**ASCE STANDARD** 

ansi/asce/ewri **70-19** 

Estimation of Aquifer Hydraulic Properties by Inverse Numerical Modeling of Aquifer Pumping Tests







ASCE STANDARD



## Estimation of Aquifer Hydraulic Properties by Inverse Numerical Modeling of Aquifer Pumping Tests







PUBLISHED BY THE AMERICAN SOCIETY OF CIVIL ENGINEERS

## Library of Congress Cataloging-in-Publication Data {to come from ASCE}

Published by American Society of Civil Engineers 1801 Alexander Bell Drive Reston, Virginia 20191 www.asce.org/pubs

This standard was developed by a consensus standards development process, which has been accredited by the American National Standards Institute (ANSI). Accreditation by ANSI, a voluntary accreditation body representing public and private sector standards development organizations in the United States and abroad, signifies that the standards development process used by ASCE has met the ANSI requirements for openness, balance, consensus, and due process.

Although ASCE's process is designed to promote standards that reflect a fair and reasoned consensus among all interested participants while preserving the public health, safety, and welfare that is paramount to its mission, it has not made an independent assessment of and does not warrant the accuracy, completeness, suitability, or utility of any information, apparatus, product, or process discussed herein. ASCE does not intend, nor should anyone interpret, ASCE's standards to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this standard.

ASCE has no authority to enforce compliance with its standards and does not undertake to certify products for compliance or to render any professional services to any person or entity.

ASCE disclaims any and all liability for any personal injury, property damage, financial loss, or other damages of any nature whatsoever, including without limitation any direct, indirect, special, exemplary, or consequential damages, resulting from any person's use of, or reliance on, this standard. Any individual who relies on this standard assumes full responsibility for such use.

ASCE and American Society of Civil Engineers-Registered in US Patent and Trademark Office.

*Photocopies and permissions.* Permission to photocopy or reproduce material from ASCE publications can be requested by sending an email to permissions@asce.org or by locating a title in ASCE's Civil Engineering Database (https://cedb.asce.org) or ASCE Library (https://ascelibrary.org) and using the "Permissions" link.

Errata: Errata, if any, can be found at https://doi.org/10.1061/9780784415412.

Copyright © 2020 by the American Society of Civil Engineers. All Rights Reserved. ISBN 978-0-7844-1541-2 (paper) ISBN 978-0-7844-8252-0 (PDF)

Manufactured in the United States of America.

25 24 23 22 21 20 1 2 3 4 5

## ASCE STANDARDS

In 2016, the Board of Direction approved revisions to the ASCE Rules for Standards Committees to govern the writing and maintenance of standards developed by ASCE. All such standards are developed by a consensus standards process managed by the ASCE Codes and Standards Committee (CSC). The consensus process includes balloting by a balanced standards committee and reviewing during a public comment period. All standards are updated or reaffirmed by the same process every five to ten years. Requests for formal interpretations shall be processed in accordance with Section 7 of ASCE Rules for Standards Committees, which are available at www.asce.org. Errata, addenda, supplements, and interpretations, if any, for this standard can also be found at www.asce.org.

The provisions of this document are written in permissive language and, as such, offer the user a series of options or instructions, but do not prescribe a specific course of action. Significant judgment is left to the user of this document.

This standard has been prepared in accordance with recognized engineering principles and should not be used without the user's competent knowledge for a given application. The publication of this standard by ASCE is not intended to warrant that the information contained herein is suitable for any general or specific use, and ASCE takes no position respecting the validity of patent rights. The user is advised that the determination of patent rights or risk of infringement is entirely his or her own responsibility.

A complete list of currently available standards is available in the ASCE Library (https://ascelibrary.org/page/books/s-standards).

This page intentionally left blank