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State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE RESOURCES

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
Timothy H. Provan
Division Director

1596 West North Temple
Salt Lake City, Utah 84116-3195
801-538-4700
801-538-4709 (Fax)

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041/002 #2

RECEIVED

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DIVISION OF
OIL, GAS & MINING

Mr. Daron R. Haddock
Permit Supervisor
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Daron:

The Division of Wildlife Resources has reviewed Coastal States Energy Company's plans for a coal exploration drilling project in the Convulsion Canyon area of Sevier County. We have the following comments and recommendations regarding this project.

The area which will be impacted by the proposed project provides habitat for a variety of wildlife, including deer, elk, raptors, sage grouse and numerous small mammals and birds. This project has the potential to significantly impact these species through the actual destruction of habitat and also through disturbance. The issues with which we are primarily concerned are drilling during critical big game winter and parturition seasons, drilling and road work within 0.5 miles of active raptor nests, drilling and road work within two miles of a sage grouse lek and minimizing the amount of road improvement and construction. The following recommendations are presented for your consideration to reduce impacts associated with the above concerns.

Holes 94-24-1, 94-13-1, 94-17-2, 94-17-3, 94-17-1, 94-20-1, 94-16-1 and 94-21-1 fall within an area classified as critical big game summer range. This area is considered critical to big game due to its use as elk calving and deer fawning habitat. Any significant disturbance in these areas during the parturition season could result in reduced reproductive success. We recommend that road construction and drilling of these holes be postponed until after July 5 in order to minimize impacts to elk and deer during this crucial period of the year.

Holes 94-33-1, 94-34-1, 94-27-2, 94-28-1, 92-22-1 and 94-22-1 are located within critical big game winter range. Winter is a particularly stressful time for big game due to deep snows, lack of forage and cold temperatures. Disturbance during this time of year can result in increased stress levels leading to displacement and reduced health and vigor. We recommend that no activities associated with these holes be allowed from December 1 through



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April 15. This will minimize any impacts to wintering big game populations.

The DWR has participated in regular raptor surveys within the Convulsion Canyon Mine permit area. There are 18 known raptor nest sites in the vicinity of this project. These include 15 golden eagle nests, one red-tailed hawk nest, one prairie falcon eyrie and one northern goshawk nest. We fully support Coastal's intention to conduct a raptor survey in the spring of 1994. We recommend that the cliff areas of Quitchupah Creek and Link Canyon be surveyed, as well as aspen and conifer stands within the permit area due to their potential use by goshawks and red-tail hawks. This survey should be completed prior to any road construction or drilling activity. Should any active raptor nests be located within 0.5 miles of a proposed drill hole or road construction, we recommend that activity be postponed until after the nesting season. The nesting season generally extends from February 1 through July 20 for the species found in this area. This should minimize the possibility of nest abandonment which could lead to egg or nestling mortality. If no active nests are located, seasonal restrictions for raptors will not be necessary.

A sage grouse lek was discovered in 1991 in the SW1/4NE1/4 of section 28 T21S R5E. Undisturbed leks are critical to the reproductive success of this species. Sage grouse and their nest/brood habitat located within a two mile radius of the lek need protection from man's disturbances between March 15 and June 30. As all of the drill holes except 94-13-1 and 94-24-1 fall within a two mile radius of this lek, we recommend that the starting date for this project be set for some time after June 30.

We fully support the outlined reclamation of all drill pads and wheel tracks. There is no mention of reclaiming newly constructed roads. These new roads represent additional access into critical wildlife habitat. Improved access will increase the amount of human disturbance due to hunters and recreationists. This increased access could result in significant impacts to wildlife during sensitive portions of the year such as the winter and parturition seasons. We recommend that all new roads be scarified, reclaimed and barricaded to prevent vehicular access.

The seed mix that will be used during reclamation of the drill pads and roads was not included in the preliminary plans for this project. We recommend that a diversity of grasses, forbs and shrubs be utilized within the mix. It is particularly important that a number of browse species be included in the mix. We strongly recommend that sagebrush be included in the mix due to the

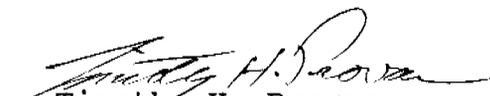
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use of portions of this area by sage grouse and wintering big game. Enclosed is a seed prescription that we recommend for use during the reclamation phase of this project. We urge that the reclaimed areas be monitored for vegetative establishment and impacts from livestock, recreationists, etc. If seedings are unsuccessful or if the reclaimed areas are being degraded, we recommend the use of follow-up treatments.

Taking into consideration the recommended seasonal restrictions for the various species that occupy this area, an appropriate window for activities associated with this project would be between July 20 and December 1. Adjusting the starting date so that reclamation could occur during the fall would allow for greater revegetation success.

We appreciate the opportunity to review this action and provide recommendations. If you have any questions regarding our comments or if we can be of additional assistance, please contact Ken Phippen, Regional Habitat Manager (637-3310).

Sincerely,


Timothy H. Provan
Director

Enclosure

Recommended guidelines for seedbed preparation and planting techniques in the MONTANE ecological association.

- A. Seedbed Preparation: (1) Disturbed areas should be double ripped. (2) Fertilizer (0-16-8) at a rate of 100 lb/acre should be disked into the topsoil mass prior to seeding. (3) Where possible, the grass segment of the seed mix should be drilled. The remainder of the seed mix should be hydrosprayed in a slurry containing tackifier (60 lb/acre) and wood fiber mulch (400 lb/acre). Seed mix applied by hydrospray technique should be increased by 1.5 times. This first application containing seed should be immediately followed by another hydrosprayed slurry to incorporate more tackifier (60 lb/acre), more wood fiber mulch (2,000 lb/acre), and nitrogen fertilizer (33-0-0 distributed at a rate of 100 lb/acre). (3a) If a hydrospray technique is not utilized, the seed mix should be drilled. (3b) If broadcast, the seed mix should be doubled, spread, and covered through use of a harrow or chain. (4) After seed application (3a or 3b), nitrogen fertilizer (33-0-0 distributed at a rate of 100 lb/acre) should be broadcast and an acceptable mulch should be applied at a rate of 2,000 lb/acre to protect raw soil from erosion and to conserve moisture. Mulch should be held in place by tackifying, crimping, or netting. (5) Seeding should occur following a permanent killing frost which is usually after October 1.
- B. Nursery Stock or Transplants: Planting of nursery or transplant stock should occur in spring when soil moisture is greatest. Nursery stock should be planted after dormancy breaks; greatest success for transplant stock is achieved during dormancy. Shoots spaced 2, 3, 4, 6, 10, 12, 13, and 15 feet apart will achieve 10888, 4840, 2722, 1210, 436, 302, 258, and 193 plants per acre, respectively. A 60% canopy cover is the goal. All plantings need to have soil compacted around the roots.
- C. Cuttings of Woody Riparian Species (willow, cottonwood, etc.): Cut stems at a length of 12 to 18 inches from 1-3 year old local, wild stock (0.5 to 1.0 inch diameter) with a 30-45° angle on basal end. Lateral branches and leaves must be removed. Cuttings can be immediately transplanted or if cut in winter cold stored in snow filled bags until the ground thaws. The basal end can be dipped in indolebutyric acid prior to planting to aid in root formation. When planting, all but one inch of the stem should be extended into the moist soil to a depth of the water table. This will protect recreators from inadvertent injury. Dormant logs (1.5 to 6 inches diameter and up to 20 feet long) can also be used for many species as long as the water table is reached.
- D. Bare-root or Containerized Plants: Prior to planting, bare-root or containerized plants should be stored at 34-39° F for one week to "harden". Planting should be in an adequately sized hole to insure that roots are well distributed and extending full length into the hole. For bare-root and containerized stock, care needs to be taken that the root hairs are not allowed to dry. The outer edge of the root mass for containerized stock should be scarified to alleviate root binding.
- E. Plugs: Plugs of vegetation can be excavated with a shovel or front-end loader. They should be handled such that moist soil remains packed firmly around the roots. A similar sized hole needs to be excavated and the plug planted.
- F. Rhizomic Plants: Woody plants with interconnected root stock should be located and excavated intact. The tops of plants should be removed so that only one remains. Connecting roots should be aligned vertically and buried. In the instance of herbaceous plants, rhizomes can be harvested with a front-end loader, and distributed with a manure spreader. A one inch layer of top soil should be compacted over plantings.

Table 1. Revegetation prescription for disturbed areas within the SAGEBRUSH/GRASS ecosystem in the MONTANE ecological association.¹

Plant Material	Pounds of Pure Live Seed/Acre
GRASS SPECIES²:	
Intermediate wheatgrass (<i>Agropyron intermedium</i>)	1.0
Slender wheatgrass (<i>Agropyron trachycaulum</i>)	2.0
Hard sheep fescue (<i>Festuca ovina</i>)	0.5
Regar brome (<i>Bromus biebersteinii</i>)	1.0
Kentucky bluegrass (<i>Poa pratensis</i>)	0.2
Paiute orchardgrass (<i>Dactylis glomerata</i>)	0.5
FORB SPECIES³:	
Alfalfa (<i>Medicago sativa</i>)	1.0 (Ladak, Nomad, Spreader)
Northern sweetvetch (<i>Hedysarum boreale</i>)	1.0
Common sainfoin (<i>Onobrychis viciifolia</i>)	1.0
Pacific aster (<i>Aster chilensis</i>)	0.2
Eaton penstemon (<i>Penstemon eatonii</i>)	0.5
Rockymountain penstemon (<i>Penstemon strictus</i>)	0.5
SHRUB AND TREE SPECIES⁴:	
Mountain big sagebrush (<i>Artemisia tridentata vaseyana</i>) ⁶	0.25 (20% purity)
Basin big sagebrush (<i>Artemisia tridentata tridentata</i>)	0.25
Mountain snowberry (<i>Symphoricarpus oreophilus</i>)	1.0
Wax currant (<i>Ribes cereum</i>)	1.0
TOTAL	11.9
NURSERY OR TRANSPLANT STOCK⁵:	
Shrubby cinquefoil (<i>Potentilla fruticosa</i>)	STEMS/ACRE (SPACING)
Wax currant (<i>Ribes cereum</i>)	Plant 544 of each species per acre
Mountain snowberry (<i>Symphoricarpus oreophilus</i>)	randomly spaced 4 feet apart to
	reach a goal of 2,722 stems/acre.

¹Note attachment: Recommended guidelines for seedbed preparation and planting techniques in the MONTANE ecological association.

²Alternate grass species: Bluebunch wheatgrass (*Agropyron spicatum*), Thickspike wheatgrass (*Agropyron dasystachyum*), Pubescent wheatgrass (*Agropyron intermedium trichophorum*), Smooth brome (*Bromus inermis*-southern variety)

³Alternate forb species: Oneflower sunflower (*Helianthella uniflora*), Palmer penstemon (*Penstemon palmeri*), Cicer milkvetch (*Astragalus cicer*), Silky lupine (*Lupinus sericeus*), Porter licoriceroot (*Ligusticum porteri*)

⁴Alternate shrub and tree species: Antelope bitterbrush (*Purshia tridentata*), Saskatoon serviceberry (*Amelanchier alnifolia*), Gooseberry currant (*Ribes montigenum*)

⁵Alternate nursery or transplant stock: Antelope bitterbrush (*Purshia tridentata*), Utah serviceberry (*Amelanchier utahensis*), Squaw-apple (*Peraphyllum ramosissimum*), Greenleaf manzanita (*Arctostaphylos patula*), Basin big sagebrush (*Artemisia tridentata tridentata*)

⁶This species should not be covered. It should be hydrosprayed in the seed mix slurry or broadcast over the surface after drilling or covering of other seed and before application of mulch.