

Flushing Program Plan

What you will need to setup a flushing program.

1. System distribution maps (one overall map would be great) showing valve, hydrant, all dead end mains, and blow-off locations.
2. Complaint records – bad water calls with problem resolutions.
3. Maintenance records that may show location of valves that have been closed due to maintenance in the past year. (This is a good time to start a valve maintenance/exercise program, if you don't already have one.)
4. Water Quality records
 - Location of any positive samples
 - ph level
5. Monthly production reports to determine low flow periods (1 year preferred)
6. Any fire flow records
7. Identify sensitive customers
 - Hospitals
 - Dialysis Clinics
 - Restaurants, food processing
 - Bottling plants
 - Specialized manufacturing using water

Flushing Program Elements:

Plan
Notify Public
Flush
Track
Evaluate

Steps for Flushing Program

Planning

- Obtain Distribution Maps
- Prepare flushing plan
- Locate & inspect operation of valves, hydrants and blowoffs
- Revise plan, if necessary
- Prepare flushing forms
- Notify public
- Gather tools & supplies to complete flushing task
- Create contingency plan for any repairs needed, due to flushing

Field Work Flushing

- Isolate valves
- Flush 2.5 ft/sec*
- Monitor flow
- Record information (i.e. flow rate, gpm, psi, chlorine residual, etc)
- Inspect area for landscape damage, debris & repair
- Open previously closed valves
- resolve flushing complaints

Program Management

- Review & evaluate hydrant flows, take action if needed
- Review flushing reports, take action if needed
- Record total gallons used on water loss report
- File & keep flushing reports for future system comparisons, sanitary surveys, etc.

* Flushing Procedures:

1. Valves are opened and closed slowly to prevent water hammer.
2. Direct water away from traffic, pedestrians, underground utility vaults and private lands.
3. Confirm, that storm drains or natural water courses can handle the flow.
4. Flushing velocity should be at minimum 2.5 ft/sec, but 5.0 ft/sec is preferred in order to achieve suitable biofilm removal.
5. Open hydrants or blowoffs for a period long enough (5-10 minutes) to stir up deposits inside the watermain. Then flush until water is clear (sometimes 30 minutes or longer).
6. Assure that system pressures in other parts of the distribution system do not drop below 20 psi (below 15 psi, requires a boil advisory)
7. Dechlorination may be required.
8. Record data.

Flushing Program Plan
For
<Water System Name>

I. Goal

The purpose of the flushing program is to provide a safe high quality water supply to the customers of <Water System Name>. Debris can enter and accumulate in a water distribution system. Disinfectant residuals can deplete due to low usage and disinfectants may combine with materials in the system to form undesirable byproducts. Each of these situations may be corrected by an adequate flushing program.

II. Policy

During <date to date>, the <Water System Name> identified all dead-ends in its distribution system. About <number of dead-ends> sites are placed on the flushing list annually based on the diameter of pipe, time and volume required to meet the minimum chlorine residual and bacteriological results.

Flushing is conducted during periods of low water demand. Prior to flushing the <Water System Name> will notify the customers who may be affected of the dates and times of the flushing, through billing, leaflets, or by door to door information.

III. Plan of Action

1. A systematic flushing of the entire distribution system will be conducted annually or more often if required to maintain water quality. Individual sites will be flushed as needed. The flushing program will ensure that:
 - a. Dead end and low usage mains are flushed periodically
 - b. Drinking water standards are met
 - c. Sediment and air are removed
 - d. The required free chlorine residual is maintained

2. In some instances specific areas of the distribution system may need to be flushed more frequently to correct problems. These problems may include but are not limited to the following:

- a. Air in the lines
 - b. Sediment in the lines
 - c. Maintaining the free chlorine residual
 - d. Taste, odor or color problems
3. Flushing will be performed by water system personnel and local firemen.
 4. Following line repairs, main lines will be flushed to remove air and sediment from the repaired section of line. If disinfection is necessary to comply with the systems Leak Repair standard operating procedures, the line will be flushed to remove the high chlorine content. During flushing, water containing high chlorine concentrations will be flushed on relatively flat ground so as not to contaminate a receiving stream or body of water.
 5. Flushing should continue until the following conditions are met:
 - a. The free chlorine residual reaches a minimum of 1.0 mg/l (or according to ph).
 - b. No air is detected
 - c. Water is clear with no visible sediment
 - d. No objectionable taste of odor remains
 6. Flushing will be performed so as to ensure a minimum velocity of 2.5 ft/sec to adequately scour the interior of the main.

IV. Record Keeping

Records of each flushing will be maintained by the <Water System Name>. These records will include the following:

- A. Date
- B. Time
- C. Location
- D. Persons responsible
- E. Length of flushing
- F. The free chlorine residual after flushing
- G. Amount of water used for flushing
- H. Other information deemed as useful to the <Water System Name>

FIRE HYDRANT RECORD

Territory _____

Hydrant No. _____ Date Installed _____ Date Purchased _____

Location _____

Make Hydrant _____ Cost _____ Size of Barrel _____

Paint: Color _____ Condition _____ When Painted _____

No. of Outlets _____ Hose _____ Pumper Outlet _____

Pressure _____ Valved _____ Yes () No ()

Does aquaphone indicate leakage? _____ If so, date of repair _____

Was hydrant flushed? _____ Water muddy? _____ Did it finally clear? _____

Did hydrant drain freely? _____

Was pressure applied? _____ Date corrected _____

Stem Oiled? _____ Caps lubricated? _____ Further repairs needed? _____

Date completed? _____

Date last inspected? _____ By _____

Remarks: _____

Visual Fire - Hydrant: 72041

Address & General Info

Hydrant/Main/Valve Info

Hydrant ID	Fire District	Rept. Area	Department	Lat/Long
72041		F8F	ASHEVILLE FIRE RESCUE	
Number	Prefix	Street Name	Type	Suffix
1280		TUNNEL	RD	
		City	State	Zip Code
		ASHEVILLE	NC	28805-

Cross Street Intersec.
 LOWER GRASSY BRANCI

Additional Address Info
 AZALEA RD EAST

Manufacturer	Model	Year	Date Installed
American Darling		1995	//
Hydrant Type	Valve Size	Barrel Size	Barrel Length
ISO 3 Way	ins.	ins.	ins.
Thread	Color	<input type="checkbox"/> Street Marker <input type="checkbox"/> Strapped <input checked="" type="checkbox"/> Out of Service <input type="checkbox"/> Repair Required	
NS <input checked="" type="checkbox"/> Color Coded	GREEN		

Owned by
 Asheville Water Auth Private Hydrant

Flow (GPM)	Last Flow Test	Last Service	Next Insp. Due
1501	12/06/2006		05/11/2007

Hydrant

Inspect 4

Flow Tests 3

Names 0

Attachments 0

Notes

