

# **Practical Prospecting: The Past, Present, and Future**

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## **Abstract**

The oil and gas exploration and production industry is one of the world's largest industries, and the industry has cycled through many changes since retired railroad conductor Edwin Drake struck oil in 1859 in Titusville, Pennsylvania and touched off the modern oil industry. There may be no other industry today that demands a more diverse set of human, technological, scientific and political, capabilities than the oil and gas exploration and production industry. Competition for natural resources has driven companies to explore and produce in harsh, remote and even hostile locations, and develop modern technologies to overcome and develop the modern era of the industry. And as the environment grows more diverse and unforgiving and the challenges more complex, the skilled prospectors are aging and are growing scarce. Currently the industry is seeing an upturn, but with price fluctuations, industry and technology challenges the industry has seen its share of good and bad times. As the oil and gas industry evolves into this next phase of oil and gas development, a phase predicated by the use of closely spaced horizontal wells that are drilled into low permeability formations and the extraction of oil and gas are enhanced with the application of hydraulic stimulation (or permeability enhancement), there are many new obstacles to overcome.

For the first of many decades, the industry was focused on generating individual prospects for developing oil and gas. Early oil and gas prospectors would take geologic ideas, do the research, expand and map the prospects, acquire geophysical support data, seek approvals, acquire leases and then permit and drill the wells. As completion technologies have changed (i.e. hydraulic stimulation) the modern prospector appears to be going by the way-side; or has the prospectors job changed? What technologies are expected from this change in the industry and how does this affect the modern prospect generator? How does the industry maintain the skills for future prospect generators to be fostered, mentored and matured? A look back at the industry timeline and a review of a few of the modern mega-giant unconventional resource plays may answer these questions and help advance prospectors for this and even the next age of the oil and gas industry.