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State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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January 31, 2000

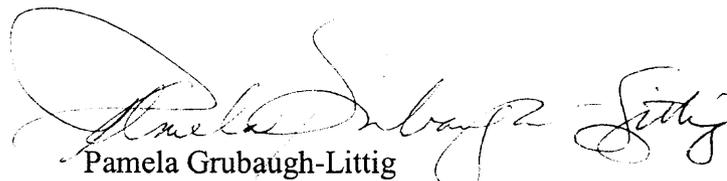
David Miller, Resident Agent  
Lodestar Energy, Inc  
HC 35 Box 370  
Helper, Utah 84526

Re: 160 Acre Incidental Boundary Change, Lodestar Energy, Inc., White Oak Mine,  
ACT/007/001-IBC99F, Outgoing File

Dear Mr. Miller:

Enclosed is a copy of the Division's review of the proposal to add 160 acres to the White Oak Mine permit area, that must be addressed. Please feel free to call me if you would like to arrange a meeting to discuss these deficiencies or if you have any questions about the review. Please respond with 90 days or the Division will return this application to you.

Sincerely,

  
Pamela Grubaugh-Littig  
Permit Supervisor

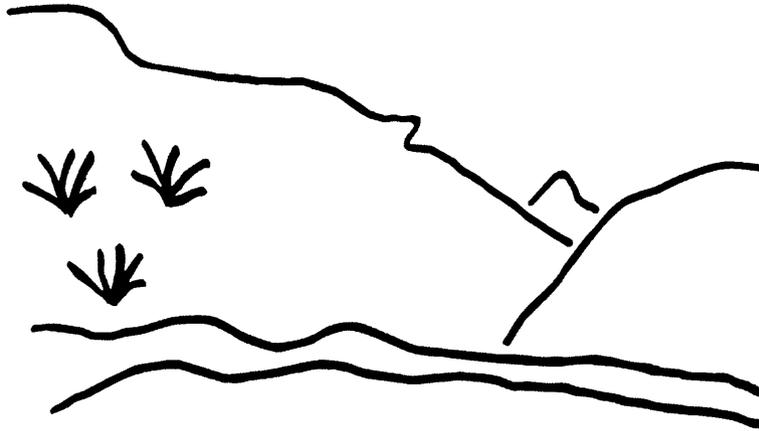
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Enclosure

cc: Vicki Miller, EarthFax  
Pete Hess, Price Field Office  
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# State of Utah



## Utah Oil Gas and Mining

### Coal Regulatory Program

White Oak Mine  
160 Acre Incidental Boundary Change  
ACT/007/001 - 99F  
Technical Analysis  
January 28, 2000



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## ADMINISTRATIVE FINDINGS

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# ADMINISTRATIVE FINDINGS

## OWNERSHIP AND CONTROL

Regulatory Reference: R645-301-112

### Analysis:

The current mining and reclamation plan contains land ownership information for areas within and contiguous to the permit area, and, according to information on Plates R645-301-112.500 and R645-301-112.600, this information does not need to be updated. The incidental boundary change should not affect any other parts of this section of the plan.

### Findings:

Information provided in the proposal is adequate to meet the requirements of this section of the regulations.

## RIGHT OF ENTRY

Regulatory Reference: R645-301-114

### Analysis:

Right of entry information has been updated to include the lease modification. For the most part, this information is complete, but Table 114.100b has a legal description of Lease U-017354 that needs to include the modification area.

### Findings:

Information provided in the proposal is not adequate to meet the requirements of this section of the regulations. Prior to final approval, the applicant must supply the following in accordance with:

**R645-301-114**, Table 114.100b has legal descriptions of the leases, and it needs to be updated to show the modification to lease U-017354.

## TECHNICAL ANALYSIS

### INTRODUCTION

On December 10, 1999 the Division received a request to amend the approved Mining and Reclamation Plan (MRP) to include an additional 160 acres. This action required a lease modification to Federal Coal Lease No. U-017354 which was jointly approved by the Forest Service and Bureau of Land Management on September 29, 1997. The added coal reserves would extend the life of mine by about four years. This Draft Technical Analysis explains the manner in which the submittal did, and in some instances did not, meet the regulatory requirements of the Utah Coal Regulatory Program. Only those elements of the regulations that are relative to this request are included.

### SUMMARY OF OUTSTANDING DEFICIENCIES

In its present form the submittal does not meet regulatory requirements. Accordingly, the Applicant must address those deficiencies as found within this Technical Analysis and provide the following, prior to approval, in accordance with the requirements of:

**R645-301-114**, Table 114.100b has legal descriptions of the leases, and it needs to be updated to show the modification to lease U-017354.

**R645-301-731**, select a more appropriate set of springs to monitor in and/or adjacent to the 160 acre addition, collect complete data during at least three quarters of the year 2000 and add that to the baseline data, and use the data to show a more consistent accounting of stream inflows and outflows for Coal and Cox Canyons.

**R645-301-511.100, 511.200**; the approved mining plan, as it exists in the MRP does not reflect a "no surface impacts, including subsidence" scenario, as mandated by stipulation in Federal lease U-017354. The approved USBLM plan which supposedly reflects the requirements of the lease stipulation, has not been included with the application. This must be done, so it can be reviewed by all concerned agencies. Following approval of this mining plan revision, the MRP must be updated accordingly.

**R645-301-525.300, 525.400**; the subsidence control and monitoring plan, as it exists within the approved mining and reclamation plan is inadequate to monitor a mining plan in which a "no surface impacts, including subsidence" stipulation has been mandated. Same needs a major revision to monitor potential subsidence within the lease modification area.

## **ENVIRONMENTAL RESOURCE INFORMATION**

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR Sec. 783., et. al.

### **HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION**

Regulatory Reference: 30 CFR Sec. 783.12; R645-301-411.

#### **Analysis:**

The application includes no new historic and archaeological information. Since no subsidence is anticipated, there would be no effects on cultural resources, so no information is required.

As documented in a letter to the State Historic Preservation Office dated August 4, 1997, the Forest Service conducted a literature search to identify known or suspected cultural resource sites in the area. A few historic sites have been found in or near the incidental boundary change area, but none of these is considered significant. The Forest Heritage Staff concluded the area has low potential to contain significant historic resources that will be affected by underground mining and related subsidence impacts.

#### **Findings:**

Information in the application is adequate to meet the requirements of this section of the regulations.

### **VEGETATION RESOURCE INFORMATION**

Regulatory Reference: 30 CFR Sec. 783.19; R645-301-320.

#### **Analysis:**

The applicant has supplied a new map, Plate 3-1, showing vegetation communities in the main part of the permit area (not the loadout). The proposed addition contains grass/forb/elderberry, aspen, and spruce/fir communities.

More detailed information is not required since there would be no surface disturbance.

#### **Findings:**

Information in the application is adequate to meet the requirements of this section of the regulations.

## **FISH AND WILDLIFE RESOURCE INFORMATION**

Regulatory Reference: 30 CFR Sec. 784.21; R645-301-322.

### **Analysis:**

#### **Wildlife Information**

The entire area contains critical deer and elk summer range.

The text discusses two buteo nests found in Boardinghouse Canyon in 1998, but no nests were found in 1999. Boardinghouse Canyon is not near the proposed addition to the permit area.

Most raptor nests in this area are in trees, and they are very difficult to find. There are almost certainly additional nests.

#### **Threatened and Endangered Species**

The Joint Decision Memorandum from the Bureau of Land Management and the Forest Service says no threatened, endangered, or sensitive species will be affected by modification of the lease. The current mining and reclamation plan says no threatened or endangered species are known to occur in the permit area, and although this information is from nearly twenty years ago, the lease modification area does not contain habitat for any listed or proposed threatened or endangered species.

### **Findings:**

Information provided in the application is adequate to meet the requirements of this section of the regulations.

## **LAND-USE RESOURCE INFORMATION**

Regulatory Reference: 30 CFR Sec. 783.22; R645-301-411.

### **Analysis:**

The application includes Plates 4-1 and 4-2 which show land uses and grazing allotments in the area. Land uses include timber, range, and recreation.

### **Findings:**

Information in the application is adequate to meet the requirements of this section of the regulations.

## **GEOLOGIC RESOURCE INFORMATION**

Regulatory Reference: 30 CFR Sec. 784.22; R645-301-623, -301-724.

**Analysis:**

White Oak's mining operations have encountered igneous rock dikes and extensive faulting. The purpose of this proposed lease modification and IBC is to allow the mine to go around rather than through several fault systems. There is to be no subsidence in the IBC area, and only mining practices consistent with this requirement are to be allowed.

There are no changes to the text in Chapter 6 - Geology. Geology information in the current MRP covers the IBC area. Plates 5-2A - Interburden Isopach, 5-2B - No. 2 Mine Thickness, 5-3A - No. 1 Mine Overburden, and 5-3B - No. 1 Mine Thickness have been updated to include the IBC area.

**Findings:**

Information on geologic resources is considered adequate to meet the requirements of this section.

**MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION**

Regulatory Reference: 30 CFR Sec. 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

**Analysis:**

**Coal Resource and Geologic Information Maps**

Plates 5-2A - Interburden Isopach, 5-2B - No. 2 Mine Thickness, 5-3A - No. 1 Mine Overburden, and 5-3B - No. 1 Mine Thickness have been updated to include the IBC area. Geology maps in Chapter 6 in the current MRP include the IBC area.

**Findings:**

Information on coal resource and geologic information maps is considered adequate to meet the requirements of this section.

## **OPERATION PLAN**

### **MINING OPERATIONS AND FACILITIES**

Regulatory Reference: 30 CFR Sec. 784.2, 784.11; R645-301-231, -301-526, -301-528.

#### **Analysis:**

##### **Type and Method of Mining Operations**

Section 523, Mining Method(s), (Page 500-11 of 43 of the currently approved MRP) indicates that the approved Mine Plan calls for mining in the upper twelve feet of each coal seam. Approximately two feet of top coal is left in place to aid roof support. The next ten feet (first mining) below is mined using a continuous miner. The remaining bottom coal is then extracted during the retreat (second mining) from each mining section. Room and pillar mining has been the only production method employed thus far.

As noted above, room and pillar mining will be practiced in both the #1 and #2 Mines, extracting approximately twelve feet of coal from both the upper and lower O'Connor coal seams.

By definition, room and pillar mining involves the development of pillars by driving rooms in the seam (primary mining). Pillar mining is the extraction (secondary mining) of the developed pillars. Development (primary) and extraction (secondary) are taking place at the same time. Remaining bottom coal (the lowest part of the seam) is mined by the continuous miner as the pillars are extracted, based on the mining sequence established by the mine's management.

Thus, approximately twenty-four feet of coal seam height will be extracted from the two seams, and no pillars will be left to support anything. Subsidence of the overburden is imminent.

Quoting from submittal ACT/007/001-IBC99F, page 500-19 of 43, paragraph 5, The Subsidence Base Maps 728.100a and 728.100b show angle of draw, survey monument information, gas line locations, power lines and other pertinent surface features related to subsidence. Plate 5-1A identifies the location of the subsidence monitoring points to be associated with the 1999 Lease Modification area (Section 10). According to the joint decision document from the BLM and Forest Service the proposed mine plan "will not cause surface disturbance, including subsidence". A copy of the Joint Decision Memo is located in Attachment A of Section 10.

Quoting from Page 300-8 of 77, paragraph 4, of the submittal, "A stipulation in the modification to lease U-017354 is that no subsidence is to occur due to mining activities. Therefore, the mining plan reflects a "no subsidence" recovery plan approved by the BLM per the Joint Decision Memo included as Attachment A to Section 10 of this M & RP.

This analysis has obviously come upon a major problem, in that the stipulation mandated by the joint decision document authored by the BLM and the USFS is contradictory to the room and pillar mining plan approved within the UDNR/OGM mining and reclamation plan.

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The "no subsidence" recovery plan approved by the BLM has not been included in submittal ACT/007/001-IBC99F. Quoting from Page 500-8 of 43 of the approved MRP, under 521.142 PLANNED SUBSIDENCE MINING METHODS, "Should any change be made in the (mining) methods used, UDOGM will be notified. This has not been done.

### Findings:

In its present form the submittal does not meet regulatory requirements. Accordingly, the Applicant must address those deficiencies as found within this Technical Analysis and provide the following, prior to approval, in accordance with the requirements of:

**R645-301-511.100, 511.200;** the approved mining plan, as it exists in the MRP does not reflect a "no surface impacts, including subsidence" scenario, as mandated by stipulation in Federal lease U-017354. The approved USBLM plan which supposedly reflects the requirements of the lease stipulation, has not been included with the application. This must be done, so it can be reviewed by all concerned agencies. Following approval of this mining plan revision, the MRP must be updated accordingly.

## PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES

Regulatory Reference: 30 CFR Sec. 784.17; R645-301-411.

### Analysis:

Because there should be no subsidence, there should be no effects on cultural resources. In a letter to the Forest Service dated August 20, 1997, the State Historic Preservation Office has given its concurrence with the project.

### Findings:

Information in the proposal is adequate to meet the requirements of this section of the regulations.

## AIR POLLUTION CONTROL PLAN

Regulatory Reference: R645-301-420

### Analysis:

The proposed addition to the permit area should have no bearing on the Air Quality Approval Order.

**Findings:**

Information in the application is adequate to meet the requirements of this section of the regulations.

**SUBSIDENCE CONTROL PLAN**

Regulatory Reference: 30 CFR Sec. 784.20, 817.121, 817.122; R645-301-521, -301-525, -301-724.

**Analysis:**

**Subsidence control plan.**

As noted above, and quoting from Page 500-19 of 43 of the submittal, "Plate 5-1A identifies the location of the subsidence monitoring points to be associated with the 1999 Lease Modification area (Section 10).

A review of Plate 5-1A, which is titled "Permit Extension-White Oak No. 2 Mine-5 Yr. Mine Plan, (lower O'Connor seam) does indeed show the location of two subsidence monitoring points, as indicated by the black triangles within the designated lease modification area. The lease modification area has indication that it will be mined in 2003; the map is P.E. certified by Richard B. White, EarthFax Engineering.

A review of Plate 5-1B, which is similarly titled but shows the 5 year mine plan for the #1 Mine (upper O'Connor seam), DOES NOT SHOW THE LOCATION OF ANY SUBSIDENCE MONITORING POINTS. The map shows that mining will take place in the lease modification area in the #1 Mine during 2001, 2002, and 2003. Thus, it appears that the applicant intends to mine in the first two areas of the #1 Mine within the lease modification area without installing any subsidence monitoring points. It is common knowledge, that in multiple seam mining, extraction occurs from the top seam and proceeds to lower seams in sequence.

If no monitoring points are installed prior to the development and extraction of the lease modification area in Mine #1, it will not be possible to establish baseline elevation data in order to monitor subsidence.

Upon reviewing the annual reports for the last two years for the site, the subsidence monitoring for the permit area consists of making a traveling visual (referred to as a pedestrian inspection within the annual reports) of the mine permit area. The 1998 report refers to sixty tagged sites including sink holes, cracks, fractures, etc. The locations of same are referred to by latitude and longitude. A map showing the tagged sites was included with the 1997 annual report, but not with the 1998 annual report. There was not a differential elevation survey run for either year for any of the tagged sites.

Page O-5 of 14, of the approved MRP discusses the Subsidence Monitoring Plan. The text refers to a 1988 commitment made by the operator (Valley Camp Coal Co. at that time) to conduct annual aerial surveys in an effort to monitor subsidence. These surveys proved to be unfruitful due to heavy forestation of the area. The data generated was found to be unusable. A pedestrian survey, in

## OPERATION PLAN

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coordination with the aerial survey, was part of the commitment. Quoting text from the approved plan, "The pedestrian survey, in coordination with a differential level survey of subsided areas utilizing rebar monuments, has proved to be the most reliable source for the identification of surface disturbance". Further text indicates that the pedestrian survey was conducted annually by Hansen, Allen, and Luce, Inc. since 1982, and that the control survey was completed by Bruce T. S. Ware. "Data recorded as part of these surveys is documented on Maps 728.100a and 728.100b."

Map R645-301-728.100a, Subsidence Base Map, which was submitted as part of the 1997 annual report, and was P.E. certified by Mr. Richard B. White of EarthFax Engineering on March 30, 1998. According to this map, it was last updated in March of '98. The map does show sixty tagged subsidence features, however the only elevations indicated on this map are elevations for five survey monuments, the mine fan and four "nontagged" subsidence features. There is no information provided relative to elevation differentials for any of these sites.

### Findings:

In its present form the submittal does not meet regulatory requirements. Accordingly, the Applicant must address those deficiencies as found within this Technical Analysis and provide the following, prior to approval, in accordance with the requirements of:

**R645-301-525.300, 525.400;** the subsidence control and monitoring plan, as it exists within the approved mining and reclamation plan is inadequate to monitor a mining plan in which a "no surface impacts, including subsidence" stipulation has been mandated. Same needs a major revision to monitor potential subsidence within the lease modification area.

## FISH AND WILDLIFE INFORMATION

Regulatory Reference: 30 CFR Sec. 784.21, 817.97; R645-301-322, -301-333, -301-342, -301-358.

### Analysis:

#### **Bald and golden eagles.**

Because there will be no subsidence, the proposed expansion of the permit area should have no effects on any wildlife, including bald and golden eagles.

### Findings:

Information in the application is adequate to meet the requirements of this section of the regulations.

## OPERATION PLAN

### HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

#### Analysis:

##### Ground-water monitoring.

The proposed addition is within the Upper Huntington Creek and Mud Creek Basins CHIA. This was determined by comparing CHIA Figure 2 and Plate 7-1, Permit Extension-Surface And Ground Water Rights And Monitoring Points. The CHIA does not need to be revised due to this proposed amendment.

The proposed 160 acre addition is located on the south edge of the present lease area on the west end. The 160 acres is at the headwaters of Coal Canyon, which is a spring-fed stream. Cox Canyon is the stream one mountain ridge to the south, and both streams could potentially be impacted by mining operations. Cox Canyon is also spring-fed. The existing permit area extends to the headwaters area of Cox Canyon. Both streams are shown on the U.S. Geological Survey maps (Candland Mountain Quadrangle) as perennial streams for most of their length. The submitted baseline monitoring data shows flows during all seasons, except one date in November when both streams were frozen.

The area is characterized by perched water tables which have springs issuing on the mountainside. Spring locations are shown on Plate 7-1, Permit Extension-Surface And Ground Water Rights And Monitoring Points. Baseline data in Appendix 722.100d shows a one-time monitoring of 16 springs feeding Cox Canyon and nine springs feeding Coal Canyon. The amendment proposes to establish three new monitoring points in addition to those already in the MRP. Monitoring point COAL is near the mouth of Coal Canyon where the stream enters Electric Lake, COX is near the mouth of Cox creek near where the stream enters Electric Lake, and SCOAL-1 is at a spring at the southwest corner of the lease addition, just outside the boundary.

It's recognized that fourth quarter monitoring may not be feasible due to frozen streams and snow preventing access. However, review of the submitted data still shows a rather sparse amount of data. Specifically, of the three remaining quarters for data gathering, the following numbers of data points were obtained for the new monitoring points:

COX:	1996 - two,	1997 - three,	1998 - one,	1999 - one	Total 7
COAL:	1996 - two,	1997 - three,	1998 - one,	1999 - one	Total 7
SCOAL-2:	1996 -one,	1997 - zero,	1998 - one,	1999 - zero	Total 2

The regulations require, "Ground-water will be monitored and data will be submitted at least every three months for each monitoring location." The same is true for surface-water monitoring. Reference R645-731.212 and 731.223. On that basis, assuming three data points per year, there should have been a total of 36 data points. Only 16 data points were submitted. The submitted data also shows "no access" to the COX and COAL sites on 6/28/99, 6/23/98, and 10/24/96. It's difficult to understand

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why the sites would be inaccessible during those seasons when COX and COAL are within 1 ½ mile of a paved road.

On 6/28/96 all of the contributing springs and both streams were monitored. Included were flows for all the points. Review of these data showed a curious situation with regard to the amount of flow contributed to the streams by the springs. SCOAL-3 through SCOAL-8 are located directly on the stream. When the flows are totaled for them they equal 74.0 gallons per minute (gpm). The flow for COAL, at the mouth of the stream is only 7.93 gpm or 11% of the flow entering the steam. SCOAL-8 is about 2500 feet up from COAL and it's flowing 31.6 gpm. Even considering some reaches of the stream absorbing water, it's difficult to understand where 89% of the water went. Coal Canyon has a similar situation. SCOX- 11 through SCOX-14 are located directly on the stream and all are within about 4,200 feet of COX, at the mouth of the stream. When the flows are totaled they equal 54.00 gpm. The flow at COX is 11.22 gpm or 21% of the flow entering the stream. COX-14 is about 1,200 feet up from COX and it's flowing 18.2 gpm. It's difficult to understand where 79% of the water went. These figures do not consider another 26.10 gpm flowing in one side canyon and another 14.2 gpm in another side canyon. Again, even considering some reaches of the stream absorbing water, it's difficult to explain these comparisons that show such large water losses.

Referring to Plate 7-1, Permit Extension-Surface And Ground Water Rights And Monitoring Points, and comparison of the flows in the springs adjacent to the proposed 160 acre extension, shows the best spring may not have been selected for monitoring. Looking at the 6/28/96 data for all springs shows the following:

SCOAL-1	7.9 gpm	
SCOAL-2	1.2 gpm	This is the proposed monitoring point.
SCOAL-3	14.3 gpm	
SCOAL-4	1.0 gpm	
SCOAL-5	11.6 gpm	

All of these springs are within or immediately adjacent to the proposed 160 acre extension. The data were collected on the same day in the late spring/early summer when flows were higher than other seasons. It's better to monitor springs with higher flows than lower flows. SCOAL-3 or -5 would be much better monitoring points. SCOAL-1 is directly above the proposed mining area, and it has a greater flow than SCOAL-2. It seems the best combination for monitoring would be SCOAL-1 and SCOAL-3 or -5.

A significant concern has been raised concerning the amount of subsidence that will occur in the proposed addition. The original lease modification assumptions and the actual subsidence due to this submittal seem to be different. The concern is that more subsidence will occur than originally planned. In turn, this could impact recharge to the springs feeding Cox and Coal Canyons.

Review of Plate 5-1B, Permit Extension-White Oak No. 1 Mine- 5yr. Mine Plan shows that the mining in the 160 acre extension to be about 12 acres (7%) during the year 2000. This area is located in the extreme northeast corner of the extension and should have little impact on the monitoring points. Considering this timing, and the lack of baseline data, and the concern regarding subsidence, the Division requires the Applicant to collect complete data during at least three quarters of the year 2000

## OPERATION PLAN

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and to add that to the baseline data. It will also be necessary to select a more appropriate set of springs to monitor in and/or adjacent to the 160 acre addition.

### **Findings:**

In its present form the submittal does not meet regulatory requirements. Accordingly, the Applicant must address those deficiencies as found within this Technical Analysis and provide the following, prior to approval, in accordance with the requirements of:

**R645-301-731**, select a more appropriate set of springs to monitor in and/or adjacent to the 160 acre addition, collect complete data during at least three quarters of the year 2000 and add that to the baseline data, and use the data to show a more consistent accounting of stream inflows and outflows for Coal and Cox Canyons.

## RECLAMATION PLAN

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# RECLAMATION PLAN

## POSTMINING LAND USES

Regulatory Reference: 30 CFR Sec. 784.15, 784.200, 785.16, 817.133; R645-301-412, -301-413, -301-414, -302-270, -302-271, -302-272, -302-273, -302-274, -302-275.

### Analysis:

The applicant has proposed no changes to the postmining land use, and information in the current mining and reclamation plan is considered adequate.

### Findings:

Information in the application is adequate to meet the requirements of this section of the regulations.

## REVEGETATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

### Analysis:

#### General requirements.

Because the applicant is proposing no surface disturbance, no revisions to the revegetation plan are needed.

### Findings:

Information in the application is adequate to meet the requirements of this section of the regulations.

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-301-731	5, 10
-301-732	10
-301-733	10
-301-742	10
-301-743	10
-301-750	10
-301-761	10
-301-764	10
-302-270	13
-302-271	13
-302-272	13
-302-273	13
-302-274	13
-302-275	13
-302-280	13
-302-281	13
-302-282	13
-302-283	13
-302-284	13