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DRINKING WATER QUALITY SERVICE AND CORROSION STUDIES ON WATER DISTRIBUTION SYSTEMS

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Abstract:

Materials employed in water distribution systems might suffer corrosive attack from both the outside (soil) and the inside (water) environments. In addition those materials have to meet mechanical requirements coming from hydraulic operation of the system and external loads. Corrosion condition of the pipeline network is closely related to water quality obtained by consumers, as formation of loose products and water pollution may be caused by either inner or outer corrosion attack of pipelines. In order to find the actual condition of the pipeline it is necessary to carry on systematic sampling on both the aggressive environment and the pipeline itself. On the other hand, due to the large size of water distribution systems it is needed to apply statistical techniques to calculate the sample size and distribution. Besides physicochemical analyses it is also needed to study the microbiological state of the system. Information of either water in the case of internal corrosion or soil in the case of external corrosion is required to have a complete view of the situation under study. The results and methodologies of some extensive studies are revised.

Keywords: Water corrosion, pipeline corrosion, water quality, soil corrosion, deposit characterization

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