

## **Is There a Resource Base in Lower 48 Frontiers?**

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The U. S. Lower 48 is maturely drilled by international standards, with a current median field discovery size around 1 MMBOE (Energy Information Administration). Since 1975, over 130,000 exploratory wells found 22 BBOE; 23% of these wildcats were completed, but less than 2% found fields >1 MMBOE. What criteria define a Lower 48 Frontier? What is frontier discovery performance since 1975; is it any better than the overall average and is it an indicator of future trends?

Let's consider four different categories of frontiers:

**SPARSELY DRILLED AREAS** (about 1 well per 9 square miles, or 100 wildcats per 1/2 degree latitude/longitude grid): 9% of total exploratory wells found 24% of total reserves discovered, with 5 MMBOE median field size.

**RECENTLY DENSELY DRILLED AREAS** (sparsely drilled prior to 1975): 12% of total exploratory wells found 26% of total reserves with 4 MMBOE median field size.

**DEEPER STRATA IN MATURE AREAS:** 7% of total exploratory wells, found 8% of total reserves with 3 MMBOE median field size.

**DEPTHS GREATER THAN 15,000'** prime: only 3% of exploratory wells found 9% of total reserves with 6 MMBOE median field sizes.

Besides finding larger median field sizes, 24% of frontier wildcats were completed and 3% found fields >1 MMBOE.

Since 1975, only 30% of U.S. wildcats tested these Lower 48 frontier categories yet found 67% of total reserves discovered. Is there a resource base in Lower 48 Frontiers? Yes -- in sparsely drilled basins, untested deeper horizons, and especially in sediments below 15000'