



Designation: D8571 – 24

Standard Practice for Detection of Hydrocarbon Liquids in Soils by Fluorescence with an Optical Imaging Profiler Using Direct Push Methods¹

This standard is issued under the fixed designation D8571; 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 practice presents a method for delineating the subsurface presence of nonaqueous phase liquids (NAPLs) consisting of petroleum hydrocarbons, coal tars, and similar waste materials using an optical image profiler (OIP) system. The OIP probe is advanced into waste materials, soils, and unconsolidated formations using direct push (DP) methods. The OIP system provides data approximately each 15 mm (0.05 ft) of log depth to support high-resolution site characterization.

1.2 OIP logging is limited to wastes, soils, and unconsolidated formations that can be penetrated with the available direct push equipment. The ability to penetrate materials is based on carrying vehicle weight, density of soil/materials, and consistency of soil/materials. Penetration may be limited or damage to sensors or tooling can occur under certain ground conditions. DP tools are not designed to penetrate consolidated rock (Guides [D6001/D6001M](#) and [D6282/D6282M](#), Practices [D7352](#) and [D8037/D8037M](#)).

1.3 *Units*—The values stated in SI units are to be regarded as standard, however, inch pound units are indicated for information within parentheses as they are in common use for many users. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in nonconformance with the standard.

1.4 All observed and calculated values shall conform to the guidelines for significant digits and rounding established in Practice [D6026](#), unless superseded by this standard.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 standard-*

ization 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

- [D653 Terminology Relating to Soil, Rock, and Contained Fluids](#)
- [D5088 Practice for Decontamination of Field Equipment Used at Waste Sites](#)
- [D5092/D5092M Practice for Design and Installation of Groundwater Monitoring Wells](#)
- [D5299/D5299M Guide for Decommissioning of Groundwater Wells, Vadose Zone Monitoring Devices, Boreholes, and Other Devices for Environmental Activities](#)
- [D5681 Terminology for Waste and Waste Management](#)
- [D5778 Test Method for Electronic Friction Cone and Piezocone Penetration Testing of Soils](#)
- [D6001/D6001M Guide for Direct-Push Groundwater Sampling for Environmental Site Characterization](#)
- [D6026 Practice for Using Significant Digits and Data Records in Geotechnical Data](#)
- [D6187 Practice for Cone Penetrometer Technology Characterization of Petroleum Contaminated Sites with Nitrogen Laser-Induced Fluorescence \(Withdrawn 2019\)³](#)
- [D6282/D6282M Guide for Direct Push Soil Sampling for Environmental Site Characterizations \(Withdrawn 2023\)³](#)
- [D6724/D6724M Guide for Installation of Direct Push Groundwater Monitoring Wells](#)
- [D6725/D6725M Practice for Direct Push Installation of Prepacked Screen Monitoring Wells in Unconsolidated Aquifers](#)
- [D7352 Practice for Volatile Contaminant Logging Using a Membrane Interface Probe \(MIP\) in Unconsolidated Formations with Direct Push Methods](#)

¹ This practice is under the jurisdiction of ASTM Committee [D34](#) on Waste Management and is the direct responsibility of Subcommittee [D34.01.05](#) on Screening Methods.

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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.