - 6170

Division of Drinking Water, Source Protection Program - (801) 536-4200

Environmental Hotline - 1-800-458-0145

Sonja Wallace, Pollution Prevention Coordinator - (801) 536-4477



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Utah Department of Environmental Quality

Septic Tank/Drainfield System Fact Sheet

What Are The Potential Hazards?

Septic systems can contaminate ground water if they are misused, improperly maintained, or improperly constructed. The major contaminant discharged from septic systems is disease-causing germs. These germs (bacteria and viruses) - can cause many human diseases. Another contaminant discharged from septic systems is nitrogen in the form of nitrate. If the nitrate level of drinking water is too high, infants, up to the age of six months old, can develop a fatal disease called blue baby syndrome (methemoglobinemia). Additionally, if toxic chemicals are disposed in a septic system, they can percolate through the drainfield and into the ground water.

How Does A Septic Tank/Drainfield System Work?

The basic septic system is composed of a septic tank followed by a drainfield. Wastewater flows out of the house and into the septic tank through the building sewer pipe. Once in the septic tank, most solids in the wastewater settle to the bottom of the tank to form a sludge layer. Other solids float and form a scum layer on top of the wastewater. Some decomposition of solid material takes place here, but the primary function of a septic tank is to trap solids and prevent them from entering the drainfield.

Wastewater treatment is restricted to a rather thin zone of unsaturated soil underlying the drainfield. Many of the harmful bacteria and microbes are filtered out as the wastewater passes through this soil. Some of the smaller microbes (viruses) and nutrients such as phosphorus and some forms of nitrogen are trapped and held (adsorbed) by soil particles. Once the effluent reaches the groundwater table, little treatment occurs. Soils can differ markedly in their pollutant removal efficiency. The ability to which soil can remove pollutants in the wastewater determines how many impurities will eventually reach the groundwater beneath the drainfield.

Site Evaluation And Construction

Current rules require a comprehensive evaluation of the soil and ground water before a septic system can be permitted for construction in a given location. This evaluation must be reviewed and approved by the local health department. The rules require that the bottom of the drainfield trenches be placed at least 12 inches (preferably 24 inches) above the water table. Additionally, there must be adequate amounts of unsaturated soil beneath the trenches to allow sufficient treatment of the wastewater.

Site Considerations

- ☐ Trees and deep-rooted shrubs should be as far away from the system as possible.
- ☐ Keep the water that runs off of foundation drains, gutters, driveways, and other paved areas away from the drainfield of your septic system.

- Keep the soil over the drainfield covered with grass to prevent soil erosion.
- Don't drive vehicles over the system.
- Don't cover the tank or drainfield with concrete or asphalt and don't build over these areas.

Proper Disposal Practices

- Use only a moderate amount of cleaning products and do not pour solvents or other household hazardous waste down the drains.
- Garbage disposals should not be used because they tend to overload the system with solids. If you have one, you should severely limit its use.
- Do not pour grease or cooking oil down the sink.
- Do not put items down the drain that may clog the septic tank or other parts of the system. These items include cigarette butts, sanitary napkins, tampons, condoms, disposable diapers, paper towels, egg shells, and coffee grounds.

Water Conservation

There are limits to the amount of wastewater a septic system can treat. If you overload the system, wastewater may backup into your home or surface over your drainfield. Problems caused by using too much water can occur periodically throughout the year or be seasonal. For example, the soil beneath your drainfield is wetter in the spring than it is in the summer and its capacity to percolate wastewater is somewhat diminished. If you wash all your laundry in one day, you may have a temporary problem caused by overloading the soil's capacity to percolate wastewater for that day. To reduce the risk of using too much water, try the following:

- Use 1.6 gallons (or less) per flush toilets.
- Fix leaking toilets and faucets immediately.
- Use faucet aerators at sinks and flow reducing nozzles at showers.
- Limit the length of your shower to 10 minutes or less.
- Do not fill the bathtub with more than 6 inches of water.
- Do not wash more than one or two loads of laundry per day.
- Do not use the dishwasher until it is full.

Septic Tank Cleaning

It is recommended that the solids that collect in your septic tank be pumped out and disposed at an approved location every three to five years. If not removed, these solids will eventually be discharged from the septic tank into the drainfield and will clog the soil in the absorption trenches. If the absorption trenches are clogged, sewage will either back up into the house or surface over the drainfield. If this happens, pump the tank will not solve the problem and a new drainfield will probably need to be constructed on a different part of the lot.

For More Information, Contact:

Division of Drinking Water, Source Protection Program - (801) 536-4200
 Division of Water Quality - (801) 538-6146
 Sonja Wallace, Pollution Prevention Coordinator - (801) 536-4477
 Environmental Hotline - 1-800-458-0145



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Fertilizer Fact Sheet

What Are The Potential Hazards?

Fertilizer applied to plants during crop, lawn, and garden maintenance may leach into the ground water and cause contamination. The main constituent in fertilizer is usually nitrogen. If the nitrate level of drinking water is too high, infants, up to the age of six months, can develop a fatal disease called blue baby syndrome (methemoglobinemia). Drinking water that contains 10 milligrams of nitrate-nitrogen per liter of water exceeds the drinking water standard and should not be used, especially for infant formula. Proper storage, application, and watering procedures should be included in fertilizer best management practices to prevent contamination of ground water.

Storing Fertilizers

The less fertilizer you buy, the less you will have to store. Therefore, only purchase the amount and kind of fertilizer that you need.

- ☐ Fertilizer should be stored in locked, dry cabinets.
- ☐ Keep fertilizer and pesticides on separate shelves.
- ☐ Don't store fertilizer with combustibles, such as gasoline or kerosene, because of explosion hazards.

Application Precautions

The chemical in fertilizer that can most easily pollute ground water is a form of nitrogen called nitrate. Nitrate moves readily in soil to the ground water strata. The best way to prevent the movement of nitrate into the ground water is to apply no more nitrogen than the crops, grass, garden plants, shrubs, or trees can use during the time that the plants are growing.

- ☐ Calibrate your spreader and sprayer to keep from applying too much fertilizer.
- ☐ Load fertilizer spreaders on the driveway or other hard surfaces so any spills can easily be swept up. Fertilizer that spills should be swept up and applied to the lawn or garden at the right time and amount. This allows the fertilizer to grow plants instead of washing off into the storm drain system and ultimately contaminating nearby streams and lakes.
- ☐ If you are using liquid fertilizer on your turf, add fertilizer to the spray tank while on the lawn. This way, if you spill the fertilizer, it will be used by the plants and not run off into the storm drain system.
- ☐ Do not spray or apply fertilizer near irrigation wells. Wells are conduits to the ground water.

Application Rates For Lawns

Utah State University's Extension Service recommends the following for Utah lawns: "It is important to fertilize on a regular basis every four to six weeks to maintain an attractive lawn. Begin

when lawns start to green in the spring, mid to late April. Earlier applications may cause a lawn to become greener faster, but may also increase spring disease problems. Summer applications of nitrogen fertilizer will not burn lawns, if you apply them to dry grass and water immediately. Fall applications are important for good winter cold tolerance, extended fall color, and fast spring green-up. A complete fertilizer containing nitrogen, phosphorus and potassium should be applied in the fall every three to four years. This will prepare the lawn for winter conditions and allow the phosphorus to penetrate into the root zone by the next growing season.

For a well-kept lawn in Utah, apply 1 pound of available nitrogen per 1,000 square feet each four to six weeks throughout the growing season. The following chart indicates how much of various fertilizer will supply one pound of nitrogen.”

%N on Label	Pounds of Fertilizer Per 1000 Square Feet
12-15	7-8
18-21	5-5 ½
24-28	3 ½-4
30-34	3-3½
45-46	2-2 ¼

Types of Plants

One of the best ways to protect your ground water is to use plants that are drought-tolerant and that are adapted to your area. Drought-tolerant or low-water-use plants can continue to survive once they are established, even during times of little rainfall. Because you do not have to water these plants, there is less chance that nitrate and pesticides will be carried with the water through the soil and into the ground water.

If low-water-use plants are not practical, then try to use medium water use plants. Water these plants only when they begin to show drought stress. Some plants will wilt when they are drought-stressed, while other plants will show marginal leaf burn.

Watering

Over-watering plants can cause excess water to move through the soil. This water can flush fertilizer away from the root zone of your plants and into the ground water. The best way to avoid over-watering is simply to measure how much you are adding. Contact your county Extension Service to determine the best way to calculate how much water your plants need and how to measure the amount you are applying.

For More Information, Contact:

Division of Drinking Water, Source Protection Program - (801) 536-4200
Department of Agriculture - (801) 538-7100
Environmental Hotline - 1-800-458-0145
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