

# Contractor Guidelines for Testing Mains and Manholes

## EAST BAY REGIONAL **PRIVATE SEWER LATERAL PROGRAM**

These guidelines provide information about private sewer lateral (PSL) testing requirements and procedures specific to mains and manholes within a privately owned system. Privately owned mains and manholes are required to comply with the PSL Program requirements. This guideline should be used in addition to the PSL Contractor Guidelines to assist with inspection planning, testing, and obtaining a Compliance Certificate for extensive sewer lateral systems that include mains and manholes. Please contact EBMUD at (510) 287-1599 to schedule if your privately owned system includes main and manhole testing.

### Verification Test Criteria

Component	Test Type	Passing Criteria
Manhole  (Multiple manholes may be tested concurrently using multiple test set ups)	Vacuum Test	Vacuum cannot drop more than one inch Hg in 5 minutes (starting vacuum 10 inches Hg).
Main	Low Pressure Air Test	Pressure cannot drop more than one psi in 5 minutes (minimum starting pressure 3.5 psi).

### Vacuum Test Verification Test Setup for Manholes

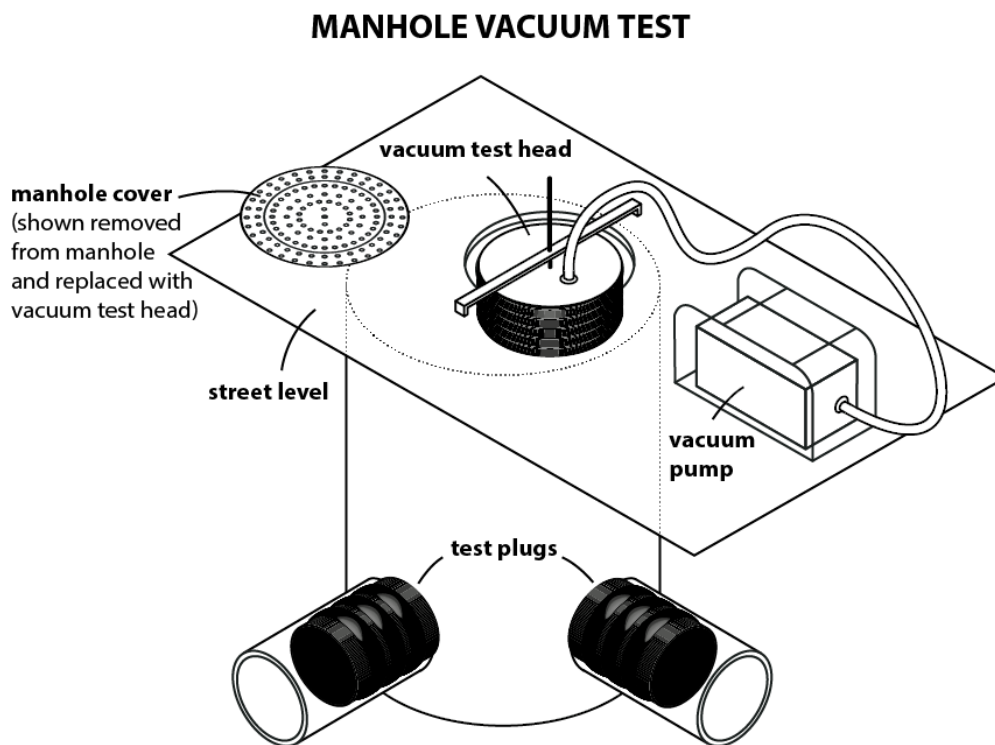
The contractor shall provide all materials and equipment necessary for conducting the test. The vacuum test assembly shall include the following equipment:

- Appropriate pipe test plugs for securing the manhole openings and penetrations during testing.
- A test assembly that allows the application of vacuum to the manhole being tested, provides connections for the vacuum test gauge, and includes a 3/8" female pipe thread connection to allow a second vacuum test gauge to be connected in parallel to the vacuum test gauge.
- A vacuum test gauge that
  - has a range of 0 to 30 inches of Hg that can be accurately read to 0.5 inch Hg, and
  - is in good working order.
- A reliable source of a vacuum as needed to conduct the test.
- The required test set up is shown in Figure 1.

## Testing Procedure for Manholes

- Plug all manhole penetrations. Each plug must be installed at a location beyond the manhole/pipe gasket (i.e., outside the manhole wall), and shall be braced to prevent the plug or pipe from being drawn into the manhole.
- Install the test head inside the rim of the cast iron frame at the top of the manhole and inflate it in accordance with the manufacturer's recommendations.
- Apply a vacuum to the test assembly and lower the internal pressure to approximately 10-inch Hg vacuum.
- Maintain the internal air pressure at 10-inches Hg for at least two minutes to allow the air pressure and internal temperature to stabilize.
- Disconnect the vacuum source and begin timing the test. No additional vacuum may be applied once the test has started.
- Remove all temporary plugs and braces after each test.
- The manhole shall pass the test if the vacuum does not drop more than 1-inch Hg in 5 minutes with a starting vacuum of 10-inches Hg.

Figure 1



## Low Pressure Air Test Verification Test Setup for Mains

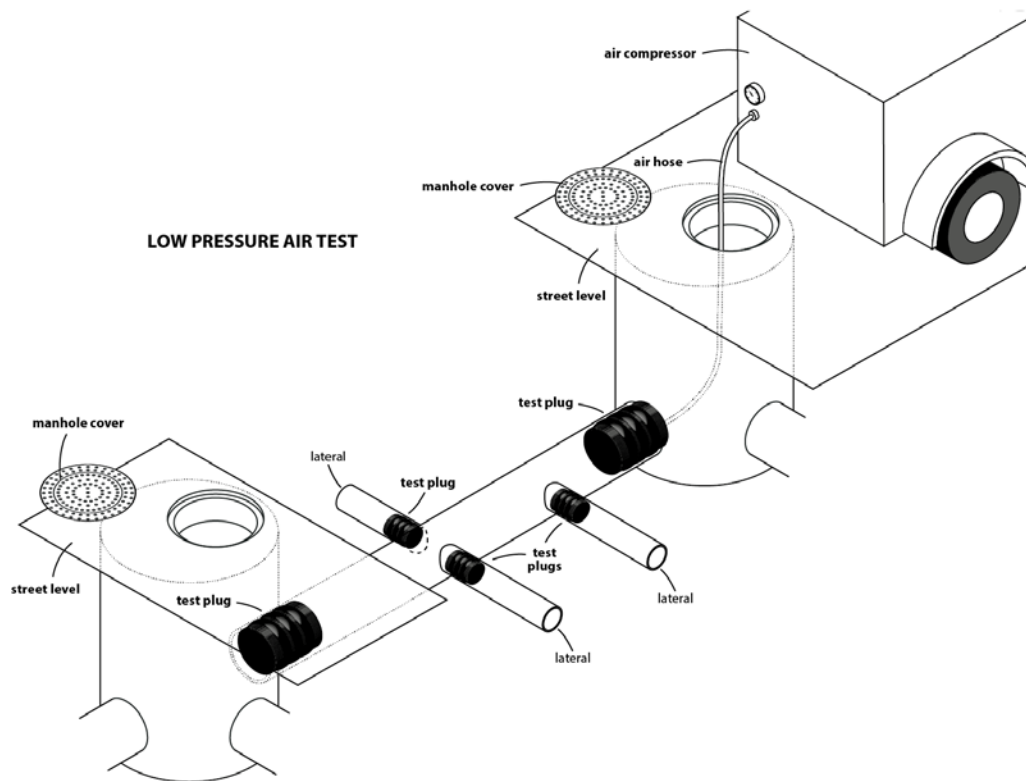
The contractor shall provide all materials and equipment necessary to conduct the test. The test assembly shall include the following equipment:

- Appropriate pipe test plugs and caps for securing the main during testing.

- A test assembly that allows the application of pressurized air to the pipe being tested, provides connections for the air pressure gauge, and includes a 3/8" female pipe thread connection to allow a second pressure test gauge to be connected in parallel to the pressure test gauge.
- A pressure test gauge that is in good working order and has a range of 0 to 10 pounds per square inch (psi) that can be accurately read to **0.1 psi**.
- A reliable source of pressurized air with a pressure regulator as needed to conduct the test.
- The required test set up is shown in Figure 2.

## Testing Procedure for Mains

- Plug all laterals and connections to the main. Each plug must be installed at a location beyond the main/pipe gasket (i.e., outside the main wall). To set up a valid test, the laterals must be connected to the sewer main and the main must be connected to the manholes. Plugging or capping close to the main or manhole without connection is considered as test set up failure.
- Apply pressurized air to the test assembly and raise the internal pressure to approximately 4 psi. Pressure may be applied from either end of the main.
- Maintain the internal air pressure between 3.5 and 4.0 psi for at least two minutes to allow the air pressure and internal temperature to stabilize. The minimum starting pressure is 3.5 psi.
- Disconnect the pressurized air supply and begin timing the test. No additional air may be added once the test has started.
- After 5 minutes, the contractor will be asked to remove the test assembly for EBMUD inspector to verify if the test was set up properly.
- The main passes the test if the pressure does not drop more than one psi in 5 minutes.
- If you have lost a testing plug to the public sewer system, notify the local agency where work is being performed immediately. A runaway plug may block the sewer system and cause overflow.



**Figure 2**

For additional information go to [www.ebmud.com/psl](http://www.ebmud.com/psl) or contact EBMUD's Private Sewer Lateral Program at (510) 287-1599.