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STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

*Debbie*  
Scott M. Matheson, Governor  
Temple A. Reynolds, Executive Director  
Dr. G. A. (Jim) Shirazi, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

December 2, 1983

(P 396 996 901)  
CERTIFIED RETURN RECEIPT REQUESTED

Mr. R. E. Yourston  
General Superintendent  
U. S. Steel Mining Company, Inc.  
P. O. Box 807  
East Carbon, Utah 84520

RE: Determination of Completeness  
Review  
Wellington Preparation Plant  
ACT/007/012, Folder No. 2  
Carbon County, Utah

Dear Mr. Yourston:

Please find enclosed the Division's Determination of Completeness (DOC) review of U. S. Steel's recent submittal for the Wellington Preparation Plant permanent program permit application. As you will note, there are still many areas which are seriously deficient. The requested information must be provided before the application can be determined complete and the Technical Analysis (TA) can proceed.

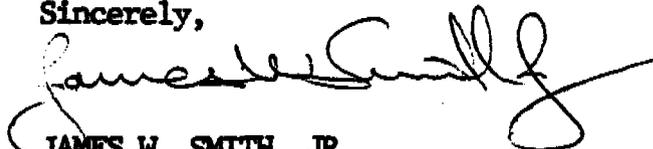
The Division letter of November 8, 1983 containing the compliance review schedule is not flexible. A decision on completeness of the application must be made by January 13, 1984. Therefore, it is imperative that the requested information be provided to the Division no later than December 30, 1983. Failure to submit the required information will result in the action outlined in the Division's November 8 letter.

The Director of the Division, Dianne Nielson, requests a meeting with you and your staff in our office on Thursday, December 8 at 3:30 p.m., to discuss the permit deficiencies and the importance of meeting the established

Mr. R. E. Yourston  
ACT/007/012  
December 2, 1983  
Page Two

permitting compliance schedule. Our respective permitting staffs should get together at 10:00 a.m., to discuss technical issues. If you have any questions or concerns, please do not hesitate to call me, Ron Daniels or Shannon Storrud.

Sincerely,



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

JWS/SS:btb

Enclosures

cc: Allen Klein, OSM  
D. Nielson, DOGM  
R. Daniels, DOGM  
L. Kunzler, DOGM  
T. Portle, DOGM  
D. Wayne Hedberg, DOGM  
D. Davis, DOGM  
R. Summers, DOGM  
S. Storrud, DOGM

DETERMINATION OF COMPLETENESS

U. S. Steel Mining Company, Inc.  
Wellington Preparation Plant  
ACT/007/012, Carbon County, Utah

December 1, 1983

UMC 771.19 Compliance With Permits

The applicant must demonstrate that compliance with conditions put forth in a December 4, 1981 approval letter has been achieved. No record is found in this office of U. S. Steel's response to Stipulation 12-1-81 and Stipulation 12-2-81.

UMC 783.13 Description of Hydrology and Geology: General Requirements

(a) The applicant must provide information concerning the depth to the water table near the Price River and all data available concerning ground water quality and quantity from nearby wells (i.e., any in Township 15 South, Range 11 East and specifically, the deep water well discussed on page 1 of the MRP). Page 783-5 discusses this, but more detail is requested. How does the water level fluctuate and are water quality data available?

DETERMINATION OF COMPLETENESS

The applicant's claim that no wells exist in the area is not valid. U. S. Geological Survey (USGS) Open-File Report 79-915 (1979) lists 10 wells in that township and range with many more in adjacent areas. The applicant's claim that the water well source is listed as a Price River water right does not preclude the fact that this is indeed a water well and will be considered as such during permitting. The applicant is requested to perform a more thorough investigation of available data to describe the ground water resource more completely. Quantity and quality data for the ground water resource are lacking in the application.

(a)(1)(2) The applicant has failed to provide the previously requested information:

1. Dip and strike readings within the proposed permit area; particularly in the vicinity of the coarse and fine refuse piles.
2. Location of faults, folds and joints.
3. Does the "Upper Unnamed Shale" of Map C9-1213 correspond to the Blue Gate Shale as described within the text of the permit application?

The applicant references USGS Geologic Map I-1178, however, it is absent from the Mining and Reclamation Plan (MRP).

*Language will be modified to the effect - N15W 40W dip is referenced in the characteristics of shale cover. To this knowledge - fault or joints are not mapped but may occur.*

DETERMINATION OF COMPLETENESS

Dip and strike readings within the proposed permit area southwest of the coarse and fine refuse piles in Unnamed Shale (K mu) and on either side of the clear water dike (i.e., southeast and northwest of dike in Unnamed Shale) must be supplied.

*See no. 1 level  
to  
dip  
+ strike*

The applicant states that rock beds dip 40° to the west and strike N 15° E yet does not explain which (1) beds or strata this measurement applies to, or (2) where this measurement was taken. This measurement is in disagreement with the strike and dip measurement on the geologic map concerning the Ferron Sandstone. The applicant must explain where the N 15° E 40° W measurement was taken, what stratum it applies to, and show it on the geologic map.

The topography of the permit area suggests that faults or joint systems may exist on either side of the clear water pond, the southeastern tip of the lower refuse pond, and along the southwestern boundary of the permit area. The applicant must investigate at least these areas and incorporate his findings concerning these areas in the mine plan. Also, the applicant must explain where the Farnham Anticline is in relation to the permit area.

*Preliminary reports done  
by a study was not sufficient  
faults or joints or we will*

Since the applicant references the USGS Map I-1178, he must include it in the mine plan.

The applicant must commit to a designation of the "Unnamed Shale Member"--is it the Blue Gate Shale or isn't it? If it isn't Blue Gate Shale, and is a member of some other formation, then the application must: (1) specify which formation it belongs to (since it is a "Member") with a reference cited; and (2) explain why he makes reference throughout the mine plan to the Blue Gate Shale (give references). If it is Blue Gate Shale, then the applicant must explain the geologic character of the Blue Gate Shale within the permit area and cite references.

*Unnamed Shale is Member  
of Ferron Shale & Blue  
Gate is part of Unnamed  
Shale*

UMC 783.14 Geology Description

The applicant states that the subsurface investigations concluded that the Blue Gate Shale is . . . sufficiently thick to prevent seepage loss to the underlying Ferron Sandstone. Yet, only two holes were drilled through this formation--both of which are located on the clear water dike.

DETERMINATION OF COMPLETENESS

The conclusion that the Blue Gate Shale is sufficiently thick to prevent seepage loss to the underlying Ferron Sandstone on the basis of two drill holes 1,000 feet apart on the clear water dike is unfounded. This statement should be taken out of the plan and/or measures must be taken to verify this statement.

*the  
water  
dike will  
be the basis  
of drill holes  
Blue gate water  
as evidence of  
+ permeability*

(a)(2)(ii) The applicant has not provided the average pyrite and sulphur contents of the coarse and fine refuse piles.

*Trickles  
of Rain  
seep  
out of  
the  
refuse  
piles*

DETERMINATION OF COMPLETENESS

The applicant must provide the amount of pyritic sulphur, organic sulphur, sulfate sulphur and total sulphur present in the fine refuse pile southeast of the upper refuse pond and the coarse refuse pile.

A description is requested of the measures used to plug, case or manage bore holes within the proposed permit area.

UMC 783.15 Ground Water Information

(a) A description of the ground water resources in the area must be completed. The Ferron Sandstone as a possible aquifer as briefly discussed on page 783-6 must be described more fully. The information must include the lithology, thickness, depth and horizontal extent of the formation and uses and quality of the water in the formation and water table.

(b) The topics outlined in this section must be addressed for all aquifers in the area and for the general ground water below the water table adjacent to the Price River.

DETERMINATION OF COMPLETENESS

Again, the applicant's claim of no wells in the area is invalid (see comments under UMC 783.13). The extrapolation of data from the wells on page 783-10 to the site area is tenuous. The applicant should conduct a more thorough data search and obtain data closer to the permit area and compile these data into a narrative summarizing the ground water resources. The alluvium water table is considered to be an aquifer, and as such, must be addressed under this section. The operator is requested to address each item of this section with supporting evidence for each aquifer. The applicant should also address the potential for faulting/jointing communication between surface and shallow ground water and the Ferron Sandstone. The applicant must submit a ground water sample scheme to describe the quality and quantity of the subsurface water.

UMC 783.16 Surface Water Information

(a) Please provide a quantitative description of the flow path for that portion of the flow of Soldier Creek that flows beneath the slurry ponds. Describe the amount of flow and the barrier that prevents pond water from entering this flow path.

Please provide a description of the surface drainage system at the cleaning plant and the ponds. Indicate flow patterns for both locations on a map of scale 1:6,000.

Please identify more completely the site investigations conducted; including the investigators, the methods used in the investigation and the specific results of these investigations (see UMC 771.23[c] for requirements).

(b) The applicant must provide discharge estimates for the Price River for the dates of water quality sampling. Flow data from the published USGS gaged discharge for the Price River (Station 09314250) can be used for this purpose.

Please provide an updated water monitoring data report.

#### DETERMINATION OF COMPLETENESS

The operator has deleted the previous statement that a portion of Soldier Creek flows under the slurry ponds stating that it cannot be substantiated.

The operator discusses the slurry pond system and the liner materials for the ponds involved. The clear water pond is lined with clay and clay loam material. The ponds above the lower refuse clear water pond are unlined.

It is the operator's opinion that the thick coal fines and associated settleable solids in the pond areas form a low permeable layer restricting water seepage into the alluvial beds beneath the ponds. This conclusion is substantiated by recording make-up water losses pumped from the Price River to the ponds. It is the operator's opinion that make-up water can be accounted for through normal evaporation from the ponds and the plant's heat dryer system.

The operator must further substantiate the evaporative loss projections by submitting the calculations and method utilized to compute the actual evaporative losses attributable to the make-up water utilized (also see comments under UMC 817.52).

#### UMC 783.17 Alternative Water Supply Information

The application lacks a commitment by the operator to develop an alternative water supply in the event the operator is responsible for contamination, diminution or interruption of a legitimate water use of ground water or surface water supply.

#### DETERMINATION OF COMPLETENESS

The operator owns water rights in the Price River adequate to cover the make-up water required for operation of the coal cleaning plant. Statements are made that there is no known contamination, diminution or interruption of water flow in the area that will adversely affect holders of downstream water rights on the Price River.

The operator states that the use of water by the coal cleaning plant is in a closed system which precludes contamination to downstream users.

Any impact of a plant discharge to the river would have a negligible effect on downstream river water quality.

It is the Division's opinion that the operator still has not adequately addressed the potential impacts to downstream or adjacent water right owners, nor provided adequate mitigation. A contingency plan and commitment to provide an alternative water source still must be provided. This may require the operator to provide some means of assistance to recover losses to impacted adjacent water users (i.e., drilling costs to replace water, a portion of U. S. Steel water rights, diversion and/or pumping costs, etc.). The operator must provide some contingency plan to address this section and a commitment to UMC 817.54.

#### UMC 783.19 Vegetation Information

The vegetation study presented as "Appendix E" in the Mining and Reclamation Plan (MRP) is not acceptable in meeting the vegetation information requirements.

Please have a qualified individual or consulting firm redo a vegetation survey this year (July preferably). It is highly recommended that a meeting be scheduled to discuss sampling methodology, intensity, etc., before field work is initiated to help assure that the vegetation study is completed in an acceptable manner. It is essential that this study be completed to fully evaluate reclamation plans for this site and establish the reclamation success standards. In any event, this study should follow the Division's vegetation guidelines (March 1982).

#### DETERMINATION OF COMPLETENESS

A vegetation study was made during the summer of 1983 in the adjacent undisturbed communities.

It appears that the operator intended to use the Range Site Method as described in the Division's guidelines (although this is not clearly stated). However, to use this method, sampling must be done in range sites that are in fair or better condition. Two of the three sites sampled were in poor condition. Therefore, it will be necessary to establish these sampling sites as reference areas by permanently marking them in the field as such. It will also be necessary to fence or otherwise manage the reference areas to improve the range condition to fair or better at the time of bond release. Please provide a management plan for approval. This plan should also include a schedule for periodic assessment of the range condition (i.e., once every three to five years) to evaluate the effectiveness of the management plan.

Also, before the "pasturelands" are disturbed for a borrow area, baseline vegetation data must be collected (as per the Division's guidelines) and success standards for revegetation established.

UMC 783.22 Land-Use Information

The MRP fails to identify that a major land-use of the area was and is wildlife habitat, including portions that have been ranked as being of "crucial-critical value" by the Utah Division of Wildlife Resources (DWR).

DETERMINATION OF COMPLETENESS

The operator fails to acknowledge the ranking of portions of the area by the DWR as "crucial-critical habitat." The applicant's rationale for not accepting the DWR rankings is without basis.

UMC 783.24 Maps: General Requirements

The operator has provided a map which serves to delineate the soil series encountered on the permit area (E9-3339). This map should be revised to include the exact location of all sample points (see UMC 817.22) within each series.

DETERMINATION OF COMPLETENESS

The operator provided a map (E9-3425) in Technical Revision Number I showing soil sample locations.

A single map which serves to combine the soil series (Map E9-3339) with sample site locations shown in Appendix H (Map E9-3443) and those attendant to the refuse pond revisions (Map E9-3425) must be provided. Consolidate all soils data from these discrete submissions at this time. This must be done to allow a determination of completeness. Data presented in Appendix H are incorrectly labeled 2WD and 9WD rather than "B." This should be corrected on the forthcoming consolidated MRP.

UMC 783.25 Cross-Sections, Maps and Plans

(f) Provide a map and cross-section of the subsurface water, including the Ferron Sandstone, depicting the areal extent of this formation and its location relative to the ground water table.

DETERMINATION OF COMPLETENESS

The operator has provided a map (E9-3428) which shows a series of generalized core logs from a number of holes drilled on the property (1957). Several holes indicate the level where water was intercepted during drilling.

No indication is provided as to whether this is a static water level which remained after drilling, or if this is where a water "show" was encountered during drilling. No monitoring records were collected.

The operator states that there is no ground water information available relative to the Ferron Sandstone Unit within the permit area. It is also stated on revised page 783-10 (Ground Water Information) that no ground water has been sampled within the permit area. Reference is made to several "remote" gas wells and a coal mine which have water quality (Total Dissolved Solids [TDS]) analyses from the Ferron Sandstone Unit (TDS range of 3,454 - 21,534 ppm). These data are extrapolated by the operator to be representative of the Ferron Sandstone underlying the permit area.

The operator has not provided the specific information requested under this section with regard to identification of the water table and ground water system. See comments under UMC 783.15.

(i) The ultimate boundary of the refuse pile must be clearly marked on Map E9-3341. Also, the extent of the diversion ditches must be clearly marked on this map.

#### DETERMINATION OF COMPLETENESS

Upon comparison of Maps E9-3341 and F9-177 it appears that the ultimate extent of the coarse refuse pile will eventually inundate the undisturbed drainage diversion ditch to the southwest of the pile.

This situation must be resolved before this section will demonstrate compliance.

#### UMC 783.27 Prime Farmland Investigation

The operator states on page 783-32 that the lands in the mine plan area are not prime farmlands and provides some justification. Documentation from the Utah State Office of the Soil Conservation Service (SCS) is also required. This involves the solicitation of a letter of negative determination from the SCS to be provided to this office.

#### DETERMINATION OF COMPLETENESS

The operator has submitted a letter of negative determination from the SCS. This section is now complete.

#### UMC 784.11 Operation Plan: General Requirements

(b)(6) Please describe the plant washdown process including the amount and frequency of these activities. A water quality analysis of a representative washdown water sample must be submitted along with a description of the flow path for overflow water from the washdown process.

The applicant should provide design details for the water clarification facilities that are anticipated (page 784-10) for the cleaning plant once the ponds east of the river are nonfunctional.

DETERMINATION OF COMPLETENESS

The operator has answered this section in part. It is stated on page 5 of the resubmission that in the event of a power loss during coal cleaning operations, that excess water from the system will be discharged into the auxiliary pond and proposed road pond.

The operator must demonstrate that the ponds are capable of containing all water which could potentially be discharged from the coal cleaning system in addition to the design storm surface runoff and maximum sediment storage volume (i.e., compare maximum water inflow potential vs. total storage volumes for ponds).

UMC 784.13 Reclamation Plan: General Requirements

(b)(3) The operator should provide a map indicating the pre- and post-mining contours. Please describe how the postmining contour will be designed to accommodate drainage patterns as well as ensure adequate stability (see UMC 817.101).

DETERMINATION OF COMPLETENESS

The operator has provided a postmining reclamation contour map for the entire permit area (E9-3342). This drawing is not of adequate scale to clearly discern how postmining drainage patterns will be reestablished.

No narrative addressing drainage patterns or stability was provided. No data are presented to document the stability of reclaimed areas.

The operator must provide postmining reclamation contour maps of a scale similar to drawing E9-3426 (1:2,400) for all of the permit area, which clearly depict stable postmining drainage patterns.

(b)(4) Please provide a map (as described in UMC 783.24) adequate to address the concerns in UMC 817.22.

More detail is needed to achieve a topsoil management plan capable of describing the removal, storage, protection and redistribution of topsoil and substitute materials as further detailed in UMC 817.21-.25.

DETERMINATION OF COMPLETENESS

The operator has submitted soils information pursuant to a refuse pond modification in Technical Revision Number I. No map showing where soil was/will be removed attendant to refuse pile expansion (784014) is found. A soils management plan is presented. (Please refer to comments under UMC 817.21-.25.) The operator has failed to provide a map adequate to address UMC 817.22(e). The operator must do so to allow a determination of completeness.

In the "Vegetation Study and Revegetation Plan," the operator alludes to the use of soils from "alluvial lowlands within the property." Maps and volume estimates of this proposed area must be submitted. A detailed proposal is necessary, as a one sentence statement on a matter which is at the heart of the reclamation plan will not suffice for completeness. (Also, refer to comments under UMC 817.22[e].)

(b)(5) Revegetation aspects of the reclamation plan are seriously lacking. An overlay of Maps E9-3339 (Soils Map and Disturbed Area) and E9-3345 (Vegetative Types and Plant Communities) reveals that vegetative types 1A, 1B, 2A, 2B, 2C, 3A, 3B and 3D have been affected by the operations at the preparation plan. The applicant needs to supply a consolidated and comprehensive revegetation plan for these types and any proposed disturbed areas which will meet the performance standard requirements of UMC 817.111-.117, including, but not limited to:

- (i) A relative schedule for final revegetation, including season for reseeding and/or planting of seedlings.
- (ii) A seed mixture capable of achieving a diverse community and conducive to postmining land-use of wildlife habitat and limited grazing, including seeding rates in terms of Pure Live Seed (PLS), stocking rates, etc. If introduced species are to be used, a justification pursuant to UMC 817.112 must be provided.
- (iii) Detailed methods to be used in planting and seeding, including plant spatial arrangements to maximize benefit to wildlife as per UMC 817.97(d)(9)(C)(ii). How will the areas be prepared for seeding?
- (iv) A detailed discussion of mulching and fertilizing techniques (type, rates, methods of application, how anchored, etc.). It has been the Division's experience that, in similar areas of precipitation, mulching or another form of moisture retaining measure is necessary for successful revegetation. Research has shown that revegetation can be greatly enhanced when areas are "pitted." These small "pits" or "depressions" have been quite successful in controlling erosion and enhancing water availability.
- (v) If seeding occurs in the spring, it may be necessary to irrigate revegetated areas to insure revegetation success.

A statement is needed as to what pest and/or disease measures will be used or a statement as to why their use will not be necessary.

- (vi) What technical procedures, guides, etc., of the U. S. Department of Agricultural (USDA) or U. S. Department of the Interior (USDI) will be used for determining revegetation success and how will they be used?

Measures proposed to be used to determine the success of revegetation as required under the performance standards, which include an effective and detailed monitoring plan should be submitted.

#### DETERMINATION OF COMPLETENESS

The operator has failed to provide a comprehensive revegetation plan--a discussion of several alternatives (of which more than 5,700 detailed revegetation plans could be developed) with no commitment to use any (or all) of the techniques is not adequate.

(i) Although late fall was identified as being the best time to seed, there is no indication or commitment that seeding will be done in late fall.

(ii) Several forbs should be added to the seed mix (especially one or two legumes). Also seeding rates should be revised for several species to help insure the establishment of a diverse community.

(iii) It is unclear as to whether drill seeding or broadcast seeding methods will be employed. Both may be used, but the areas to be seeded by each method must be identified (i.e., map).

(iv) Again, there is no definite plan to use any particular mulch or other moisture retention/stabilization technique or to use any particular fertilizer. Definitive mulching and fertilizing plans must be supplied.

(v) The monitoring plan should be more detailed, i.e., what parameters will be measured, etc. Also, to follow success of individual species, permanently marked transects (sampling points) generally provides more reliable data. These transects should be randomly located the first year. Also, refer to comments under UMC 783.19.

(b)(5)(vii) Please provide a topsoil and substitute material testing program as further described under UMC 817.22.

The operator states on page 784-10 that a variance "requested regarding revegetation until five years before abandonment." The reviewer cannot easily discern exactly what type of a variance is requested and for what purpose. Please clarify.

#### DETERMINATION OF COMPLETENESS

Please see comments under UMC 817.22(e). The operator failed to address clarification of the variance request. This must be done prior to determination of completeness.

The operator (see page 784-16) plans to use local soil to fill the well at the pumphouse. The volume of material required for this fill must be provided. This should be considered in light of the overall topsoil/substitute material deficit. Further, any material used as fill in this manner shall be chemically tested to demonstrate that no adverse affect on the ground water results pursuant to UMC 817.13-.15.

The operator has addressed this section. However, no attempt was made to coordinate this information with the overall topsoil/substitute material deficit. Nothing with regard to chemical testing of this material has been provided.

Since the material may communicate with ground water fill material must be shown to be nontoxic.

These concerns must be addressed to allow a determination of completeness.

(b)(7) The operator states on page 784-11 that "acid-forming and toxic-forming materials are not present and does not constitute a fire hazard" but offers no documentation to support this assertion. The operator must supply physical and chemical test data to support this statement (i.e., for refuse piles, slurry ponds, etc.). Contingency plans addressing the control (combustion) of these materials shall be provided.

#### DETERMINATION OF COMPLETENESS

Data submitted via a November 2, 1983 letter is not complete. Information lacking is as follows: lab methods; lab certification; pyrite, sulphur, as well as trace elements have not been included.

Also, nothing has been provided to address combustion potential or contingency plans. The operator must do so to allow a determination of completeness.

(b)(9) Please provide designs for configuration of the ponds east of the Price River following reclamation. Also, provide justification for the retention of these ponds, addressing the requirements of UMC 817.49. For the preparation plant area: (a) provide detailed plans for how runoff is precluded from this area and assumptions used in determining that runoff will not occur from this area; (b) provide tests and designs for separation of plant water discharge/runoff water and the ground water resources of the area; (c) provide proof of the nontoxicity of the material resulting from demolition.

#### DETERMINATION OF COMPLETENESS

The operator describes on pages 20 and 21 of the resubmission final reclamation plans for the refuse pond areas. The upper and lower refuse ponds will be regraded to match postmining reclamation contours as indicated on Drawing No. E9-3342.

The lower refuse pond is to be covered with 1.5 feet of coarse refuse material prior to redistribution of a six-inch layer of topsoil.

Will the same procedure be utilized to reclaim the upper refuse pond area? If not, why will this area be handled differently? Where will the coarse refuse be obtained from? What volumes will be necessary?

If the refuse material will be derived from the expanding coarse refuse pile west of the preparation plant, how will this effect final reclamation of this area? On page 784-22 (revised June 30, 1983), the operator states that this area will not require regrading to achieve final reclamation contours. Please provide an explanation as to how this plan may change if the coarse refuse pile is utilized as a source of material for reclamation of the refuse ponds.

The operator states that the clear water pond will remain as a sedimentation control structure for the refuse disposal area during reclamation. The operator must demonstrate that the clear water pond will be adequately sized to handle all postmining surface drainage from the recontoured upper and lower refuse pond areas. See section UMC 817.46(u) for water monitoring requirements after cessation of operations. See deficiency section UMC 817.103(a)(3) also.

#### UMC 784.14 Reclamation Plan: Protection of Hydrologic Balance

(a)(2)(3) The applicant must document and identify all current users of the surface and ground water in the mine plan and adjacent areas. A plan for the protection of the rights of current users of the Price River and area ground water must be submitted. This should include, but not be limited to, the development for an alternative water supply should a slurry pipeline failure (or similar event) occur.

#### DETERMINATION OF COMPLETENESS

(a)(2)(3) The applicant has not addressed or documented any users of the surface waters adjacent to the mine plan area. The applicant must also document evidence to support the statement on page 784-25 that there are no known users of ground water in the adjacent areas. What is the size of this area? What records were searched to document users (i.e., Division of Water Rights, State Engineer's Office, etc.). Are the wells documented in the USGS reports 79915 and 78121 (1979) as water wells all defunct? The plan for an alternative water supply discussed under UMC 783.17 should also consider any ground water users in the area. Again, the Division considers water in the flood plain alluvials as a ground water aquifer and wells in this strata as a water source.

(b)(3) A plan for the monitoring, collection and recording of the surface and ground water data must be developed for the monitoring requested as part of this ACR.

DETERMINATION OF COMPLETENESS

(b)(3) The applicant must submit a plan for monitoring the ground water quality and quantity for the shallow ground water aquifer. Attention should be focused on, but not specifically limited to, the coal refuse pile, the slurry ponds on the east side of the Price River, and the discharge area of the plant overflow ponds near the Price River.

The operator has presented a plan for control of runoff and plant discharge waters on page 784-26 (revised June 30, 1983). Also described is a monitoring plan (quarterly) for those surface water stations identified on Drawing #F9-177. A commitment is made to leave the silt fence structures upon initial site reclamation to assure that surface drainage water quality is maintained until the disturbed areas become vegetated adequately to warrant removal.

The operator is again referred to Section UMC 817.46(u) which requires the operator to demonstrate that the drainage entering the treatment facility meets the postmining State and Federal water quality requirements for the receiving stream.

UMC 784.16 Reclamation Plan: Ponds, Impoundments, Banks, Dams and Embankments

(iv) The applicant must provide a plan to remove impoundment structures and dikes including a timetable for removal for all structures in the permit boundary.

DETERMINATION OF COMPLETENESS

The applicant should alter the reclamation timetable for the area west of the Price River such that the sediment ponds are left in place until final reclamation has been completed. Additionally, UMC 817.46(u) requires the ponds be left in a place until the drainage entering the pond meets effluent limitations. A plan for this post-operations monitoring must be submitted.

UMC 784.22 Diversions

Maps and cross-sections showing details of diversions, water collection, conveyance, treatment, storage and discharge facilities. The location and extent of all ditches and water spreading areas must be shown. Maps F9-161-1 and similar unnumbered maps received March 26, 1980 should have more detail added concerning diversion location and flow patterns of the permit area.

DETERMINATION OF COMPLETENESS

The operator refers the reviewer to Map E9-3427 for cross-sections of the diversion ditch adjacent to the North Dike. This drawing could not be located within either of the (2) ACR response copies on file with the Division. Please provide appropriate copies of this drawing for review.

UMC 784.23 Operation Plan: Maps and Plans

(11) The applicant should submit cross-sections addressing the final reclamation configuration of the upper and lower ponds including the upper, lower, clear water and north refuse dikes.

DETERMINATION OF COMPLETENESS

See DOC comments under UMC 784.13(b)(3).

(12) The applicant is reminded that Map C9-1212 must be updated to show any water monitoring points established as the result of this ACR.

DETERMINATION OF COMPLETENESS

The applicant must include a map showing proposed ground water monitoring points as part of the ground water monitoring plan required under UMC 784.14(b)(3).

UMC 786.19 Criteria for Permit Approval or Denial

The applicant should demonstrate that revegetation can be feasibly accomplished in the plan. The applicant alludes to test plots (page 784.10) to ascertain a feasible revegetation plan. The use of substitute materials may be necessary to achieve reclamation in these areas. A test plot design should be put forth by the operator and should be adequate to demonstrate that reclamation is possible and should be tied into UMC 817.22(e) regarding soils suitability.

DETERMINATION OF COMPLETENESS

This is addressed in Appendix H. The plan is now complete.

### TECHNICAL DEFICIENCIES

#### UMC 817.22 Topsoil: Removal

The application is severely deficient with regard to topsoil removal. Indeed, the only place that topsoil removal is addressed is on page 784-14 where the operator indicates that 12 inches of topsoil will be removed as the coarse refuse pile is expanded.

What criteria were used to decide that 12 inches was the appropriate removal depth?

#### DEFICIENCIES

Criteria and rationale were not discussed. This omission must be corrected.

Is the slurry pond to be expanded over the life of the operation? If so, soil shall be removed according to previously established criteria.

#### DEFICIENCIES

In Technical Revision Number I, slurry pond expansion is addressed. The operator should refer the reader to this document here.

Soil sample number 2 was taken from series Ru B2, a description of which does not appear in the Soil Resources Section. Soil electrical conductivity data appears in error and should be checked by the operator and/or rerun. Soil texture determination is erroneous. These data thus must be considered suspect.

A map as described in UMC 783.24 must be provided. Information on the goals of soil sampling as well as a justification of sample sites are necessary. Page 14 of Appendix H should be amended to state the soils laboratory samples were sent to and provide the methods utilized for analysis.

Why were subsoil samples confined to one location? Why were no samples taken for in-situ materials at the plant and storage areas. Why were no samples taken for any proposed borrow area(s)?

Also, based on data in Appendix H (sample 10 WT), it is suggested that its potential for use of substitute material be evaluated.

The application contains no criteria useful in making topsoil removal decisions relative to topsoil depth. The operator should advance such criteria to be applied throughout the operation including any future slurry pond expansions.

The operator should also consider the development of criteria to assist in any decisions relative to the removal of substitute materials, as applicable.

DEFICIENCIES

Criteria and rationale were not discussed. This omission must be corrected.

Please provide rationale based on interpretation of soils test data. What equipment and methods will be employed in topsoil removal activities?

DEFICIENCIES

The operator has not addressed salvage depth except by way of the 12 inch depth stated above. Stating that the top layer will be removed as indicated by tests again fails to embrace the problem of the creation and utilization of valid decision making criteria.

Will soils be staked prior to removal at any future development site(s) or will some other method be used to delineate to equipment operators the soils to be salvaged and to what depth?

DEFICIENCIES

The operator states on page 784-22 that areas will be staked to confine disturbance to the planned area. However, the matter of staking to delineate various removal depths was not addressed.

UMC 817.23 Topsoil: Storage

The operator must provide updated maps sufficient to indicate the exact location of all current and future topsoil storage sites associated with the operation. Also, the volume of soil presently being stored should be indicated specifically for each location. The operator has not addressed the protection of stored topsoil.

1. What is the depth/anticipated depth of the topsoil stockpile(s)?
2. What are the dimensions of the topsoil stockpile(s)?
3. What slopes are/will be associated with the topsoil stockpile(s)? Provide this for each stockpile as necessary.
4. What measures are being/will be employed to protect the topsoil stockpile(s)? All information regarding the seed mix, the seeding rate, type and rate of mulch to be used or any other measure to be employed should be provided. How are/will stockpile(s) be protected from surface drainage.

Storage of topsoil stockpiles for a long period of time presents an opportunity to rebuild soil materials and possibly increase their ability to support the intended land-use and accelerate or increase the capability of the operator to achieve bond retrieval. In light of this, it would be wise to consider the use of leguminous species on the stockpile in conjunction with grass species since they will contribute to the nitrogen content of the soil and their use as a green manure in the redistributed soils has been proven efficient with respect to facilitating past reclamation.

#### DEFICIENCIES

Stockpile locations attendant to the slurry pond are presented in Map E9-3425, the proposed location for expansion of the coarse refuse pile is shown on Map E9-3341 as well as the current stockpile for the Sauerman dragline and facilities. The text of the MRP on page 784-13 should refer the reader to maps which depict all the storage locations.

The volume of soil as per each location was not included in the application. This must be done to address relevant concerns.

Topsoil protection is addressed in the way of providing a seed mix and committing to berms or straw bales on the toe of stockpiles. However, the following is still of concern: the operator failed to address: (1) depth of stockpiles; (2) dimensions of stockpiles; (3) slopes of stockpiles; (4) volume of each stockpile.

The topsoil stockpile protection afforded by current vegetative growth is inadequate as determined by field inspections. Lynn Kunzler has indicated that the seeding rate is inadequate and that other recommended species should be included. The following seed mix is suggested:

<u>Species</u>	<u>Pounds PLS/ac</u>
Alkali sacaton	1.0
Western wheatgrass	4.0
Tall wheatgrass	6.0
Yellow sweetclover	<u>3.0</u>
TOTAL	14.0

Please respond appropriately.

#### UMC 817.24 Topsoil Redistribution

Methods to be used by the operator to prepare overburden prior to topsoil redistribution such as ripping the overburden material should be described to insure that slippage surfaces are eliminated and revegetation promoted.

DEFICIENCIES

The operator states that grading and ripping will occur but does not describe implements or methods to be used. A more detailed treatment is required.

What will be the depth to which the topsoil/substitute material is applied in redistribution operations for each operational area? If the intended depth of soil redistribution in various operational areas varies, please provide a map indicating intended redistribution depths for each area.

DEFICIENCIES

The operator states that a uniform depth of topsoil will be applied. No consideration is given to varying conditions attendant to rock waste areas, slurry ponds, plant sites and any contaminated areas. Lack of topsoil coupled with above conditions necessitates that the operator provide various depth of topsoil according to the situation as defined by a forthcoming test plot program. The operator must explain how a uniform depth application will be suitable considering all applicable variables especially an apparent shortage of suitable topsoil and substitute materials. Additional data on the chemical nature of the slurry ponds is required.

(b)(2) A narrative outlining methods used to prevent undue soil compaction problems associated with redistribution of topsoil has not been provided.

DEFICIENCIES

The operator states that undue vehicular activity will be prevented but fails to address whether soil moisture at the time of redistribution will be taken into account as a means to prevent excessive compaction.

(b)(3) What will be done to protect the redistributed topsoil from loss due to wind and water erosion after redistribution, both prior to seeding and until the establishment of a successful stand of vegetation?

DEFICIENCIES

The operator states that the protection of redistributed topsoil will be accomplished by mulching. The type of mulch, its application rate and means of application are not discussed. These items must be provided.

Also, please expand on the selection of equipment to be utilized in redistribution of soil materials and how the redistribution operation will be designed to minimize excessive soil compaction.

DEFICIENCIES

This section was addressed above.

The operator must show the adequate topsoil or substitute materials as described in UMC 817.22(e) exists. A materials (topsoil and substitute material) balance must be submitted to affirm that adequate soil material is available to reclaim all disturbed areas, present as well as future. Accurate volume figures for current soil stockpile(s) must be provided to assess the deficit volume.

The operator should consider the following in his response:

1. As to the redistribution of topsoil/substitute materials over coarse refuse, the material in question may warrant a cover of inert nontoxic material (see UMC 817.85[d]). Attention to the necessity of the implementation of a buffer strip between the topsoil and coarse refuse is warranted.
2. The necessary depth of topsoil/substitutute material and techniques to be applied in slurry pond reclamation should be presented in detail. On page 784-10, the operator alludes to a "test revegetation area." This approach should be expapnded upon in light of reclamation requirements and the substitute material requirements detailed in UMC 817.22(e).

The operator states (on page 784-15) that using in situ material at the plant site would "approximate the predisturbance condition." This statement is seriously questioned. On what basis is this statement made? The operator must: (1) document this statement; (2) propose substitute materials as per UMC 817.22(e); or (3) utilize field trials to ascertain the validity of this statement.

DEFICIENCIES

The operator must provide detailed test plot designs based on the recent "Vegetation Study and Revegetation Plan" (Appendix H, page 24).

UMC 817.25 Topsoil: Nutrients and Amendments

(5)(vii) A soil testing program to determine nutrient deficiencies after redistribution has not been provided. This plan should suffice to ascertain the degree of success met by the topsoil handling and redistribution procedures. The soil testing should be adequate to ascertain the suitability of managed soil materials to support the intended vegetation. The operator should commit to fertilizing soils according to the results of these tests and propose at least a minimal fertilization plan which will provide nitrogen, phosphorus and potassium. This, of course, will be altered according to the results of tests.

DEFICIENCIES

This section is not fully addressed. No soil testing program or criteria are proposed. Soil amendments should be provided to satisfy plant nutritional needs and according to DOGM guidelines at the time of reclamation.

Although recommendations are made in the "Vegetation Study and Revegetation Plan," the basis for these recommendations are not provided. These recommendations, if justified, could be the basis of a minimum plan. However, it must be understood and so stated that actual amendments would be determined by test plot results combined with soil analyses at the time of redistribution.

What means will be employed to apply any necessary soil nutrients?

Will maintenance applications of nutrients be required? If not, please provide rationale.

DEFICIENCIES

The above concerns were not addressed and must be.

UMC 817.42 Water Quality Standards and Effluent Limitations

(a)(1) "All surface drainage from the disturbed area . . . shall be passed through a sedimentation pond or a treatment facility before leaving permit area." The applicant must submit documentation and data to support the statements made on page 784-19 (b)(2) that no discharges from precipitation events are known. If these data are not available nor the statement demonstrable, then the operator must submit plans for sediment control for all disturbed areas in the permit boundary. Designs and plans for sedimentation ponds must comply with UMC 817.46. Alternate sediment control measures other than sediment ponds may be considered.

The applicant must address those items requested by the Department of Health (DOH) in the April 1, 1983 letter to Mr. Randy Watts. A copy of the submittal to DOH and approval letters must be submitted to DOGM. Specifically, these items are as follows:

1. Description of the sanitary wastewater system indicating capacity, location, current wastewater loading and construction details. We cannot find any information in our files regarding former review and approval by the State Department of Health. If you have such information, this should also be submitted.
2. Construction details of the refuse and clean water pond recycle system describing pond lining, seepage rate and documentation of prior review and approval by this office.

3. Description of plant wastewater system between the railroad track and river indicating pond locations, construction details, locations, flow, documentation of prior review or approval by this office.
4. 1982 water quality data of the surface streams adjacent to the plant.

DEFICIENCIES

Although the applicant has provided plans as requested, they are inadequate. Refer to comments under UMC 817.46.

The submittal to the DOH was not found in DOGM's files, however, it is felt that this information must be included as part of the MRP document as these concerns are shared by the Division.

(b)(7) The applicant must provide a narrative concerning the flow in the diversion ditch to the north of the upper refuse pond. Is this the result of intercepted ground water, undisturbed runoff or refuse pond seepage through the embankment? An analysis of the quality of this flow must be submitted and the discharge point should be under consideration for inclusion in the surface water quality monitoring program. A determination of this inclusion will be made upon the receipt of the analysis and field inspection.

DEFICIENCIES

The operator indicates on page 784-7 of the ORP that the diversion ditch to the north of upper refuse pond was constructed to intercept surface return flow of irrigation water and to lower the surface water table. A sample of the water quality from the ditch is presented on page 783-21 of the ORP (February 9, 1981).

The reviewer is confused as to just what water source this sample is representative of? It wouldn't necessarily represent irrigation return flow unless irrigation is practiced in February locally. It may represent surface runoff from early spring snowmelt and/or it might represent seepage through the upper refuse pond embankment.

On June 9, 1983, Division hydrologists performed a field inspection of this area and noted several instances along the north dike where minor slumpage and seepage was apparent and draining into the diversion.

The operator must identify what water source this analysis is representative of. This may require the need to implement a limited monitoring program to resolve this question. One water quality analysis does not adequately characterize a surface water source.

UMC 817.43 Hydrologic Balance: Diversions and Conveyance of Overland Flow, Shallow Ground Water Flow and Ephemeral Streams

(a) and (b) Please provide dimensions and sizing computations for all diversions and berms.

(c) through (f) Please address the requirements of these sections in the diversion design plans and computations.

DEFICIENCIES

The operator describes on page B-15 of Appendix B, Hydrologic Evaluation, culverts which are implemented at various locations in the plant area. Drawing No. F9-177 vaguely indicates the location and apparent size of numerous culverts on the property.

The operator must provide the design calculations which correspond to the sizing of the existing culverts.

UMC 817.45 Sediment Control Measures

Also, a description of the post-reclamation drainage and sediment control plans should be provided.

DEFICIENCIES

The operator is referred to DOC deficiencies under UMC 783.13(b)(3).

UMC 817.46 Hydrologic Balance; Sediment Ponds

DEFICIENCIES

The heat dryer pond, auxiliary pond and road pond are all designed for runoff control and, therefore, must comply with this section. The applicant is requested to address each subsection of this section item by item with complete information in order that a technical analysis and finding of compliance can be made. Although not thoroughly reviewed at this state of the permit review process, the following items were noted to be deficient. It is to be emphasized that this list is not inclusive and addressing only these concerns will likely be insufficient. The operator must read the regulations and insure the plans are complete enough for compliance.

1. A discrepancy was noted in the dump volume of the plant. Map C9-1285 states the volume is 160,000 gallons, whereas E9-3429 states 80,000 gallons. Please clarify the true volume.

2. How is the volume of the auxiliary pond determined without contour lines of the basin? More details are needed for this pond. What is the elevation of the inlet to the decant, the road pond? A cross-section of the pond is required under UMC 784.16(a)(i)(ii).
3. Sediment storage for each pond must be provided including calculations determining the required volume.
4. A discharge structure must be provided for the road pond and the proposed heat dryer pond. A demonstration that they will pass the design requirements of UMC 817.46(g) and (i) needs to be submitted including calculations and assumptions for peak flows.
5. It should be noted that section (a) requires sediment ponds to remain in place until reclamation is complete. Page 784-26 states the auxiliary and road ponds are to be regraded with the rest of the plant area. This proposal must be changed with plans to leave the structures in place. Also, a plan for postoperation monitoring of the drainage entering all ponds on the permit area must be submitted (UMC 817.46[u]). This plan should include frequency of sampling, parameters sampled, access to sampling points and location of sampling points. It should be noted that the requirement of section (u) is that the drainage entering the pond be sampled rather than the outflow discharge.

#### UMC 817.47 Discharge Structures

The applicant should provide a description, including plans, computations and diagrams for the discharge structures of the diversion ditches.

#### DEFICIENCIES

The operator must provide plans and calculations for energy dissipators for discharge points, all diversions, ponds and impoundments on the permit area. This comment specifically requests information that has been ignored by the applicant. A discharge structure was not found on E9-3431. Calculations must include expected exit velocities, including assumptions, and size of riprap needed. Plans should show exit points and extent of each energy dissipator.

#### UMC 817.49 Permanent and Temporary Impoundments

The permanent refuse ponds must have detailed plans to comply with this section. The operator must address all the sections of this code completely and adequately to facilitate review. The code is summarized as follows:

If permanent or temporary:

1. 2v:1h or less steep side slopes that are stable;

2. slope protection measures and sediment control off embankments;
3. embankments graded, fertilized, seeded and mulched;
4. plan for and reports from routine inspections;
5. plan for routine maintenance;
6. certification of embankment construction by registered engineer on an annual basis - see (h)(1-5) for details which these reports must contain.

#### DEFICIENCIES

The response is not adequate. The certificate report must clearly address all items of section (h) and be submitted.

The proposed auxiliary ponds, heat dryer and road ponds must have slopes no steeper than 2v:1h.

Is the slope of the north impoundment dike (i.e., near diversion ditch) vegetated sufficiently to control erosion? What is the cover density for all impoundments?

The certification reports required by section (h) must include all items of that section and be certified and reports submitted to the Division on an annual basis. A commitment for this submittal must be made.

#### UMC 817.52 Surface and Ground Water Monitoring

##### DEFICIENCIES

The operator must amend the surface water monitoring plan to include sampling of the surface waters in the upper, lower and clear water refuse ponds on a quarterly basis. This requirement is to coincide and be compatible with the ground water monitoring plan to be implemented for this area (see comments under UMC 784.14[b][3]). The duration of this monitoring will depend on the preliminary results of both monitoring programs (surface and ground water).

#### UMC 817.53 Transfer of Wells

Please address the requirements of this section in terms of the potential for transfer of wells on the east bank of the Price River.

##### DEFICIENCIES

The operator states on page 784-21 of the ORP that the water well will be filled with soil from the pumphouse area.

The operator must comply with the State guidelines for the plugging of wells upon final abandonment and reclamation.

UMC 817.54 Water Rights and Replacement

The applicant must include a commitment by the operator to replace the water supply of a legitimate user of water in the event of interruption or contamination of that water source by the Wellington Preparation Plant.

DEFICIENCIES

The operator is referred to DOC deficiencies under UMC 783.17.

UMC 817.83 Water Control Measures

(a)(2) Please provide justification for exemption from the requirements of section (a)(1) of this regulation. Representative ground water quality monitoring data and refuse sample analysis data proving the nontoxic nature of the refuse are requested.

DEFICIENCIES

The operator states that the refuse ponds were constructed initially in 1957-58 and an underdrain system was not included. No plans are proposed to modify the ponds as they were constructed pre-Act. Refuse samples have been analyzed and forwarded to the Division. See deficiencies under UMC 784.13(b)(7).

If the operator is requesting an exemption to the design standards of Subchapter K, then it must be demonstrated that the existing structures meet all performance standards which are applicable pursuant to UMC 784.12 et al.

Refer to DOC deficiencies UMC 784.14(b)(3) for additional requirements for this section.

UMC 817.89 Disposal of Noncoal Waste

A plan addressing the placement and storage of noncoal waste in a controlled manner on the permit area as well as its final disposal should be provided.

An adequate account of noncoal waste handling should include a description of any temporary noncoal waste storage area. Please specify the location of storage area(s). Please specify the methods to be used to ensure that degradation of surface water, ground water or reclamation potential does not occur and describe more clearly the frequency at which materials will be removed from the permit area to an approved site.

### DEFICIENCIES

The operator provides a plan (as Appendix G) used to satisfy the requirements of NOV 81-3-24-1. The plan depicts storage locations on maps and provides a narrative pertaining to each separate area described by the violation. The plan as submitted is deficient in that it does not provide a schedule for removal of noncoal waste to the sanitary landfill. "As required" should be clarified by providing a timeframe, a percentage of storage capacity which would cause removal or some other means to remove subjectivity regarding exactly when removal should occur.

See comments under UMC 817.100 which address the consolidation of stored waste rock to facilitate contemporaneous reclamation.

At the oil drum storage site, the operator should define the handling procedures for these materials. Please indicate how drainage has been/will be controlled in this area. Elaborate on the timeframes intended for storage.

The operator cites three options for use of "recovered wood material." To facilitate the proper handling of noncoal waste material, DOGM requires an update on what has been/will be done with this material.

### UMC 817.97 Protection of Fish, Wildlife and Related Environmental Values

The applicant must provide sufficient wildlife information and provide a wildlife plan which demonstrates compliance with the requirements of UMC 817.97. (DWR has provided U. S. Steel with a recommended wildlife plan. It should be used as a guide to develop an adequate wildlife plan for the Wellington Preparation Plant site.)

The SCS's rating of the area as "very poor" wildlife habitat probably reflects an economic assessment rather than an assessment of the relative biological worth of the habitats to wildlife. This section of the MRP needs to be clarified.

The riparian-wetland habitats in this area are productive sites. They have been ranked as being of critical value to local wildlife populations.

Due to the arid nature of the area and soil types, biological productivity of the desert scrub habitat is typically low. Similar statements can be made concerning the agricultural areas based upon soil type; however, biological production of these areas can be enhanced through standard agrarian practices. Both of these habitat types are ranked as being of substantial value to local wildlife populations.

### DEFICIENCIES

The operator fails to acknowledge the value of the area for wildlife or the Utah Division of Wildlife Resources (DWR) habitat ranking in discussions of land-use (see pages 783-39 and 783-40). Appropriate reclamation could and should result in suitable wildlife habitat.

Reclamation plans need to be developed to restore riparian habitat that has been disturbed along the Price River and ephemeral drainage(s) within the permit area (see UMC 784.13[b][5]).

The MRP fails to identify a specific and detailed mitigation plan (the MRP says the plan "will be considered"). Specifically, a commitment is needed as to what mitigation will be used and how will it be implemented. In addition to reclamation, this plan should address mitigation for the loss of habitat and other wildlife impacts during the interim of operations.

As per the operator's intent to inform employees of wildlife values and impact avoidance techniques, the DWR has developed a training film for the mining industry. A copy of this film may be obtained through their Price office. Please inform DOGM as to whether this film will be used or not (use of this film is not mandatory, but is recommended as an aid to the operator for employee training).

### UMC 817.100 Contemporaneous Reclamation

The operator shall submit plans to perform contemporaneous reclamation of all areas not actively utilized. The prompt reclamation of these areas will minimize air and water pollution to the extent feasible. Compliance with State and Federal air and water quality regulations will thus be ensured pursuant to UMC 784.13(9).

A more detailed plan for contemporaneous reclamation should include the total acreage of land to be contemporaneously reclaimed and the timing of and plans for backfilling, grading, topsoil, mulching and seeding each section. A seed mixture for contemporaneous reclamation should be proposed in accordance with UMC 817.113(b) to help ensure erosion protection.

It is recommended that where possible, the applicant use the same seed mix, mulch, methodology, etc., as is proposed for final reclamation. With proper monitoring, this could provide valuable site specific data as to the practicality and effectiveness of the proposed methods, and allow valuable lead time to modify or replace the plans should they prove not to be effective at this site.

DEFICIENCIES

The operator has not provided a contemporaneous (temporary stabilization) reclamation plan as requested, stating that all areas of disturbance are being used for plant operations. However, out slopes on dikes, refuse embankments, road cuts, excess material areas, etc., should be vegetated or otherwise stabilized to protect against wind and/or water erosion.

An acceptable contemporaneous and temporary revegetation plan must be submitted before final approval of the plan can be granted.

This plan must include seed mix(es), rates, mulch type and rates, if the operator determines it is necessary to deviate from the final reclamation seed mix.

Storage areas near the plant site are termed "material and equipment storage area." Consolidation of materials and contemporaneous reclamation of excess areas will decrease wind and water erosion, but is not discussed by the operator. Please respond appropriately. These areas left open after material consolidation may be available for test plots on in-situ materials.

UMC 817.103 Backfilling and Grading: Covering Coal and Acid- and Toxic-forming Materials

(a)(3) The operator shall supply information or plans sufficient to demonstrate that upward migration of salts will not adversely affect reclamation efforts. Any information provided should suffice to demonstrate that the proposed depth of cover materials is, in fact, adequate for each reclamation condition encountered. This demonstration should take into account: the salinity of various surfaces encountered (slurry ponds, coarse refuse, in situ materials); the physical and chemical properties of all cover materials (buffer) as related to its depth of replacement (this may vary from condition to condition). The salinity tolerance of all species proposed in the revegetation mix as well as the physical and chemical characteristics of all topsoil/substitute materials which the operator either: (1) has stored on-site; (2) borrows from the permit area; (3) imports from off the permit area.

DEFICIENCIES

The operator commits to supplying 1.5 feet of coarse refuse to act as a buffer to prevent upward salt migration. What is the source of this material? What volume will be necessary? Data on the chemical nature of this material is not found.

Nothing is included which addresses the depth of cover by specific area. Also, no rationale is put forth for the six inch topsoil depth or the 1.5 foot coarse refuse depth.

The operator states that the clear water pond (to be left for sediment control during the time required to meet the revegetation requirements under UMC 817.111-.117) will be regraded into the lower refuse dike. Nothing is proposed with regard to revegetation of this regraded area. This must be done.

UMC 817.106 Regrading or Stabilizing of Rills and Gullies

The applicant should provide a contingency plan regarding measures to be implemented should rills and gullies deeper than nine inches be observed in areas that have been regraded and topsoiled.

DEFICIENCIES

This is addressed on page 784-23 in the "Redistribution" section. More detail is needed in addition to "rills and gullies more than nine inches will be filled and/or regraded." The operator should address implements, access, methods to minimize disturbance and how reoccurrences will be prevented.

UMC 817.111 Revegetation: General Requirements

On page 784-15, the applicant states that vegetative type 3A will be seeded with yellow sweetclover and tall wheatgrass. Also, the reviewer is led to believe that various areas (slurry ponds, etc.) will not be seeded at all. Please document that these seeding plans (or lack of seeding) will promptly encourage a diverse, effective and permanent cover that is capable of self-regeneration and plant succession and at a minimum, will be equal in extent of cover to the natural vegetation of the area. Otherwise, a detailed revegetation plan as required by UMC 784.13 must be submitted for all affected areas (see also comments under UMC 817.133).

UMC 817.113 Revegetation: Timing

The applicant is requested to provide detailed plans regarding anticipated dates (at least to the nearest month or precipitation patterns) of seeding and planting for both contemporaneous and final reclamation (see also comments under UMC 784.13[b][5] and UMC 817.100).

UMC 817.114 Revegetation: Mulching and Other Soil Stabilizing Practices

Describe in detail the type of mulch, rates of mulching and the methods to be used to distribute and secure the mulch. If alternative methods (i.e., pitting, basins, etc.) are to be used (along or in conjunction with mulch) to help insure erosion control, moisture retention and/or seed germination, they should be described (see comments under UMC 784.13[b][5][iv]). Also, discuss the type(s) and rate(s) of fertilizers to be used on the area.

UMC 817.116 Revegetation: Standards for Success

The applicant must develop success standards for all areas to be revegetated. Please refer to comments under Sections UMC 783.19 and 784.13(b) (5)(vi) in developing the success standards for the Wellington Preparation Plan.

DEFICIENCIES

The operator has not provided a definitive reclamation plan that can be evaluated for compliance with UMC 817.111-.116 (see comments under UMC 783.19 and 784.13[b][5]).