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STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

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October 17, 1983

Mr. C. E. Shingleton  
Director of Permitting, Compliance and Services  
Mining and Exploration  
Utah Power & Light Company  
1407 West North Temple  
Salt Lake City, Utah 84110

RE: Apparent Completeness Review  
Utah Power & Light Company  
Wilberg Mine  
ACT/015/019  
Emery County, Utah

Dear Mr. Shingleton:

Enclosed are the results of the joint Office of Surface Mining/Division of Oil, Gas and Mining (OSM/DOGM) Apparent Completeness Review (ACR) for Utah Power and Light Company's Wilberg Mine ACR response received by this office June 13, 1983. The OSM has contracted the assistance of Simons, Li and Associates in preparing the draft response.

The following areas of the mine plan and the ACR response lack sufficient detail for a Determination of Completeness to be made.

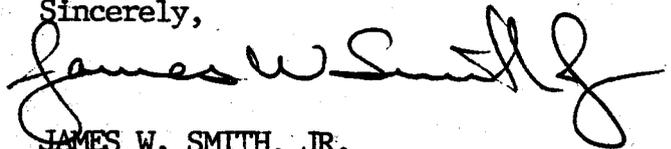
1. UMC 782.13 Identification of Interests
2. UMC 784.13 Reclamation Plan: General Requirements
3. UMC 784.20 Subsidence Control Plan
4. UMC 805.11 Determination of Bond Amount
5. UMC 817.21-.25 Topsoil
6. UMC 817.97 Protection of Fish, Wildlife and Related Environmental Values
7. UMC 817.116 Revegetation: Standards For Success

Several other sections have minor questions and concerns which need more clarification. Please note that the response must be received at OSM no later than November 21, 1983. The final determination of completeness will be made by OSM based on the material provided on November 21. If the material is determined to be incomplete, the permit application will be returned to the applicant and authority to operate under administrative delay will be terminated. If the permit application is found to be complete, public notice may begin and OSM will proceed with the technical analysis.

Mr. C. E. Shingleton  
ACT/015/019  
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If you have any questions, please feel free to contact me or Cy Young of the Division Staff.

Sincerely,



JAMES W. SMITH, JR.  
COORDINATOR OF MINED  
LAND DEVELOPMENT

JWS/CJY/jvb

Enclosures

cc: Allen D. Klein, OSM  
Shirley Lindsey, OSM  
Tom Munson, DOGM  
Lynn Kinzler, DOGM  
Pam Grubaugh-Littig, DOGM  
Ev Hooper, DOGM  
Cy Young, DOGM  
Mary Boucek, DOGM

DRAFT

DETERMINATION OF ADEQUACY  
OSM COMMENTS

Utah Power & Light Company  
Wilberg Mine  
ACT/015/019, Emery County, Utah

October 14, 1983

UMC 771.23 Permit Applications - General Requirements for Format and Contents

The mining and reclamation plan for Wilberg mine was submitted in March 1981. Since that time, a number of modifications and revisions have been made to this plan. It is requested that the applicant incorporate all information from these various modifications into the mining and reclamation plan. The intent of this request is to provide a single self-contained document that is complete and accurate, current, and provides all information relevant to the mining and reclamation plan. Maps, figures and tables that have been updated as a result of agency review should be substituted for superceded material. Furthermore, if necessary, a discussion of new material should be incorporated into the body of the text for the mining and reclamation plan.

The following comment from the Branch of Solid Minerals (BLM) concerning the Cottonwood Lease should be addressed by the applicant.

1. The multi-seam (three) mine plans appear to be workable as submitted; however, we are concerned about the proposed mining of the middle or Cottonwood seam. Part of the minable portion of this seam is approximately 15 to 35 feet below the Blind Canyon seam. It is proposed to be mined by ramping down from the Blind Canyon seam. The Cottonwood seam location complicates the preferred methods of mining top seams first and columnating main support barriers. This office would require a discussion with mine management and Utah Power & Light mine planning engineers on this part of the submitted plan sometime after the mine has been developed to an area where ramping down to the Cottonwood seam is feasible.

UMC 782.13 Identification of Interests

Several sections are adequate for TA review. However, several others are not adequate, including:

(a.2) Much of this information incorrectly appears under UMC 782.15 - Right of Entry. In addition, comparison of the surface and coal ownership maps submitted with the original application and the South Lease Modification show a variety of inconsistencies which must be resolved. Please correct the following points:

- Move or cross reference the list of coal and surface owners of record to this section (782.13) and update it to show the current owners of record and status of lands as required by UMC 771.23 (b).

- The ownership maps must present a clear delineation of the proposed permit area boundary for the Wilberg Mine. If there are instances where the Wilberg permit area boundary will overlap with other mines, this should be clearly shown. In addition, the segment of land containing the special use permit from the Forest Service (SW 1/4; NE 1/4; Sec. 27; T17S, R7E) should be added to the permit area and indicated on all maps. Also, the applicant must show all areas potentially affected by subsidence defined by the angle of draw as part of the permit area.
- Update the maps to identify all current coal leases, fee coal, and surface ownership, rather than correct these errors with an "errata sheet" to be "submitted upon completion of the permit application" (as the applicant states on page 6 of the ACR response). It is understood that certain leases are to be shared with the Deer Creek operation, and/or mined coal seams overlap each other. These overlaps with Deer Creek can simply be identified on the maps with unique coding keyed to the legend.
- The parcels of land indicated on several maps and identified by the coding U-37641 (unknown purpose) and U-37642 (apparent waste rock disposal area) should be identified as to their full purpose and included within the permit area boundary. When this is done and the areas indicated above are included within the permit area, all legal, compliance, etc. information must be updated accordingly as well as any other calculations or information which may be affected.
- The fee coal identified in the original application (page 1-8) as the SW 1/4 of Section 14 and belonging to UP&L seems to have been incorrectly identified with the Wilberg Mine rather than the Des-Bee-Dove Mines. When correcting these maps and text, please double-check this area's status and correct as necessary.
- A "typo" of significance was noted on page 4 of the South Lease Modification. "Sec. 28, S 1/2 N", S 1/2" apparently should read Sec. 28, S 1/2 N 1/2, S 1/2.

(a.3) A separate listing of leasehold interests must be provided by the applicant. Or, in the absence of any leasehold interests, a negative declaration should be provided.

(a.4) A separate listing of purchasers of record must be provided by the applicant. Or, in the absence of any purchasers of record, a negative declaration should be provided.

(d) Statements showing compliance with this section cannot be found within the application. This information must be provided for any UP&L coal mine, including, but not limited to:

- Deer Creek operation,
- Des Bee Dove operation,
- Wilberg operation,

#### UMC 782.18 Personal Injury and Property Damage Insurance Information

As indicated in the ACR (Point No. 1), the applicant must include a rider that the insurance company will notify the OSM and the UDOGM if substantial changes are made to the policy. This rider could not be found in the ACR response.

#### UMC 782.21 Newspaper Advertisement and Proof of Publication

A copy of the proposed newspaper advertisement of the application's submittal does not appear in the application. Please provide this proof of publication.

#### UMC 783.14 Geology Description

(NOTE TO DOGM REVIEWER: please inform OSM if all chemical data required in this paragraph are needed) Coal seam analyses must include values of pyrite, marcasite, and sulfur. Also, please provide data on (1) the pyritic content and potential alkalinity (in equivalent  $\text{CaCO}_3$  (mg/L)) of the stratum immediately above and below the Blind Canyon seam, (2) the clay content of the stratum below the Blind Canyon coal seam, and (3) the potential alkalinity of the Hiawatha seam roof and floor material. The pH values given in the MRP are not comparable to alkalinity.

#### UMC 783.19 Vegetation Information

The vegetation information presented for the permit area and major modifications is generally complete. The following points still need clarification:

1. Pursuant to UMC 771.23 (b), vegetation reports and data should be presented in a complete, accurate and concise manner, such that they can be reviewed with minimal confusion.
2. Please present reference area ground cover data by species.
3. It is evident that maps 2-13, 2-14 and 2-15 (referenced on page 1 of the vegetation appendix) have different identification numbers. Please clarify what maps these are.

#### UMC 783.22 Land Use Information

Narratives provided for the Cottonwood Fan Portal, Waste Rock Storage Site, the Land Use Map and revised Land Use section contained in the Wilberg ACR Response need to be incorporated into the MRP application. There are

several discrepancies between the original Land Use description and that provided in the ACR response. Please retain only that information which is current and correct.

The original Land Use description (page 2-121) notes that "there is a wildlife classification for approximately 1,000 acres near the mouth of Cottonwood Canyon, three miles west of the Wilberg Mine." Provide this classification and by which agency (BLM, USFS, UDWR) it is classified. Show this area on the Land Use Map.

Page 12, Paragraph 1, ACR Response:

Clarify if "(Hauck)" referred to is a reference not provided in the References or if "Hauck" was an early settler.

Please provide the documentation for the productivity information from the Soil Conservation Service for soil types or range sites in the disturbed mine area that was provided in the mine plan.

Please provide any estimate available for the tonnage of coal removed during the original Wilberg Mine operation (1944-1958).

#### UMC 783.25 Maps and Plans

Strikes and dips of all coal outcrops must be shown on any of these maps, e.g., Figure 2-4 (Hiawatha Seam) and Figure 2-6 (Blind Canyon Coal Seam) in the Mine Application and Figure CE-10437 and CE-10446 in the Cottonwood Lease Modification.

#### UMC 783.27 Prime Farmland Investigation

It is stated in the Land Use section that a site investigation was conducted with a Soil Conservation Service specialist in 1979. A negative determination by the Soil Conservation Service for prime farmlands for the entire permit area needs to be included. The Cottonwood Fan Portal and Waste Rock Storage Site are not included in the existing letters from the SCS and should also be addressed.

#### UMC 784.11 Operation Plan: General Requirements

(b.4.5) The available maps and miscellaneous submittals covering the past two years indicate that there have been additional disturbances associated with the mine outside of the original facilities area in Grimes Wash. These include the South Portal, Cottonwood Portal, the breakout in "Newberry Canyon," Miller Canyon breakout and the development water disposal area. Description of these areas must be provided in the application so that an overall description of the operation over the permit term is available and the extent of these disturbances is known. This information will be critical in evaluating the proposed bond amount.

UMC 784.12 Operation Plan: Existing Structures

(a.4) The applicant has stated that no stability calculations were made on the slopes constructed in the facilities area since inspections have shown the slopes to be stable. Since slope stability problems often appear after a slope has existed for a long period of time, inspection of the site may not reflect the long-term condition of the slopes. The applicant must provide an analysis of the stability of the fill slopes constructed in the mine plan area including a description of the method of construction, the nature of the foundation material, and drainage control in and around the slopes. Of particular concern is the size of lifts that were placed and compaction of the material, location of any seeps or springs, and existence of old fill material that may have been built upon and may not provide a sound foundation. It was noted that in the Dames and Moore report much of this type of information was provided; confirmation of the as-built conditions must be provided.

In the stability analysis on the Cottonwood Portal, several recommendations were made by the consultant to ensure that the slope remained in a drained condition. Verification of the as-built conditions must be provided.

UMC 784.13 Reclamation Plan: General RequirementsGeneral

(b.2) The applicant must provide documentation substantiating the development of the unit costs presented in the bond estimates which have been developed for the disturbances within this permit term. This documentation would consist of identifying references used in the analysis and providing any background calculations that were made in the estimates. Information such as equipment productivity and haul distances used in the analysis must be provided.

Background calculations must be provided showing how the volumetrics were determined which are shown in the bond calculations. This must include any additional cross sections which might have been utilized in developing the volumetrics. See related questions under (b.3) of this section.

Specific costs for all of the anticipated disturbances over the permit term for which bond estimates have not been supplied must be developed in the level of detail mentioned above. This includes the waste disposal site and the additional breakout areas. Bonding calculations must include anticipated reclamation costs even if final reclamation is not anticipated during the permit term.

Within the portal area in Grimes Wash, there has been an additional disturbance associated with the construction of the South Portal. Substantial amounts of material have been hauled in to construct the fill for a retaining wall. The bond amounts presented in the original bond application and the

South Portal application only show increases associated with the removal of the silo and closure of the portals. The additional costs associated with removal of the pad areas, retaining wall, asphalt and the concrete headwalls in addition to revegetation must be added to the bond amount.

The cost estimate developed for the reclamation of the Cottonwood Portal does not appear to include a cost for the closure of the portal. The estimate prepared for the facilities area does not include removal and burial of asphalt material. These costs must be determined and added to the bond amount.

A cost for the monitoring and maintenance of rills and gullies over the 10-year responsibility period must be added to the bond amount. This could include the mobilization of equipment to backfill rills and gullies and the reestablishment of vegetation. In addition, the cost of monitoring of sediment pond discharges must be included.

Reclamation of the stream channels will require the use of a significant quantity of sized riprap material. How will this material be obtained? Will screening be required? A method for obtaining the material and an associated cost must be determined.

No specific revegetation techniques are identified for restoration of the stream channels. The applicant must submit a revegetation plan specific to stream channel restoration. The border along the reconstructed stream channel would appear to be an appropriate site for clump shrub plantings for wildlife pursuant to 784.21.

The final reclamation costs of the backfilling and grading have low unit costs for the D-7 crawler tractor, 621-B motor scraper, and operator costs. The costs should be reflective of the rental rate blue book (the standard for construction costs). These costs should be revised.

(b.3) The description on the backfilling and grading in the permit area provides only general information on the procedures that will be utilized. A plan must be provided for backfilling of the disturbed sites showing the volumes of material to be handled, the volume of fill to remain in specific areas, and the volume of fill available to cover asphalt or any toxic material that is known to exist. Calculations made by the applicant to respond to this request must be provided, including any additional cross section information.

The applicant proposes placing a large amount of the excess fill material in the right branch of Grimes Wash and a quantity of material on the south slope. Material was removed from the north slope, and should be replaced. If north slope material cannot be replaced, an explanation should be provided. Indicate the quantity of the material that will be placed along the east slope to ensure that asphalt and concrete rubble disposed of at the site will be adequately covered. Additional cross sections would be helpful in this demonstration.

The applicant has stated that no stability calculations were made on the reconstructed slopes due to the fact that there is no grade steeper than 1v:2h and that slopes at 1v:1.3h have remained stable. Since slope stability depends upon many factors other than the final grade, especially the method of construction of the fills, the comparison may not be adequate. The applicant must provide an analysis of the stability of the final fill slopes. Of particular concern is the size of lifts that are proposed (50 feet) and compaction of the material in these size lifts, location of any seeps or springs, and existence of old fill material that may be built upon and may not provide a sound foundation.

Since an old slide occurred in the right branch of Grimes Wash on the north slope, retention of a highwall in that area may not be appropriate due to instability. The applicant must provide a discussion on the location of the highwall and the feasibility of obtaining a 1.3 static safety factor in this area during reclamation. If the toe has been cut out of this old slide, the most stable configuration may be to backfill this area. Please clarify the applicant's intention of leaving rock faces or backfilling and revegetation of these sites.

(b.7) There exist strata within the permit area which have a high SAR value that would hinder the reestablishment of vegetation. The applicant must address the need for special handling of this material if it exists within the fill and provide a plan for covering the material with four feet of non-toxic material, as necessary.

In the ACR response, the applicant refers to techniques specified in the Interim Stabilization and Revegetation Plan as those which will be used during final reclamation, with the option to modify techniques as appropriate in the future. Two concerns must be addressed. First, the Interim techniques are appropriate for steep slopes (greater than 3:1) but by examination of post-reclamation cross sections it is evident that lesser slopes will be reclaimed. The reclamation of such lesser slopes (3:1) must also be addressed. Second, the Interim Plan does not contain a description of techniques to be utilized sufficient to permit an adequate appraisal of the application. Provide a more detailed description of techniques.

The applicant must submit a revised final revegetation plan, separate from the Interim Plan, which details the techniques and methodologies to be used for final revegetation. Information appropriate for this discussion includes type of equipment, type and amounts of materials (where appropriate) and method of application. The permit application can be modified in any manner the applicant chooses so long as sufficient information is presented to define the applicant's final revegetation commitments and plans, allows evaluation of bonding estimates, and allows analysis of the revegetation techniques proposed.

The applicant should consolidate all revegetation plans presented to date in summary form showing what seed mix(es), methodologies, mulches, etc. will be used for all disturbed areas for interim (if appropriate) and final revegetation.

(b.1) In addition to the revegetation schedule included in the application, the applicant must provide a schedule showing which years reclamation of the various components of the mine will be accomplished.

(b.3) The applicant must commit to removing gravel and gravel base material from roads, parking lots, etc. and eliminate the use of such material as a sole seedbed material. The use of topsoil or any substitute materials must be identified.

The applicant responded (pg. 29) to the ACR comment concerning flat slopes: "What flat slopes?" The basis of this comment referred to slopes of less than 3:1, which, according to Drawing CM-10500-W13 and pp. 4-4 of the ACR response, will exist after grading. The applicant must develop a revegetation plan for such areas.

The applicant refers to diversion ditches to collect runoff from major recontoured areas to control sedimentation (p. 4-5). Such ditches must control sediment from all disturbed areas, not just major slopes. The applicant must also provide a description of such ditches in the reclamation plan, or reference such a discussion if it was included elsewhere in the application.

(b.4) The applicant states (p. 4-3) that 6 inches of suitable plant growth medium will be applied to the road from the inlet structure down the southwest side of Grimes Wash. Indicate the source of this material. Note that premining and postmining soil depths should be comparable.

The method for developing "topsoil" described in the ACR response (pp. 32 and 37) has merit, but more specifics are needed to assess the viability of the technique. Will this material be replaced as a "topsoil" material or as an established community similar to sodding? The applicant needs to furnish a discussion of the objectives of this technique as well as specifications and sequential timing for accomplishing the activity. In addition, the general spatial arrangement and proposed size of the islands must be explained.

(b.5.i) The applicant's Reclamation Schedule table shows that seeding and planting could take place as soon as the middle of August. Given the frequently droughty nature of August, how can this be justified? Also, the applicant should consider spring planting seasons for shrub and tree seedlings.

It is unclear as to which "fast-growing species" the applicant refers to on page 32. It is recommended that the applicant consider revising the seed mix to incorporate species with higher establishment potentials and sod-forming characteristics for use on steep slopes. (This would logically lead to the development of different mixtures and planting rates for steep slopes, gentle slopes and wildlife areas.) A discussion of applicable revegetation test results in the region would be useful to the evaluation of proposed species and seed mixes.

Is the final seed mix that shown on page 36 of the ACR response? It contains the line item "Test Plantings." Will there be more tests or is this an editorial error? Please clarify.

Submit detailed descriptions of methods to be used in planting and seeding.

(b.5.v) The methodology, equipment, and timing of the irrigation technique must be detailed.

(b.5.vi) A detailed discussion of sampling methodology and sampling locations for soil samples must be included in the application. Taking of soil samples on undisturbed areas (p. 4-9) is not necessary to determine fertilizer application rates.

(b.7) The methods for neutralizing and burying (depth) of "hot spots" must be explained.

The applicant, in a letter dated January 11, 1983, mentions that 200 cubic yards of topsoil will be dedicated to the Disposal Area. Indicate the source and characteristics of this topsoil.

Details of the interim revegetation monitoring plan to provide justification to use introduced species in final reclamation pursuant to UMC 817.112 must be submitted.

The seeding rates for table 1 (wasterock disposal plan) must be submitted. Also, please clarify if this is the seed mix for final reclamation of the waste rock disposal area.

Results of the greenhouse tests mentioned in the letter to UDOGM dated July 3, 1980, must be included in the plan to aid in species adaptability and materials use analysis.

Please provide the rate (weight) of straw per acre needed to provide the 1/2 inch of mulch over the area as stated in the plan. Fertilization rates should be in amounts consistent with soil test recommendations rather than the specific, pre-determined rates committed to in the application.

On Page 37 of the ACR response the operator states that grazing will be precluded from revegetated areas. How will this be accomplished (i. e. controlling grazing permits, fencing etc.)?

The applicant has stated that no revegetation will be required in conjunction with the Cottonwood lease modification. This is questioned since surface disturbances will result in conjunction with face-ups. Please clarify.

The following comments are made with respect to statements made in the Cottonwood Fan Modification application and the ACR response.

The applicant has not provided information requested in the original ACR (page 6, #13) for the Cottonwood Fan Modification. This information must be provided and must include detailed specifications for each revegetation technique selected to revegetate all disturbances resulting from this modification.

Will there be sufficient backfill material necessary to return the proposed fan/portal area to approximate original contour (AOC) given that permanent reclamation/revegetation of the exploration site (Type 2) is already completed?

Will additional soils will be salvaged with respect to construction of the portal facilities versus what was salvaged during exploration? It would appear that topsoil materials would be available under proposed support structures for salvage, stockpiling, and redistribution. The applicant must commit to saving all topsoil to given depths reported in the "Soils Resource Information" section. A plan in accordance with 817.21-817.25 is required.

The statement is made in the "Vegetation Information" report that "Riparian vegetation to be affected would be limited to the portal facilities area only." The applicant must submit a proposed revegetation seed mix and details for techniques to reclaim such a community if it has been disturbed by the pad.

Cross sections showing the final configuration of all disturbances after reclamation (see ACR, page 6, #13) are required in the application.

A description of the method which will be used to dispose of acid-forming, toxic-forming, etc. materials must be included in the application.

#### UMC 784.15 Post Mining Land Use

Final post mining land use plans must be submitted prior to permit approval, not "upon completion of operations". (See page 21 of the ACR response).

#### UMC 784.19 Underground Development Waste

The applicant must provide an updated design of the development waste disposal site showing the anticipated final configuration of the pile. An estimate should be made by the applicant on the amount of development waste that might be expected to be encountered over the life of the mine.

On page 18 of the applicant's response to the ACR, the applicant states that coal waste will be disposed of in an approved waste rock disposal site. Is this the development waste disposal site that the applicant is constructing? If this is the case, the toxicity of the material in the pile must be addressed. Given the sometimes high pyrite values in roof and floor rock (up to 10% in one set of samples), and the fact that this material is

most likely to be inadvertently mined and removed as coal waste, there is a significant possibility that the material will not support vegetation and that four feet of cover will be required. In addition, some of the roof and floor rock would also be disposed of as development waste. The applicant should identify the quantity and quality of this material and evaluate the need for four feet of non-toxic cover.

UMC 784.19(a) - 817.71(b) Disposal Structure

"The construction of the disposal excavation and berms will be accomplished by standard earth construction practice." This statement should be clarified, whose standard are you following?

It should be clarified that when the access road is removed, will it be scarified before planting?

UMC 784.20 Subsidence Control Plan

The information and analyses collected and completed to date on subsidence primarily address lowering of the surface as a result of mining in areas of relatively thick overburden cover. However, the primary issues surrounding subsidence impacts to the environment at the UP&L mines may center more around areas of shallow cover, particularly where streams exist, and along the canyon sides where springs and seeps are predominant. An analysis of subsidence impacts must address these issues.

In the report submitted by John T Boyd Co., it was evident that several factors affected the subsidence of the large block of material in the area of the Wilberg Portal. These were an existing fault, an area of burned coal which probably failed under the additional loads placed on it due to mining, and the proximity of the Castlegate sandstone forming the adjacent bluff - all combining to cause a slump of almost 12 feet. In areas where future mining will encounter the same or similar conditions, this same type of failure is possible. In addition, such a failure might be augmented by mining in up to three seams where the Cottonwood seam is to be mined.

The concern is that, if this type of failure were to occur, what would be the effect on the springs in the North Horn Formation and along faults? Slumping could deplete springs and seeps at their source. A geotechnical analysis must be provided showing that the coal barrier to be left between the outcrop and the operations will prevent significant slumping in areas where springs and seeps, and land use might be affected. If partial extraction is to be utilized as suggested in the Boyd Report, then an area of partial extraction must be shown and an analysis provided on long-term pillar stability, pillar design, maximum size of opening and extraction ratio.

In sections of the mine where the applicant is proposing to mine in areas of relatively thin overburden, the mine maps show that partial extraction of coal will occur. Information must be provided on the design of the operation in these areas. Long-term pillar strength, extraction ratio, pillar design

and the maximum size opening must be evaluated. If multiple seam mining is proposed in any of these areas, a plan for superposition of pillars must be provided.

Subsidence analyses should be provided for the worst-case situation for the several types of conditions that exist. These would include areas where mining will occur in one, two or three seams under the shallowest overburden conditions, near faults, and/or near edges of the canyons. These various scenarios should then be related to significant seeps and springs, and sensitive land use areas.

The subsidence monitoring plan that the applicant has proposed must be discussed in light of these issues. Monitoring should commence in any potentially sensitive areas prior to mining within the area defined by the angle of draw around areas of concern. In the areas where it is proposed to leave pillars, it is understood that subsidence is not expected to occur. In these areas, it would perhaps be more appropriate to monitor the stability of the pillars in the mine to determine if they are remaining stable under design loads.

The applicant has stated that a bond covering subsidence impacts has been obtained to cover potential damage to structures due to subsidence. What is the amount of the bond and how did the applicant determine the amount required?

UMC 784.23 Operation Plan: Maps and Plans

(b.1) Show the absorption field associated with the septic tank facilities as part of the permit area.

(b.5) Show the development waste disposal site as part of the permit area.

UMC 800.5 Definitions

State the type of bonding program (surety, self-bond, etc.) which will be submitted.

UMC 805.11 Determination of Bond Amount

The following deficiencies must be addressed when calculating the bond amounts for modifications (Underground Development Waste Disposal Area, Cottonwood Lease, Cottonwood Fan/Portal) as well as resubmitting bonding material relevant to the permit application as a whole.

(a.1) On page 31 of the ACR response, the applicant includes a cost table but does not define what these costs pertain to. Indicate what these costs represent.

Supply supporting calculations for bond estimates. (These calculations should be made subsequent to completion of the revisions to the reclamation plan requested in this document.) Several methods of calculation and

organization are available to fulfill this request; however, each step for each type of reclaimed site outlined in the reclamation plan must be addressed in detail. Such steps include ripping, scarification, seedbed preparation, fertilization, seeding, transplanting, mulching, riprapping, and any others that the applicant cites in the reclamation plan. Variations in reclamation/revegetation techniques with respect to site conditions (e.g., techniques for nearly level-slightly sloping areas (less than 3:1) versus techniques for steeper slopes (greater than 3:1) must be addressed. Identify the labor classification and labor rate used to develop cost (i.e. equipment operator, common laborer) rather than a gross labor rate. The type of equipment proposed for the work must be identified with the associated cost rate.

With respect to bond estimates included in the original application, the following deficiencies were noted:

- Bond estimates must be adjusted based on estimates of the Consumer Price Index or other inflationary adjustment factor.
- Laboratory analysis costs do not appear to have been included in the line item "Soil Analysis Tests."
- Vegetation monitoring estimates appear low. Provide calculations supporting this figure.

(a.2) It is necessary that bond estimates reflect costs to the regulatory authority (RA) with respect to equipment delivery to the site, etc. since the RA would not have access to the applicant's equipment. Have such costs been included in the calculations? If yes, a statement and showing to this effect is necessary. If not, calculations need to be adjusted accordingly.

(a.4) The regulations require that additional funds be included in the bond cost estimate which reflect cost changes during the last five years for activities included in the reclamation plan. Are such cost adjustments included in the present costing? If yes, a statement and showing to this effect is needed. If not, calculations need to be adjusted accordingly.

#### UMC 817.21-25 Topsoil

The applicant has indicated (Pg. 30 ACR response) that fill material was sampled again in 1983. Provide information on the location of these samples and a description of the methodology used to collect them.

The applicant should reorganize the soil and overburden data contained in both the original application and the ACR response. A single table should be constructed itemizing the results from laboratory analysis for all samples collected at the Wilberg Mine only. The table should indicate the sample number, type of material, and the sample site location. If all types of

material to be used as topsoil substitute are not represented, the operator must conduct additional sampling on such substitute materials. Sampling and chemical analyses to be conducted for any additional needs should follow the document "Guidelines for Management of Soils" prepared by UDOGM and include a value for pH.

Data for pH values has not been provided for samples included in the ACR response. This information must be included.

It is apparent that the soil samples used to describe the soil resource at the disposal area were taken at the Wilberg portal. Given the difference in topography between sites, the assumption that these are the same soils cannot be justified. Provide the location of the additional sample taken on the disposal area. The pedon characterization for this soil description appears to indicate that 18 inches of soil material are available for salvage yet the applicant is proposing to salvage only 12 inches. All soil available must be salvaged. The applicant must salvage all of this material, or provide justification for recovering only 12 inches.

The applicant states that no revegetation will be required with the Cottonwood Lease modification. Since surface disturbances would appear to be involved in the development of portals it follows that revegetation would be involved. If this will occur, the applicant must provide information relevant to the materials which will be used as seedbed.

On page 4-4 of the application the applicant proposes to place 6 inches of growth medium over a solid sandstone ledge. Considering annual precipitation, evapotranspiration, and the apparent texture of available material, significantly more plant growth medium must be provided. The applicant must revise this topsoil depth.

#### Shrub Tests

How long will the test strip be? The applicant proposed to test shrub species separate from grass seeding. This may not be appropriate during final revegetation since shrubs will have to compete with establishing grasses. The applicant should adjust the proposed tests. If a similar method of testing is retained, the plastic should be kept on site through the winter and until shrubs are planted to prevent erosion of an otherwise bare area. How will 2 inches of hay be worked into the soil after shrubs are planted without disturbing the planting? The methods for determining the success of test plots must be submitted in greater detail.

#### Interim Stabilization and Vegetation Plan

With respect to the methodology stated on page 34 of the ACR response, the following deficiencies are noted:

- Seedbed preparation techniques must be included.

- Fertilizer must be applied according to soil analyses rather than predetermined rates.
- At what rate (tons per acre) will mulch be applied.
- Raking must be completed prior to mulching and mulch anchoring.
- An evaluation procedure (monitoring plan) must be developed to determine species success.
- The annual monitoring report (referenced on page 35 of the ACR response) must be submitted to the regulatory authority as well.

The applicant should evaluate the Interim Stabilization and Vegetation Plan in relation to the disturbed area to determine if short-term and long-term stabilization (see ACR, pg. 12, second paragraph) is appropriate.

UMC 817.71(i)

The fill shall be inspected for stability by a registered engineer at least quarterly throughout construction and, during the following critical construction periods in accordance with the proposed plan: (1) removal of all organic material and topsoil, (2) placement and compaction of fill materials, and (3) revegetation. The compaction of fill material was not included in the plan and should be. Please include.

UMC 817.97 Protection of Fish, Wildlife and Related Environmental Values

The applicant should incorporate all additions and revisions made in response to the Utah ACR into the MRP application.

Results of the Raptor and Migratory Bird Survey and yearly monitoring for the Cottonwood Fan Portal need to be incorporated in the Fish and Wildlife Plan section of the MRP. No site-specific information is presented on raptor nesting use of cliff areas in the vicinity of the Wilberg portal. This information is needed to determine if any mitigation or monitoring plans are necessary to protect raptors in this area. The applicant needs to incorporate the results of the U.S. Fish and Wildlife Service (USFWS) raptor survey for the Wilberg Mine and respond to the relevant mitigation and monitoring procedures suggested by the USFWS (Memorandum dated November 17, 1981). Results of any monitoring program will need to be reported to the UDWR and USFWS.

More detailed information regarding mule deer seasonal distribution and numbers within the permit area and particularly along the access road is needed to determine the potential for mine and haul road operation impacts to the local deer herd. The applicant states that "truck traffic on the mine access roads kill an unknown number of deer each year" (page 2-115). The

applicant should commit to monitor the occurrence of road-killed deer on a regular basis. Monitoring deer road-kills would determine if any portions of the access road are particularly hazardous to deer, especially during winter and early spring. If any such areas are identified, mitigation measures, (crossings, fencing, etc.) would need to be proposed to alleviate the problem.

A map showing raptor cliff nesting habitat and the mule deer critical and high-priority winter ranges in relation to the permit area should be provided.

On page 4-30 of the MRP and page 25 of the ACR Response the applicant states that no additional disturbance is anticipated during the five-year permit period. This statement needs to be amended to include surface disturbances resulting from the Cottonwood Fan Portal and the Waste Rock Storage Site (cross referencing to other portions of the MRP is encouraged).

On page 2-115 the applicant states that "some raptor disturbance continues at the mines and along the access roads which transect some of their hunting territory." What is the extent of this disturbance and how was it determined since it appears that no site-specific studies of raptors was conducted in the mine area?

On page 2-119 the applicant states that "annual surveys will be conducted to assess the impact, if any, of wildlife use in an around the fan portal. How are these annual surveys being conducted and what species do they address? What have been the results of these surveys thus far?

On page 2-88 of the Operations Plan it is stated that mining may alter or disrupt the flow of surface water on East Mountain. Text on page 4-26 of the Reclamation Plan-Hydrologic Balance indicates "that mining under seeps and springs at the depths of cover of Wilberg Mine, up to 2,400 feet does not dry up the seep of spring." Since continued availability of free water to wildlife is an essential habitat constituent, these discrepancies need to be clarified.

The applicant includes the UDWR's general wildlife mitigation recommendations as a mitigation plan without comment. What specific elements of the UDWR's recommendations will be carried out by the applicant?

On page 2-117 the applicant states that "the small riparian zones at the Wilberg and Deer Creek Mines will be protected from further disturbances and destruction." The applicant must identify any riparian habitat on the Wilberg Mine that has been disturbed or destroyed and describe how riparian habitat will be restored an/or enhanced in the final reclamation plan pursuant to UMC 817.97(c)(5).

The applicant states that wildlife habitat will be one of the primary post-mining land uses. The applicant also implies, on page 4-31 of the MRP and page 27 of the ACR respnse, that revegetation for wildlife will be consistent with UMC 817.97 (9). However, the applicant does not supply any

specifics (other than "plantings will be randomly spaced and clumped for wildlife enhancement", page 37, ACR Response) on how plants will be grouped and distributed in a manner which optimizes edge effect, cover, and other benefits for wildlife. Provide details for wildlife plantings. The appropriate vegetation sections should reflect revisions made here.

UMC 817.116 Revegetation: Standards For Success

The applicant states, on pages 37 and 38 of the ACR response, five points with regard to "sampling for ten year responsibility period and bond release" pursuant to this section and UMC 784.13 (b.5.vi). The following comments pertain to these five points:

- No. 1) Late summer (July - August) is preferable.
- No. 2) Acceptable; however, other techniques may be more cost effective and provide better quality data.
- No. 3) Acceptable, however, the PCQ technique, implemented as a complete random design or systematic design is preferred.
- No. 4) Acceptable.
- No. 5) Not acceptable. Merely stating that revegetation success "will" be based on 817.116 (b.3.iv) and 817.117 is not adequate. The applicant must state how compliance with this section will be effectuated.

On page 11 of the ACR response it is stated that the range condition of both mine and waste rock references acres is poor. Pursuant to the requirement that reference acres is poor. Pursuant to the requirement that reference areas must be in fair or better range condition at the time of bond release, the applicant must present and commit to a management plan for the selected reference areas to insure their utility for revegetation success determination. The applicant must:

1. Detail the proposed management plan for approved reference areas,
2. Detail monitoring methods and standards which will be used to gauge the success of revegetation and to determine when augmented seeding or plantings will be needed to meet the revegetation success standards.
3. Detail testing procedures which must be passed to trigger final bond release.
4. Overall success standards should be related to the pre-mine vegetation study and the established reference areas (refer to DOGM vegetation guidelines for details).