City of Phoenix
High-Capacity Transit
Water Pressure/Leakage Test Checklist

Pre-pressure/leakage Test Checklist (to be completed before scheduling a test with the contractor):

- ☐ Agree with the contractor on the limits of the waterline to be tested. The total length of pipe 4" and greater to be pressure/leak tested cannot exceed 2500' (COP Supplement to MAG 611.1).
- ☐ Walk the limits of the waterline to be tested. Mark on your plan sheets indicating all pipes, valves, hydrants, services (including curb stops), etc., are completely installed.
  - *This is the last double-check to make sure nothing was missed and that all laterals are completed prior to performing the pressure/leak testing. This may require contractor coordination to remove plates to expose all ends of the pipe.*
- ☐ Submit that marked-up plan sheet with this checklist to the Inspection Supervisor.
- ☐ All water main, services, and laterals **MUST** be backfilled with passing compaction testing, except for the ends of mains and large laterals that need to be tied in after testing/acceptance is completed.
- ☐ Verify that all pipes sized 4" and larger are within 20' or less of the per plan tie-in location (AWWA C651-14 Sec. 4.10).
- ☐ Verify that all pipes sized 2" and smaller are installed to the per plan meter box location and including curb stops are installed.
- ☐ The waterline is **ONLY** filled with potable water (COP Supplement to MAG 611.1). Loading the line from a non-certified water truck, water buffalo, etc., is **NOT** acceptable.
  - *If you observe or find that **ANY** waterlines are filled with non-potable water. Immediately notify your Chief Inspector or Supervisor because this will require removal of waterline filled with non-potable water or more stringent testing mandated by Maricopa Health delegate and State of Arizona ADEQ.*
- ☐ The waterline must be filled at least 24-hours prior to the test for absorption.
- ☐ Verify the testing tree/test cap location with the contractor. If the waterline has more than a few feet of elevation, change from one end to the other. Make sure that the test cap is on the lowest end of the waterline to be tested. Make sure the pressure hose to the testing tree connection is a quick disconnect.
  - *This is to prevent over-pressurization of the waterline because the pressure gauge at the high end will give a false pressure reading. You could have a pressure reading greater than 200 psi at the lower end of the waterline because of the weight of water at the low end of the line.*

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Pressure/leakage Testing Checklist (right before the start of the actual testing):

- ☐ Walk the limits of the waterline being tested, with the contractor, to verify that they've opened all the valves, and all hydrants are closed within the test limits. Also, have the contractor remove a hydrant cap, which should be left off during the pressure testing.
- ☐ A pressure gauge on the testing tree must be accessible, readable, and in good working order (i.e., no significant damage to gauge and reads zero pressure when not pressurized). Verify the pressure gauge is up to date on Manufacture Calibration requirements.
- ☐ Verify that the calculated makeup water (determined from separate pressure/leakage test form) is in a separate bucket and kept covered during the testing. This requires coordination between the inspector and contractor to agree that the makeup water is the correct amount allowed.
  - *This requires a measuring device to measure the allowable water leakage from the pressure/leakage test form. 1 gallon = 128 ounces. (example: 2.26 gallons leakage allowed = 2 gallons and 33.28 ounces)*
- ☐ Verify that the contractor has a new/clean bucket completely full to the brim with **POTABLE** water, with the pressure pump suction hose in the bucket.
- ☐ Verify that all the ball valves on the testing tree are in the correct position to ensure that the testing gauge is reading the pressure in the water main being tested.
- ☐ Once the contractor has set the pressure to at least 188 psi(typically 200 psi for ease and accuracy of reading the gauge) and indicated that they are ready to start the test, verify the pressure gauge reading, and verify that the suction bucket is still full. Document the pressure reading and the start time of the pressure test.
- ☐ Have the contractor remove the quick disconnect pressure hose from the testing tree pipe. If this hose is hooked back up to re-pressurize anytime during the 2-hour test, be sure it's re-disconnected each time.
- ☐ Monitor the pressure gauge for 2 hours. The contractor is to keep the pressure test within 5 psi of documented starting pressure during the 2-hour test.
- ☐ If the gauge does not move during the 2-hour test, record the test as no leakage and document a passing pressure/leakage test.
- ☐ If the gauge does move during the test, then follow the following steps.

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- ☐ The contractor is to use the potable water in the full bucket at the start of the test. The pressure needs to be brought back up to the exact pressure reading documented at the start of the pressure/leakage test.
- ☐ Leaving the suction hose in the fill bucket just as it was at the start of the test, take the makeup water stored in the separate bucket and begin to fill the suction bucket to the brim as it was at the beginning of the test. If **ALL** makeup water is dumped into the suction bucket and the bucket does not fill back to the brim, then the test is recorded as a failure and notify the contractor.
- ☐ After the suction bucket is filled back up to the brim, and there is water left in the makeup water bucket. Measure the amount of water left in the makeup water bucket. Subtract the amount of water left in the makeup bucket from the allowable leakage and document that amount as the leakage amount on the pressure/leakage form.
- ☐ After the 2 hour test is completed have the contractor open randomly selected curb stops and main lateral risers, eventually ending at the furthest opposite end of the waterline from the testing gauge. Have the contractor release a small amount of water from each selected location while you observe the pressure gauge. If the gauge continues to drop pressure when each lateral on the main is opened, this will re-confirm that no gate valves were left closed.
- ☐ Have the contractor bleed off all the remaining pressure out of the waterline being tested and observe that the pressure gauge returns to the zero pressure reading at the end of the test. If the gauge does not read zero, it's not an accurate functioning pressure gauge, and the contractor is to be notified that it's a failing test.
  - *If this happens, the contractor must replace the gauge and perform the test again.*
- ☐ Submit pressure/leakage test form, marked up plan sheet, and this checklist completely checked off to the Inspection Supervisor.

Section of waterline tested(sta to sta):_____
_____
_____
_____
_____
_____

Inspector:
print/sign name: _____ Date:_____