S517 (Page 1 of 3) **Hydrant Testing**

***Policy P610***

1. *East Side Fire District will perform hydrant testing for all certified private water distribution systems utilizing pressurized hydrant systems located within the District.*
2. *Testing dates will be established by the Fire Chief ensuring all required tests are performed during the required calendar year using properly trained ESFD volunteers. (List of qualified volunteers will be maintained by the Chief.)*
3. *All hydrant systems within the East Side Fire District will be inspected and tested a minimum of every two (2) years. Testing procedures will include:*
   1. *Operational Functionality*
      * *Water Flow, Accessibility, Valve Operation, Proper draining, Caps/chains, Port Leaks, Visibility*
   2. *Static/Residual pressure and GPM*
      * *For systems with >200’ vertical elevation drop, Static and Residual testing will include two (2) highest adjacent and two (2) lowest adjacent hydrants, all other hydrants will be tested for items 1-4.*
      * *For systems with <200’ vertical elevation drop, Static and Residual testing will include the two (2) lowest adjacent hydrants, all other hydrants will be tested for items 1-4.*

**Required Testing**

1. **Static, Residual** 
   * Static/Residual PSI & GPM – *Required on limited hydrants*
     + Static/Residual PSI test will utilize hydrant closest to the water source, GPM/PSI test will utilize hydrant downstream from static/residual test hydrant
     + For systems with >200’ in elevation change from highest to lowest hydrant, two (2) tests will be conducted using two (2) adjacent hydrants at the upper elevation and two (2) adjacent hydrants at the lower elevation
     + For systems with <200’ in elevation change from highest to lowest hydrant, a single test using two (2) adjacent hydrants at the lower elevation will be conducted
2. **Operational Functionality**

* *Required on all hydrants*
* Water Flow, Accessibility, Valve Operation, Proper draining, Caps/chains, Port Leaks, Visibility

**Hydrant Testing Process**

* Wildland PPE with gloves & helmet - **required**
* **Things to Take**: PSI and Diffuser Testing gauges, 2 hydrant wrenches, broom, rake, WD-40, charts/pens, handheld radios, PPE, rag, brush clippers, wire brush, square end shovel

**Be Sure To:** Notify the Chief one week prior to the test date. The Chief will notify water system manager of the hydrant test date.

* Record names of hydrant testing crew, date and results on the Hydrant Test Data forms.
* Lubricate all caps with WD-40 before replacing them on hydrant.

S517 (Page 2 of 3) **Hydrant Testing**

**Hydrant Testing Process (cont.)**

1. **Static, Residual Test Procedure:**

**NOTE: To avoid creating a vacuum and breaking the gauges, open the valve (on both the diffuser and on static/residual gauge) as you shut down the hydrant.**

**Also: When you close a hydrant be sure to go slowly in the final turns to avoid water hammer**

**Upper hydrant:**

1. Prior to testing, flow water out of the hydrant to eliminate rocks and muck
2. Set up Static/Residual PSI gauge on first hydrant and take flow gauge to next(lower) hydrant
3. Close static/residual PSI gauge valve, slowly open hydrant
4. Record Static PSI reading
5. Record Residual PSI reading during GPM test on lower hydrant
6. Slowly close hydrant valve, open PSI gauge to drain water, remove gauge & replace cap

**Lower Hydrant:**

1. Prior to testing, flow water out of the hydrant to eliminate rocks and muck
2. Place Diffuser w/Gauge on hydrant furthest from the water source
3. Turn bypass valve toward hydrant to let water and air run through valve)
4. Slowly open hydrant
5. Turn bypass valve toward diffuser to close the valve
6. Open lower hydrant with diffuser and quickly record the PSI & GPM flow readings. At same time record residual PSI reading from static/residual gauge on upper hydrant
7. Slowly close hydrant, open diffuser valve to drain, remove diffuser & replace cap
8. **Operational Functionality Test Procedure**
   * Water Flow (Stream)
     + Sufficient water stream is discharged from the hydrant when opened
   * Accessibility
     + 507.5.4 Obstruction. Unobstructed access to fire hydrants shall be maintained at all times. The fire department shall not be deterred or hindered from gaining immediate access to fire protection equipment or fire hydrants.
     + 507.5.5 Clear space around hydrants. A 3-foot (914 mm) clear space shall be maintained around the circumference of fire hydrants, except as otherwise required or approved.
   * Valve Operation

* Ease of opening, closing main valve
* Does the hydrant **shut down** fully? If not, try opening it up again and closing down again to see if a rock had gotten lodged in the shutoff valve. If the hydrant does not shut down, notify the Chief or Office who will notify the Water Manager.
  + Proper draining
* Hydrant **drainage** (when it is shut off. Put your palm over the opening, if you feel suction it is draining, if not, record “does not drain” in the remarks column.)

S517 (Page 3 of 3) **Hydrant Testing**

**2. Operational Functionality Test Procedure (cont.)**

* + Caps, chains in place
    - Note missing caps, chains
  + Port Leaks
    - Leaks around bonnet, base or fittings
    - Leakage with caps in place
    - Gaskets in good condition
  + Visibility
    - Is hydrant easy to locate, marker in place

1. **Reporting**

All ESFD hydrant test results will be recorded on the ‘Hydrant Test Data‘ form and will be submitted to the Fire Chief within one (1) business day following the test. Administrative staff will be responsible for determining the flow GPM @ 20 PSI calculation, test results input and record maintenance.

ESFD Fire Chief will be responsible for informing the Water Manager prior to the test date and for communicating test results and any/all corrective actions to the hydrant systems responsible party.

**!IMPORTANT! – Remember to rake and/or shovel to clean up any damage caused by our testing.**