

**CONSOL ENERGY.****Consolidation Coal Company**P.O. Box 566
Sesser, IL 62884
(618) 625-2041

January 18, 2005

Mr. Lowell Braxton, Director
Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801*Incoming
C/015/0015*Re: Emery Deep Mine Permit C/015/015
Amendment to MRP to revise partial pillar splitting plan (additional information)

Dear Mr. Braxton:

Please consider this additional information to supplement and replace some of the data submitted on December 10, 2004. Consol is submitting a revised partial pillar splitting plan, for the 1st and 2nd south sections.

If you have any questions concerning this request, please call me at (618) 625-6850.

Sincerely,

John Gefferth
Environmental Engineer

FEB 08 2005

APPLICATION FOR COAL PERMIT PROCESSING

Permit Change New Permit Renewal Exploration Bond Release Transfer

Permittee: Consolidation Coal Company

Mine: Emery Mine

Permit Number: 015/015

Title: Updated Pillar Split Plan

Description, Include reason for application and timing required to implement:

Update the MRP to match the MSHA approved Pillar Splitting Plan (Additional Information)

Instructions: If you answer yes to any of the first eight (gray) questions, this application may require Public Notice publication.

- Yes No 1. Change in the size of the Permit Area? Acres: _____ Disturbed Area: _____ increase decrease.
- Yes No 2. Is the application submitted as a result of a Division Order? DO# _____
- Yes No 3. Does the application include operations outside a previously identified Cumulative Hydrologic Impact Area?
- Yes No 4. Does the application include operations in hydrologic basins other than as currently approved?
- Yes No 5. Does the application result from cancellation, reduction or increase of insurance or reclamation bond?
- Yes No 6. Does the application require or include public notice publication?
- Yes No 7. Does the application require or include ownership, control, right-of-entry, or compliance information?
- Yes No 8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
- Yes No 9. Is the application submitted as a result of a Violation? NOV # _____
- Yes No 10. Is the application submitted as a result of other laws or regulations or policies?
Explain: _____
- Yes No 11. Does the application affect the surface landowner or change the post mining land use?
- Yes No 12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2)
- Yes No 13. Does the application require or include collection and reporting of any baseline information?
- Yes No 14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
- Yes No 15. Does the application require or include soil removal, storage or placement?
- Yes No 16. Does the application require or include vegetation monitoring, removal or revegetation activities?
- Yes No 17. Does the application require or include construction, modification, or removal of surface facilities?
- Yes No 18. Does the application require or include water monitoring, sediment or drainage control measures?
- Yes No 19. Does the application require or include certified designs, maps or calculation?
- Yes No 20. Does the application require or include subsidence control or monitoring?
- Yes No 21. Have reclamation costs for bonding been provided?
- Yes No 22. Does the application involve a perennial stream, a stream buffer zone or discharges to a stream?
- Yes No 23. Does the application affect permits issued by other agencies or permits issued to other entities?

Please attach four (4) review copies of the application. If the mine is on or adjacent to Forest Service land please submit five (5) copies, thank you. (These numbers include a copy for the Price Field Office)

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

JANE M. YOUNG
Print Name

Jonathan M. Fastter 1/14/05
Sign Name, Position, Date
Manager, Environmental Permitting

Subscribed and sworn to before me this 14 day of JANUARY, 2005

Jane M. Young
Notary Public
My commission Expires: JUNE 20, 2005
Attest: State of PENNSYLVANIA } ss:
County of ALLEGHENY

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Jane M. Young, Notary Public
Upper St. Clair Twp., Allegheny County
My Commission Expires June 20, 2005
Member, Pennsylvania Association of Notaries

For Office Use Only:

Assigned Tracking Number:

Received by Oil, Gas & Mining

RECEIVED

FEB 08 2005

DIV. OF OIL, GAS & MINING

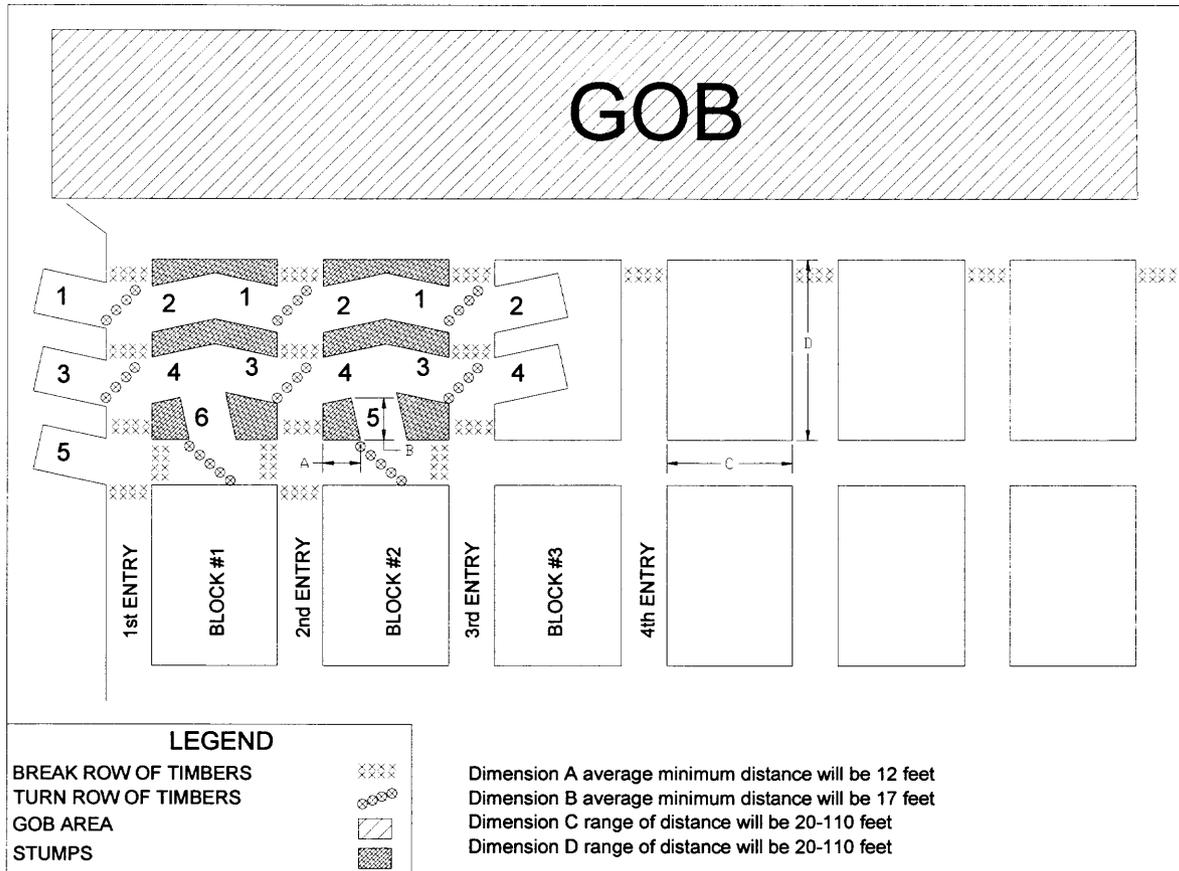
The mining method used is room and pillar with partial pillar removal. Full extraction mining is not practiced at Emery. As a result, any subsidence would fall into the unplanned category. Figure 1V-2 pg. 28 shows the partial pillar splitting diagram range of pillar and room dimensions employed underground. These layouts are the result of past experience as well as state and federal regulations pertaining to roof control and ventilation. ~~Roof spans are based on the same criteria. Roof spans are limited to 18 ft. except in second pass mining of pillars, in which case they can be as wide as 20 ft. Figures V-3 and V-4 show the second pass mining methods for partial pillaring during retreat from the section. This methodology has been approved by MSHA.~~

Consol intends to prevent subsidence from affecting Quitchupah Creek, Christiansen Wash and the alluvial valley floor area on the west side of the permit area (Refer to Plate V-5). An intermittently occupied dwelling in Section 30 will also be protected from subsidence. As of the date of this writing, a subsidence waiver has not been obtained on this dwelling. At such time as a waiver is obtained, the Division shall be notified and the buffer around this dwelling will be removed. Other than these features, the presubsidence survey, and our knowledge of the permit area confirms that there aren't any structures overlying present or future underground workings for which mitigation of subsidence effects would be overly difficult.

The three above noted features will be protected by establishing buffer zones which in turn are created by leaving coal pillars of adequate size beneath these areas. The dimensions of the buffer zone will be determined by the overburden depth and the angle of draw. With respect to Quitchupah Creek and Christiansen Wash, the buffer zone will include an additional standoff distance of 100 ft. on either side, as required by UMC 817.57. The pillar dimensions are based on established geotechnical information and a factor of safety for long term pillar stability. The partial pillar splitting design data can be found at CH V Page 28a, 28b, and 28c. A pillar split plan sketch can be found at CH V Page 28 and Figure V-1 on CH V Page 28d. As can be seen from the following design data this partial pillar splitting plan will not result in subsidence, and is considered unplanned subsidence per the MRP.

~~The following analysis shows how pillar sizes are determined to be of adequate size. The ultimate compressive strength of the coal was determined by Consol's Research and Development Department, in Library, PA, to be 5,500 psi as measured on cylindrical specimens measuring 2" in diameter by 4" high. Consol uses an 18° angle of draw for all of our mines. It represents the maximum (as measured from vertical) exhibited by full extraction panels in our eastern mines. In that the SUFGO No. 1 mine has measured 11° and UP&L's Deer Creek Mine exhibits less than 7° the use of 18° for Emery partial pillar and development sections is very conservative. In relating pillar strength to pillar size for barrier protection, a minimum factor of safety of 1.75 is confirmed by Dr. D. S. Choi of Consol Research and Development, who is a recognized expert in this field.~~

**PILLAR SPLIT PLAN SITE SPECIFIC FOR
1ST AND 2ND SOUTH**



**Figure 1: Partial Extraction with Timbers for Supplemental Support
Mirror image applies**

1. A breaker row may consist of either:
 - a) two MRS units, or
 - b) two row of posts on a maximum spacing of four feet (4'), or
 - c) two cribs

EMERY MINE 2ND SOUTH SECTION, PARTIAL PILLAR PLAN
PILLAR DESIGN SAFETY FACTOR CALCULATIONS

Background

Pillar Loading can be calculated via the tributary area stress method, such that:

$$\sigma_p = \gamma D / (1-R),$$

where: σ_p = pillar stress (psi)
 γ = density of rock
D = overburden depth (feet), and
R = extraction ratio, (unitless, eg., 75.3% = 0.753)

Pillar strength can be calculated from the Mark-Bieniawski (modified PSU) formula. The Mark-Bieniawski formula is an industry-accepted formula, and is used within the well known NIOSH (formerly USBM) pillar design programs, ARMPS and ALPS, which can assess pillar stability due to abutment loading from full extraction pillaring and longwalling, respectively. For partial pillar mining within 2nd South, pillars have been designed not to fail, therefore abutment loading is not a concern.

The Mark-Bieniawski pillar strength equation is expressed as:

$$S_p = \sigma_1 [0.64 + 0.54 (w/h) - 0.18 (w^2/hl)],$$

where: S_p = pillar strength (psi)
 σ_1 = insitu coal strength factor (psi),
w = pillar width, i.e., average least lateral dimension (feet),
h = mining height of cut coal pillar (feet), and
l = pillar length, i.e., average greatest lateral dimension (feet).

The insitu coal strength factor, σ_1 , which is the large-scale cubical strength of the coal can conservatively be estimated to be 900 psi (or greater).

Ultimately, the pillar safety factor, SF, can be expressed as,

$$SF = S_p / \sigma_p.$$

Per prior practice and permit documentation, pillar safety factors at or equal to 1.75, are sufficient to guarantee no surface subsidence.

Site Specific Data

As designed, the 2nd South Section pillaring plan will have a total coal recovery (based on entry centers) of approximately 75.3%. All pillar remnants will have an average width of no less than 12 feet. The smallest remnant will measure approximately 12 feet wide by 17 feet long. Maximum extraction height at the pillar periphery will be approximately 10 feet.

The maximum depth (roof to surface) over any pillar being pulled in 2nd South will be approximately 135 feet. The overburden rock consists of approximately 10 to 12 feet of coal and 2 to 5 feet of weathered surface material. Combined with the sandstone, siltstone (shale), and claystone, and the shallow depth, the maximum overburden density, γ , is approximately 151 lb/cu ft (pcf) or 1.05 psi per foot of overburden.

Calculations and Conclusion

Using the maximum depth scenario for 2nd South, the maximum tributary area stress, σ_p , on the pillar remnants following secondary mining (partial pillaring), will be approximately:

$$\begin{aligned}\sigma_p &= \gamma D / (1-R) \\ &= 1.05 (135) / (1-0.753) \text{ psi} \\ &= 574 \text{ psi}\end{aligned}$$

Additionally, the strength of the smallest pillar remnant (i.e., 12 feet by 17 feet) can be calculated as:

$$\begin{aligned}S_p &= 900 [0.64 + 0.54 (w/h) - 0.18 (w^2/hl)] \\ &= 900 [0.64 + 0.54(12/10) - 0.18(12^2/(10)(17))] \\ &= 1022 \text{ psi}\end{aligned}$$

Therefore, the safety factor, SF, of the smallest remnant pillar will be:

$$\begin{aligned}SF &= S_p / \sigma_p \\ SF &= 1022 / 574 \\ SF &= 1.78\end{aligned}$$

Therefore, the smallest remnant will remain stable (i.e., $SF > 1.75$) under the worst case loading condition. Likewise, all larger remnants will be stable, thereby precluding the likelihood of surface subsidence.

Pillar Design Safety Factor Calculations were prepared by me using the approved partial pillar mine plan, best available information, and industry-accepted formulae.

Gregory J. Hasenfus Geomechanical Engineer
Name Title

PE038556E
Pennsylvania, PE License Number

Consol Energy Inc. (412) 724-2006
Firm Phone Number

172 Route 519, P.O. Box 355, Eighty Four, PA 15330
Address

Signature Date

A subsidence monitoring plan has been in place at Emery and contains the following features:

1. A series of reference points will be established outside the theoretical angle of draw for a particular area of mining.
 - 1a. A mine representative will inspect monthly the surface area overlying the 1st and 2nd south when partial pillar splitting begins and continue until the survey monitoring points below indicate that there is no subsidence. A record of this inspection will be kept at the mine office.
 2. New reference points will be established as the area of mining increases to include old reference points.
 3. Subsidence monitoring should, at a minimum, be established: a) at a point coincident to the geometric center of high extraction panels at least three months prior to mining activities beneath the station, and b) at periodic intervals over mains and sub mains at least three months prior mining activities beneath the stations.
 4. New monitoring points established over partial pillar sections will be resurveyed within six months after final mining has taken place beneath them.
 5. New monitoring points established over advancing sections such as mains and sub mains will be resurveyed within one year after mining has been completed beneath the station.
 6. Monitoring points over partial pillar sections that have been resurveyed once and where no significant movement (".5') was found will be surveyed again within one year. If this subsequent survey shows no significant movement from the original survey, the point will be surveyed again at one year intervals. Points over advancing sections need not be resurveyed unless there has been evidence underground, (such as massive caving) that indicates subsidence may have taken place above them. If these sections have been abandoned, resurveys shall take place every two years.
- This program will remain in effect during the permit term (5 years), after which it will be reevaluated and modified if necessary to reflect the data collected to that point.
7. If a resurveyed point does demonstrate significant movement, the Division shall be notified of the survey discrepancies, and the point resurveyed at six-month intervals until no movement is indicated. Subsequent surveys will then take place as indicated in item 6.
 8. When a new point is installed it shall be surveyed (the "Initial survey"), into a closed loop containing at least one "reference point", or any other point, (not located over high extraction areas) that is "linked" to a reference point, and has been surveyed within 6 months prior and no movement found. The initial survey should consist of a horizontal traverse having a closure of at least 1:10,000 and a vertical traverse having a closure of at least 0.10 feet.