Hydrostatic pressure testing methods

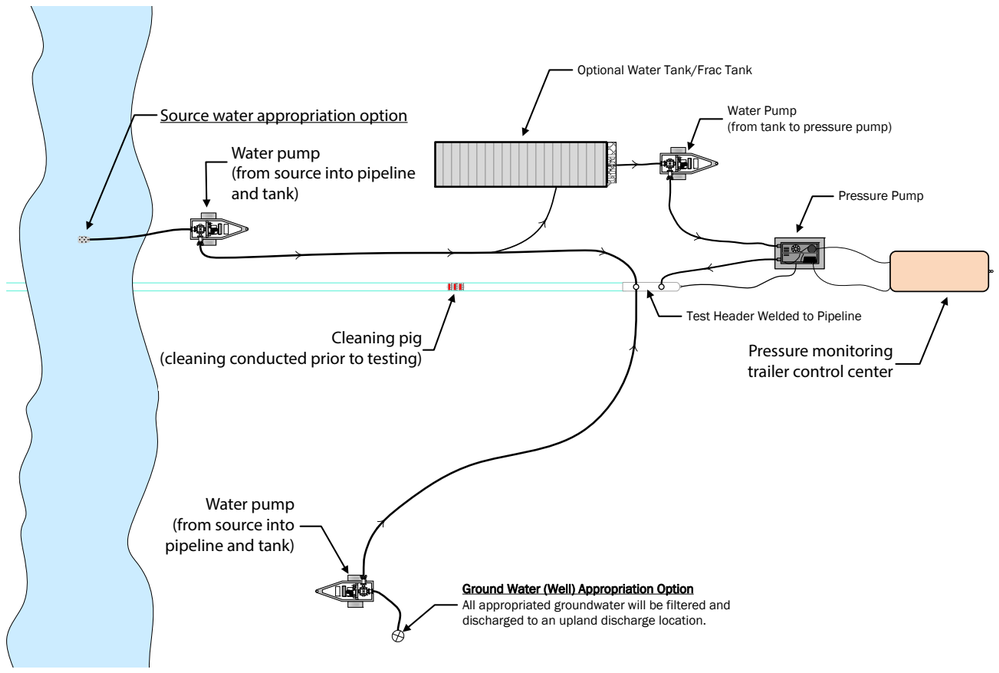
Mainline: Larger segments of pipe that require larger volumes of water.

Horizontal directional drill (HDD): A method for crossing water bodies during construction. HDD segments of pipe are smaller, and require less water for testing. Testing is completed above ground, and once installed, these segments of pipe are welded onto the mainline segments of pipe.

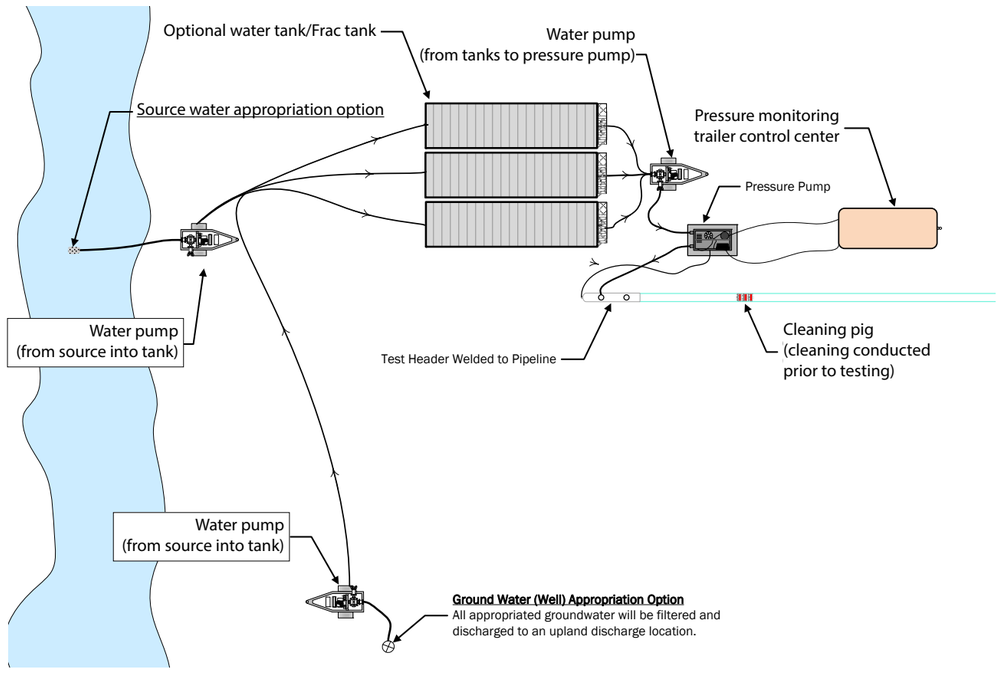
Testing process

Water will be appropriated from a nearby surface water. In some instances when water cannot be appropriated from a surface water, water will be appropriated from a ground water well. The Minnesota Department of Natural Resources approves water appropriations. The process is the same for both mainline and HDD methods.

Mainline water appropriation/hydrostatic pressure testing



Horizontal direction drill water appropriation and pre-test pressure testing



MINNESOTA POLLUTION CONTROL AGENCY

Hydrostatic pressure testing discharge options

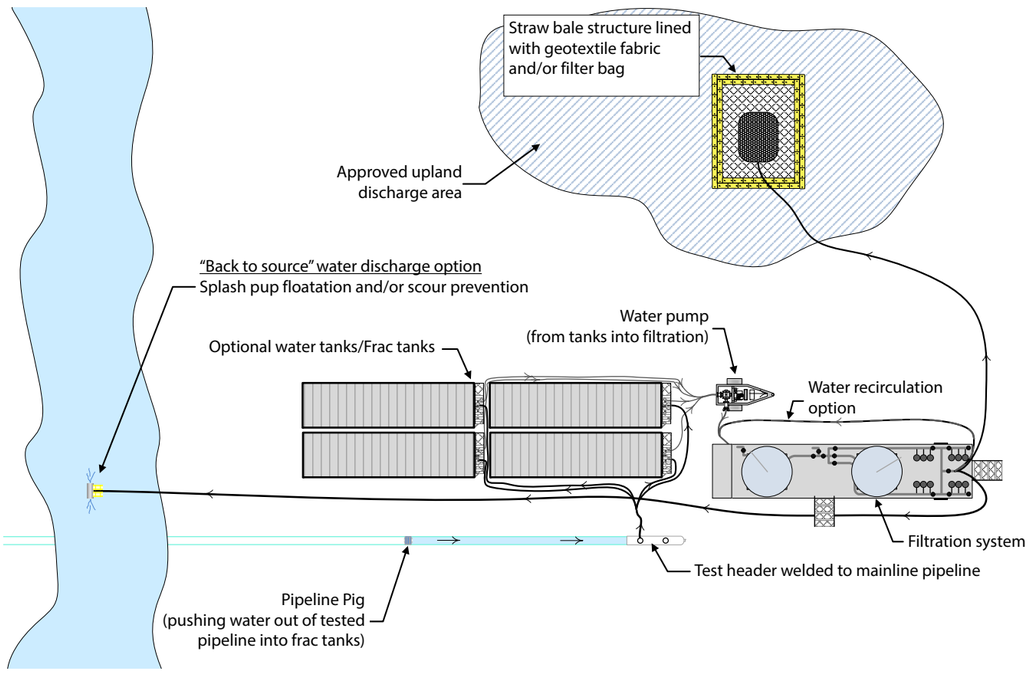
Mainline: Larger segments of pipe that require larger volumes of water.

Horizontal directional drill (HDD): A method for crossing water bodies during construction. HDD segments of pipe are smaller, and require less water for testing. Testing is completed above ground, and once installed, these segments of pipe are welded onto the mainline segments of pipe.

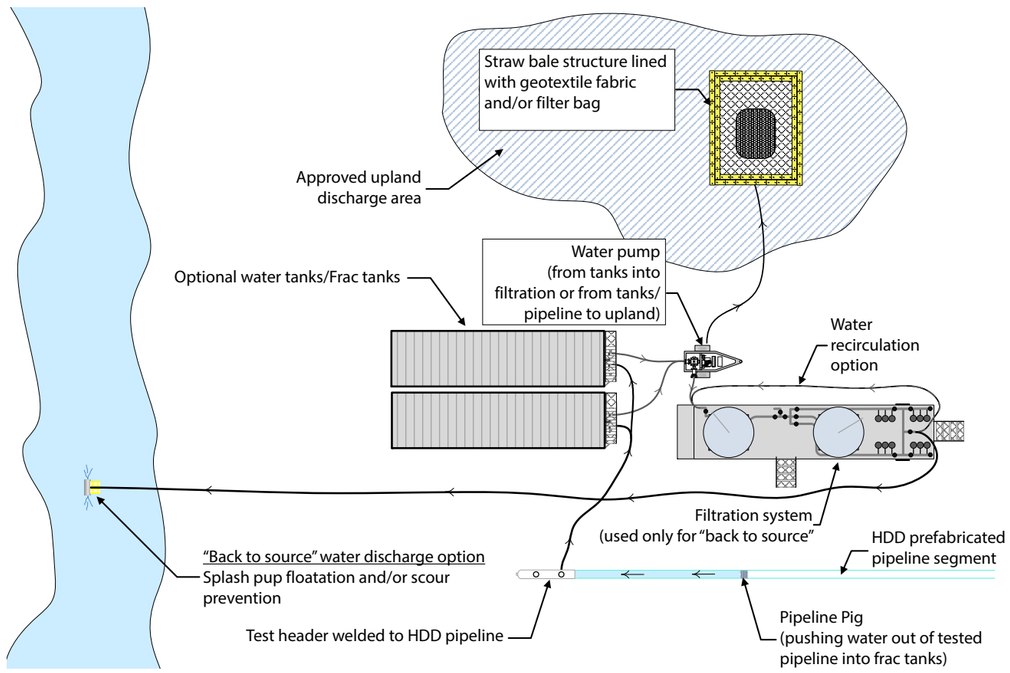
Discharge options

After the testing is complete, and the pipe is installed, water will be treated and discharged either back to the source water it was appropriated from, or to an upland area where it will be infiltrated. Water discharged back to the source water will be treated prior to discharge. Treatment includes a sand filter or carbon treatment as needed. Water discharged to an upland area will be discharged through a straw bale structure to contain the water and allow it to infiltrate.

Mainline discharge options: back to source and upland



Horizontal direction drill pre-test discharge options: back to source and upland



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