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OF THE STARPOINT MINING AND RECLAMATION PLAN.

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TECHNICAL AND ENVIRONMENTAL ASSESSMENT OF
THE STARPOINT MINING AND RECLAMATION PLAN

DIVISION OF
OIL, GAS & MINING

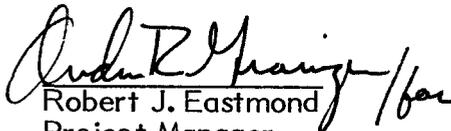
Prepared for
United States Department of the Interior
Office of Surface Mining Reclamation and Enforcement

Prepared by
NUS CORPORATION
720 South Colorado Boulevard
Denver, Colorado 80222

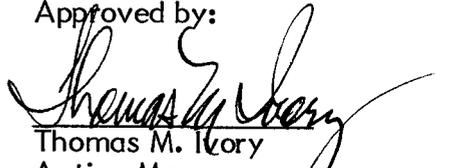
USDS - OFFICE OF SURFACE MINING
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REGION V

Draft Report - Task Order No. 23
Starpoint Mines
Contract No. J5191336
Environmental Analyses of Surface Mining and
Reclamation Plans for Federal Coal Leases
8 July 1981

Approved by:


Robert J. Eastmond
Project Manager

Approved by:


Thomas M. Ivory
Acting Manager
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TECHNICAL AND ENVIRONMENTAL ASSESSMENT FOR
STAR POINT MINES

NAME OF COMPANY SUBMITTING THE PERMIT APPLICATION: Plateau Mining Company, a subsidiary of Getty Mineral Resources Company.

NAME OF THE MINING OPERATION: Star Point Mines

TYPE OF APPLICATION: The application was submitted in order to maintain production and includes plans for a major expansion.

TYPE OF MINE: Underground

TYPE OF OPERATION: Underground, room and pillar and longwall.

LOCATION OF THE MINE: Carbon and Emery Counties, Utah, approximately 12 miles from Price. Major drainages are Corner Canyon and Huntington Canyon.

BRIEF HISTORY OF THE APPLICATION: This application was submitted to the Office of Surface Mining and the Utah Division of Oil, Gas and Mining on February 20, 1981. A completeness review was presented to the applicant on April 21, 1981. Revisions to the mine plan were submitted on May 15, 1981.

BRIEF DESCRIPTION OF THE PERMIT AREA: The 5,200 acre permit area is located on the east face of the Wasatch Plateau in central Utah. Vegetation of lower elevations is shrubland and desert scrub, while higher elevations support mixed conifer communities. A large number of economically important wildlife species are present. Mines have existed on the permit area since 1917. Mining will take place in three seams and will generally proceed north and west from portals on the east side of the permit area.

PROJECTED ANNUAL PRODUCTION RATE: 2,000,000 tons per year. If an adjacent tract is acquired, a rate of 4,000,000 tons per year is anticipated.

782.13

- a.
1. The application includes the name, address and telephone number of the permit applicant.
 2. The applicant lists Utah as the surface and coal owner of parcel C (Table 2-1, Plate 2-2), which is inside the applicant's permit area. Table 2-1 shows the applicant to hold a grazing lease but no coal lease on this parcel. Plate 2-2 shows it to fall in coal lease UCL 22729. This apparent discrepancy must be eliminated.

Parcel I is listed in Table 2-1 (p 2-4) but is not shown on Plate 2-2. The location of this parcel must be shown on the map.

Parcel K is shown in Plate 2-2 as being within the permit area. Table 2-1 shows no leases for the Utah owned coal of that parcel. This apparent discrepancy must be eliminated.

3. The applicant gives the names and addresses of holders of record of leasehold interests in areas to be affected by surface operations and/or the coal to be mined.
4. There are no known purchasers of record for real estate within the permit boundaries.
5. The operator and applicant are the same.
6. The resident agent and his address and phone number are listed.

- b. The applicant is a corporation.
1. The names and addresses of the officers, directors or other individuals performing a similar function to director are provided by the applicant.
 2. The applicant is owned 100% by Getty Mineral Resources.
 3. The applicant does not give the names under which it, a partner or a principal shareholder previously operated underground or surface coal mining in the United States during the five years preceding the application date. This information must be provided.
- c. The names and addresses of the principals for U.S. Fuel Co. and Husky Oil are listed. The names and addresses of their resident agents are not. These must be provided.
- d. The applicant lists the current and previous coal mining permits in the United States which it has held subsequently to 1970. These apply to two mines: the Star Point Mines and Skyline Mine.
- e. There is some confusion concerning what area is being permitted with this application. Table 2-2 and Plate 2-2 do not identify the owners of T15S.R8E. Section 18, T14S.R7E. Section 36 and SE $\frac{1}{4}$ Section 35, T15S.R7E. NE $\frac{1}{4}$ NW $\frac{1}{4}$ Section 1, the area west of the mine plan boundary or the area northeast of that boundary. If these areas are part of or contiguous to the proposed permitted area, the ownership of the surface and coal must be provided.
- f. The application applies to the Star Point Mines. These are covered by MSHA identification numbers 42-00170 and 42-00171.

- g. The applicant shows several areas outside of the present permit boundary which are within the mine plan boundary, but says that it has no leasehold interests, options or pending bids on any of those areas. The applicant must clarify which leads are included in this permit application. It must acquire the rights to any lands or coal which it wishes to mine prior to applying for a permit to mine them.

782.14

- a.
 - 1. The applicant has had no federal or state mining permit suspended or revoked in the last five years.
 - 2. The applicant has not forfeited a mining bond or similar security.
- b. Not applicable
- c. The applicant shows violation 7 (p. 2-22) as being issued by DOGM for a lack of approval by DOGM of the upper coal processing waste disposal area. The abatement listed shows only that approval has been given by MSHA. Clarification is needed concerning how this abated the violation.

The listing for OSM violation N80-5-3-5 (13 March 1980) (p. 2-23) does not state what the notice was for or how the violation was abated. This information must be provided.

The listing for OSM violation N80-5-3-12 (15 August 1980) (p. 2-23) states that discharge from disturbed area fails to meet effluent standards-tipple. Abatement is listed as occurring 15 September 1980, on which date no discharge was present. This does not say what the applicant did to insure that the discharge would not occur again.

The violations which are listed by the applicant only cover a two year period and the Star Point Mines. Information is required on all notices of violation received by the applicant for three years prior to the submission of the application and for any mine.

782.15

- a. The applicant lists several documents on which it bases its right to enter and begin underground mining.
- b. Not applicable.

782.16

- a. No portion of the area to be permitted is within an area designated as unsuitable for mining. As far as the applicant is aware, none of those lands is under study for such designation.
- b. Not applicable
- c. The applicant does not propose to conduct or locate surface facilities or operations within 300 feet of an occupied dwelling.

782.17

The applicant is requesting a permit for a term of 20 years. The applicant has not, however, demonstrated exactly where it plans to mine during those 20 years or that its financial backing would be lost without a long term permit. The permit term will be for five years. Any major revisions in the applicant's operation of the Star Point Mines must be permitted renewal or under a separate permit. The applicant cannot permit land or coal for which it has no rights.

782.18

The applicant carries insurance of \$500,000 for bodily injury and property damage combined for each occurrence and \$500,000 for bodily injury and property damage combined aggregate (Appendix 2-C). Utah requires a minimum of \$300,000 each, bodily injury and property damage, for each occurrence and \$500,000 each, bodily injury and property damage, aggregate. These become \$600,000 combined per occurrence and \$1,000,000 combined aggregate. The applicant must increase its insurance coverage to meet these requirements. The insurance policy must also be in effect for the life of the mine and contain riders covering the use of explosives and damage to water wells.

782.19

The applicant lists its other licenses and required permits to mine and the name of the issuing agency, the identification numbers of the licenses and permits if applicable and the date of approval or submission. The addresses of the issuing agencies are not included and must be.

782.20

The applicant has filed its application with Utah DOGM, OSM and the Carbon County Clerk.

782.21

The applicant has included a proposed newspaper advertisement but no proof of publication. This proof should have been provided within four weeks of the last date of publication. Publication should have occurred after the apparent completeness review was conducted. Proof of publication must be provided.

817.11 SIGNS AND MARKERS

A. DESCRIPTION OF EXISTING ENVIRONMENT

Signs used on the property are constructed of suitable material, employ uniform and standard designs and conform to local ordinances and codes. The gate at the main entrance is posted with a sign containing the company name, address, telephone number and identification number.

At times when surface blasting becomes necessary, "Blasting Area" signs will be posted on access roads and on public roads within 100 feet. The blasting area will also be conspicuously flagged in the vicinity of the blast. Access from public road will be posted with "Warning, Explosives in Use" with appropriate warning "All Clear" signals given.

Topsoil stockpiles are marked with "Topsoil" signs.

Access roads are posted with speed, direction and necessary traffic information signs.

B. REVISIONS TO APPLICANT'S PROPOSAL

No revisions to applicant's proposal are given. The signs as described above will be maintained during the conduct of all activities to which they pertain.

C. REEVALUATION OF COMPLIANCE

Not applicable.

D. PROPOSED SPECIAL STIPULATION WITH JUSTIFICATION

If surface blasting becomes necessary, appropriate signs and signals in accordance with 30 CFR 817.11 will be posted.

E. SUMMARY OF COMPLIANCE

Will comply if proposed stipulation is implemented.

F. PROPOSED DEPARTMENTAL ACTION

Approval of signs and markers.

G. Environmental impacts of proposed departmental action

Approve proposed actions and carry on with necessary blasting operations.

H. RESOURCE ALTERNATIVES TO THE PROPOSED ACTION

None

I. ENVIRONMENTAL IMPACTS OF ALTERNATIVES TO THE PROPOSED ACTION

None

817.21 TOPSOIL PROTECTION

A. DESCRIPTION OF EXISTING ENVIRONMENT

The permit area consists of 5,200 acres, with 125 acres presently disturbed and an additional 75 acres proposed to be disturbed by surface activities. Soil parent materials are sandstones interbedded with carbonaceous shale and coal seams. The mine is located near the northeast central edge of the Wasatch Plateau and topography is steep and deeply dissected. Elevations range from 7,000 to 10,000 feet. No on-site soils data are provided in the current mine plan but soils descriptions for the general area included in the MRP show soil materials ranging from deep to very deep, calcareous, high in coarse

fragments and located on steep slopes. Families range from coarse-loamy to fine-loamy to loamy-skeletal. Soil temperatures range from frigid to cryic and moisture regimes are udic or ustic. It should be emphasized that these soil descriptions are from a survey some miles away from the mine plan area, many are not defined with a range of characteristics and none have a precise location described for where the soil profile was taken. Therefore, no projections for types of soil material that may occur on this permit area can be made from this information.

B. DESCRIPTION OF APPLICANT'S PROPOSAL

1. The applicant has conducted no on-site soil investigations at this time. Information provided consists of soil profile descriptions from the general area (as described above) and a general description of methods to be used for protecting and reclaiming topsoil when it is identified. A soils map of the Wattis area is included but the map units have no supporting data other than the above referenced soils descriptions.

The applicant proposes to conduct a field survey in 1981. "A pedon will be described and sampled within the area boundaries for each soil encountered. A map unit description for each soil unit treated will accompany the survey map." (Chapter 8, p. 8-2). Information on physical and chemical properties of the soils will be provided.

2. The applicant has not provided information necessary to assess soil suitability for reclamation. This will be provided during 1981. No topsoil substitutes are presently proposed by the applicant.
3. No calculations for volumes of suitable soils material are provided.

4. Removal procedures are discussed in Section 8.7. The applicant proposes to prepare a site-specific soil removal and storage plan in 1981 based on the on-site soil survey. The general outline of procedures is as follows:
- a. Existing vegetation will be removed and topsoil collected prior to excavation.
 - b. Only A and B horizon material will be removed and stockpiled for later redistribution.
 - c. Rubber tired scrapers, bulldozers, front-end loaders, and dump trucks will be used to salvage topsoil.
 - d. Both short- and long-term topsoil stockpiles will be used. No time frames or locations are detailed in this section.
 - e. Topsoil stockpiles will be protected from disturbance. Short-term piles will be sprayed with water or temporarily vegetated. Long-term piles will be vegetated.
5. Redistribution procedures are general in nature. Applicant proposes to provide a detailed plan in 1981. Prior to redistribution, regraded land will be scarified. Steep slopes will be ripped to create a rough topography to retard soil erosion and promote vegetation establishment. Topsoil will be redistributed and allowed to settle. Topsoil thickness will be determined by the proposed use. A seedbed will be prepared and Plateau will use necessary measures to ensure stability and prevent erosion.

Soil fertilization needs will be determined when the soil survey is complete. Soil analyses will include micronutrients, K, Ca, Mg, P, N, pH, salinity and texture.

6. Topsoil stockpiles will be protected by revegetation. Access will be controlled. Only stable areas out of drainages will be used to locate the stockpiles. Stockpiles will have signs identifying them.
7. Applicant has not provided any information with reference to the seasonal timing for new area disturbance or for fugitive dust calculations. Applicant has provided no indication on whether this information will be provided.

C. EVALUATION OF COMPLIANCE OF PROPOSAL

817.21 Adequate Soil Segregation

- (a) The applicant has proposed to segregate A and B horizon material from C horizon material since "C horizon material... is not sufficiently capable of supporting diverse vegetation." No evidence of such deficiency is provided in the mine plan. The applicant may wish to revise this proposal on the basis of 1981 survey and analyses. At this point, however, the applicant is in compliance with the letter of the requirement.
- (b) Redistribution Schedule

No specific redistribution schedule is provided. Applicant is not in compliance with this section at this time.

Summary: Applicant must provide a detailed, time-specific redistribution schedule in order to be in compliance with this section. Soil segregation information must be based on adequate soil characterization data when it is available.

817.22 Topsoil Removal

- (a) The applicant has proposed to remove topsoil at the start of any construction phase. Existing vegetation will be removed prior to topsoil collection.
- (b) The applicant has stated that A and B horizon material will be salvaged.
- (c) Lack of an on-site survey makes it impossible to assess the possibility of thin topsoil situations at this time. Some of the map units shown on the Wattis canyon survey include shallow soils. The true extent of these soils and their salvage depth can only be determined from the 1981 survey.
- (d) The B and C horizons have not been evaluated on-site at this time.
- (e) No topsoil substitutes have been proposed at this time. The applicant states the section is "not applicable."

Summary: The applicant has complied with this section to the extent of the information available. However, the completion of the 1981 soil survey and soil interpretations are critical to the refinement and accuracy of the proposed salvage methods and materials. In addition, the applicant may wish to propose topsoil substitutes when the survey is complete. Therefore, though the applicant has provided some general information, a true assessment of compliance must be postponed until the soils report is submitted.

817.23 Topsoil Storage

Applicant has stated that topsoil will be stored within the permit boundary as it is being stored now and will be protected from disturbance and unnecessary compaction.

Short-term stockpiles will be used for areas that will be immediately reclaimed. An effort will be made to utilize the soil as soon as possible to get maximum benefit from incorporated seeds and roots.

Long-term stockpiles will be used for final reclamation of the abandonment areas, the unit train site and cover for the coal refuse pile.

Short-term stockpiles will be sprayed with water or temporarily vegetated to retard erosion. Long-term stockpiles will be placed in stable areas away from active operations, the surface will be left in a roughened condition and vegetated with quick-growing plants. The seeding will be performed during the next planting season. The stockpiles will have signs identifying their use and establishment of various weeds will be prevented.

Summary: The applicant has provided only the most general of plans for storage and protection of soil resources. Locations are not identified on any of the maps presented, no time frames are presented, specific erosion-preventing techniques are not presented and no drainage control plans for the stockpiles can be found in the mine plan. Such plans do not require the existence of a current soils report. They do require some time and attention to detail by the applicant.

The applicant is not in compliance with this section at this time.

817.24 Overburden Scarification/Topsoil Redistribution

- (a) Applicant states that prior to topsoil redistribution, regraded land will be scarified by a ripper-equipped tractor to reduce compaction. Steep slopes which will remain after cessation of mining will receive special ripping to create "ledges, crevices, pockets and screes. This will allow better soil retention and vegetation establishment."
- (b) Topsoil will be redistributed within a suitable time period prior to seeding. It will be allowed to "settle" on areas where surface facilities have been removed. Applicant proposes to spread a "uniform thickness consistent with the reclamation plan." Compaction will be relieved by ripping. "Necessary measures" will be used to ensure stability of soil on graded slopes. Specific methods are dependent on "the basis of additional soil analyses." Ripping on slopes is suggested as one of the possible methods.

Summary: The applicant has provided only the briefest of outlines for redistributing and protecting a scarce soil resource. It is granted that the conditions at the mine are difficult, especially in view of the long history of disturbance in the immediate vicinity of the two portals in Wattis Canyon. However, the applicant must demonstrate a concerted effort to attempt to deal with the situation as in as complete a manner as possible. Time-frames must be established on a yearly basis for the reclamation process, specific methods to be used for redistribution (recognizing that there are areas where this may not be possible due to very steep slopes), erosion control methods for flatter areas and for steep areas, mulching techniques where they can be used, and drainage control.

The depth of redistributed topsoil can be determined when a soil survey is complete.

Several of the statements in this section show a lack of attention in this area. For example, the statement about ripping steep slopes appears both physically impossible and counter-productive. Steep slopes must be stabilized, not subjected to unnecessary disturbance leading to more erosion. Sidecase slopes below roads should not be disturbed any further unless it is part of an effort to reduce the angle during final reclamation. However, such steep slopes are part of the landscape in the mine area and such an effort to reduce does not seem necessary. An effective mulching technique to vegetate these steep slopes as they are would be much more effective and help them blend in with the dominant landscape.

Another statement, referring to needing soil analyses to determine methods for stabilizing topsoil, seems out of place. Clarification of what is meant is needed.

Overall, the applicant must develop a more comprehensive plan dealing with this section. It is recognized that the problems will require some inventive thinking and some techniques will need time and research to develop. Coordination between the applicant and the regulatory authority is encouraged and expected in order to develop a plan satisfactory to both.

817.25 Soil Testing Amendments

The needed amendments will be determined before the final cover is seeded.

Applicant is in compliance with this section.

F. PROPOSED SPECIAL STIPULATION AND JUSTIFICATION

817.21 Adequate Soil Segregation

Applicant must base segregation decisions on an adequate soil survey, to be completed during 1981.

The redistribution schedule must be presented on a yearly basis, coincident with reclamation plans.

817.22 Topsoil Removal

The specifics for topsoil removal depths, segregation of soil horizons, and the necessity for topsoil substitutes are dependent on completion of the 1981 soil survey.

817.23 Topsoil Storage

The applicant has provided only the most basic of plans for storage and protection of soil resources. A plan related to specific years, locations and methods must be presented before the section can be considered complete.

817.24 Topsoil Redistribution

The applicant has presented a general outline only. This must be made site- and soil-specific before the section can be considered complete.

I. Plateau Mining Company must provide to the regulatory authority a complete and adequate soil survey for both disturbed and potentially disturbed areas within the permit area by November 1, 1981. This must include:

- i) Depths to which soil will be removed from disturbed areas

- ii) Volume of soil removed from disturbed areas
- iii) Volume of soil suitable for revegetation
- iv) Depths of redistributed soil associated with plant species to be used in reclamation.

If Plateau Mining Company needs to disturb new ground prior to November 1, 1981, all soil available to hard bedrock must be salvaged. A and B horizons may be segregated from the C material and stockpiles separately. A qualified soils person must supervise the stripping. The location of the stockpiles must be approved by the regulatory authority 3 months prior to the actual excavation.

- 2. Plateau Mining Company must develop a detailed reclamation plan, by year, and with specific methods for both steep slopes and slopes where equipment can be used. It is recognized by the regulatory authority that such plans may need revision in the future but a framework must be established as a common ground between the applicant and the regulatory authority.

G. SUMMARY OF COMPLIANCE

The applicant will comply if the proposed stipulations are met.

H. PROPOSED DEPARTMENTAL ACTION

To approve salvage and replacement of suitable topsoil materials on the existing and proposed disturbed areas.

I. ENVIRONMENTAL IMPACTS OF PROPOSED DEPARTMENTAL ACTION

The proposed action will impact approximately 200 acres on the 5,200 acre permit area. This is not a major impact, especially

considering the fact tht 125 acres of that total are presently disturbed and have been for years. However, the lands on which the mine is located are in the public domain. Therefore, the managing agency is responsible for preserving recreational value coincident with the need for the energy resource for reducing soil erosion, promoting timber production and managing wildlife. All these considerations must be based on preserving the soil resource, which is limited in this rugged terrain. The soils are of varying textures, depths and coarse fragment contents and generally located on steep to very steep slopes. Geologic erosion is the over-riding force in this environment and vegetation has difficulty in getting established and remaining in place. The effect of runoff from both snowmelt and precipitation can be extensive even on areas undisturbed by man. Thus, exposing soils by removing vegetation and cutting into steep slopes produces serious erosion and sedimentation potential. Replacement of soil on and revegetation of steep slopes may not be possible. Soil genesis will be interrupted by salvage operations, textures will be mixed and coarse fragment content increased. Unstable slopes may be created where tye do not now exist due to road-building and construction of the track bed for the unit train. Soil erosion impacts the visual resource, and the production of both timber and wildlife.

In summary, some unavoidable loss of the soil resource is foreseen. Every effort must be made to reduce this loss and promote stabilization of revegetation of the disturbed areas where feasible.

J. RESOURCE ALTERNATIVES TO THE PROPOSED ACTION

The need to recover a federal resource not mineable by any other method dictates the need surface facilities for the extension of underground mining. Disturbance of some additional acreage to allow Plateau Mining Company to recover

the resource as part of the existing operation seems the only logical alternative at this time. Other alternatives would not allow recover of the resource at all or would necessitate establishing new portals and surface facilities beyond those already proposed.

817.41 HYDROLOGIC BALANCE
SURFACE WATER

A. DESCRIPTION OF THE EXISTING ENVIRONMENT

The Plateau Mining Company Star Point Mines are located in Carbon County and Emery County, Utah. The company controls 5,200 acres in these two counties.

The mine plan area is located near the headwaters of the Price and San Rafael river basins. The Carbon-Emery County line marks the watershed divide. Approximately 3,900 acres drain north to the Price River through Mud Water and Corner Canyons (tributaries to Gordon Creek) and through Serviceberry and Miller Creeks (tributaries to the Price River). Runoff from the remaining acres west of the drainage divide flow through Huntington Creek to the San Rafael River.

Annual precipitation for the mine plan area averages 22 inches. Snowmelt is the primary source of stream flow for perennial streams in the area. Summer precipitation generally yields very little runoff. Peak 25-year and 50-year flows for four of the streams in the mine plan area are given in Table I. Peak flows were estimated by use of empirical formulas based upon channel geometry characteristics (p. 7-34).

Table I

Peak 25-Year and 50-Year Flows (cfs)

<u>Stream</u>	Q ₂₅	Q ₅₀
Corner Canyon	183	198
Mud Water Canyon	107	115
Miller Creek	54	58
Tie Fork Canyon	127	137

The applicant states that, in general, water quality in the headwaters of the Price and San Rafael rivers is excellent. Water quality, however, deteriorates in a downstream direction as total dissolved solids increase significantly due to contact with shale formations and irrigation return flows.

There are 39 surface water rights on and adjacent to the mine plan area. With the exception of the United States Fuel Company right for 3.3 cfs on Miller Creek, all the surface rights are for stockwatering (Tables 7-8 and 7-9). The application states that: "There is presently a pending water right application...to appropriate 1.0 ft³/min of water in Carbon County from the mine workings." (p. 3-72).

B. DESCRIPTION OF APPLICANT'S PROPOSAL

General

The applicant proposes to control runoff from disturbed areas by means of diversion ditches, culverts and sedimentation ponds. Runoff from all disturbed areas will be routed through sediment control ponds. Effects of the mining operation on the surface water system will be analyzed by the surface water monitoring plan.

Diversion Ditches

Fourteen diversion ditches will be provided to divert runoff from disturbed areas into the sedimentation ponds or to divert

runoff from undisturbed areas past the sedimentation ponds. Culverts have been sized to pass peak flow requirements for associated diversion ditches.

Sedimentation Ponds

Seven small sedimentation ponds will be provided to control sediment from surface drainage of disturbed areas. The ponds were designed to contain an accumulated sediment storage volume from a three-year period. In addition to the sedimentation ponds, small sediment traps are located throughout the property. However, the sedimentation ponds have been designed to contain runoff without regard to the sediment traps.

Surface Water Monitoring

The application states that "An ongoing hydrologic monitoring program will be conducted at each of the stations shown on Plate 7-16." (p. 7-89). Plate 7-16 indicates seven monitoring stations in or near the mine plan area. Samples will be collected quarterly from these stations.

Site Reclamation

After disturbed areas are stabilized and runoff is comparable to premining conditions, the site drainage system will be removed. Drainage system areas will be backfilled and revegetated. Ponds will be drained, backfilled and revegetated. Natural drainage patterns will be reestablished.

Impacts on Hydrologic Balance

The application states that the applicant does not expect to discharge mine water into surface drainages. If any discharge is necessary it would be in compliance with the NPDES permit

program. Based on the above, the applicant believes that the mining operation will have no impact on the surface water system.

C. EVALUATION OF COMPLIANCE OF PROPOSED PLAN

817.42 Water Quality Standards and Effluent Limitations

Runoff from all disturbed areas will be passed through sediment ponds (pp. 3-82, 7-89). Sedimentation control facilities will be maintained as long as they are required to meet effluent limitations of applicable federal or state laws for runoff or drainage (p. 3-21).

Starpoint Mines has applied for and received (10-7-80) an NPDES permit. It was signed October 3, 1980 and a copy is included in the application. It appears that there are no limitations for total manganese in the NPDES permit and no provisions for monitoring manganese from the sediment pond discharges.

817.43 Diversions and Conveyance of Overland Flow,
Shallow Ground Water Flow and Ephemeral Streams

The diversion ditches which divert runoff from disturbed areas to sediment ponds have been designed for 25-year, 24-hour runoff events. Those ditches diverting runoff from undisturbed areas around disturbed areas are designed for 10-year, 24-hour runoff event, with the exception of ditches 9 and 14 which are designed for the 50-year, 24-hour storm (Page 7-61). Diversion ditch locations and alignment are displayed on Plate 7-8.

Storm rainfall depths for selected durations and return periods were taken from the Precipitation Frequency Atlas of the West, NOAA Atlas 2, Volume VI-Utah (p. 7-35).

Peak flows from contributing areas as a result of various precipitation events were estimated using the dimensionless hydrograph method (Figure 7-4) developed by the U.S. Soil Conservation Service. Hydrologic calculations for peak flows are given in Table 7-10.

In reviewing the calculations in Tables 7-10 and 7-11, the rationale for revising the T_o/T_p ratio was not clear. Also, it was not possible to verify peak flows (final columns of Tables 7-10 and 7-11) since the method for converting calculated values of q_p (Equation 7-8) to peak flows was not given.

Diversion ditches were designed with a trapezoidal cross section. Depth of flow was computed for each ditch at maximum and minimum slopes (Table 7-12).

A maximum permissible velocity of 5.0 fps (Page 7-61) is acceptable engineering practice for unlined channels (Haan & Barfield, p. 132). Those channel segments with velocities greater than 5.0 fps will be riprapped (Page 7-62). Freeboard for all channels is 0.5 feet which surpasses the OSM freeboard requirement of 0.3 feet.

In addition to the diversion ditches, culverts and downspouts are provided for conveyance of overland flow. Six downspouts are designed to divert drainage into or around proposed sedimentation ponds. Culverts were sized for peak flow requirements for their associated diversion ditches.

817.44 Stream Channel Diversions

There will be no stream channel diversions in the permit area. No changes to the natural drainage patterns are anticipated (Page 3-72).

817.45 Sediment Control Measures

Runoff from disturbed areas will pass through sediment control ponds and any discharge from these ponds will be monitored per the requirements of the NPDES permit. It is not clear from the mine plan whether any other sediment control measures are intended.

817.46 Sedimentation Ponds

Seven small sedimentation ponds will be provided to detain runoff from the mine plan area. Small ponds were used so they could be located close to disturbed areas and in order to avoid the costs of more rigorous requirements for larger dams and reservoirs. Pond locations and drainage areas are displayed on Plate 7-8.

In addition to the sedimentation ponds, small sediment trap basins are located in the mine plan area. Sedimentation ponds, however, were designed without regard to the influence of the sediment traps (p. 7-66). Thus the sedimentation pond design should tend to be conservative in terms of controlling runoff.

A report submitted with the mine plan ("Coal Processing Waste Pile Extension Plan and Feasibility Study", February 1981) indicates that an eighth sedimentation pond is proposed (page 57 of the report). However, the location for Sedimentation Pond No. 8 is not given on Plate 7-8 and no drawings were found for plans or cross sections of Pond No. 8.

Sediment Storage Volume

Sediment storage volumes for the seven ponds were estimated by use of the Universal Soil Loss Equation. The acres of disturbed and undisturbed area in the contributing watersheds along with the factors for the soil loss equations are given in

Table 7-13. Soil loss volumes for disturbed and undisturbed areas in each watershed were calculated separately and added together to obtain the total estimated sediment load for a three-year period.

A bulk density factor for sediment was not given in the mine plan. A spot check of the figures in Table 7-13 indicates a density of 81 pounds per cubic foot was probably used to convert soil loss in tons to the volumes given.

It is not clear, from Table 7-13, how the calculated values for the topographic factor (LS) were obtained. Using Equation 7-12, as given on page 7-41, with given values for S and L and appropriate values for m, it was not possible to calculate identical values for LS.

Detention Time

Sufficient capacity is provided in each of the seven ponds to store the runoff from the 10-year, 24-hour storm (in addition to sediment storage and dead pool storage volumes). A comparison of the runoff volumes in Table 7-14 with storage volumes in Table 7-15 indicates that adequate storage volume will be provided.

The applicant proposes to detain stormwater runoff for a period of fourteen days before releasing through the dewatering device in each pond (p. 7-82). This surpasses the regulation requirement of a theoretical twenty-four hour detention time.

Dewatering

Each of the seven sedimentation ponds will be provided with a dewatering device. The dewatering device will be placed above the level of the sediment storage pool. The application does not indicate whether the dewatering devices will have discharge

rates to achieve and maintain the required theoretical detention time. However, as stated above, the applicant intends to detain stormwater runoff for fourteen days.

Short Circuiting

Short circuiting does not appear to be a problem in the design of the sedimentation ponds. However, the locations of inflow channels are not given for Ponds 3, 6 and 7 on Plates 7-11, 7-14 and 7-15 respectively.

Effluent Limitations

Any discharge from sediment control facilities will be monitored in accordance with the NPDES permit requirements. The permit contains discharge limitations and monitoring requirements for total suspended solids, total iron, alkalinity-acidity, total dissolved solids, oil and grease and pH. (Permit No. UT-0023736).

Emergency Spillway

For all seven sedimentation ponds, the emergency spillway elevations are set at or above the total storage level. Total storage consists of sediment, dead pool and runoff storage. Elevations for total storage were obtained from Figures 7-11 through 7-17. Emergency spillway elevations were obtained from Plates 7-9 through 7-15.

For Pond No. 6, total storage of 2.6 acre-feet was taken from Table 7-15. This volume corresponds to a total storage depth of 14.0 feet on Figure 7-16 and also corresponds to the emergency spillway elevation.

Sediment Removal

Sediment will be removed when it fills 60% of the sediment design volume in the ponds (p. 7-86).

Principal and Emergency Spillway

For the seven ponds, the proposed principal and emergency spillway system will consist of a corrugated metal riser and conduit with an anti-vortex device and trash rack. The spillways are designed to pass the 25-year, 24-hour storm (p. 7-76).

Embankment Elevation

With the exception of Pond No. 4, the minimum elevations of pond embankments will be at least 1.0 feet above the water elevation when the emergency spillway is flowing at design depth.

Table 7-15 shows an actual embankment height of 14.0 feet for Pond No. 4. The emergency spillway elevation is 12.8 feet (from Plate 7-12) and the head above the spillway crest at design discharge is 0.6 feet (from Table 7-15) giving a total water surface elevation of 13.4 feet. This allows only 0.6 feet between the water surface and the top of the embankment.

Embankment Construction

For each pond, required total embankment height includes a five percent allowance for settling. The top width of all embankments meets the $(H + 35)/5$ requirement (Table 7-15).

For Ponds 2,4,6 and 7, the embankment slopes meet the regulation requirements. However, for Ponds 1 and 5, the downstream embankment slopes are 1v:1.35h which is steeper

than the 1v:2h limitation. For Pond No. 3, embankment slopes are not given on Plate 7-11, however, it appears that the downstream slope is approximately 1v:1.3h which is steeper than the requirement. Thus Ponds 1,3 and 5 do not meet the embankment slope requirements.

No specifications were found regarding organic matter in the embankment foundation or the quality of fill material. The plan specifies fill material to be placed in six-to eight-inch lifts over the length of the fill and be machine compacted except immediately around conduits where hand compaction is required.

20 Acre-Feet Capacity

All of the sedimentation ponds in this mine plan have less than 20 acre-feet of storage capacity and an embankment height of less than 20 feet.

Registered Engineer

The drawing for Pond No. 4(Plate 7-12) has not been certified by a registered professional engineer. All other sedimentation pond drawings were certified.

Embankment Stabilization

Riprap will be placed on the upstream pond embankment of each pond to a width of five feet on both sides of the spillway and dewatering device up the full height of the embankment (p. 7-82). The application also states that all disturbed areas in and near the ponds will be seeded to establish a vegetative cover (p. 7-86).

Sedimentation Pond Removal

After disturbed areas are stabilized and runoff is comparable to premining conditions, the site drainage system will be removed. Ponds will be drained, backfilled and revegetated. Natural drainage patterns will be reestablished (p. 3-113).

817.47 Discharge Structures

Riprap will be placed in the inlet channels and below the outlet of each pond to dissipate energy and reduce erosion (p. 7-82). Plate 7-8 indicates riprap will be provided at the outlet of down-spouts and culverts on steep slopes.

817.48 Acid-forming and Toxic-forming Materials

This mine produces no acid-forming or toxic-forming materials (Page 3-55).

817.49 Permanent and Temporary Impoundments

There will be no permanent impoundments. Temporary impoundments meet the criteria established in Section 817.46 e-u.

817.50 Underground Mine Entry and Access Discharges

All large diameter openings will be sealed as part of the reclamation activities. The seals will be designed so that mine drainage, if any, will not enter surface water bodies (Page 3-56).

Present mine portals are designed to insure that water will not be discharged from the mine.

817.52(b) Surface Water Monitoring

The application states that "An ongoing hydrologic monitoring program will be conducted at each of the stations shown on Plate 7-16" (p. 7-89). Plate 7-16 indicates seven monitoring stations in or near the mine plan area. However, the application does not provide names of the streams on which the stations are located, the rationale for the location or the length of time data have been collected at these stations (if any).

Samples will be collected quarterly from each station. The third quarter sample, collected during low flow conditions, will be analyzed for 36 water quality parameters while the other quarterly samples will be tested for 20 parameters.

Surface water monitoring will continue for the life of the operation and during the post-mining period until the reclamation work is approved by the regulatory authority.

817.54 Water Rights and Replacement

There is presently a pending water right application to appropriate 1.0 cubic foot per minute from the mine workings. The application was approved in 1972, with an extension currently being sought (Page 3-72).

There are 39 surface water rights on an adjacent to the mine plan area. With the exception of the United States Fuel Company right for 3.3 cfs on Miller Creek, all surface rights are for stockwatering.

The application states that Plateau Mining Company will provide an alternative water supply in the event the mining operation should affect water supplies in the Gentry Mountain area (p. 3-77).

817.55 Discharge of Water into an Underground Mine

There will be no discharges of water into an underground mine.

817.56 Postmining Rehabilitation of Sedimentation Ponds, Diversions, Impoundments, and Treatment Facilities

There will be no permanent impoundments. Complete site restoration is proposed for drainage systems and impoundments (see comments under 817.46).

817.57 Stream Buffer Zones

There are no perennial streams or streams having a biological community within 100 feet of a disturbed area.

D. REVISIONS TO APPLICANT'S PROPOSAL

None

E. REANALYSIS OF COMPLIANCE

None

F. PROPOSED SPECIAL STIPULATIONS AND JUSTIFICATION

1. Provide information why Section 817.42 (a)(7), regarding total manganese, has not been complied with in the proposal. Total manganese is and will be monitored at several locations, but apparently not at sedimentation pond outfalls, as required by this regulation.
2. Provide information regarding sediment control measures to be used per the requirements of Section 817.45.

3. Provide the locations of inflow channels for Sedimentation Ponds 3, 6 and 7 to allow an assessment of potential short circuiting per Section 817.46(e).
4. Provide a description of Sedimentation Pond No. 8 (if such pond is intended) in order that it can be reviewed under the requirements of Section 817.46.
5. Provide a description of measures to be taken to bring Pond No. 4 into compliance with Section 817.46(j) regarding embankment elevation.
6. Provide a description of measures to be taken to bring Ponds 1, 3 and 5 into compliance with Section 817.46(m) regarding embankment slopes or variances obtained from regulatory agencies.
7. Provide specifications regarding quality of embankment fill material per the requirements of Sections 817.46(n) and (o).
8. Provide certification of the drawing for Pond No. 4 per the requirements of Section 817.46(r).
9. Provide further information on the locations of surface water monitoring stations per the requirements of 817.52(b).
10. Provide clarification of calculated values for the topographic factor (LS) in Table 7-13.
11. Provide an explanation for the revision of the T_o/T_p ratio in Tables 7-10 and 7-11 and the manner in which calculated q_p values (from Equation 7-8) were converted to peak flows in the final column of the two tables.

G. SUMMARY OF COMPLIANCE

If the proposed stipulations are implemented or variances accepted, this section on surface water hydrology will be in compliance.

H. PROPOSED DEPARTMENTAL ACTION

To approve, with stipulations, the applicant's plan to restore surface drainages and protect water quality in the permit area of Starpoint Mines.

I. ENVIRONMENTAL IMPACTS OF PROPOSED DEPARTMENTAL ACTIONS

1. The applicant suggests that since groundwater will be intercepted and brought to the surface, the TDS content will not increase as it would without the mine being there. The result is an improvement in the overall water quality in the region (Page 3-76).

2. It is not expected that there will be sufficient mine water requiring discharging to surface streams. The quantity would be insignificant compared to spring runoff volumes (Page 3-81).

J. RESOURCE ALTERNATIVES TO THE PROPOSED ACTION

None

K. ENVIRONMENTAL IMPACTS OF ALTERNATIVES TO THE PROPOSED ACTION

None

GROUNDWATER

A. DESCRIPTION OF THE EXISTING ENVIRONMENT

The occurrence of groundwater in the region of the Starpoint Mine is predominantly controlled by the geology and exists under water table, artesian and perched conditions. Water table conditions exist primarily in shallow alluvial deposits along larger perennial streams and in relatively flat-lying sedimentary rocks. The groundwater occurring at greater depths is generally perched where impeding conditions exist or artesian where a confining layer overlies an aquifer. In general, the groundwater is very discontinuous.

There are numerous springs and seeps in the area which generally issue from south-facing slopes due to the general southern dip of the strata in the region. The flows of these springs are quite sensitive to precipitation. These springs are quite localized in nature and primarily utilized for stockwatering.

No alluvial valley floors have been identified on the mine site.

Geologic Controls

All of the formations exposed on or adjacent to the mine plan area are Cretaceous members of the Mesa Verde group, with the exception of the North Horn Formation, which is Tertiary, the stratigraphy and lithology of the units, in ascending order, are: the Star Point Sandstone: a massive, medium-grained sandstone ranging in thickness from 400 to 600 feet; the Blackhawk Formation: an interbedded sandstone, siltstone, shale and coal formation approximately 1000 feet thick; the Castlegate Sandstone: a massive, medium-to-coarse-grained sandstone; the Price River Formation: a medium-to-coarse-grained sandstone with shale lenses; and the North Horn

Formation: an interbedded sandstone and variegated shale formation. The coal to be mined is located in the Blackhawk Formation.

The North Horn Formation plays an important role in the groundwater regime due to the heterogenous lithology. The shales in this formation have a large influence on the occurrence of the springs and seeps in the mine plan area. A majority of the springs issue from south-facing slopes, often at a sandstone-shale interface considerably above the adjacent stream. Apparently, water which infiltrates into the soil and is not consumptively used percolates down until an impeding shale lense is met. It then follows the shale member downdip until an outlet is reached (either the surface or a discontinuous sandstone member). In regard to the Blackhawk Formation, no springs or seeps were located on the mine plan are issuing from this formation or the overlying Castlegate Sandstone (p. 7-10).

Two dominant fault zones are located on the Star Point mine plan area and trend in a north-south direction. Since the Plateau mining operation has not encountered these fault zones yet, it is not known what effect these faults have on the groundwater regime. However, a mining operation operated by U.S. Fuels east of Gentry Hollow encountered concentrated water as they approached a fault zone. The maximum initial flow was 500 gpm and the sustained flow has been approximately 200 gpm (p.7-21).

Groundwater Characterisitcs

Due to the discontinuous nature of the groundwater, monitoring wells were not installed at the mine site. Past experience in the region has shown that very limited information can be obtained from utilizing monitoring wells and this type of approach was not cost-effective. Therefore, discussions on the groundwater characteristics are based on information collected

from springs, seeps, local wells, mine dewatering, and U.S. Geological Survey studies.

Wells in the immediate area of the Star Point mine generally yield less than 10 gpm. The specific yield from these wells is generally on the order of 0.2 to 0.7%, and the hydraulic conductivities are very low. The estimated volume of recoverable water in the area averages less than 600 acre-ft/mi² in the upper 100 feet of saturated rock (p. 7-15). However, wells penetrating highly fractured sandstone result in enhanced yields, specific yields, and hydraulic conductivities.

All identified springs within the plan area are in the Price River or North Horn formations at or above an elevation of 9,300 feet. Of the 34 springs that were measured, four had flows between five and 15 gpm. All of the other springs were flowing less than five gpm, with most flowing between one and two gpm (p. 7-22).

Water encountered in the mine has generally been in the form of small roof leaks of usually less than five gpm that dry up within a few days or weeks after the mining progresses downdrift. Occasionally, in conjunction with a tension crack associated with a fault, larger flows of up to 150 gpm have been encountered.

Groundwater Quality

The groundwater quality of the mine plan area was primarily determined from springs and seeps. In addition, samples were collected from seepage within the Plateau Mine to determine the water quality of the Blackhawk Formation in which the coal-bearing zones are located. The samples were analyzed for bicarbonate, calcium, chloride, magnesium, potassium, sodium, sulfate, and total dissolved solids.

In general, the groundwater constituents for the springs were mostly calcium bicarbonate with some calcium and magnesium sulfates. Total dissolved solids concentrations vary from 200 to 370 mg/l, averaging approximately 285 mg/l (p. 7-11, Hydrology Section, Vol. III). The total concentration of dissolved solids concentration in groundwater in the mine plan area would tend to increase as the contact time of the water with the shale layers of both the North Horn and upper Price River formations increases. Shales tend to contain an abundance of soluble minerals and to allow more surface contact to water flowing through them than would be expected in coarse-textured rocks. Water that percolates into the soil mantle appears to move only a relatively short distance before it encounters a nearly impermeable layer of shale or siltstone and then flows downdip on top of the rather impermeable layer.

In addition, concentrations of various water quality constituents were compared among the separate geologic formations to determine the variability in groundwater quality between and within individual formations. As seen from Figure 1, concentrations of the various constituents both between and within the North Horn and Price River formations are relatively consistent (primarily a calcium bicarbonate system). The groundwater quality of the Blackhawk Formation is not only inconsistent with the North Horn and Price River formations, but is also variable within the formation itself. As seen in Figure 1, three samples from the Blackhawk Formation within the mine were calcium bicarbonate and the other was strongly calcium sulfate. This further illustrates the discontinuous nature of the Blackhawk Formation and the variability that can be found therein.

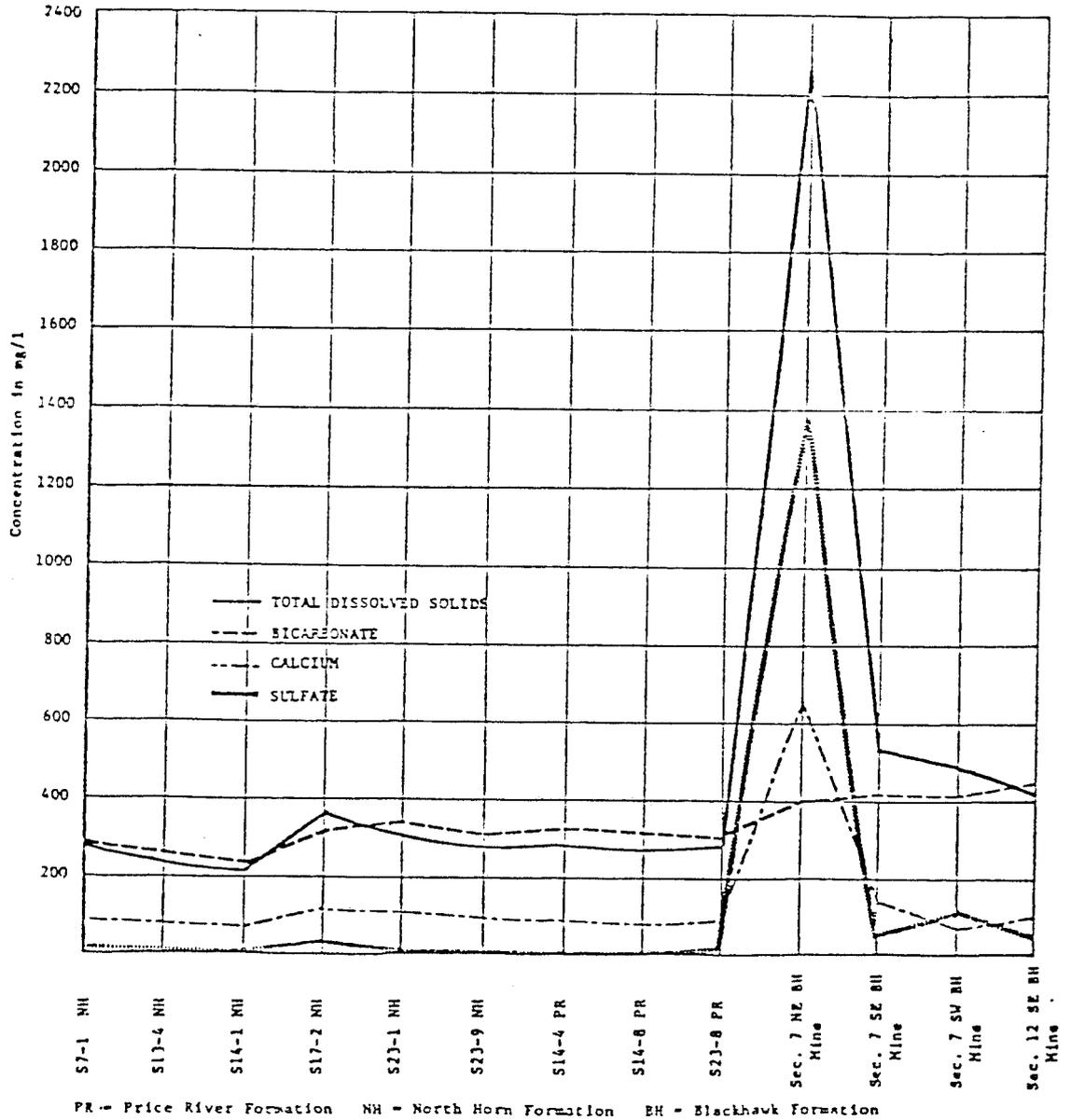


FIGURE 1. Comparison of Water Quality Data Collected From Springs and Mine Within Separate Geologic Formations in the Plateau Mine Plan Area

B., C. DESCRIPTION OF APPLICANT'S PROPOSAL AND EVALUATION OF COMPLIANCE

817.48 Hydrologic Balance: Acid-Forming and Toxic Forming Materials.

The mined coal is transported from the mine via conveyer to the processing plant near Wattis. After the coal has been processed, the coal and coaly waste are individually stockpiled near this location. Piezometers are going to be installed in the stockpiles to monitor the degree of saturation.

Acid-forming or toxic-forming materials have not been identified on the site. This observation is supported by the low sulfur content of the coal in the area (MRP 6.5.5.2). Furthermore, the stockpiles are located in an area which is stratigraphically removed from the primary groundwater system.

The applicant complies with 816.46, provided piezometers are installed in the stockpiles.

817.50 Hydrologic Balance: Underground Mine Entry and Access Discharge.

As previously discussed, the Plateau Mine currently intercepts groundwater in the form of small roof leaks (approximately five gpm) and tension cracks (flows up to 150 gpm). This water is used for dust suppression and fire protection within the mine, for bathhouse water in the portal area, and for preparation plant use. All water not used for these purposes has been stored in reservoirs within the mine. A National Pollution Discharge Elimination system (NPDES) permit is currently maintained for discharge into Mud Water Canyon. If at some future time the mine produces more water than can be utilized within the mine or outside the mine by the surface facilities,

water may either be discharged into Mud Water Canyon in connection with the aforementioned NPDES permit or into some other drainage after proper approvals are obtained.

It has been shown that the groundwater brought to the surface has a lower dissolved solids content than would have existed if the water were to continue its downward movement through shale layers, dissolving increased amounts of salt with distance (p. 7-28). This is also evident in the strong calcium bicarbonate type of water and low concentration of dissolved solids encountered during the mining operation. In addition, acid drainage problems should not be a problem due to the high alkalinity and low acidity concentrations.

Provided the water produced in the mine is treated to prevent the discharge of suspended solids, oil, grease, etc., the applicant is in compliance.

816.52 Hydrologic Balance: Surface and Groundwater Monitoring.

(a) Groundwater Monitoring

An ongoing groundwater monitoring program will be conducted at each of the stations shown in Plate 7-6 (see Hydrologic Section, Vol. III). In addition, data will be collected from within the mine.

As stated previously, the quality of water issuing from springs and seeps is representative of groundwater within the North Horn and Price River formations. Groundwater usage in the area is almost entirely from springs; therefore, the monitoring of springs on the site takes on added importance in the effort to monitor impacts from mining activities.

Water quality samples will be collected quarterly, when accessible, from the springs noted on Plate 7-6 and from seepage near the working face within the mines. Each of the water quality samples collected during the low-flowing third quarter will be analyzed as outlined by the comprehensive list in Table 1. All other quarterly samples will be analyzed as outlined by the abbreviated list in Table 2, with the exception of suspended solids. Data collected at springs will give a measure of the impact from mining on the groundwater system at its primary point of use. Measurements taken from the mine will give an indication of quality impacts on the deep groundwater system.

Table 2 is presented to clarify background conditions and future impacts. Because of the high chemical quality of waters in the Plateau mine plan area, as determined by the baseline study, suspended solids have been included in the abbreviated schedule as the single most important impact indicator for surface waters. Phenol and phosphate are included because of the high background concentrations found previously. Total dissolved solids, specific conductance, temperature, and the major cations and anions are included as indexes of major change. Total iron, total manganese, and pH determinations are required by OSM regulations.

In addition to the above outlined monitoring program, a National Pollution Discharge Elimination System (NPDES) discharge permit has been acquired for mine water discharge as necessary. Monitoring of all discharges will be conducted in accordance with this permit.

As required, groundwater quality data collected from the mine plan area will be submitted to the Utah Division of Oil, Gas, and Mining. Such reports will normally be submitted within 60 days of the end of each quarter, depending on the speed of laboratory analyses.

TABLE I

Comprehensive Water Quality Analytical Schedule

Field Measurements	Laboratory Measurements	
Discharge	Acidity	Manganese, Dissolved
pH	Alkalinity	Manganese, Total
Specific Conductance	Arsenic, Total	Mercury, Total
Temperature, Air	Barium, Total	Nickel, Total
Temperature, Water	Bicarbonate	Nitrogen
	Boron, Total	Oil & Grease
	Cadmium, Total	Potassium
	Calcium	Selenium, Total
	Carbonate	Sodium
	Chloride	Sulfate
	Chromium, Total	Total Dissolved Solids
	Copper, Total	Total Keldahl
	Iron, Dissolved	Total Phosphate
	Iron, Total	Total Suspended Solids*
	Lead, Total	Zinc, Total
	Magnesium, Total	

TABLE 2

Abbreviated Water Quality Analytical Schedule

Field Measurements	Laboratory Measurements	
Discharge	Acidity	Manganese, Dissolved
pH	Alkalinity	Manganese, Total
Specific Conductance	Bicarbonate	Potassium
Temperature, Air	Calcium	Sodium
Temperature, Water	Chloride	Sulfate
	Iron, Dissolved	Total Dissolved Solids
	Iron, Total	Total Suspended Solids*
	Magnesium	

*Surface waters only

The applicant has complied with this section.

817.53 Hydrologic Balance: Transfer of Wells

There are no references in the mine plan regarding the transferral of an exploratory well for present or future use as a water well.

817.54 Hydrologic Balance: Water Rights and Replacement

The mine plan states that "an alternate water supply will be provided to replace any water source disrupted, degraded, or diminished by the mining operation. Although the mining operation is unlikely to affect the water supplies in the Gentry Mountain area, the Plateau Mining Company will provide this alternate supply if needed. Several alternatives exist as to the source of this alternate supply:

- 1) Water from springs held by Plateau Mining Company could be piped to the affected site.
- 2) Water rights could be traded or transferred for springs held by Plateau.
- 3) A well could be drilled at the affected site to provide an alternate supply. Means of pumping must be provided in this alternative, as artesian conditions do not exist.
- 4) Water produced in the mine could be piped to the affected site.

In the unlikely event that mining adversely affects a water source, the Plateau Mining Company will select an alternative after considering all possibilities of each site-specific

circumstance and in conjunction with the proper regulatory authorities."

The applicant will comply with this section.

817.55 Hydrologic Balance: Discharge of Water Into an Underground Mine

There are no plans included in the applicant's proposal to discharge water into an underground mine.

D. REVISIONS TO APPLICANTS PROPOSAL

None

E. REANALYSIS OF COMPLIANCE

Not applicable

F. NECESSARY STIPULATIONS AND JUSTIFICATIONS

The applicant will install piezometers in the stockpiles. This will allow the applicant to monitor the degree of saturation present in the stockpiles as well as allow for the mitigation of any potential stockpile failure.

G. SUMMARY OF COMPLIANCE

If proposed stipulation is implemented, the groundwater portion of this mine plan will comply.

H. PROPOSED DEPARTMENTAL ACTION

To approve the groundwater section of the underground mining plan as described. The groundwater monitoring plan is adequate and will alert both the applicant and regulatory authority if

three seams; Wattis (top seam), Third (middle seam) and Hiawatha (bottom seam). In addition to projected mineable coal, recoverable coal remains in already mined areas. The Hiawatha seam portal (referred to as Portal 1) and the original Wattis portal (Portal 2), are used primarily to recover coal from previously worked areas; the Lion Deck Portal which is also in the Wattis seam, traverses old mine workings to develop virgin coal reserves in Federal Leases U 031286 and U 13097.

The projected mineable tonnage is 72,170,000 tons, of which 34,000,000 in place are from the Wattis seams, 21,430,000 tons from Third seam and 16,740,000 tons from Hiawatha seam.

Mining recovery of the above reserves is projected to be 68% of the total in-place raw coal tonnage, of which 80% will be recovered in the cleaning plant. (MRP 1.1, 3.4.1, 3.4.3.2.2)

B. DESCRIPTION OF APPLICANT'S PROPOSAL

The mine uses the Room and Pillar-Advance/Retreat mining method. About eight such sections are projected for operation at 2,000,000 tons/year. This system (Room and Pillar) with continuous mining machines was the only logical choice for recovering the coal in the old workings and for driving development openings into the virgin areas. A longwall mining system is projected to be applied in the future. However, longwall and, in most cases, shortwall methods are not amenable to the types of situations encountered in the initial developments. Longwall will be used wherever possible to decrease manpower, improve safety, increase production and recover the maximum percentage of the reserves. As far as equipment used in the Room and Pillar sections, continuous miners were selected over conventional loading and cutting machines because; 1) the coal cuts rather easily and 2) manpower is saved. In cases where longwall is installed, continuous miners will drive development openings and mine

rooms (with full pillar recovery) in those areas unsuitable for longwall installation.

The mine plan consists of entries on 80 foot centers, 20 foot wide crosscuts with 60' x 60' pillars. Current projections indicate that panels will be 2,000 to 2,500 feet long.

Longwall work will be accomplished on 500 to 600 foot faces. (MRP 3.4.1.3, 3.4.1.4, 3.4.1.5)

C. EVALUATION OF COMPLIANCE

The proposed mining methods (Room and Pillar and Longwall Sections) and sequence, seem to adequately complement each other in the overall coal recovery program. Use of longwall panels will result in small areas of unmined coal in the vicinity of outcrops or odd-shaped corners which this system cannot reach because of the regular, rectangular shape of the panel. Such areas will be recovered by use of continuous miners using Room and Pillar.

In conjunction with proposed subsidence monitoring and control plan, environmental integrity will be maintained (30 CFR 817.59).

A roof control plan, as required by 30 CFR 75.200, is provided in Appendix 3B of the report, and has been approved by MSHA.

No U.S.G.S. analysis of coal recovery has been brought to the reviewer's attention.

D. REVISIONS TO APPLICANT'S PROPOSAL

None.

E. REANALYSIS OF COMPLIANCE

Not applicable.

F. PROPOSED SPECIAL STIPULATION WITH JUSTIFICATION

The proposed longwall mining method will be used in areas of unmined coal in the vicinity of outcrops or odd-shaped corners which the Room and Pillar system cannot reach because of regular, rectangular shape of the panel. The longwall work will be accomplished in 500 to 600 foot faces advancing maximum distance. This procedure will maximize coal recovery.

G. SUMMARY OF COMPLIANCE

Will comply if proposed methods and stipulation are implemented.

H. PROPOSED DEPARTMENTAL ACTION

Approval of the proposed method of coal extraction using longwall mining in selected areas to maximize coal recovery.

I. ENVIRONMENTAL IMPACTS OF PROPOSED DEPARTMENTAL ACTION

Removal of coal deposits from proposed areas.

J. RESOURCE ALTERNATIVE TO THE PROPOSED ACTION

The alternative to the proposed action is to prevent mining of reserves obtainable with longwall mining, resulting in the loss of valuable resource. Proper enforcement and compliance with the permit will eliminate adverse effects of this work and, therefore, do not warrant the alternative action.

K. ENVIRONMENTAL IMPACTS OF ALTERNATIVE TO THE PROPOSED ACTION

The alternative action would not appreciably reduce impacts to the site environment in terms of magnitude or duration.

817.61-817.68 EXPLOSIVES

A. DESCRIPTION OF APPLICANT'S PROPOSAL

This is an underground mine using continuous mining or longwall machines, which eliminates the need for blasting. Excavation requiring blasting, such as rock slopes and shafts, will be shot in accordance with existing Federal and State laws (3.4.6.3.4).

Work on the surface, such as site preparation which requires blasting, will be done in accordance with applicable Federal and State regulations for surface work under Plateau's existing permit. The permit number is not given, however, MSHA has granted permission to use non-permissible shot firing units for First West Rock slope in the letter from the District Manager dated July 14, 1980 (p. 3B-84).

Explosives are stored in the area shown on Plate 3-1 in a magazine constructed to conform with Treasury Department and MSHA regulations. This area satisfies requirements of the above agencies relative to its distance from travelled roads and buildings.

In compliance with regulations, the explosive magazine is not located near powerlines, fuel tanks, storage areas or other possible sources of fire. According to Plate 3-1, computed distances show the magazine is 1,400 feet northwest of a 500 gallon diesel tank, 1,840 feet west of transmission lines and 4,160 feet southwest of more diesel and gasoline storage tanks.

Construction material for the magazine is of a noncombustible type, covered with a fire resistant material. The structure's interior is built with non-sparking materials for walls and floors. The structure is equipped with screened ventilation openings near the floor and ceiling. The structure is bullet resistant and posted "Danger" signs are located such that bullets passing through the signs will not strike the magazine structure. The magazine is equipped with two security locks designed to prevent intrusion when the buildings are unattended by mine security personnel (3.4.6.3.4.).

B. EVALUATION OF COMPLIANCE

No immediate surface blasting is planned. However, excavation requiring blasting, such as rock slopes and shafts, will be shot in accordance with existing Federal and State laws (MRP 3.4.6.3.4).

This section is in compliance.

C. REVISIONS TO APPLICANT'S PROPOSAL

None.

D. REANALYSIS OF COMPLIANCE

Not applicable.

E. PROPOSED SPECIAL STIPULATIONS AND JUSTIFICATION

None.

F. SUMMARY OF COMPLIANCE

The operator will comply except for Plateau's existing blasting permit number not given in report.

G. PROPOSED DEPARTMENTAL ACTION

Approval of the proposed mining method of coal extraction.

H. ENVIRONMENTAL IMPACTS OF PROPOSED DEPARTMENTAL ACTION

Removal of coal deposits from proposed areas.

I. RESOURCE ALTERNATIVES TO THE PROPOSED ACTION

No alternatives are considered.

J. ENVIRONMENTAL IMPACTS OF ALTERNATIVES TO THE PROPOSED ACTION

No alternatives are considered.

817.95 AIR RESOURCES PROTECTION

A. DESCRIPTION OF EXISTING ENVIRONMENT

Climatological data for the area of the mine are available from Hiawatha, five miles southeast and about 500 feet lower than Star Point.

The lower level winds in the region are controlled by the local terrain. In the area of the mine the winds are most likely west-southwesterly (night, down canyon flow or up canyon) due to the channelling effects that dominate the flows within the canyon. Wind data at the site are being collected during 1981.

The annual average temperature is 45°F at Hiawatha with an average monthly mean of 23°F in January and 69°F in July. At Hiawatha, the annual precipitation is 16 inches. With a range of normal monthly precipitation of 0.87 to 1.92 inches. The

Hydrologic Atlas of Utah shows an annual precipitation of 22 inches; about 16 inches of this occurs as snow from October to April. Rainfall from May to September accounts for the other 6 inches.

B. DESCRIPTION OF APPLICANT'S PROPOSAL

1. Air Quality Monitoring Program

Although precipitation wind direction and windspeed will be monitored at the mine, no air quality monitoring program is proposed.

2. Fugitive Dust Control

Fugitive dust control measures have been planned for the major sources at the mine: topsoil removal and storage pile, access roads, and coal handling facilities. The following control methods will be implemented at the mine:

- o Water spray program during operation involving topsoil removal and stockpiling
- o Application of water sprays and nontoxic dust suppressants during construction of new roads
- o Stabilization of cut and fill slopes along new roads when established and revegetation at the earliest seasonal opportunity
- o Restriction of vehicular traffic on access roads to only authorized personnel and maximum vehicle speed of 30 mph
- o Periodic retreatment of moderately used roads, i.e. used daily, with water and/or nontoxic dust suppressants
- o Paving of the road from the Lion Deck portal to the coal washing plant
- o Application of a soil stabilizing agent to the upper layer of the roadbed on frequently used access roads; periodic

(as needed) application of water spray or dust suppressants.

- o Conveyers from portals to intermediate stockpiles and overland conveyors are covered; transfer points in coal crusher area have water sprays; conveyor discharge heights will be minimized
- o Primary crushers enclosed and contain water sprays
- o Periodic application of water spray and/or nontoxic dust suppressant on the coal storage pile.
- o A new refuse disposal site will be selected in an area where there is a natural wind break; refuse will be compacted and sprayed with nontoxic dust suppressant
- o Design railroad loadout to control fugitive dust; telescoping chute used to load railroad cars; water and/or nontoxic dust suppressant applied to the top of loaded railroad cars
- o Revegetation of topsoil storage areas and refuse disposal piles.

C. EVALUATION OF COMPLIANCE OF PROPOSAL

1. Climatological information is adequate.
2. Fugitive dust control measures for the mine area are specified and will reduce fugitive dust emissions at the mine site. The plan does not identify 1) the methods which will be used to stabilize cut and fill slope, 2) the nontoxic dust suppressants, and 3) the soil stabilizing agent to be applied to roadbeds of frequently travelled roads.
3. No monitoring plan is described in the plan, therefore it will be difficult to define the impact of the mine on the area.
4. No modeling for the proposed mine operations was performed for the permit application. Uncontrolled and controlled emissions have been estimated for each fugitive dust source.

However, no calculations or tables are present to document the emission and control estimates.

Although modeling is not required by the State of Utah, no calculations were presented in the mine plan to evaluate the total emissions expected.

D. REVISIONS TO APPLICANT'S PROPOSAL

None

E. REEVALUATION OF COMPLIANCE

None

F. PROPOSED SPECIAL STIPULATIONS WITH JUSTIFICATION

1. Within 30 days of permit approval the applicant shall submit to the regulatory authority an air quality monitoring program to evaluate the effectiveness of fugitive dust control at Star Point or provide documentation and calculations supporting the uncontrolled and controlled emission estimates.

2. Within 30 days of permit approval, the applicant shall submit to regulatory authority a list of methods to be used to stabilize cut and fill slope and a list of proposed nontoxic dust suppressants and soil stabilizers to be used to control fugitive dust.

G. SUMMARY OF COMPLIANCE

With stipulations this section is in compliance.

H. PROPOSED DEPARTMENT ACTION

To approve the air resources section as controlling and minimizing air pollution subject to review and approval of information to be submitted in response to stipulations.

I. ENVIRONMENTAL IMPACTS OF THE PROPOSED DEPARTMENTAL ACTION

The approval of the plan could result in some occasional short-term, local impacts in the immediate vicinity of the mine and railroad loadout facility.

Also, the gaseous pollutants such as CO and NO/NO_x would be increased in the immediate vicinity of the roads and to a very minor degree in the area. These impacts would exist for the life of the hauling with the worst impacts occurring during the early morning because of surface inversions.

J. ALTERNATIVES TO THE PROPOSED ACTION

Proposed discretionary stipulation identified under requirement of NEPA: Covering the trucks would reduce the impact of coal dust from trucking the coal to the loadout to almost nil. This measure has been determined to have a unit cost of approximately \$400.00 (estimate from private canvas manufacturer). This would add an additional \$4,800.00 to the costs of hauling coal to the loadout plus time required to handle the covers at the mine and at the loadout. Revegetation of topsoil stockpile would farther reduce the emission of fugitive dust.

K. ENVIRONMENTAL IMPACTS OF ALTERNATIVES TO THE PROPOSED ACTION

The implementation of the suggested alternative would reduce or virtually eliminate the emission of fugitive dust from the topsoil stockpile.

817.97 PROTECTION OF FISH AND WILDLIFE

A. DESCRIPTION OF EXISTING ENVIRONMENT

The mine plan area is located in Carbon and Emery Counties, Utah. Considerable variation in elevation results in a number of diverse habitats for wildlife. Five major habitats are found: pinyon-juniper, salt desert shrub, sagebrush, mixed conifer-aspen, mixed mountain brush-grass, and mixed desert shrub (MRP 10-10).

No endangered species have been observed on the mine plan area. A small population of bald eagles winters at Scafield Reservoir, north of the mine plan area. Table 10-10 indicates the golden eagle is present in the mine plan area year-round. No search for raptor nests has been performed.

Elk, mule deer, mountain lion, bobcat, black bear, cottontails, snowshoe hare, several furbearers, chukar, morning dove, and probably blue and ruffed grouse are economically important species occurring on the mine plan area. Elk occur in summer in the higher elevation portions of the area, and migrate to lower areas in winter, primarily to the west of the area (MRP 10-35). Mule deer follow a similar pattern, but appear to winter primarily east of the mine plan area (MRP 10-37).

The applicant has not specifically described or mapped important wildlife habitat areas such as cliffs supporting raptors or fawning and calving grounds. The location of migration routes is described in a general way.

B. DESCRIPTION OF APPLICANT'S PROPOSAL

1. a. The applicant proposes to minimize adverse impacts primarily by timely reclamation and minimizing disturbance in space and time, particularly in reference to the proposed ventilation shaft and breakout area.
- b. The applicant proposes to control and avoid impacts by keeping surface disturbance to a minimum, by timely revegetation, by fencing areas hazardous to wildlife, and by implementing a monitoring program in the Tie Fork watershed.
2. No mention is made of the construction of power lines.
3. The applicant states that "all hazards associated with the expansion and mine operation will be covered, buffered or fenced to prevent damage to wildlife of concern. "No locations are cited nor are the types of fence to be used shown.
4. The applicant has determined that the proposed refuse pile expansion area is in a mule deer wintering area, and states that it will be revegetated with adapted native species of value to wildlife. No specific plans are given. The applicant has identified no other critical areas.
5. The applicant states that species selected for revegetation will be of value to wildlife (MRP 10-42) but does not give a list of species or discuss their potential for establishment or survival.

C. EVALUATION OF COMPLIANCE OF PROPOSAL

1. The applicant has not adequately described efforts to control and minimize adverse impacts on fish and wildlife resources.
2. The applicant has not conducted an adequate survey of the area for golden eagles, peregrine falcons and other potential nesting raptors.
3. The applicant has not described construction of powerlines.
4. Proposed fencing of roadways and other hazards has not been adequately described.
5. Habitats of unusually high value have not been adequately identified, nor has the applicant provided an acceptable description of plans for their protection.
6. There is no commitment to avoid the use of persistent pesticides or to prevent fires.
7. The description of revegetation efforts in reference to plant species providing food and cover value for wildlife is wholly inadequate.

D. REVISIONS TO APPLICANT'S PROPOSAL

None

E. REANALYSIS OF COMPLIANCE

Not Applicable.

F. PROPOSED STIPULATIONS WITH JUSTIFICATION

1. The applicant will submit complete baseline data on wildlife resources, which will include specifically the location of raptor nesting areas and habitats of unusually high value such as fawning and calving grounds and wintering areas.
2. The applicant will respond to the requirements of section 817.97, specifically in reference to construction of powerlines, location and type of fencing proposed, and selection of plant species for revegetation.
3. The projected impacts of subsidence (section 3.5.8.1) include the Tie Fork watershed. Section 3.5.6.3 delineated a monitoring program for the Tie Fork watershed. This monitoring program should be continued as planned and should be continued at least every other year until the release of the bond.

Should mining impacts occur within the Tie Fork watershed, mitigation procedures should be developed, with Utah DWR concurrence, and implemented.

G. SUMMARY OF COMPLIANCE

If the proposed stipulations are met, adequate data for a determination of compliance will be available.

H. PROPOSED DEPARTMENTAL ACTION

In all likelihood, this plan will be in compliance when adequate data are received from the applicant. However, because of the inadequacy of the plan and supporting information, it is impossible to recommend approval with stipulations at this time. At this time the plan must be disapproved.

I. ENVIRONMENTAL IMPACTS OF PROPOSED DEPARTMENTAL ACTION

The most serious potential impacts of this mine plan appear to be disturbance of elk and mule deer and their habitat. However, the location of special use areas for these species and the description of the applicant's proposed methods of avoiding and mitigating impacts are not detailed enough to allow an accurate assessment.

J. RESOURCE ALTERNATIVES TO THE PROPOSED ACTION

None

K. ENVIRONMENTAL IMPACTS OF ALTERNATIVES TO THE PROPOSED ACTIONS

Not Applicable

817.111-817.117 REVEGETATION

A. DESCRIPTION OF EXISTING ENVIRONMENT

The applicant has not described the vegetative environment. A vegetation survey is to be made during the 1981 growing season. Methods will be used which incorporate OSM suggestions. Seven vegetation types have tentatively been determined and a vegetation map which does not show topographic relief has been included.

B. DESCRIPTION OF APPLICANT'S PROPOSAL

The applicant proposes to seed disturbed areas during the first appropriate season following grading and topsoil redistribution. Seed will be distributed using a drill on gentle slopes and flat areas and a cyclone spreader or hydroseeder on steeper slopes.

Straw mulch will be used on all but the steeper slopes where hydromulch and/or matting will be used. Different seed mixes will be used for the southern, sunny exposures and for the northern, shaded exposures. Irrigation is not proposed unless the planting year is very dry and then may be considered as an aid to seedling survival. Deer and rodent use will be observed and overuse dealt with appropriately.

The applicant says that it will inspect the revegetated areas for 5 years. Any area which does not have 80% of the original cover will be investigated. Any area having 80% of the original cover will no longer be monitored. The mine is situated in an area of approximately 13 inches of precipitation annually. A schedule has been provided.

C. EVALUATION OF COMPLIANCE

The applicant has agreed to use methods suggested by OSM for evaluating the vegetation of the permit area. It is the opinion of the reviewer, however, that a single transect established "within the most representative portion of a vegetative type" (p. 9-2) with all plots for the vegetation type being found along it will result in biased sampling.

The seed mix which has been proposed for south facing and sunny slopes (p. 3-120) is heavily dependent on non-native species and the mix for north facing shady areas includes one with no justification for their use as required under UMC 817-112. Such justification must be provided or the seed mix must be revised to reflect the natural plant communities of the permit area.

The applicant states that shrub mixes may be hand planted on both sunny and shaded slope faces (pp. 3-118-3-119). The applicant must make a commitment to the revegetation methods which are being proposed in this permit application.

The applicant states that the trees and shrubs which may be planted on south facing slopes would be set at m^2 intervals. Nothing is said about the spacing on north facing slopes (p. 3-119).

If the applicant does intend to return the area to forest land, it must provide an abundance criterion for all areas to be planted.

The applicant does not address the temporary stabilization of soil with vegetation, although it shows in Table 3-10 (p3-123) that this will be done for topsoil stockpiles and the refuse pile extension. Information must be provided concerning how these areas will be seeded and what type(s) of seed will be used.

The applicant's proposals for measuring revegetation success do not correspond to Utah's regulations (UMC 817.116) since they are concerned with areas having 80% of the original cover at the end of five years. Utah's regulations say that revegetation will be successful when the cover and production of revegetated areas equal those for their corresponding reference areas ten years after the last year of augmented seeding, fertilizing, irrigation or other success insuring work. Since livestock grazing is to be a post-mining landuse, the area must have a grazing plan in effect during the final two years of liability.

F. PROPOSED SPECIAL STIPULATIONS AND JUSTIFICATION

The applicant must complete the proposed vegetation survey during the 1981 growing season as to fulfill the requirements of UMC 783.19. The map must show topographic details found on 1:24,000 scale USGS maps or be based on aerial photo mosaics (UMC 771.23, UMC 783.19)

The applicant must re-evaluate its seed mixes and either replace the non-native species with natives or justify the use of non-natives as required under UMC 817.112.

The applicant must commit itself to the shrubs it intends to plant as well as the density of those shrubs as required under UMC 817.117. Since the preliminary assessment of seven vegetation types includes six shrub or forest lands, the planting of trees and shrubs cannot be eliminated from the revegetation plan.

The applicant must give information on methods and seed mixes which will be used for temporary stabilization as required under UMC 817.114.

The applicant must design its methods for measuring revegetation success to meet Utah's regulations (UMC 817.116). Since the mine site receives less than 26 inches of precipitation annually, the applicant's period of liability is ten years after the last year of augmented seeding, fertilizing, irrigation or other success insuring work. A grazing plan must be used during the final two full years of that liability period. The applicant must provide the grazing plan for permit approval. The ground cover and productivity of the revegetated areas will be considered equal to those of the reference area if they are at least 90 percent of the values obtained from the reference areas with 90 percent confidence (80 percent confidence on shrublands) or ground cover and productivity are at least 90 percent of the technical guide approved pursuant to UMC 817.116 (b) (1).

G. SUMMARY OF COMPLIANCE

If the proposed stipulations are implemented, this section is in compliance.

H. PROPOSED DEPARTMENTAL ACTION

Approval with stipulations.

I. ENVIRONMENTAL IMPACTS OF PROPOSED DEPARTMENTAL ACTION

More than half of the disturbance which is planned for the Star Point Mines has already occurred. If the mines are permitted for only the current permit area the action would have no further effect on the vegetation or wildlife habitat of the area. If the mine plan area is permitted, the mines' operation would affect another 75 acres. This is a relatively small disturbance whose effects would be minimized by implementation of the reclamation plan and attached stipulations.

J. RESOURCE ALTERNATIVES TO THE PROPOSED ACTION

There are no reasonable alternatives to the proposed action.

K. ENVIRONMENTAL IMPACTS OF ALTERNATIVES TO THE PROPOSED ACTION

None.

817.121-817.126 SUBSIDENCE

A. DESCRIPTION OF EXISTING ENVIRONMENT

The Plateau Mining Company uses the Room and Pillar mining method. A longwall mining method will be implemented pertaining to approval of proposed actions. Maximum coal extraction which includes retreat pillar recovery, could result in surface subsidence over a long period of time. Subsidence has occurred on old workings on the eastern part of the permit area where pillars have been pulled. Observed subsidence typically consists of linear cracks, sometimes showing orthogonal patterns corresponding to the orientation of drifts and crosscuts. Severe forms of subsidence are likely to occur near outcrops.

In general, subsidence would depend upon the depth of cover over mined coal, the stratigraphy of the formations above coal seams and amount of coal removed (3.5.8, 3.5.8.1).

B. DESCRIPTION OF APPLICANT'S PROPOSAL

The mine uses the Room and Pillar-Advance/Retreat mining method. Continuous miners are used predominantly in developing openings, mine rooms and pillar recovery. The mine plan consists of entries on 80 ft. centers, 20 ft. wide crosscuts with 60 x 60 ft. pillars and panels between 2000 ft. and 2500 ft. long. A longwall mining method is projected to be applied in the future.

The expected percentage recovery is 68% from the three seams with about 80% of the recovered tonnage estimated as saleable coal.

C. EVALUATION OF COMPLIANCE

A detailed description of mining methods and possible effect on surface subsidence is adequately covered in the report (3.4.1). The degree of controlled subsidence is identified and anticipated effects of subsidence are adequately covered. A pre-subsidence survey to assess potential damage to identified surface structures is in compliance.

In cases where subsidence occurs, affected structures will be moved or protected against structural failure (T.V. tower and powerline).

Surface structures including fences and roads can be repaired. Flow from springs can be diverted or conveyed over a crack that might disrupt flow.

Measures to mitigate the effect of damage for subsidence are covered adequately.

D. REVISIONS TO APPLICANT'S PROPOSAL

None

E. REANALYSIS OF COMPLIANCE

Not applicable.

F. PROPOSED STIPULATION WITH JUSTIFICATION

Replace and repair any man-made structures damaged or affected by subsidence. These include T.V. tower, powerline, roads and fences. Flow from springs will be diverted or conveyed over cracks that might disrupt flow (3.5.8.2).

G. SUMMARY OF COMPLIANCE

The mining company will comply fully with both the monitoring plan, as proposed by Manti-LaSal National Forest and the regulations as stated in 30 CFR 784.20 (3.5.8.1, 3.5.8.2).

H. PROPOSED DEPARTMENTAL ACTION

Approval of the proposed method of coal extraction using longwall mining in selected areas to maximize coal recovery.

I. ENVIRONMENTAL IMPACTS OF PROPOSED DEPARTMENTAL ACTION

Removal of coal deposits from proposed areas.

J. RESOURCE ALTERNATIVE TO THE PROPOSED ACTION

The alternative to the proposed action is to prevent mining of reserves obtainable with longwall mining, resulting in the loss of a valuable resource. Proper enforcement and compliance with the permit will eliminate adverse effects of this work and, therefore, do not warrant the alternative action.

817.133 POST MINING LAND USE

A. DESCRIPTION OF EXISTING ENVIRONMENT

The permit area is currently used for cattle grazing, wildlife habitat, forestry, recreation and mining. These uses fit the Carbon County zoning ordinance uses for the area. The land capability and productivity is discussed only in general terms. No map is included.

Coal mining has occurred in the permit area since 1917 under four different operations with only a three year break. From 1917-July 1980 approximately 17,750,000 tons of coal were removed using room and pillar mining. There have been "no significant" new surface disturbances due to mining activities since 1917. The coal being mined is in the lower 400 feet of the Blackhawk Formation of the Mesa Verde Group. Coal has been removed from three seams: the Wattis, Third and Hiawatha.

A single oil and gas exploration hole was sunk on the permit area. This hole proved to be dry. No other minerals have been explored for or mined within the permit area.

B. DESCRIPTION OF APPLICANT'S PROPOSAL

The applicant proposes to remove all of the surface facilities and equipment (except an access road), seal openings and backfill ponds. Drainages will be returned to patterns which

are similar to the original drainage patterns. Final contours will be suitable for grazing and wildlife habitat. Ripping and scarification will be practiced to provide the best environment possible for revegetation. Perennial woody species will be emphasized. Moisture retention methods (i.e. mulch) may be used.

C. EVALUATION OF COMPLIANCE OF PROPOSAL

The applicant has written only in general terms of the productivity and capabilities of the land involved. Information is required on how much forage is produced in terms of animal units, not how many are allowed to use the area.

The applicant has not provided a land use map. Such a map must be included in the permit application.

The applicant states that the revegetation plan will emphasize perennial woody species (p. 4-18). The revegetation plan itself, however, seems to emphasize grasses. This must be clarified.

The applicant states that moisture retention methods may be used (p. 4-18). The reclamation plan says that they will be used. The two sections should be written so they sound like they apply to the same mine plan.

The applicant does not have a grazing plan which must be in effect during the final two full years of liability.

F. PROPOSED SPECIAL STIPULATIONS WITH JUSTIFICATIONS

The applicant must provide information on actual productivity of the area to be permitted as required by UMC 783.22.

The applicant must have a map showing land use at the time of filing of the application, as required by UMC 783.22, which is of the proper scale and topographic detail.

The applicant must correct the post mining land use plan to follow the reclamation plan.

The applicant must develop a grazing plan for the final two years of its liability period in order to comply with UMC 817.115 and UMC 817.133.

G. SUMMARY OF COMPLIANCE

If the proposed stipulations are implemented, this section will be in compliance.

H. PROPOSED DEPARTMENTAL ACTION

Approval with stipulations.

I. ENVIRONMENTAL IMPACTS OF PROPOSED DEPARTMENTAL ACTION

Approval of the mine plan will have minimal impact on land use since the mines being permitted have been in operation for several years. If the total mine plan area is permitted as many as 75 acres of grazing land may be lost. This would be a temporary loss, however, as the land will be returned to grazing after mining ceases.

J. RESOURCE ALTERNATIVES TO THE PROPOSED ACTION

There are no reasonable alternatives to the proposed action.

K. ENVIRONMENTAL IMPACTS TO ALTERNATIVES TO THE PROPOSED ACTION

None.

817.150 ROADS/TRANSPORTATION

A. DESCRIPTION OF EXISTING ENVIRONMENT

There are class I roads in existence at the surface facilities. Approximately two miles of access roads will be rehabilitated upon completion of mining; 2.3 miles of all-weather roads may remain after mining to service Carbon County's T.V. structure. Public roads are used in the permit area. Access to these roads is, however, limited and controlled by the mine operator, since the roads mainly service mine facilities. The Utah Railroad presently operates the spur track to the permit area.

As part of overall coal transportation the company operates a 6,300 foot overland conveyor belt system (Plate 3-1).

B. DESCRIPTION OF APPLICANT'S PROPOSAL

Any asphalt or treated surfaces (roads) will be removed prior to reclamation. Approximately two miles of access roads will be rehabilitated upon completion of mining. Various roads and sites in the area (Plates 3-6A through E) have already been reclaimed and the bonds reduced. The Utah Railroad will reclaim its operating spur in accordance with regulation upon cessation of operation (3.3.12, 3.3.15).

Access roads are posted with "Authorized Personnel Only", speed and road information signs upon entrance to the property; use of these roads is restricted to authorized personnel (Plate 3-1).

Some alterations or additions to existing roads (mine access road to the Lion Portal Deck for example) is anticipated. The proposed new road construction guidelines would be:

1. Access

To gain a foot hold on the hillside, it is necessary to pioneer a cut with a bulldozer. The pioneer cut provides an avenue for transportation of the cut material to the fill areas and also provides a work deck for another construction equipment. Material from this initial excavation is side-cast to increase bench width or is used to fill small depressions.

2. Road Width

The required road width-40 feet-is attained by continual removal of material. This material is moved to those areas where fill is needed in an effort to minimize the amount of cut and maximize the road's safety by constructing as straight a road as possible. Downward movement of fill material is controlled by keyways, i.e. tram road and natural sandstone ledges.

3. Grade

The final grade of the finished road will be 10%. This grade will permit easy access to the mine for both men and material and will comply with regulations designed to reduce the velocity of run-off water thereby minimizing suspended solids that might enter the hydrologic regime.

4. Berm

Along the outside edge of the road a berm will be built according to MSHA regulations. The berm will be approximately two feet in height.

5. Drainage

The road will be bounded on the outslope by the berm and along the inside by the highwall. A ditch will be constructed running parallel to the road against the highwall with the road sloping gently inward, away from the outslope. In addition, the road will be hard surfaced.

C. EVALUATION OF COMPLIANCE

The information given on roads, i.e. road construction and rehabilitation is adequate and it complies with regulations 30 CFR 817.151 and 30 CFR 817.153. The maps included with the report give adequate information.

D. REVISIONS TO APPLICANT'S PROPOSAL

None

E. REEVALUATION OF COMPLIANCE

Not applicable.

F. PROPOSED SPECIAL STIPULATIONS WITH JUSTIFICATION

Any additional roads built on the facility will be class I and will comply with the above regulations.

G. SUMMARY OF COMPLIANCE

Will comply if proposed stipulation is implemented.

H. PROPOSED DEPARTMENTAL ACTION

To approve applicant's proposed plan.

I. ENVIRONMENTAL IMPACTS OF PROPOSED DEPARTMENTAL ACTION

Build new or modify existing roads. This will make it possible to increase annual tonnage from 150,000 tons to 500,000 tons, as proposed, without introducing any coal handling or transportation inefficiencies.

J. RESOURCE ALTERNATIVES TO THE PROPOSED ACTION

No alternatives are considered.

K. ENVIRONMENTAL IMPACTS OF ALTERNATIVES TO PROPOSED ACTION

None

823.1-823.15 OPERATIONS ON PRIME FARMLANDS

A. DESCRIPTION OF EXISTING ENVIRONMENT

The proposed permit area is located some 15 air miles south west of Price, Utah in Carbon County. The terrain is very rugged and elevations range from 7,000 to 10,000 feet. The climate is that of a short growing season with approximately 13 inches of precipitation per year.

The slopes in the area range from above 10 percent in the drainage bottom where the mine surface facilities are located to 100 percent or better on the canyon walls above.

Vegetation is pinyon-juniper and sagebrush on rolling terrain within the mine permit area. Steep slopes are vegetated with mountain shrub communities and some Douglas fir on north aspects.

Existing and historical land use includes grazing, recreation, forestry and mining. The applicant states (Section 8.4) that there is no evidence of any croplands in or adjacent to the permit area at any time in the past.

There is a preliminary and undocumented soil survey included in the MRP for the Wattis Canyon area. None of the map units include any prime farmlands. The balance of the permit area has not yet been surveyed.

B. DESCRIPTION OF THE APPLICANT'S PROPOSAL

The applicant states that an investigation has been conducted on the mine permit area and that no prime farmlands are present. A negative determination has been requested from the Soil Conservation Service.

C. EVALUATION OF COMPLIANCE

The permit application is in compliance with 783.27 and a negative determination has been requested from Soil Conservation Service.

D. REVISION OF APPLICANT'S PROPOSAL

None

E. REANALYSIS OF COMPLIANCE

None

F. NECESSARY STIPULATIONS AND JUSTIFICATIONS

None

G. PROPOSED DEPARTMENTAL ACTION

To approve the proposed action.

H. ENVIRONMENTAL IMPACTS OF PROPOSED DEPARTMENTAL ACTION

No environmental impacts to prime farmland are seen to exist from the applicant's proposal.

I. RESOURCE ALTERNATIVES TO THE PROPOSED ACTION

No alternatives to the proposed action are necessary.

J. ENVIRONMENTAL IMPACTS OF ALTERNATIVES TO THE PROPOSED ACTION

None

BONDING

A. DESCRIPTION OF EXISTING ENVIRONMENT

The Starpoint Mines have been mined for coal since 1917 with only a three year break. The leases held under the current permit include enough coal to continue mining through 2001.

B. APPLICANT'S PROPOSAL

The applicant does not feel that the areas over underground mine workings require bonding (p. 3-134). It is, however, prepared to bond those areas.

Different bonding levels (\$/acre) are a result of the amount of work required to reclaim an area (i.e. structure removal, backfilling, grading, topsoil spreading, seeding vs. grading, topsoil spreading, seeding). The applicant is not definite about what additional areas will be permitted and disturbed over the life of the mine. The reviewer can find no map which specifically details the areas to be bonded. The applicant does provide a detailed estimate of the cost of reclamation of the operation as well as supporting calculations for those estimates.

A permit term of 20 years has been requested (p 2-32).

The permit area receives approximately 13 inches of precipitation annually. Therefore, the period of liability for revegetation is ten years.

C. COMPLIANCE

The 20 year requested permit term will not be given. The applicant provides insufficient information for a permit covering more than five years.

The liability period for the applicant for revegetation is ten years.

The applicant provides no information on anticipated bond release times. There is no request for bond release in the permit application, although there is an implication (in Table 3-12) that once a sum has been spent for reclamation, that sum is automatically removed from the amount of the bond. This is

incorrect. A request must be made to DOGM which specifically asks for the release of those funds. Until such a request is made, the applicant must be bonded for \$1,768,000. This figure includes costs for reclaiming the Seeley Canyon breakouts and the Gentry Mountain ventilation shaft but none for subsidence, which is felt to be a negligible impact for this mine. Areas which will be permitted and disturbed in the future must be bonded prior to disturbance.

The applicant's insurance policy must be corrected to meet the requirements of the Utah regulations.

The company has not forfeited any bonds.

The applicant must submit a bond approved by DOGM before permit approval.

The applicant does not request incrementation bonding. It is not clear to the reviewer how the applicant is planning to bond under this permit. It should be pointed out, however, that bonds are not automatically released merely because the applicant has spent a given amount of money for reclamation. Bond release must be requested from the Division of Oil, Gas and Mining. Until release is given, the amount of bond remains constant. Since the applicant does not request bond release at this time, and does not indicate that any bond has been released, the bond to cover reclamation costs is \$1,768,000, not \$1,646,000. An additional 10 percent is normally added to this base cost for the added expenses incurred by having an outside source (e.g. DOGM) undertake the reclamation tasks. The applicant must provide information on when it plans to seek bond release and must take into account the seasonability of some types of evaluation which go into the release (UMC 807.11).

The method of bonding must be disclosed.

The applicant's insurance policy for the Star Point Mines expires in March 1982. It does not include water wells or explosives provisions. The coverage is insufficient (\$300,000 combined coverage for bodily injury and property damage per occurrence and \$500,000 combined) for compliance.

Contractor personnel involved in the Technical and Environmental Assessment of the Star Point Mine Plan Application:

Donald Carlson - hydrologist

Robert J. Eastmond - plant ecologist

William Freeman - mining engineer

Andrew R. Grainger - wildlife biologist

William Green - hydrologist

Kevin E. Kelly - hydrologist

David E. Ruiter - aquatic biologist

Terry L. Ruiter - biologist

Alexandra Silvernale - soil scientist