Comments and Questions
West Elk Mine E-Seam Gas Economic Evaluation Report
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General

Can the produced methane be used for other mine operations, sans mine heating, such as CNG for vehicles and processing equipment?

An assumption is made that "existing surface restrictions will continue." Why wasn't a request made to the BLM and FS to ascertain the possibility of allowances for a more robust MDW placement program to enhance project feasibility? How significant of a change in project economics would occur if allowed to independently determine well placement and numbers?

Economics

Since the cost of capital as explained in the report is inherently a return to stockholders on invested capital, why is the project economics characterized as avoiding an economic loss?

Why isn't the economic feasibility calculated on stand-alone project options rather than on the normalized rate of return to Ach Coal, Inc. investors?

Expand the economic analysis to include identification of all costs and revenue (gas sales) forecasts, including startup costs, for all options, on a monthly basis. Include any salvage value in the economic analysis. Expand the economic analysis to provide more detail on monthly gas sales volumes and pricing. Revise the economic analysis based on any changes made to any of the options as a result of this inquiry.

The report fails to include specific information on the net-back method for calculating the market value of gas sales and relies solely on the pricing stated in an edition (?) of the CIG Rockies Section of the Gas Daily. Provide a methane sales pricing estimate specific to this project and proposed contract terms over the life of the project, including acceptable gas contaminants, composition, and inert gases, from anticipated gas purchasers. Alternatively, for gas sales revenues, upon request the MMS may be able to provide an estimate of the value of the methane specific to the project local. Even if MMS assistance is obtained, the other specific contract terms are still needed.

Include in the revised economic analysis the elimination of the flare system costs that was included in the various options in lieu of a system to simply vent the gas.

Equipment

The basic gathering system design and Capital Costs section states that compression would be needed at each of the MDW but farther in the report it is stated that a single compressor can handle multiple MDWs. For example, the wellhead design schematic shows multiple wells feeding a single compressor. Elsewhere in the document it is stated that as gas production drops it will become necessary to optimize the performance of the screw compressor by increasing the number of MDW serviced by a single compressor. And, in the Winter Operations section two MDW are assigned to a single compressor. Explain why a system that uses less than one compressor per well can't be used from the start and continue throughout the project to minimize costs?

If the exhauster contains a separator then why is an additional separator required on each MDW location?

Why is a water tank required for each MDW location? How is the discharge from the separator that is attached to the exhauster currently handled and can this method be continued without additional equipment needs?

Why is a BTU analyzer required on each MDW? Why is a BTU analyzer located on the production side of the piping configuration for each MDW location? It's stated that the BTU analyzer will be used to ensure a minimum BTU content to run the compressor but no piping is shown that runs from the downstream production side of the BTU analyzer to the compressor. The fuel for the compressor is shown to be coming from a separate fuel line. Also, the extreme stated for the low-end concentration of produced methane at 35% is well above the minimum methane concentration required to run the compressor.

Can the MDW onsite compressors, exhauster, and water tank, if necessary, be run by the gas produced at the location rather than from an additional fuel line routed to the location?

In a section of the report it is stated that the fuel for the exhauster and compressor will be taken straight from the compressor discharge header, dehydrated, and used for fuel. This statement contradicts other portions of the report and the dehydrator is not shown on the wellhead design schematic. Clarify the type of system to be used at the wellhead for gas gathering.

Why is a gas meter required on each MDW location? Why is electronic flow metering, versus a cheaper chart recorder, needed for flow downstream of a compressor?

Currently there are 6 MDW in use, the capital cost estimate considers 8 MDW, and winter operations may require 10 MDW. The gathering system lateral pipeline length varies from 33.9 miles (Capital cost section) to 35.6 miles (cost estimate). Further explain how the number of MDW at various times and lateral pipeline length are determined.

Since the gathering pipeline will be left in-place on the old MDW and only some of the wellhead equipment removed, will these old MDW continue to contribute to the production stream, be vented, or plugged? If the old MDW will continue to contribute to the production stream, how

will this occur? If the old MDW are left to vent, how will this occur? If the old MDW are left to self-vent or are plugged, can the gathering pipeline and remaining wellhead equipment be reused?

Provide information on the normal operating fuel requirements for the compressors and exhausters.

Procedure

One of the observations in the report was to increase the economic feasibility of the various options by designing a gathering system that is located up the mountain directly over the active mine workings, which would save millions of dollars in gathering system costs (Gas flaring option.). Centralized compression and a single trunk line then could be installed at and from this location to the substation for the gas sales and electrical generation options. However, this gathering system was characterized as posing additional MSHA, FS, and other permitting and operational challenges, and was not considered. Also, a straight line pipeline layout, at a 40% savings in cost, for the lateral gathering system was rejected because additional impact would likely not be allowed. Further explore these possibilities for the gas gathering system, including any associated impact on the economic feasibility of the various options. Include a discussion about the other challenges mentioned. MCC

Explain the specific duties of a staff of eight (8) people to maintain 6-10 active MDW and associated equipment. Is this number of personnel actually necessary? Also explain why there is a need for a small office ($20,000 in annual costs) in addition to the existing mine facilities and why the use of snowcats is necessary during the winter months rather than alternate and less expensive methods of winter transportation.

Explain the reasons why a vent backup is "suboptimal" to a flare backup? Include a proposal for and economic analysis on the option of a vent backup as the safety system used in the CMM application options for equipment shutdowns or malfunctions.

Gathering System

The report indicates that 6" pipeline laterals will be installed but the cost estimate section shows the purchase of 6" pipeline and the installation of 8" pipeline. Further explain the pipeline lateral setup for the gathering system.

Break out and justify the costs associated with the following gathering system needs. In some cases there are additional questions asked about the necessity of the equipment.

1. Cost estimate MDW Wellheads
    - Material
        - Onsite separator
        - Water tank w/heater
        - Fuel conditioning system
        - Meter skid w/EFM
        - BTU monitoring

Installation

Why is the cost that is indicated for initial compressor setup so much more expensive than the costs associated with the annual moves (O&M Costs section)?

Project Management

Inspection

Engineering contingency costs

2. Cost Estimate "E" Seam Gathering

Material

3 - 12" pig traps considering the type of gathering system that will be used. Where will these three pig traps be placed?

Installation

Provide more information about the costs associated with the 10" trunk pipeline and 6" (8" indicated) lateral pipeline installation. Provide the "Petty" quote. Were alternate pipeline installation bids sought for comparison?

Pig Traps

Project Management

Inspection

Engineering contingency costs

3. Cost Estimate Control System

Material

Explain the necessity of purchasing a gas chromatograph.

4. O&M Costs

Why isn't there annual MDW wellhead moves included in the estimate?

Labor

Explain the duties and necessity of the personnel listed.

Compression

Working Screws

Sealed screws

Measurement/SCADA

Working Screws

Sealed screws

System

Office/Misc

Gas Processing

Provide the analysis used to choose the PSA process over the Cryogenic plant.

Explain the sales gas compression outlet pressure (1440 psig as indicated on the schematic.) requirements.

Was thought given to transporting the unprocessed, or slightly processed gas a short distance north and using/incorporating the gas processing facilities of area oil and gas producers?

Break out and justify all the costs associated with the gas processing needs.

Gas Sales Pipeline

Were other pipeline sales systems, such as a closer connection to the existing gas field gathering lines (i.e. The Sheep gathering system.) directly to the north of the project area, analyzed? If so, what were the results of this analysis?

Break out and justify all the costs associated with the Bull Mountain Sales Lateral. Provide the "Petty" quote.

Reservoir

Provide the anticipated monthly flow rates over the life of the mine of all gases and liquids from all the methane drainage wells.

Expand on the method and procedure of collection and gas analysis of, and the accuracy of obtaining representative flow samples from a MDW by the bag method. Provide the methane discharge spreadsheets, gas quality analyses (Not just the extended gas analysis by Analytical Solution, Inc.), and the calculations to determine the weighted average gas quality.

How are the daily volumes of produced fluids from the MDW measured? Provide the methane discharge spreadsheets.

My notes

12.5% royalty is assumed on electrical power generation. The royalties on electrical power generation are different than methane sales and the BLM should inform MCC of the situation for a more precise report.

For annual report updates include further gas development and infrastructure in the area that may lessen the cost for pipeline connections and gas processing.