

Development of the mine is accomplished with seven or eight entry mains with entries on 80 foot centers and crosscuts on 100 foot centers. The submains for panel development typically use a five entry system with similar entry centers. Panels are developed off the mains or submains with a four or five entry system with rooms driven on either side of the development entries. The Emery Mine does not use maximum extraction techniques, but instead uses a system of partial secondary extraction (except in the First South panel where full extraction will occur) which leaves the roof intact (see Chapter V Part B).

During the term of this permit the planned production for the Emery Mine is 1.7 million tons per year. The mine will produce this coal with five continuous miner sections. Producing at this rate, the mine will continue operations until 2010 at which time the IJ Zone will be mined out. At that time final reclamation will begin as discussed in Chapter III.

#### 4 EAST PORTAL

##### Site Description

The site is entirely within the surface area owned by Consolidation Coal Company. Coal ownership is also in Consolidation Coal Company's name.

##### Geology:

Drill hole FC 702, located on the site, was cored from the surface to below the IJ seam. It provides a detailed stratigraphic sequence and geochemical analyses to characterize the overburden to be stockpiled on the site. The following three pages show the lithology of the overburden and contain the geochemical test results on strata intervals. The portal excavation does not go any deeper than the top eleven (11) feet of the IJ seam.

##### Acid-Forming Potential:

Sulphur values (PS, SO4S, OS, and TS) are low throughout the strata. Moreover, pyritic sulphur, a potential acid former, is present in very low concentrations (less than 0.01 percent), so the acid-forming potential is quite small. As a result, acid production is not anticipated to be a problem within the proposed construction area.

##### Alkalinity-Forming Potential:

High pH and/or high SAR can cause piping, surface crusting, soil structure problems, and plant toxicities. The only samples with alkaline pH (8.1-8.3) occurred below the coal seams. Likewise the floor strata samples tested distinctly more sodic than the overburden. Since the excavation does not go this deep, alkaline material production is not anticipated.

Mine # C/015/0015  
File Incoming  
Record # 0036  
Doc. Date 8-26-05  
Recd. Date 8-26-05

### IV.A.3 MAXIMUM ECONOMIC RECOVERY

UMC 784.13(b)(6), 817.59

The mining operation at the Emery Mine maximizes the recovery of the IJ Zone while maintaining safety as a primary priority. The following criteria are used to determine the mineability of the coal:

1. The minimum required mining height is 5 feet.
2. Two feet of combined roof and floor coal is left. The shale under the coal has a high clay content making it susceptible to water requiring a minimum 1.5 feet of floor coal to be left in place to prevent floor heaving. In areas of shale top, top coal must be left to maintain roof stability.
3. The maximum mining height will be 10 feet from a safety standpoint to provide stable coal pillars (see Chapter V Part B).

The Emery Mine uses a partial extraction technique during secondary mining, except in the First South panel, to maintain a stable top. Partial and full pillar extraction plans for the mine are described in Chapter V, Section V.B.1. In those areas where protection must be given to prevent subsidence (see Chapter V Part B), no secondary mining will take place. By leaving larger pillars in these areas the surface should remain unaffected.

There are no coal seams above the IJ Zone that are considered mineable under the above mentioned criteria. Any future operations will take place in coal seams below the IJ Zone and will not be adversely affected by current mining operations in the IJ Zone.

Additional information related to recoverability of the other coal seams is in Appendix IV-I. This appendix deals with the maximum economic recovery of the coal in Federal Lease U-5287.

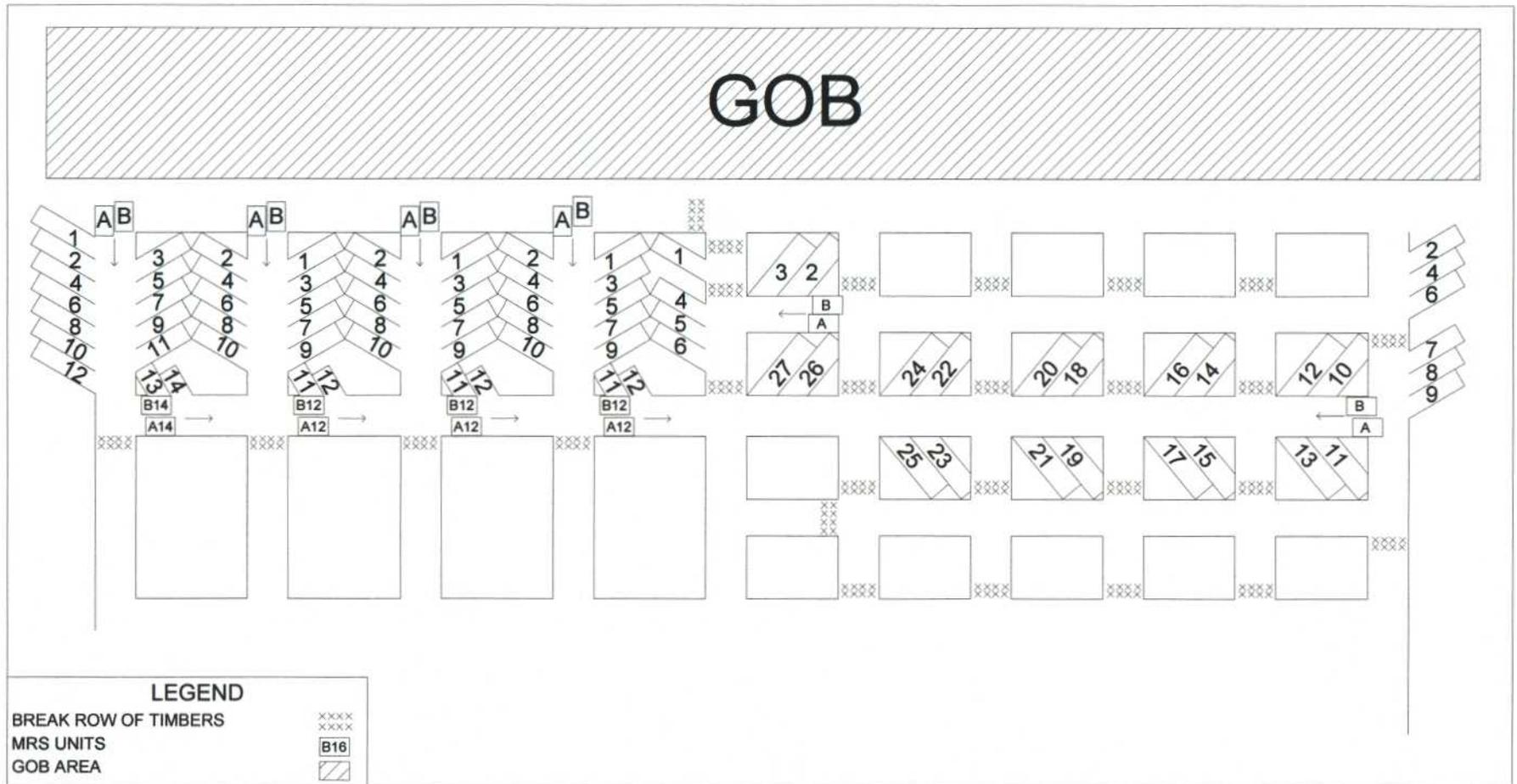
The mining method used in most of the mine is room and pillar with partial pillar removal. Full extraction mining (planned subsidence) is proposed at Emery only in the First South panel, as noted on Plate V-5. As a result, any subsidence outside of the First South panel area would fall into the unplanned category. Figure 1 pg. 28 shows the partial pillar splitting diagram employed underground. This layout is the result of past experience as well as state and federal regulations pertaining to roof control and ventilation. All pillar splitting will be approved by MSHA. A pillar split diagram specific to full extraction is provided in Figure 2 (page 29).

**Deleted:** not practiced

**Deleted:** This methodology has been

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). There will be no full extraction within the designated buffer zones. 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.



**Figure 2: Full Extraction with 2 MRS Units for Supplemental Support**  
Mirror Image Applies

A breaker row may consist of either:

- two MRS units, or
- two rows of posts on a maximum spacing of four feet (4'), or
- two cribs

9. Resurveys of a point should consist of a vertical traverse having a closure of at least 0.50 feet. If significant movement is detected, ( $\pm 5'$ ), a horizontal survey to that point will also be performed to check horizontal movement. The horizontal check survey may consist of a "side shot" where angles and distance are double checked, and need not be a closed traverse.
10. Monitoring points will consist of a concrete base and brass cap installed according to Figure V-8.

Plate V-5 shows the existing and future monitoring points for the permit area.

Consol will provide 3 copies of a subsidence monitoring report to DOGM within one month after completion of any subsidence monitoring field survey conducted pursuant to the approved subsidence control plan. Subsidence monitoring reports shall contain the following information:

1. Mine maps showing where pillars have been pulled and the month and year that such pillars were removed or partially removed.
2. Maps showing the location of survey monitoring stations and tension cracks and/or compression features visible on the surface.
  - 2a. The subsidence monitoring points above the 1<sup>st</sup> South panel will have photographs recorded both pre subsidence and post subsidence.
3. The differential level and horizontal survey summary.
4. Brief narrative explaining any "significant movement" and any action the applicant has taken to mitigate the effects of such movement or any tension or compression features visible on the surface.

Revised 8/05

If subsidence should materially damage, reduce the value, or alter the usage of surface lands and structures, Consol intends to do the following:

1. If it is demonstrated to the satisfaction of Consol that subsidence attributed to mining operations has materially damaged a significant structure or reduced its value, or if surface lands have been reduced in value or the usage altered, Consol will mitigate the damage as mutually agreed upon by Consol and the owner of record. With respect to the 1<sup>st</sup> South full extraction panel, Consol is the surface owner of record. The surface affects of subsidence over the 1<sup>st</sup> South panel are expected to be mostly surface tension cracks. These cracks will be graded and /or backfilled as required. The options that may be used in the mitigation process may include, but are not limited to, the following, as outlined and expanded upon, in UMC 817.124 of the Permanent Regulatory Program:

(a) Restore, rehabilitate, or remove and replace, to the extent technologically and economically feasible, each materially damaged structure, feature or value.

(b) Purchase the damaged structure or feature (except structures or features owned by the person who conducts the underground coal mining activities) for its pre-subsidence fair market value. To the extent technically and economically feasible, restoration will be achieved within a reasonable period of time after the damage from subsidence has occurred. The issue of timing is discussed in the response to UMC 817.124.

(c) Compensate the owner of any surface structure that has been materially damaged by subsidence. This can be accomplished by purchasing a noncancellable insurance policy as described in UMC 817.124(b)(3).

Revised 8/05

**UMC 817.121**

The room and pillar mining method used at Emery is a commonly used practice in the mining industry. While unplanned subsidence is possible and has occurred in the past, the subsidence control plan is being and will be followed as prepared pursuant to UMC 784.20.

**UMC 817.122**

Consol shall submit written notice to surface property owners at least six months prior to mining under or adjacent to their property. Such notice shall include:

1. Identification of the specific areas in which mining will occur with the estimated dates of underground operations.
2. Measures to prevent, minimize or control subsidence.

The following property owners shall be notified by certified mail six months prior to mining under or adjacent to their property:

Utah Power and Light  
P. O. Box 899  
Salt Lake City, Utah 84522  
(801) 748-2570

Dermis Jensen  
500 W. West Ln.  
Emery, Utah 84522

Lyle Anderson  
Box 523  
Emery, Utah 84522  
(801) 286-2295

Wayne Staley  
482 N. 2 W.  
Emery, Utah 84522  
(801) 286-2213

Earl Jensen  
Box 111  
Emery, Utah 84522  
(801) 286-2398

Revised 8-31-95  
Revised 8/05

Morgan Jensen  
1163 Wildflower Drive  
Cedar City, Utah 84723  
(801) 586-6432

Jens C. Jensen  
8760 Cranbrook Dr.  
Boise, Idaho 83704  
(208) 376-1917

George Olsen  
15 E. Center  
Orangeville, Utah  
(801) 748-2522

James Frost  
Route 2  
Box 115  
Randlett, Utah 84063

Jerry Mangum  
193 N. 3 E.  
Emery, Utah 84522  
(801) 286-2280

A. Petty c/o Gary Petty  
Emery, Utah 84522  
(801) 286-2395

Glendon E. Johnson  
1200 19th ST NW , Suite 500  
Washington, DC 20036

Osburn Bret Carter  
P.O. Box 24  
Emery, Utah 84522

Morgan Robertson  
P.O. Box 64  
Emery, Utah 84522-0065

Josiah K. Eardley  
2433 South Highway 10  
Price, Utah 84501

Inserted 8-31-95  
Revised 8/05