

ENDICOTT, ENDICOTT OIL

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Milne Point, Schrader Bluff Oil

Summary

The Schrader Bluff Oil Pool at Milne Point was discovered in 1969 by the Social Kavearak Pt. 32-25 well. The pool was initially delineated and then developed by Conoco, Inc. through drilling programs that began in 1989. Currently, more than 400 well bores penetrate the pool.¹ Regular production began during March 1991, peaked at an average rate of 3,700 barrels of oil per day ("bopd") in October 1991, and declined to an average of about 2,850 bopd (about 15% of MPU production) by mid-1993.² In early 1994, BP became operator of the Milne Point Unit ("MPU") and began an aggressive development program. By June 1996, development drilling at E-Pad and additional wells at H- and J-Pads caused production to increase steadily until it reached 12,000 bopd in April 2002. During September 2002, BP's extensive S-Pad development began production, and Schrader Bluff production immediately jumped to 20,000 bopd. Production from the pool peaked at 23,922 bopd in October 2003, and it currently averages about 20,650 bopd, or about 40% of current MPU production. The Schrader Bluff Oil Pool is developed on 10-acre spacing.³

Geology

The Schrader Bluff Oil Pool ("SBOP") was originally defined in the Milne Point Unit ("MPU") A-1 well. However, a more typical and representative section for the pool lies between 4,100 and 4,726 feet measured depth in MPU G-1. The pool occurs within the Schrader Bluff Formation, which was deposited in the Late Cretaceous (Maastrichtian). At Milne Point, the Schrader Bluff is divided into two stratigraphic intervals designated, from oldest to youngest, the "O-sands" and the "N-sands." The O-sands consist of very fine to fine-grained sandstone interbedded with siltstone and mudstone that were deposited under shallow marine conditions in the distal portion of a delta. The overlying N-Sands were deposited within a muddy marine shelf system. Mudstone and siltstone dominate the lower portion of this interval, but the sediments coarsen upward, becoming fine to medium grained sandstone that dominates the upper part of the N-Sand interval. The SBOP occurs within a homocline that dips 1 to 2 degrees to the east-northeast, and lies between 3,400 and 5,200 feet true vertical feet below sea level. NW and NE-trending faults compartmentalize the pool. Reservoir intervals average 28% in porosity and 171 md in permeability. Total estimated original oil in place ("OOIP") for the SBOP at Milne Point ranges from 1.25 to 2 billion barrels, with an estimated solution gas in place of between 1.3 to 2.1 billion cubic feet. Within the S-Pad area, the current OOIP estimate for both N and O sands ranges from 247 to 363 million barrels.⁴

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¹ Alaska Oil and Gas Conservation Commission, 2004, Well Information Database

² Alaska Oil and Gas Conservation Commission, 2004, Production Database:

<http://www.aogcc.alaska.gov/publicdb.htm>

³ Alaska Oil and Gas Conservation Commission, 2002, Conservation Order No. 477, Milne Point Field - Milne Point Unit, Schrader Bluff Oil Pool: http://www.aogcc.alaska.gov/orders/co/co400_499/co477.htm

⁴ Alaska Oil and Gas Conservation Commission, 2002, Conservation Order No. 477, Milne Point Field - Milne Point Unit, Schrader Bluff Oil Pool: http://www.aogcc.alaska.gov/orders/co/co400_499/co477.htm