



Technical Analysis and Findings
Utah Coal Regulatory Program

May 26, 2016

PID: C0070019
TaskID: 4763
Mine Name: CENTENNIAL MINE
Title: KENILWORTH LEASE ADDITION

Summary

Andalex Resources, Inc. (the Permittee) submitted the Centennial, Kenilworth Lease Addition amendment to the Division of Oil, Gas and Mining (the Division) on Dec. 15th, 2014. On April 14, 2016 the Division requested additional information and on February 24, 2016 the Division received the revised application from the Permittee. The task is processed by the Division as a significant revision to the Centennial MRP and is assigned Task ID #4763.

The Division must update the CHIA for the Centennial Mine to add the Kenilworth Lease. This will require combining the Centennial mine Book Cliffs I CHIA with parts of the Willow Creek CHIA.

Deficiencies Details:

[Empty box for deficiencies details]

kstorrar

General Contents

Permit Application Format and Contents

Analysis:

The amendment does not meet the State of Utah R645 requirements for Clear and Concise.

It is difficult to interpret mostly all of the tables in Chapter 7. It appears when the document was reformatted the column and row spacing was modified so values no longer line up properly. All tables must be formatted so columns and rows properly line up.

The PHC in the amendment includes a water monitoring plan and supporting map (Figure 6) for surface and groundwaters. This plan does not match the proposed water monitoring plan in Chapter 7 and the supporting water monitoring map Plate 7-8. The water monitoring plan must be consistent throughout the amendment.

Deficiencies Details:

R645-301-121.200: The amendment does not meet the State of Utah R645 requirements for Clear and Concise. The following deficiencies must be addressed prior to final approval:

It is difficult to interpret mostly all of the tables in Chapter 7. It appears when the document was reformatted the column and row spacing was modified so values no longer line up properly. All tables must be formatted so columns and rows properly line up.

The PHC in the amendment includes a water monitoring plan and supporting map (Figure 6) for surface and groundwaters. This plan does not match the proposed water monitoring plan in Chapter 7 and the supporting water monitoring map Plate 7-8. The water monitoring plan must be consistent throughout the amendment.

kstorrar

## Permit Application Format and Contents

### Analysis:

The amendment does not meet the State of Utah R645-301-120.200 requirements for being clear and concise.

This application adds the Kenilworth lease and addresses it separately from other leases. The plan must cover the entire permit area. The way the amendment is organized is confusing because it replaces entire chapters but it addresses leases separately and some plans contradict others.

### Deficiencies Details:

The amendment does not meet the State of Utah R645-120.200 requirements for being clear and concise. The following deficiency must be addressed prior to final approval:

R645-120.200: The Permittee must clean up the plan to make it clear and concise. Specific examples are provided in other sections of this analysis. The table of contents must be accurate. The introduction to the chapters must be inclusive of the entire permit area and not just what the amendment is proposing.

Ireinhard

## Environmental Resource Information

### Historic and Archeological Resource Information

#### Analysis:

The amendment does not meet the State of Utah R645-301-411.140 requirements for cultural and historic resources information.

An archaeological survey for the Kenilworth Lease is referenced; however adequate information is not available to determine the nature of cultural and historic resources listed or eligible for listing in the National Register of Historic Places. The application references Appendix C, which covers the permitted mining area in 1974 and also includes a file search and quad map at a 1:50,000 scale. This information is not adequate to determine potential impacts from mining operations within the lease area. Inventories in appendix C include a reconnaissance in Deadman Canyon, and part of Fiasco, Starpoint, and Straight Canyons. Appendix W includes a cultural report for the Fan Portal and Appendix X includes a cultural report for the Gob Vent Holes. Reports for Kenilworth Lease area and supporting SHPO consultation is not provided with the amendment or within the existing MRP.

For lands under BLM jurisdiction, the BLM must consult with SHPO for concurrence on findings made during the survey (if the survey is greater than 10 years old it is considered stale by SHPO and must be re-evaluated prior to consultation). For Fee lands, the Division will consult with SHPO and acquire concurrence. The Division needs adequate information to make a preliminary determination on potential impacts to sites that could be listed or eligible for listing in the National Register of Historic Places in accordance with R645-411-140 through 144.

Although the application does contain a file search (literature review) on the general area from 2007, a comprehensive report describing the level of survey and recommendations from a professional archeologist are not provided. The map provided does not include a boundary of the Kenilworth lease area, nor does it include any information to determine who made the map and how reliable it is. As noted in Appendix C, letter dated 6/15/1988 from the Utah State Historic Preservation Office, the area has the potential for rock shelters and rock art. Furthermore, it is well understood that subsidence may impact rock shelters or art and as such a monitoring and mitigation plan must be in place prior to approval of the application.

#### Deficiencies Details:

The amendment does not meet the State of Utah R645-301-411 requirements for historic and archeological information. The following deficiency must be addressed prior to final approval:

R645-301-411: The Permittee must provide the Division with Cultural and Historic Resource Information including:

- A narrative which describes the nature of cultural and historic resources listed or eligible for listing in the National Register of Historic Places
- Evidence of SHPO consultation with the information described above.
- A map showing the permit boundaries, including public parks and locations of cultural or historic resources. The map must include locations of cemeterys within 100 feet of the permit area.
- If eligible resources are confirmed by SHPO, the Permittee must provide measures to present adverse impacts. The Division may require the applicant to protect properties listed or eligible for listing on the NRHP through appropriate mitigation and treatment measures

Ireinhardt

## Climatological Resource Information

*Analysis:*

The amendment meets the State of Utah R645 requirements for Climatological Resource Information.

The amendment includes a narrative on the climate of the permit area.

kstorrar

## Vegetation Resource Information

*Analysis:*

The amendment does not meet the State of Utah R645-301-321 requirements for vegetation resource information.

The amendment does not provide information for vegetation and reference areas of the Gob Vent Holes but does mention them in section 321.100. If the GVH are addressed in another appendix or volume, the Permittee must reference where to find the information for clarity.

Vegetation of the mine site is described in Section 321, on page 3-2. Reference areas to be used to determine reclamation success are shown on Plate 7-1 and Plate 1-6 (GVH). The vegetative description of the reference sites are located in Appendix M. Appendix M is not updated with this amendment since there is no new surface disturbance proposed. If gob vent holes are proposed in the future, each will need a new reference area to be identified in that amendment.

Appendix M provides baseline of production estimates, species diversity, cover, and density of woody species from 1980. The following statement needs clarification to determine the purpose and outcome of evaluation and clarification on what -permitting- action it refers to. -Each reference areas will be re-evaluated every 5 years prior to permitting.-

Production rates need to be provided.

Plates for GVH and reference areas are not provided.

*Deficiencies Details:*

The amendment does not meet the State of Utah R645-301-300 requirements for vegetation resource information. The following deficiency must be addressed prior to final approval:

R645-301-300: The amendment must describe plant communities within the proposed permit area and any reference areas. The description must be adequate to predict the potential for reestablishing vegetation and include productivity measurements on all lands that will be disturbed. Productivity will be expressed as average yield of food, fiber, forage, or wood products under high levels of management.

Prior to approval, the permittee must:

- Correct typo for the reference map located in paragraph 2, line 5, page 3-3, Section 321.100. "See plate 9" should say, "See Plate 7-1". Reference areas for the GVH's are located on Plate 1-6 and should be referenced for clarity.
- Correct plates need to adequately show what reference areas are to be used for the GVH.
- Provide production rates for reference areas.

## Fish and Wildlife Resource Information

### Analysis:

The amendment does not meet the State of Utah R645-301-322 requirements for fish and wildlife resource information.

In accordance with R645-301-322.100, the scope and level of detail is determined by the Division. The permit must describe what wildlife resources have the potential to exist within the permit/mining areas and also analyze the potential for mining operations to impact any of those resources. If the analysis determines a resource has the potential to be impacted, it must be mitigated for and described in the operations and reclamation plan. The Permittee must analyze potential impacts of mining on wildlife resources CURRENTLY identified by the Utah Division of Wildlife Resources and US Fish and Wildlife Service as having habitat in the general area.

When the Centennial Mining Project was originally approved, the Division of Wildlife Resources (DWR) was consulted for wildlife species of concern. Appendix A contains detailed information and recommendations from 4/13/1981. Over the course of the past 35 years, the species list has changed and therefore evaluation of current species is warranted.

R645-301-322.200. The plan updates the Threatened and Endangered Species list by incorporating Appendix A Addition. This meets the requirements of Section 7 of the TES Act. The plan does not update a list of species classified as sensitive by the State of Utah. Through the use of shared technology, the Division has determined these species to be: Bald Eagle, Golden Eagle, Greater Sage-grouse, Burrowing Owl, Bluehead sucker, Western Red Bat, Western Toad, White-tailed Prairie-dog, Ferruginous Hawk, Grizzly Bear, and Northern Goshawk. Within the permit area, the National Heritage Program has record occurrences for Golden Eagles. The permittee must update State Sensitive Species and consult with Division of Wildlife on potential impacts.

Page 3-8, Section 322.100 refers to Plates 3-3A, 3-3B, 3-3C, and 3-3D, which have been revised to include the Kenilworth Lease. These maps meet the requirements but are marked as 3-4 A through D not 3-3 A through D. The Permittee must reconcile the map titles.

Mammal and bird species possibly occurring in the lease area are listed in Table III-11. This list does not include the following species listed for protection which have been identified by DWR and FWS as having habitat in the area: Bald Eagle, Burrowing Owl, White-tailed Prairie-dog, Ferruginous Hawk, Grizzly Bear, and Northern Goshawk. The Permittee must update Table III-11 to include current species.

The narrative of animal species on pages 3-7 and 3-8 does not include an evaluation on each species listed as threatened, endangered, or state sensitive. The Permittee must provide evaluation if the species specific habitat requirements exist with the permit area.

The Birds section on page 3-10 does not include evaluation of habitat for the following protected birds: Golden Eagle, Burrowing Owl, Ferruginous, Hawk and Northern Goshawk. The Permittee must updated the birds section to include current birds of special interest.

The Other section on page 3-10 briefly discusses sage-grouse habitat but warrants additional information that will be provided by the Division as an attachment to this analysis. As shown on Page 3-4D, the majority of the permit area overlaps with Greater Sage-grouse habitat and therefore, consultation with Utah DWR has been initiated by the Division pursuant to the Governors Order on Greater Sage-grouse. The Permittee must incorporate DWR comments in regards to Greater Sage-grouse.

The Fish section on page 3-10 does identify that fish will not be directly impacted because there are no fisheries. Section 333.300 of the amendment provides calculations to evaluate the potential water depletion to the Colorado River system as a result of the mining at this site. The calculations are shown on Table III-12, and indicate a net increase of approximately 47.61 acre-feet of water per year to the Colorado River. Therefore, the one-time payment is not required.

Section 322.210, page 3-10 identifies the Utah Division of Wildlife Resources as the source for threatened and endangered species information but the list in Appendix A addition is from US Fish and Wildlife Service. Appendix M is referred to for TES species but the title of Appendix M is -Soil Survey and Vegetation Inventory-. Although the last few pages do contain a list for a list of threatened and endangered species, that list was last incorporated on 10/28/2004 conflicts with Appendix A addition. Appendix A and the U.S. Fish and Wildlife Service should be the only referenced source for TES information to reduce confusion. The Permittee must correct references to TES information. Fish and Wildlife Service provided information listed in Appendix A.

*Deficiencies Details:*

The amendment does not meet the State of Utah R645-301-322 requirements for fish and wildlife information.

Prior to approval, the Permittee must address the following in accordance with R645-301-322:

- As noted in Section 322 on Page 3-7, Plates 3-3A, 3-3B, 3-3C, and 3-3D are wildlife maps. However, the maps are identified as 3-4A, B, C & D. The Permittee must reconcile the map titles and references to each.
- The Permittee must analyze potential impacts of mining on species identified by Division of Wildlife Resources and U.S. Fish and Wildlife Service as having habitat in the general area.
- The Permittee must update Table III-11 to include current species.
- The Permittee must updated the birds section to include current birds of special interest.
- The Permittee must incorporate DWR's comments in regards to Greater Sage-grouse.
- The Permitte must correct references to TES information. Fish and Wildlife Service provided information listed in Appendix A.

Ireinhart

## **Land Use Resource Information**

*Analysis:*

The amendment meets the State of Utah R645-301-411 requirements for land use information but the information is not clear and concise as required by R645-301-120.200

Information provided in the application is adequate to meet the minimum requirements of the R645-301-411. Present land use is grazing, wildlife habitat, and outdoor recreation. Historically, it was also used for coal mining; Figure 4-1 is a Land Use Map. County zoning regulations (1974) indicate all lands involved in the lease application are within zone M and G1 which is for mining and grazing. There are no public parks, cemeteries, significant trails or known cultural or historical resources listed.

The last sentence in 411.120 causes confusion and should be clarified. -The AEP Lease Area has the same land-use as that of the original permit area-

*Deficiencies Details:*

The amendment does not meet the State of Utah R645-301-120.200 requirements for being clear and concise. The following deficiency must be addressed prior to final approval:

R645-301-120.200. The Permittee must clarify the last sentence in 411.120 which causes confusion. "The AEP Lease Area has the same land-use as that of the original permit area". What is the AEP and how is it different than the original permit?

Ireinhart

## **Geologic Resource Information**

*Analysis:*

Geological information has been revised and provided in Chapter 6 of the Application.

Plate 21 shows the surface geology of the area. There is revised text in Chapter 6 that describes the geology of the Kenilworth lease area. Maps have been PE certified.

The application contains an updated version of Plate 22 which is a drill hole reference map. Plate 22A provides the fence diagram through the drill holes showing the stratigraphic cross section through the Kenilworth lease. There were 6 drill holes used which accurately describe the stratigraphy of the lease area.

Plate 29 is an Isopach map of the lease area and it describes the Aberdeen seam and shows coal thickness of between 9 to 12 feet. The depth of cover is shown to between 2500 and 3000 feet. This depth of cover may present difficulties in mining, but it will limit the extent of subsidence occurring at the surface.

Much of the narrative discusses previous mining and mining in other leases such as the Graves lease and the AEP lease

and describes the overburden as being from 0 to 2700 feet (see pages 6-4, 6-10 and 6-11). Page 6-4 describes the bulk of the coal being under less than 1500 feet of cover. This is not the case in the Kenilworth lease. There seems to be some hold-over information from the original Centennial mining and reclamation plan which has not been up-dated. A more accurate description of the overburden in the Kenilworth lease needs to be provided. The application adequately describes the stratum above and below the coal seam. There is a discussion of this on pages 6-13 and 6-14 and Appendix E. The seams in the book cliffs area generally dip towards the North and East. This provides for fairly dry mining conditions and limits the amount of mine water discharge that is needed. Gravity discharge of mine water is not anticipated.

*Deficiencies Details:*

Much of the narrative discusses previous mining and mining in other leases such as the Graves lease and the AEP lease and describes the overburden as being from 0 to 2700 feet (see pages 6-4, 6-10 and 6-11). Page 6-4 describes the bulk of the coal being under less than 1500 feet of cover. This is not the case in the Kenilworth lease. There seems to be some hold-over information from the original Centennial mining and reclamation plan which has not been up-dated. A more accurate description of the overburden in the Kenilworth lease needs to be provided.

dhaddock

## Hydro Baseline Information

*Analysis:*

The amendment does not meet the State of Utah R645 requirements for Baseline Information.

The amendment does not include updated baseline water monitoring data. The monitoring locations do not quantify surface water bodies within and adjacent to the Kenilworth Lease. Additionally, the amendment does not quantify the areal and vertical distribution of aquifers within and adjacent to the Kenilworth Lease. The data provided is too old to be considered baseline water monitoring. There have been multiple drought and wet cycles since the sites were last monitored. The amendment must establish a comprehensive surface and groundwater monitoring plan for the Kenilworth Lease and monitor these sites for a minimum two consecutive water years to establish baseline.

*Deficiencies Details:*

R645-301-724: The amendment does not meet the State of Utah R645 requirements for Baseline Information. The following deficiency must be addressed prior to final approval:

The amendment must establish a comprehensive surface and groundwater monitoring plan for the Kenilworth Lease and monitor these sites for a minimum two consecutive water years to establish baseline.

kstorrar

## Probable Hydrologic Consequences Determination

*Analysis:*

The amendment does not meet the State of Utah R645 requirements for Probable Hydrologic Consequences.

A mine pool has developed in the old workings during temporary cessation. The quality and quantity of mine pool water must be known in order to plan for de-watering the mine during re-entry. The quality of the water must be known in order to plan for treatment and the quantity of water must be known in order to appropriately size the treatment facility. The quantity must be represented on a map showing the extent and in calculations to determine the volume of the mine pool.

*Deficiencies Details:*

The amendment does not meet the State of Utah R645 requirements for Probable Hydrologic Consequences. The following deficiencies must be addressed prior to final approval:

R645-301-728.320: The application must outline how the mine will be de-watered and how the water discharge will comply with UPDES permitted effluent limits.

R645-301-724.520; R645-301-728.320: The application must provide a narrative and a map of the mine pool that has developed in the mine workings since the mine went into temporary cessation. The narrative must include a calculation of the volume mine water impounded and an analyzed sample of the mine pool water quality.

kstorrar

## Hydro SurfaceWater Monitoring Plan

### Analysis:

The amendment does not meet the State of Utah R645 requirements for Surface-water monitoring plan.

The amendment proposes to reduce monitoring at B262, B263, B32, AC-1 and SC-1. However, these sites fall within the hydrologic and/or hydrogeologic boundaries of past and future mine workings. Therefore, it is necessary to continue to monitor these sites until final bond release.

### Deficiencies Details:

R645-301-731.200: The amendment does not meet the State of Utah R645 requirements for Surface-water monitoring plan. The following deficiency must be addressed prior to final approval:

Monitoring must continue at the water monitoring sites B262, B263, B32, AC-1 and SC-1. These sites may not be released from the water monitoring schedule at this time.

kstorrar

## Maps Affected Area Boundary Maps

### Analysis:

The amendment meets the State of Utah R645 requirements for Affected Area Boundary Maps.

The amendment meets the requirements of R645-301-521.100 through-521.130 by not updating all the relevant maps for the entire area shown on the mine plan for the current Centennial and Kenilworth leases.

The application includes updated Plates 14 and 15 that depict the area currently affected by mining, as well as the area to be affected by future mining operations in the Kenilworth lease. The application also included the information that County Road 299 starts at highway 6 in Price and terminates at Andalex Resourcesâ€™ mine site, as shown on Plate 1.

cparker

## Maps Existing Structures and Facilities

### Analysis:

The amendment meets the State of Utah R645 requirements for Existing Structures and Facilities Maps.

The amendment meets the requirements of R645-301-521.120 which require a map clearly showing the location of all building in and within a1000 ft of the proposed permit area, along with identifying the current use of said building. The amendment updates are for the current Centennial and Kenilworth leases.

The old workings in the three coal seams mined are shown on Plates 29, 30, and 31. Plate 29 was updated in this application to include the Kenliworth Lease area with approximately 2,500 to 3,000 feet of cover.

cparker

## Maps Mine Working

### Analysis:

Plate 25, Subsidence Map, and Plate 29 show the proposed mine workings for the additional lease. The application meets the minimum requirements of R645-301-512.100 for mine workings maps.

cparker

## Maps Monitoring and Sampling Locations

### Analysis:

The amendment does not meet the State of Utah R645 requirements for Monitoring and Sampling Location Maps.

The amendment includes Plate 7-8 as the Operational Water Monitoring Locations map. This map does not match the proposed Table A water monitoring locations. Instead the map appears to include water monitoring locations for three separate water monitoring plans and not one cohesive plan.

*Deficiencies Details:*

R645-301-731.730: The amendment does not meet the State of Utah R645 requirements for Monitoring and Sampling Location Maps. The following deficiency must be addressed prior to final approval.

The amendment includes Plat 7-8 as the Operational Water Monitoring Locations map. This map does not match the proposed Table A water monitoring locations. The amendment must be corrected so the map and table match.

kstorrar

## Maps Permit Area Boundary

*Analysis:*

The Kenilworth federal lease is approximately 1760.0 acres, as shown on an updated Plate 3, with the lease acquired in 2006. The application meets the minimum requirements of R645-301-521 detailing the permit area boundary maps.

cparker

## Maps Subsurface Water Resources

*Analysis:*

The amendment does not meet the State of Utah R645 requirements for Subsurface Water Resources Maps.

The amendment must include a potentiometric map of the contiguous regional aquifer found within the Star Point sandstone within and adjacent to the Kenilworth Lease area in the Book Cliffs. The potentiometric gradient of the aquifer generally corresponds to the strike and dip of the Star Point Sandstone. This regional aquifer is characterized in the Willow Creek CHIA (1996) which encompasses the Kenilworth lease addition.

*Deficiencies Details:*

R645-301-722.100: The amendment does not meet the State of Utah R645 requirements for Subsurface Water Resources Maps. The following deficiency must be addressed prior to final approval:

The amendment must include a potentiometric map of the contiguous regional aquifer found within the Star Point sandstone within and adjacent to the Kenilworth Lease area in the Book Cliffs.

kstorrar

## Maps Surface and Subsurface Manmade Features

*Analysis:*

The amendment meets the State of Utah R645 requirements for preexisting Surface and Subsurface Manmade features maps.

The amendment meets the requirement of R645-301-521.122 as it only includes a drawing or plate that clearly calls out the existing surface and subsurface man made features within, passing through, or passing over the permit area for the current Centennial and Kenilworth leases.

The application detail that there are no surface facilities currently associated or planned for the Kenilworth Lease. There are no changes to the plates that currently describe the main facilities areas.

cparker

## Maps Surface and Subsurface Ownershiip

*Analysis:*

The amendment meets the State of Utah R645 requirements for Surface and Subsurface Ownership Maps.

The amendment meets the requirements of R645-301-521.130 which requires landowners, right of entry, and public interest maps for both leases. The MRP must address the R645-301-521.130 for the current Centennial and Kenilworth leases.

The application updated Plates 2 and 3 to show the surface and subsurface ownership of lands contiguous to the permit area. The lease for which the Permittee has legal right of entry are shown on plate 4. The application meets the requirements of R645-301-521 detailing the existing surface and subsurface ownership maps for the Kenilworth lease side but not the Centennial.

cparker

## Maps Vegetation Reference Area

### Analysis:

The amendment does not meet the State of Utah R645-301-323 requirements for maps and aerial photographs.

As noted in Section 322 on Page 3-7, Plates 3-3A, 3-3B, 3-3C, and 3-3D are wildlife maps. However, the maps are identified as 3-4A, B, C &D. The Permittee must reconcile the map titles and references to each.

The Permittee must provide maps, or reference existing maps, that show reference sites for the GOV holes.

### Deficiencies Details:

The amendment does not meet the State of Utah R645-301-323 requirements for maps and photographic information. The following deficiency must be addressed prior to final approval:

R645-301-323: The Permittee must provide, or reference, a map showing the location and boundary of proposed reference areas to be used for GVH. The Permittee must reconcile map numbers on the map with those referenced in the narrative.

lreinhart

## Operation Plan

### Mining Operations and Facilities

#### Analysis:

The amendment meets all the State of Utah R645 requirements for Mining Operations and Facilities.

The amendment meets the requirements of R645-301-521,-523 and -526 by including a description of the mining operation, method of coal mining, engineering techniques, anticipated annual and total production of coal by tonnage, and major equipment to be used for all aspects of those operations proposed to be conducted during the life for the current Centennial and Kenilworth leases.

The application included various minor edits to include the Kenilworth Lease addition. The mining operations described in the MRP remain unchanged with the development of room and pillar, pillar extraction and longwall panels general 650 to 800 feet in width and up to 800 feet in length. There was an addition of text in the application to state that due to the recent MSHA requirements a barrier pillar will be left between longwall panels at depths deeper than 1,500 feet. The application for the Kenilworth lease does not include the addition of any equipment beyond the extent already operating at the Centennial mine. The application included the change in acreage to reflect the Kenilworth Lease to a total of 47.19 acres affected by mining operations located in T13S, R11E, S.L.B.&M, Carbon County Utah

cparker

### Existing Structures

#### Analysis:

The amendment meets the State of Utah R645 requirements for Existing Structures.

The amendment meets the requirements of R645-301-526 by providing updated information to include the discussion of the existing buildings of both the Kenilworth and Centennial Leases. The MRP must address the R645-301-526 for the current Centennial and Kenilworth leases

Plates 6, 7, and LF-1 detail the support structures and buildings associated with mining operations, the proposed lease requires no additional buildings at this time and this section and plates remain unchanged.

cparker

## Air Pollution Control Plan

### Analysis:

The amendment does not meet the State of Utah R645-301-422 requirements for air pollution control plan.

The amendment does not provide a description of recent coordination and compliance efforts with the Utah Division of Air Quality in regards to adding the Kenilworth lease. It is unclear if projected production rates of the Kenilworth lease exceed 1,000,000 tons of coal per year. Although the Kenilworth Lease addition does not include any new surface disturbance, this application is to completely replace Chapter 4 and therefore, the entire permit area is analyzed for compliance with the rules.

The application references Appendix F for the air quality permit, however the Air Quality Approval Order is located in Appendix J. DAQE-997-96 was last updated 10/25/1996 does not include the Kenilworth Lease. Appendix F is the emission inventory and includes a letter dated 11/2/1988 from Department of Health, Division of Environmental Health. The letter conditionally approves the project of the Centennial Mine operation, consisting of the Pinnacle Mine, the Apex Mine, and the Aberdeen Mine according to the information submitted in the notices of intent in 1980, 1980, 1981, 1982, 1985, and 1988. Coal production parameters are established and shall not be exceeded without prior approval in accordance with Section 3.1, UACR.

### Deficiencies Details:

The amendment does not meet the State of Utah R645-301-422 requirements for air pollution control plan. The following deficiency must be addressed prior to final approval:

R645-301-422: The Permittee must correct references to include Appendix J for the permit. The Permittee must provide a description of coordination and compliance efforts which have been undertaken by the applicant with the Utah Division of Air Quality. Due to the addition of the new lease area and the time lapse since the last documented coordination with the air quality regulatory authority, it is prudent to provide recent coordination efforts between the applicant the Utah Department of Air Quality. The projected production rates from the Kenilworth lease addition shall be considered in the air pollution control plan.

Ireinhart

## Coal Recovery

### Analysis:

The amendment meets the State of Utah R645 requirements for Coal Recovery.

The amendment meets the requirements of R645-301-522 due to a discussion of the measures to be used to maximize the use and conservation of the coal resources for the current Centennial and Kenilworth leases

The application includes the additional of the Kenilworth Lease to the Andalex Resources mining operations located in the Deadman Canyon area of the Book Cliffs coal field. Plate 6 shows the development into all seams, which involve separate surface facilities as shown. All seams within the current leases have been mined out. The addition of the Kenilworth lease will provide some coal for future recovery. Of the four original economic seams available in the leased areas, the lowermost seam, Aberdeen, is the only seam with coal remaining. Plate 29 details the mine plan for the Aberdeen seam. A minor change in text was added on page 5-178 to revise the location of the destination to which coal haulage trucks will transport coal from the Centennial Projects. The change specifically removes the Wildcat loadout from the truck dump point to a more general "unit train loadout in the near vicinity.

cparker

## Subsidence Control Plan Subsidence

### Analysis:

The amendment meets the State of Utah R645-301-525.requirements for Performance Standards for Subsidence Control.

The amendment does not meet the requirements of R645-301-525.300 due to only addressing the performance standards for the current Centennial and Kenilworth leases.

Section R645-301-525 has been revised to change the method of extraction and changes the spacing of the longwall panels for effective ground control. In the R2P2 method, the barriers which are left act as bridge abutments to support the roof left after the longwall face is extracted. The Bureau of Mines performed extensive research at Price River Coal Co. in the early 1980's at the #5 and #3 mines and showed a maximum draw angle over longwall extraction of positive 15.2 degrees and minimum of negative 7.4 degrees, as shown in Appendix T. The information presented in appendix T clearly states that "Although the data from this report (USBOM, "Surface Subsidence Over Longwall Panels in the Western United States") by itself cannot be used to predict subsidence, it does provide some insight as the magnitude of subsidence that can be expected in the Book Cliffs Coalfield." Appendix T also contains subsidence monitoring survey's completed by Bruce T.S. Ware for the Andalex Resources mines and found no movement horizontally or vertically since monitoring points were established.

The original application sections do not reference the current R645 rules. The application included the sections R645-301-525.241 through -525.270, which no longer exists. The current application has all of this information presented under Section R645-301-525.27. The application now includes a reference to all R645-301-525 which requires details of the subsidence control plan contents as outlined in the rules.

cparker

## **Subsidence Control Plan Performance STD**

### *Analysis:*

The amendment meets the State of Utah R645-301-525.400 requirements for Subsidence Control Plan.

The requirements of R645-301-525.400 are met in the amendment as the Permittee presented a clear subsidence plan for protected areas for the current Centennial and Kenilworth leases.

The application included the revision of text on page 5-153 to reflect the changes in the subsidence monitoring points currently outlined on Plate 25. The text states that three additional subsidence monitoring stations have been added to Plate 25 to cover the long wall mining operations on the new Kenilworth Lease area.

cparker

## **Subsidence Control Plan Notification**

### *Analysis:*

The amendment meets the State of Utah R645-301-525.700 requirements for Public Notice of Proposed Mining.

The requirements of R645-301-525.700 are met in the amendment as the Permittee presented a clear subsidence plan for protected areas that includes the appropriate notification at least six months prior to mining. The application includes new text to detailing that 6 months prior to mining the underground mine operator shall mail a notification to all owners and occupants of surface property and structures above the underground workings.

cparker

## **Subsidence Control Plan Notification**

### *Analysis:*

The amendment meets the State of Utah R645-301-525.700 requirements for Public Notice of Proposed Mining.

The requirements of R645-301-525.700 are met in the amendment as the Permittee presented a clear subsidence plan for protected areas that includes the appropriate notification at least six months prior to mining. The application includes new text to detailing that 6 months prior to mining the underground mine operator shall mail a notification to all owners and occupants of surface property and structures above the underground workings.

cparker

## Subsidence Control Plan Slides and Other Damage

### Analysis:

The amendment meets the State of Utah R645 requirements for Slides and Other Damage.

The amendment meets the requirements of R645-301-515.100 with procedures already described within the existing MRP detailing the emergency contact procedures in the event of a slide. The application includes the revision of section R645-301-515.100 that is identical to text that was previously approved and included in the MRP as of October 2, 2002.

cparker

## Fish and Wildlife Protection and Enhancement Plan

### Analysis:

Information provided in the application does not meet the minimum requirements of the regulations. R645-301-330

331: Measures taken to disturbed the smallest practicable area are identified in section 331. They include minimal surface disturbance. Surface disturbance is limited to 47.19 acres of existing disturbance and approval of this amendment does not provide for additional disturbance.

332: Anticipated impacts of subsidence are identified in section 332. Andalex commits to mitigate all subsidence related damage to renewable resources including, but not limited to water, grazing, and wildlife habitat including raptor nests. Subsidence monitoring stations will be established as necessary along the first proposed longwall mining. The results of this monitoring program will define monitoring and permitting needs in the future. In the event problems should occur, the company will develop a mitigation plan with the Division of Wildlife Resources. The Permittee commits to conducting raptor surveys in several places but specifically in Section 332. However, additional information is required in order to adequately monitor effectiveness of the surveys. The Permittee must clarify and discuss the raptor survey protocol.

333: BTCA is described on page 3-16. Small islands of natural vegetation occur within the site. All disturbed slopes have been revegetated. Other enhancement measures may include water sources (if available), thermal cover, escapeways, hiding and loafing places, and travelways. ANDALEX will consult with the Division of Wildlife Resources, at the time of final reclamation, to determine exactly what reclamation designs, planting.

### Deficiencies Details:

The amendment does not meet the State of Utah R645-301-332 requirements for mitigating impacts of subsidence on raptors. The Permittee must clarify and discuss the raptor survey protocol so that expectations are clear between the Division and Permittee.

lreinhard

## Road Systems Classification

### Analysis:

The amendment meets the State of Utah R645 requirements for Road Systems and Other Transportation Facilities.

The amendment meets the requirements of R645-301-527.100 by classify each road as primary or ancillary. Text has been previously approved by the Division in previous amendments was moved to section R645-301-527.100. The text states that all roads within the permit area are classified as primary roads and details the typical designs of such roads. Primary Road 1 through 11 along with Ancillary Road 1 through 5 were moved to this section with the text left unchanged within each section.

cparker

## Road System Plans and Drawings

### Analysis:

No changes were made to text within this section of the MRP within this amendment. The application meets the minimum requirements of R645-301-527.

## Road System Performance Standards

### Analysis:

No changes were made to text within this section of the MRP within the Kenilworth Lease amendment. The application meets the minimum requirements of R645-301-527.

cparker

## Road System Certification

### Analysis:

The amendment meets the State of Utah R645 requirements for Primary Road Certification

The amendment meets the requirements of R645-301-521.170 by submitting plans and drawing for each road to be prepared by or under the direction of and certified by a qualified registered professional engineer. Text within the application details that all primary road design and construction has been certified by a Professional engineer.

cparker

## Road System Other Transportation Facilities

### Analysis:

The amendment meets the State of Utah R645 requirements for Other Transportation Facilities.

The amendment meets the requirements of R645-301-521.170 by submitting plans and drawing for each road, conveyor, and rail system to be used within the proposed permit area. Text detailing the conveyor structures was moved to this section. The text was left unchanged from a previous Division approval in 8/8/95. The application meets the minimum requirements of R645-301-512.250.

cparker

## Spoil Waste Disposals of Noncoal Mine Wastes

### Analysis:

No changes were made to text within this section of the MRP within this amendment. The application meets the minimum requirements of R645-301-500.

cparker

## Spoil Waste Coal Mine Waste

### Analysis:

The amendment meets the State of Utah R645 requirements for Coal Mine Waste.

The amendment meets the standards of R645-301-528.320 as Plate 6 shows the location of temporary storage for underground development waste which can be stored in an area which was previously used as sediment pond. No text was revised in this section in the current application. There were no changes in the text in section R645-301-512.

cparker

## Spoil Waste Refuse Piles

### Analysis:

No changes were made to text within this section of the MRP within the Kenilworth Lease amendment. The application meets the minimum requirements of R645-301-526.

cparker

## Spoil Waste Impounding Structures

### Analysis:

The amendment meets the State of Utah R645 requirements for impounding structures.

The amendment meets the standards of R645-301-533 as all information regarding impoundments was moved from Chapter 5 to section R645-301-733.

cparker

## Spoil Waste Burning and Burned Waste Utilization

### Analysis:

No changes were made to text within this section of the MRP within the Kenilworth Lease amendment. The application meets the minimum requirements of R645-301-526 as spoil waste burning is not applicable to the site.

cparker

## Spoil Waste Coal Processing Waste to Abandoned

### Analysis:

No changes were made to text within this section of the MRP within the Kenilworth Lease amendment. The application meets the minimum requirements of R645-301-526 since no coal processing waste will be stored underground.

cparker

## Spoil Waste Excess Spoil

### Analysis:

The amendment meets the State of Utah R645 requirements for excess spoil.

The amendment meets the requirements of R645-301-512.210, R645-301-514.100, R645-301-521.143, R645-301-528, and R645-301-535.100 as Chapter 3 Section 3.2.3.1 that states that no excess spoil will be generated.

The application did not revise text within this section as excess spoil is not applicable to mining operations at Centennial.

cparker

## Hydrologic Ground Water Monitoring

### Analysis:

The amendment does not meet the State of Utah R645 requirements for Ground-water monitoring plan.

The amendment does not include groundwater monitoring above, within, or below the coal seam in the Kenilworth Lease. The amendment also does not provide groundwater monitoring up- and down-gradient of the proposed Kenilworth Lease. It will be important to monitor groundwater within and adjacent to the Kenilworth Lease to determine if any mining related impacts occur to the hydrologic balance.

### Deficiencies Details:

R645-301-731.200: The amendment does not meet the State of Utah R645 requirements for Groundwater monitoring plan. The following deficiency must be addressed prior to final approval:

The groundwater monitoring plan must include monitoring water levels in the strata above, within and below the coal seam in the Kenilworth Lease. The groundwater monitoring plan must include monitoring groundwater levels within strata within and adjacent to the Kenilworth Lease.

kstorrar

## Hydro Surface Water Monitoring

*Analysis:*

The amendment does not meet the State of Utah R645 requirements for Surface Water Monitoring.

The stream and spring survey provided does not translate to a comprehensive surface water monitoring plan. Surface water monitoring of streams must be established at the following locations: left and right fork and directly below junction of the two in Mathis Canyon, Dry Canyon Willow creek, Dry canyon; and in the adjacent Price River drainage – Cordingly Canyon, Alrad Canyon, Left fork Deadman. Springs within and adjacent to the Kenilworth Lease area must be included in the water monitoring plan as well.

The sentence stating, “Due to weather, the steep grade of the access road is impassible year-round” must be clarified. If the road identified as impassible is used to access water monitoring sites, an alternative transportation route or other means of access to water monitoring sites must be taken. The amendment appears to absolve itself of water monitoring requirements due to road conditions. This is not allowed within the State of Utah R645 requirements.

*Deficiencies Details:*

R645-301-731.223: The amendment does not meet the State of Utah R645 requirements for Surface Water Monitoring. The following deficiency must be addressed prior to final approval:

The amendment must establish surface water monitoring sites on all streams and springs within and adjacent to the Kenilworth Lease area. The water monitoring plan must include measuring quantity and quality of surface waters on a quarterly basis.

The sentence stating, “Due to weather, the steep grade of the access road is impassible year-round” must be clarified. If the road identified as impassible is used to access water monitoring sites, an alternative transportation route or other means of access to the water monitoring sites must be taken. The amendment may not absolve itself of water monitoring requirements on this basis alone.

kstorrar

## **Hydrologic Diversion General**

*Analysis:*

The amendment meets the State of Utah R645 requirements for Diversions.

Surface disturbance will not change with the addition of the Kenilworth Lease. The MRP contains adequate maps and calculations for diversions while the mine is operating.

kstorrar

## **Hydrologic Stream Buffer Zones**

*Analysis:*

The amendment meets the State of Utah R645 requirements for Stream Buffer Zones.

Surface disturbance will not change with the addition of the Kenilworth Lease. The MRP contains adequate protections for the stream buffer zone while the mine is operating.

kstorrar

## **Hydrologic Sediment Control Measures**

*Analysis:*

The amendment meets the State of Utah R645 requirements for Sediment Control measures.

Surface disturbance will not change with the addition of the Kenilworth Lease. The MRP contains adequate sediment control measures while the mine is operating.

kstorrar

## Hydrologic Siltation General

### Analysis:

The amendment meets the State of Utah R645 requirements for Siltation Structures.

Surface disturbance will not change with the addition of the Kenilworth Lease. The MRP contains adequate maps and calculations for siltation structures while the mine is operating.

kstorrar

## Hydrologic Ponds Impoundments Banks Dams

### Analysis:

The amendment meets the State of Utah R645 requirements for Sediment Ponds.

Surface disturbance will not change with the addition of the Kenilworth Lease. The MRP contains adequate maps and calculations for sediment ponds while the mine is operating.

kstorrar

## Support Facilities and Utility Installations

### Analysis:

The amendment meets the State of Utah R645 requirements for Support Facilities and Utility Installations.

The amendment meets the requirements of R645-301-521.180 and -526 the require the description, plans, and drawing for each support facility to be constructed, used, or maintained within the proposed permit area. There is no change in the text in regards to the information regarding supporting facilities, as shown on Plates 6 and 7

cparker

## Signs and Markers

### Analysis:

The amendment meets the State of Utah R645 requirements for Signs and Markers.

The amendment meets the requirements of R645-301-521.200 by the general discussion of signs. Text included in section R645-301-521.200 details the signs and markers required to meet the minimum compliance of said state code. The text remains unaltered from previously approved MRP amendments

cparker

## Explosives General

### Analysis:

The amendment meets the State of Utah R645 requirements for general Use of Explosives.

The amendment meets the requirements of R645-301-524 as there was no change in the text describing the explosives and blasting operations at the Anadelx mine within this application.

cparker

## Maps Affected Area

### Analysis:

The amendment meets the State of Utah R645-301-521.100 requirements for Affected Area Maps.

The amendment meets the requirements of R645-301-521.100 through-521.130 by not updating all the relevant maps for the entire area shown on the mine plan as detailed on updated Plate 26, as Plate 26, 27, 28 and 40 show all the relevant

test borings locations and elevations. Plate 29, 30, and 31 show the old workings in the three coal seams and Plate 29 was updated within this application to show the Kenilworth lease on the figure. The application meets the requirements of R645-301-512 and -521.

cparker

## Maps Mine Workings

### Analysis:

The amendment meets the State of Utah R645 requirements for Mine Workings Maps.

The amendment meets the requirements of R645-301-521.140 and -512.110 which require maps that clearly show all mine plans. The amendment updates for the current Centennial and Kenilworth leases.

Plate 25, Subsidence Map, and Plate 29 show the proposed mine workings for the additional lease.

cparker

## Maps Monitoring and Sampling Locations

### Analysis:

Plat 9 shows the location of the reference areas R-1, R-3, and R-4, each approximately 200 square feet. Plates 26, 27 and 28 show all the test borings locations and elevations, with the respective information from each located in Appendix E. The application meets the minimum requirements of R645-301-521 detailing the monitor and sample location maps.

cparker

## Reclamation Plan

### General Requirements

### Analysis:

The amendment meets the State of Utah R645 requirements for General Reclamation Requirements. The application includes the revision of section R645-301-515.100 through -515.300 that is identical to text that was previously approved and included in the MRP as of October 2, 2002 which details the minimum required environmental monitoring which the Permittee will continue to perform while Centennial Projects is in temporary cessation status.

cparker

## PostMining Land Use

### Analysis:

The amendment does not meet the State of Utah R645-301-412 requirements for postmining land use.

The application refers to Appendix R for surface owner comments as required by 412.200. Surface owner's comments for the Kenilworth Lease are not provided. Appendix R of the existing plan does have comments for the Graves Lease. Plate 5-1 indicates surface owners are BLM and Scott W. Mathis.

The description of the PMLU is located in Section 412.100. The proposed use is livestock grazing with wildlife habitat and some recreation. The PMLU is consistent with surface owner plans and applicable Utah and local land-use plans and programs.

The amendment meets the State of Utah R645-301-413 requirements for post mining land use performance standards in Section 412.140.

### Deficiencies Details:

The amendment does not meet the State of Utah R645-301-412 requirements for postmining land use.

R645-301-412: The Permittee must provide surface landowner comments in accordance with 412.200.

Ireinhart

## WildLife Protection

### Analysis:

The amendment meets the State of Utah R645-301-342 requirements for a fish and wildlife plan for the reclamation and postmining phase of operation.

Wildlife and enhancement measures are described in Appendix A. Additionally, they commit to include water sources, thermal cover, escapeways, hiding and loafing places, and travelways. Andalex will consult with the DWR at the time of final reclamation, to determine exactly what reclamation design would best enhance habitat.

Specific facilities are not used to protect or enhance wildlife with the exception of the powerline which was built according to strict guidelines issued by the Division of Wildlife Resources and the U.S. Fish and Wildlife Service regarding raptor protection. The powerline design is included in Volume I as Appendix I (powerline design). Also, speed limits are posted within the permit area.

lreinhart

## Approximate Original Contour Restoration

### Analysis:

The amendment meets the State of Utah R645 requirements for Approximate Original Contour Restoration.

The amendment meets the R645-301-512.200, -553.110 through -553.150, and -302-270 due to the proposed post mining land use change that would not require a variance from approximate original contour (AOC).

AOC as defined by R645-301-553.100 through -553.150 is achieved when the final grade closely resembles the general surface configuration of the land prior to mining activities and provides a subsurface foundation for vegetative cover capable of stabilizing the surface from erosion. The original amendment under section R645-301-512.260 stated the only cut slopes at Apex, Pinnacle and Aberdeen will vary from AOC. All remaining slopes will be backfilled to the extent possible. This text was amended to state that no variance is granted and all backfill and grading will be to AOC.

cparker

## Backfill and Grading General

### Analysis:

The amendment meets the State of Utah R645 requirements for Backfill and Grading.

The amendment meets the general requirements of R645-301-553 by failing to detail a general backfill and grading plan that details how disturbed areas will be backfilled and graded to achieve the approximate original contour, eliminate all highwalls, spoil piles, and depressions, and achieve a postmining slope that does not exceed either the angle of repose or such lesser slope as is necessary to achieve a long term static safety factor of 1.3 and to prevent slides, minimize erosion and water pollution both on and off the site, and support the approved postmining land use. No changes were made to section R645-301-553. The application meets the minimum requirements of R645-301-553.

cparker

## Mine Openings

### Analysis:

The amendment does not meet the State of Utah R645 requirements for Mine Openings.

The requirements of R645-301-513.500, R645-301-529, and R645-301-551 are met within the amendment as text was revised on page 5-183 under section R645-301-525, that states a seven of seven entry system is being used. The Permittee states that mine water discharges would be treated, should one occur from any of the Aberdeen, Pinnacle or Apex Mine portals. The Permittee states that this is unlikely to occur, as the coal seam at the mines portals dips away from the portals as one advances deeper into the mine. The Permittee commits to monitoring any mine discharge according to the UPDES permit which is in effect when the discharge is observed.

cparker

## Road System Reclamation

### Analysis:

The amendment meets the State of Utah R645 requirements for Reclamation of Roads.

The requirements of R645-301-534 are met within the amendment as there is no change to the existing MRP reclamation of roads throughout the permitted are within section R645-301-534 and -537.

cparker

## Road System Retention

### Analysis:

The current application did not change the text within section R645-301-534 and -537 and meets the minimum requirements of R645-301-534 and -537

cparker

## Hydrological Information Reclamation Plan

### Analysis:

The amendment does not meet the State of Utah R645 requirements for Reclamation of Impoundments.

The reclamation plan of the surface disturbance area does not provide proper calculations to support the sediment pond design. Pond "E"-PM does not provide adequate detention time calculations to show the pond will settle suspended solids and meet UPDES permitted effluent standards.

Pond "E"-PM reclamation design does not meet the minimum containment or treatment of a 10-year, 24-hour event.

### Deficiencies Details:

The amendment does not meet the State of Utah R645 requirements for Reclamation of Impoundments. The following deficiency must be addressed prior to final approval:

R645-301-724.320, -742.221.32: Pond "E"-PM does not provide adequate detention time calculations to show the pond will settle suspended solids and meet UPDES permitted effluent standards.

Pond "E"-PM reclamation design does not meet the minimum containment or treatment of a 10-year, 24-hour event.

kstorrar

## Contemporaneous Reclamation General

### Analysis:

The amendment meets the State of Utah R645-301-352 requirements for contemporaneous reclamation.

Because the mining operation is underground, minimal surface disturbance will occur and the reclamation plan is practicable. Disturbed areas will be stabilized and hydroseeded with the final reclamation seedmix. Vegetation cover will be maintained as necessary and slope stability will be measured by visual inspection.

Ireinhard

## Revegetation General Requirements

### Analysis:

Portions of the plan state shrubs will be planted whereas other portions state no shrubs will be planted. The Permittee must reconcile if shrubs will be planted and to what extent.

The reclamation plan for final revegetation is located in Sections 340 through 357. The plan describes how all lands disturbed by mining and operations (except water areas and surface of roads approved as part of the postmining land use) comply with the biological protection performance standards. The plan includes a schedule and timetable for each major

step, seed mix (tables III-13 & III-14) planting methods, mulching. Measures proposed to determine success of revegetation are identified in section 321.200. Plate 3-2 shows vegetation mapping for the disturbed area. Plate 3-3 shows revegetation mapping for the disturbed area and includes areas to be planted for shrubs.

The amendment meets the State of Utah R645-301-353 requirements for vegetative cover.

The revegetation plan is described in section 353. All areas disturbed will be regraded and seeded with the seedmixes listed on tables III-13 & III-14. This seedmix should result in vegetative cover that is diverse, effective, and permanent comprised of native species and compatible with wildlife and livestock.

The amendment meets the State of Utah R645-301-354 for revegetation timing.

The planting schedule is identified in Section 354 and identifies fall for the seeding period which is the favorable planting time for this location. Shrubs will be planted in the spring after thaw.

The amendment meets the State of Utah R645-301-357 requirements for extended responsibility period.

As noted in Section 357, the extended responsibility period will be 10 years.

*Deficiencies Details:*

The amendment does not meet the State of Utah R645-301-341 requirements for revegetation plan. The following deficiency must be addressed prior to final approval:

R645-301-341: The Permittee must reconcile contradictions as to whether shrubs will be planted and to what extent.

Ireinhart

## **Revegetation Mulching and Other Soil Stabilization**

*Analysis:*

The amendment meets the State of Utah R645-301-355 requirements for mulching and soil stabilizing.

Mulching and soil stabilizing practices are identified in Section 355. Mulch will be applied to all reseeded areas. Where hydromulching cannot be used, straw mulch (at the rate of 1-1/2 to 2 tons/acre) will be crimped either mechanically or by hand. Hydromulch will be used on steep slopes and straw will be used wherever possible. These practices should promote soil stability and optimal vegetative growth conditions.

Ireinhart

## **Revegetation Standards for Success**

*Analysis:*

The amendment does not meet the State of Utah R645-301-356 requirements for revegetation standards for success.

Success standards are identified in Section 356. Standards for success, statistically valid sampling techniques for measuring success, and approved methods are identified in the Division's Vegetation Information Guidelines. The PMLU is grazing and wildlife and the ground cover and production of living plants on the revegetated area will be at least equal to that of a reference area or such other success standards approved by the Division.

The amendment identifies a revegetation test plot which was initiated in 1983. The Permittee must identify the results of the test plot and identify if results will be incorporated into the final reclamation plan.

*Deficiencies Details:*

The amendment does not meet the State of Utah R645-301-120.200 requirements for being clear and concise in regards to revegetation standards for success. The Permittee must identify the purpose and results of the test plot and identify if results should be incorporated into the final reclamation plan.

Ireinhart

## Cessation of Operations

### Analysis:

The amendment meets the State of Utah R645 requirements for Cessation of Operations

The requirements of R645-301-515 and -541 are met within the amendment as there is no change to the existing MRP plan of communication with the appropriate parties in the event of the cessation of operations and final reclamation. The application includes the revision of section R645-301-515.300 and -529 that are identical to text that has been previously approved and was added to the MRP as of October 2, 2002.

cparker

## Maps Bonded Area

### Analysis:

The text was not edited within the MRP and references section R645-301-542. Section R645-301-510 details that Plate 26 and 29 have been updated to reflect the addition of the Kenilworth lease. The application meets the minimum requirements of R645-301-542

cparker

## Bonding and Insurance General

### Analysis:

The amendment meets the State of Utah R645 requirements for Bonding and Insurance Requirements.

The amendment meets the requirements of R645-301-800 as the applicant is current on the bond and insurance standings. Chapter 8 of the application was revised to contain the relinquishment of the mined out leases and the addition of the Kenilworth Lease. These changes do not required any changes in the amount of disturbed area acreage at this time. Although the addition of gob vent holes may be necessary to mine the Kenilworth lease, these disturbances are not anticipated at this time.

All changes to the text within Chapter 8 are minor and the approved reclamation cost estimate is contained in Volume 2, Appendix B of the Centennial Project MRP.

cparker

## Bonding Form of Bond

### Analysis:

The amendment meets the State of Utah R645 requirements for Form of Bond.

The amendment meets the requirements of R645-301-860.100 as the Division and the OSMRE currently hold thirteen surety bonds and one letter of credit which total \$1,520,000 for the 47.19 acres of disturbance at Centennial.

cparker

## Bonding Determination of Amount

### Analysis:

The amendment meets the State of Utah R645 requirements for Determination of Bond Amount.

The amendment meets the requirements of R645-301-830.140 as the Permittee did not need to submit detailed bond information in regards to the amendment as it is all underground. The posted bond amount for the Centennial project is \$1,520,000.

cparker

## Bonding Terms and Conditions Liability Insurance

*Analysis:*

The amendment meets the State of Utah R645 requirements for Terms and Conditions for Liability Insurance.

The amendment meets the requirements of R645-301-850 as the applicant currently holds liability insurance through Federal Insurance Co, effective until 6/1/16. The insurance includes the required Marsh from, explosives and claims made per occurrence.

The Permittee is a subsidiary of Murray Energy Corporation which maintains general liability insurance for the site on an annual basis.

**cparker**