

**U.S. Department of the Interior
Bureau of Land Management
Glenwood Springs Field Office
2300 River Frontage Road
Silt, Colorado 81652**

ENVIRONMENTAL ASSESSMENT

NUMBER: CO-140-2008-132 EA

CASEFILE NUMBER:

PROJECT NAME: Mt. Sopris Stock Pond

LEGAL DESCRIPTION: Township 8 South, Range 88 West, E2 Sec. 21, 6th Principal Meridian, Pitkin County, Colorado

APPLICANT: Bureau of Land Management, Glenwood Springs Field Office

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Proposed Action: Construction of one stock pond. The location of the proposed pond is shown on the attached map (Appendix A). The pond would be constructed as described on the attached drawing and construction specifications (Appendix B). The pond will be no more than 100 feet in diameter and will disturb no more than 0.2 acre of vegetation and soils at the site. A bulldozer would be used to perform the work. The pond is located in a drainage and would impound water from surface runoff (rain or snowmelt) and springs.

Construction of the above range improvement would be accomplished by the BLM's Force Account or the grazing permittee. The project would be authorized by a Cooperative Range Improvement Agreement as per 43 CFR 4120.3-2 and the grazing permittee would be responsible for maintenance. Construction is anticipated to begin anytime from September 1 to Nov. 30. In accordance with 43 CFR 4120.3-2(b), title of the range improvement shall be in the name of the United States.

Project Design Features:

- The U.S. Fish and Wildlife Service (USFWS) has determined that any Federal action that will deplete water in the basin will prompt a "**May Affect**" determination for the four Colorado River Endangered Fishes under Section 7 of the Endangered Species Act. The project is covered by the programmatic biological assessment and will be included on the Resource Area's water depletion log, submitted to the FWS at the end of the year.

No Action Alternative: Construction of the stock pond would not be authorized.

ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD: None

NEED FOR THE ACTION: The water development would provide livestock and wildlife with an additional source of water, would help improve grazing distribution, would maintain/improve the condition of riparian and upland areas, and would help maintain/achieve Colorado Public Land Health Standards 2 (riparian systems) and 3 (plant and animal communities).

PLAN CONFORMANCE REVIEW: The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: Glenwood Springs Resource Management Plan.

Date Approved: January 1984, revised 1988, amended in November 1991 – Oil & Gas Leasing & Development Final Supplemental Environmental Impact Statement; amended November 1996 – Colorado Standards and Guidelines; amended in August 1997 – Castle Peak Travel Management Plan; amended in March 1999 – Oil & Gas Leasing & Development Final Supplemental Environmental Impact Statement; amended in November 1999 – Red Hill Plan Amendment; and amended in September 2002 – Fire Management Plan for Wildland Fire Management and Prescriptive Vegetation Treatment Guidance.

Decision Number/Page: The proposal implements land use plan decision LGM2 page 20

Decision Language: LGM2 states "construct facilities such as springs, reservoirs, fences, corrals, and livestock trails where necessary to control and distribute livestock."

Standards for Public Land Health:

In January 1997, Colorado Bureau of Land Management (BLM) approved the Standards for Public Land Health. The five standards cover upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. The Glenwood Springs Field Office is in the ongoing process of completing Land Health Assessments on a landscape basis.

The Roaring Fork Landscape, which incorporates the Mt Sopris allotment where this Proposed Action would take place, is scheduled to be assessed in 2010. As such, we are deferring making a determination on conformance with the Standards on this allotment until the formal Land Health Assessment is completed.

Because a standard exists for the five categories mentioned above, the impact analysis herein must address whether the Proposed Action or any alternatives being analyzed would result in impacts that would maintain, improve, or deteriorate land health conditions for that specific parameter. These analyses are located in specific elements listed below.

AFFECTED ENVIRONMENT /ENVIRONMENTAL CONSEQUENCES / MITIGATION MEASURES:

CRITICAL ELEMENTS

This section provides a description of the human and natural environmental resources that could be affected by the Proposed Action and No Action alternative. In addition, the section presents comparative analyses of the direct and indirect consequences on the affected environment stemming from the implementation of the various actions.

A variety of laws, regulations, and policy directives mandate the evaluation of the effects of a Proposed Action and alternative(s) on certain critical environmental elements. Not all of the critical elements that require inclusion in this EA are present, or if they are present, may not be affected by the Proposed Action and alternative (Table 2). Only those mandatory critical elements that are present and affected are described in the following narrative.

In addition to the mandatory critical elements, there are additional resources that would be impacted by the Proposed Action and alternative. These are presented under **Other Affected Resources**.

Table 1. Critical Elements of the Human Environment									
<i>Critical Element</i>	<i>Present</i>		<i>Affected</i>		<i>Critical Element</i>	<i>Present</i>		<i>Affected</i>	
	Yes	No	Yes	No		Yes	No	Yes	No
Air Quality	X		X		Prime or Unique Farmlands		X		X
Areas of Critical Environmental Concern		X		X	Special Status Species*	X		X	
Cultural Resources		X		X	Wastes, Hazardous or Solid	X		X	
Environmental Justice		X		X	Water Quality, Surface and Ground*	X		X	
Floodplains		X		X	Wetlands and Riparian Zones*		X		X
Invasive, Non-native Species		X		X	Wild and Scenic Rivers		X		X
Migratory Birds	X		X		Wilderness and Wilderness Study Areas	X			X
Native American Religious Concerns		X		X					

AIR QUALITY

Affected Environment

The Proposed Action area (Pitkin County) has been described as an attainment area under CAAQS (Colorado Ambient Air Quality Standards) and NAAQS (National Ambient Air Quality Standards). An attainment area is an area where ambient air pollution amounts are determined to be below NAAQS standards. For more information on existing air quality in the area, refer to the Roan Plateau RMPA and EIS which describes potential effects from oil and gas development (BLM 2006:4-26 to 4-37).

Environmental Consequences/Mitigation

Proposed Action

The Proposed Action would result in short-term localized vehicle emissions from dozer operations associated with construction of the stock pond. Additionally, there is a potential for some dust generation if these activities occur in dry conditions. These effects would be minor, of short duration, and overall would have little or no effect on air quality.

No Action Alternative

The No Action alternative would have no effect on air quality.

CULTURAL RESOURCES

Affected Environment

One Class III inventory (GSFO#15807-10) was conducted for this pond. No historic properties eligible or potentially eligible for listing on the National Register of Historic Places were found.

Environmental Consequences/Mitigation

No historic properties were identified. Therefore, no formal consultation with the Colorado State Historic Preservation Office was initiated and a determination of **No Adverse Affect** was made in compliance with the National BLM/SHPO Programmatic Agreement (1997) and the Colorado Protocol (1998).

The Education/Discovery stipulation needs to be added as a condition of approval.

ENVIRONMENTAL JUSTICE

Affected Environment

The table below reflects 2004 estimated median annual household income data,¹ and minority population data from July 2005² for the Proposed Action and “No Action” area.

2004 Estimated Median Household Income & 2005 Minority Data			
County	Estimate	90% Confidence Interval	Minority %
Pitkin	\$60,662	\$56,388 to \$65,259	9.5

¹ Source: U.S. Census Bureau, Data Integration Division, Small Area Estimates for Garfield and Pitkin Counties
Release Date: December 2006

² Source: U.S. Census Bureau: State and County QuickFacts. Data derived from Population Estimates, Census of Population and Housing, Small Area Income and Poverty Estimates, State and County Housing Unit Estimates, County Business Patterns, Nonemployer Statistics, Economic Census, Survey of Business Owners, Building Permits, Consolidated Federal Funds Report. Last Revised: January 12, 2007

Environmental Consequences/Mitigation

Pitkin County is not considered to be impoverished, but is thought to be a wealthy county. The Proposed Action is not likely to create a disproportionately high and adverse human health impact or environmental effect on minority or low-income populations in the area.

INVASIVE NON-NATIVE SPECIES

Affected Environment

No known state listed noxious weeds are known to occur at the project site. However, several weeds occur in the surrounding vicinity including musk thistle, plumeless thistle, and houndstongue.

Environmental Consequences/Mitigation

Proposed Action

Surface-disturbing activities, such as the Proposed Action, create a niche for the invasion or expansion of noxious weeds, particularly in areas where noxious weeds are already present in the vicinity. Subsequent livestock grazing and trampling around the pond may result in an additional loss or reduction of vegetation and an increase in the risk of weed invasion at a small isolated level. On an allotment wide basis, improving and adding livestock ponds provide for better distribution of livestock throughout the allotment reducing the affect livestock would have on invasive, non-native species.

To reduce the opportunities for weeds to become established, the disturbed areas would be reseeded with a certified weed-seed free mixture of native grasses adapted to the site. The permittee would monitor the reservoir disturbance to detect the presence of any noxious weeds and would be responsible for promptly controlling any noxious weeds on the Colorado State List A or B (except redstem filaree) within the area disturbed from reservoir construction. If the permittee chooses to use herbicides as the control method on public lands, a Pesticide Use Proposal shall be submitted to the BLM and approved prior to initiating any herbicide spraying.

The operator is to ensure equipment involved in land disturbing actions be clean of noxious weed seeds or propagative parts prior to entry on site. When working in areas with noxious weeds, equipment should be cleaned prior to moving off site.

No Action Alternative

Under this alternative, the pond would not be constructed. The presence of noxious weeds would likely continue under current conditions, unless BLM aggressively pursues weed control activities.

MIGRATORY BIRDS

Affected Environment

BLM Instruction Memorandum No. 2008-050 provides guidance toward meeting the BLM's responsibilities under the Migratory Bird Treaty Act (MBTA) and the Executive Order (EO) 13186. The guidance directs Field Offices to promote the maintenance and improvement of habitat quantity and quality. To avoid, reduce or mitigate adverse impacts on the habitats of migratory bird species of conservation concern to the extent feasible, and in a manner consistent with regional or statewide bird conservation priorities.

The 1988 amendment to the Fish and Wildlife Conservation Act mandates the USFWS to "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act (ESA) of 1973." The list of *Birds of Conservation Concern (BCC) 2008* is the most recent effort to carry out this mandate (<http://www.fws.gov/migratorybirds/reports/BCC2008/BCC2008m.pdf>).

The conservation concerns may be the result of population declines, naturally or human-caused small ranges or population sizes, threats to habitat, or other factors. Although there are general patterns that can be inferred, there is no single reason why any species was is on the list. Habitat loss is believed to be the major reason for the declines of many species. When considering potential impacts to migratory birds the impact on habitat, including (1) the degree of fragmentation/connectivity expected from the proposed project relative to before the proposed project and (2) the fragmentation/connectivity within and between habitat types (e.g., within nesting habitat or between nesting and feeding habitats. Continued private land development, surface disturbing actions in key habitats (e.g. riparian areas) and the proliferation of roads, pipelines, powerlines and trails are local factors that reduce habitat quality and quantity for many species.

The GSFO is within the Southern Rockies/Colorado Plateau Bird Conservation Region. The 2008 BCC list includes the following species that are known to occur, or potentially could occur, in the GSFO area: Gunnison sage-grouse, bald eagle, ferruginous hawk, golden eagle, peregrine falcon, prairie falcon, yellow-billed cuckoo, burrowing owl, Lewis's woodpecker, willow flycatcher, gray vireo, pinyon jay, juniper titmouse, Brewer's sparrow, black rosy-finch, brown-capped rosy-finch, and Cassin's finch.

BCC species potentially present in the project area and vicinity include the pinyon jay and juniper titmouse in pinyon-juniper habitats and Brewer's sparrow in sagebrush habitats. Other migratory birds potentially present in the project area include the gray flycatcher, plumbeous vireo, black-throated gray warbler, and lesser goldfinch in pinyon-juniper; the Cordilleran flycatcher, MacGillivray's warbler, Virginia's warbler, lazuli bunting, spotted towhee, and black-headed grosbeak in oakbrush and mixed mountain shrubs; and the western meadowlark, vesper sparrow, and lark sparrow in sagebrush.

Birds of prey (raptors) potentially present in the area include two BCC species (the bald and golden eagles) as well as flammulated owl, great horned owl, red-tailed hawk, northern goshawk, Cooper's hawk, sharp-shinned hawk, and American kestrel. Bald eagles are known to winter along portions of the Colorado, Eagle, and Roaring Fork Rivers and their major tributaries. Wintering bald eagles are generally present from mid-November to mid-April. Large mature cottonwood trees along the rivers and their major tributaries are used as roosting and perching sites, and these waterways provide the main food sources of fish and waterfowl. Upland habitats adjacent to these waterways are used as scavenging areas, primarily for winter-killed mule deer and elk. Major threats include habitat loss, human disturbance and illegal shooting. Bald eagles are increasing in numbers throughout their range and were removed from the Federal threatened and endangered species list in 2007; however, they remain protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Environmental Consequences/Mitigation

Proposed Action

Impacts to Individuals. The proposed project does have some potential to impact migratory bird species however limited bird count or species data exists for the area. The project has the potential to create some short-term impacts to individual birds (e.g., destruction of eggs, nests and nesting habitat, fragmentation of habitat, human presence, noise, commotion, etc.) because a portion of the project work may occur during the nesting season. If disturbance occurs during the nesting period the destruction of active nests could occur. It is possible that trampling of ground nesting birds and/or their eggs could occur.

Raptors are not expected to be negatively affected as no known nests are located within 0.25 mile of project area and upland foraging habitat is plentiful in the area. The project may impact individuals but would probably not contribute to a trend towards the loss of viability of a population or species.

Species-Level Impacts. Species require specific habitats to survive and reproduce. Meeting critical habitat needs may include ensuring perpetuation of characteristics important for breeding, producing, and rearing of young, feeding, refuge from predators, and protection from inclement environmental conditions. The project area is so small that species would likely only use the project area for only part of the year or part of their life cycle.

Overall, the amount of affected habitat, the relative abundance of sagebrush habitats over the landscape reduces the chance of this project individually or cumulatively influencing populations of migratory birds on a landscape level. If similar habitat is broadly distributed regionally, then any local effects in a specific project area may be inconsequential to species viability. The conclusion is that the impacts to migratory birds would be regionally negligible and isolated and would not likely impact (e.g. species distribution, abundance, migratory/dispersal characteristics) the population at the species level for any specific species.

No Action Alternative

There would be no impacts to migratory birds from the No Action alternative.

NATIVE AMERICAN RELIGIOUS CONCERNS

Affected Environment

The proposed pond is in an area considered the ancestral homeland of the Ute Tribes. At present no areas of Native American concern are known or were identified during the cultural resource survey. No formal consultation was initiated as no areas of Native American concern were identified and the Ute Tribes have indicated that consultation is not necessary for small projects or where no areas of Native American concern were identified.

Environmental Consequences/Mitigation

There would be neither beneficial nor detrimental affects by the action on areas of Native American concerns. The Educational/Discovery stipulation needs to be added to the permit.

THREATENED, ENDANGERED, AND SENSITIVE SPECIES (includes an analysis on Public Land Standard 4)

Affected Environment

Federally Listed, Proposed, and Candidate Threatened or Endangered Species

According to the latest species list from the USFWS, the following Federally listed, proposed, or candidate threatened or endangered plant and animal species may occur within or be impacted by actions occurring within Pitkin County: Canada lynx (*Lynx canadensis*), Mexican spotted owl (*Strix occidentalis lucida*), yellow-billed cuckoo (*Coccyzus americanus*), Colorado pikeminnow (*Ptychocheilus lucius*), bonytail chub (*Gila elegans*), humpback chub (*Gila cypha*), razorback sucker (*Xyrauchen texanus*), greenback cutthroat trout (*Oncorhynchus clarkii stomias*), Uncompahgre fritillary butterfly (*Boloria acrocneuma*), and Ute ladies'-tresses orchid (*Spiranthes diluvialis*), (<http://www.fws.gov/mountain-prairie/endspp/countylists/colorado.pdf>),

Plants:

Within the project area, no suitable habitat is found for the threatened Ute ladies'-tresses orchid. No occupied habitat is present within the vicinity that could be indirectly impacted by the Proposed Action.

Fish:

Designated Critical Habitat for the Colorado pikeminnow and razorback sucker is located in the mainstem Colorado River over 45 miles downstream of the proposed pond site.

Designated Critical Habitat for the humpback chub and bonytail is located in the Black Rocks section of the Colorado River near the Colorado/Utah border well over 125 miles downstream. Because the action would deplete water within the Colorado River Basin, these endangered fishes will be analyzed in detail.

The greenback cutthroat trout, Federally listed as Threatened, is a species of the eastern slope of Colorado, in the South Platte River drainage. Although a few scattered occurrences also occur on the western slope—including some small streams in the GSFO area—these were apparently the result of intentional introductions rather than natural colonization. The greenback cutthroat trout is not known to occur in the Colorado, Eagle, or Roaring Fork Rivers.

Wildlife:

The only Federally listed, proposed, or candidate threatened or endangered wildlife species potentially present in the project vicinity is the Canada lynx, based on known geographic range and habitat requirements. The Canada lynx is a species of boreal (northern) and subalpine (high-elevation) coniferous forests, where it hunts primarily for snowshoe hares and secondarily for pine squirrels, blue grouse, and other vertebrates. Canada lynx may also prey on the young of deer and elk and on carrion of these species.

Habitat types within the project area are not those normally associated with Canada lynx, nor is the project area map as lynx habitat. Potentially, transient lynx could move through the area from more suitable habitats at higher elevations on nearby National Forest System lands.

BLM Sensitive Species

Plants:

The BLM Sensitive plant, Harrington's penstemon (*Penstemon harringtonii*), is known to occur within the project area. During a survey for Harrington's penstemon in June 2008, it was estimated that several hundred penstemon plants were observed within ¼ mile of the project area. Additional suitable habitat is located within a mile of the project area and it is estimated that this habitat may support hundreds more penstemon plants.

Fish:

Three BLM sensitive fish species—the bluehead sucker (*Catostomus discobolus*), flannelmouth sucker (*C. latipinnis*), and roundtail chub (*Gila robusta*)—have habitat requirements similar to those of the Federally listed big-river fishes described above. Both the flannelmouth sucker and roundtail chub are known to occur in the Colorado River. The bluehead sucker is not known to occur in the GSFO area. Another BLM sensitive fish species, the Colorado River cutthroat trout (*Oncorhynchus clarki pleuriticus*) is known from several small streams in the GSFO area but not in the vicinity of the Mt. Sopris Stock Pond project.

Wildlife:

BLM sensitive wildlife species potentially present in the project area include the bald eagle (*Haliaeetus leucocephalus*), which nests, roosts, and perches in mature cottonwoods along the Colorado, Eagle, and Roaring Fork Rivers and their major tributaries; the northern goshawk (*Accipiter gentilis*), which nests in subalpine spruce-fir forest and less commonly in Douglas-fir forest but may move into pinyon-juniper habitats during winter; Brewer's sparrow (*Spizella breweri*), which is migratory and nests in large stands or sagebrush; and the northern leopard frog (*Rana pipiens*), which occupies permanent ponds or slow-flowing streams with good water quality and abundant aquatic vegetation. Of these, the only species likely to occur in the project area is the northern goshawk, which could occur in nearby pinyon-juniper habitats during winter.

Environmental Consequences/Mitigation

Federally Listed, Proposed, and Candidate Threatened or Endangered Species

Proposed Action

Plants:

Due to the absence of any occupied or suitable habitat within or adjacent to the project area, the Proposed Action would have “**No Effect**” on the Federally listed Ute ladies'-tresses orchid.

Fish:

The Colorado pikeminnow, razorback sucker, bonytail, and humpback chub are all Federally listed as Endangered, and Critical Habitat is designated within the Colorado River and its 100-year floodplain from the town of Rifle downstream to Lake Powell for the razorback sucker and Colorado pikeminnow. Critical Habitat for the bonytail and humpback chub is located near the Colorado Utah border. In July 2008, BLM prepared a Programmatic Biological Assessment (PBA) that addresses water depleting activities in the Colorado River Basin. In response to BLM's PBA, the USFWS issued a Programmatic Biological Opinion (PBO) (#ES/GJ-6-CO-08-F-0010) on February 25, 2009, which determined that water depletions from the Colorado River Basin resulting from BLM actions described in the PBO are not likely to jeopardize the continued existence of the Colorado pikeminnow, humpback chub, bonytail, and razorback sucker or result in the destruction or adverse modification of their critical habitat. The PBO addresses internal and external BLM projects including impoundments, diversions, water wells, pipelines, and spring developments.

The USFWS has determined that projects that fit under the umbrella of the PBA would avoid the likelihood of jeopardy and/or adverse modification of critical habitat for depletion impacts to the Upper Colorado River Basin if they deplete relatively small amounts of water (less than 100 acre-feet [AF]) and BLM makes a one-time contribution to the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Recovery Program) in the amount equal to the average annual

acre-feet depleted by each project. The PBO instructed BLM to make an annual payment to the National Fish and Wildlife Foundation (NFWF) to cover all BLM authorized actions that result in water depletions. The Mt. Sopris Stock Pond project would deplete 0.15 AF of water annually. This project has been entered into the Glenwood Springs Field Office water depletion log which will be submitted to the Colorado State Office at the end of the Fiscal Year. The CSO is responsible for paying depletion fees based on the annual statewide total.

Wildlife:

Because the project would result in very minor habitat modification and would be located in an area that does not provide suitable habitat for the Canada lynx, the Proposed Action would have “**No Effect**” on this Federally listed species.

BLM Sensitive Species

Plants:

An estimated 6-10 Harrington’s penstemon plants would be destroyed by construction of the proposed pond. An additional 10-15 plants may be lost or damaged by the increase in grazing or trampling use associated with the new water development. The loss of less than 25 Harrington’s penstemon plants in a local population which is estimated to exceed 500 plants is not likely to result in a loss of long-term viability of the local population. The Proposed Action would not result in a trend toward listing of the species.

Fish:

None of the sensitive fish species in the GSFO area is considered likely to occur within the project vicinity or to be affected by the Proposed Action.

Wildlife:

Bald eagles are unlikely to occur in proximity to the proposed project or to be directly or indirectly affected. The same is true for Brewer’s sparrow, which generally occurs at lower elevations than the project area and requires more extensive sagebrush stands. The northern goshawk is likely to occur as a transient during winter, when it commonly moves from higher elevation to lower elevation forests to hunt for small birds and squirrels. However, construction of the pond, which would occur outside the winter season, would avoid impacts to the goshawk. The northern leopard frog would not be affected because the drainage on which the pond would be located is ephemeral, while the frog requires permanent surface water.

No Action Alternative

The No Action alternative would have no effect on special status species.

Finding on Public Land Health Standard 4 for Threatened and Endangered Species: A formal Land Health Assessment has not been completed for this area but is planned for

the summer of 2010. The Proposed Action should have little impact on the ability of the area to meet Standard 4 for Special Status Species.

WASTES, HAZARDOUS OR SOLID

Affected Environment

Vehicle fuel and lubricants would be used for dozer operations during project implementation.

Environmental Consequences/Mitigation

Proposed Action

Fuels and lubricants would be stored in appropriate containers and refueling would occur in designated areas. Based on the distance of the proposed activities from area drainages, the existing slope angles, and good vegetative cover; it is unlikely that fuels or lubricants would be transported to area drainages.

No Action Alternative

Environmental Consequences/Mitigation: Under the No Action alternative, there would be no fuel or lubricants present associated with vehicles.

WATER QUALITY, SURFACE AND GROUND (includes an analysis on Public Land Health Standard 5)

Affected Environment

Proposed activities would occur south of the Town of Carbondale within the 14,688 acre Lower Crystal River 6th field watershed. Approximately 0.3 miles northwest of the proposed stock pond is the ephemeral Smith Gulch. This drainage is intercepted by diversion ditches downstream and northeast of the proposed activities. The proposed stock pond would be located in a natural depression to intercept and collect runoff and spring snowmelt.

According to the *Stream Classifications and Water Quality Standards* (CDPHE, Water Quality Control Commission, Regulation No. 33) list, Smith Gulch is within the Roaring Fork River Basin segment 3a that includes the mainstem of the Roaring Fork River, including all tributaries, from a point immediately below the confluence with Hunter Creek to the confluence with the Colorado River. This segment has been classified aquatic life cold 1, recreation 1a, water supply, and agriculture. Aquatic life cold 1 indicates that this water course is capable of sustaining a wide variety of cold water biota. Recreation class 1a refers to waters in which primary contact recreation is presumed to be present. In addition, this segment is suitable or intended to become suitable for potable water supplies and agricultural purposes that include irrigation and livestock use.

Smith Gulch is not currently listed on the State of Colorado *303(d) List of Water Quality Limited Segments Requiring TMDLS* (CDPHE, Water Quality Control Commission, Regulation No. 93) or the *Monitoring and Evaluation List* (CDPHE, Water Quality Control Commission, Regulation No. 94) as a waterbody suspected to have water quality problems. At this time there are no current water quality data available for Smith Gulch.

Environmental Consequences/Mitigation

Proposed Action

Proposed activities would remove some vegetation and could alter soil conditions through compaction and displacement associated with dozer operations. These impacts would result in an increase in erosion potential and sediment available for transport to area drainages. These impacts would be short term and minor prior to vegetation reestablishment around the stock pond and disturbed areas. Additionally, there is a potential for contaminants associated with fuel and lubricant spills to be transported. Based on the distance of the proposed activities from area drainages, the existing slope angles, and good vegetative cover; it is unlikely that sediment, fuels, or lubricants would be transported to area drainages.

No Action Alternative

The No Action alternative would have no effect on water quality.

Finding on Public Land Health Standard 5 for Water Quality: The Proposed Action and the No Action alternative would not likely prevent Standard 5 for Water Quality from being achieved. At this time the Roaring Fork Land Health Assessment is scheduled for 2011.

WILDERNESS AND WILDERNESS STUDY AREAS

Affected Environment

The Proposed Action is not within a designated wilderness area or a Wilderness Study Area (WSA). However the Proposed Action is within an area that citizens groups have proposed as a wilderness area known as Thompson Creek. Current legislation is underway and the area is part of the “Hidden Gems Wilderness Campaign.” Currently there are no BLM policies or guidelines that would preclude such actions in areas outside designated wilderness or WSAs. However, as part of the GSFO Resource Management Plan revision planning process, a wilderness character assessment was done and the area was found to contain wilderness characteristics. The planning process will analyze a range of alternatives and public comments and make a decision on how to manage the area.

Environmental Consequences/Mitigation

Proposed Action

Grazing is an allowed for activity within designated wilderness areas, however associated developments must be designed so as to not dominate the landscape and should not impact the area's naturalness, opportunities for solitude and/or for unconfined types of recreation. This Proposed Action would not create long term impacts as all native materials would be used and the location within the drainage and would not detract from the area's wilderness characteristics or more specifically its naturalness. In addition, the proposed action would not preclude any management alternatives currently being analyzed in the RMP, it would not change findings in the Wilderness characteristic assessment, nor would it preclude any legislative actions.

No Action Alternative

The No Action alternative would have no effect on wilderness, WSAs, or the Thompson Creek wilderness area identified in a Citizens Wilderness Proposal.

NON-CRITICAL ELEMENTS

The following elements **must** be addressed due to the involvement of Standards for Public Land Health:

SOILS (includes an analysis on Public Land Health Standard 1)

Affected Environment

According to the *Soil Survey of Aspen-Gypsum Area, Colorado: Parts of Eagle, Garfield, and Pitkin Counties* (USDA 1992), the proposed activities would be located on the soil map units Ipson cobbly loam and Showalter-Morval complex. Following is a brief description of the two soil map units encountered in the project area.

- Ipson cobbly loam (56) – This deep, well drained soil is derived from sandstone and basalt rocks and formed in alluvium and outwash. It is found on terraces, terrace side slopes, and fans at elevations ranging from 6,700 to 8,300 feet and on slopes of 3 to 25 percent. Surface runoff for this soil is medium and the erosion hazard is classified as moderate. Primary uses for this soil include rangeland and homesite development.
- Showalter-Morval complex (94) – This soil map unit is found on alluvial fans, high terraces, and valley sides at elevations ranging from 7,000 to 8,500 feet and on slopes of 5 to 15 percent. Approximately 45 percent of this unit is Showalter very stony loam, 35 percent Morval loam, and the other 20 percent a mixture of soil types. The Showalter soil is deep, well drained and is derived from basaltic alluvium. Surface runoff is medium and the water erosion hazard is slight. The Morval soil is deep, well drained and is derived from basaltic alluvium. Surface runoff is medium and the water erosion hazard is slight. Primary uses for this soil map unit include rangeland, hayland, crops, and homesite development.

Environmental Consequences/Mitigation

Proposed Action

Proposed activities would result in soil compaction and displacement associated with dozer operations and the construction of the stock pond. This could result in an increase in erosion and sediment available for transport to area drainages. These impacts would be short term and minor prior to vegetation reestablishment. Based on the distance of the proposed activities from area drainages, the existing slope angles, and good vegetative cover; it is unlikely that sediment would be transported to area drainages.

No Action Alternative

The No Action alternative would have no effect on soil resources.

Analysis on Public Land Health Standard 1 for Upland Soils: The Proposed Action and the No Action alternative would not likely prevent Standard 1 for Upland Soils from being met. At this time the Roaring Fork Land Health Assessment is scheduled for 2011.

VEGETATION (includes an analysis on Public Land Health Standard 3)

Affected Environment

Vegetation in the project area consists of big sagebrush, snowberry, serviceberry, Gambel oak, pinyon pine, and Utah and Rocky Mountain junipers. The understory is a diverse mix of perennial grasses and forbs.

Environmental Consequences/Mitigation

Proposed Action

Construction of the proposed pond would result in the permanent loss of 0.2 acres of mixed mountain shrubs and some pinyon pine and juniper trees. This represents a very small amount of this vegetation type in the project vicinity. The bulldozer used to construct the pond would be “walked” into the construction site with the blade up. This would destroy a minimal amount of vegetation and would avoid creating a new road. The surface disturbance associated with the pond construction and additional grazing use would increase the risk of noxious weeds invading the site. See the Invasive, Non-native Species section for a discussion of noxious weed impacts and mitigation.

The construction of a new pond is designed to improve the distribution of livestock grazing use in the Mt Sopris allotment. The new pond should reduce grazing intensity in other parts of the allotment, thereby improving overall vegetative conditions across the allotment.

Following completion of the Proposed Action, the disturbed areas would be reseeded with a certified weed-free mix of native grasses adapted to the site.

No Action Alternative

The No Action alternative would result in no impacts to vegetation.

Finding on Public Land Health Standard 3 for Plant and Animal Communities (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial): A formal Land Health Assessment has not been completed in this area. The Proposed Action would likely result in a localized deterioration in vegetative composition and cover immediately adjacent to the pond but would improve vegetative conditions in the allotment as a whole. The Proposed Action should maintain or improve overall conditions relative to Land Health Standard 3 within the Mt Sopris allotment.

WILDLIFE, AQUATIC (includes an analysis on Public Land Health Standard 3)

Affected Environment

No perennial water sources are located at the project site. The Crystal River is located within 1.0 miles to the east of the project site. The Crystal River contains brown, rainbow, and brook trout, mountain whitefish, mottled sculpin, and aquatic invertebrates.

Environmental Consequences/Mitigation

Proposed Action

Given the size of the pond and the distance to the Crystal River, the project is not anticipated to have any negative impacts to resident fish. Construction of the pond would result in the disturbance of 0.2 acres of upland habitat. It is likely that a small amount of soil compaction and soil displacement would occur at the site. In addition, it is likely that livestock use would increase at the site as they concentrate at this water source. Some additional soil compaction may result from the long-term use of the pond. However, it is unlikely that sediment produced from the Proposed Action would negatively affect downslope fisheries. A large ditch exists between the project site and the Crystal River, which would intercept waterflow prior to reaching the Crystal River.

No Action Alternative

The No Action alternative would result in no impacts to aquatic wildlife.

Finding on Public Land Health Standard 3 for Plant and Animal Communities (partial, see also Vegetation and Wildlife, Terrestrial): A formal Land Health Assessment has not been completed for this area. The Proposed Action would likely help to better distribute livestock on the grazing allotment which would help to improve upland and riparian habitats across the allotment. The minimal ground disturbance and livestock concentration at the site would have little bearing on the areas ability to meet Standard 3 for aquatic wildlife.

WILDLIFE, TERRESTRIAL (includes an analysis on Public Land Health Standard 3)

Affected Environment

Sagebrush stands provide important habitat for a variety of obligate species of birds, and are particularly important as food and cover for wintering big game within the Eagle South landscape. Pinyon-juniper woodlands provide important foraging and nesting habitat for some raptor species and many migratory song birds, and provide security, foraging, and thermal cover for a variety of small game, big game, and nongame wildlife. Mixed mountain shrub and oak habitats are important to turkey, black bear, mule deer and elk among others. The project area does not provide critical habitat for any wildlife species.

The current condition of wildlife habitats varies across the landscape. Upland habitats have been altered by roads (both authorized and unauthorized), powerlines, pipelines, fences, public recreation use, residential and commercial development, vegetative treatments and livestock and wild ungulate grazing. These human uses contribute to degradation of habitat quality, fragmentation of habitat for several species and the expansion of areas supporting noxious and exotic vegetative species.

Species of High Public Interest.

Mule deer and elk usually occupy higher elevations, forested habitat, during the summer and then migrate to sagebrush-dominant ridges and south-facing slopes at lower elevation in the winter. BLM lands provide a large portion of the undeveloped winter range available to deer and elk. Portions of these allotments are mapped as important big game winter habitat. A large portion of both allotments overlap with severe winter range. A small portion of the lower elevations overlap with elk severe winter range. Severe winter range is considered that part of the overall range where 90% of the individuals are located when the annual snowpack is at its maximum and/or temperatures are at a minimum in the two worst winters out of ten.

Environmental Consequences/Mitigation

Proposed Action

Little upland habitat would be impacted to accommodate the pond. The pond would provide resident wildlife with an additional upland water source and would generally help distribute livestock grazing throughout the allotment. However, it is also likely that livestock would concentrate around the pond, which could result in increased utilization of upland vegetation in the immediate area. In conclusion the construction of one small pond would have negligible impact to terrestrial wildlife overall.

No Action Alternative

No impacts to terrestrial wildlife species or their habitat would occur under this alternative. However, the Proposed Action would likely benefit wildlife species by improving habitat conditions throughout the allotment.

Analysis on the Public Land Health Standard for Plant and Animal Communities (partial, see also Vegetation and Wildlife, Aquatic): A formal land health assessment has not been completed for this area. The Proposed Action is expected to have negligible impacts on terrestrial wildlife species and would not preclude standard 3 from being met.

OTHER NON-CRITICAL ELEMENTS: For the following elements, those brought forward for analysis are formatted as shown above.

Table 2. Other Resources Considered in the Analysis.			
<i>Resource</i>	<i>NA or Not Present</i>	<i>Present and Not Affected</i>	<i>Present and Affected</i>
Access and Transportation	X		
Cadastral Survey	X		
Fire/Fuels Management	X		
Forest Management	X		
Geology and Minerals	X		
Law Enforcement	X		
Paleontology	X		
Noise	X		
Range Management			X
Realty Authorizations	X		
Recreation		X	
Socio-Economics		X	
Visual Resources		X	

RANGE MANAGEMENT

Affected Environment

The proposed project is located in the Mt. Sopris Allotment, which is under a grazing permit with the following permitted use:

Livestock No./Kind	Period of Use	%PL	AUMS
102 Cattle	5/25 – 6/23	21	21

Environmental Consequences/Mitigation

Proposed Action

The Proposed Action supplies livestock with a more reliable source of drinking water and would help improve grazing distribution. This would improve conformance with Guidelines for Livestock Grazing Management in Colorado (Guideline No. 2 – grazing management practices that address distribution and helps achieve/maintain of Colorado Public Land Health 2 (riparian systems) and 3 (plant and animal communities).

No Action

The water development would not be constructed. Additional sources of drinking water would not be supplied. Consequently, grazing disturbance would not be improved. There would be no improved conformance with the Guidelines for Livestock Grazing Management in Colorado (Guideline No. 2 – grazing management practices that address distribution). This alternative would not help achieve/maintain Colorado Public Land Health Standard 2 (riparian systems) and 3 (plant and animal communities).

CUMULATIVE IMPACTS SUMMARY:

Indirect long term cumulative impacts from livestock congregating around the ponds could result in the potential for erosion and trampling which could uncover of buried cultural components. Additionally, the potential increase in human activity around the ponds as well as more access into the area at least during construction and maintenance could result in a range of impacts to known and undiscovered cultural resources in the vicinity of the location, from illegal collection and excavation to vandalism. No other cumulative impacts have been identified.

PERSONS / AGENCIES CONSULTED:

Grazing Permittee

INTERDISCIPLINARY REVIEW:

<i>Name</i>	<i>Title</i>	<i>Responsibility</i>
Dereck Wilson	Rangeland Management Specialist	NEPA lead, Range Management, Invasive, Non-native Species
Jeff O'Connell	Hydrologist	Soil, Air, Water, Geology
Cheryl Harrison	Archaeologist	Cultural Resources and Native American Concerns
Brian Hopkins	Wildlife Biologist	Migratory Birds, Special Status Animals, Aquatic and Terrestrial Wildlife
Carla DeYoung	Ecologist	ACEC, T/E/S Plants; Land Health Standards; Vegetation
Tom Fresques	Fisheries Biologist	T&E Aquatic Species, Aquatic Wildlife
Kay Hopkins	Outdoor Recreation Planner	WSR, Wilderness, VRM
Mike Kinser	Rangeland Management Specialist	Wetlands and Riparian Zones

FONSI CO-140-2008-132 EA

The environmental assessment and analyzing the environmental effects of the Proposed Action have been reviewed. The Proposed Action with any approved mitigation measures result in a Finding of No Significant Impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the Proposed Action.

DECISION RECORD

DECISION: It is my decision to adopt the Proposed Action to construct the reservoir as described in the Proposed Action in accordance with the project design features, specifications and drawings.

RATIONALE: Construction of the reservoir would provide cattle and wildlife with an additional source of water, help improve grazing distribution, maintain/improve the condition of riparian and upland areas, and help achieve Colorado Public Land Health Standards 2 (riparian systems) and 3 (plant and animal communities).

The environmental impacts have been mitigated with measures outlined below and have been included in the Cooperative Range Improvement Permit.

MITIGATION MEASURES: The permittee and all persons specifically associated with operations involved in this permit must be informed that any objects or sites of cultural, paleontological, or scientific value such as historic or prehistoric resources, graves or grave markers, human remains, ruins, cabins, rock art, fossils, or artifacts shall not be damaged, destroyed, removed, moved, or disturbed. If in connection with allotment operations under this authorization any of the above resources are encountered, the proponent shall immediately suspend all activities in the immediate vicinity of the discovery that might further disturb such materials and notify the BLM authorized officer of the findings. The discovery must be protected until notified in writing to proceed by the authorized officer (36 CFR 800.110 & 112, 43 CFR 10.4)

Following completion of the Proposed Action, the disturbed areas shall be reseeded with a certified weed-free mix of native grasses adapted to the site.

The permittee shall monitor the reservoir disturbance to detect the presence of any noxious weeds and shall be responsible for promptly controlling any noxious weeds on the Colorado State List A or B (except redstem filaree) within the area disturbed from reservoir construction. If the permittee chooses to use herbicides as the control method on public lands, a Pesticide Use Proposal shall be submitted to the BLM and approved prior to initiating any herbicide spraying.

The operator shall ensure that equipment involved in land disturbing actions is clean of noxious weed seeds or propagative parts prior to entry on site. When working in areas with noxious weeds, equipment shall be cleaned prior to moving offsite.

NAME OF PREPARER: Dereck Wilson

SIGNATURE OF AUTHORIZED OFFICIAL:



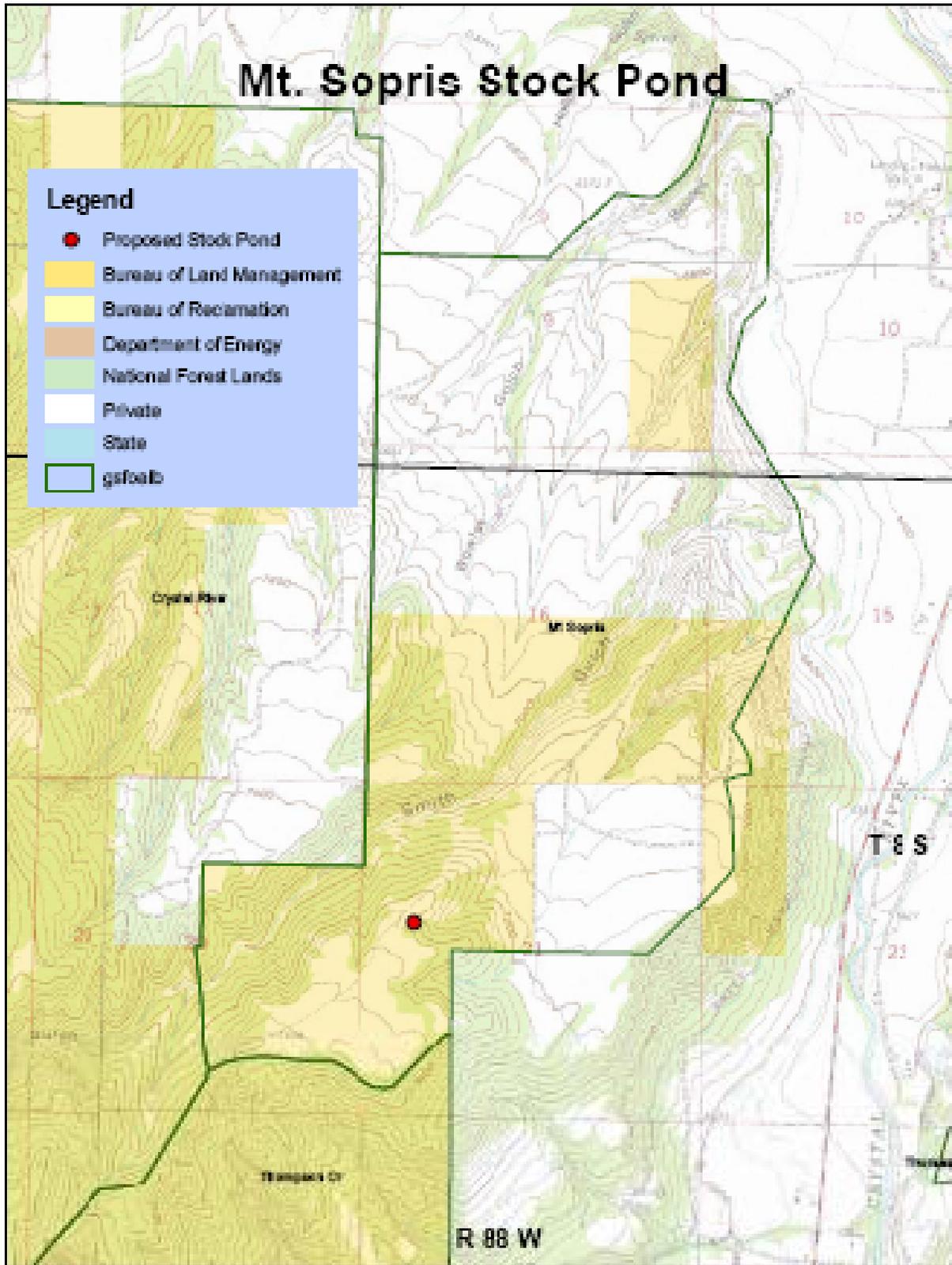
Authorized Officer

DATE SIGNED: 10/29/2009

APPENDICES: A: Location map and picture
B: Specifications and drawings.

ATTACHMENTS: None

Appendix A





Mt. Sopris Stock Pond Site (Mt. Sopris in Background)

Appendix B
Project Specifications

02291
WORK DATA SHEET

for

SECTION 02291 - MINOR EARTH DAMS AND PITS

1. Pit depth: 4 to 6 ft
2. Pit length (L): 30 to 50 ft
3. Pit width (W): 30 to 50 ft
4. End slope: 2:1
5. Side slope: 3:1
6. Embankment shape: U
7. Distance between pit and berm (A): None
8. Dam height: 5 to 8 ft
9. Crest width: 12 ft
10. Crest length: 70 to 200 ft
11. Downstream slope (D. S.): 2:1
12. Upstream slope (U. S.): 2.5:1
13. Cut spillway width: 6 to 8 ft
14. Cut spillway side slope: 1:1
15. Cut spillway depth: 2 to 3 ft
16. Natural spillway depth: 2 to 3 ft
17. Depth of cut off trench (core): 2 to 4 ft
18. Borrow area side slope: 1:1
19. Borrow area end slope: 3:1

SECTION 02291

Minor Earth Dams and Pits

PART 1: GENERAL

1.01 SUMMARY:

A. Section Includes: Clearing, grubbing, excavation, embankment development, and core trenching for construction of minor earth dams and water-retention pits.

B. Related Sections:

Clearing and Grubbing - Section 02231

1.02 DEFINITIONS:

A. Common Excavation: Materials to be removed from excavation, except igneous, metamorphic and sedimentary rock which cannot be excavated without blasting, will be considered common excavation. When ripping is required, the material will also be considered common excavation. Material which cannot be ripped with a rear-mounted, heavy duty, single-tooth, ripping attachment mounted on a crawler tractor having a power rating of at least 195 net flywheel hp shall be considered rock.

PART 2: PRODUCTS

2.01 MATERIALS:

A. General: See definitions.

B. Embankment: Excavated materials shall be placed in the embankment. Pervious materials, such as sand and gravel, shall be placed above the high water level.

PART 3: EXECUTION

3.01 PREPARATION:

A. Clearing and Grubbing: Shall be in accordance with Section 02231 - Clearing and Grubbing.

B. Conservation of Topsoil: Suitable material removed in conjunction with clearing, grubbing, bank sloping, and borrow area preparation shall be conserved in neat stockpiles at locations designated by the BLM.

C. Depth of Stripping: Normal stripping depth is not expected to exceed 6 inches, although variations may be encountered. The Contractor shall conserve available topsoil.

3.02 INSTALLATION:

- A. Placement of Topsoil: After construction of the embankment and excavation areas is completed, the stockpiled topsoil shall be uniformly placed over cut and fill areas above high water line with priority to the top and upstream slopes of reservoirs, spillways, and borrow pits. Spreading of topsoil shall not be done when the ground or topsoil is frozen, or excessively wet. Topsoil shall be spread to depths as shown on the plans or designated by the BLM.
- B. Excavation: Additional excavation for the convenience of the Contractor, or due to careless operations, including the cost of backfilling, shall be at the expense of the Contractor. The Contractor shall use care not to disturb sod or vegetation in natural spillways or sodded watercourse areas below excavated spillways. Further requirements are:
1. End and side slopes of the borrow excavation shall be as shown on the Work Data Sheet. The dimensions of excavation shall be as shown on the drawings and the Work Data Sheet.
 2. Suitable materials from excavations for specified permanent construction shall be used in the embankment and shall either be placed in the embankment directly from excavation or shall be placed in temporary stockpiles and later placed in the embankment as approved by the BLM.
 3. Excavated materials which are unsuitable for, or are in excess of the requirements, for the embankment or other earthwork, as determined by the BLM, shall be deposited as waste. The material shall be placed immediately below the downstream toe of the embankment in a manner that shall not leave windrows. Compaction of such waste materials shall not be required. Costs of placing material in temporary stockpiles shall be included in the unit price for common excavation.
 4. Core trenches, where required, shall be excavated and suitable materials, as determined by the BLM, shall be placed in the embankment. Material determined not suitable shall be wasted at the downstream toe of the embankment in a manner that will not leave windrows.
- C. Embankment: The embankment shall be constructed downstream from the borrow excavation, as shown on the drawings. Embankment materials shall be free of sod, roots, brush, snow, other waste matter and rocks of a shape or size that will interfere with uniform placement of materials in layers of specified thickness. Fill materials shall not be placed when either materials, or surface on which they will be placed, are frozen or too wet for satisfactory compaction as determined by

the BLM. The scarified surface shall be compacted with the first layer of earthfill. Further requirements are:

1. Materials shall be placed parallel to the axis of the embankment in even, continuous, horizontal layers not more than 8 inches in thickness as deposited by scrapers. The full cross section of the fill shall be maintained as each successive layer is placed.
2. Successive loads of material shall be dumped on earthfill so as to produce an optimum distribution of material, subject to approval of the BLM. Distribution and gradation of materials throughout earthfill shall be free from lenses, pockets, streaks, or layers of material differing substantially in texture or gradation from surrounding material. Combined excavation and placement operations shall be such that materials, when compacted in the embankment, shall be blended sufficiently to secure the optimum compaction and stability.
3. Slopes of embankments shall be finished to conform to lines and grades shown on the Work Data Sheet. The top of the embankment shall be constructed level.
4. Core trenches, where required, shall be backfilled with material excavated from the pit, spillway, or borrow area, with its suitability determined by the BLM.

3.03 FIELD QUALITY CONTROL:

- A. Core Trenches: During backfill operations, the Contractor shall operate hauling equipment evenly over the full width of the excavated core trench to obtain maximum compaction.
- B. Embankment: The Contractor shall route hauling equipment over the layers of embankment material already in place, and shall distribute travel evenly over the entire width of the embankment to obtain maximum compaction while placing material. Overcompaction shall be avoided along hauling route.

END OF SECTION

SECTION 02231

CLEARING AND GRUBBING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Clearing of vegetation, and grubbing of stumps, roots, and debris; disposal of unutilized materials; and other incidental work related to preparing the site for later use.
- B. Related Sections:
 - Trenching - Section 02321
 - Minor Earth Dams and Pits - Section 02291

1.2 DEFINITIONS

- A. Clearing: Clearing shall consist of the felling, trimming, and cutting of obstructions such as trees into sections and the satisfactory disposal of the trees and other surface vegetation designated for removal, including down timber, snags, brush, and rubbish occurring in the areas to be cleared.
- B. Grubbing: Grubbing shall consist of the removal and disposal of below-surface stumps, roots larger than 75 millimeters (3 inches) in diameter, and matted roots from the designated grubbing areas.
- C. Hazardous Waste: Substance likely to cause death or injury by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritating, or otherwise harmful; and includes, but is not limited to flammable dust, flammable fiber, combustible liquid, dangerous chemical, flammable gas, liquified flammable gas, and flammable liquid.

1.3 PROJECT/SITE CONDITIONS

- A. Work Limits: Area to be cleared and grubbed will be the excavation area. Total width of clearing shall not exceed 15 feet. This width may be to one side of the pipeline or partially to both sides. Scalping of topsoil during clearing operations will not be permitted.
- B. Burning of Slash: Shall not be permitted.
- C. Landscape Preservation: Protect vegetation outside the work limits from injury. Existing trees and shrubs shall not be disturbed or damaged.

PART 2 PRODUCTS

2.1 PREPARED PRODUCTS

- A. Tree Wound Paint: Bituminous based material of standard manufacture specially formulated for tree wounds.
- B. Herbicide: Comply with Federal Insecticide, Fungicide, and Rodenticide Act, Title 7 U.S.C. Section 136, for requirements on Contractor licensing, certification, and record keeping.

2.2 EQUIPMENT

- A. Spark Arresters: Shall meet the requirements of the U.S. Forest Service Spark Arrester Guide, Volume 2, dated 1993.

PART 3 EXECUTION

3.1 PROTECTION

- A. Utility Lines: Protect existing utility lines that are indicated to remain from damage. Notify the BLM immediately of damage to or an encounter with an unknown existing utility line. The Contractor shall be responsible for the repairs of damage to existing utility lines that are indicated or made known to the Contractor prior to the start of clearing and grubbing operations. When utility lines which are to be removed are encountered within the area of operations, the Contractor shall notify the BLM 72 hours prior to interruption of the service.

3.2 CLEARING

- A. Requirements: Clear trees, stumps, roots, brush, and other vegetation in areas to be graded; cut off flush with or below the original ground surface, except such trees and vegetation indicated or directed to be left standing. Trees designated to be left standing within the cleared areas shall be trimmed of dead branches 1-1/2 inches or more in diameter and be painted with an approved tree-wound paint. Limbs and branches to be trimmed shall be neatly cut close to the bole of the tree or main branches. Trees and vegetation to be left standing shall be protected from damage incident to clearing, grubbing, and construction operations by the erection of barriers or by such other means as the circumstances require. Clearing shall also include the removal of existing obstructions that are a distance of 5 feet beyond the perimeter of to-be-built structures.

3.3 GRUBBING

- A. Requirements: Material to be grubbed, together with logs and other organic or metallic debris not suitable for

foundation purposes, shall be removed to a depth of not less than 18 inches below the original surface level of the ground in areas indicated to be grubbed. Depressions made by grubbing shall be filled with suitable material and compacted to make the surface conform with the original adjacent surface of the ground. Debris not suitable for foundation purposes shall be removed.

- B. Low Embankment Areas: When the finished subgrade is less than 3 feet above the original ground, remove stumps, roots, and debris to a minimum of 6 inches below the original ground. Backfill stump and root holes with approved material and compact before placing embankment material.
- C. High Embankment Areas: When the finished subgrade is 3 feet or more from the original ground, stumps may be cut flush and left in place. Removal of undisturbed stumps and roots and nonperishable solid objects will not be required. The surface of the original ground shall be scarified before starting the embankment operation.

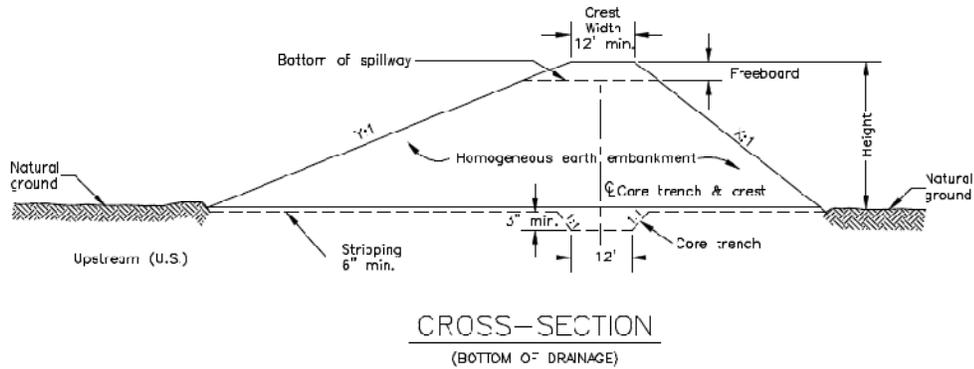
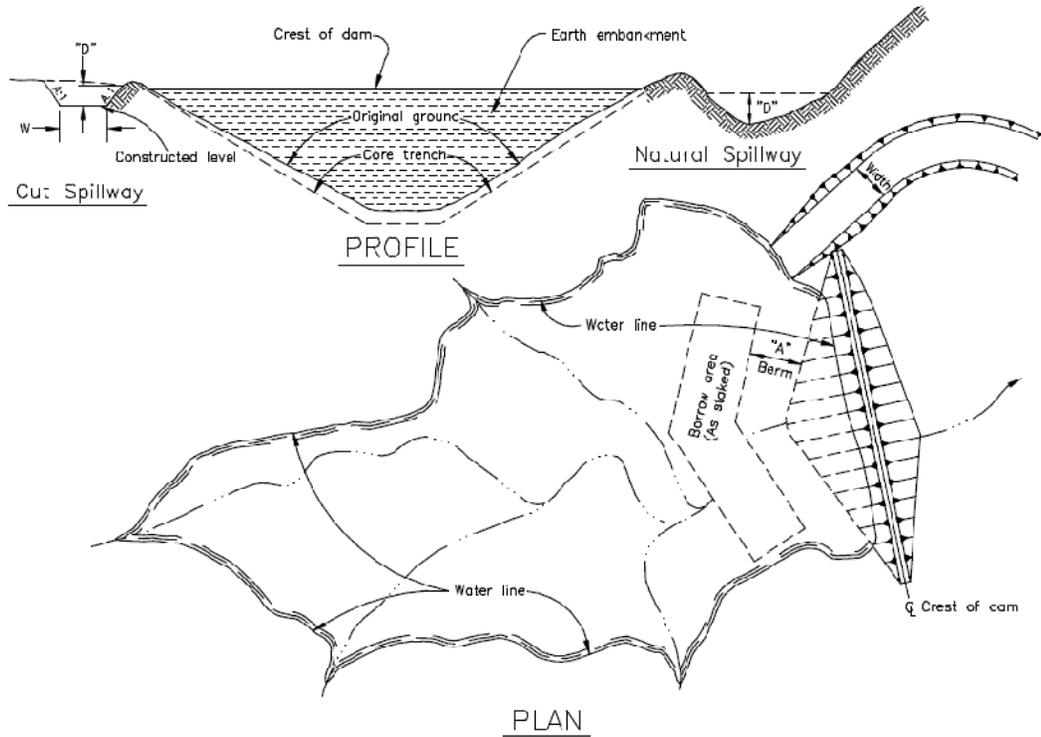
3.4 SALVAGE

- A. Trees and Limbs, 8-inch Diameter and Larger: Trim limbs, cut into approved log lengths, and stockpile where directed. The stockpiled materials will remain the property of the Government.
- B. Trees and Limbs, 3-inch to 8-inch Diameter: Cut logs into 4-foot lengths and stack where directed. The stockpiled material will remain the property of the Government.

3.5 DISPOSAL

- A. Requirements: Material that is not to be salvaged shall be removed from the project site and legally disposed of offsite or disposed of by a combination of burying and removal. Burning will not be permitted.

END OF SECTION



NOTES:

1. Embankment slopes and dimensions shall be as shown in specifications.
2. Berm with "A" minimum of 25' or as shown on the Work Data Sheet or as staked.
3. Freeboard as shown on the Work Data Sheet.

ALWAYS THINK SAFETY

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT DIVISION OF TECHNICAL SERVICES SERVICE CENTER	
TYPICAL MINOR RETENTION DAM	
DESIGNED	by others _____
REVIEWED	_____
APPROVED	_____
DRAWN	SCALE NONE
DATE	JULY 24, 1990 SHEET 02
DRAWING NO.	02261-2