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TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

August 28, 2012

TO: Internal File

THRU: April Abate, Lead 9/5/2012

FROM: Ingrid Campbell, Environmental Scientist III IC

RE: South Fork Quitchupah 2R2S, Canyon Fuel Company, SUFCO Mine, C/041/0002, Task ID #4155

SUMMARY:

On November 4, 2011, the Division received an application from Canyon Fuel Company (CFC) to amend the current SUFCO mine monitoring and mitigation plan for undermining the South Fork of the Quitchupah stream channel. CFC requested that the Division expedite the review in order to mine the area by December 30, 2011. The application includes proposed amendments to Chapters 4, 5, 7 and the confidential binder as well as plates 5-10AC, 5-10A and C. The application was not recommended for approval. Several deficiencies were identified and returned to the permittee. CFC submitted a response to deficiencies on August 6, 2012.

This application is not recommended for approval. In addition to the deficiency listed below, the permittee is required to develop a data recovery plan in coordination with the USFS and the USHPO. A Memorandum of Agreement (MOA) regarding the protection and mitigation of the cultural resource site between the USFS, USHPO and the permittee is currently being developed. Once the MOA is signed, the MOA and the data recovery plan must be submitted to the Division for incorporation into the MRP in appendix 4-6. Also, the permittee must respond to the following, in accordance with:

R645-301-322, -333: Please include in Appendix 3-14 a commitment to monitor the macroinvertebrate population *after* undermining the South fork of Quitchupah. The post mining surveys must be compared to the baseline in order to determine whether the stream condition has been impacted by undermining.

TECHNICAL ANALYSIS:

ENVIRONMENTAL RESOURCE INFORMATION

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

HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

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

Analysis:

CFC made changes to the SUFCO MRP, Chapter 4 page 4-12 to include a summary of the cultural and historic information for the South Fork of the Quitchupah Area. The summary indicates that two sites are recommended eligible for the National Register of Historic Places. There is a brief description of the shelter that may be impacted from undermining.

The actual report is located in the amendment for incorporation into Appendix 4-2 of the confidential folder of the MRP. The report is titled, "Cultural Resource Inventory of the Proposed Quitchupah Plateau Mine Expansion Sections 6 and 7, T37S R16E, SLB&M, Sevier County, Utah" Report No. 110122. Christopher T. Jensen of Canyon Environmental prepared the report on August 22, 2011 with Public Lands Policy Coordination Office Permit Number 177 and State of Utah Antiquities Project Permit Number U-11-YN-0695f.

The report included a class I file search in June at the State of Utah Historic Preservation Office. Three cultural resource sites were identified within a .5 mile radius of the proposed project site. One site, 42SV2690 was identified in the project area.

The report also included a class III cultural resource survey conducted on June 13-14, 2011 in Section 24 of T21S R4E of 160 acres of land in the Fishlake National Forest. The survey was conducted using parallel transects spaced no more than 10 m apart. Mr. Jensen identified one previously recorded cultural resource site (42SV2690), and three new sites (42SV3462, 42SV3463, and 42SV3464) within the survey area. Sites 42SV2690 and 42SV3464 were recommended as eligible for listing in the National Register of Historic Places.

Mr. Jensen determined that undermining site 42SV2690, a large lithic scatter, will not impact the site. However, site 42SV3464, a rock shelter and associated lithic scatter, could be impacted

from undermining. Therefore, the following recommendations were included in order to mitigate the potential adverse effects:

- Long term, periodic monitoring of subsidence activities in the immediate area that is proposed to be undermined;
- Direct, periodic monitoring of the shelter and documentation of subsidence activities as they may or may not affect the site;
- The development of a treatment and mitigation plan to determine possible future steps in the event that subsidence is found to cause structural damage or failure of the shelter.

The application does not include a monitoring and mitigation plan as suggested above by Canyon Environmental. Prior to approval of undermining, CFC must develop and submit a plan to the Division.

In addition to the above mitigation recommendations for site 42SV3464, Canyon Environmental recommended that further precautions be taken by CFC to minimize potential damage to cultural resources. These recommendations include the following:

- The operator and its contractors inform their employees about Federal regulations intended to protect cultural resources. All personnel would be informed that collecting artifacts, including arrowheads, is a violation of Federal Law.
- If cultural resources are uncovered during surface-disturbing activities, the operator and its contractors would suspend all operations at the site and the discovery would be immediately reported to the Authorized Officer, who would arrange for a determination of significance in consultation with the USHPO, and if necessary, recommends recovery and avoidance plan.
- All vehicular traffic, personnel and equipment movement, and construction activities should be confined to the locations surveyed for cultural resources as referenced in this report, and to the existing roadways and/or inventoried access routes.

Chris Jensen prepared an additional report on May 7, 2012 (No. 110122). This report states that undermining will have an adverse affect on the rock shelter site 42SV3464, and a data recovery of the site must occur prior to any subsurface mining activity in the lease area.

An MOU between the USDA-Manti-LaSal National Forest, the Utah State Historic Preservation Officer, Canyon Fuel Company and the Division regarding the cultural resources protection and consultation at the SUFCO mine is located in Appendix 4-5, Volume 6. This MOU states that the Forest Service will be the lead agency to contact and coordinate between the Division, tribes and SHPO. The FS is also responsible to assure that all evaluation and monitoring of subsidence effects will follow the process outlined in the MOU. Attachment B of this report is a list of sites to be monitored. Site 42SV3464 is not listed on the attachment. The US Forest Service, Fishlake National Forest Office submitted comments to the Division on December 7, 2011.

Currently, a Mining and Mitigation plan Cultural Resource Memorandum of Agreement is being developed between CFC, the Fishlake National Forest, and USHPO. After the MOA is signed, it will be submitted for incorporation into appendix 4-6 of the MRP.

Findings:

The information provided in this application is considered adequate to meet the minimum regulatory requirements for this section. The permittee must develop a data recovery plan in coordination with the USFS and the USHPO. A Memorandum of Agreement (MOA) regarding the protection and mitigation of the cultural resource site between the USFS, USHPO and the permittee is currently being developed. Once the MOA is signed, the MOA and the data recovery plan must be submitted to the Division for incorporation into the MRP in appendix 4-6.

VEGETATION RESOURCE INFORMATION

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

Analysis:

CFC did not submit any new information pertaining to vegetation with the amendment. Plate 3-1v8, Plant Communities and Sampling Area, is included in the Plates Volume I of the MRP. According to this map, the South Fork Quitchupah Creek area includes Douglas Fir-Spruce-limber Pine, Pinyon-Juniper- Mountain Mahogany, and sagebrush-grass plant communities. No sampling areas were located near the South Fork Quitchupah.

The Aquatic Resource Report (Appendix 3-3) prepared by Dr. Richard Wingett, includes a resource description of South Fork Quitchupah Creek (table 7, page 27) conducted in 1980. The table describes the South Fork Quitchupah Creek's, left and right bank vegetative cover, stability, class, gradient, ungulate damage and riparian zone length. This provides a baseline inventory of the stream's riparian vegetation. CFC did not provide an update to this data which may be dated.

Undermining should have a minimal impact to vegetation (See Smith and Pritchett Report in Appendix 3-3, 1980).

The Fishlake and Manti La Sal National Forest provided comments on this application to the Division on December 7, 2011. The FS indicated that, "The Forest Land and Resource Management Plan (LRMP) designates use in the area for emphasis on livestock grazing and management indicator species habitat. Protection of riparian habitat is also a priority. In order to adequately protect the riparian habitat, a monitoring plan must be established to insure that mining does not negatively impact the vegetation.

In the response to deficiencies, CFC included a Monitoring and Mitigation Plan for the Undermining of the Quitchupah in Appendix 3-14. The plan includes conducting pre and post mining survey of the south fork Quitchupah in 2012 and 2015 respectively. A qualified botanist will identify major representative plant species and vegetation communities along the stream channel and riparian and spring areas. Photographs and maps of the vegetation communities will also be provided. Surveys will be provided to the Division in the annual report. The Division will be responsible for providing a copy of the surveys to the Fishlake National Forest.

Findings:

The information provided is considered adequate to meet the minimum regulatory requirements for this section

OPERATION PLAN

FISH AND WILDLIFE INFORMATION

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

Analysis:

Protection and Enhancement Plan

CFC did not submit any new information pertaining to fish and wildlife with the amendment.

A wildlife assessment was conducted in 1980 by H. Duane Smith and Clyde Pritchett. The assessment is located in Appendix 3-3 of Volume 5 of the MRP. The area of study, shown on Figure 1 of the report, includes the south fork of Quitchupah Creek. The amendment area is near elk calving grounds and located in elk winter range and big game migration routes. Page 43 of the report explains possible impacts from subsidence to wildlife. The long-wall and room and pillar mining techniques proposed in 1980 would minimize surface impacts and impacts to wildlife. Undermining this area should not have an impact on big game; however, if water loss occurs due to undermining, big game could be impacted. CFC included a subsidence monitoring and mitigation plan in this amendment. Page 5-39E of the amended MRP pages states, "if mitigation measures by SUFCO personnel and their consultants and contractors, are not

successful in restoring flows after two spring runoff periods, Sufco will initiate additional analysis and planning with the Forest Service. Wildlife could be greatly impacted by the loss of water in this area for two years. Therefore, CFC must plan an alternate source of water for wildlife during their plans to replace water.

The report also suggests, on page 56, that water is the most limiting resource, and it would be advantageous of the mining company to install additional permanent water via development of springs, wells or guzzlers at strategic locations within the lease area. In response to deficiencies, CFC included a water replacement commitment in appendix 3-14. CFC commits to promptly provide alternate sources of water, replace or compensate any state appropriated water supply that is contaminated, diminished or interrupted by mining operations for wildlife, cattle or drinking water.

Robert N. Winget of Environmental consultants conducted Aquatic macroinvertebrate surveys of Quitchupah Creek in 1980-1982. The results indicated a stressed condition due to low water flows, sedimentation and poor water quality but noticeably improved by 1982. Winget summarized the condition of the stream as having marginal quality for both habitat and water quality due to highly variable flows, chronic grazing and naturally alkaline waters. Winget concluded that the stream was not suitable for developing fisheries. On page 16 of this report, Winget states that possible project impacts are mainly subsidence related and entail a reduction of stream flows. He reiterated that the stream section has no fisheries value but is important as a watering source for wildlife and domestic animals and a source of aquatic organisms for downstream North Fork Quitchupah Creek.

Page 45 of the Smith and Pritchett report states that, "prior to and as mining progresses these aquatic and aquatic dependent resources should be monitored to assess potential degradation impacts....surface water equivalents should be permanently provided to maintain the integrity of any areas and populations so impacted". In the response to deficiencies, CFC included a macroinvertebrate monitoring plan in appendix 3-14. A qualified biologist will survey the baseline populations of macroinvertebarates within the portion of the stream channel to be subsided. The commitment does not include surveying the macroinvertebrate population after undermining. CFC must include a commitment to survey the macroinvertebrate population after undermining and compare the results to the baseline data.

Plates Volume I of the MRP includes Plate 3-2v6, "Elk Range", last incorporated on February 1, 2011. According to this plate, the south fork Quitchupah area includes limited priority Elk winter range, and some adjacent Critical Elk Calving areas.

Endangered and Threatened Species

A list of Endangered and Threatened species is located in the MRP volume 1, Chapter 3, Environmental Description, page 3-15. This list is from January 2005 and is currently outdated.

It does not explain whether the species on the list can be found in the permit area. CFC updated the list in 2012 in response to the Division's deficiency. The Fish Lake National Forest consulted with the US Fish and Wildlife Service in 2012 regarding the impact to endangered species from undermining. The USFWS concurred with the USFS finding of no impact. CFC included a commitment to survey for all TEC and Sensitive species within the South fork quitchupah undermining area. This commitment is located on page 4 of appendix 3-14. The survey will occur prior to mining.

The original addition of the Quitchupah lease in the 1980's was approved under the assumption that the south fork of Quitchupah creek would not be undermined. A barrier panel was to be left in place. Therefore, the original analysis and consultation with the Fish and Wildlife Service did not cover this scenario. The Fish and Wildlife Service should be consulted on the undermining of the South Fork of the Quitchupah. The permittee should address the requirements of the Fish and Wildlife Service's Colorado Fish Recovery Program.

The Fishlake National Forest has a Threatened and Endangered Species plan on page II-33 within the forest plan found online at: http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5115591.pdf. The plan lists threatened, endangered and sensitive species (although outdated) that could be found in the forest as the following: Bald Eagle, peregrine falcon, utah prarie dog, northern flying squirrel, merlin, mountain bluebird, western bluebird, bonneville cutthroat trout, and Utah mountain kingsnake. Some of these species can be found to nest in or inhabit parts of the forest, but exact locations are not outlined. The plan also identifies threatened, endangered and sensitive plant species in the Tushar and Monroe mountains.

The US Forest Service initiated a section 7 consultation with the US Fish and Wildlife Service on this project regarding the Colorado River Fish . The USFWS indicated that the mine is located in a watershed that contributes to the Dirty Devil River which is not considered habitat for the endangered fish species. This information was provided through email correspondence which is on file with the Division.

Bald and Golden Eagles

An Avian and special status species inventory for the proposed 2011 Utah coal Properties exploration area was submitted to the Division in July of 2011 as part of task 3878, NOI for minor coal exploration. The inventory was conducted by Craig Brown of Tetratech on June 24, 2011. The inventory included northern goshawks, nesting raptors, and special status species as well as incidental flora and fauna observations of management indicator species (elk calving and mule deer fawning) within the Fishlake National Forest.

According to the 2011 raptor survey data, two red-tailed hawk nests are located near the South Fork of Quitchupah creek but not directly over the projected panels. The nests were last surveyed in 2008 and were found to be inactive or not found. The area has not been surveyed

since 2008. CFC included the 2012 raptor survey in the response to deficiencies. The survey included the planned subsidence areas including the south fork of the quitchupah. No historic nests were active and no new nests were identified.

Page 3-9 of the MRP states that an environmental assessment of the Quitchupah Lease area was performed by the FS and BLM and 6 golden eagle nests were located.

Wetlands and Habitats of Unusually High Value for Fish and Wildlife

The responses to deficiencies include a monitoring plan for the riparian area in appendix 3-14. Baseline data will be collected and the riparian areas and then the vegetation will be monitored twice yearly for the first two years and then once during the fifth year after undermining. The reports will be provided in the annual report.

Findings:

The information provided is not considered adequate to meet the minimum regulatory requirements of this section. Prior to approval, the permittee must submit the following in accordance with:

R645-301-322, -333: Please include in Appendix 3-14 a commitment to monitor the macroinvertebrate population *after* undermining the South fork of Quitchupah. The post mining surveys must be compared to the baseline in order to determine whether the stream condition has been impacted by undermining.

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 south fork of Quitchupah Creek is located in the Fishlake National Forest and is subject to the Land and Resource Management Plan prepared by the FS. The plan can be accessed online at: http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5115591.pdf. According to the plan, the main forest uses are Recreation, and Fish and Wildlife, timber, mineral extraction and grazing.

Two categories of Management Indicator Species (MIS) groups have been identified in the Fishlake National Forest for viable population maintainance, Ecological Indicators and High

Interest indicators. The ecological indicator species group includes goshawk, cavity nesters, riparian dependent guild, sage nesters, macroinvertebrates and resident trout. The high interest species group includes elk, mule deer, Bonneville cutthroat trout and Rydberg's milkvetch. The purpose for protection of these two categories is to ensure high habitat quality and protection for all forest species. Habitat for the listed species is generally similar to habitat for other forest species.

The FS provided the Division with comments on December 7, 2011. In their comments, the FS indicated that they designated the area in question for use as grazing and management indicator species habitat. They also emphasized that protection of the riparian habitat was important.

Findings:

The information provided is considered adequate to meet the minimum regulatory requirements for this section.

RECOMMENDATIONS:

This application is not recommended for approval at this time.

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