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Standard Guide for Recordkeeping for Reverse Osmosis and Nanofiltration Systems¹

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1. Scope

1.1 This guide covers procedures for well-defined recordkeeping of reverse osmosis (RO) and nanofiltration (NF) systems.

1.2 This guide includes a start-up report, recordkeeping of RO and NF operating data, recordkeeping of pretreatment operating data, and a maintenance log.

1.3 This guide is applicable to waters including brackish waters and seawaters but is not necessarily applicable to wastewaters.

1.4 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

D1125 Test Methods for Electrical Conductivity and Resistivity of Water

D1129 Terminology Relating to Water

D1253 Test Method for Residual Chlorine in Water

D1889 Test Method for Turbidity of Water (Withdrawn 2007)³

D3739 Practice for Calculation and Adjustment of the Langelier Saturation Index for Reverse Osmosis

D4189 Test Method for Silt Density Index (SDI) of Water

D4194 Test Methods for Operating Characteristics of Reverse Osmosis and Nanofiltration Devices

D4195 Guide for Water Analysis for Reverse Osmosis and Nanofiltration Application

D4582 Practice for Calculation and Adjustment of the Stiff and Davis Stability Index for Reverse Osmosis

D6161 Terminology Used for Microfiltration, Ultrafiltration, Nanofiltration, and Reverse Osmosis Membrane Processes

3. Terminology

3.1 *Definitions*—For definitions of terms used in this guide, refer to Terminologies **D1129** and **D6161**.

4. Significance and Use

4.1 Proper operation and maintenance of RO and NF systems are key factors in obtaining successful performance. This guide provides the necessary input for the evaluation of the performance of the RO and NF systems, the pretreatment system, and the mechanical equipment in the plant.

4.2 This guide is for general guidance only and must not be used in place of the operating manual for a particular plant.

4.3 Site-dependent factors prevent specific recommendations for all recordkeeping. Thus, only the more general recordkeeping is covered by this guide.

4.4 This guide can be used for both brackish and seawater systems which contain either spiral-wound or hollow-fiber devices.

5. Procedure

5.1 Start-Up Report:

5.1.1 Provide a complete description of the RO or NF plant. This can be done by using a flow diagram and equipment,

¹ This guide is under the jurisdiction of ASTM Committee **D19** on Water and is the direct responsibility of Subcommittee **D19.08** on Membranes and Ion Exchange Materials.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ The last approved version of this historical standard is referenced on www.astm.org.