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# United States Department of the Interior

BUREAU OF LAND MANAGEMENT  
Colorado State Office  
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Lakewood, Colorado 80215-7093

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FEB 07 2006

Mr. Charles S. Richmond  
2250 Highway 50  
Delta, Colorado 81416

Dear Mr. Richmond:

We are in receipt of your October 24, 2005, request to review the drilling forecast contained in the August 27, 2004, Reasonable Foreseeable Development (RFD) prepared by the Bureau of Land Management (BLM) for the Grand Mesa, Uncompahgre and Gunnison Forests (GMUG). Specifically, you requested that we review the drilling forecast base on current conditions. You state that public comment received has raised concerns about the accuracy of the RFD drilling forecast in light of current gas prices and other factors. Your request came with comments from oil and gas operators SG Interests I, Ltd. (SG), Gunnison Energy Corporation (GEC), and Riviera Drilling and Exploration Company.

We have reviewed the comments you supplied and have reviewed the gas price and drilling history since the completion of the RFD. In addition, a meeting was held on January 5, 2006, with SG, GEC, Forest Service (FS) and the BLM in attendance to allow SG to provide their plans for development that they referred to in their comments. Attachment 1 provides a summary of the comments submitted by the operators and a response to each comment, as well as the meeting summary which is confidential. Attachment 2 provides the original exploration and development trends included in the RFD along with an update as denoted under each operator's summary. Attachment 3 provides a geologic update based on CBNG data submitted by SG. Figure 1 represents a plot of GMUG spuds, GMUG-area<sup>1</sup> spuds and gas price.

A review of the drilling activity reveals that GMUG-area drilling, and gas prices, have recently incline sharply. However, according to recent Department of Energy projections, the gas price is expected to drop and continue along the RFD-forecasted 2 percent incline within the next 6 or 7 years. According to Dwights Energy Data, drilling in the GMUG alone has been slow to catch up with only one well (Leon Lake #5) being drilled on the GMUG since 1995. The RFD included 15 wells recently proposed under a Geographic Area Proposal submitted by GEC. We have been informed that the 15 wells should be 18 wells drilled from 15 well locations.

<sup>1</sup> GMUG area includes the GMUG and a 6-mile buffer around the GMUG.

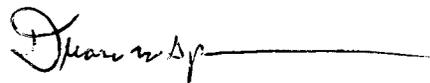
In summary, we find that the RFD Projections sections of the August 27, 2004, RFD should be amended as follows:

1. The original 15-year forecast of 45 wells to develop the sandstone reservoirs discussed in Items #1 and #2 of the RFD Projections section of the RFD should be increased slightly to 48 sandstone reservoir wells to cover the three additional wells described in the previous paragraph.
2. The additional information provided by GEC and SG during the meeting support an additional 40 Coal Bed Natural Gas (CBNG) wells in the Bull Mountain Area of the Grand Mesa National Forest (GMNF). This should be added to the 48 wells in Item #1 of the RFD Projections section for a total of 88 sandstone and CBNG wells.
3. Each CBNG well is estimated to produce from the Cameo Coal and V-seam (South Canyon Coal) sections. Based on area and San Juan Basin CBNG wells, combined zone rates for a typical CBNG well could initially produce at 1,000 MCFGPD<sup>2</sup>, incline to approximately 2,000 MCFGPD over a couple of years, and remain constant for three years then decline and ultimately produce about 5 BCF of gas in 15 years. Initial production of water could be about 1,000 BWPD and ultimately produce 320,000 BW. This information should be added to Item #9 of the RFD Projections section.
4. The last two sentences of Item #6 should be deleted.

All other aspects of the RFD Projections section will remain the same.

If you have any questions regarding this matter, please contact Pat Gallagher at 303 985 4236.

Sincerely,



Duane Spencer  
Chief, Fluid Minerals

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<sup>2</sup> M=1,000; B=1,000,000,000; CF=Cubic Feet; G=Gas; P=Per; D=Day; B=Barrels; W=Water

## Recent Exploration/Development Trends – 12/20/05 Update

Recent drilling activity and proposed exploration or development activities in the vicinity of the GMUG may influence the projected development in portions of the GMUG. As of March 2004, the following was noted:

Gunnison Energy Corporation (GEC) – Eight APDs (6 FS and 2 BLM) were submitted in 2003 and are approved for exploration in an area north of Paonia, Somerset, in the Surface Creek area northeast of Cedaredge. Four wells were drilled on fee lands east of Cedaredge in 2003. Based on significant gas found in Mesaverde Group sands in the Spaulding Peak No. 1-24 well (northeast of Cedaredge), GEC is proposing 4 additional development wells on fee lands just south of the Forest boundary. They will be identified as the 1-23, 2-23, 2-24, and 3-24 wells. The wells would be located around the producing Spaulding Peak well, spaced 160 acres apart. If productive, gathering lines and a compressor would be constructed to connect the wells into the existing Rocky Mountain Natural Gas pipeline at Cedaredge. Drill pads would measure 180' x 250', and reclaimed back to 150' x 200' size when production begins. The other 3 drilled wells are currently being tested. Through an agreement between GEC and several special interest groups, GEC has agreed to postpone plans for recompleting the Leon Lake No. 2 well into the coal beds for coal bed natural gas exploration. GEC also has an interest in the potential for producing coal mine gas from vent holes at its closed Sanborn Creek Mine. GEC is also in the process of completing a Geographic Area Proposal that would include 15 wells north of the Spaulding Creek area on the GMNF. The wells are projected to be drilled in years 2006 and 2007.

**Update on GEC (From COGCC website):** The 4 development wells on fee lands near the Spaulding Peak well were drilled. Two of the wells are in production (sections 23 and 24, T12S, R94W). Of the 6 APDs approved on the GMUG in 2003, 4 of the locations are reported as abandoned. The Leon Lake 4 is shown as planned (2005), and Leon Lake 5 was drilled in the summer of 2005 with no other information. The other fee wells drilled east of Cedaredge are not producing with future status unknown.

There has been no movement on the Leon Lake 2 recompletion. GMUG is analyzing 18 exploratory wells from 15 locations in the Spaulding peak Area Wide Plan, implementation would be 3 to 5 wells over a 3 to 5 year period.

GEC also drilled 2 private wells in 2005, 4 private well in 2004 and 1 private well in 2005. All these wells were on private land in Delta County. GEC also received approvals from COGCC and Delta County for additional wells in 2005, and has plans for more wells on private lands. Check with GEC for the details. GEC has also been in contact with the UFO about potential drilling on BLM lands adjacent to the GMUG.

BDS International Corporation (BDS) has submitted six production well APDs in the Ragged Mountain Unit, which would be connected to the existing gathering system. An application from SG Interests proposes a pipeline to connect fee wells into the existing Ragged Mountain Gas Gathering System.

**Update on BDS:** BDS declared bankruptcy in 2005, and their existing wells were taken over by SG Interests. The Ragged Mountain Pipeline was assumed by Gunnison Energy. The 6 APDs BDS filed have been withdrawn.

Strachan Exploration Inc submitted APDs in 2003 for 2 wells in section 2, T9S, R92W to explore Mesaverde Group reservoirs. The wells would be located near Hightower Mountain in the adjacent White River national Forest about 1-2 miles from the GMUG.

**Update on Strachan (From COGCC website):** The Strachan interests were taken over by Laramie Energy. There is only 1 well producing in section 2, but 8 additional wells are proposed off 2 pads (in section 2 – White River National Forest).

**Update on Laramie Energy:**

Laramie has submitted plans of development to BLM for the Brush Creek area (northeast of Collbran) and Plateau Field (southeast of Collbran). For Brush Creek, approximately 12 wells (bottom locations) are located within 1 mile of the GMUG. For Plateau Field, approximately 7 future bottom hole locations are shown on the plan map. Many more wells are planned in these areas, but are located further than 1 mile from GMUG boundary. There are no current plans for drilling in the GMUG.

EnCana Oil and Gas operates the Hunter Mesa Unit in the Mamm Creek Field. The unit extends into White River Forest. The operator has proposed two exploration wells along the southern edge of the unit in section 15, T8S, R93W, approximately 1 mile from the GMUG. An APD was also submitted in 2003 for a well in section 11.

EnCana also operates the Orchard Unit and recently completed a well into Mesaverde Group reservoirs in section 16, T8S, R96W, located about 5 miles from the GMUG. A new APD in 2004 proposes a well in section 28, about 4 miles from the GMUG boundary.

**Update on Encana (From COGCC website):** There is no change in proposed well in section 15 (Hunter Mesa). The well proposed in section 11 has been drilled and is in production (1 ½ mile from GMUG). The well proposed in section 28 (Orchard Unit area) was drilled and briefly produced in 2005. No further development indicated.

CDX Rockies LLC submitted an APD in 2002 for exploration in the Cameo coal zone at a location about ¼ mile outside the GMUG.

Evertson Oil Company drilled 5 exploration wells in 2003 to test the Dakota Sandstone potential. They are located in the Whitewater Basin area, about 1-2 miles from the extreme west edge of Grand Mesa Forest. The drilling produced mixed results, with 3 of the wells being plugged. The other wells were completed for connecting up to the nearby Transcolorado Pipeline.

**Update on Evertson (From COGCC website):** The Evertson interests were taken over by South Oil. In 2005, South Oil proposed 3 wells in sections 32 and 33, T12S, R97W., less than 1 mile from GMUG.

Mesa Hydrocarbons submitted an APD in 2001 for a proposed well in section 7, T9S, R92W, which would target the Mesaverde Group reservoirs. The well is located < 1 mile from the GMUG boundary. Another APD (section 15, T9S, R93W) in the Buzzard Creek Field was submitted by EnCana in 2002.

**Update on Mesa Hydrocarbons (From COGCC website):** The proposed well in section 7 is shown as an abandoned location. No wells are shown in section 15 or nearby. There is an Encana producing well in the GMUG in section 16, T9S, R92W.

Willsource Enterprises submitted several APDs in 2002 along the flank of the Divide Creek Anticline (Mesaverde Group target), the nearest located about 2 miles from the GMUG boundary in section 20, T9S, R90W.

**Update on Willsource (From COGCC website):** The Willsource interests were apparently taken over by Delta Petroleum. In 2005, the well proposed in section 20 was drilled, and is currently shut-in. No other new wells nearby.

**Update on Delta Petroleum:**

BLM is currently processing 4 APDs from Delta for locations approximately 1 mile from the GMUG. In addition, 12 more APDs will be submitted as part of their plan of development. From the COGCC website, there are about 13 fee wells proposed also. Therefore, the total number of wells would be about 29, all located within 1/2 to 1 1/2 miles of the GMUG (T9 and 10S, R93W). There are no current plans for drilling in the GMUG.

SG Interests drilled three wells on private lands in Section 20, T 11S, R 89W, and section 13, T 11 S, R 90W. SG Interests reports that the well testing has shown encouraging results from the coal seams, and they are awaiting test results from the sandstones.

**Update on SG Interests (From COGCC website):** The Bull Mountain Unit is on private and BLM lands adjacent to GMUG. SG assumed BDSs interest in 4 wells -- Henderson No. 1, Federal 10-8, Federal 1-25 and Federal 1-26. SG has filed APDs (Nov. 2005) to drill 4 new wells on these existing pads. There were 3 obligation wells drilled for the Bull Mountain Unit. They are the Jacobs 29-1, located in Section 29 of Township 11 S, Range 89 W, the Falcon Seaboard 11-90-12#1, located in section 12 of Township 11 S, Range 90 W and the Federal 11-90-24#1, located in Section 24 of Township 11 S, Range 90 W. These wells have been drilled and completed and show good tests from the coal seams. Their unit plan of development includes 7 wells for 2005.

Recent interest has been expressed in drilling wells on existing leases on the GMUG in the Hamilton Creek Field (Paradox Basin)

**Update on Hamilton Creek (From COGCC website):** The well on the GMUG east of Hamilton Creek field was still shown as proposed in October 2005, and there were no other new proposals nearby. Encana filed an APD in Nov. 2004 for a production well on NFS lands east of

the Hamilton creek field. They formed an exploration unit including a State lease. Encana has indicated they could drill 4 additional wells from this one pad (for 5 total).

**Recent Unit Agreement Summaries.** There are five Federal oil and gas units that contain lands within the GMNF and GUNF. The Ragged Mountain, Coal Basin, Old Man Mountain, Leon Lake and Bull Mountain are established units, while the Aransas, Narrows, Collier Creek and Acapulco proved unsuccessful and have been terminated.

**Update on the Bull Mountain Unit** - See SG Interests update above.

AMOCO Production Company formed the Megas Unit during 1986 to test the degasification potential and develop CBNG from the Bowie coal member of the Mesaverde in the southern Piceance basin. The unit area included over 150,000 acres and was one of the largest units approved in Colorado. The lands included in the unit were considered by AMOCO to be optimum for the production of CBNG. The unit was subsequently terminated due to several factors, which included economics, well performance and seasonal access problems.

**Pipelines.** The Ragged Mountain Unit has a gas gathering System in place for the 12 producing wells. The gathering system connects to the Northwest Gas Pipeline that runs north off of the GMUG and onto the White River National Forest. BDS International/Paradox Partners own and operate the gas gathering system and pipeline.

**Update:** GEC assumed the ragged Mtn Pipeline after BDS bankruptcy. GEC has done work on a mobile compressor on the line, and has added a JT skid.

The Paonia RD has received an application from SG Interests for a pipeline to connect to the existing Ragged Mountain Gas Gathering system. This pipeline is proposed to connect three wells on private lands in Section 20, T 11S, R 89W, and section 13, T 11 S, R 90W to the system. SG Interests reports that the well testing has shown encouraging results from the coal seams, and they are awaiting test results from the sandstones.

**Update:** This pipeline, known as the Henderson Lateral was under construction in December 2005. The line connects wells on private lands through a compressor to be placed on private lands to the existing Ragged mtn. Line. In addition, The GMUG, White River NF and BLM – GSFO are analyzing a proposal from SG for a 20-inch pipeline that would run from the Bull Mtn. Unit to the West Divide Creek compressor station.

BDS has proposed connecting the production wells for which APDs have been submitted to the existing gathering system.

Riviera Drilling has also expressed interest in connecting the 11-90-3, 11-90-10 and the 11-90-17 to the existing gathering system. The Forest Service does not have a formal proposal for this. GEC has expressed interest in a pipeline running from the Sanborn Creek Mine in section 8, T 13 S, R 90W north to connect to a gas gathering system. The hook in point would be at the 30-4 well.

**Lands Currently Under Lease** According to the USFS, there are about 70,500 acres of land on the Paonia RD currently under lease for oil and gas. There are about 37,000 acres of land on the Grand Valley RD currently under lease for oil and gas (Piceance Basin). There are about 52,000 acres under lease on the Uncompahgre Plateau (Paradox Basin). There are currently 168 leases in the GMUG (131 leases within the Piceance and 37 leases and within the Paradox).<sup>3</sup>

Figure 15. Plat of currently active leases in the GMUG National Forests

**Pending Leases** According to the USFS, the GMUG currently has 131 individual oil and gas lease parcel requests, totaling about 177,800 acres, which represents 65% of the leased acreage. Fifty-three of these requests are on the Paonia RD, encompassing 75,800 acres. Sixty-two of the requests are on the Grand Valley RD, encompassing about 84,000 acres. Sixteen requests are on the Norwood RD, and encompass 18,000 acres.

Attachment 2-5

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<sup>3</sup> U:\GMUG\gmugleaseintersectpiceance2.lyr and gmugleaseintersectparadox2.lyr

## Coal Bed Natural Gas (CBNG) Update

This update is specific to the CBNG potential in the Coal Basin area related to SG development plans.

The primary targets for CBNG production in the Coal Basin area are the Cameo coals and the overlying V Seam within the Williams Fork Formation. The CBNG reservoir has been evaluated by SG using data from various sources, including the nearby Coal Basin mines, logging, sampling, and testing of wells, and coal desorption analyses. Within the area covered by existing data, the development potential is high based on the existence of laterally continuous thick coal beds, high gas contents, and good permeability and production rates. This would support the proposed development plans for CBNG wells within the GMUG lease acreage.

Although existing data supports the development plan, it should be noted that there is insufficient data to define the west and northwest limits of the CBNG reservoir. Increasing depth to coal toward the west and northwest is expected to affect coal permeability, and therefore productivity. As a rule, permeability decreases with depth based on increasing confining stresses on the rock. Natural fracturing may enhance permeability. USGS and industry studies in the southern part of the Piceance Basin have concluded that permeability may decrease to non-productive levels below a depth of about 7,000 feet. Within the lease area in T10S, R91W, the depth to coal increases toward the west and northwest based on regional dip and surface elevation changes. Depth to the Cameo coal is projected to range from about 6,000 feet in the southeast corner of the township to about 9,000 feet under Oil Well Mountain to the west. Approximately 5,000-6,000 acres of the SG acreage within the GMUG are projected to have coal overburden depths exceeding 7,000 feet. The productivity of new wells in this area would be less predictable with higher drilling risks involved.

Figure 1

**GMUG and GMUG Study Area  
Drilling and  
Natural wellhead gas price history and forecast**

