#2028

01942059

GUNNISON ENERGY CORPORATION

AN OXBOW COMPANY

Sent via USPS Priority Mail

February 8, 2008

Jon Holst
CDOW
415 Turner Drive
Durango, CO 81303

Kirk Madariaga
CDOW
PO Box 426
Paonia, CO 81428

Re: Review of the previous EA's and wildlife reports done in the vicinity of newly proposed well locations for the Hotchkiss Federal 1289 #'s:
(17-11, 17-11A), 19-12, 19-14, 19-33, 19-44, & (20-12 & 20-12D)
Including Access, Pipeline & Waterline information for Gunnison County Standards.

Dear Gentlemen:

Regarding your conversation with Lee Fyock, enclosed are the following for your review:

- A Description of Operations of the proposed project so you have a better understanding of what we are conceiving in this area.
- A Map of the potential wells over a 2-3 year program.

NEPA done within a mile within 5 years:

- BLM 2005 EA for HKF 17-13 & 19-23
- BLM 2006 EA for HKF 18-22, 18-31 & 18-43
- June 11, 2005 Jon Monarch Wildlife Habitat Survey for the 19-23 & 17-13
- May 11, 2006 Jon Monarch Wildlife Habitat Survey for the 18-22, 18-22D, 18-31 & 18-43
- E-mail from Jon Kehmeier of SWCA regarding site specific work in 2007 for newly proposed wells. Please feel free to call him, or Jon Monarch directly with questions or concerns.

Thanks so much and please do not hesitate to call me or Lee with any questions at 303-296-4222.

Sincerely,

Judi Kohn for Lee Fyock
Environment and Permitting

Encl.

1801 Broadway, Suite 1200 Denver, Colorado 80202
Phone: 303-296-4222 Fax: 303-296-4555

HABITAT AND WILDLIFE EVALUATION

FOR

GEC HOTCHKISS FEDERAL LEASE #1289 AREA PLAN

SECTIONS 17-20, T. 12S., R89W.

INTRODUCTION

The purpose of this report is to evaluate the proposed project as to potential effects on habitat and wildlife if the project occurs. Emphasis has been placed on evaluating the project on the basis of whether there will be significant impacts to habitat and wildlife and whether any impacts would be short, mid, or long term.

These wells are located in an area where habitat and wildlife surveys were conducted by Monarch & Associates in late spring and fall (2005), May 2006 and February (2008). Although the sites are located on private land they are adjacent for USFS and BLM lands. With this in mind evaluating the wildlife and habitat in the area included surveying those adjacent USFS and BLM lands for habitat condition and wildlife. Emphasis was based upon assessing the area as to its importance for listed species and raptors although opportunistic observations were recorded for other species. Because USFS and BLM lands are involved information presented in this document addresses those species listed by these agencies and species listed by the USFWS as well.

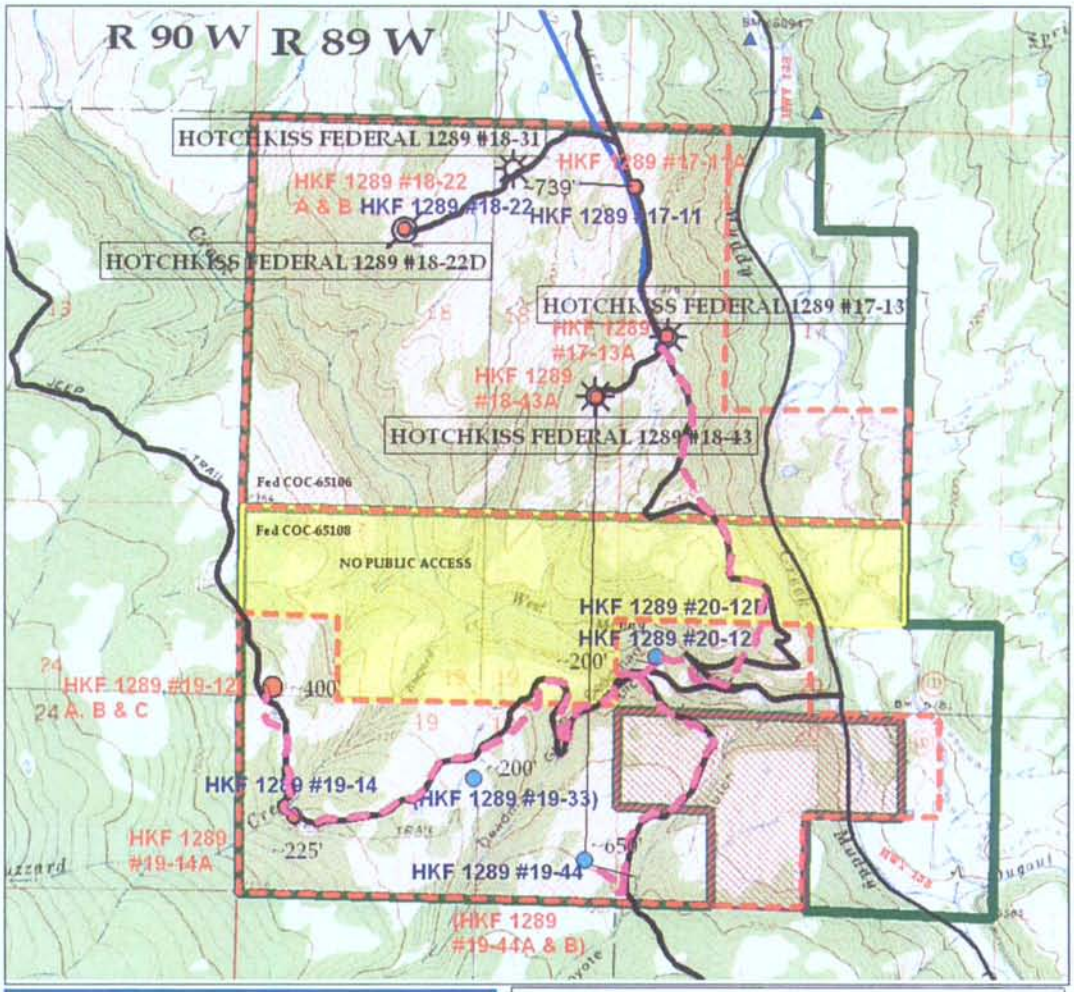
Although CDOW Standard Operating Practices (SOPs) were not in place during the surveys in 2005 and 2006 methods used adequately address those requirements. All species listed in the February 15, 2008 draft SOPs guidelines that may be found in the area have been addressed in this document. This includes listed species, big game, raptors and amphibians and reptiles.

In the spring and fall of 2005, spring of 2006 and February 2008, wildlife surveys were conducted by Monarch & Associates in the project area. In addition to findings from those surveys, data from 8 years of studies for other projects that have been conducted by Monarch & Associates within similar habitat types in the North Fork Valley, including several areas in the Muddy Creek drainage, were reviewed. These studies were done in habitat types and elevations similar to those found in the project area. Those surveys included both undisturbed areas and areas where drilling operations have occurred. This information provides a basis for determining, in addition to species known to occur, what species might be found in the project area and the potential effects on habitat and wildlife from activities associated with this project.

PROJECT AREA

The project area is located in sections 17, 18, 19, 20 T. 12S., R. 89W. The proposed project includes clearing vegetation, stockpiling topsoil, constructing well pads, road construction

(pipelines will be buried in the roads) and well development. The project area and well site locations are shown on Figure 1. A detailed discussion of activities associated with development activities has been presented in an EA submitted to the BLM. Of the 16 wells currently being applied for, 5 have been previously approved and are on existing pads. The remaining 11 are on 5 new well pads and 1 well pad which was drilled in the 1980's. A discussion of vegetation and site conditions on the latter 11 well sites (6 well pads) is presented in this report. It is estimated that approximately 20 acres will be disturbed during road and pad construction.



GUNNISON ENERGY CORPORATION
AN OXBOW COMPANY

GEC Hotchkiss Area Plan
Sections 17-20, T12S, R89W

Map Author: JCK	APD 2006 1289 Gunn CO HK Master Plan	Date: 21 February, 2008

BLM Mineral Lease
Hotchkiss Surface
BLM Surface
Hotchkiss Minerals
Vertical Survey Well Spot
Directional Survey Well Spot
Proposed HKGL Extension
Existing Hotchkiss Gath Line
Existing Roads
N

1" = 2000'

VEGETATION/HABITAT

The area which this plan encompasses lies on the east and west sides of West Muddy Creek which is vegetated by Douglas fir *(Pseudotsuga menzesii)*, Engelmann spruce *(Picea engelmannii)*, Colorado blue spruce *(Picea pungens)*, and narrow-leaf cottonwood (*Populus angustifolia*). These species extend up the main ephemeral drainages such as Deadman Gulch and Buzzard Creek. The west side of the project area is vegetated by irrigated and dry land meadows, the Gambel oak *(Quercus gambelii)* vegetative community and the aspen *(Populus tremuloides)* vegetative community. It receives more moisture, mostly in the form of snowfall, than the east side; therefore, vegetation is more vigorous here. The east side is vegetated primarily with Gambel oak and sagebrush *(Artemesia tridentata)* with scattered Rocky Mountain juniper *(Juniperus scopulorum)* throughout the area.

Following are a series of pictures showing (1) a general overview of the area, (2) site specific pictures around the proposed well sites showing conditions during the growing season and (3) pictures of the well sites taken in the winter showing conditions during the winter period.

Typical Vegetation on west side of West Muddy Creek where proposed wells are located.

Typical Vegetation on east side of West Muddy Creek

GUNNISON ENERGY CORPORATION

HOTCHKISS FEDERAL 1289 #19-33

LOCATED IN GUNNISON COUNTY, COLORADO
SECTION 19, T12S, R89W, 6th P.M.

PHOTO: VIEW FROM CORNER #5 TO LOCATION STAKE **CAMERA ANGLE: NORTHEASTERLY**

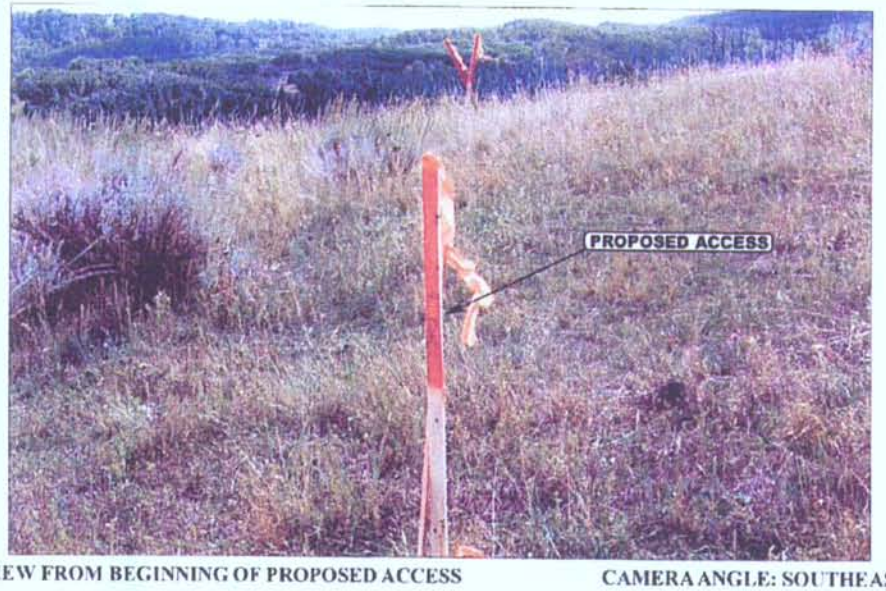


PHOTO: VIEW FROM BEGINNING OF PROPOSED ACCESS **CAMERA ANGLE: SOUTHEASTERLY**

Uintah Engineering & Land Surveying
85 South 200 East Vernal, Utah 84078
435-789-1017 uels@uelsinc.com

LOCATION PHOTOS	09 MONTH	20 DAY	07 YEAR	PHOTO
TAKEN BY: T.A.	DRAWN BY: C.C.	REVISED: 00-00-00		

This site is located in an open irrigated meadow. There are nearby older aspen stands with little regeneration. There is some gamble oak and serviceberry, chokecherry and snowberry with a grass-forb understory in nearby drainages.

GUNNISON ENERGY CORPORATION

HOTCHKISS FEDERAL 1289 #20-12 & #20-12D

LOCATED IN GUNNISON COUNTY, COLORADO
SECTION 20, T12S, R89W, 6th P.M.

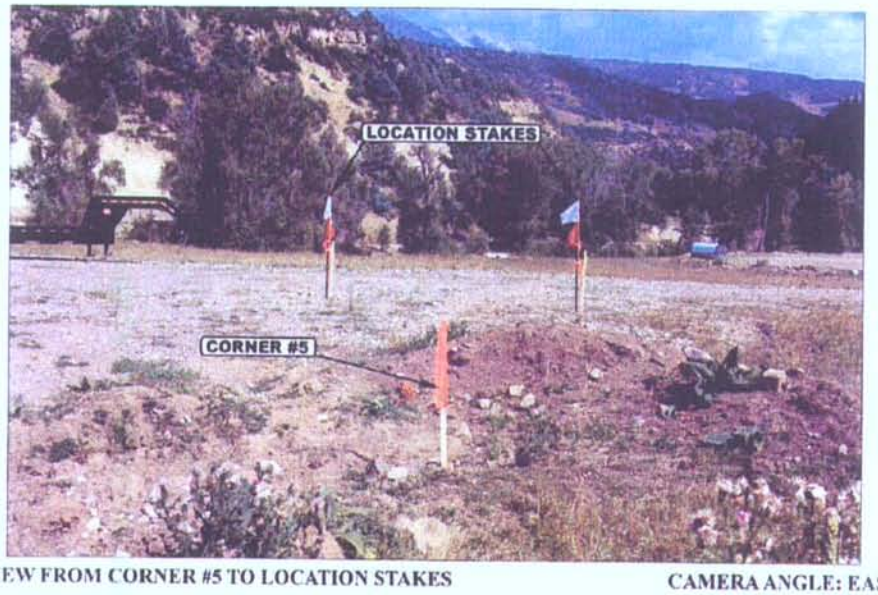


PHOTO: VIEW FROM CORNER #5 TO LOCATION STAKES **CAMERA ANGLE: EASTERLY**

PHOTO: VIEW OF EXISTING ROAD **CAMERA ANGLE: NORTHWESTERLY**

- Since 1964 -

Uintah Engineering & Land Surveying
85 South 200 East Vernal, Utah 84078
435-789-1017 uels@uelsinc.com

LOCATION PHOTOS	09 MONTH	18 DAY	07 YEAR	PHOTO
TAKEN BY: J.R.	DRAWN BY: C.C.	REVISED: 00-00-00		

Hotchkiss Federal 1289 # 20-12.

This well was drilled in the 1980's and was reclaimed and revegetated to grasses. It is used for grazing and sometimes as a holding area for cattle and sheep

Hotchkiss Well 19-33. Looking west from site. February 27, 2008.

This site is located well away from any aspen, riparian or mountain shrub habitat. The meadow where this site is located was covered with three feet of hard snow during the February survey. There was no evidence of wildlife activity in the drill site area.

Hotchkiss Federal 1289 # 19-14.

Hotchkiss #19-14 is located in a meadow surrounded by transition stands of aspen on three sides of the location. The grass forb component in both the meadow and surrounding aspen stands is well established. There is a limited limited shrub component in the aspen understory.

Hotchkiss Federal 1289 # 19-14. Picture taken toward northwest.

Hotchkiss Well - 19-14. Looking west. February 27, 2008

Note the site is located away from the aspen stand. Aspen stands in the area will not be disturbed during pad and access road construction.

Hotchkiss Federal 1289 # 19-12.

This location is adjacent to one of the Hotchkiss hunting cabins. It is on a relatively flat irrigated bench (<10% average slope) with Gambel oak, meadow grasses and aspen adjacent to the site. Aspect is generally east. A stockpond lies about 300 feet to the south.

Hotchkiss Federal 1289 # 19-12. Picture toward southeast.

Looking Southwest from 19-44 well site. February 27, 2008

This site is located away from any mountain shrub habitat. All aspen stands are well removed from the site.

Hotchkiss Federal 1289 # 19-44.

Hotchkiss #19-44 is located on the bench northwest of Coyote Gulch in a meadow surrounded by scattered clumps of Gambel oak. Transition stands of aspen exist to the east and west of the location.

Hotchkiss Federal 1289 # 19-44. The actual location is 200-300 feet to the right of this photo, but conditions are very similar. Photo toward northwest.

Hotchkiss Well 19-12. Picture toward southeast. Picture taken February 27, 2008

Like other sites this well site is located away from aspen and mountain shrub and construction of the pad and access road will not result in any loss of these vegetation types.

Hotchkiss Federal 1289 # 17-11.

This site is located on the east side of West Muddy Creek in a sagebrush flat with Gambel oak to the east and scattered juniper throughout the area. It is east of and directly adjacent to the access road and pipeline ROW.

Looking north towards Hotchkiss Federal 1289 # 17-11 which is located east of and adjacent to the access road. Well site is in NE quarter of the picture.

Hotchkiss Federal 1289 # 17-11 Looking south.

Looking South from 17-11 site. February 27, 2008

WILDLIFE

GENERAL OBSERVATIONS CONCERNING THREATENED & ENDANGERED, SENSITIVE AND MANAGEMENT INDICATOR SPECIES

In reviewing the list of species and their habitat requirements provided by the USFS, BLM and CDOW the conclusion can be drawn that habitat for most of these species is lacking or of poor quality in the project area.

Two ground dwelling mammals are listed by the USFWS. These are the Canada lynx and black-footed ferret. There is no suitable denning or wintering habitat for lynx in the project area. The USFS has not mapped any of the area as suitable lynx habitat. No suitable habitat exists for the black-footed ferret in this part of the state. The only listed bird species is the yellow-billed cuckoo (candidate). Suitable habitat for this bird is lacking in the project area.

Given the habitat requirements of many bird species listed as either T&E or Sensitive the possibility of affecting any habitat important to these species is minimal. There is a possibility that the area might be used by some of the species. However, no habitat considered critical to most of the species will be affected. No riparian riparian or wetland habitat will be affected by the proposed operations.

Habitat for USFS listed Management Indicator Species (MIS) species is either not limiting to those species occurring in the area and is lacking for other species.

THREATENED AND ENDANGERED SPECIES

The U.S. Fish & Wildlife Service (FWS) lists one terrestrial vertebrate species, one invertebrate and two plant species which occur, potentially occur, or habitat for which occurs on the Gunnison National Forest as Threatened, Endangered, or Proposed under the Endangered Species Act of 1973; Canada lynx (threatened), Uncompahgre fritillary butterfly (endangered), Clay loving wild buckwheat (Endangered) and Uinta Basin Hookless Cactus (threatened). In addition, four species of fish, which occur in the Colorado River drainage, are listed; Colorado pikeminnow (endangered), Humpback chub (endangered), Razorback sucker (endangered), Bonytail (endangered), The yellow-billed cuckoo is listed as candidate species.

Of the species listed by the CDOW, most are not known to occur in the area because suitable habitat is lacking. Those species that are known to or could possibly occur in the area include boreal toad (endangered), northern leopard frog (species of concern), bald eagle (threatened) and peregrine falcon (species of concern).

DISCUSSION OF POTENTIAL EFFECTS

Canada lynx: The project is not located within any Lynx Analysis Unit (LAU). The project is located in an area that is not considered suitable lynx denning, wintering or other habitat by the USFS.

In the past a radioed lynx was known to be in eastern portions of the Muddy Creek drainage along Huntsman Ridge. The radio on this animal has ceased to function and it is not known whether the animal is dead or alive. Numerous lynx habitat and prey base surveys have been conducted (2006, 2007, 2008) by Monarch & Associates in the Huntsman Ridge, Spruce Mountain and Big Burn areas in the Muddy Creek basin and into Mesa County. No lynx tracks have been observed during those surveys.

No Canada lynx occurrence has been formally documented within 10 miles of the proposed project area. There is always the possibility that lynx could move through the project area, but the lack of suitable habitat and prey probably precludes this from happening. Conditions definitely do not exist in the area that would attract and hold any lynx.

Endangered Fish: Four federally listed endangered species **(Colorado pikeminnow, humpback chub, bonytail chub, and razorback sucker)** occur in offsite areas including the Gunnison and Colorado river (USFWS) 1994). Offsite areas inhabited by Colorado pikeminnow include the lower 30 to 40 miles of the Gunnison River and the Colorado River near Palisade, Colorado downstream to Lake Powell. The closest offsite areas inhabited by razorback sucker include the Gunnison River (below Hartland Dam to the Colorado River confluence) and the Colorado River between Palisade, Colorado and Westwater Canyon. The occurrence of humpback chub is limited to one recent record in the lower Gunnison River and the Black Rocks and Westwater Canyon reaches of the Colorado River. The humpback chub has been collected in the Colorado River in the Black Rocks area, Cataract Canyon and Lake Powell. Activities associated with proposed operations in this area are isolated from West Muddy Creek which drains into the North Fork. There would be no impacts on streams from activities associated with road building and drilling in this area.

Uncompahgre fritillary butterfly: The Uncompahgre fritillary butterfly is restricted to the higher San Juan Mountains in southern Colorado (Eager – per. comm.). There are no records of this butterfly being found in or near the North Fork Valley.

Clay-loving wild buckwheat: The clay-loving wild buckwheat grows in alkaline clay soils, locally referred to as adobes, on sparsely vegetated badlands of Mancos shale (USFS 1984). The only known population of this plant is restricted to an adobe hills area located between Montrose and Delta (Ellen Mayo, per. comm.). There are no records of this plant being found in the North Fork Valley.

Uinta Basin Hookless Cactus: To date no Unita Basin Hookless Cactus have been located during surveys in this portion of the Gunnison Forest (Bradford USFS and Ferguson BLM, per. comm.). The nearest known plants were observed North-northwest of Paonia along the foot of Grand Mesa (Ferguson, per comm.). The species is found at an elevational range of 4,500 to

SENSITIVE SPECIES

The USDA Forest Service, Region 2 lists a total of 58 terrestrial vertebrates, fish, invertebrates and plant species, which occur, potentially occur, or habitat for which occurs in the GMUG as sensitive. A review of information on these species shows that for 17 species either they are known to occur or suitable habitat exists in this portion of the Gunnison National Forest. The purpose of this section is to analyze the effects of the proposed project, to determine if the proposed activities are likely to cause a loss of viability or a trend toward Federal listing under the Endangered Species Act for any of these species.

DISCUSSION OF POTENTIAL EFFECTS

Sensitive Species -Terrestrial Vertebrates

Townsend's big-eared bat: Townsend's big-eared bats have not been formally documented in the project area. Townsend's big-eared bats are consistently found in areas with canyons or cliffs. Townsend's big-eared bats roost in exposed, open areas in cool, damp caves or mine tunnels, old buildings, and at rocky outcroppings. Townsend's big-eared bat foraging habitat is comprised of juniper/pine forests, shrub steppe grasslands, deciduous forest, and mixed coniferous forests from sea level to 10,000 feet elevation. It forages near tree and shrub foliage for moths and other flying insects. Suitable reproductive, roosting, and migration/dispersal habitat does not occur within the proposed project area. The proposed project will not affect Townsend's big-eared bat suitable reproductive, foraging or migration/dispersal habitat.

Fringed myotis: Fringed myotis bats have not been formally documented in the project area. The fringed myotis is considered to be uncommon in Colorado. They have been found in ponderosa pine woodlands, greasewood, oakbrush, and saltbush shrublands. Caves, mines and buildings are used as both day and night roosts. Reproductive and hibernation sites include caves and buildings, both of which are lacking in the project area. The proposed project will not impact fringed myotis suitable reproductive, roosting, and migration/dispersal habitat.

Spotted bat: No spotted bat occurrence has been formally documented within the proposed project area. Potential reproductive habitats for spotted bat are crevices high up on steep cliff faces. Cracks and crevices in limestone or sandstone cliffs are critical roosting sites. Potential foraging habitat for spotted bat includes open ponderosa pine and Pinyon-juniper forests, open desert scrub shrubland, open pasture and hay fields. Spotted bat suitable reproductive, roosting, and migration/dispersal habitat, in the presence of cliffs and rocky outcroppings occurs within the project location.

Wolverine: The status of the wolverine in Colorado is unknown at this time (CDOW 2004). The CDOW has conducted surveys in the state, but have not found any definitive evidence of any wolverines. Wolverines are wide ranging and occur in low densities in large roadless or isolated areas. Radio-tracking studies of wolverine in northwest Montana indicate that wolverines prefer rugged, relatively inaccessible mountainous areas at the high elevations in the summer and move to lower (but still snow bound) elevations in the winter (Hornocker and Hash 1981). Seventy

percent of all relocated animals were found in large areas of medium or scattered mature timber. Ecotonal areas, small timber pockets, and rocky, timbered benches accounted for the remainder of the relocation sites. Subalpine fir was the predominant timber type selected by wolverines. One conclusion of this study was that wilderness or remote country where human activity is limited appears to be essential for the maintenance of viable wolverine populations. Suitable wolverine habitat is lacking in or near the project area.

American marten: The American marten inhabits late successional coniferous or mixed forests throughout northern North America. Martens are most abundant in mature to old-growth true fir and spruce-fir forests in the western United States. They prefer mature, mesic coniferous or mixed forests with at least a 30-50- percent crown density. (Ruggerio et al. 1994). They avoid large, open areas and clearings, but may use small riparian areas and meadows for foraging. They feed on a wide variety of foods including squirrels, voles, mice, birds, reptiles, amphibians, insect and fruits and berries (Clark, et. al. 1987) but voles are often cited as the marten's preferred food source. The marten's preference for moist sites may be related to the fact that lush stands of herbaceous vegetation growing at mesic sites often support large populations of voles.

Habitat requirements specific to the American marten include resting sites, dens, subnivean access areas, and logs and trees in various stages of decay. The best marten habitat in this portion of the Gunnison Forest is contiguous stands of spruce-fir found at higher elevations. Suitable marten habitat is lacking for a considerable distance in any direction from the project area. There were no marten tracks observed during the February 2008 survey. This was not unexpected as a suitable prey base for this species is typically found to be lacking in aspen habitat.

Peregrine falcon: One peregrine falcon occurrence was formally documented in the proposed project area. This bird was observed foraging along West Muddy Creek during a site visit in 2006. These birds have been observed foraging at other project areas or flying through those areas in the spring.

Potential reproductive habitat for peregrine falcon includes high cliff ledges with potholes or small caves. Nest sites also include old stick nests of ravens and hawks, and holes and stubs of large trees. Potential foraging habitat includes high mountains and open forests, preferably where there are rocky cliffs overlooking rivers, lakes, or other open water. .

There is no suitable nesting habitat in the project area. There is a chance that one or more of these birds could be observed moving through the area foraging or during migration, but that would be a chance occurrence The proposed project will not impact peregrine falcon suitable reproductive, roosting, and migration/dispersal habitat.

Northern goshawk: No northern goshawk occurrence has not been formally documented in the proposed project area. Preferred habitat includes mature to over-mature coniferous forest, mixed conifer aspen or aspen with a 75-80% intermediate-closed canopy, moderate (15-35%) slope, and northern aspect. Goshawk nests are normally found within stands of large trees with dense canopy and open understory.

There is no suitable goshawk nesting habitat in the immediate project area. The nearest known nest sites are found several miles to the north and northwest of the project area. Goshawk foraging could occur in the area, but this is doubtful as habitat where these birds typically forage is lacking. If any of these birds nest did exist within one-fourth mile of the project area they would have been observed during the February 2008 project area survey.

Northern harrier: The northern harrier is found in both wet and dry open terrain, but is most often found around marshes, especially in the nesting season. Harrier nests are found on the ground in dense fields and marshes, either in shallow depressions or as a platform of sticks, grass and weeds. This species is known to occur in the Gunnison National Forest. Harriers have been observed during surveys conducted for other projects, but none were observed in the project area.

Two of these birds were observed several miles north of the project area while traveling to and from other project areas.

Yellow-billed cuckoo: This species has been addressed in the T&E section of this report.

Olive-sided flycatcher: The olive-sided flycatcher breeds primarily in open mature spruce-fir and Douglas-fir forests, especially on steep slopes, near cliffs and near the edges of open areas including bogs, ponds, and clearings. In Colorado this bird most commonly occurs at elevations of 9,000 to 10,000 feet. Nest sites are located in a tree and are usually located in conifers. They have also been observed nesting in Aspen. They have been observed foraging in mountain shrub habitat that is closely associated with mature conifer or aspen stands during other studies in the North Fork Valley. This bird has been commonly observed during breeding bird surveys conducted since 2000 at other projects in the North Fork Valley and in other areas of the state.

Loggerhead shrike: The loggerhead shrike is an uncommon resident during the summer in desert shrublands of the lower Gunnison and Uncompahgre River valleys. This bird is distributed sparsely throughout suitable habitat during the nesting season. This bird prefers open country with scattered trees and shrubs. In desert shrublands, scattered pinions and junipers usually provide the tree component, and greasewood provides the shrub component. Only one of these birds has been observed while conducting surveys south of Somerset. This bird was observed in mountain shrub/gambel oak habitat.

Suitable habitat for the loggerhead shrike is lacking in the project area. The lack of suitable habitat minimizes the chances of loggerhead shrike occurrence in the area.

Purple martin: The nearest known nesting purple martin populations are in the upper Muddy Creek, McClure Pass and Dry Fork of Minnesota Creek drainages. Both these locations are several miles from the project area. These birds breed at the edges of old-growth stands of aspen adjacent to open meadows, usually near open water. Both the afore mentioned locations are in areas where these habitat conditions exist. During the June 2005 and 2006 site visits no purple martin were observed in the project area. These birds have been observed flying in a number of areas in the North Fork Valley and there is undoubtedly nesting going on in other locations that have not been surveyed.

There are large expanses of suitable purple martin nesting habitat in the area, but no trees that provide suitable nesting locations will be lost during development. If these birds are nesting in

the area, foraging habitat is not limited and the few acres to be disturbed would probably not affect these birds.

Three-toed woodpecker: Potential habitat for three-toed woodpecker is mixed-coniferous forest containing spruce-fir, lodgepole pine, or aspen, with abundant dead and decayed trees, between 4000 and 9000 feet elevation. Three-toed woodpecker is a snag-dependent species, which typically occurs at low endemic levels until abundant dead and decayed trees, in diseased and/or newly burned areas, become available. Nest cavities are excavated in trees with heartrot, while snags with the most bark and limbs remaining on are used for foraging on wood-boring larvae of moths and beetles, caterpillars, and ants. Snags are required for feeding, perching, nesting, and roosting. None of these birds were observed during the surveys and have only been observed on one occasion (2007) while conducting surveys for another project in the North Fork Valley.

No trees that would provide suitable nesting or foraging habitat for these birds would be lost during pad and road construction. There are other areas on the forest that provide large expanses of more suitable habitat for this species.

Brewer's Sparrow: The Brewer's sparrow is a common summer resident in the region in basins and on plateaus, primarily between elevations of 5,000 and 7,500 feet. It commonly nests in sagebrush, and will nest in other brushy habitats, such as greasewood and rabbitbrush in desert valleys, and in snowberry at higher elevations.

None of these birds were observed during surveys conducted in this area in June 2005 and 2006. They were observed in large expanses of sagebrush several miles north of the project area during surveys conducted for other projects in 2006 and 2007. There is some suitable nesting habitat in sagebrush found around the 17-11 site. Less than 2 acres of sagebrush would be affected in this area by pad construction which minimizes the chances of any nesting Brewer's sparrows being affected.

Boreal toad: The boreal toad was discussed in the T&E section of this document.

Northern leopard frog: The northern leopard frog was discussed in the T&E section of this document.

Sensitive Species – Fish

Colorado River cutthroat trout: Colorado River cutthroat trout is a native of the Colorado River Basin, occurring mainly in upper headwater streams and rivers in northwest Colorado. Preferred stream habitat includes cobble/boulder substrates, riffles, deep pools, and cover provided by logs and undercut banks. Pool density, pool depth, and large woody debris are important components of cutthroat trout habitat.

These fish have been found in the upper reaches of West Muddy Creek from Mule Park and further up stream. These locations were well above the project area.

Bluehead sucker: Bluehead suckers were found during surveys conducted by the USFS in lower West Muddy Creek in 2003 (James, per. com.). These fish were found at all sampling locations

between where the stream goes under Highway 133 to Mule Park. Best Management Practices will be used to insure that West Muddy Creek is protected in the project area.

Sensitive Species – Insects

Nokomis fritillary butterfly: The Nokomis fritillary butterfly inhabits moist meadows and seeps. The host food for the caterpillar is *Viola nephrophylla*. The nearest known location where this species had been found is in Unaweep Canyon.

There is no suitable habitat for this species in or near the project area.

Sensitive Species- Plants

Rocky Mountain or Adobe Thistle: This species is found on disturbed sites in Adobe clays derived from Mancos Shale (Bradford per. comm.) at elevations between 4,500 and 7,000 feet. This plant has been found during surveys conducted at other sites in the North Fork Valley. In those instances the plants were always located in Adobe clays on disturbed sites.

The project area is found outside of the areas where this species is known to occur in the North Fork Valley.

MANAGEMENT INDICATOR SPECIES

The USDA Forest Service, Region 2, lists eight species, seven terrestrial vertebrates and common trout, which occur, potentially occur, or habitat for which occurs on this portion of the Gunnison National Forest as Management Indicator Species. The purpose of this section of the report is to address these species and determine if the proposed activities are likely to affect any of these species or their habitat within the project area.

DETERMINATION OF POTENTIAL EFFECTS

Elk: Elk populations within the analysis area move seasonally to and from higher to lower elevation habitat. Shifts in distribution and habitat use patterns occur as a result of elevational migration in response to snow cover. However, observations of elk during this and other studies indicate that a few elk probably remain in the general area year around.

All proposed wells are in elk winter range as mapped by the CDOW. Elk winter on south and west facing slopes on the east side of West Muddy Creek. They will not be affected by activities on the west side of West Muddy Creek as they tend not to winter in that area (Madariaga, Per. comm).

Although cows were observed, no elk production areas were identified in the project area. There are large expanses of suitable calving habitat away from the project area at higher elevations in the forest. These areas are large enough in expanse that the cows can be well removed from any activity when calving. Large herds of cows and calves were observed in June and July 2006 & 2007 while conducting wildlife surveys for other project further up the West Muddy drainage.

5,900 feet within the desert shrub vegetation community. Habitat for this plant consists of gravelly or rocky surfaces on river terrace deposits and lower mesa slopes. The species occurs on varying exposures, but is more abundant on south-facing exposures, with slopes to about 30 percent grade and where terrace deposits break from level tops to steeper side slopes. Based upon habitat descriptions provided, suitable Unita Basin hookless cactus habitat does not occur in or near the proposed project area.

Yellow-billed Cuckoo: To date no yellow-billed cuckoos have been located during surveys in potentially suitable habitat in the Gunnison Forest and North Fork Valley. In recent years, none have been observed during breeding bird surveys in this area of western Colorado. Data indicate they require rather extensive stands of cottonwoods with a good understory of willows or other suitable species. None of this habitat occurs in the study area.

Boreal toad: The boreal toad typically lives in damp conditions within the vicinity of marshes, wet meadows, streams, beaver ponds, glacial kettle ponds, and lakes (Hammerson 1999). It is restricted to areas with suitable breeding habitat in spruce-fir forests and alpine meadows and is generally found in suitable habitat between 8,500 and 11,500 feet in elevation. Boreal toads breed in any body of water lacking a strong current and with gradually descending banks at some point around the perimeter. The primary requirement for breeding apparently is the presence of shallow water. The study area is located below the 8500 foot elevation and lacks other habitat requirements. The nearest known location where boreal toads were found is along Buzzard Creek approximately 15 northwest of the project area during the summer of 2007 (Garrison, Per. comm).

Northern leopard frog: Typical habitat for the northern leopard frog includes wet meadows and the banks and shallows of marshes, ponds, lakes, reservoirs, streams, and irrigation ditches (CDOW 2004). The species range can extend to above 11,000 feet in elevation and occurs throughout most of western Colorado (CDOW 2004). The leopard frog is known to occur in the Gunnison National Forest, but has not been documented in the project area. There is potential suitable northern leopard frog habitat in portions of the project area lying west of West Muddy Creek. None of these areas will be disturbed by pad and road construction or other activities associated with the project.

Gunnison sage grouse: The project area is outside the current range of this species. The nearest known populations of this bird are found more than twenty miles away in the Black Canyon of the Gunnison area.

Bald Eagle: A discussion of bald eagle activity in the North Fork Valley is presented in the raptor section of this report.

Peregrine falcon: Peregrine falcon activity in the area is presented in the sensitive species section of this report.

Approximately 20 acres of habitat will be disturbed by road and well site construction. Habitat in this area is aspen, mountain shrub and sage-grass of which there are large expanses. When considering total amount of habitat in the area available to elk, loss of very small amount of habitat means there is little chance elk will be adversely affected by the project. In addition, the area already receives a high amount of human activity from early summer through late fall. Thus, elk in the area have habituated to the presence of vehicular and human activity and the noise associated with both.

Abert's Squirrel:

Abert's squirrels are ecologically dependent on ponderosa pines for both nesting sites and food. Thus they are restricted to open montane forests (Fitzgerald et al. 1994). . According to the 1988 Dominant Cover Type Map included in the 2001 MIS assessment for Abert's squirrel (USFS 2001a), no ponderosa pine is located within miles of the Project Area. There is no suitable habitat for Abert's squirrels in the project area.

American marten: American marten were discussed in the Sensitive Species section of this report.

Northern goshawk: Northern goshawk was discussed in the Sensitive Species section of this report.

Brewer's sparrow: Brewer's sparrow was discussed in the Sensitive Species section of this report.

Merriam's wild turkey: This bird inhabits mountains and high-elevation mesas throughout the region. These birds are commonly seen in the North Fork Valley and have been observed near the project area.

The project area does provide suitable habitat for the turkey, but the amount of disturbance in habitat used by these birds will be a small percentage of suitable habitat in the area. There are large expanses of suitable habitat throughout the area and the loss of this minor amount of habitat will have negligible effect, if any, on Merriam's turkeys.

Red-naped sapsucker: During eight years of spring bird surveys conducted for other projects in the North Fork Valley these birds have always been observed in aspen stands. They are also observed in other habitat types including mountain shrub and riparian.

There is suitable nesting habitat in aspen stands found in the study area. No suitable aspen habitat would be removed during well pad and road construction. The large expanses of nearby suitable habitat minimizes the potential for impacts to these birds.

Common Trout: Of the ommon trout, which include Colorado River cutthroat trout, rainbow trout, brown trout and brook trout, only cutthroat and brook do occur in West Muddy Creek approximately 20 miles above the project area and beyond.

BLM SENSITIVE SPECIES; GUNNISON COUNTY, COLORADO

Northern goshawk: Northern goshawk was addressed in the FS sensitive species section of this report.

White-faced ibis: The white-faced ibis is a rare migrant in this area. When migrating through the area they are typically found in low elevation valleys. There is a limited amount of suitable nesting habitat in this part of the state. When migrating they will be found along reservoir shorelines, wet meadows and irrigated fields. Nesting habitat is in bull rushes in deeper water. One of these birds was observed at a pond adjacent to Ault Creek in June of 2007. It was only observed on one occasion and it is assumed this was a bird moving through the area. This pond is located several miles from the project area.

Colorado River cutthroat trout: This species was addressed in the FS sensitive species section of this report.

Rocky Mountain or Adobe Thistle: This species was addressed in the FS sensitive species section of this report.

RAPTORS

In June of 2005 and 2006 suitable raptor nesting habitat within 1/4 mile of the sites was surveyed for the presence of active and inactive nests around proposed well sites in sections 17, 18 and 19. Aspen and cottonwoods in those portions of sections 19 and 20 where the proposed wells and access roads are located were checked for evidence of past raptor nesting in February 2008. Surveys for the presence of past nesting in winter when aspen and cottonwoods are not leafed out have been found to be very effective. Only those stands within 1/2 mile of the sites and access roads that provided suitable nesting habitat were surveyed. Areas such as oakbrush/mountain shrub dominated expanses were not surveyed. During eight years of raptor nest surveys for other projects in the North Fork Valley no raptor nests have been found in oak/mountain shrub. This supports the reasoning for not doing surveys in this habitat type. During the 2005 & 2006 surveys, GPS fixes for all nest sites, both active and inactive, and habitat type where located were recorded. Surveys were conducted in mature aspen and cottonwood stands prior to the trees becoming fully leafed out or after leaves had been dropped.

During surveys conducted in 2005 and 2006 inactive raptor nests were found in sections 18 and 19. In 2005 two nests were found in an aspen stand near the proposed 19-14 well site. These nests were old and deteriorating indicating they had not been used in a number of years. These nest sites were checked again during the February 2008 surveys. All remnants of these nests were gone. One old deteriorated nest was found in a Cottonwood in a drainage near the 18-31 well site in June 2006. No other raptor nests were found within one-half mile of any proposed activity during the February 2008 survey. Suitable nesting habitat does exist in nearby aspen stands and in cottonwood stands along Deadman Gulch, but if nesting had occurred in these stands in recent years there would be nests or remnants of nests.

All sandstone outcrops along this portion of the West Muddy drainage were checked for evidence of raptor nesting. Surveys of outcrops were done while conducting surveys for the well sites in June 2005 and 2006. No nests were located during those surveys. Outcrops that provide suitable conditions for raptor nesting are found more than 1/2 mile from any proposed well site.

Raptors were observed in the general area during the surveys and at other times and undoubtedly nest in the general vicinity. Those species observed during surveys included peregrine falcon, golden eagle, red-tailed hawk and kestrel. Based upon 8 years of nesting raptor surveys in aspen stands with similar structure in other areas of the North Fork Valley one would expect to find sharp-shinned, Cooper's, red-tailed hawks and kestrels nesting in the area. Active nests for these birds have been found in the West Muddy drainage during studies conducted for other projects. There is a lesser chance that goshawks would nest in this area. With large expanses of suitable nesting habitat adjacent to the project area and the fact that no trees will be taken by road and pad construction minimizes the chances that any nesting raptors would be affected. They undoubtedly forage in the area, but the few acres of meadow that will be affected by drill pad construction and small areas of mountain shrub that will be lost during road widening will have minimal effect on habitat availability for these birds.

No occurrence of bald eagles has been formally documented within the proposed project area. The nearest known bald eagle activity is along the North Fork of the Gunnison River and around Paonia Reservoir. Suitable nesting, reproductive and roost habitat is found along the river, but is not present in the proposed project area. Bald eagles do winter along the North Fork of the Gunnison River and in winter possibly make foraging flights into the general area searching for carrion. Winter roost site habitat for these birds is not present within the project area.

No owl species were observed during the surveys, but several species have been observed in similar habitat types in the North Fork Valley during surveys conducted for other projects. Those species are listed in Table 1.

MAMMALS

Big Game

Elk, mule deer and black bear are commonly found in the project area. Elk and mule deer were observed in the area during all surveys. During the February 2008 survey a cow moose was observed southwest of the 19-44 well site. A cow moose was later observed my operations personnel near the 18-22 well site. Black bears are commonly observed in the area. There are also suitable conditions in the area for mountain lions.

The CDOW has the area west of West Muddy Creek mapped as elk winter range and lands east of the stream as sever winter range.

Elk were observed during June and November 2005 June 2006 and February 2008 in mountain shrub, aspen P/J and sage-grass habitat in the area. Although elk winter in the area none of those areas where wells and roads are proposed west of West Muddy Creek are found in sever winter

range (Madariaga, Per comm. 2008). No evidence of elk activity was found where the well sitesand roads are located during the February 2008 surveys. This was undoubtedly due to the depth and hardness of snow in the area. Elk were observed on the south facing slope in Deadman Gulch where there was less snow and some bare areas.

The well 17-11 is located in mapped severe winter range. The CDOW will request that timing limitations for the development period only be implemented. This means they would request that pad and drilling operations not occur between December 1 and April 15. There would be no limitations if drilling occurred outside this period. There are no timing limitations on other activities associated with operations activities.

Due to deep snow during the winter of 2007-2008 all elk moved to lower elevations and well away from the area. Considering this well is adjacent to an existing road that is maintained year around by GEC for existing wells and access roads, this location would have little additional influence on elk wintering in the area. Elk have continued to use the area during the period of road, well drilling and operation and pipeline construction in the area. Like the area west of West Muddy Creek snow depth and hardness precluded the elk from using the area. Elk observed on the east side of West Muddy Creek in February 2008 were on open west facing slopes above the stream or along the stream bottom.

The area west of West Muddy Creek is not mapped as deer winter range by the CDOW. Those lands east of West Muddy Creek where the proposed 17-11 well site is located are mapped as a deer winter concentration area. Timing limitations requested by the CDOW would be the same as for elk.

Only a few mule deer were observed during the surveys. During the spring and fall they were observed randomly scattered throughout the area. In February 2008 the only deer observed were on west and south facing slopes east of West Muddy Creek. Like elk, when deep snow has not limited their movements, deer have continued to use the area since activities associated with drilling were initiated. There are large expanses of fawning habitat away from the proposed well sites and access roads which minimizes potential disturbance of does fawning or with fawns.

When evaluating potential effects on big game habitat use from proposed development activities two things must be considered; (1) numbers of animals that might use the area for winter or transition range and (2) total amount of habitat available. Based upon observations made during these surveys elk and deer numbers are low from spring through fall. In the winter most animals will be found on south facing slopes or at lower elevations. Considering the amount of suitable habitat available throughout the area from spring through fall transition periods there will be little affect on either deer or elk activity during those periods. The depth of snow in winter affecting access to browse definitely has an affect on how these animals use the area during that period.

As moose numbers continue to expand in the area it is expected they will be observed more often in the project area. These animals are typically found alone unless it is a cow with young of the year. These animals are well equipped for deep snow and it would be expected they will continue to use the project area on occasion. Habitat more suited to moose is found away from

the project area and will undoubtedly be utilized regularly. Any moose activity will probably be limited to the infrequent movement of a animal through the area. Based upon monitoring of moose activity at other projects where the animals move freely through areas where there is human activity one would not expect any of these animals to be affected by the proposed operations.

Black bears are common observed in the North Fork Valley and around the project area. The potential impacts to bears lies not with lost habitat, but with their habituating to the presence of humans. Any activity that attracts bears leads to a potential problem with the bears becoming habituated to the presence of humans. In those cases the bear can become a problem and has to be moved or destroyed. Efforts to minimize this problem will be undertaken by GEC. These will include the use of bear proof dumpsters, training of on site workers to not leave any food stuffs where they would be accessible to the bears and other measures as recommended by the CDOW.

There is suitable habitat for mountain lions in the area, but no evidence of their presence was observed during the surveys or at other times.

Bats

In 2007, Dennis Garrison, USFS biologist conducted bat surveys on USFS lands in the North Fork drainage. He netted and identified six species of bats. Those captured at two sites in the Muddy Creek drainage and nearby areas included little brown myotis, long-legged myotis, long-eared myotis, hoary bat and silver-haired bat. Habitat for foraging does occur in the project area. There is roosting and hibernaculum habitat in the sandstone outcrops along West Muddy Creek, but this habitat is found more than 1/2 mile from the proposed activities. None of this habitat would be affected by the proposed activities.

Other Mammals

Other mammals observed or evidence of their presence was encountered included coyotes, fox, weasel, snowshoe hare and small rodents. Chipmunks and ground squirrels were observed during the spring surveys. Rodent tracks in the snow observed in February 2008 were probably those of Peromyscus or Microtus species. None of these species are considered to be species of concern by any of the agencies. Habitat is definitely not a limiting factor for any of these species in the project area.

NEOTROPICAL BIRDS

During the site surveys conducted in 2005, 2006 and 2008 no surveys for neo-tropical birds were conducted for this project. Opportunistic observations of birds observed were recorded during these surveys and while traveling through the area to other project sites. For purposes of discussion of these species data collected from surveys over an 8 year period at other projects in the North Fork Valley, in similar habitat types, have been used to make assumptions about what species could be found in the area. Birds observed during previous studies in the various habitat types found in the project area are found in Appendix A. From these studies we have been able to reasonably evaluate the importance of different habitat types in the project area for these birds.

Data in Table 1 point out the relative importance of the different habitat types. As evidenced by the shear number of species some habitat types have a much higher diversity of species than other habitat types. Thus, when evaluating the project area and its potential importance to birds the importance of each habitat type was evaluated. Data in Table 1 show that within the project area aspen supports more species of birds than sage-grass. By limiting disturbance to grassland areas and leaving aspen habitat relatively untouched potential impacts to a greater number of species is minimized. Very little riparian habitat will be affected. The small amount of riparian habitat is dominated by mature and over mature cottonwoods which reduces their importance to species know to depend on riparian habitat for part of their life cycle. Only a few shrubs will be lost during construction minimizing potential impacts to use of this type by nesting birds.

As is commonly found when conducting bird studies, there are preferred habitat types within any study area. In addition, there are birds that are habitat generalists and others that have specific habitat requirements. As shown by the data Aspen and Gamble oak/mountain shrub support the greatest density and diversity of birds. Both the density and diversity of birds would probably been higher had there been more riparian habitat in the study area. Riparian habitat is very limited due to the steepness of the drainages and lacks the vegetation typically found in riparian areas where the gradient is less.

The large expanses of aspen and oakbrush/mountain shrub habitat in this general area help minimize the potential impacts to neotropical birds from lost habitat due to construction of drill pads and access roads. Considering the total number of acres of these types available and the few acres that will be lost, potential impacts to these birds will be minor. In addition, as sites and roads are reclaimed, vegetation species used to revegetate these areas will add to the diversity of the areas. Other studies in the North Fork Valley have shown that as vegetation becomes established along the road corridors and around pads, both the density and diversity of birds increases.

AMPHIBIANS AND REPTILES

While conducting transects and raptor surveys observations of amphibians and reptiles are kept. The only species of amphibians observed in the West Fork of the Muddy drainage during other studies were tiger salamanders and chorus frogs. These were observed several miles upstream from the project area. As previously discussed no boreal toads have been found in the drainage. There is suitable habitat in the drainage for the northern leopard frog and the probably do occur.

Suitable habitat for amphibians is very limited in the project area. Ponds and drainages with slow moving waters generally preferred by these species are lacking in the project area. None of these waters will be affected by the proposed project.

The only species of reptile that has been observed during any surveys or at other project areas in the North Fork Valley is the western terrestrial garter snake.

FISHERIES

West Muddy Creek runs through the project area and does support a viable fishery. During fishery surveys conducted by the CDOW and USFS the following species were found in the stream. In the lower reaches blue-headed suckers, speckled dace and mottled sculpin were found. No trout species were found below Mule Park which is 20 miles+ above the project area. Of these species, the bluehead sucker is listed as sensitive by the USFS. This species is discussed in the Sensitive Species section of this report.

SUMMARY

There is no critical habitat for any wildlife found in the project area. Implementation of Best Management Practices (BMP), as outlined in the CDOW draft SOPs, will further insure there are no significant impacts to habitat and the associated wildlife. This will hold true for potential short, mid and long term impacts.

The basic conclusion is that potential impacts to habitat and wildlife in the area from pad, road, pipeline construction, drilling and maintenance operations will, with the implementation of CDOW SOPs, be minimal.

Considering there will be approximately 20 acres of habitat disturbance and the extensive areas of similar or more suitable habitat in the area potential impacts to wildlife from habitat loss will be minimal and not detectable at the population level.

During the habitat and wildlife surveys conducted no federally listed Threatened or Endangered Species were observed in the project area. There is no suitable habitat for Canada lynx, black-footed ferret, boreal toad or Uncompahgre fritillary butterfly. Habitat is lacking for the two listed plant species, Clay-loving buckwheat and Uinta Basin Hookless Cactus. Habitat is lacking for listed candidate species, Gunnison sage grouse and yellow-billed cuckoo.

There is limited suitable habitat for some USFS and BLM listed Sensitive Species. The limited amount of habitat removed will limite potential impact on any sensitive species.

The bluehead sucker is the only USFS listed Sensitive fish species found in West Muddy Creek that may be affected by the proposed project. Considering the distance from the creek and the requirement to implement measures to preclude sediment leaving any disturbed areas no fisheries will be affected.

Habitat is lacking for any USFS and BLM listed Sensitive plant species that may occur in the area. None of these plants were observed during the spring surveys and while traveling through the area to other projects.

USFS listed Management Indicator Species do occur on the property. Of these, only elk and the red-naped sapsucker were observed. These species are commonly observed in the habitat types found in the project area and the limited amount of habitat disturbance will not adversely affect

these species. Timing restrictions for the 17-11 well site will further decrease potential effects to wintering elk.

Raptor nesting is common in Aspen habitat in the area. Raptor nesting only rarely occurs in Gambel oak/mountain shrub habitat. There are large expanses of aspen where nesting can occur away from pads and roads which would further minimize potential aeffect on nesting activity.

Over 100 species of neotropical birds have been observed during breeding bird surveys at other locations in the North Fork Valley. Habitat for these same species is not limited in the project area. The minor amount of habitat to be disturbed will not affected the viability of any of these species.

Because black bears are common in the area measures must be implemented by GEC to minimize potential interaction between humans and the bears. Bear proof containers for garbage will be used and personnel must understand that feeding of bears which, would cause them to imprint on humans will be strictly prohibited.

GEC will be fencing pits with six foot chain link fence to keep elk, deer and wildlife out of the pits. Upon completion of drilling the pits will be covered with netting to keep waterfowl and other birds out of the pits.

Other species of wildlife observed are common in the area. The large expanses of suitable habitat in comparison to the small of habitat that will be disturbed by the proposed operations means that the viability of these species within the project area will not be affected.

REFERENCES

Andrews, R., R. Levad, C. Dexter and K. Potter. 2004. Birds of Western Colorado Plateau and Mesa Country. Grand Valley Audubon Society.

Andrews, R. and R. Righter. 1992. Colorado Birds. Denver Museum of Natural History.

Bradford, Dave. 2007. Range Specialist, USFS, Paonia Ranger District. .Personal communications about list plant species on the Gunnison National Forest

Eager, Tom. 2007. Biologist, UFS, Gunnison, CO. Personal communications concerning listed insect species in the Gunnison National Forest.

Ferguson, Jim. 2006. Biologist, BLM. (now retired) Montrose, CO. Personal communications about listed plant species in the North Fork Valley.

Fitzgerald, J., P. Meany, C and Armstrong, D. M. 1994. Mammals of Colorado. Denver Museum of Natural History and University Press of Colorado.

Garrison, Dennis. Wildlife Biologist. USFS Paonia Ranger District Paonia, CO Personal communication about bats, boreal toad and other wildlife species in the project area.

Hammerson, G. A. 1999. Amphibians and Reptiles in Colorado. Second Edition. University Press of Colorado and Colorado Division of Wildlife, Niwot, CO 484 pp.

Ireland. Terry. 2007. Biologist. USFWS Grand Junction, CO. Personal communication concerning Threatened & Endangered wildlife species.

James, C. 2007. Fisheries Biologist. GMUG National Forest. Montrose, CO. Communications concerning listed species of fish in the project area.

Kingery, H. (ed.). 1998. Colorado Breeding Bird Atlas. Colorado Bird Atlas Partnership. Denver, CO. 636 p.

Krueger, Rick. 2007. Biologist, USFWS Grand Junction, CO. Personal communication concerning Endangered fish in the Upper Colorado River drainage.

Madariaga, Kirk. 2008. District Wildlife Manager. CDOW. Paonia, CO. Personal communications concerning wildlife activity in the project area.

Mayo, Ellen. 2005. Botanist/Plant Ecologist, USFWS, Grand Junction, CO. Personal communication concerning habitat for Nokomis fritillary.

Reudiger, B., et al. 2000. Canada lynx Conservation Assessment and Strategy. USDA Forest Service, USDI Fish and Wildlife Service, USDI Bureau of Land Management, and USDI National Park Service. Missoula MT. 122 p.

Ruggerio, L. F. et al. 1994. The Scientific Basis for Conserving Forest Carnivores: American Marten, Fisher, Lynx and Wolverine in the Western United States. USDA Forest Service, Rocky Mountain Forest and ranger Experiment Station. GTR-254. Ft Collins, CO. 184 p.

USFWS 1994. Endangered and threatened wildlife and plants; determination of critical habitat for the Colorado River endangered fishes: Colorado squawfish, razorback sucker, humpback chub and bonytail.

APPENDIX A

BIRD SPECIES LIST

Bird species that have been observed while conducting breeding bird and other wildlife surveys in the North Fork Valley from 2000 to 2008

TABLE 1

BIRD SPECIES	Water Influence Zone	Pinyon-Juniper	Gambel Oak	Aspen	Douglas fir	Spruce/fir	Sage/grass	Other
Great Blue Heron	X							
White-faced Ibis	X							
Canada Goose								
Green-winged Teal	X							
Mallard	X							
Blue-winged Teal								
Ring-necked Duck								
Turkey Vulture	X		X					X
Bald Eagle	X							
Northern Harrier			X				X	
Sharp-shinned Hawk			X	X	X	X		
Cooper's Hawk		X		X				
Northern Goshawk				X		X		X
Swainson's Hawk								X
Red-tailed Hawk			X	X				X
Golden Eagle		X	X					
American Kestrel			X					
Prairie Falcon								X
Peregrine Falcon								X
Blue Grouse			X	X				
Merriam's Turkey	X		X					
Killdeer	X							
Willet	X							
Spotted Sandpiper	X							
Mourning Dove		X	X					
Great Horned Owl				X		X		
Northern Pygmy-Owl				X		X		
Northern Saw-whet Owl					X			
Common Nighthawk		X						X
Common Poorwill			X					

TABLE 1

	Water Influence Zone	Pinyon-Juniper	Gambel Oak	Aspen	Douglas fir	Spruce/fir	Sage/grass	Other
White-breasted Nuthatch				X	X	X		
Brown Creeper					X	X		
House Wren			X	X				
American Dipper	X							
Golden Crowned Kinglet						X		
Ruby-crowned Kinglet					X	X		
Blue-gray Gnatcatcher		X						
Western Bluebird		X						
Mountain Bluebird		X	X	X			X	
Townsend's Solitaire			X	X				
Swainson's Thrush				X		X		
Hermit Thrush	X			X				
American Robin	X	X	X	X	X		X	
Gray Catbird	X							
American Pipit	X							
Cedar Waxwing	X		X					
Loggerhead Shrike			X					
Plumbeous Vireo			X	X				
Warbling Vireo			X	X				
Orange-crowned Warbler	X		X	X				
Virginia's Warbler	X		X					
Yellow Warbler	X		X	X				
Yellow-rumped Warbler			X	X		X		
MacGillivary's Warbler	X			X				
Common Yellowthroat	X							
Wilson's Warbler	X							
Yellow-breasted Chat			X					
Western Tanager	X		X	X	X			
Black-headed Grosbeak			X	X				
Lazuli Bunting		X	X					
Indigo Bunting			X					

TABLE 1

	Water Influence Zone	Pinyon-Juniper	Gambel Oak	Aspen	Douglas fir	Spruce/fir	Sage/grass	Other
Green-tailed Towhee	X	X	X	X	X			
Spotted Towhee	X	X	X					
Chipping Sparrow			X				X	
Brewer's Sparrow							X	X
Vesper Sparrow							X	X
Lark Sparrow		X						
Fox Sparrow	X							
Song Sparrow	X			X				
Lincoln's Sparrow	X							X
White-crowned Sparrow	X							X
Gray-headed Junco				X	X		X	
Red-winged Blackbird	X							
Brewer's Blackbird	X		X	X			X	
Brown-headed Cowbird			X				X	
Bullock's Oriole	X							
Pine Grosbeak						X		
Cassin's Finch			X					
Pine Siskin			X	X	X	X		
American Goldfinch	X							
Evening Grosbeak				X				

Water influence zone includes riparian, wetland and impoundments.
Gambel oak includes other mountain shrub species.
Sage/gras includes sagebrush, grassland or a combination of both.
Other generally includes birds observed flying in area.