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Technical Analysis and Findings
Utah Coal Regulatory Program

October 6, 2016

PID: C0070005
TaskID: 5257
Mine Name: SKYLINE MINE
Title: NEW WATER MONITORING WELL

Environmental Resource Information

Vegetation Resource Information

Analysis:

The amendment meets the State of Utah R645-301-321 requirements for vegetation resource information.

The amendment describes the plant communities within the proposed drill site and reference sites in the report prepared by Alpine Ecological in July 2016. Total estimated disturbance for drill site WM-16 in 2016 is less than 0.10 acres. Methodologies used for vegetation collection were performed in accordance with vegetation guidelines supplied by the State of Utah, Division of Oil, Gas and Mining (DOG M). In July of 2016, quantitative and qualitative data were collected in the plant communities proposed for drilling activities as well as reference areas that were chosen for future revegetation success standards. The production estimates made for total available dry forage for this site is 1,120 lbs/acre.

The inventory and analysis of federally listed threatened, endangered and candidate plant species for Carbon, Emery and Sanpete Counties was consulted shows no impacts to any listed plant species.

Ireinhart

Fish and Wildlife Resource Information

Analysis:

The amendment meets the State of Utah R645-301-322 requirements for fish and wildlife resource information.

The amendment includes a 2016 Wildlife Survey Report prepared by Alpine Ecological dated 7/26/2016. The report describes fish and wildlife resource information within the proposed drilling area. The level of detail of the information is sufficient to design the protection and enhancement plan under R645-301-333.

Pre-field research was completed by Alpine wildlife biologists who utilized GIS data from the Utah Division of Wildlife Resources (UDWR) Utah Threatened, Endangered, and Sensitive Species Occurrences shapefiles and mapping services. The US Fish and Wildlife Services species by County list was reviewed and a search was conducted in their Information, Planning and Consultation System (IPaC). Research included species occurrences, historic records, species ecology, life histories, known distributions, and habitat requirements. Survey requirements were discussed and are in accordance with the Northern Goshawk technical guide. American three-toed woodpecker surveys were conducted using the same methodology as the Forest Service; conducted along northern goshawk transects in suitable habitat. Northern goshawk protocol surveys, nesting raptor surveys, American three-toed woodpecker, and general wildlife surveys have been conducted in or near the project area by private and federal biologists over the past several years.

There are no threatened, endangered, or candidate species known to occur within the project area. State or Federally listed sensitive species which were identified as species of concern included raptors, with emphasis on northern goshawk and golden eagle, and American three-toed woodpecker. The remaining listed species were dismissed from further consideration, as a result of the multiple agency review, because there is no suitable habitat or the project is outside of the species known distribution.

Consultation with Utah Division of Wildlife and United States Forest Service occurred on 09/13/2016.

The Division determined that approval of this amendment would not affect a listed species or designated critical habitat and therefore did not initiate informational consultation with U.S. Fish and Wildlife Service.

Ireinhart

Soils Resource Information

Analysis:

Analysis:

A soils report by Alpine Ecological is included with the application. The investigation of soil profile SpWM-16 was conducted on July 1, 2016. The Alpine Ecological soil report does not meet the requirements of R645-301-222 for soil survey, because the soil polygons illustrated on the web soil survey map are not labeled and the location of SPWM-16 is not shown in relation to the web survey. The google image of the SpWM-16 location does not allow the viewer to determine the location in relation to the topography and finally, no soil chemistry (field or laboratory) information was provided.

The soil profile in Appendix D states the A horizon is 58 cm (22 inches). The photograph in Appendix E confirms this topsoil depth.

The Alpine Ecological vegetation report (dated July 2016) states the acreage as less than 0.10 acres (which is less than 4,356 sq. ft or a square area 66 ft x 66 ft. The vegetation report states that the site is located on a north to northeast facing slope at an elevation of 8,099 ft near the bottom of East Fork (Andrew Dairy) Canyon. The slope has 56% cover composed of grasses (mountain brome, Bromus marginatus and Kentucky bluegrass, Poa pratensis); shrubs (mountain snowberry, Symphoricarpos oreophilus); forbs (common yarrow, Achillea millefolium and stinging nettle, Urtica dioica holosericea); and trees (subalpine fir, Abies lasiocarpa and quaking aspen, Populus tremuloides). Productivity of the site is 1,120 lbs/ac. Musk thistle, Cardus nutans, a noxious weed, covers 1.13% of the area.

Deficiencies Details:

R645-301-222, The Alpine Ecological soil report does not meet the requirements of R645-301-222 for soil survey, because the soil polygons illustrated on the web soil survey map are not labeled and the location of SPWM-16 is not shown in relation to the web survey. The google image of the SpWM-16 location does not allow the viewer to determine the location in relation to the topography and finally, no soil chemistry (field or laboratory) information was provided.

pburton

Maps Archeological Site Maps

Analysis:

The amendment meets the State of Utah R645 requirements for Archaeological site Map.

Appendix A-4 is a confidential file that contains descriptions and locations of cultural resources located during a class 3 survey.

Ireinhart

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 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.

R645-301-521.120 through-521.125 requires maps to clearly show existing surface and subsurface facilities. Skyline Mine MRP Plate 2.3.6-1 was updated to reflect the removal of water monitoring wells 91-35-1 and 91-26-1 and addition of 16-22-1.

cparker

Operation Plan

Fish and Wildlife Endangered and Threatened

Analysis:

The amendment meets the State of Utah R645 requirements for Fish and Wildlife Protection.

The US Fish and Wildlife Services' species by County list was reviewed and a search was conducted in their Information, Planning and Consultation System (IPaC). Research included species occurrences, historic records, species ecology, life histories, known distributions, and habitat requirements.

There are no threatened, endangered, or candidate species known to occur within the project area. State or Federally listed sensitive species which were identified as species of concern included raptors, with emphasis on northern goshawk and golden eagle, and American three-toed woodpecker. The remaining listed species were dismissed from further consideration, as a result of the multiple agency review, because there is no suitable habitat or the project is outside of the species known distribution.

The Division has determined approval of the amendment will not jeopardize any listed species.

Ireinhart

Topsoil and Subsoil

Analysis:

Analysis:

The application meets the requirements of topsoil salvage R645-301-230. The seven inch diameter Well 16-22-1 will be drilled in 2016 in the East fork of Andrew Dairy Canyon to monitor water levels only (Table 2.3.7-1). This well is needed to replace failed wells 91-26-1 and 91-35-1 North of the Granger Ridge in the Winter Quarters North Lease (Dwg 2.3.6-1 and p. 2-29c). The Water Monitor Well Location map indicates that the WM-16 well site will be accessed by helicopter and a temporary water line will be placed from the end of the road on the Granger Ridge to the site in the East Fork of Andrew Dairy Canyon.

Appendix B contains the Permittee's proposed work plan in response to USFS stipulations. The Permittee makes the following statements

- 1) Drilling fluids will be contained in portable containers and hauled off site for disposal. An MSDS (data sheet) of the drilling fluids and muds used will be provided to the USFS. Similarly, the MSDS should be made available to the Division.
- 2) Minor amounts of topsoil will be removed to level the site. Topsoil piles will be placed on the uphill side of construction and protected with a silt fence.
- 3) The estimated acreage disturbed by drilling is given in the reply to 43CFR 3482.1(a)(3)(iv)(D), which was not included in the application.

Deficiencies Details:

R645-301-231.100, The soil profile log indicates an A horizon of 58 cm or 22 inches. The plan should indicate salvage of 22 inches of topsoil, rather than a small amount.

pburton

Hydrologic Ground Water Monitoring

Analysis:

The amendment meets the State of Utah R645 requirements for Hydrologic Ground Water Monitoring.

Over the last few years, the Permittee has lost communication with groundwater monitoring wells located in the North Lease

area of the permit. These wells were monitoring the groundwater levels in the Star Point sandstone formation. The Permittee has proposed installing well 16-22-1 to continue monitoring the Star Point formation and will essentially replace the function of wells 91-26-1 and 91-35-1. This well will continue to provide usable data to understand the response of the ground water levels below the coal seams being mined.

Water monitoring Plate 2.3.6-1 has been updated to include the new well. Additionally Tables 2.3.7-1 and 2.3.7-3 have been updated to include this well in the regular operational water monitoring program.

The Permittee has committed previously in the MRP that all water monitoring wells will be abandoned using practices outlined by the Utah Division of Water Rights.

adaniels

Support Facilities and Utility Installations

Analysis:

The amendment does not meet the State of Utah R645 requirements for Support Facilities and Utility Installations.

The amendment does not meet the requirements of R645-301-521.180 and -526 that require the description, plans, and drawing for each support facility to be constructed, used, or maintained within the proposed permit area. Water levels of the Starpoint Sandstone in the North Lease area, 91-26-1 and 91-35-1 were recently mined through and communication with each of the wells was lost in late 2014 and late 2012 respectively. Both wells were abandoned in 2016 with plans submitted within this amendment to replace monitoring obligation with a new monitoring well 16-22-1. Table 2.3.7-1 details all the water quality schedule and table 2.3.7-3 details the various monitoring stations but there is no clear and concise table that details the complete list of water monitoring wells with relevant information. Review of this amendment disclosed that there is only enough reclamation bond held for a couple of the existing monitoring wells associated with the Skyline mine. A general level of information is required to determine an approximate sealing and reclamation cost such as: casing diameter, depth, top of screen, and method of plugging. The Permittee shall create a new table or include narrative referencing all relevant tables or drawings to show the complete list of monitoring wells that need sealing. Minimum information on each well should include: Casing Diameter, depth, top of screen, and method of plugging.

Deficiencies Details:

R645-301-521.180 and -526: The Permittee shall create a new table or include narrative referencing all relevant tables or drawings to show the complete list of monitoring wells that need sealing. Minimum information on each well should include: Casing Diameter, depth, top of screen, and method of plugging.

cparker

Reclamation Plan

Topsoil and Subsoil

Analysis:

Analysis:
Appendix B contains the Permittee's proposed work plan in response to USFS stipulations. The Permittee makes the following statements

- 1) Contaminated soil and gravel and trash will be removed.
- 2) Topsoil will be replaced, followed by raking, seeding and the redistribution of grubbed material over the site.
- 2) Noxious weeds will be controlled.

Deficiencies Details:

R645-301-242.200, The plan must include treatment of the disturbed area prior to topsoil replacement in order to prevent slippage.

R645-301-244.200, The plan must include suitable mulch over topsoiled areas. The plan must specify the seed mix.

pburton

Bonding Determination of Amount

Analysis:

The amendment does not meet the State of Utah R645 requirements for Determination of Bond Amount.

The amendment meets the requirements of R645-301-830.140 as the Permittee failed to submit detailed bond information in regards to the amendment. Review of this amendment disclosed that there is only enough reclamation bond held for a couple of the existing monitoring wells associated with the Skyline mine. No additional bonding information was submitted with the amendment but the location of the proposed well 16-22-1 which will require helicopters for sealing and reclamation, due to no road construction to access the site. The Permittee must create a new table or include narrative referencing all relevant tables or drawings to show the complete list of monitoring wells that need sealing. Minimum information on each well should include: Casing Diameter, depth, top of screen, and method of plugging. Any other relevant information that would have a direct effect on the reclamation cost of sealing any of the monitoring wells should also be disclosed. The Permittee will likely need to make a reasonable effort to obtain three contractor bids for helicopter sealing of as may wells as relevant. A new sheet detailing the relevant information for sealing all the monitoring wells associated with the skyline mine should be added to the Demolition reclamation cost bond.

Deficiencies Details:

R645-301-542.800, R645-301-830.140: Update Demolition reclamation cost bonding sheet to show all relevant information for sealing of the proposed monitoring well.

cparker