

## What Does a Billion Mean?

### 1,000,000,000

The word “billion” seems to be slipping more and more easily into our conversations.

Scientists talk about the concentration of contaminants in the water supply in terms of parts-per-billion.

And, politicians discuss spending billions of dollars with the greatest of ease.

Let's put one billion into perspective:

- A billion seconds ago, it was 1976.
- A billion inches equals 15,780 miles—about the same distance as driving from Los Angeles to New York 5-1/2 times.
- A billion square feet equals 22,957 acres, or about 17,400 football fields.

Of course, some water contaminants *are* dangerous in parts per billion levels—which is mind-boggling in itself!

*One billion water drops equals about 21,700 gallons!*



## News from the Field

### Wastewater Treatment Plant Groundskeeping

By Scott Renslow, Senior Technical Adviser, USA BlueBook

As spring approaches, it's once again time to retire the plows, snow shovels and salt until next winter, and to develop a plan for groundskeeping duties at your water/wastewater treatment facility.

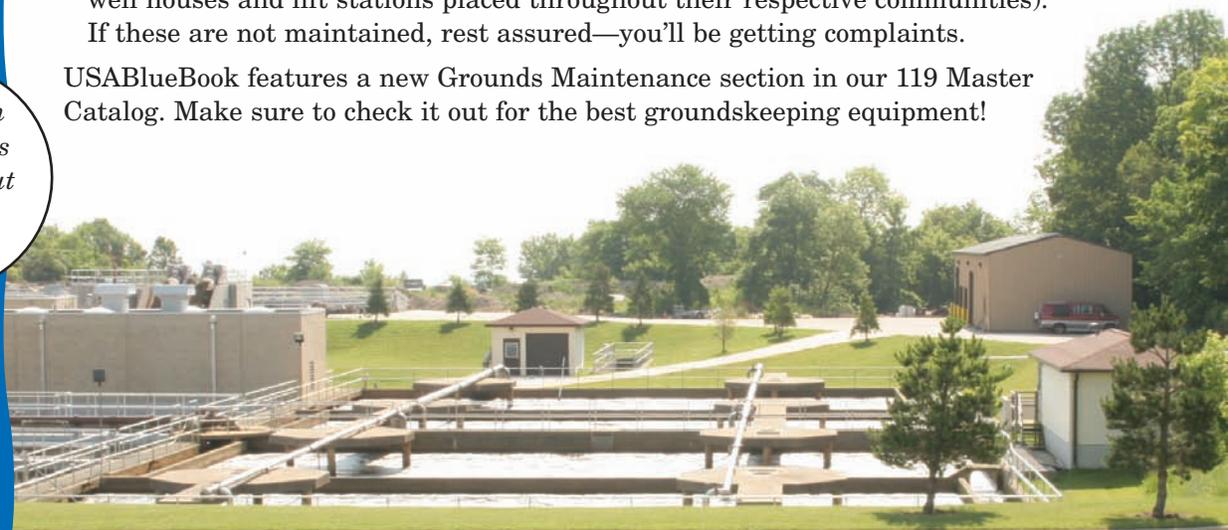
Many facilities have set plans that include daily, weekly, monthly and annual groundskeeping tasks. Groundskeeping budgets and duties may vary considerably based on the size of the community. Some larger municipalities hire contractors or seasonal help to do the groundskeeping, while at smaller facilities the regular staff add groundskeeping to their long list of duties.



#### Here's a list of tasks to consider in the spring:

- First and foremost, make sure employees know how to safely operate passenger- and tractor-type lawn mowers. In some cases, employees need to maintain or service mowers as well. Servicing mowers can involve removing old cutter blades and installing new ones; adjusting or replacing belts on the cutting units; engine tune-ups and oil changes.
- Early in the season, prune trees, shrubs and hedges; and rake leaves and grass. Later in the spring, water and fertilize lawns and plants; spray plants and flowers with insecticides; and transplant and cultivate plants, flowers and shrubs.
- Trim grass and weeds along walks, driveways, buildings, planted areas, tanks and/or drying beds.
- Spread topsoil either manually or with a tractor over dug-up areas where water main breaks have occurred during the winter months.
- Annually drain and inspect clarifiers and aeration tanks. This is also a great time for diffuser maintenance and replacement.
- Drain and clean chlorine contact tanks, as well as spray a mild solution of water and bleach onto the walls, and power wash areas that need it.
- As needed, paint buildings and equipment (since most larger municipalities have well houses and lift stations placed throughout their respective communities). If these are not maintained, rest assured—you'll be getting complaints.

USA BlueBook features a new Grounds Maintenance section in our 119 Master Catalog. Make sure to check it out for the best groundskeeping equipment!





# Stormwater Waste Management

By Scott Renslow, Senior Technical Adviser, USABlueBook

Stormwater runoff is the water from rain and snow melt that flows across land. This water picks up pollutants on land and carries them into nearby water systems, degrading water quality and increasing flooding and erosion. **Stormwater runoff is the most common cause of water pollution.**

*Approximately 70% of all storm drains lead directly to open waterways without treatment.*

*About 46% of all polluted rivers and lakes in the U.S. are polluted due to uncontrolled stormwater runoff.*

*Just one quart of spilled oil can cause a two-acre oil slick.*

Polluted stormwater runoff often flows into municipal storm sewer systems and is ultimately discharged into local rivers and streams without treatment. Urban development can alter or even destroy natural drainage features, which creates even more stormwater runoff.

Common pollutants in stormwater runoff include oil and grease from roadways, lawn pesticides, construction site sediment, and trash. Heavy runoff can also cause sewer overflows, leading to possible untreated human and industrial waste in nearby waterways. These pollutants can block waterways, discourage recreational use, contaminate drinking water, and interfere with animal and plant life.

Failing to manage stormwater runoff can also be expensive. Recently a major retail chain was fined \$1 million by the EPA for stormwater violations. In San Francisco, you can receive up to a \$25,000 fine for dumping oil into a storm drain.

## Managing Stormwater Runoff

Stormwater Management Regulations are key components of the EPA's Clean Water Act. The goal of these regulations is to protect the quality of U.S. waterways by reducing the discharge of sediment, oil, and chemicals into storm drains, surface water and ground water.

Stormwater management includes strategic site design, measures to control the runoff sources, and thoughtful landscape planning. The best way to manage stormwater waste is usually at the pollutant's source. Proper chemical storage and good housekeeping can prevent pollutants from entering the runoff in the first place.

The EPA's stormwater program regulates discharges from **Municipal Separate Storm Water Systems (or MS4s)**. In accordance with federal regulations (40 CFR 122.26), operators of regulated MS4s are required to create a stormwater management program.

## Phase I Regulations

Phase I of the EPA's Stormwater Rule was issued in 1990 and applies to medium and large (100,000 to 249,999 population) municipal systems. In addition, Phase I Rule covers construction activities disturbing more than five acres.

For Phase I MS4s, a stormwater management program includes measures to:

- Identify major outfalls and pollutant loadings;
- Detect and eliminate non-stormwater discharges to the system;
- Reduce pollutants in runoff from industrial, commercial, and residential areas; and
- Control stormwater discharges from new development and redevelopment areas.

## Phase II Regulations

Phase II regulations, which went into effect in 2003, apply to municipalities with a total population of 10,000 or more and a density of at least 1,000 persons per square mile. Construction activities disturbing more than one acre are included.

For Phase II MS4s, a stormwater management program requires implementing six minimum measures:

- Public Education and Outreach
- Public Participation/Involvement
- Illicit Discharge Detection and Elimination
- Construction Site Runoff Control
- Post-Construction Runoff Control
- Pollution Prevention/Good Housekeeping

The EPA controls stormwater and sewer overflow discharges through its National Pollutant Discharge Elimination System. NPDES provides guidance to municipalities and state and federal permitting authorities on how to meet stormwater pollution control goals as flexibly and cost-effectively as possible.

**For more information, see this website:**

<http://www.epa.gov/greeningepa/stormwater/index.htm>



## Break Time!

### 119 Catalog Trivia Contest

Find the answers to our trivia questions in the #119 Master Catalog and be entered in our drawing for a **\$50 Best Buy Gift Card** (1st Prize) or **\$25 Best Buy Gift Card** (2nd Prize)!



To enter, answer the questions below.

**Either e-mail your answers to [stories@usabluebook.com](mailto:stories@usabluebook.com) or fax this page to 847-775-6908 no later than May 23, 2008.** A winner will be randomly selected and announced in the next newsletter.

Don't have a #119 Master Catalog? Don't delay—call 1-800-548-1234 and we'll get one out to you right away.

1. What is the e-mail for Technical Support?

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2. What are the hours during which you can place an order by phone?

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3. Write the name and page number of any new product in our new Security Section.

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4. On what pages can you find the Sampling Equipment section?

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5. Which section do you go to for lawn mowers, blowers and pruners?

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6. Name two brands of power tools available in our Tools section.

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7. What is the cost of an evaluation for warranty and non-warranty repairs?

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Name: \_\_\_\_\_

Phone #: \_\_\_\_\_



## Great People

### GPS Contest Winner

Marshall Munshon, Service Department Manager in Wapato, WA, updated his information in January and won a

**Garmin StreetPilot Global Positioning System** through our random drawing. Marshall says, "We use BlueBook often as an information source to water and wastewater. It's a very handy reference." Congratulations, Marshall!



## Ask Don!

USABlueBook Technical  
Training Manager



### Sodium Hypochlorite (Keeping the Potency)

Many systems use sodium hypochlorite as their source of chlorine. We often hear about how it degrades over time, and little on how to minimize that degradation. Here are some factors that affect chlorine's ability to maintain its strength.

**pH is the single largest factor that affects chlorine's stability.** When pH drops, chlorine takes the form of hypochlorous acid, which is much more prone to react and is less stable. It is no wonder that when sodium hypochlorite is shipped, it typically has a pH greater than 11.

Frequently the day tanks in which we store chlorine before injecting have a pH of 6 to 8, resulting in a significant loss of chlorine potency in two to three weeks.

Increasing the pH of the solution in the tank to 10+ by adding caustic soda or soda ash will increase the solution life nearly 50%. This does not affect the finish water pH because of the very small amount of chlorine injected from the day tank.

**Temperature and sunlight are the next major factors affecting potency.** High temperatures cause the chlorine to dissipate from the solution. Of course the higher the temperature, the more dissipation occurs.

Ultra Violet rays (UV) from sunlight also play a factor. UV at specific wavelengths (180 to 200 nm) has been shown to be an effective dechlorination method. Storage in a cool dark room is ideal; however, depending on location, a black storage tank may suffice.

*For more information, please contact Don at 503-544-0456 or [dvanveldhuizen@usabluebook.com](mailto:dvanveldhuizen@usabluebook.com) or LoAnn Mayer at 847-377-5162.*

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## Catalog #119 is here!

The number one catalog for water and wastewater professionals is updated and better than ever!

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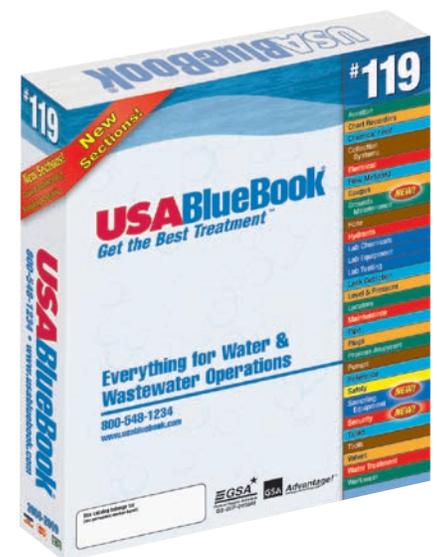
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April 1 to 3  
April 8 to 11  
April 14 to 16  
April 21 to 24  
April 22 to 24  
April 29 to May 1  
April 30 to May 2  
May 4 to 7  
May 6 to 8  
May 17 to 20  
May 19 to 22  
June 2 to 4  
June 8 to 12  
July 14 to 17



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