



Standard **Operating Guideline**

**Hydrant Maintenance and Testing**

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

Date Prepared: \_\_\_\_\_\_ Date Revised: \_\_\_\_\_\_\_

OBJECTIVE:

The inspection of fire hydrants is critical to determining the readiness of the hydrants to provide water during fire emergencies. The inspections shall verify the location, accessibility, proper mechanical operation, and water flow from the hydrant.

METHODS/PROCEDURES:

* Periodic inspection, maintenance, and testing of hydrants.
* Identify closed system valves and heavily tuberculated mains.
* NPDES discharge permit compliance.

1. **INSPECTION**
   1. Position apparatus as necessary to assure the safety of employees from passing traffic. Do not obstruct traffic unnecessarily. Personnel used to direct traffic shall adhere to appropriate traffic control and flagger standards and wear appropriate reflective clothing.
   2. Inspect the fire hydrant for accessibility. The center of the 4 ½ -inch connection should be no lower than 18-inches above the ground. There should be no obstructions, including the ground, preventing easy coupling of hoses, or turning of spanners. The hydrant should be visible from all approaches. There should be no brush or tree limbs that could interfere with anyone approaching the hydrant and attempting to connect to it or operate it.

Crews should make minor corrections such as pruning and minor digging. More significant work such as heavy brush removal, significant digging, placing of retaining walls to prevent hillside soil slough off, or the raising of bodies that are set too low, should be referred for correction by submitting a repair request.

1. Trim bushes away from the hydrant to maintain at least a 3-foot clear space. Inform the customer before removing any landscaping. Allow the customer an opportunity to remove impediments to fire protection personnel and District maintenance.
2. Remove dirt from the hydrant’s base.
3. Expose shut-off valve box.

**This model form/template must be customized to meet your Agency’s needs.**

1. Remove all caps and inspect threads and outlets for damage or obstruction. Replace caps with a hydrant wrench slightly tighter than hand tight.
2. Open hydrant completely with caps in place. Determine water has filled the hydrant and turn the hydrant off completely. All personnel in the vicinity of a charged hydrant/hose line must wear their helmet. Note any difficulty opening the hydrant.
3. Observe hydrant for proper draining.
4. Document inspection by indicating hydrant number, location, and any deficiencies noted, and date inspected.
5. Submit inspection report.

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| --- | --- |
| **Condition** | **Corrective Action** |
| Inaccessible | Make accessible |
| The barrel contains water or ice | Repair and drain; for high (presence of water or ice could indicate a faulty drain, a leaky hydrant valve, or high groundwater table) |
| Improper drainage from the barrel | Repair drain |
| Leaks in outlets or at top of the hydrant | Repair or replace gaskets, packing, or parts as necessary |
| Cracks in hydrant barrel | Repair or replace |
| Tightness of outlets | Lubricate if necessary; tighten if necessary. |
| Worn nozzle threads | Repair or replace |
| Worn hydrant operating nut | Repair or replace |

1. **MAINTENANCE**

**Lubrication:**

1. Remove oil filler plug.
2. Add food-grade oil until full.
3. Reinstall plug. Do not overtighten.
4. Remove nozzle caps.
5. Replace gasket if necessary.
6. Add oil to threads.
7. Put caps back on nozzles. Do not overtighten.

**Valves:**

Valves should open and close properly and should not leak at either the stem or the nozzle. Leaky packings on older hydrants should be tightened. Valves that are difficult to operate, have bent stems, or do not open and close fully, should be reported.

1. Locate valve box.
2. Open and close the valve until it operates properly.
3. Close the valve and turn on the hydrant to verify the valve shuts tightly.
4. Slowly open the valve to charge the hydrant while flushing the valve seat.
5. Turn off the hydrant then fully open the valve.
6. Check that the hydrant barrel drains before installing the caps.

**Flow:**

1. Carefully remove nozzle caps (they may be under pressure if weep holes are not working).
2. Look into the hydrant barrel to see if it is draining properly.
   1. If the barrel does not drain, the weep holes may be obstructed.
   2. To clear the drain ports, install the nozzle caps tightly then open the hydrant two to three turns using water pressure to flush the weep holes.
   3. If still obstructed, remove the operating rod assembly and clean the drain mechanism.
   4. If neither b nor c work, the draining area around the hydrant needs to be rebuilt.
      1. Cover the hydrant with an “out of service” bag
      2. Notify the local fire department
      3. Notify supervisor of need for repair or replacement
3. Attach hose and diffuser with de-chlorination tablets.
4. Take appropriate measures to prevent erosion.
5. Fully open hydrant then close slowly to prevent water hammer.

**Paint:**

The paint should be in good condition. Hydrants with chips or rust showing should be touched up with aerosol paint. Hydrants in severe need of repainting should be reported. Bodies should be the correct color.

1. Wire brush hydrant and apply a fresh coat of paint (color appropriate to hydrant).
2. Wire brush valve box lid and apply a fresh coat of paint (color appropriate to hydrant).

**Blue Reflector:**

The blue reflector should be relatively clean and reflective. At least 2/3 of its reflective surface should be intact and in good condition. Severely damaged or missing reflectors should be reported.

**Gate Pot:**

The gate pot for the street shutoff valve should be accessible and readily discernible from water main zone valves. All hydrant gate pots should be painted white to be easily spotted underwater if a hydrant gets knocked off. Any gate pots which cannot be located should be reported.

**Curb Paint:**

Curb paint involves two issues. One is a "red zone" painted on the curb where appropriate. The other indicates the distance from the curb to the street valve which is painted in contrasting roman numerals. Missing red zones or numerals should be reported.

**Markings:**

Markings are indicators on the hydrant bodies of special conditions such as a hydrant on a regulator zone or a dead-end main. Markings shown on the checklist that do not appear on the hydrant should be reported.

SAFETY CONSIDERATIONS:

* Lockout/tagout
* Traffic control
* Training on proper hydrant operation especially by non-district entities (e.g., fire department, contractors)

ENVIRONMENTAL ISSUES:

Most water systems use chlorinated water. Chlorine and chloramine can be troublesome when hydrants being tested discharge into environmentally sensitive drainages and riparian areas. Diffuser baskets outfitted with nylon mesh covers which contain pockets in which large "industrial strength" chlorine neutralizing tablets are placed. Enough material from these tablets dissolves during testing, to render chlorine residues in test water non-harmful to fragile plants and wildlife. Chloramine testers can be used to check the neutrality of water discharged through the diffusers.

COST BENEFIT:

* Reduce revenue loss.
* System failure prediction may reduce water system loss.
* Minimize liability and property loss.
* Create a manageable capital improvement budget.

INSPECTION FORMS/CHECKLISTS/DOCUMENTATION:

* Bella Vista Water District – Fire Hydrant Master Record
* [AWWA Fire Hydrant Maintenance and Testing](https://www.awwa.org/Store/Product-Details/productId/43997259)