EXHIBIT 5

Bond Amount

It seems that the best case "market value" for the calculation of impacts to the coal estate or to the BLM as the owner of the coal is a comparison to coal gasification. Under that approach, royalties would be paid to the BLM under the coal gasification regulations and BLM guidance documents. This is the approach that Mr. Fred Crockett and Mr. Steven Wright took in their Analysis of the Impacts of Methane Farming on Federal Coal in the Powder River Basin, Wyoming dated March 11, 2010. That comprehensive analysis sets out what the BLM would recover if it were determined that the royalties from this process were owed to the coal estate under a coal lease. The analysis showed that under this "best case scenario" for the coal estate owner, the coal estate would be entitled to $0.08/mcf. Luca has reviewed the Instructional Memoranda Mr. Crockett relied on in that analysis and believes that Mr. Crockett has followed the most recent BLM instructions for how to calculate a coal gasification royalty. Of course, Mr. Crockett's analysis assumes 100% of the gas is new gas created by this process. While we don't currently know the exact percentage, we know a portion of the gas that will be produced is naturally occurring CBM gas that exists in the coal or would be created over time without Luca's technology. Luca contends that it is appropriate to reduce the $0.08/mcf in order to take into account the existing gas.

The same "Analysis of Impacts of Methane Farming on Federal Coal in the Powder River Basin" comes to the conclusion that the federal government would recover nearly triple the royalties under a gas lease that it would under a coal royalty. In areas where the federal government owns both the coal and the gas, Luca is paying the federal government three times the amount that it would receive if the compensation were based on the impact to the coal. As a result, the bond and any impact payment should only apply to those areas where the federal government owns the coal and some other entity owns the gas estate.

The Rough Draw Unit Area contains 283 wells. Of that total 228 are in areas with federal coal and private gas. Based on prior testing of our technology in this area, we expect that in the first year, our technology will increase production from those wells by an average 1.6 mcf/day. A simple calculation of 228 wells x 1.6 mcf x 365 days x $0.08 = $10,652. Luca proposes to post $10,652 as the initial bond payment for this permit to cover the first year's production. At the end of the first year, Luca will compare actual gas creation with its estimated gas creation and if the actual gas created exceeded the amount predicted, Luca will increase the bond amount to cover actual gas production. Luca expects gas creation to increase substantially in year two and three and will use gas creation for year one and experience from other field applications to estimate expected gas creation for year two. Luca will post the bond based on this estimated gas creation within 30 days of first and anniversary of the effective date of this permit for the bond covering gas creation for year two. At the end of year two, Luca will once again provide

additional bonding if actual gas creation exceeded the estimated gas creation. Luca will follow the process as outlined above for year three and subsequent years if the permit is extended.

At the close of the permit and conclusion of the monitoring plan, Luca and the BLM will review the information gathered through the monitoring and testing process and determine whether and how much of the bond should be returned to Luca or whether additional compensation is required. None of the bond will be returned without the express written approval of the BLM.