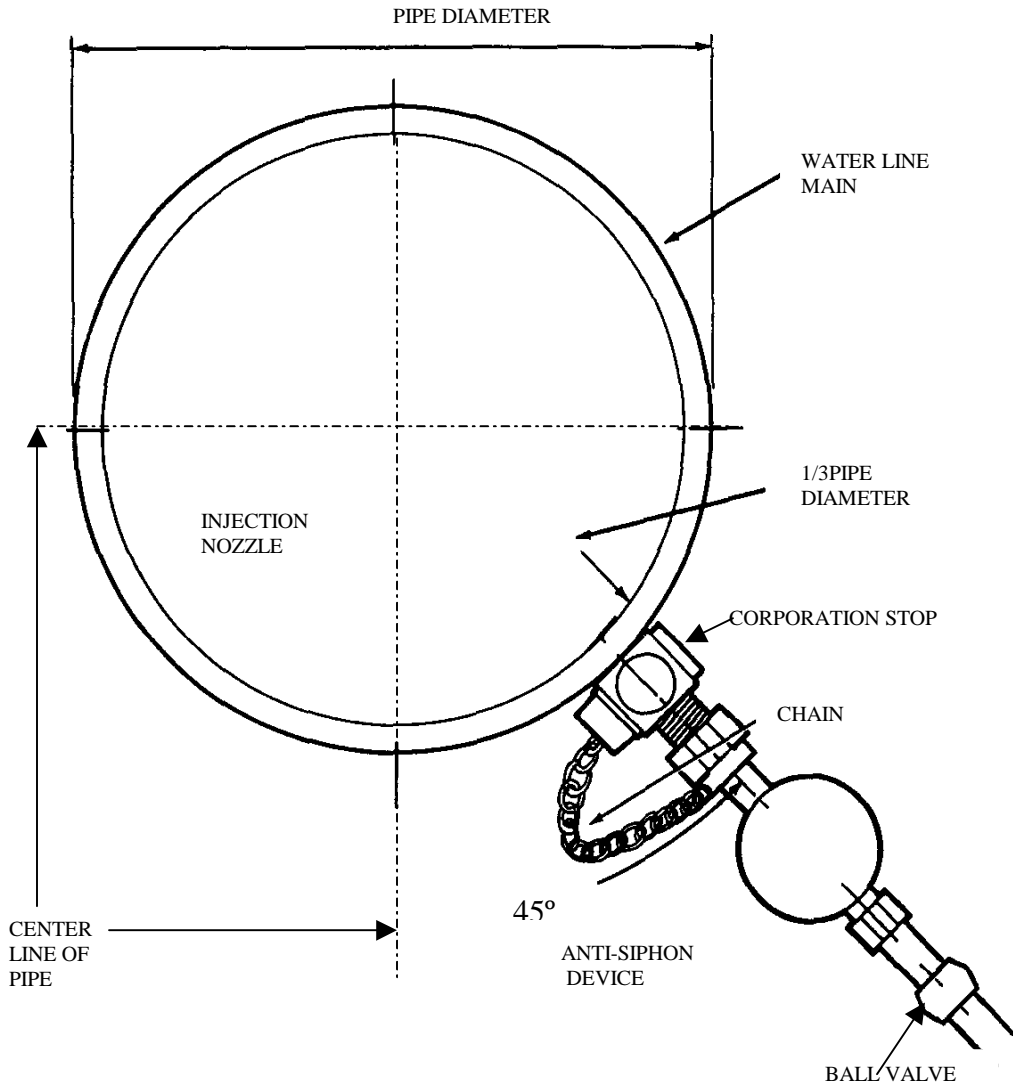


**FIGURE 4-4
FLUORIDE INJECTION POINT**



4.5 Equipment Installation

4.5.1 General

Fluoridation installation should be considered during the design stage. The decisions made during the design phase will greatly affect the installation. The best installation is one that incorporates as many of these factors as possible:

1. Simple, accurate feeding equipment
2. Minimum chemical handling
3. Consistent with the above two factors, the lowest overall cost based on amortization of equipment and cost of chemical
4. Ease in collecting reliable records
5. Minimum maintenance of feeder, piping, and injector equipment

A thorough knowledge of the types of equipment available is a must in order to determine the best installation.

Before a type of feeder can be selected, sufficient and appropriate space for its installation must be provided. If there is an existing water plant where other water treatment chemicals are being fed, usually space for an additional feeder is no problem. If there is no treatment plant, as is often the case with well systems, then there may be a well house, or perhaps even some type of shelter, near an elevated storage tank. The feeder must be placed in a dry, sheltered area, near the point of fluoride injection, and preferably in a place that has storage space for chemicals. Electrical power (in most cases) and a water line for solution preparation must be available. The location must be accessible for chemical replenishment and maintenance. Other than these basic requirements, consideration should be given to the desirability of isolation of chemical storage from other materials, for adequate ventilation, and for general convenience.

When the fluoridation system is tied electrically to the well pump, it should be physically impossible to plug the fluoride metering pump into any "hot" electrical outlet. The pump should be plugged only into the circuit containing the overfeed protection. One method of ensuring this is to provide a special plug on the metering pump, which is compatible only with a special outlet on the appropriate electrical outlet. This special plug should be clearly labeled. This recommendation is true for both acid feed and saturator systems.

4.5.2 Fluorosilicic Acid Installation

The simplest and easiest fluoridation installation is an acid feed system with a single well. The typical installation would include a carboy of acid (or drum), small metering pump, and scales (**See Figure 4-5 below**). The carboy (or drum) should be vented to the outside and sealed around the pump intake line and vent line. If the room where the fluoride equipment is located is exposed to strong direct sunlight, the tubing pigment should be black. The black color screens out the ultraviolet rays, which can cause cracking of the translucent tubing.