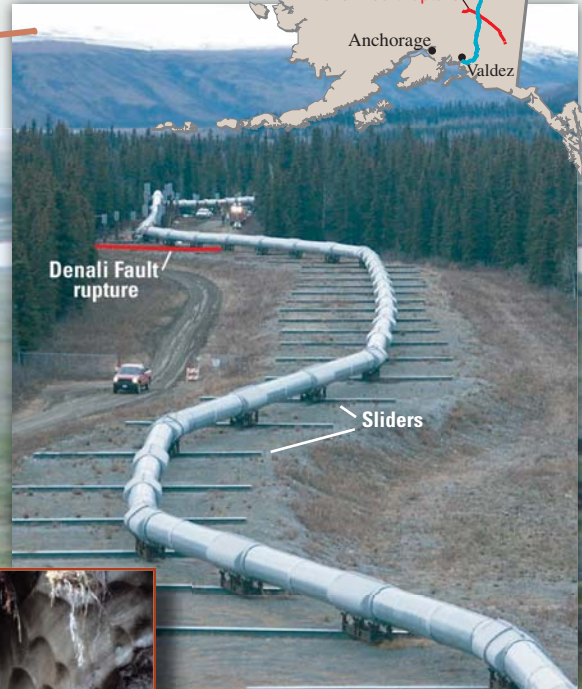
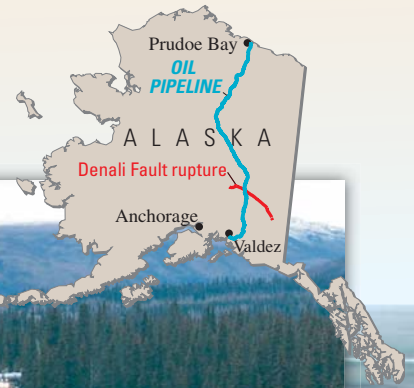


# Hot Oil, Frozen Ground, and Earthquakes

The Trans-Alaska Pipeline story—so far, so good!

By George Gryc, Arthur Lachenbruch, and Robert Page, Scientists Emeriti



- The 1968 discovery of North America's largest oil field on the Arctic coast posed the challenge of an 800-mile pipeline to carry hot oil across mountains, rivers, and the giant Denali Fault
- The oil industry's plan was to bury the hot pipeline, even through extensive tracts of permafrost (frozen ground)
- After USGS scientists raised the alarm about hazards to the pipeline and the environment, a USGS working group set performance requirements for the pipeline
- Redesign of the pipeline—elevated over ice-rich permafrost and set on "sliders" across the Denali Fault—delayed the project 2 years and increased its cost from \$900 million to \$8 billion
- When the Denali Fault slipped 14 feet under the pipeline in a powerful 2002 quake, the design worked—no oil was spilled!
- The story of the Trans-Alaska Pipeline has been a complex battle of scientific, economic, safety, environmental, and political concerns—what lessons can we learn from it?

**Thursday, October 28, 2004, 7:00 p.m.**  
**USGS, Conference Room A, Bldg. 3, Menlo Park, California**

The Earth Science Information Center (Map and Publication Sales) in Building Three will remain open until 7:00 p.m. on the evening of the lecture. Map for lecture site on reverse. For information on USGS public events, call (650) 329-5000 or visit our website at <http://online.wr.usgs.gov/calendar/>

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