ENVIRONMENTAL ASSESSMENT
Shell Western E and P, LP
Temporary Surface Pipeline
WY-040-EA-02-035

Introduction

The Bureau of Land Management (BLM) prepared an environmental assessment and on May 21, 2001, released a decision which approved Wolverine's 3-well drilling program in close proximity to the national historic trails system (California, Oregon, Mormon Pioneer, and Pony Express), located approximately 19 miles northwest of Farson, Wyoming. The first of the three wells has been drilled. SWEPILP (Shell), who acquired interest in the lease originally held by Wolverine, is seeking a short-term right-of-way (ROW) for a temporary surface pipeline to test production from one or more wells drilled on lease WYW-147486. The EA prepared for the Wolverine drilling program recognized a permanent pipeline route leading away from the drilling area in a northwesterly direction. Before Shell will apply for the permanent pipeline route (following the route recognized in the Wolverine EA), they want to test production to assure the present and future wells are economically viable.

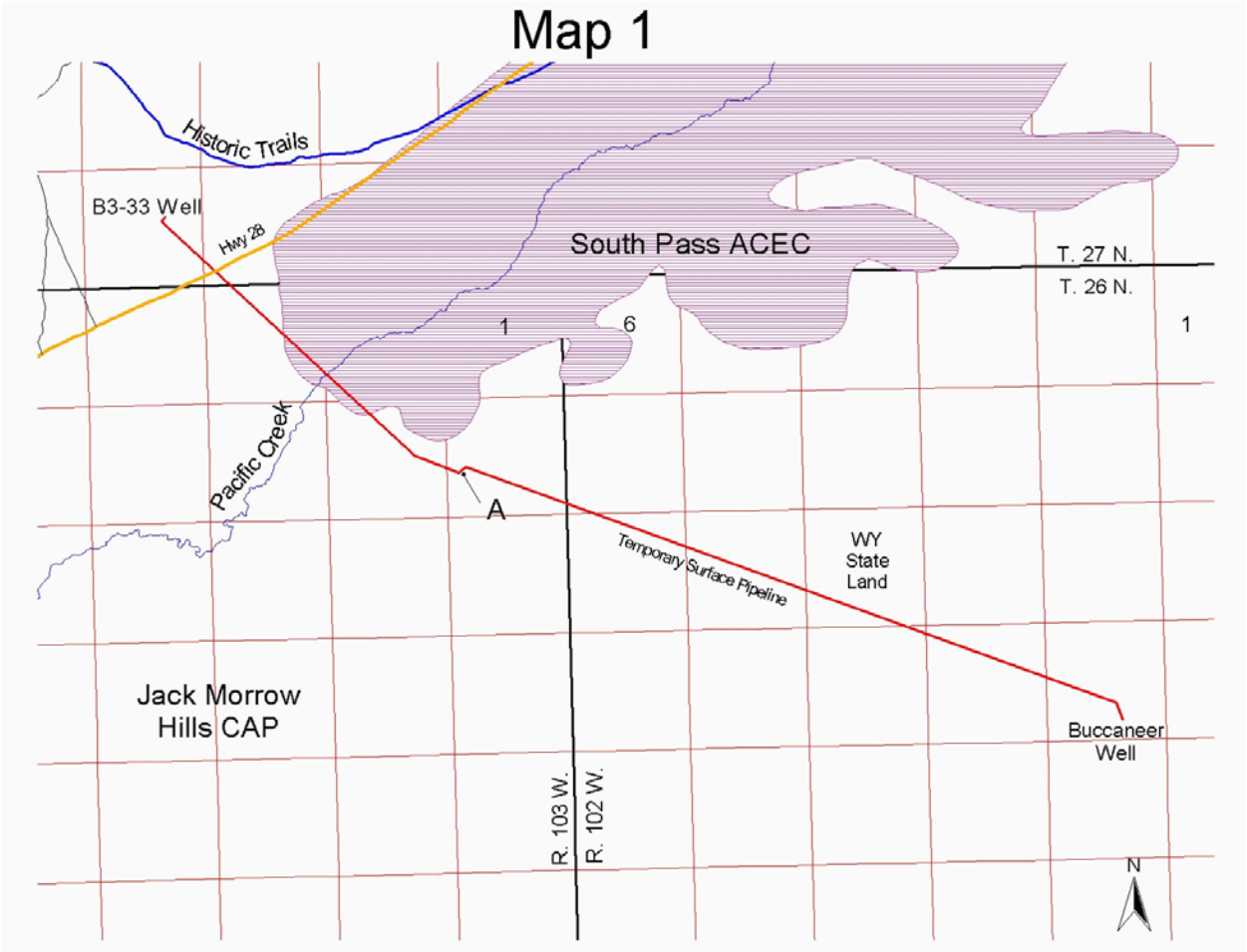
Purpose and Need for the Proposed Action

The temporary surface pipeline will serve as an interim gathering system for gas produced from wells drilled on federal lease WYW-147486 during initial testing and evaluation phases of operations therein. Evaluation of Pacific Creek Federal B3-33, and other wells, is necessary to determine production rates and decline curves for certain gas-producing formations. The proposed temporary surface pipeline route will follow existing two-track trails in previously disturbed areas for most of the route (see Map 1). Another 310 feet of pipeline would be placed cross-country.

Conformance with Land Use Plans

In accordance with 43 CFR 1610.5, the Proposed Action has been reviewed and is in conformance with the Green River Resource Management Plan (GRRMP), approved August 8, 1997. Management objectives and actions for lands and realty management and specifically utility/transportation systems can be found on page 9. Public lands will be made available throughout the planning area for ROWs, with the exception of exclusion and avoidance areas, and will be open for consideration of granting ROWs.

The proposed temporary pipeline route would affect the western fringe (portions of sections 2, 3, and 11, T26N, R103W) of the South Pass Historic Landscape Area of Critical Environmental Concern (ACEC). The management objective is to protect the visual setting and historical integrity of the Oregon, Mormon


Map 1
Historic Trails
B3-33 Well
Hwy 28
South Pass ACEC
T. 27 N.
T. 26 N.
1
6
1
Pacific Creek
A
Temporary Surface Pipeline
WY
State
Land
Jack Morrow
Hills CAP
Buccaneer
Well
R. 103 W.
R. 102 W.
N

Map

Pioneer, California, and Pony Express National Historic Trails as they pass over the summit of South Pass. A South Pass National Historic Landmark (NHL) was established by Congress in 1959. The intent of the ACEC is to protect the trails and their setting in the greater South Pass area since boundaries have not been established for the NHL. The ACEC is managed as a Class II visual resource management area. Actions such as temporary surface pipelines along existing roads and two-track trails may be allowed as long as analysis indicates that the visual integrity of the ACEC will not be compromised.

Routing of the proposed pipeline will also cross certain lands under analysis for the Jack Morrow Hills Coordinated Activity Plan (JMHCAP). The GRRMP identifies criteria for "surface-disturbing" interim actions proposed outside of the 'core area.' Interim actions must not affect the outcome of future planning decisions. The proposed pipeline route is located outside the core area. These criteria include:

t. Slopes greater than 20%.
u. Forest-type areas such as juniper, limber pine, and aspen.
v. Tall sagebrush habitat (sagebrush 4 feet high or taller).
w. Badland areas with highly erodible soils.
x. All mountain shrub communities such as mountain mahogany, bitterbrush, and serviceberry (usually associated with 20% slopes).
y. All big game severe winter relief/crucial winter range areas and big game birthing areas.
z. Other sensitive areas or situations that may be identified.

Placement of a temporary surface pipeline is not considered a "surface-disturbing" activity although the southern work site associated with boring underneath Wyoming Highway 28 is. Therefore, the aforementioned criteria would apply. However, the work site is located outside of the areas listed above and is considered to be in conformance with the interim action criteria.

Relationship to Statutes, Regulations, or Other Plans

BLM issues ROW grants for natural gas pipelines under the authority of the Mineral Leasing Act of 1920, as amended. The ROW grant would be subject to standard approval procedures as outlined in the ROW grant regulations (43 CFR 2880).

Engineering standards would be in accordance with Department of Transportation regulations. Wyoming Department of Transportation has certain requirements for boring under public highways and requires E-54 and E-54D license forms to be submitted and approved by the department. Industrial standards established by the American Petroleum Institute, American Society of Mechanical Engineers, and the American Standard Code for Pressure Piping would be followed as appropriate.

Sublette and Sweetwater Counties require certain permits to be obtained before construction activity can proceed.

Scoping, Public Involvement, and Issues Identified

On October 19, 2001, the BLM released a scoping notice to the public seeking identification of issues and concerns relating to this proposal. BLM received 13 comment letters, emails, or phone calls in response. The following list of issues was identified from the commentors.

Vandalism of surface pipelines - Any natural gas facility could be vulnerable to vandalism. Where the pipeline crosses roads or trails, it would be buried to reduce opportunity for such acts. Any individual who chooses to vandalize any natural

gas facility does so with serious risk of injury or death to themselves and others.

South Pass Historic Landscape ACEC, visual impacts in Class II VRM area and surface disturbance within the ACEC - No surface disturbance is proposed in the ACEC with the exception of shallow trenching where the pipeline crosses existing two-track trails, a requirement for public safety.

Potential impacts to threatened, endangered, proposed, or candidate plant and animal species - BLM has made a "no effect" determination due to the timing of construction associated with this project or lack of suitable habitat. Rationale for the determination is presented in Appendix A.

Permit requirements for boring Wyoming Highway 28

Social and economic impacts to the local economy - Construction of the pipeline would result in continued employment for local/regional workers but would not add new employment to the area. Thus, socio-ecomonics will not be addressed further in the document.

Potential pollution to downstream Little Sandy Creek and possible impacts to flannelmouth suckers and bluehead suckers - Potential pollution and its affect on sensitive species downstream from the crossing assumes the occurrence of a break in the pipe and resultant hazardous materials spill. On this pipeline, stabilizers will be used to prevent movement of the pipe at intermittent streams and at the crossing of Pacific Creek so that breakage does not occur. Where the pipe spans Pacific Creek it will be high enough to pass high flows and not be a trash collection hazard.

Other issues brought forth by BLM's interdisciplinary staff prior to public scoping include:

Jack Morrow Hills planning area
Perennial and intermittent stream crossing and associated riparian/wetland areas
Slopes in excess of 20 percent
Sage grouse leks and nesting habitat
Elk crucial winter range
Elk connectivity area
Mountain plover habitat
Other sensitive plant and animal species and their associated habitat
Geologic hazards, wind-blown sand - Based upon field review, wind-blown sand is not an issue and will not be addressed further.

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

Proposed Action

The Proposed Action is to lay a total of 50,000 +/- feet (9.47 miles), of which 45,300 feet (8.58 miles) crosses public lands managed by BLM, of 6-inch nominal diameter temporary surface pipeline along existing two-track trails in previously disturbed areas (the pipeline would be placed cross-country in one small area, see point A on Map 1). Placement of the pipe would be offset from the existing two-track trails a minimum of 2 feet or more depending where the pipe makes a turn. The pipeline would start at the Pacific Creek B3-33 well site located in section 33, T. 27 N., R.103 W., 6th Principal Meridian (Sublette County) and proceed in a southeasterly direction to the pipeline terminus at the existing Buccaneer Unit well located in section 23, T. 26 N, R 102W (Sweetwater County). Width of the proposed ROW is 30 feet to accommodate construction equipment and the pipe. Construction is to commence upon issuance of the ROW grant. The term of the temporary surface pipeline ROW is 5 years. Shell could request a new temporary ROW should a permanent pipeline not be in place or operational. Any route within the JMHCAP area would be subject to BLM review and future land use planning decisions for the area.

No surface disturbance would be required with the exception of work sites used for boring under Wyoming Highway 28 (requirement of the Wyoming Department of Transportation) and shallow trenching where the pipeline crosses the active travelway of two-track trails in order to protect public safety. Trenches across the two-track trails would be constructed utilizing either a small backhoe with a narrow bucket or a small trencher (a ditch witch) to dig a shallow trench wide enough to accommodate the pipe and deep enough to bury the pipe a minimum of 10 inches. All trenching of two-track trails would be limited to the active travelway to minimize disturbance.

Total area affected by the Proposed Action is 31.77 acres. Shell would use existing two-track trails as a working surface for equipment, welding, and other work associated with pipe installation. Pipe would be offset from the two-track trails by a minimum of 2 feet to allow safe passage by vehicles on the trails. Where the pipe goes cross-country to connect with another existing two-track trail, the pipe would be laid with the least disturbance possible but would require the use of vehicles.

Two work areas located approximately 125 feet from the highway fences, on either side of Wyoming Highway 28 corridor, would be required to allow safe boring and pipe retrieval operations in accordance with Wyoming Department of Transportation requirements. On the north side of Wyoming Highway 28, a 100- x 125-foot area would be required. Within this 100- x 125-foot area, an area large enough to accommodate boring equipment would be leveled to allow the safe operation of the equipment. On the south side of Highway 28, a 40- x 40-foot area would be required to accommodate a "bell hole," a hole wide and deep enough to allow pipe retrieval, welding, and other work associated with boring operations. Topsoil associated with the bell hole would be stockpiled and used to reclaim the disturbed area once boring is complete. The pipeline underlying Wyoming Highway 28 would be encased in casing to protect the pipe. Pipeline markers would be installed on either side of Wyoming Highway 28. Placement of other markers would be coordinated with BLM as to height, style, and color within existing rules and regulations.

Construction of the pipeline would take approximately 21 days to complete assuming weather conditions are cooperative. Shell is requesting an exception to the seasonal restriction period to complete construction in the southern portion of the pipeline route where elk crucial winter range lies and proposes to either start construction at the southern terminus or commence construction simultaneously from both ends of the project to expedite construction time frames. Neither of the two-track trails used as a working surface would be plowed if snow is on the ground and if the snow becomes so deep that it hinders pipe installation, the project would be stopped until conditions improve.

Equipment required for the installation of the pipeline includes medium duty trucks for pipe delivery and line fabrication, trenching tools/backhoes for trenching across two-track trails, tracked bulldozers with booms for pipe installation, and a blade for backfilling trenched areas (two-track trails). In addition, a road grader would be required for leveling or topsoil stripping at work areas used for boring operations.

The pipeline will be designed for pressures of approximately 1,775 psi and the expected amount of natural gas to be transported is 8.5 mmcf (million cubic feet). Engineering standards will be in accordance with Department of Transportation regulations and industrial standards established by the American Petroleum Institute, American Society of Mechanical Engineers, and the American Standard Code for Pressure Piping as appropriate.

Pipe color will be as delivered to location from the manufacturer (a muted dark brown). No

external wrapping or painting is anticipated. If pipeline markers are placed within the ACEC area, they will be done in such a manner as not to affect the viewscape of those visiting the national historic trails system located to the north of the project area.

In areas where taller (≥ 4 feet) sagebrush occurs, the pipe would be pulled through with winches to avoid disturbing or breaking branches.

Where the pipeline crosses perennial (e.g., Pacific Creek) or intermittent streams, the pipe would be laid at the same grade elevation as the banks on either side of the stream. If the span is greater than 20 feet, the pipe would be supported by a vertical brace located in the stream bottom. Any vertical supports used would be anchored into the ground approximately 5 feet below the base of the stream bed. Soil from anchoring the vertical braces would be either scattered or removed from the floodplain and any vertical braces will be placed outside of the main stream channel. This would allow water to flow unobstructed below the pipeline and prevent debris from building up and blocking waterflow upstream of the pipe. Where the pipeline crosses land in the vicinity of a known spring or shallow stream beds, the pipe would be supported on wood blocks to allow free migration of water under the pipe. Any wood blocks would be anchored by driving iron rods through the wood into the ground to minimize pipe and block movement.

Whenever possible, needed bends in the pipeline will be placed in areas of less steep topography to reduce potential for soil disturbance and concentration of overland water flows on higher slopes.

The pipeline would be hydrostatically tested for leaks using fresh water obtained from local sources. Water used for testing purposes would be captured and disposed of in strict accordance with Wyoming Department of Environmental Quality rules and regulations pertaining to the disposal of waste water.

Disturbed work areas will be reclaimed by discing on the contour to a depth of 4 to 6 inches and uniformly covering the area with depressions constructed perpendicular to the natural flow of water to facilitate the capture of water to promote vegetation establishment. Disturbed areas would be seeded using the following seed mixture as recommended by BLM.

Species	Pound of PLS [1] /Acre
Thickspike wheatgrass	4.0
Western wheatgrass	4.0
Bottlebrush squirreltail	3.0
Indian ricegrass	3.0
Winterfat	1.0
Gardner's saltbush	1.0

1 - Pure live seed

The seed mix would be applied on the contour using a seed drill equipped with a depth regulator to ensure even depths of planting which would not exceed 0.5 inch and utilizing outside bins of the seed drill for the seeding with shrub species.

Timing of seeding would be completed after September 1 and prior to ground frost. Should spring seeding be done, it would be completed after frost has left the ground but prior to June 15. Seeding would be repeated until a satisfactory stand as determined by BLM is achieved.

Shell would be responsible for weed control on disturbed areas within the boundary of the right-of-way in consultation with the BLM.

The pipeline would be removed upon termination of the ROW. The casing lying underneath the Wyoming Highway 28 roadway would be abandoned in place.

All construction, operation, maintenance, and termination activities would be conducted within

the confines of the right-of-way.

No Action Alternative

The No Action alternative would deny the ROW application to place a temporary surface pipeline along the route proposed.

Alternatives Considered but Dropped from Detailed Analysis

In accordance with 40 CFR 1502.14(a), BLM is required to rigorously explore and evaluate alternatives and to briefly document why such alternatives were dropped from analysis if upon such evaluation, the alternative is dropped from detailed study. Several alternative routes were considered but dropped from detailed analysis. One route would place the temporary surface pipeline outside the South Pass Historic Landscape ACEC. This route was dropped because it would require cross-country placement of the pipeline 720 feet to the west of the proposed route where no previous disturbance occurs. It was determined that placement of the pipe along this route would constitute a greater effect to the historic trails setting than placing the pipeline within a previously disturbed area even though that area is within the ACEC. The proposed route follows existing two-track trails in a previously disturbed area and would result in less overall impact. Two other routes were considered and while both followed existing two-track trails, the proposed route is more direct, would require less pipe be laid, and would be more cost effective for the proponent.

AFFECTED ENVIRONMENT

The following critical elements and other resource elements of the human environment have been considered. Those items checked 'no' are not potentially affected or impacted by the Proposed Action or the alternative and will not be addressed further in this document.

Critical Elements:

Critical Element	Yes	No	Critical Element	Yes	N
ACEC	X		Wastes, Hazardous, Solid		X
Air Quality		X	T/E Species		X
Cultural/Historic	X		Water Quality		X
Farmland, Prime/Unique		X	Wetlands/Riparian Areas	X	
Wilderness		X	Invasive Species		X

Other Resource Elements:

Resource Element	Yes	No	Resource Element	Yes	N
Forested Area/Products		X	Fluid or Solid Minerals	X	
Geology		X	Land Resources		X
Livestock Grazing		X	Rangeland		X
Palenotology		X	Vegetation	X	
Wild Horses		X	Soils	X	
Visual Resource Management	X		Jack Morrow Hill Planning Area	X	

General Setting

The Draft and Final EIS associated with the GRRMP provides a detailed discussion of the general setting of the RSFO. The area involved is considered to be a semiarid, midcontinental desert typified by dry, windy conditions, limited rainfall, and long winters. Topography of the immediate area is relatively flat to gently rolling hills with topographic features such as nobs and rock formations.

The area is dissected by various types of roads including Wyoming Highway 28 and numerous two-track trails. A radio tower lies to the east and within the South Pass Historic Landscape ACEC. The Buccaneer Unit well is the closest producing

well providing access to transportation pipelines leading out of the area. A couple of plugged and abandoned wells can be found in the general vicinity of the pipeline route. Other developments such as range improvements occur in the general area.

Affected Resources

Cultural/Historic Resources

A Class III cultural resources inventory of the proposed pipeline route and an alternative route were conducted during mid-October and early November 2001. The inventory resulted in the evaluation of 2 historic expansion era roads, the Green River-South Pass City Stage Road (48SW3864) and the Bryan-South Pass City Stage Road (48SW3869). Both roads have been determined to be eligible for inclusion in the National Register of Historic Places (NRHP). Both of the roads have been disturbed by the two-track trail along the proposed pipeline route. These points along each of the roads where the pipeline route crosses have been determined to be not contributing to the values that make those roads eligible for the NRHP.

Additionally, the inventory resulted in the recordation, testing, and evaluation of 7 archaeological sites (48SW14050, 48SW14051, 48SW14052, 48SW14053, 48SW14098, 48SW14099, and 48SW14100). BLM has determined that all of the sites, except 1 (48SW14053), are not eligible for inclusion in the NRHP. The site that was determined to be eligible was avoided by altering the proposed pipeline route to avoid the site by over 100 feet.

Historic Trail System/South Pass Historic Landmark ACEC

The proposed pipeline route within the ACEC is at least 2 miles away from the actual remnants of the historic trails. The GRRMP established the South Pass Historic Landscape ACEC. This ACEC encompasses some 53, 870 acres and is located to the south (south side of Wyoming Highway 28) of the historic trail system. Approximately 5,041 feet would be affected by the proposed pipeline route. The historic trails system and the ACEC are shown on Map 1.

Analysis of the viewshed surrounding the historic trails indicated that two areas could be seen from the historic trails. The viewshed model indicates that the surface of the ground would be visible for about 1,500 feet at one point and for about 2,000 feet at the other. The points along the trail from which those areas are visible are located about 3 miles east from the proposed pipeline route. The viewshed analysis is an idealized model that does not take into account vegetative cover. Since the 6-inch diameter pipe would be placed on the ground, it is apparent that it would be shielded from view by existing vegetative cover in the area.

Jack Morrow Hills Planning Area

The pipeline route affects a small and linear portion of the 622, 000-acre JMHCAP area; an area that is undergoing further analysis for management options. Interim actions may be allowed if they meet the criteria listed under the section entitled "Conformance with Land Use Plans" above. The Proposed Action meets the requirements for interim actions.

Recreation/Visual Resources

Recreation in the general area is mostly associated with visiting the historic trail system that lies several miles to the north. Hunting occurs during the fall months and hiking, photography, and some camping likely occur at other times of the year.

The visual resource management class for the area outside of the ACEC is Class IV. The objective of this class is to provide for management activities which may require major modification of the existing character of the landscape.

Contrasts may attract attention and be a dominant feature of the landscape in terms of scale; however, the change should repeat the basic elements (form, line, color, and texture) inherent in the characteristic landscape.

Visual resource management classification within the ACEC is Class II. The objective of this classification is that any action must be designed to blend into and retain the existing character of the natural landscape.

Floodplain/Riparian and Wetlands

The floodplains, riparian, and wetland areas along the proposed pipeline route are associated with stream channels. The largest of these channels is located adjacent to Pacific Creek, a perennial stream. The Pacific Creek riparian area consists of comparatively flat topography vegetated with a mixture of facultative and obligate wetland species. Grazing pressures within this area tend to be moderate to heavy. The riparian survey conducted in 1995 indicated that there was some vegetative recovery and improvement in stream resiliency in this reach of stream at the time but had not reached the minimum desired level of resiliency and is still sensitive to disturbance. This reach of stream was in a functional at risk condition with an apparent upward trend (BLM Technical Reference TR 1737-15). Portions of the channel immediately downstream from the reach surveyed, were in a functional at risk condition with an apparent downward trend.

Other water courses crossed by the pipeline route have intermittent or ephemeral water flows with correspondingly smaller riparian areas that are in similar conditions.

Vegetation/Soils

Because there is no standard soil survey for the proposed pipeline route, only inferences derived from the Sandy Grazing EIS (1976), can be made for soil types. This information is, therefore, not site specific to the well locations or potential pipeline alignment and can only provide a general assessment of the affected environment.

Soils in this upland area are well drained and formed in alluvium and colluvium derived predominantly from sandstone with some influence from shales. Many of these soils have a sandy surface of fine sandy loam or sandy loam 4 to 6 inches thick overlying sandy clay loam and sandy loam to a depth of 40 inches or more. Depth to bedrock is generally greater than 20 inches, with depth generally increasing with distance from ridges and outcrop. Most of these soils are calcareous, with some having a high carbonate horizon up to 40 inches thick. Scattered throughout the area are soils with more sand or more clay.

These soils support Loamy, Sandy, and Shallow Sandy range sites dominated by big sagebrush, with grasses that include thickspike wheatgrass, bluebunch wheatgrass, Canby bluegrass, needleandthread grass, and Indian ricegrass.

Wildlife

Wildlife in the project area is typical for a high elevation, shrub steppe habitats with elk, mule deer, pronghorn antelope, Greater Sage-grouse, migratory birds, coyote, small mammals, non-game fish, lizards, and possibly some frogs.

Big Game - Currently all big game range designations in this area are under review by the Wyoming Game and Fish Department and may be adjusted.

Pronghorn Antelope - Pronghorn antelope found in the project area are part of the South Sublette Herd Unit. The herd is currently at, or near population objective. The project area is also within the high density portion of hunt area 92 (WGFD 1999). The proposed pipeline route travels through winter/yearlong range and spring/summer/fall range.

Mule Deer - The mule deer are in the Steamboat

Herd Unit. The deer are presently below their stated population objective, but are showing a slow steady population growth. The proposed pipeline route goes through approximately .75 miles of winter/yearlong range.

Elk - The elk are part of the Steamboat Herd and are currently estimated at 1500 animals (WGFD pers. comm. 2001), well above the objective of 500. However this is thought to be due, in part to the change in counting methods. This has resulted in more animals being estimated than before. The herd objective is currently under review and could be changed. There is approximately 2.27 miles of the proposed pipeline that goes through the northern edge of crucial winter range (see Map 2). The vegetation in this portion of the crucial winter range appears to be of marginal quality for winter range.

Jack Morrow Hills Connectivity Area - Approximately 2.21 miles of the proposed pipeline occurs within the connectivity area (Map 2). The connectivity area is proposed for special management consideration under the Jack Morrow Hills Coordinated Activity Plan and EIS as a "security area" facilitating the movement of big game (particularly elk) from birthing to wintering ranges etc. in the planning area.

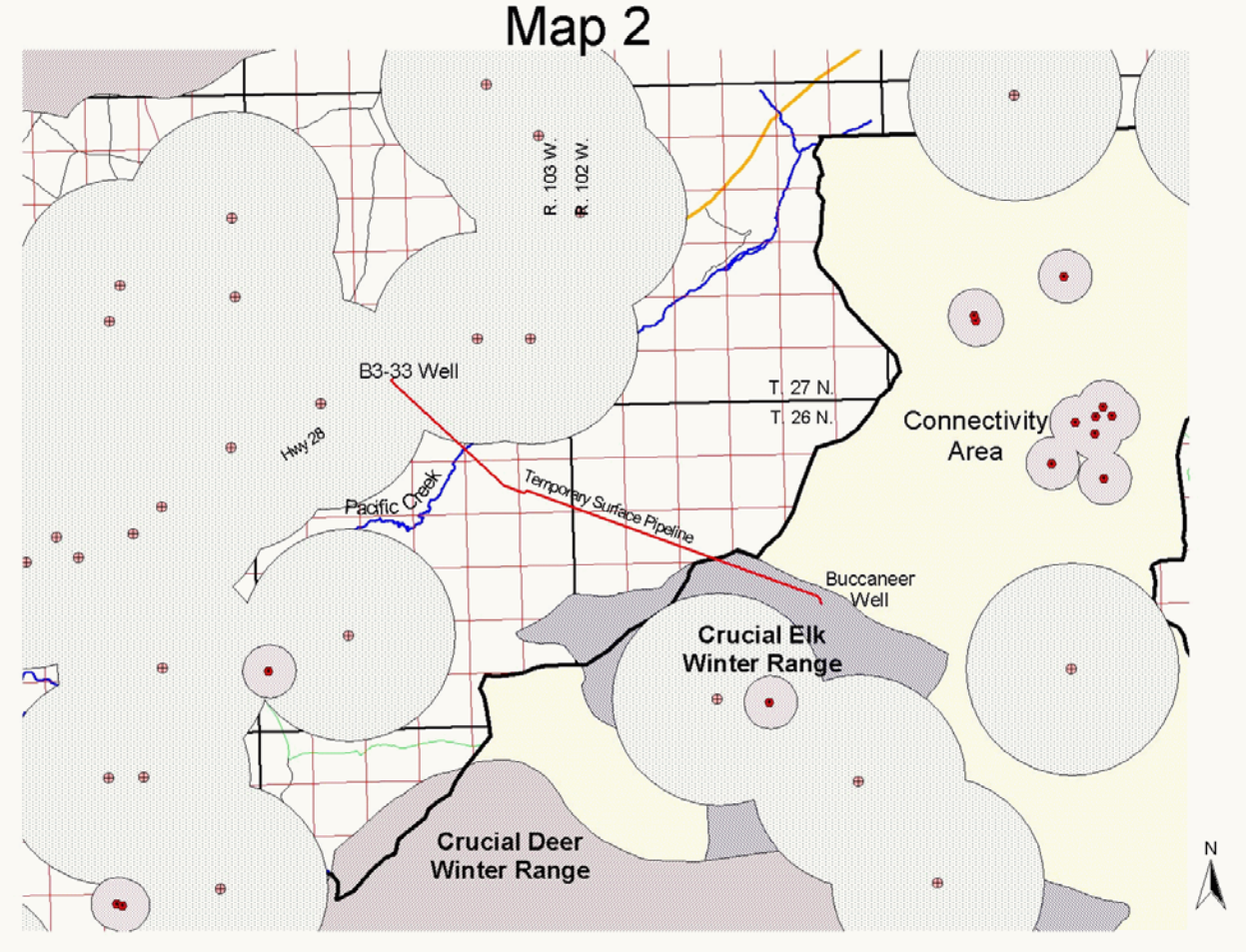
Birds - In addition to the sensitive bird species listed below, the area is occupied seasonally by Horned Lark, Ravens, Magpies, Golden Eagles, and many species of hawks and falcons typical of the sagebrush-steppe ecosystem.

Fish - Pacific Creek is located in the project area and may support populations of some non-game fish such as suckers, dace and sculpin. It is a small, relatively slow, warm creek dissecting the project area. This fall the stream became intermittent due to drought conditions. There are no species of game fish known to inhabit this portion of the creek.

Sensitive Animal Species

Several BLM Sensitive Species have the potential to be affected by the Proposed Action.

Greater Sage-grouse - The Greater Sage-grouse is a game bird occurring throughout Wyoming in Sagebrush habitats. There are numerous known, and a high probability of unidentified strutting grounds (called leks) in and near the proposed pipeline route. Much of the pipeline right of way lies in what isexpected to be an important brood-rearing area (Map 2). During the field reviews much evidence of grouse usage was found along the proposed pipeline route. It is believed that there is a high probability of


Map 2
R. 103 W.
R. 102 W.
B3-33 Well
T. 27 N.
T. 26 N.
Connectivity
Area
Hwy 28
Pacific Creek
Temporary Surface Pipeline
Buccaneer
Well
Crucial Elk
Winter Range
Crucial Deer
Winter Range
N

Map 2

finding previously unidentified leks along the proposed pipeline. Local population studies have shown the Greater Sage-grouse has been declining in this area. Likewise there has been a decline throughout the birds' range nationwide. The reasons for this decline are many such as: habitat conversion to croplands, development, urban sprawl, degradation of existing habitats, increase in predator populations, possibly hunting and any activity that caused disturbance to the birds during critical time periods such as leking, nesting, brood rearing and wintering.

Ferruginous Hawk - Ferruginous Hawks are known to nest on pinnacles, and the ground. There are no known Ferruginous Hawk nests in the vicinity of the proposed pipeline although there is potential for nesting in the area..

Brewers Sparrow - This species is a sagebrush obligate that nests in sagebrush and may utilize the project area for nesting and brood-rearing in the spring and summer months.

Sage Thrasher - A sagebrush obligate that nests in sagebrush and may utilize the project area for nesting and brood-rearing in the spring and summer months.

Loggerhead Shrike - Another obligate that nests in sagebrush, and uses the tall sage for foraging. This bird may utilize the project area for nesting and brood-rearing in the spring and summer months.

Flannelmouth Sucker - A fish species that may inhabit Pacific Creek within the project area during some part of the year. They have been known to travel up smaller streams like Pacific Creek to spawn (Pers Comm. WGFD 2001).

Bluehead Sucker - A rare sucker in Wyoming historically known to inhabit the Green River drainage (Baxter and Stone, 1995). Pacific Creek is a tributary to the Green River and there is a remote possibility they could be present in Pacific Creek within the project area where the pipeline would cross the creek.

Great Basin Spadefoot Toad - Found in sagebrush communities below 7,000 ft (Parker & Anderson 2001). Therefor it is unlikely to be found in the project area.

Northern Leopard Frog - Occurs in permanent waters up to 9,000ft (Parker & Anderson 2001). Maybe present in Pacific Creek.

Pygmy Rabbits -Pygmy rabbits inhabit dense, often tall sagebrush stands in southwestern Wyoming. Their occurrence in the area along the pipeline route is highly probable.

E N V I R O N M E N T A L CONSEQUENCES/IMPACTS

Proposed Action

Cultural Resources

Direct, Indirect Impacts - BLM has made a determination that there would be no effect to the expansion
era roads as the segments affected by the Proposed Action are not eligible for inclusion in the NRHP. The proposed temporary surface pipeline will have no effect on historic properties eligible for inclusion in the NRHP and would be in compliance with Section 106 of 36 CFR 800, which implement provisions of the National Historic Preservation Act.

Cumulative Impacts - There would be no cumulative impacts to cultural resources due to construction of the temporary surface pipeline.

Historic Trail System/South Pass Historic Landmark ACEC

Direct, Indirect Impacts - No direct impact to the trail system is anticipated. Analysis indicates that visitors to the trail would not be able to see the pipeline in or adjacent to the ACEC because the

pipeline will be screened from view by vegetation between the trail and the pipeline route. The visual classification within the ACEC would not be exceeded as the pipeline is low profile and temporary. Color of the pipe would also help screen the pipe from view.

Cumulative Impacts - No cumulative impacts are anticipated since the temporary surface pipeline will be removed within 5 years.

Jack Morrow Hills Planning Area

Direct and Indirect Impacts - The pipeline would be laid within the planning area for 5 years. Continued placement, should it be requested by Shell, would be subject to review of and conformance with all land use decisions made in conjunction with the JMH planning effort. A 40-x 40-foot work site associated with boring operations would be disturbed within the JMHCAP area but located in an area with previous disturbance which was reclaimed with mostly crested wheatgrass. The site would be reclaimed and seeded with native species as soon as practicable after the pipeline is installed although it will take a growing season or two for vegetation, mainly grasses, to become established. Establishment of shrub species will take longer.

Cumulative Impacts - No cumulative impacts are expected as placement of the pipeline is temporary and subject to review of all land use plan decisions made for the area.

Recreation/Visual Resources

Direct and Indirect Impacts - No impacts are expected with installation activities as they would be done at a time of year when there is no or little recreational activity occurring. Over the life of pipeline, little impact to those using the area for recreational purposes would result as the pipeline would be off-set from or buried under any two-track trails. Visual management objectives outside the ACEC would not be exceeded.

Cumulative Impacts - No cumulative impacts to recreation or visual resources are anticipated since the pipeline is temporary.

Floodplain/Riparian/Wetlands

Direct and Indirect Impacts - Suspending the pipeline above the active floodplains will reduce the potential for disturbance during high water flow events. Any required excavations for vertical braces used to support the pipeline suspension would be minor and quickly recover. Since livestock tend to travel up/down riparian corridors, the suspended pipeline could cause increased grazing pressure in the immediate vicinity of the pipeline. However, the pipeline is located adjacent to an existing two-track trail and would provide means for livestock to travel around the pipeline.

Cumulative Impacts - The impacts from the installation of the pipeline on riparian areas should be relatively minor over the life of the project (5 years or less) as suspension of the pipeline over the floodplains will reduce the potential for flood related disturbance. Areas where the pipe actually contacts the ground could cause minor disturbance and create a potential source for accelerated contributions of upland sediment. Once the pipe is removed (no longer than 5 years), the effect will disappear.

Vegetation/Soils

Direct and Indirect Impacts - Soil stability and productivity would not be impacted by placement of the pipeline. Initial installation of the pipeline on the surface could cause minimal disturbance to vegetation. Movement of soil caused by the pipeline directly contacting the ground due to thermal expansion or contraction would also be minimal although it would be continually renewed throughout the lifetime of the project. This effect would minimized by avoidance of pipeline bends (horizontal to the contour of the slope) where it traverses steeper areas of slope. Topsoil salvaged

from the work site used for the bell hole would be salvaged and used for reclamation. Disturbed work areas used for boring operations would be reseeded with native species (see Proposed Action).

Cumulative Impacts - Revegetation of grasses following reclamation of the work sites used for boring operations generally takes 2 to 3 years in this area while it often takes 20 years or more for sagebrush to reach maturity.

Wildlife/Special Status Animal Species

Big game

Direct and Indirect Impacts -Several field reviews by BLM specialists of the proposed pipeline route have taken place, the latest of which took place on Dec. 5, 2001 by a BLM Wildlife Biologist. No big game were actively using the land in the vicinity of the proposed pipeline. There was fresh snow on the ground that showed evidence of a small herd of elk (approx. 8-10) moving through the area bisecting the proposed route in an east to west migration. The tracks appeared to be heading to a "saddle" in the hills to the southwest of the proposed project area. There was also a small number of old pronghorn tracks near highway 28 in the vicinity of the proposed pipeline. No evidence of mule deer was observed.

Cumulative Impacts - No cumulative impacts are expected from the Proposed Action. Impacts on big game species from possible future oil/gas development within the general area are unknown until testing is complete. Should testing prove natural gas reserves are economically viable, such impacts would analyzed at that point.

Pronghorn Antelope

Direct and Indirect Impacts - Direct impacts from the proposed pipeline are expected to be displacement of animals should they be in close proximity to the pipeline during the construction activities. However, the pronghorn would be expected to return soon after the construction is completed. The proposed pipeline falls within winter/yearlong and spring/summer/fall range for the pronghorn. As of Dec. 5, 2001 there were no pronghorn on the portion of the range adjacent to the proposed pipeline route. Once the pipeline is in place, no further impacts are anticipated until the removal of the pipeline.

Cumulative Impacts - There should be no cumulative impacts to pronghorn from the proposed activity.

Mule Deer

Direct and Indirect Impacts - Direct impacts from the proposed pipeline are expected to be displacement of animals in the vicinity of the pipeline during the construction activities. However, they would be expected to return soon after the construction stopped. The proposed pipeline route lies within a small section of mule deer winter range although it is not characterized as crucial winter range. No animals appeared to be using the range during a field inspection on Dec. 5, 2001. Once the pipeline is in place, no further impacts are anticipated until the removal of the pipeline.

Cumulative Impacts - There are no anticipated cumulative impacts to mule deer from the proposed activity.

Elk

Direct and Indirect Impacts - Data generated from radio collared elk over the past three winters show elk primarily using the areas to south and west of the proposed route during the winter restriction period. Provided there are no elk in the vicinity of the project during construction there should be no direct impacts to the elk. There is some potential for indirect impacts should elk attempt to use or traverse the area during construction of the pipeline. The elk would likely be displaced to another area or route. With the proposed mitigation measures of completing the project in

10 - 14 days within the crucial winter range, the likelihood of indirect impacts are minimal. Any further exceptions would be based on the criteria found in appendix B and for short periods of time (1 to 2 weeks). There are no anticipated impacts to the elk from the existence of the pipeline. There may be some disturbance to the elk during the removal of the pipeline.

Cumulative Impacts - No cumulative impacts are anticipated from placement of the proposed pipeline.

Jack Morrow Hills Connectivity Area

Direct and Indirect Impacts - The pipeline goes through a small section of the JMH Connectivity area. There should be no direct or indirect impacts on the quality or quantity of the Connectivity area due to the proposed pipeline.

Cumulative Impacts -No cumulative effects are anticipated from the Proposed Action.

Birds

Direct and Indirect Impacts - Direct impacts to birds other than the sensitive species listed below would be that of temporary displacement if the birds are present during the installation of the proposed pipeline. No indirect impacts are anticipated.

Cumulative Impacts -No cumulative effects are anticipated from the Proposed Action. Impacts on birds from possible future oil/gas development within the general area are unknown until testing is complete. Should testing prove natural gas reserves are economically viable, such impacts would analyzed at that point.

Fish

Direct and Indirect Impacts - No direct or indirect impacts are anticipated from the Proposed Action due to the design of pipeline specifications and placement of the pipe above the creek.

Cumulative Impacts -No cumulative effects are anticipated from the Proposed Action

Sensitive Species

Greater Sage-grouse

Direct and Indirect Impacts - Provided the pipeline construction activities take place before Feb. 1, there should be no direct or indirect impacts to Greater Sage-grouse. Installation of the pipeline is not expected to go beyond mid to late January but if it does, a seasonal restriction would apply February 1 although seasonal exception rules could apply based field review by a BLM Wildlife Biologist in accordance with the criteria found in Appendix 7 of the GRRMP. The Biologist would conduct a survey along the entire pipeline and a two-mile buffer around the proposed pipeline. If construction were delayed until after February 1 and birds are using the leks and/or brood-rearing areas, those birds could be impacted in that the birds would likely not attend the leks, and any nests already initiated in the area may be abandoned.

Cumulative Impacts - No cumulative impacts to the Greater Sage-grouse would occur along the pipeline route. However, should well testing prove economically viable and further exploratory drilling or field development is proposed on Shell's lease holds, impacts to Greater Sage-grouse would be expected. The extent of potential development is unknown until testing of the wells is complete; thus, any future development would be analyzed at that time to assess the impacts on the birds.

Ferruginous Hawk

Direct and Indirect Impacts - Provided the pipeline construction does not occur between February 1 and July 31 there will be no direct or indirect impacts. If construction occurs between February 1 and July 31 a BLM Biologist will perform a field survey for Ferruginous Hawks. If a nest were to be found, construction activities

would be halted within one mile of the nest until the birds have fledged.

Cumulative Impacts - Provided the aforementioned mitigation measures are taken, no cumulative impacts to Ferruginous Hawks are anticipated along the pipeline route. Any future development of Shell's lease holdings would be analyzed at that time.

Brewers Sparrow/Sage Thrasher/Loggerhead Shrike

Direct and Indirect Impacts - Provided the pipeline construction activities take place before the breeding season, there should be no direct or indirect impacts to these species. However, if construction takes place during the breeding/nesting season, a field survey by a BLM Biologist will need to be conducted. Any action that would destroy a nest, eggs or bird constitutes a violation of the Migratory Bird Treaty Act, 16 U.S.C. 703.

Cumulative Impacts - No cumulative affects to this species are anticipated from this action provided nests are not destroyed or abandoned. Any future development of Shell's lease holdings would be analyzed at that time.

Flannelmouth Suckers

Direct and Indirect Impacts - Given the mitigation measures put in place to prevent spills from the pipeline entering into Pacific Creek and the placement of the pipeline above the creek, no direct or indirect impacts are expected for this species.

Cumulative Impacts - No cumulative effects to this species are anticipated from the Proposed Action.

Bluehead Sucker

Direct and Indirect Impacts - Given the mitigation measures put in place to prevent spills from the pipeline entering into Pacific Creek and the placement of the pipeline above the creek, no direct or indirect impacts are expected for this species.

Cumulative Impacts - No cumulative effects to this species are anticipated from the Proposed Action.

Great Basin Spadefoot Toad

Direct and Indirect Impacts - No toads are expected to occur in the project area due to elevation limitations, therefor no direct or indirect impacts should occur.

Cumulative Impacts - No cumulative effects to this species are anticipated from this action.

Northern Leopard Frog

Direct and Indirect Impacts - Given the mitigation measures already in place, i.e., type of pipe used and no disturbance of the creek bottom or riparian areas, no direct or indirect adverse impacts area expected for the Northern Leopard Frog.

Cumulative Impacts - No cumulative effects to this species are anticipated from this Proposed Action.

Pygmy Rabbit

Direct and Indirect Impacts - Direct impacts would be a temporary displacement of pygmy rabbits during the construction phase. Indirect impacts could occur if displaced rabbits are left more vulnerable to predation.

Cumulative Impacts - No cumulative impacts are expected from the Proposed Action along the pipeline route.

Mitigation/Monitoring Requirements

Construction activity and surface disturbance will be prohibited during the period from November

15 to April 30 for the protection of crucial winter range for elk, and February 1 to July 31 for the protection of sage grouse leks and raptors, and nesting habitats for both species. Any exceptions to this requirement must have prior written approval from the authorized officer. Appendix B provides criteria for exception approval.

Standard stipulation for discovery of unanticipated cultural resources.

Avoidance of archaeological site 48SW14053 which was done by rerouting the pipeline in accordance with the cultural resource inventory report.

No surface blading should be allowed except where the work sites used for boring operations under Highway 28.

Residual Impacts - Work sites for boring operations would be shaped to original contours and seeded with same native species found in adjacent areas. Acceptable vegetation cover of 80% of the adjacent undisturbed area normally takes 2 or 3 years. The time frame to achieve shrub growth on reclaimed areas so it blends in with undisturbed vegetation (located outside of the previously disturbed area) may take a minimum of 10 years.

No Action Alterative

The No Action Alternative would deny Shell's request for a temporary surface pipeline along the route proposed. It would require Shell to either flare the well or shut the well in until another pipeline route could be evaluated. This would result in the waste of energy resources into the atmosphere or a loss of production. Other pipelines capable of handling the estimated production are located between 20 and 60 miles away from the Pacific Creek B3-33 well site. Proposing and constructing a different temporary pipeline route to reach one of these other pipelines would be more expensive and likely cause unnecessary impacts. Impacts to resource values found along the proposed route should the No Action Alternative be selected are identified below.

Cultural Resources

Direct, Indirect, and Cumulative Impacts - Potential impacts to cultural resources would not occur under this alternative.

Historic Trails/South Pass Historic Landscape ACEC

Direct, Indirect, and Cumulative Impacts - No direct, indirect, or cumulative impacts would occur. Current interpretations and use of the historic trail would be unaffected.

Jack Morrow Hills Planning Area

Direct, Indirect, and Cumulative Impacts - It would be possible another pipeline route leading through the planning area could be proposed should the No Action Alternative be selected.

Recreation/Visual Resources

Direct, Indirect, and Cumulative Impacts - Potential impacts to recreation and visual resources would not occur under this alternative.

Floodplain/Riparian/Wetlands

Direct, Indirect, Cumulative Impacts - No direct, indirect or cumulative impacts would be anticipated.

Vegetation/Soils

Direct, Indirect, and Cumulative Impacts - Potential impacts to vegetation and soils in the work areas associated with boring operations would not occur under this alternative.

Wildlife/Special Status Animal Species

Direct, Indirect, and Cumulative Impacts - There would be no direct, indirect or cumulative impacts to any wildlife from the No Action alternative with the exception of the Greater Sage-grouse. The Greater Sage-grouse may be directly impacted if the wells are flared due to the pipeline not being constructed. The noise from the flaring would be within the birds' strutting area. Noise from the flaring has the potential to reduce the ability of the hens to hear the males on the leks. There is evidence (Lyon, 2000) disturbances associated with oil and gas activity may cause a reduction in nest initiation by Greater Sage-grouse. The Greater Sage-grouse has shown an average of 30% decline in population range-wide over the past 30 years. The contributing factors for this decline are many (habitat loss, predation reduction in quality of habitat and possibly hunting pressure, etc.). Disturbance to the birds from oil and gas development is believed to be only one of the many pressures causing the decline of this species. Flaring of the well could affect the reproduction of the Greater Sage-grouse by reducing reproduction.

LITERATURE CITED

Baxter, George T and Michael Stone, Fishes of Wyoming, Wyoming Game and Fish Dept. 1995

Parker, Josh and Dr. Stanley Anderson, Herptiles of Wyoming 2001

Lyon, Alison, "The Potential Effects of Natural Gas Development on Sage Grouse Near Pinedale, Wyoming." Master of Science Thesis, Laramie, Wyoming May 2000

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Appendix A

As noted under the section entitled "Scoping, Public Involvement, and Issued Identified, listed, proposed for listing, and candidate species are not effected by the Proposed Action. The rationale for that determination follows. Other BLM-Wyoming species of concern are also addressed.

WILDLIFE/RESOURCE CONCERN	SUITABLE HABITAT	STIPULATION DATE	STIPULATION APPLIES
Raptor Nest (other than raptors listed below)	Yes	February 1 - July 31	Yes
Crucial Big Game Winter Range	Yes	November 15 - April 30	Yes
Elk Calving Areas	No	May 1 - June 30	No
Riparian Areas	Yes	Year Round 500 feet from perennial streams/ live water	no
Game Fish Spawning Areas	No	Determined on a case by case basis	No
Migratory Bird Treaty Act species (specify)	Yes	Determined on a case by case basis	Yes
Mountain Shrub Communities	No	Avoidance	No
Slopes 20% or Greater	Yes	Avoidance	No
Tall Sage	Yes	Avoidance	No

T&E SPECIES	NO EFFECT	MAY AFFECT	NOT LIKELY TO ADVERSELY	AFFECT STIPULATION
Black-footed ferret (E) FWS criteria	X			Move Project from Ferret Habitat
Canada Lynx (T)	X			
Bald Eagle (T)	X			Feb 1 - July 31 nesting
Cuckoo, Yellow-billed (C)	X			
Whooping Crane (X)	X			
Mountain Plover (P)	X			April 10 - July 10
Penstemon (E)	X			Move Project from Plant Location
Spiranthes (T)	X			Move Project from Plant Location
Water Depletions (to the Green & N. Platte)	X			Formal Consultation **Required**

Sensitive Species Common Name	Habitat	Potential Habitat	Stipulation Dates	Comments
MAMMALS				
Shrew, Dwarf	Mountain foothill shrub, rock fields, grasslands	Yes		
Myotis, Long-eared	Conifer and deciduous forests, caves and mines	No		
Myotis, Fringed	Conifer forests, woodland-chaparral, caves and mine < 7,000 ft elev	No		
Bat, Spotted	Cliffs over perennial water, basin-prairie shrub	No		
Bat, Townsend's Big-eared	Forests, basin-prairie shrub, caves and mines	No		
Rabbit, Pygmy	Tall sagebrush	Yes		Avoid tall sage destruction
Prairie Dog, White-tailed	Basin-prairie shrub, grasslands	No		Avoidance
Pocket Gopher, Wyoming	Dry ridge tops, gravelly loose soil, greasewood	No		
Pocket Gopher, Idaho	Shallow stony soils	No		
Fox, Swift	Grasslands	No		Avoid dens
BIRDS				
Ibis, White-faced	Marshes, wet meadows	No		
Swan, Trumpeter	Lakes, ponds, rivers	No		
Goshawk, Northern	Old growth forests	No	Feb 1 - July 31	
Hawk, Ferruginous	Basin-prairie shrub, grassland, rock outcrops	Yes	Feb 1 - July 31	
Falcon, Peregrine	Tall cliffs	No	Feb 1 - July 31	
Sage-grouse, Greater	Sagebrush	Yes	Feb 1 - July 31	
Curlew, Long-billed	Grasslands, plains, foothills, wet meadows	No		
Owl, Burrowing	Grasslands, basin-prairie shrub	No	Feb 1 - July 31	
Thrasher, Sage	Sagebrush	Yes		
Shrike, Loggerhead	Basin-prairie shrub, mountain-foothill shrub	Yes		
Sparrow, Brewer's	Sagebrush	Yes		
Sparrow, Sage	Sagebrush	No		
FISH				
Chub, Roundtail	CO River drainage, mostly large rivers, also streams and lakes	No		Spawning Mid May - Early Aug
Chub, Leatherside	Bear, Snake and Green drainages, clear, cool streams and pools	No		
Sucker, Bluehead	Bear, Snake and Green drainages, all waters	No		
Sucker, Flannelmouth	CO River drainage, large rivers, streams and lakes	No		
Trout, Colorado River Cutthroat	CO River drainage, clear mountain streams	No		
REPTILES				
Rattlesnake, Midget Faded	Mountain foothills shrub, rock outcrop	No		
AMPHIBIANS				
Frog, Northern Leopard	Close to permanent water up to 9,000ft.	Yes		
Spadefoot, Great Basin	Spring seeps, permanent and temporary waters, Sagebrush areas below 7,000ft.	No		
Toad, Boreal (Northern Rocky Mt. pop)	Mountains. & foothills, relatively moist areas, high elevations. Found near water.	No		
Frog, Spotted	Ponds, small streams, mountains, and foothills	No		

APPENDIX B

CRITERIA FOR GRANTING EXCEPTIONS FOR WILDLIFE STIPULATIONS

In accordance with Procedures for Processing Applications in Areas of Seasonal Restrictions (Appendix 7, GRRMP), exceptions for actions proposed in areas where seasonal restrictions apply may be granted if conditions allow. The following table lists criteria from sections A and B of Appendix 7 that must be analyzed prior to approving or disproving exceptions. A final determination for granting or extending an exception to wildlife stipulations rests with BLM after consultation with Wyoming Game and Fish Department. For the 2001-2002 winter season, Wyoming Game and Fish Department (WGFD) has indicated that their field biologists will not be inclined to concur with exception requests if there is an increased risk to animals already under stress but it will continue to be a local evaluation of site-by-site circumstances. BLM will continue to consult with WGFD as appropriate. A form for exception criteria (in accordance with Appendix 7, GRRMP) as it applies to the Greater-Sage grouse is under development.

Criteria to Consider for Exceptions to Seasonal Restrictions

REQUESTER: _____ DATE OF REQUEST: _____
PROJECT NAME: _____ _____
REQUESTED DATE(S) OF EXCEPTION: _____
ACTIVITY PROPOSED: _____ _____
LAST DATE OF FIELD EXAM: _____ GIS/ARCVIEW MAP REVIEWED: YES NO

General Considerations - Requests for Exceptions	
	Comments
Are factors leading to inclusion of the wildlife restriction still valid?	
What action is the request for an exception for?	
Dates of the proposed exception?	

Criteria for Winter Ranges		**Comments**
Animal	present or absent	
Animal Condition	good, fair, poor	
Weather Severity		**Comments**
Snow Conditions	depth, crusting, longevity	
Weather patterns		
Wind chill factors (indication of animal energy use)		
Air temperatures / variation		
Duration of condition		
Short and long range forecast		
Habitat Condition		**Comments**
Animal density	low or high	
Forage condition	good or poor	
Forage Availability	yes or no	
Competition with livestock or other wildlife		
Amount of forage - Has livestock use decreased forage		

Suitable/ample forage available and accessible nearby	yes or no	
Site Location		**Comments**
Likelihood of animal habituating to activity	yes or no	
Presence of thermal, wind cover		
Proportion of winter range affected (ac or %)		
Where site is located within the winter range		
Other activity and effect on the animals		
Timing		**Comments**
Early or late in winter season		
Kind of and length of disruptive activity		
How much winter is remaining		

RECOMMENDED ACTION: Based on the above analysis, I recommend the exception be:

Approved: _____ Denied: _____

_____ Date: _____

Wildlife Biologist

The exception is: Approved: _____ Denied: _____

_____ Date: _____

Authorized Officer