



Standard Guide for Selection of Methods for Assessing Groundwater or Aquifer Sensitivity and Vulnerability¹

This standard is issued under the fixed designation D6030; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope*

1.1 This guide covers information needed to select one or more methods for assessing the sensitivity of groundwater or aquifers and the vulnerability of groundwater or aquifers to water-quality degradation by specific contaminants.

1.2 This guide may not be all-inclusive; it offers a series of options and does not specify a course of action. It should not be used as the sole criterion or basis of comparison, and does not replace professional judgment.

1.3 This guide is to be used for evaluating sensitivity and vulnerability methods for purposes of land-use management, water-use management, groundwater protection, government regulation, and education. This guide incorporates descriptions of general classes of methods and selected examples within these classes but does not advocate a particular method.

1.4 *Limitations*—The utility and reliability of the methods described in this guide depend on the availability, nature, and quality of the data used for the assessment; the skill, knowledge, and judgment of the individuals selecting the method; the size of the site or region under investigation; and the intended scale of resulting map products. Because these methods are being continually developed and modified, the results should be used with caution. These techniques, whether or not they provide a specific numeric value, provide a relative ranking and assessment of sensitivity or vulnerability. However, a relatively low sensitivity or vulnerability for an area does not preclude the possibility of contamination, nor does a high sensitivity or vulnerability necessarily mean that groundwater or an aquifer is contaminated.

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

1.6 All observed and calculated values shall conform to the guidelines for significant digits and rounding established in Practice [D6026](#).

¹ This guide is under the jurisdiction of ASTM Committee [D18](#) on Soil and Rock and is the direct responsibility of Subcommittee [D18.21](#) on Groundwater and Vadose Zone Investigations.

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1.6.1 The procedures used to specify how data are collected/recorded or calculated, in this standard are regarded as the industry standard. In addition, they are representative of the significant digits that generally should be retained. The procedures used do not consider material variation, purpose for obtaining the data, special purpose studies, or any considerations for the user's objectives; and it is common practice to increase or reduce significant digits of reported data to be commensurate with these considerations. It is beyond the scope of this standard to consider significant digits used in analytical methods for engineering design.

1.7 *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 and health practices and determine the applicability of regulatory limitations prior to use.*

1.8 *This guide offers an organized collection of information or a series of options and does not recommend a specific course of action. This document cannot replace education or experience and should be used in conjunction with professional judgment. Not all aspects of this guide may be applicable in all circumstances. This ASTM standard is not intended to represent or replace the standard of care by which the adequacy of a given professional service must be judged, nor should this document be applied without consideration of a project's many unique aspects. The word "Standard" in the title of this document means only that the document has been approved through the ASTM consensus process.*

2. Referenced Documents

2.1 ASTM Standards:²

[D653 Terminology Relating to Soil, Rock, and Contained Fluids](#)

[D5447 Guide for Application of a Groundwater Flow Model to a Site-Specific Problem](#)

[D5490 Guide for Comparing Groundwater Flow Model Simulations to Site-Specific Information](#)

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.

*A Summary of Changes section appears at the end of this standard