

# OUTSTANDING GEOLOGIC FEATURE OF PENNSYLVANIA

## OIL SEEPS, VENANGO COUNTY

Stuart O. Reese, 2016



### Location

Oil Creek State Park, Venango Co., Oil Creek Twp., lat: 41.51511, lon: -79.68103 (Petroleum Center parking); Titusville South 7.5-minute quadrangle



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Above: A show of oil in Oil Creek.

Right: Oil Creek flows to the south through Oil Creek State Park.

Photographs by Jim Shaulis, Pennsylvania Geological Survey.



### Geology

Seeps and springs of naturally oozing oil gave Oil Creek its name. The seeps occurred in abundant enough quantity that American Indians could skim the oil from the surface of the water. Oil Creek meanders about 18 miles from Titusville southward to its confluence with the Allegheny River at Oil City. “Colonel” Edwin L. Drake rightly guessed that a well in this area could provide commercial quantities of oil. He drilled the first oil well in 1859 beside Oil Creek, 3 miles south of Titusville. The thousands of oil wells that followed Drake’s well extracted large quantities of shallow oil and reduced pressures so that the extensive seeps in Oil Creek are no longer seen.

Exposed bedrock in Oil Creek valley includes units from the Lower Mississippian Corry Sandstone through the Upper Devonian Riceville Formation. Drake’s well penetrated a thin, oil-bearing sandstone layer in the dominant shale of the Riceville Formation. Below this unit is the Venango Group, a complex mix of siltstone, shale, and sandstone. The Venango sandstones are thick, porous, and permeable, and they are the chief reservoir rocks for shallow oil in Venango County.

### Recommended Reading

Flaherty, K. J., and Flaherty, Thomas, III, 2014; Oil and gas in Pennsylvania (3rd ed.): Pennsylvania Geological Survey, 4th ser., [Educational Series 8](#), 36 p.

Harper, J. A., 1998, Oil Creek State Park, Venango County—Ice and oil shape the land: Pennsylvania Geological Survey, 4th ser., [Trail of Geology 16-022.0](#), 12 p.

Pennsylvania Geological Survey, 1998, [Pennsylvania Geology](#): Pennsylvania Geological Survey, 4th ser., Pennsylvania Geology, v. 29, no. 1, 32 p. [Special edition featuring the Oil Heritage Region.]

[Oil Creek State Park](#) web page of DCNR.