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Quality Water for Idaho

# Laundry Problems and Water Quality

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Research on laundering has shown that many factors affect the cleanliness of the wash. One often-ignored factor is the quality of the wash water. Several laundry problems are caused by minerals, organic matter and other impurities in the water supply.

Some laundry problems have similar symptoms but different causes. To determine if your laundry problem is due to a combination of factors or to water quality alone, consider your equipment, water, laundry products and laundering procedures.

## Problem: Hard Water

### Laundry Symptoms

- Dinginess or graying, yellowing
- General soil build-up
- Stiff, harsh feel to fabric
- White or gray streaks on colored fabrics

Calcium and magnesium are usually the minerals that make water hard. The greater their concentration, the harder the water.

Hard water doesn't clean as well as soft water because much of the detergent added to the washer goes to soften the water instead of to clean the clothes. This means you must use more detergent than in soft water. Softening water by using more detergent has two drawbacks: It is expensive and *if the detergent contains phosphate it can add to water pollution.*

Heavy-duty liquid detergents remove soil in hard water almost as well as powdered phosphate detergents and do not contribute to water pollution. Soap and powdered detergents without phosphates do not perform satisfactorily in hard water.

### Solution

To prevent problems, take two actions. First, use adequate amounts of a low-sudsing phosphate detergent or heavy-duty liquid detergent and wash with water as hot recommended for the fabric. All detergents perform better at higher temperatures in any quality of water. Second, soften the water. You can soften water in the washer with precipitating or nonprecipitating water con-

ditioners, commonly sold in grocery stores simply as "water conditioners."

Water softener systems that exchange sodium for calcium and magnesium may also be connected to the water supply lines for the washer, kitchen or entire house. These softeners will increase the sodium content of the water, so persons on sodium-restricted diets should consult their physicians before adding them to lines that supply water for drinking and cooking.

To remedy existing problems, fill the washer with the hottest water appropriate for the fabric. Add four times the normal amount of phosphate detergent or liquid laundry detergent and 1 cup of precipitating or nonprecipitating water conditioner.

Agitate the clothes just long enough to wet them, then soak them overnight or for about 12 hours. Drain the wash water and spin the clothes without agitating them. Finally, launder using the regular cycle, no detergent and 1 cup of water conditioner.

If needed, repeat the laundering using 1 cup of water conditioner and no detergent until no suds appear during the rinses. If fabrics continue to be dingy, launder them with 1 cup water conditioner and a bleach that is safe for the fabric. Follow package instructions for the bleach.

## Problem: Rusty or Red Water

### Laundry Symptoms

- Yellow, red or brown stains
- Yellowing, especially when chlorine bleach is used

Rusty water is caused by iron. The iron may come from the water supply, from a water heater or from rusty metal parts in a well. Iron bacteria may also cause the problem. Iron can be dissolved in the water or suspended as particles.

Chlorine reacts with dissolved iron to form particles of iron that settle out of the water. If the particles form in the washer during chlorine bleaching, they will deposit in the fabric and cannot be removed.

### Solution

Replacing a rusty water heater may solve the problem. Dissolved iron may also be removed by water softening

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equipment, special iron-removing equipment or filters, chlorination and filtration through sand and carbon, or aeration followed by filtration through sand. Chlorination and filtration also remove iron bacteria.

To remove rust stains from white and colorfast washable fabrics, use a rust remover such as Rover. Follow product directions and be sure to rinse all traces of rust remover from the fabric. Do not use commercial rust removers in the washing machine.

Another method is to sprinkle salt on the spot and dampen it with lemon juice. Dry the fabric in the sun then rinse.

Test both procedures on a hidden portion of the article first. They may cause color changes. Take noncolorfast fabrics to a commercial laundry for professional treatment.

## Problem: Turbid Water

### Laundry Symptoms

- Yellowing and dinginess

Turbid water contains very fine particles of silt, clay or organic material. Normally, turbidity is prevented by water treatment plants. It may be a problem in small, private water supplies.

### Solution

Install a filter to collect the suspended particles before they enter the lines. If you do not filter the water, add water conditioner with each wash. The conditioner may help hold the particles in suspension and away from the clothes.

Stains and yellowness from turbid water may be removed by laundering with a bleach appropriate for the fabric.

## Problem: Acid Water

### Laundry Symptoms

- Red, reddish brown, green or blue stains

Acid water has a variety of causes, the most common being carbon dioxide dissolved in the water. The action of the acid water on pipes causes corrosion, which stains the fabric. The type of metal used in the pipe determines the color of the stains.

### Solution

Acid water can be neutralized with chemicals or filters. For example, a soda ash solution feeder or a bed of coarse limestone chips will make water less acid.

Metallic stains on fabrics may be difficult to remove. Treat red or reddish brown stains as rust stains. Blue or green stains may respond to a bleach that is safe for the fabric.

## More Than Laundry

Water quality affects more than laundry. It may also affect your health, the taste and odor of the water, and the operation and life span of appliances. If you suspect you have water quality problems, have your water tested and take the steps necessary to improve its quality. You can have water samples tested at several places, usually for a fee.

- Public water supply systems are tested regularly for contaminants such as coliform bacteria and nitrates, monitored for levels of sodium and certain unregulated chemical contaminants and examined for corrosion in the water distribution system. Water quality reports are available upon request.
- Private testing laboratories are listed in the yellow pages of the telephone book. Make sure they are certified by your state health department.
- County and state health laboratories, departments of health and local hospital laboratories often provide a water testing service.
- Water treatment companies and plumbing supply stores may offer certain free tests in your home.
- Local engineering firms may test water for certain contaminants.
- The University of Idaho Analytical Laboratory offers water testing services.
- Be wary of companies offering "free home water testing." Some of them may be interested only in selling you a water treatment service, whether or not you need it.

Contact the Extension agent in your county for information about water testing in your area.

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*Reference to trade names is made with the understanding that no discrimination is intended nor endorsement implied.*

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