SUDAS Revision Submittal Form

Status Date:	As of 10/23/2026	**Topic:**	Water main gaskets
Manual:	Design Specifications	**Manual Location:**	Sections 4C-1, B, 1 and 4D-1 Section 5010, 2.05 and 3.06, E

Requested Revision:

Design Section 4C-1 (Facility Design)

B. Water Mains

1. Water main pipe will typically be either polyvinyl chloride (PVC) pipe or ductile iron pipe (DIP); and meet AWWA Standards.

   Designers should use the Iowa DNR's website to determine if there are any leaking underground storage tanks (LUST) sites within 500 feet of the proposed water main: https://facilityexplorer.iowadnr.gov/facilityexplorer.

   Where distribution systems and service connections are installed in areas of known groundwater contaminated by ~~volatile~~ organic compounds ~~(LUST)~~, pipe and joint materials (non-PVC pipe) that do not allow permeation of ~~the~~ ~~volatile~~ organic compounds must be used. Gasket materials used within these contaminated zones must be nitrile (NBR) or fluorocarbon (FKM) to ensure long-term barrier performance against chemical degradation and permeation. The use of neoprene (CR) or SBR gaskets is prohibited in areas with known organic compound contamination.

   The Iowa DNR requires underground storage tank (UST) owners to meet specific design requirements for USTs installed within 1,000 feet of a community water system. The Project Engineer should determine if there is an UST within 1,000 feet of the project area. If so, the Designer should determine the need to design the water mains to prevent future permeation of any ~~volatile~~ organic compounds into the water system. There are various elements to consider, some of which include soil types, groundwater table depth, size of the UST, age of the UST, etc.

   Consult with manufacturers concerning permeation of the pipe walls, jointing materials, valve seats, etc.

…

Design Section 4D-1 (References)

Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers. ~~*10 State Standards*~~ *Recommended Standards for Water Works*. ~~2004~~ 2022.

Spec Section 5010 [Water Main] Pipe and Fittings

2.06 SPECIAL GASKETS

A. For soils contaminated with ~~gasoline, use neoprene or nitrile gaskets~~ organic compounds, including, but not limited to gasoline, petroleum hydrocarbons, diesel, or unrefined fuels, nitrile (NBR) gaskets are strictly required. Neoprene (CR) and SBR rubbers are prohibited.

B. For soils ~~contaminated with volatile organic compounds, use nitrile or fluorocarbon gaskets~~ heavily contaminated with highly aggressive industrial organic solvents, aromatic blends exceeding baseline thresholds, or chlorinated hydrocarbons (e.g., trichloroethylene), fluorocarbon (FKM) gaskets are required.

C. For other soil contaminants, contact the Engineer for the required gasket.

…

3.06 CONFLICTS

…

E. Surface Water Crossings: Comply with the Recommended Standards for Water Works, ~~2012~~ 2022 Edition.

1. **Above-water Crossings:** Ensure the pipe is adequately supported and anchored; protected from vandalism, damage, and freezing; and accessible for repair or replacement.

2. **Underwater Crossings:** Provide a minimum cover of 5 feet over the pipe unless otherwise specified in the contract documents. When crossing water courses that are greater than 15 feet in width, provide the following.
   a. pipe with flexible, restrained, or welded watertight joints,
   b. valves at both ends of water crossings so the section can be isolated for testing or repair; ensure the valves are easily accessible and not subject to flooding, and
   c. permanent taps or other provisions to allow insertion of a small meter to determine leakage and obtain water samples on each side of the valve closest to the supply source.

Reason for Revision: Updated spec language regarding the use of appropriate water main materials in areas where groundwater is contaminated with organic compounds based on 2022 Recommended Standards for Water Works

Comments: Requested change from Iowa DNR.

Region:	☒ Central	☒ East	☒ West
Comments:	None.		
Action:	☐ Deferred	☐ Not Approved	☒ Approved

Final Regional Action Summary: All 3 regions approved.

Board of Directors Action: