

# Horizontal Directional Drilling

## Advance Coverage of Horizontal Directional Drilling (HDD) Technologies for Utility and Pipeline Applications



**Course Description:** The Advanced Horizontal Directional Drilling course is offered as a 2-day course that expands on some of the topics covered in TTB's HDD Course. This course provides in depth coverage of topics such as subsurface conditions, drilling fluids, borehole stability, hydro-fracture, and allowable mud pressure.

**Course Objective:** To provide contractors, engineers, inspectors and others working in the HDD industry with advanced coverage of technical information on subsurface conditions and drilling fluids. During the course we will discuss how the subsurface conditions can impact the HDD operation and borehole stability. The course will provide in depth coverage of hydro-fracture and allowable mud pressure in HDD applications. The course will also provide design calculations with examples using a HDD computer application.

**Target Audience:** All pipeline, utility and consulting engineers, superintendents, contractors, inspectors and other technical individuals with the responsibility of managing, operating, or maintaining pipeline, trunk or distribution systems. To get the most from this course we recommend that all attendees either have extensive HDD experience or have attended the TTB HDD course.

**Registration Fee:** \$1,625 per person, which includes:

- Attendance to the course
- Course materials
- Evaluation copy of HDD Toolbox - Professional Edition
- Continental breakfast and lunch

**Instructor:** David Willoughby is a Projects Manager for Rummel, Klepper & Kahl, a consulting engineering firm headquartered in Baltimore, MD. He has 28 years of experience in engineering, technical writing, and management in the natural gas, petroleum and pipeline industry. Mr. Willoughby is registered by the Council of Engineering Specialty Boards as a Petroleum Operations Engineer. Mr. Willoughby serves as the Project Manager for several major pipeline projects that include many HDD applications and has performed HDD consulting and designs on numerous water body and road crossings. He has a B.S. degree in Petroleum Engineering and has affiliations with the American Society of Petroleum Operations Engineers, Petroleum Equipment Institute, National Association of Corrosion Engineers, and the Society of Petroleum Engineers.

**Location:** TBA  
Charlotte, NC



## Class Outline

### Day 1:

#### Subsurface Conditions

- \* Definition of Soil and Rock
- \* Properties of Soil and Rock
- \* Impact of Subsurface Conditions on Drilling Fluids



#### Drilling Fluids

- \* Purpose of Drilling Fluids
- \* Drilling Fluid Composition
- \* Drilling Fluid Behavior
- \* Drilling Fluid Hydraulics
- \* Quantity Estimating
- \* Drilling Fluid Problems
- \* Field Testing of Drilling Fluids

#### Borehole Stability

#### Hydro fracture

### Day 2:

#### Allowable Mud Pressure

#### Computer Applications for Drilling Fluid Calculations

#### Example Drilling Fluid and Borehole Stability Problem Exercise

#### Drilling Fluid Monitoring and Remediation

- \* Monitoring and Remediation Plan
- \* HDD Monitoring Overview
- \* Monitoring the Land Portion of a HDD
- \* Monitoring the Water Portion of a HDD
- \* Drilling Fluid Loss Monitoring Operations and Examples
- \* Normal Monitoring
- \* Loss of Circulation
- \* Surface Release of Drilling Fluid
- \* Cleanup and Response

Please complete the attached form  
and fax to TTI at 713-630-0560

Course Cost: \$1,625.00

Course Date:

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

Address \_\_\_\_\_

City, State, ZIP \_\_\_\_\_

Country \_\_\_\_\_

Phone/Mobile \_\_\_\_\_

Fax \_\_\_\_\_

E-mail \_\_\_\_\_

Payment by Credit Card

Circle One: VISA MasterCard AMEX

CC Number \_\_\_\_\_

Expiration Date \_\_\_\_\_

Signature\* \_\_\_\_\_

\* By signing above I commit to paying the course fee when invoiced

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