

# WHAT'S HAPPENING AT PARSHALL, NORTH DAKOTA

By Julie LeFever

Oil company interest in the Williston Basin was focused on Richland County, Montana for almost 6 years as the Bakken Formation in Elm Coulee Field was discovered and developed. Success in this area, coupled with the high price of crude oil, encouraged companies to drill the Bakken Formation in other portions of the basin in both the United States and Canada.

The Bakken play in the North Dakota portion of the Williston Basin started later than the Montana play with the completion of the first well, Continental Resources, Inc. - #1-17R Robert Heuer (SESE Sec. 17, T161N, R95W), in March 2004. Wells drilled on this side of the basin had their own learning curve; they did not produce like the wells in Montana. By May 2006, activity and interest in the play was slowing. Approximately 63 wells had been drilled ranging in cost from \$2.2 to 4.5 million dollars each with only 9 having the potential to return their investment. Additionally, disappointing results were occurring in the horizontal Bakken wells in Canada.

Recent success in the Bakken Formation has renewed interest and focused the play on Mountrail County in North Dakota. Several new horizontal wells have been drilled in an area that previously had limited production and scattered dry holes. The county has several new fields. Currently, the most significant discovery in the area is the Parshall Field (fig. 1)

The Parshall Field was discovered with the drilling and completion of EOG Resources #1-36 Parshall well (SESE Sec. 36, T153N, R90W) for 463 barrels of oil per day (bopd). It is producing from a single lateral leg oriented in a northwesterly direction in the middle member of the Bakken Formation (fig. 2). Since that time, EOG Resources has drilled and completed 11 wells in the Parshall Field with an average initial production potential of 1198 bopd (Table 1). To date, the limits of the field have not been defined by drilling. The Parshall Field is a significant discovery. Mark Papa<sup>1</sup>, the corporate executive officer of EOG Resources, Inc., has announced reserve estimates for the field of 80 million barrels of oil. They have currently drilled 22 wells on 640-acre spacing with production reported to be as high as 2000 bopd (fig. 3). They also plan to increase the number of rigs that EOG is running from 6 to 8 in early 2008. The success of these wells has certainly increased the interest in the Bakken among other companies. Future drilling in the area will determine whether this is a localized "sweet spot" with great production or whether the high rates measured in the Parshall Field can be duplicated elsewhere in the Bakken.

<sup>1</sup> Bank of America Energy Conference, November 15, 2007 ([http://www.eogresources.com/investors/investor\\_pres.html](http://www.eogresources.com/investors/investor_pres.html))

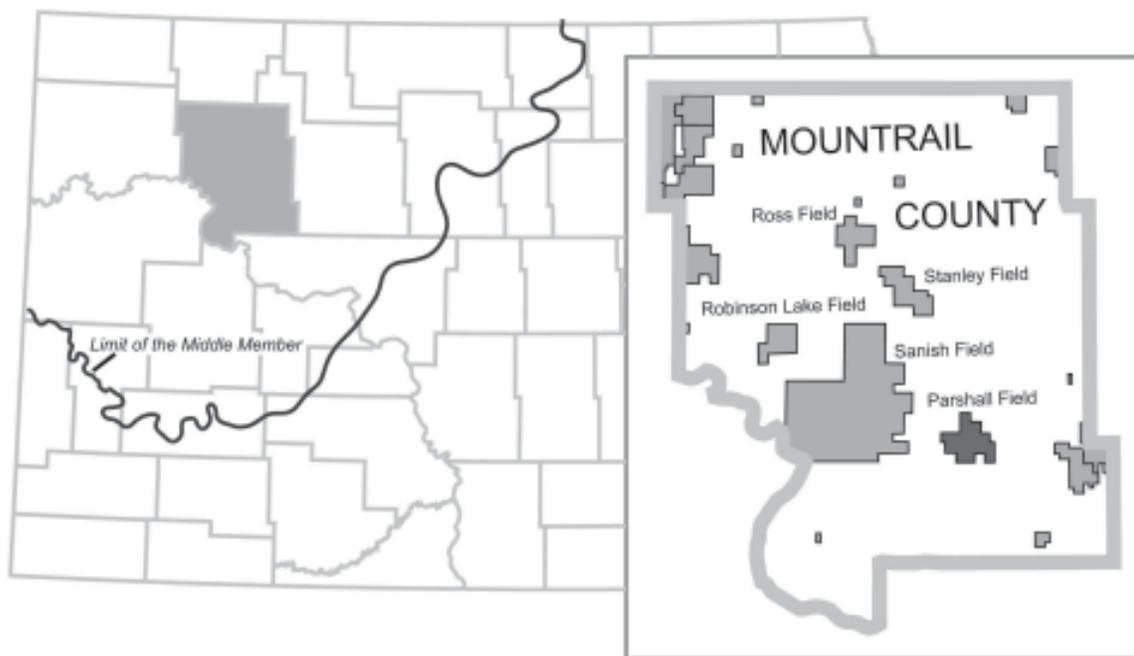


Figure 1. Index Map showing the location of the new fields in Mountrail County, North Dakota.

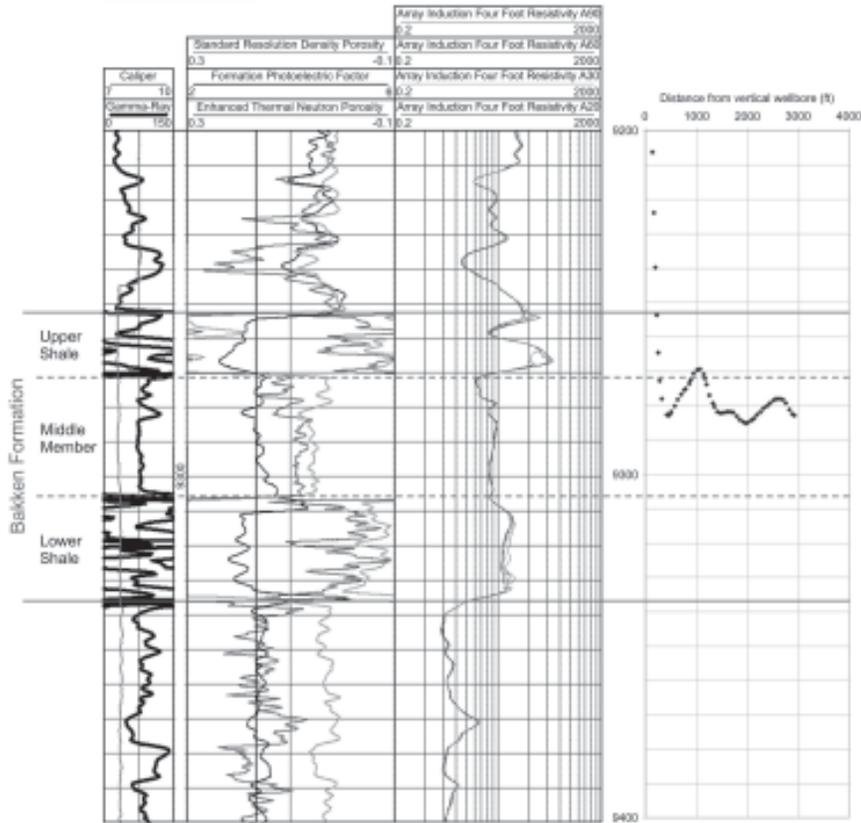


Figure 2. Wireline log from the EOG Resources #2-36 Parshall well (NWNW Sec. 36, T153N, R90W) with the Bakken Formation indicated. Also indicated on the right is the location of the lateral leg within the middle member (diagram courtesy of S. Nordeng).



Figure 3. Two oil leases in southern Mountrail County. Photograph taken looking northeast. The wells in this area are on 640-acre spacing, but these two leases are close together because the horizontal leg of the oil well to the left was drilled from southeast to northwest and the horizontal leg of the oil well on the right was drilled just the opposite, from northwest to southeast.

Table I EOG Resources, Inc. wells in the Parshall Field

Completion Date	Initial Production Test			Cumulative Production			Location
	Oil	Gas	Water	Oil	Gas	Water	
	(Bbls)	(MCF)	(Bbls)	(Bbls)	(MCF)	(Bbls)	
5/26/2006	463	128	0	94186	33200	126	SESE 36-153-90
9/27/2006	883	250	220	105080	35316	643	NWNW 36-153-90
11/17/2006	1800	457	0	124121	44248	64	SWSE 3-152-90
1/19/2007	1553	816	0	96007	32593	21	NWNW 25-153-90
3/15/2007	1487	384	0	89108	27703	0	LOT 4 2-152-90
4/29/2007	918	384	682	113653	45218	0	NWNW 35-153-90
5/15/2007	922	405	1165	69711	24046	0	SWSE 31-153-89
6/13/2007	870	265	337	82653	29937	0	NWNW 24-153-90
6/24/2007	1675	554	1317	80208	27770	0	NWNW 10-152-90
7/3/2007	1285	404	1511	67153	23479	0	LOT 3 5-152-90
9/2/2007	1329	329	1335	43683	12877	0	SWSE 32-153-89
<b>Average</b>	<b>1198</b>	<b>398</b>	<b>597</b>	<b>965563</b>	<b>336387</b>	<b>854</b>	<b>Total</b>