

**REASONABLE FORESEEABLE DEVELOPMENT SCENARIO FOR
OIL AND GAS ACTIVITIES
IN THE BLM WHITE RIVER FIELD OFFICE:
RIO BLANCO, MOFFAT AND GARFIELD COUNTIES, COLORADO**

I. EXECUTIVE SUMMARY

The White River Field Office (WRFO) encompasses 2.675 million acres of land located in northwestern Colorado, primarily in Rio Blanco County, but also includes a small portion of Garfield and Moffat counties. Approximately 2.2 million acres (83%) overlies federal mineral estate of which approximately 1.6 million acres, or 80% of the federal lands available for oil and gas leasing, are currently under federal oil and gas leases. Nearly 294,899 acres of federal lands, including lands in the National Park System, USFS designated wilderness areas and BLM wilderness study areas are not available for oil and gas leasing.

The WRFO has a long history of oil and gas drilling and production activity, with nearly 5,800 wells having been drilled since the early 1920's. Many of those wells are located on the western portion of the WRFO in the Rangely oil field. Extensive natural gas resources have also long been known to exist in the geologic Piceance Basin covering much of the WRFO. However, past conventional drilling and extraction technologies have not been successful in producing the unique geologic traps containing the gas. This factor combined with the historic low prices and demand for natural gas, means this large reserve has remained essentially untapped. Only in the past several years has new technology been developed that, combined with much greater demand for and higher natural gas prices, has stimulated significant interest by the energy industry in developing those extensive natural gas resources. In concert with these factors, two new interstate natural gas pipelines have been completed into the northern Piceance Basin in just the last two years which will allow the gas to be moved to markets around the country.

Since 1997, when the current Resource Management Plan was completed, the White River Field Office has experienced a three-fold increase in oil and gas drilling activity, much of it located on public lands administered by the BLM. In fact, most of that growth has occurred over the past four years. The number of drilling permits approved by the WRFO has risen from 58 in 2001 to over 200 in 2006. Industry has been submitting increasing numbers of multiple well projects over the past 4 years for the area and discussions with energy companies indicates a long term and continuing significant increase in drilling applications for the WRFO. In this context, BLM decided that an amendment of the 1997 Resource Management Plan was required to address the potential environmental and socioeconomic impacts of such development, determine how best to protect other important resource values through mitigation and best management practices, and how to best manage the timing and location of this significantly increasing energy development activity.

This Reasonable Foreseeable Development (RFD) scenario projects the maximum levels and types of industry activity, and the associated surface disturbance that might occur on all land ownerships in the WRFO during the twenty year period from 2009 through 2028. The RFD scenario uses the following key assumptions: 1) all potentially productive areas, except those areas designated as closed to leasing by law, regulation or executive order, are open to leasing and development; and 2) only standard lease terms and conditions would be imposed, affording minimum protections to other important resource values. These assumptions, while unrealistic, are necessary to project the maximum potential levels of development activity for environmental analysis purposes and provide full disclosure to the public. Through the public land use planning and NEPA process, BLM will ultimately determine how much and when land is made available for development and will require specific lease stipulations, best management practices and Conditions Of Approval (COA) that will protect other important resource values. The RFD scenario provides the data to be analyzed under various alternatives in the National Environmental Policy Act (NEPA), Environmental Impact Statement (EIS) analysis document supporting the RMP Amendment. This analysis will disclose to the public the potential impacts of a full range of development scenarios as well as possible effects that a range of discretionary management actions to protect other resource values will have in the context of projected possible oil and gas activity. The final decision for the RMP Amendment will determine the appropriate balance of protecting other important resource values, such as wildlife habitat, public health and safety, and local community concerns with the need to meet the nation's energy demands.

Forecasting how much drilling activity that could possibly occur in the next twenty years on federal, state and private lands within WRFO boundaries is largely speculative, and is primarily dependent upon drilling rig availability, product pricing and domestic energy needs during this period in the WRFO. The drilling for oil has largely discontinued except for a modest infill drilling program for the next 15 years in the Rangely oil field. Further, there is a limited amount of coalbed methane (CBM) drilling activity ongoing in the western portion of WRFO lands that may increase modestly if an environmentally acceptable method to dispose of high volumes of produced water can be found. The drilling of oil wells and CBM wells is expected to account for only 5% of all future drilling activity in this RFD forecast. Very limited drilling is expected to occur on United States Forest Service lands (including portions of the White River National Forest) due to the low potential for hydrocarbons occurring in these portions of the WRFO.

The Mesaverde Play area for natural gas located in the northern Piceance Basin is in the early stages of development and actual production information from the operators is limited. The Mesaverde Play Area is characterized by Upper Cretaceous tight gas sand reservoirs occurring in a concentrated area involving 712,190 acres in the central portion of the field office in the northern Piceance Basin. Current development activities in the WRFO are an extension of the drilling taking place in the southern Piceance Basin, within the Glenwood Springs and Grand Junction Field Offices. The drilling of medium-deep to deep (9,000' to 16,500') Mesaverde wells, averaging 8 wells per pad, is anticipated to be the dominant activity in the foreseeable future. Natural gas operators active in the northern Piceance Basin are planning for the aggressive drilling and development of the Mesaverde Play Area. The drilling of Mesaverde natural gas wells is projected to account for 95% of all future drilling activity in the WRFO.

The majority of northern Piceance Basin natural gas operators are expected to be drilling on 10 acre downhole spacing by 2016. The numbers of new drilling wells are expected to increase continuously each year from 2009 through 2028. In preparation of this analysis, WRFO technical staff took into account the historical drilling activity of similar medium-deep gas drilling located in 1) western Wyoming's Jonah and Pinedale Anticline areas of the Green River Basin, and 2) Colorado's southern Piceance Basin. An analysis of anticipated drilling constraints was also factored into the final projections.

WRFO technical staff also took into account an industry development forecast. This forecast consisted of the original projections from the oil companies for a total of 2,556 multiple well pads projected to be needed over a period of twenty years. The associated surface disturbance for this level of activity was estimated to be 31,257 acres or about 4.4% of the Mesaverde Play Area, or 1.2% of the total land base in the WRFO. The description and analysis for this scenario is attached to this report as an addendum.

The WRFO RFD scenario projects the potential need for 2,146 multiple well pads (averaging 8 wells per pad) by the end of 2028 to develop the natural gas resource to the maximum extent while minimizing protection of other resource values. Detailed further, 1716 multiple well pads are projected to be potentially needed on Federal lands and 430 multiple well pads potentially on fee lands (no wells are projected to be drilled on State of Colorado lands due to the limited acreage that exists). With this level of projected possible activity, a cumulative total of 26,465 acres of associated surface disturbance (construction of well pads, roads, gas plants, pipelines, and other infrastructure) could be expected which translates to about 3.7% of the Mesaverde Play Area, or 1% of the total land base of the WRFO.

It is critical to remember that forecasting how much drilling activity could possibly occur in the next twenty years on federal, state and private lands within WRFO boundaries is highly speculative, and is primarily dependent upon the economics of natural gas markets, the national demand for natural gas, and drilling rig availability during this period. All of these factors are subject to significant changes over time. At this time, the WRFO is processing on the order of 220 drilling permits per year. If this known rate were to continue over the next 20 years, there would be a need for only about 550 multiple well pads with an associated surface disturbance of 6,725 acres. Therefore the overall range of potential natural gas development activity within the WRFO for the period 2009 - 2028 could fall within a range of between 550 multiple well pads and 6,725 acres of associated disturbance and 2,556 multiple well pads and 31,257 acres of associated surface disturbance. Again, the upper range forecast makes unrealistic assumptions of imposing minimum protections for other resources and all potentially productive lands leased and developed to the maximum possible extent. The bottom line is that through the public land use planning and NEPA processes, BLM will ultimately determine how much and when and where development can occur and will require specific lease stipulations, best management practices and Conditions Of Approval (COA) that will protect other important resource values. The BLM's final revised RMP will determine the appropriate balance of protecting other important resource values, such as wildlife habitat, ensuring public health and safety, and addressing local community concerns with meeting the nation's energy demands.