

**U.S. Department of the Interior
Bureau of Land Management
Glenwood Springs Field Office
50629 US Highway 6 & 24
Glenwood Springs, CO 81601**

ENVIRONMENTAL ASSESSMENT

NUMBER: DOI-BLM-CO-N040-2009-0087-EA

CASEFILE/PROJECT NUMBER:

PROJECT NAME: Dean Gulch Ponds

LEGAL DESCRIPTION: T7S R90 & 91W Sec 18-19 & 13, 24, Garfield County, See attached maps

APPLICANT: Grazing Permittee

DESCRIPTION OF PROPOSED ACTION, BACKGROUND AND ALTERNATIVE:

PROPOSED ACTION:

Construct 2 new ponds and maintain existing ponds in good and functioning condition. Each new pond would hold approximately 0.2 acre feet of water and would retain water during spring run-off and summer storms. Construction of ponds will require the permittee to build dozer lines for access. Dozer lines are identified on the aerial photo by purple lines. The dozer lines will be about 6 feet wide and will provide better trails through dense oakbrush to aid in livestock control and distribution. Total new surface disturbance would be approximately 5 acres. The dozer lines will not be used by motorized traffic but will serve as livestock trails and future access for pond maintenance. The permittee wishes to keep the allotment free from motorized use and will continue to manage livestock by horseback.

BACKGROUND & NEED FOR PROPOSED ACTION:

The ponds are needed to help distribute livestock evenly on the allotment. The maintenance of the existing ponds is required by BLM as part of the grazing permit. Access to all ponds is currently limited to horseback. Dozer lines will be maintained as livestock trails and used periodically to maintain ponds in good and functioning condition.

NO ACTION:

Do not build the new ponds and continue with current management. Clean existing ponds and maintain the roads enough to safely access existing ponds with a dozer.

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: Jan. 1984, revised 1988, amended in November 1991 - Oil and Gas Leasing and Development - Final Supplemental Environmental Impact Statement; amended Nov. 1996 - Colorado Standards and Guidelines; amended in August 1997 - Castle Peak Travel Management

Plan; amended in March 1999 - Oil and Gas Leasing & Development Final Supplemental Environmental Impact Statement; amended in November 1999 - Red Hill Plan Amendment; amended in September 2002 – Fire Management Plan for Wildland Fire Management and Prescriptive Vegetation Treatment Guidance; amended in June 2007 – Record of Decision for the Approval of Portions of the Roan Plateau Resource Management Plan Amendment; and amended in March 2009 - Record of Decision for the Designation of Areas of Critical Environmental Concern for the Roan Plateau Resource Management Plan.

Decision Number/Page: The action is in conformance with Administrative Actions (pg. 5) and Livestock Grazing Management (pg. 20).

Decision Language: 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 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 Divide Creek Landscape, which encompasses the Dean Gulch allotment where the proposed ponds would be constructed, is scheduled for a formal land health assessment in 2009. As such, we are deferring making a determination on conformance with the Standards on this allotment until the formal Land Health Assessment is completed.

The environmental analysis herein must address whether the proposed action or alternatives being analyzed would result in impacts that would maintain, improve, or deteriorate land health conditions relative to these five standards.

COMPLIANCE WITH SECTION 302 OF FLPMA RELATIVE TO THE COMB WASH DECISION

A review of applicable planning documents and a thoughtful consideration of new issues and new demands for the use of the public lands involved in this allotment have been made. This analysis concludes that the current land and resource uses are appropriate.

Reasons for the conclusion are: No new issues or new demands for the use of public lands involved in this grazing allotment have been identified since approval of the land use plan and amendments.

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

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 2. 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
ACECs		X		X	Threatened, Endangered, and Sensitive 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/ WSAs		X		X
Native American Religious Concerns		X		X					

* Public Land Health Standard

AIR QUALITY

Affected Environment: The proposed action area (Garfield 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).

Proposed Action:

Environmental Consequences/Mitigation: The proposed action would result in short-term localized vehicle emissions from dozer operations associated with construction of the stock ponds and access routes. 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:

Environmental Consequences: The no action alternative would have no effect on air quality.

CULTURAL RESOURCES and NATIVE AMERICAN RELIGIOUS CONCERNS

Affected Environment: A Class III inventory (GSFO#15810-2) of the two new ponds was completed in October 2009. No cultural resources or areas of Native American concern were identified. Additionally, maintenance of the existing ponds and access roads fall under exceptions to Class III inventories as stated in the BLM Colorado Handbook.

Proposed Action

Environmental Consequences: No impacts are anticipated by the construction of the new ponds and access. As such no formal consultation with the Colorado State Historic Preservation Officer (SHPO) was undertaken and a determination of “**No Historic Properties Affected**” was made in accordance with the National Historic Preservation Act (NRHP), as amended (16 USC 470f), National BLM/SHPO Programmatic Agreement (1997), and the Colorado Protocol (1998).

Mitigation: Education/Discovery/NAGPRA Stipulation needs to be added to the permit.

The National Historic Preservation Act (NHPA) requires that if newly discovered cultural resources are identified during project implementation, work in that area must stop and the agency Authorized Officer notified immediately (36 CFR 800.13). The Native American Graves Protection and Repatriation Act (NAGPRA), requires that if inadvertent discovery of Native American Remains or Objects occurs, activity must cease in the area of discovery, a reasonable effort made to protect the item(s) discovered, and immediate notice made to the BLM Authorized Officer, as well as the appropriate Native American group(s) (IV.C.2). Notice may be followed by a 30-day delay (NAGPRA Section 3(d)). Further actions also require compliance under the provisions of NHPA and the Archaeological Resource Protection Act.

No Action

Environmental Consequences: There would be effect to cultural/Native American resources under this alternative since the *new ponds and access* would not be constructed. The Education/Discovery/NAGPRA Stipulation would still apply.

ENVIRONMENTAL JUSTICE

Affected Environment: Review of 2004 data from US Census Bureau indicates the median annual income of Garfield County averages \$50,119 and is neither an impoverished or wealthy county. Median annual income of Mesa County averages \$40,045 and is not an impoverished or wealthy county. U.S. Census Bureau data from 2006 shows the minority population of Garfield and Mesa County comprises less than 0.7 % of the total population of Colorado¹.

¹ 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
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Garfield County	Mesa County
Median Household Income (2004)	Median Household Income (2004)
Estimate	Estimate
\$50,119	\$40,045

Environmental Consequences/Mitigation: The proposed action and alternatives are not expected to create a disproportionately high and adverse human health impact or environmental effect on minority or low-income populations within 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 spotted knapweed, Russian knapweed, musk thistle, houndtongue, and whitetop.

Environmental Consequences

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 ponds 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.

Mitigation: To reduce the opportunities for weeds to become established, the disturbed areas will be reseeded with a certified weed-seed free mixture of native grasses adapted to the site. The permittee will monitor the reservoir disturbance to detect the presence of any noxious weeds and will 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: Under this alternative, the ponds 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 Bureau of Land Management's (BLM) 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 U.S. Fish and Wildlife Service (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." *Birds of Conservation Concern 2008*

(<http://www.fws.gov/migratorybirds/reports/BCC2008/BCC2008m.pdf>) is the most recent effort to carry out this mandate.

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 Glenwood Springs Field Office is within the Southern Rockies/Colorado Plateau Bird Conservation Region (BCR). The 2008 list include the following birds: Gunnison Sage Grouse, American Bittern, Bald Eagle, Ferruginous Hawk, Golden Eagle, Peregrine Falcon, Prairie Falcon, Snowy Plover, Mountain Plover, Long-billed Curlew, Yellow-billed Cuckoo, Burrowing Owl, Lewis's Woodpecker, Willow Flycatcher, Gray Vireo, Pinyon Jay, Juniper Titmouse, Veery, Bendire's Thrasher, Grace's Warbler, Brewer's Sparrow, Grasshopper Sparrow, Chestnut-collared Longspur, Black Rosy-Finch, Brown-capped Rosy-Finch, and Cassin's Finch.

The GSFO planning area provides both foraging and nesting habitat for a variety of migratory birds that summer, winter, or migrate through the area. The habitat diversity provided by the broad expanses of sagebrush, mixed mountain shrub, oakbrush, aspen, pinyon-juniper woodlands, other types of coniferous forests and riparian and wetland areas support many bird species. The Gray Vireo, Pinyon Jay, Juniper Titmouse, Lewis's Woodpecker and Grace's Warbler are characteristically found in pinyon/juniper woodlands and the Brewer's sparrow (*Spizella breweri*) is found within sagebrush habitats. Other Birds of Conservation Concern 2008 may also occur locally. Many

species of raptors (red-tailed hawks, golden eagles, northern goshawks, Cooper's hawks, kestrels and owls) not on the Fish & Wildlife Service's Birds of Conservation Concern list also could occur in the area.

Bald eagle (*Haliaeetus leucocephalus*). Bald eagles are known to winter along portions of the Colorado, Eagle and Roaring Fork Rivers and its major tributaries. Wintering bald eagles are generally present from mid-November to mid-April. Large mature cottonwood trees along the 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 bald eagles are still protected under the Migratory Bird Treaty Act.

Vegetation in the project area provides nesting and foraging habitat for a variety of migratory bird species. One species on the USFWS Birds of Conservation Concern List, Virginia's warbler, may nest in the area.

Environmental Consequences/Mitigation:

Proposed Action:

Impacts to Individuals. The proposed new construction 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 will not likely 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 will 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.

THREATENED, ENDANGERED, & SENSITIVE SPECIES (includes an analysis on Standard 4)

Affected Environment:

Federally Listed, Proposed or Candidate Species

According to the latest species list from the U. S. Fish and Wildlife Service (<http://mountain-prairie.fws.gov/endspp/CountyLists/COLORADO.htm>), the following Federally listed, proposed, or candidate plant and animal species may occur within or be impacted by actions occurring in Garfield County: Colorado hookless cactus (*Sclerocactus glaucus*), Ute Ladies' Tresses orchid (*Spiranthes diluvialis*), Parachute beardtongue (*Penstemon debilis*), DeBeque phacelia (*Phacelia submutica*), Canada lynx (*Lynx canadensis*), Mexican spotted owl (*Strix occidentalis*), yellow-billed cuckoo (*Coccyzus americanus*), razorback sucker (*Xyrauchen texanus*), Colorado pikeminnow (*Ptychocheilus lucius*), bonytail chub (*Gila elegans*), and humpback chub (*Gila cypha*). The U. S. Fish and Wildlife Service announced the delisting of the bald eagle in June, 2007 with an effective date of August 8, 2007. The BLM now considers the bald eagle a sensitive species.

Plants:

No suitable habitat is found within the project area for any of the four federally listed, proposed or candidate plant species which occur in Garfield County. No occupied habitat is present within the vicinity that could be indirectly impacted by the proposed action.

Terrestrial Wildlife:

No suitable habitat exists for any Federally listed, proposed or candidate terrestrial wildlife species.

Aquatic Wildlife:

Designated Critical Habitat for the Colorado pikeminnow and razorback sucker is located in the main stem of the Colorado River over 28 miles downstream of the proposed pond and dozer line construction and pond maintenance sites. 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 100 miles downstream. Because the action would deplete water within the Colorado River Basin, these endangered fishes will be analyzed in detail.

BLM Sensitive Species

Plants:

BLM sensitive plant species with habitat and/or occurrence records in Garfield County include adobe thistle (*Cirsium perplexans*), DeBeque milkvetch (*Astragalus debequaeus*), Naturita milkvetch (*Astragalus naturitensis*), Roan Cliffs blazing star (*Mentzelia rhizomata*), Piceance bladderpod (*Lesquerella parviflora*), and Harrington’s penstemon (*Penstemon harringtonii*). No BLM sensitive plant species, or suitable habitat for these species, are known to occur in or near the project area.

Terrestrial Wildlife:

The following table lists special status terrestrial wildlife species in the Glenwood Springs Field Office.

Special Status Terrestrial Wildlife Species in the Glenwood Springs Field Office			
BIRDS			
Species	Status	Species	Status
Bald Eagle	BLM-S	White-faced Ibis	BLM-S
Western Yellow-billed Cuckoo	BLM-S, C, SC	Northern Goshawk	BLM-S
Gunnison Sage-Grouse	BLM-S, SC	Barrow’s Goldeneye	BLM-S
Greater Sage-grouse	BLM-S, SC	Burrowing Owl	ST
Columbian Sharp-Tailed Grouse	BLM-S, SC	Peregrine Falcon	ST
Ferruginous Hawk	BLM-S, SC	Greater Sandhill Crane	SC
REPTILES			
Midget-faded rattlesnake	BLM-S	Utah milksnake	BLM-S
MAMMALS			
Townsend's big-eared bat	BLM-S, SC	Big free-tailed bat	BLM-S
Fringed myotis	BLM-S	Yuma myotis	BLM-S
Spotted bat	BLM-S	River otter	ST

BLM-S: BLM Sensitive Species SC: State Species of Concern
 FE: Federally Endangered Species SE: State Endangered Species
 FT: Federally Threatened Species ST: State Threatened Species
 C: Federal Candidate for listing as Threatened or Endangered

Aquatic Wildlife:

Flannemouth sucker, bluehead sucker, roundtail chub, and Colorado River cutthroat trout:

Flannemouth sucker, bluehead sucker, and roundtail chub are all known to reside within the Colorado River within 8 miles of the proposed construction, maintenance and dozer line sites. The Colorado River cutthroat trout is known to reside in Baldy creek within 0.5 miles of the eastern most pond clean-up site.

Environmental Consequences/Mitigation:

Listed, Proposed, and Candidate Species:

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 any of the four listed, proposed, or candidate plant species in Garfield County.

Terrestrial Wildlife:

Due to the absence of any occupied or suitable habitat within or adjacent the proposed action, the proposed action would have “**No Effect**” to any listed, proposed, or candidate terrestrial wildlife species.

Aquatic Wildlife:

The Colorado pikeminnow, razorback sucker, bonytail chub, 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 chub 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 FWS 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 chub, 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 FWS 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 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 Dean Gulch Stock Ponds project would deplete 0.8 AF of water annually. The depletion fee for this project is \$14.63 (\$18.29 x 0.8 AF). 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.

BLM Sensitive Species

Plants:

Due to the absence of any known occupied or suitable habitat for BLM sensitive plant species, the proposed action would have no impact on these species.

Terrestrial Wildlife:

BLM sensitive terrestrial wildlife species could be present at times in the area of the proposed action however, due to the absence of any occupied or suitable habitat within or

adjacent to the project area, the proposed action would likely have negligible impact on any BLM sensitive wildlife species.

Aquatic Wildlife:

Flannemouth sucker, bluehead sucker, roundtail chub, and Colorado River cutthroat trout:

Construction of two new ponds and the two associated dozer line access routes, and clean-up of two existing ponds as proposed should have no negative impacts to any of these fish or their habitats.

New construction activities and pond clean-out would result in the removal of approximately 5 acres of upland habitat, increase areas of bare ground, and cause some soil compaction. This could cause offsite movement of soil and result in increased sediments into nearby ephemeral and eventually perennial waters. However, the flannemouth sucker, bluehead sucker, and roundtail chub are all well adapted to the high sediment loads traditionally carried by the Colorado River. Periodic influxes of sediment are important in the creation and maintenance of important micro-habitats such as backwaters.

Due to the proximity of the eastern most pond reconstruction site to Baldy Creek there is potential that some additional sediment, associated with the construction activities, could reach this stream. Excessive sediment input can impact Colorado River cutthroat trout by silting in important spawning substrates and can smother eggs and reduce productivity. Increased sediment can also fill in important pool habitat needed as summer and winter thermal refuge by fish. Negative impacts would be minimal to the Colorado River cutthroat trout in Baldy Creek. Colorado River cutthroat trout are documented upstream of where sediment may be deposited into Baldy Creek. In addition no fish have been documented on the BLM portions of the stream during recent sampling efforts. It is possible that some Colorado River cutthroat trout could drift downstream into the BLM reach seasonally, but established populations are absent within the project's footprint.

Aquatic insects can be impacted as the spaces between stream substrates where these insects live is silted in. This reduces stream productivity and reduces food sources for fish and terrestrial bat and bird species.

No Action Alternative

Under the No Action alternative, no new stock ponds would be constructed and no new ground disturbance would result. Proper livestock distribution would not be facilitated and animals would not be more evenly distributed across the landscape. This could result in increased use at limited livestock concentration areas resulting in more bare ground and soil compaction.

Analysis on the Public Land Health Standard for T&E Species:

The project area is within a watershed that is having a formal Land Health Assessment completed on it in the summer of 2009. 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 4 for Special Status Species.

WASTES, HAZARDOUS OR SOLID

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

Proposed Action

Environmental Consequences/Mitigation: 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

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 Standard 5)

Affected Environment: Proposed activities would occur east of East Divide Creek and south of Baldy Creek within the 17,573 acre East Divide Creek 6th field watershed. Within the project area are several unnamed ephemeral tributaries to East Divide Creek. At this time, these drainages are not listed on the State of Colorado's *Stream Classifications and Water Quality Standards* (CDPHE, Water Quality Control Commission, Regulation No. 37) list that identifies beneficial uses of water and numeric standards used to determine allowable concentrations of water quality parameters, the *303(d) List of Water Quality Limited Segments Requiring TMDLS* (CDPHE, Water Quality Control Commission, Regulation No. 93) that identifies stream segments that are not currently meeting water quality standards with technology based controls alone, or the *Monitoring and Evaluation List* (CDPHE, Water Quality Control Commission, Regulation No. 94) that identifies waterbodies suspected to have water quality problems. In addition, there are no current water quality data available for these drainages.

Proposed Action

Environmental Consequences/Mitigation: 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 possible offsite sedimentation. 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

Environmental Consequences/Mitigation: The no action alternative would have no effect on water quality.

Analysis on the Public Land Health Standard 5 for Water Quality: The BLM Glenwood Springs Office is currently assessing area drainages as part of the Divide Creek Watershed Land Health Assessment. The proposed action and no action alternative would not likely prevent Standard 5 for Water Quality from being achieved.

OTHER AFFECTED RESOURCES

In addition to the critical elements, the resources presented in Table 2 were considered for impact analysis relative to the proposed action and no action alternative. Resources that would be affected by the proposed action and no action alternative are discussed below.

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	
Soils			X
Vegetation			X
Visual Resources		X	
Wildlife, Aquatic		X	
Wildlife, Terrestrial			X

RANGE MANAGEMENT

Affected Environment: The Dean Gulch allotment (#08107) consisting of 1039 acres is located about 15 miles south of Silt, CO. It is permitted for 28 cattle from 6/16 to 10/31 for a total of 127 AUMs. Much of the allotment consists of dense oakbrush causing livestock movement to be difficult.

Environmental Consequences/Mitigation: The maintenance of the existing ponds is required by BLM and will be performed to BLM standards. The construction of two new ponds will help to provide needed water sources for livestock and will better aid in seasonal distribution. This allotment is permitted season-long and in order to maintain sufficient rest and recovery

livestock are rotated on the allotment. The additional water sources and livestock trails allow the permittee more options and relieves pressure on other areas.

No Action Alternative: Maintaining the allotment in its existing condition would have no adverse or beneficial effects. The new ponds would not be constructed and livestock trails would not be created. Some portions of the allotment that are currently unused due to lack of water or access will remain unused by livestock.

SOILS (includes a analysis on Standard 1)

Affected Environment: According to the *Soil Survey of Rifle Area, Colorado: Parts of Garfield and Mesa Counties* (USDA 1985), the proposed activities would be located on the soil map units Bucklon-Inchau loams, Lamphier loam, and Torriorthents-Rock outcrop complex. These soils have been identified as having slight to severe erosion hazard ratings. In addition, portions of the project area are designated as Controlled Surface Use 4 areas for erosive soils occurring on slopes greater than 30% and No Surface Occupancy 15 for slopes greater than 50%. Following is a brief description of the three soil map units encountered in the project area.

- Bucklon-Inchau loams – These soils occur on ridges and mountainsides at elevations ranging from 7,000 to 9,500 feet and on slopes of 25 to 50 percent. About 55 percent of this soil map unit is Bucklon soil and 35 percent Inchau soil. The remaining 10 percent of the soil map unit are made up of varying amounts of Cochetopa, Cimarron, and Jerry soils. The Bucklon soil is found on steep, convex areas while the Inchau soil is found on more concave areas. The Bucklon soil is shallow, well drained and has medium surface runoff with severe erosion hazard. The Inchau soil is moderately deep, well drained and has medium surface runoff with severe erosion hazard. Primary uses for these soils include wildlife habitat and limited grazing.
- Lamphier loam – This deep, well drained soil is found on fans and mountainsides at elevations ranging from 7,500 to 10,000 feet and on slopes of 15 to 50 percent. This soil is derived from sandstone and shale rocks. Surface runoff for this soil is slow and the erosion hazard is classified as slight. Primary uses for this soil include grazing, wildlife habitat, and recreation.
- Torriorthents-Rock outcrop complex, steep – This complex consists of stony soils and exposed outcrops of Mesa Verde sandstone and Wasatch shale that occur on slopes of 15 to 70 percent. Approximately 60 percent of this complex is Torriorthents and 25 percent is Rock outcrop. The Torriorthents are clayey to loamy and contain gravel, cobbles, and stones; many of which are basaltic in origin. They are found on mountainsides below the Rock outcrop. Erosion hazard for this complex varies from moderate to severe. Primary uses for this complex include limited grazing, wildlife habitat, and recreation.

Proposed Action:

Environmental Consequences/Mitigation: As mentioned above, some of the proposed activities would occur in erosive soils on slopes greater than 30%. Proposed activities would result in soil compaction and displacement associated with dozer operations and the construction and maintenance of the stock ponds. 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:

Environmental Consequences: The no action alternative would have no effect on soil resources.

Analysis on Public Land Health Standard 1 for Upland Soils: The BLM Glenwood Springs Field Office is currently assessing area soil conditions as part of the Divide Creek Watershed Land Health Assessment. The proposed action and the no action alternative would not likely prevent Standard 1 for Upland Soils from being met.

VEGETATION (includes an analysis on Standard 3)

Affected Environment: Vegetation in the project area consists primarily of big sagebrush/mixed mountain shrubs and Gambel oak. The understory is a mixture of perennial grasses and forbs.

Environmental Consequences/Mitigation:

Construction of the two new ponds and maintenance/reconstruction of two old ponds would result in the permanent loss of approximately one acre of vegetation. To provide easier access to the water sources for livestock, the permittee would build dozer lines through the sagebrush and dense oakbrush. The dozer lines would be about 6 feet wide and the longest dozer line would be about 0.5 mile in length. The dozer lines would result in the loss of shrubs or reduction in height and density of shrubs on approximately 4 acres. This represents a very small amount of this vegetation type in the project vicinity. 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 proposed action is designed to improve the distribution of livestock grazing use in the Dean Gulch allotment. The new ponds and trails should reduce grazing intensity in other parts of the allotment, thereby improving overall vegetative conditions across the allotment.

No Action Alternative: Under the No Action alternative, no new stock ponds would be constructed and no additional loss of vegetation would result. Livestock distribution would not be improved and intensive use at limited livestock concentration areas would result in reduction in species diversity and abundance.

Analysis on the Public Land Health Standard 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 ponds but

would improve vegetative conditions in the allotment as a whole by providing improved livestock distribution. The proposed action should maintain or improve overall conditions relative to Land Health Standard 3 within the Dean Gulch allotment.

WILDLIFE AQUATIC (includes an analysis on Standard 3)

Affected Environment:

The project area contains no perennial water sources. The allotment is drained via small ephemeral washes. Baldy Creek is located within 0.5 miles of the eastern most pond restoration site. In addition to those Special Status fishes addressed above in the THREATENED, ENDANGERED, AND SENSITIVE SPECIES section, this portion of Baldy Creek may also contain creek chubs and aquatic invertebrates.

Environmental Consequences/Mitigation:

Given the size of the ponds and the distance to Baldy Creek and the Colorado River, the project is not anticipated to have any negative impacts to resident fish. Construction of the ponds and dozer lines would result in the disturbance of 5 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 these water sources. Some additional soil compaction may result from the long-term use of the ponds. However, it is unlikely that sediment produced from the proposed action would negatively affect down-slope fisheries.

No Action Alternative

Under the No Action alternative, no new stock ponds would be constructed and no new ground disturbance would result. Proper livestock distribution would not be facilitated and animals would not be more evenly distributed across the landscape. This could result in increased use at limited livestock concentration areas resulting in more bare ground and soil compaction.

Analysis on the Public Land Health Standard for Plant and Animal Communities (partial, see also Vegetation and Wildlife, Terrestrial):

The project area is within a watershed that is having a formal Land Health Assessment completed on it in the summer of 2009. 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 area's ability to meet Standard 3 for aquatic wildlife.

WILDLIFE TERRESTRIAL (includes an analysis on 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 ponds. The ponds 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 ponds, which would result in increased utilization of upland vegetation in the immediate area. In conclusion the construction of two small new ponds 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.

CUMULATIVE IMPACTS SUMMARY:

No Impacts cumulative in nature have been identified in this analysis.

MITIGATION:

1. Education/Discovery/NAGPRA Stipulation:
The National Historic Preservation Act (NHPA) requires that if newly discovered cultural resources are identified during project implementation, work in that area must stop and the agency Authorized Officer notified immediately (36 CFR 800.13). The Native American Graves Protection and Repatriation Act (NAGPRA), requires that if inadvertent discovery of Native American Remains or Objects occurs, activity must cease in the area of discovery, a reasonable effort made to protect the item(s) discovered, and immediate notice made to the BLM Authorized Officer, as well as the appropriate Native American group(s) (IV.C.2). Notice may be followed by a 30-day delay (NAGPRA Section 3(d)). Further actions also require compliance under the provisions of NHPA and the Archaeological Resource Protection Act.
2. To reduce the opportunities for weeds to become established, the disturbed areas will be reseeded with a certified weed-seed free mixture of native grasses adapted to the site. The permittee will monitor the reservoir disturbance to detect the presence of any noxious weeds and will 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.

PERSONS/AGENCIES CONSULTED:

Grazing Permittee

INTERDISCIPLINARY REVIEW:

<u>Name</u>	<u>Title</u>	<u>Area of Responsibility</u>
Isaac Pittman	Rangeland Management Specialist	Range, NEPA Lead
Mike Kinser	Rangeland Management Specialist	Riparian Zones
Jeff O’Connell	Hydrologist/Geologist	Soil, Air, Water, Geology
Kay Hopkins	Outdoor Recreation Planner	Wilderness, VRM, WSR, Recreation, Travel
Carla DeYoung	Ecologist	ACEC, T/E/S Plants, Vegetation, Land Health Assessments
Cheryl Harrison	Archaeologist	Cultural & Native American Concerns
Tom Fresques	Fisheries Biologist	Wildlife Aquatic, T/E/S (Fish)
Brian Hopkins	Wildlife Biologist	Wildlife Terrestrial, T/E/S (Terrestrial Wildlife)
Dereck Wilson	Range Management Specialist	Invasive, Non-native Species

FONSI

DOI-BLM-CO-N040-2009-0087-EA

The environmental assessment, analyzing the environmental effects of the proposed action, has been reviewed. The proposed action with 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 approve the proposal submitted and implemented by the grazing permittee on the Dean Gulch allotment. This decision will facilitate a rotational grazing system that will help in achieving land health standards by giving proper rest recovery time during the grazing season and improve livestock distribution.

RATIONALE:

1. The construction of the two additional ponds will allow for better control and distribution of cattle. The development of these additional ponds will aid in a rotational grazing system that will allow for periodic rest from grazing pressure and help to achieve land health standards and guidelines.
2. The environmental impacts have been mitigated with measures included in the attached Cooperative Range Improvement Permit.

MITIGATION MEASURES:

1. The Discovery/Education stipulation: The National Historic Preservation Act (NHPA) requires that if newly discovered cultural resources are identified during project implementation, work in that area must stop and the agency Authorized Officer notified immediately (36 CFR 800.13). The Native American Graves Protection and Repatriation Act (NAGPRA), requires that if inadvertent discovery of Native American Remains or Objects occurs, activity must cease in the area of discovery, a reasonable effort made to protect the item(s) discovered, and immediate notice made to the BLM Authorized Officer, as well as the appropriate Native American group(s) (IV.C.2). Notice may be followed by a 30-day delay (NAGPRA Section 3(d)). Further actions also require compliance under the provisions of NHPA and the Archaeological Resource Protection Act.
2. To reduce the opportunities for weeds to become established and to reduce the opportunities for offsite sediment transport, the disturbed areas will be reseeded with a certified weed-seed free mixture of native grasses adapted to the site. The permittee will monitor the disturbance to detect the presence of any noxious weeds and will be

responsible for promptly controlling any noxious weeds on the Colorado State List A or B (except redstem filaree) within the area disturbed from 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.

NAME OF PREPARER: Isaac Pittman, Rangeland Management Specialist

SIGNATURE OF AUTHORIZED OFFICIAL:



Allen B. Crockett, Ph.D., J.D.
Supervisory Natural Resource Specialist

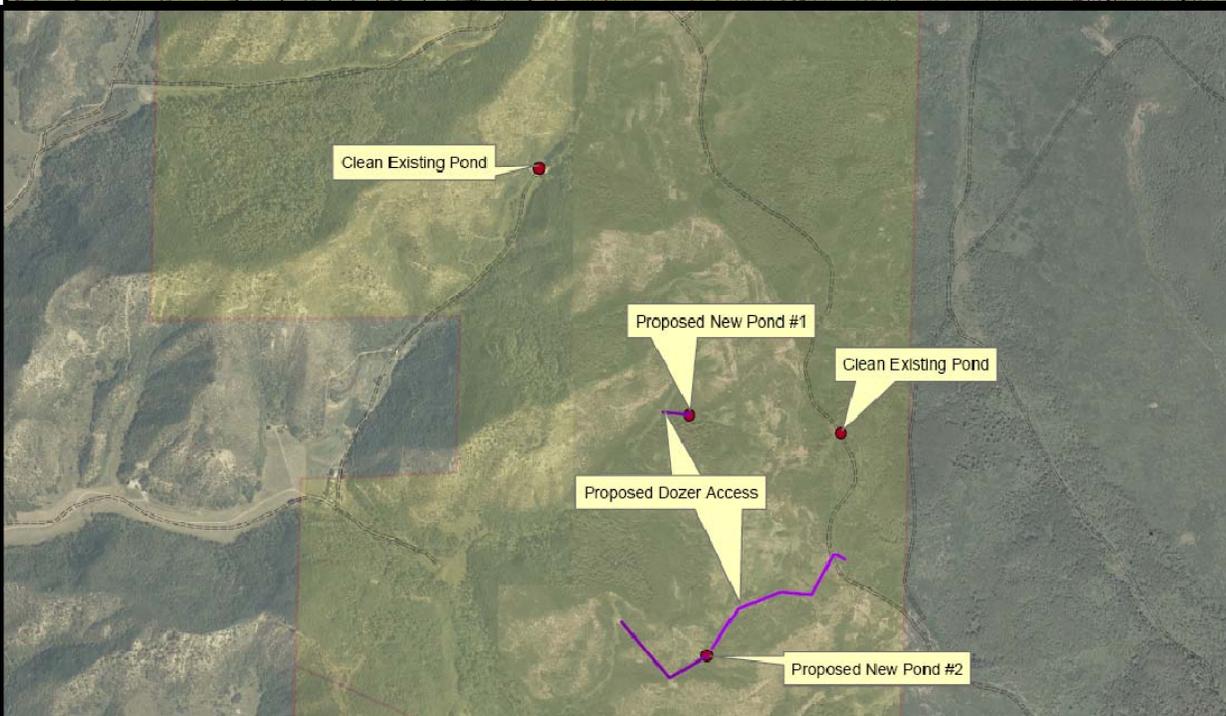
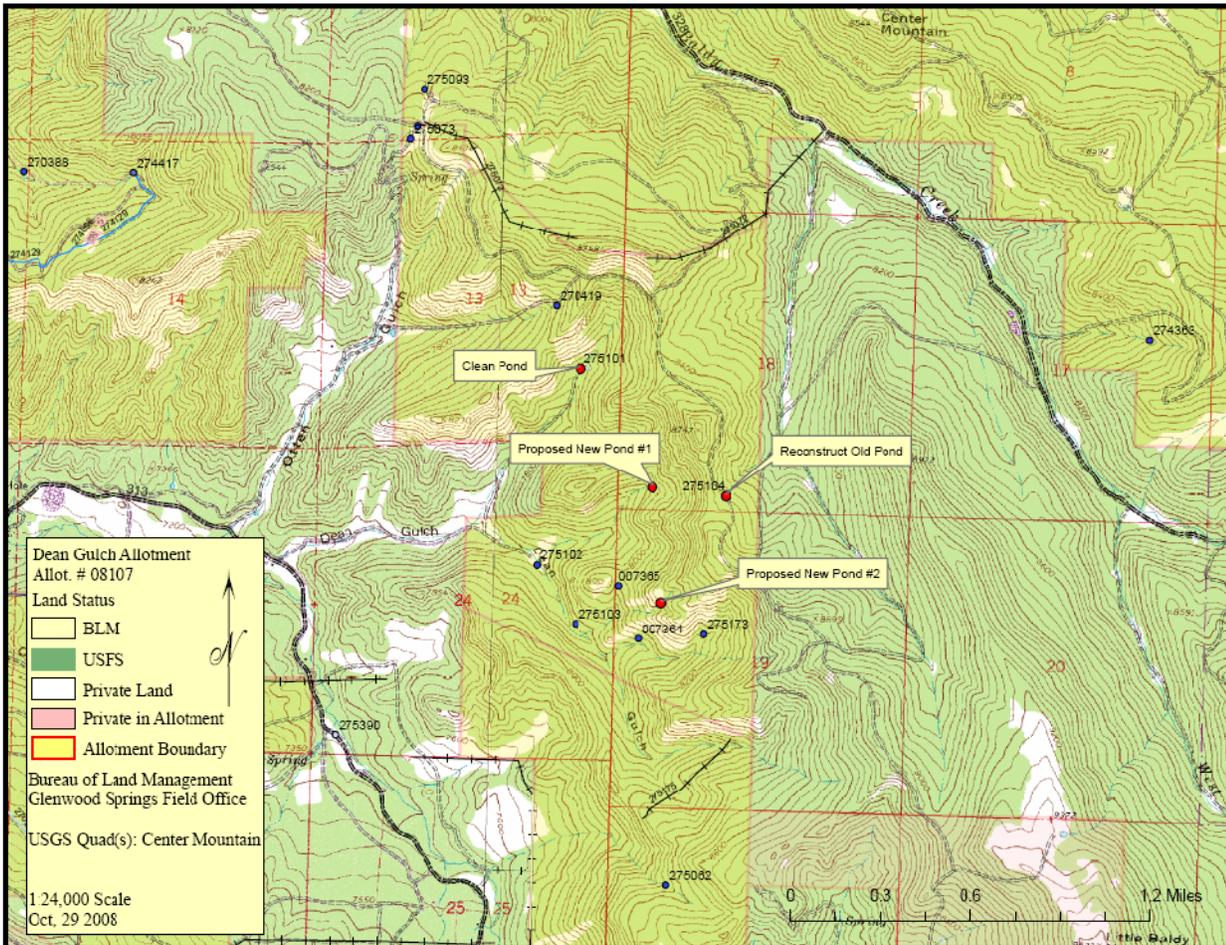
DATE SIGNED:

12/17/09

- APPENDIX:
1. Project Maps
 2. Project Location Pictures
 3. Project Specifications

Appendix 1

T7S R90 & 91W Sec 18-19 & 13, 24



Appendix 2

02291 WORK DATA SHEET

for

SECTION 02291 - MINOR EARTH DAMS AND PITS

1. Pit depth in ft 4 to 6 ft
2. Pit length in ft (L): 10 to 15 ft
3. Pit width in ft (W): 10 to 15 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 in ft: 5 to 8 ft
9. Crest width: 12 ft
10. Crest length: 70 to 150 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:

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: N/A

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: The surface area to be covered by embankments, surface of borrow areas and cut spillways shall be thoroughly cleared and stripped of vegetative matter, brush, trees, stumps, roots, loose rocks, and other objectionable materials, including sand, gravel, silt, and debris in channels within the foundation areas.
- 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 Contracting Officer.
- 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 Contracting Officer.
- 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 Contracting Officer.
 3. Excavated materials which are unsuitable for, or are in excess of the requirements, for the embankment or other earthwork, as determined by the Contracting Officer, 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 Contracting Officer, 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.
- E. 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 Contracting Officer. 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

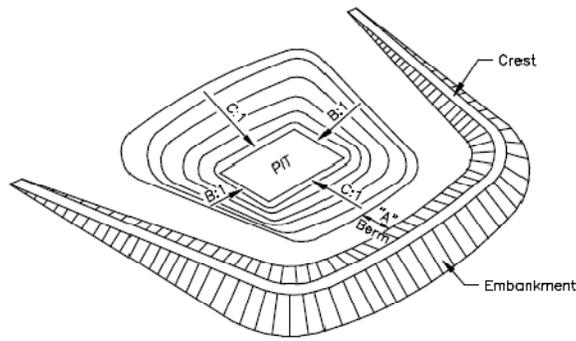
than 8 inches in thickness as deposited by scrapers. The full cross section of the fill shall be maintained as each successive layer is placed.

2. Successive loads of material shall be dumped on earthfill so as to produce an optimum distribution of material, subject to approval of the Contracting Officer. 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 Contracting Officer.

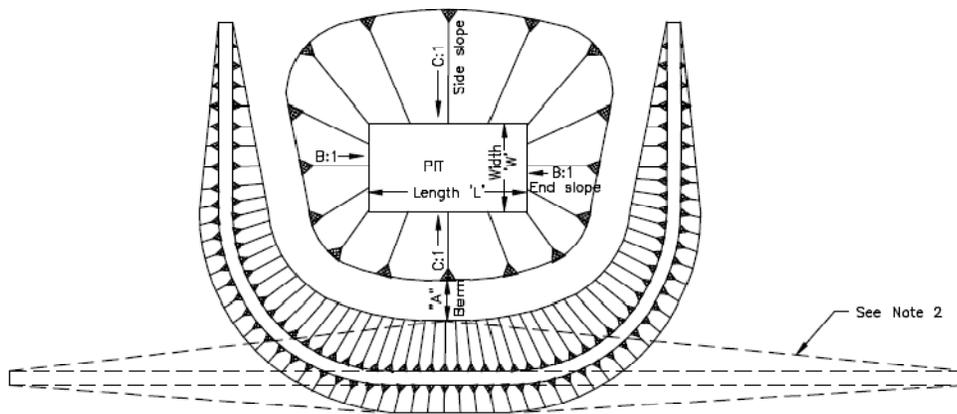
3.03 FIELD QUALITY CONTROL:

- 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.

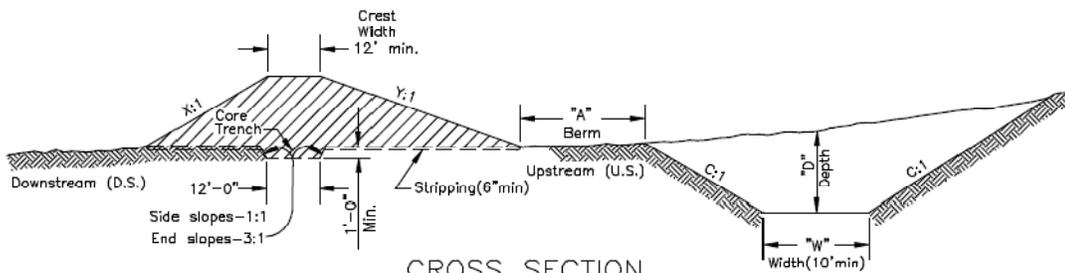
END OF SECTION



PERSPECTIVE VIEW



PLAN



CROSS SECTION

NOTES:

1. Pit and embankment slopes and dimensions shall be as shown on the Work Data Sheet or as staked.
2. Embankment may be "U", "L", "I", or straight line shape. Construct as indicated in specifications or as staked.

ALWAYS THINK SAFETY

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT DIVISION OF TECHNICAL SERVICES SERVICE CENTER	
TYPICAL WATER RETENTION PIT	
DESIGNED	by others
REVIEWED	
APPROVED	
DRAWN	SCALE NONE
DATE AUGUST 5, 1990	SHEET OF
DRAWING NO. 02291-1	

