

# STAHELI trenchless consultants

**Construction Method:**

**Horizontal Directional Drilling**

**Project: Big Gulch Segment 3**

**Location: Mukilteo, Washington**

**Date: 2009**

**Job Scope:**

- ❖ Risk Analysis
- ❖ HDD Constructability Review
- ❖ Specialized Construction Management
- ❖ Claim Analysis

**Project Description:**

Staheli Trenchless Consultants provided construction management services for the installation of a 2,600 lineal foot, 20-inch DR18 fusible-PVC gravity sewer line and a 1,500 lineal foot, 12-inch HDPE lateral sewer pipe using HDD. Both drills proved challenging, both of which, having significant elevation differences between entry and exit.



The alignments were designed in very stiff to hard lacustrine silts that were overlain by landslide deposits. At the entry locations, both bores had to penetrate the looser/softer landslide deposits prior to entering the more competent lacustrine soils, leading to concerns about slope destabilization and landslide risk. The designers considered the challenging geotechnical conditions during design; however, many problems occurred during construction of the first bore that led to over-excavation, grade deviation, and landslide mobilization. The lessons learned from the problems encountered during the first bore were applied to the construction of the second bore, which was completed without any significant problems.

**Reference:**

Dan Hammer, Mukilteo Water and Wastewater District (425) 355-3355.

