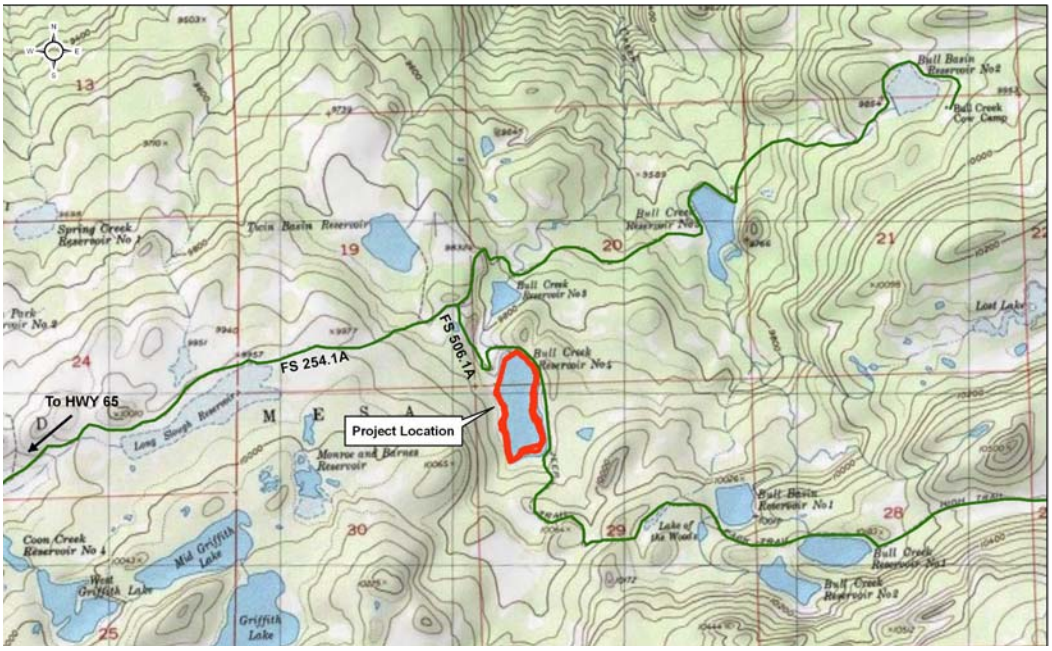
BULL CREEK RESERVOIR #4
ARMY CORPS OF ENGINEERS 404 PERMIT HISTORY ANALYSIS AND MODIFICATION REQUEST



Prepared for:

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1.0 INTRODUCTION

The Bull Creek Reservoir, Canal and Power Company (Company) has been a non-profit organization recognized by the state of Colorado, since March 7, 1895 (Exhibit 1. State of CO, 2006). The Company has owned and operated 5 reservoirs in the Bull Creek Basin since 1901 under an 1891 access easement (USFS 1906 Plat Figure 1). The access easement is currently administered by the USDA Forest Service (FS), Grand Valley Ranger District located in Grand Junction, CO. The Company has a system of canals and reservoirs on the north side of the Grand Mesa, located near Mesa, CO. The project in question involved the maintenance and rehabilitation of Bull Creek Reservoir No. 4 (Project). The Project is a necessary requirement to comply with the requirements of a Stipulation and Agreement with the State Engineers Office (SEO) (Exhibit 2. Case No. 01CW337). In addition to public safety and concern with potential dam failure, the stipulation, in part, requires the Company to repair the Reservoir No. 4 dam to avoid the abandonment of 229 acre-feet of senior restricted storage capacity rights (Exhibit 3. Attorney General (2003))

Planning of maintenance of the reservoir structures with the FS began in earnest through informal discussion in 2001 and continuing through 2009. Planning was initiated as a result of potential abandonment of storage rights located within the Project boundary. A more formal process started with both the FS and the US Army Corps of Engineers (ACOE) in 2005. The FS discussions regarded the process to formulate the data necessary to process and acquire a special use application and ultimately a special use permit. The formal ACOE process began with the initiation of a Jurisdictional Determination (JD). The formal JD was verified through PN 200575462 dated August 18, 2005 (Exhibit 4. ACOE, (2005). The ACOE permit was authorized by the ACOE on July 1, 2008 under SPK-2008-00722 (Exhibit 5, ACOE (2008). Subsequently the FS special use permit was authorized on June 9, 2009 under FS Authorization ID:CGJ601 (Exhibit 6. FS.2005). It is SPK-2008-00722 that is the subject of this review and modification proposal.

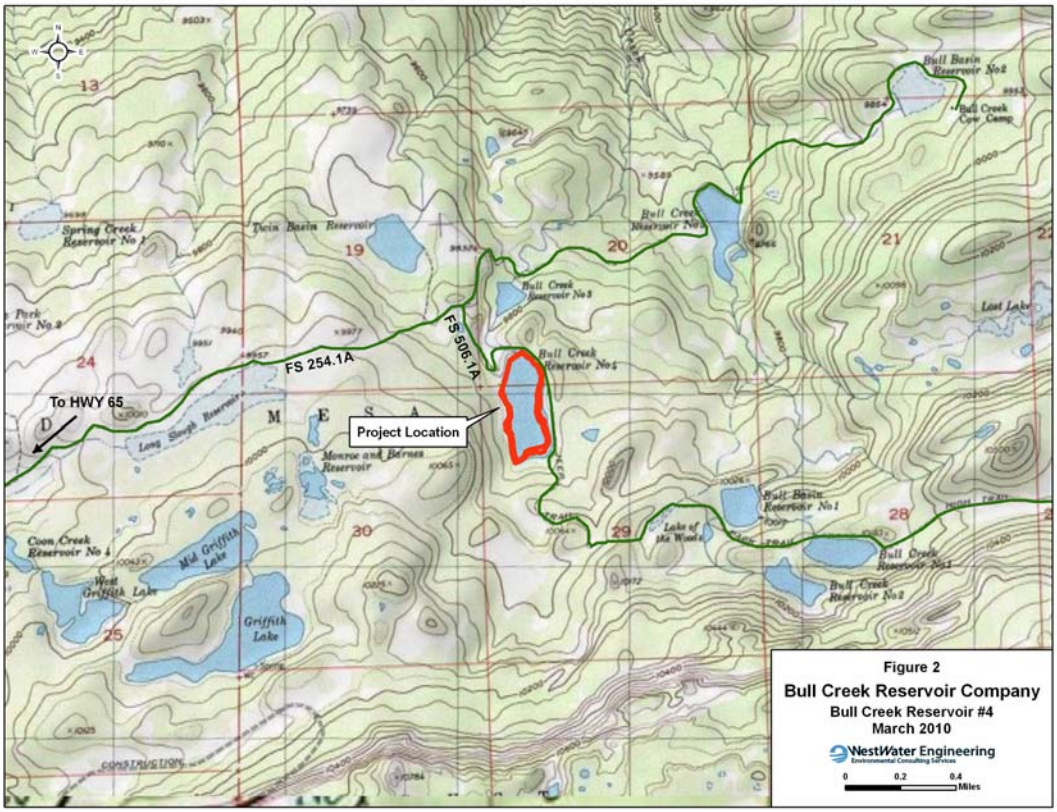
2.0 BACKGROUND AND HISTORY

The Company has operated five reservoirs (Bull Creek 1 through 5) for over 100 years. The water is used for late season irrigation. In 2001, the Division of Water Resources, Division 5, filed a decennial abandonment list with the water court claiming the abandonment of a portion of the storage right in Reservoir No. 4 (Exhibit 4). The water rights that were listed for abandonment , was a result of a portion of the SEO filling restrictions placed on the reservoir since 1971 and culminating in 1994. (Table 1. Reservoir Operation Historical Summary,2010). The abandonment list also included portions of the decreed storage rights in Reservoirs No. 1 and No. 2. This was due to the fact that both of these reservoirs did not provide the necessary volume for the decreed water storage right. The rehabilitation of Reservoir No. 4, as planned would return the Company to historic yield within the reservoir basin.

Table 1. Bull Creek #4 Historical Summary
1/13/2010

1901	Dam constructed to crest elevation _____ (State Engineer's Office has no plans on file for the original construction)
1915	Dam raised to crest elevation _____? (USFS records indicate significant dam construction in 1915 and 1943)
1943	Dam raised to crest elevation____? (USFS records indicate significant dam construction in 1915 and 1943)
9/8/1971	Storage restricted to gage height 22.0 due to severe upstream slope erosion and head-cutting in spillway
3/26/1984	Storage restricted to gage height 17.0 due to severe upstream slope erosion, sloughing of downstream slope, crest settlement, obstructed spillway
1984	Spillway crest cut down by owners to maintain compliance with restriction
8/28/1984	Restriction removed
2/17/1994	Dam reclassified as High Hazard
8/14/2003	Suspense date of 3/1/2004 imposed for submittal of plans for dam rehab, suspense date of 12/31/2003 set for geotechnical investigation
November 2003	Geotech investigation completed, piezometers installed
8/18/05	Storage restricted to 3 feet below current spillway (gage height ~14.0) due to seepage and questionable embankment stability
2006	Owners voluntarily drained reservoir until completion of repairs

Reservoir No. 4 is located on the west branch of Bull Creek above Bull Creek No. 3 and Big Beaver Reservoir (Figure 2.). The reservoir is located within the Grand Mesa National Forest in Sec. 20, T11S, R95W, Lat.39º 4' 35.3", Long 108º 2' 12.9" in Mesa, County CO. The SEO placed the fill restriction on the reservoir due to a substandard dam crest width and a high phreatic water level in the dam, which "may create an unstable embankment and possible failure". In a subsequent inspection, the SEO indicated that without the needed repairs, a breach order is likely in the next two years. (Exhibit 8. SEO report 2006).



The Bull Creek Reservoirs hold the senior storage rights on Bull Creek and tributaries to Bull Creek. Many of the senior rights on the creek are also owned and used by shareholders of the Company. Other senior water rights of significance are irrigation rights owned by the Grand Valley Irrigation Company on the Colorado River near Palisade CO. However these senior rights seldom need to place a call during winter and spring snowmelt when the reservoirs fill.

Because the reservoirs are located on FS lands and operated under an 1891 Access Easement, access to the reservoirs by the company for maintenance, rehabilitation and operations is administered under the FS special use permit. Coincidentally, it also provides the basis for surface acreage recognized by the FS.

As stated above, Reservoir No. 4 was constructed in 1901 with a formal surveyed as built plat submitted in 1906 (Figure 1.). The plat identified the surface acreage at 23.50 surface acres (SA). A formal enlargement request was submitted and approved enlarging the reservoir to 35.04 (SA) (Figure 3, Department Interior Preliminary Plat (1942), the dam was constructed “substantially built, according to State Engineers Specifications” (Exhibit 7.) (SA) (Figure 4. Recorded Plat (1943) At that time, the 35.04 surface acres was formally vested with the State of CO and recorded under the 1891 easement. It remains at the 35.04 level today. The reservoir operated at the 35.04 (SA) level from 1943 to 1971. Based on the records, it appears the dam height at this time was staff gauge height 27.5. On 9/8/71, the SEO restricted the dam to staff gage height 22 which is

approximately 20.5 (SA) with further restriction occurring on 3/26/84 to a staff gauge height level 17 approximately 18.5 (SA). Based on the records, there was some improvements completed on the dam in the summer of 1984 which allowed the restrictions to be removed on 8/28/1984. The dam operated at full capacity 35.04 (SA) until 2/17/94 when the dam was reclassified as "High Hazard" and restricted back to the 18.5 (SA) level. On 8/18/05 the storage was further restricted to 3 feet below the current spillway which is an undeterminable (SA) and subsequently voluntarily drained by the owners in 2006. (Table 1.)

3.0 SCOPE OF ANALYSIS

This permit analysis was principally based on the following:

a) A thorough review of ACOE JD File 200575462.

b) A thorough review of permit file SPK-2008-00722 as requested under Bull Creek Reservoir, Canal and Power Company letter dated (Exhibit 9. Jan 8, 2010.

c) Multiple interviews with US Forest Service Lands Specialist Linda Bledsoe beginning in November 2009 and continuing through March 5, 2010. Primary objectives included: 1) Understanding significance of 1891 access easement right; 2) locating and accessing information contained in the NEPA project record; 3) evaluating items found in the project record to match with items identified in the ACOE and previous consultant files. 4) Assessing the historical records i.e., reservoir plats, enlargement applications, Plan of Development, SOE restrictions and background materials supporting the NEPA Document.

d) Phone Interviews with previous environmental consultant (Steve Dahmer) on Feb 21 and March 3, 2010.

e) Personal Interview with John Groo – Bull Creek Representative, December 21, 2009

f) Personal Interviews with Brett Fletcher-Lead WestWater Engineering Wetland Scientist Nov. 2009 to present.

g) Personal Interviews with Paco Larson, Vista Engineering-Project Engineer in charge of construction management. Dec. 09-Present.

h) Discussion with Tim Feehan and Kirk Russell – CWCB March 10-present.

i) On-going discussion with Sue Nall –ACOE Branch Chief –Dec. 09-present including questions raised in the January 2010, email.

j) Continuing review of FS file 2720 – Bull Creek Reservoir #4 – project record for SU Permit FS Authorization ID:CGJ601

4.0 RESEARCH METHODS

The Bull Creek Reservoir Permit SPK-2008-00722 file contains a number of complexities which posed serious issues to WWE as the new authorized agent for the applicant. Of principal concern was the difficulty associated with understanding the issuance of a permit for maintenance of a structure, the purpose of which is to hold water, without the ability for the structure to fulfill its purpose. In order for a permit to be issued it must pass a test with respect to the purpose and need for the permit that was authorized. I requested a formal response to this question in a letter to the ACOE dated December 22, 2009 (Exhibit 10). I was interested in understanding why the permit was issued in this manner. In addition, I was also curious as to what type of permit should be used to authorize the filling of the reservoir with water. An email response from Susan Nall, dated January 11, 2010 (Exhibit 11.), detailed the way the action was handled and helped explain the conditions under which the ACOE was asked to review the permit. For further background, I requested the ACOE files through the applicant and have been working through the various letters and email correspondence between the applicant's previous agent, the ACOE and the FS.

Following that review, I also requested and have reviewed the FS project record for the issuance of the SU permit. It is clear that these two processes were concurrent in nature and to a large degree dependent on one another. These reviews were vitally important to understand the fundamental process that took place in order to understand why the filling of the reservoir was implicitly not authorized.

5.0 FINDINGS – CRITICAL ISSUES AND ANALYSIS BY AGENCY

This project posed a level of complexity not typically associated with a nationwide permit analysis. Given the level of involvement required by agencies outside the normal maintenance and rehabilitation realm, it led to the issuance of a permit that I believe is appropriate, but an analysis that is not typical. I will detail why I believe it is an appropriate permit mechanism given certain modifications in the next section. The focus of this section is a summarization of "Critical Issues" by Agency and how they relate to the nationwide permit analysis that was done.

U.S. FOREST SERVICE

Bull Creek Reservoir #4 is authorized under the 1891 easement with original platting of 23.5 Surface Acres. A formal amendment for expansion to 35.04 SA was applied for in 1942 and authorized, platted and vested with the State Engineers Office at a level of 35.04 SA. This is critical because it is the amount of SA legally recognized by the FS, SEO and Colorado Division of Water Resources, District 5. The legal and physical supply is in excess of 578 acre-feet of Storage with a 900 acre-feet basin capacity. 428

acre-feet of storage is currently requested and legally available to be stored at Bull Creek Reservoir #4.

Bull Creek Reservoir #4 has changed configuration throughout its existence the majority of which occurred between the years 1942 to 1984 and from 1994 to 2005, operated under a Special Use Permit that was applied for on November 22, 1935 (Exhibit 12. FS Application). It was reviewed beginning September 17, 1940 and ultimately authorized on October 29, 1942 (Exhibit 13. FS SU Permit (1942) at an SA of 35.04 SA.

A new special use permit was required based on analysis that was initiated in 2001 with a geo-technical study in 2003 due to hazard and safety issues identified by the SEO. The formal NEPA process began with an initial application received by the FS on 12/20/06 that was deemed incomplete. A complete application was formally submitted in July 2007. A summary of the formal NEPA analysis can be found in (Exhibit 14. FS Scope of Work 2007) for Level 6 Cost Recovery Agreement.). The Plan of Development (POD) identified in the scope of work that was reviewed and authorized under the NEPA Decision Memo dated, 4/8/08 (Exhibit 15), requested a dam that would be constructed to a level able to support 22.1 SA of water, at a capacity of 428 acre-feet. This NEPA decision supported the issuance of the Special Use Permit Authorization ID:CGJ601 issued 6/9/09 (Exhibit 6). The construction was to a large degree completed in the summer of 2009.

STATE ENGINEERS OFFICE

The Office of the State Engineer was created in 1881. In 1887, all of the water divisions as they exist today were created and operational. Also in 1887, the state created a Superintendent of irrigation - who is known today as the Division Engineer. Their primary function was to supervise water commissioners within each division. It is the job of the division engineer to administer water rights utilizing the “Prior Appropriation Doctrine”. In essence, this is the "first in time, first in right” system that is employed in Colorado today. This discussion will be expanded when I discuss the Division of Water Resources Agency and water rights. More important to this discussion is it was under this authority that in 1899, the State Engineer was also tasked with the responsibility of approving all plans and specifications for dams designed over ten feet in height and covering more than twenty acres, or having a capacity of more than 1,721 acre-feet. In addition, the statutes required that the construction had to be approved by the State Engineer. That same year, the State Engineer was given authority to have water levels lowered in any reservoirs that were deemed unsafe. It is under this authority that Bull Creek Reservoir #4 went through a number of restrictions beginning in the year 1971 and culminating in 2005. The full detail of the incremental restrictions can be found in (Table 1.) which was provided to me through the Colorado State Dam Safety Engineer.

As stated in the FS section, planning began in 2001 due to safety concerns and storage capacity of the dam. In 2003 a geotechnical analysis was authorized by the FS under a Temporary Special Use Permit Authorization ID:CGJ170 (Exhibit 16.). It was the results

of this study that initiated the design work necessary to rehabilitate the dam for Bull Creek #4. Planning occurred from 2004 to 2007 and concluded in the acceptance and approval of the dam design completed and carried forward in both the NEPA analysis for the Categorical Exclusion (CE) and the 404 permit analysis.

DIVISION OF WATER RESOURCES

In 1879, the Colorado State Legislature began dividing the state into divisions for the express purpose of administering water rights. Initially it provided for the division of the state into ten water districts, nine of which were located in the South Platte valley, and one that was located in the Arkansas drainage. The statute provided for a Water Commissioner to divide the water according to priorities of the various ditches within the district.

The priority of each ditch was determined by the district courts based upon the date the ditches were constructed and the water placed to "beneficial use". This is what it means when you water is referred to in terms of seniority. The "first in time, first in right" description means that if the rights possessed by an entity were filed on first you have first right to the water no matter what rights are filed junior to yours. For example if you have a right to 10 cfs of water and your neighbor has a right to 10 cfs in the same ditch but the ditch is only carrying 11 cfs, you will get your 10 cfs and your neighbor will only get 1 cfs. To carry this further, a third neighbor may have a right for 10 as well but is junior to the first neighbor and under this scenario is entitle to 0 cfs. This is a very simplistic example, but I think it gets the point across.

The statute as passed by the legislature in 1879 did not provide for stream measurement. The state was not divided this way until 1887 when all divisions as we know them today were identified and put into service.

The Bull Creek Reservoirs hold the senior storage rights on Bull Creek and tributaries to Bull Creek. Many of the senior rights on the creek are also owned and used by shareholders of the Company. Other senior water rights of significance are irrigation rights owned by the Grand Valley Irrigation Company on the Colorado River near Palisade CO. However these senior rights seldom need to place a call during winter and spring snowmelt when the reservoirs fill. This is important because the storage right will be in force during a time when no call is on the river so it will fill in all but the driest of years. This is important because the Company has senior water totaling 900 acre feet within the Bull Creek Drainage.

The Company has the ability to store up to 900 acre-feet in 5 reservoirs, known as Bull Creek Reservoirs Nos. 1,2,3,4 and 5. The Company had until 1971 been able to utilize the fully entitled 1891 and state vested right located at Bull Creek No. 4. Beginning in 1971 and concluding in 2005 they were restricted to a point that the Division of Water Resources reviewed their water rights and placed 228.96 acre-feet on the abandonment list. This was formally done in a letter from the Office of the Attorney General (Exhibit

3) dated February 25, 2003 and identified as exhibit 4. Bull Creek Reservoir filed a protest with the state to avoid the abandonment issue. Appurtenant to that, they also filed a number of draft stipulation agreements which included rehabilitation of the Bull Creek Reservoir No. 4 to a level that was within their 1891 easement right, and below their state vested right but that would give them capacity to store the rights that were at risk in Bull Creek Reservoirs Nos. 1 and 2. Based on the final stipulation agreement (Exhibit 2) between Colorado Attorney General's Office and the Company they were required to complete the dam rehabilitation or the abandonment issue would conclude with the abandonment of the rights.

COLORADO WATER CONSERVATION BOARD

The Colorado Water Conservation Board (CWCB) was created in 1937 for the purpose of aiding in the protection and development of the waters of the state. The agency is responsible for water project planning and finance, stream and lake protection, flood hazard identification and mitigation, weather modification, river restoration, water conservation and drought planning, water information, and water supply protection. As stated on their website their mission is to **"To Conserve, Develop, Protect and Manage Colorado's Water for Present and Future Generations"**

One of the ways CWCB fulfills this mission is to provide low interest loans though their Water Project Loan Program. The program began in 1971 and since then CWCB has been making loans through the Water Project Loan Program. Borrowers are generally related to agricultural, municipal and commercial industries for the specific development of raw water resource projects in Colorado.

Bull Creek applied for and was awarded a CWCB Loan through this program at the January 16, 2007 CWCB Meeting (Exhibit 17). Based on the loan application documents (Exhibit 18) dated 5/27/04, a bridge loan funded by Palisades National Bank with a maturity date of July 2007, put a formalized timeline in place to get the project permitted. In short, the Company was to complete all engineering designs, acquire the necessary FS special use permit, ACOE 404 permit, adhere to the Division of Water Resources Stipulation Agreement, and comply with the SEO Safety Requirements in order to gain access to the funding necessary to construct the project. CWCB funding was going to be used to pay off the liability at Palisades National Bank. This sense of urgency was communicated throughout the process and provided the basis for fast tracking the permitting processes through their ultimate conclusions.

ARMY CORPS OF ENGINEERS

The ACOE is authorized through their regulations, Clean Water Act Section 404 Nationwide Permits under 33 CFR Part 330. In short, this allows the ACOE to regulate, certain discharges of dredged or fill material into wetlands and waters of the United States through the nationwide permitting process. Subject to that authority the permittee must satisfy all terms and conditions of the nationwide in order for it to be applicable.

In 2008, SPK-2008-00722 (Exhibit 5) was issued nationwide permit #3 and #14 for the Project which gave authorization to the Company to construct the dam and improve the access road to a level that would facilitate such improvement. However, the permit specifically states that "**The raising of the existing water level from the existing elevation is not authorized.**" The Corps in their response to me via email (Exhibit11) stated that "impacts to wetlands caused by reservoir inundation, is regulated as a secondary impact associated with direct fill for dam rehabilitation." They further acknowledge that in the case of SPK-2008-00722, they separated the two and considered only the direct fill at the dam with an indication that secondary impacts to other wetlands would be considered at a later time with another permit submittal. This is the point that is of interest to me. The ACOE letter goes on to say that there was a "breach in protocol" for a permit that was being handled as an emergency and was done as a stop gap measure so that funding would not be lost by the applicant. This is consistent with the analysis identified above.

The correct procedure was followed through the assessment of jurisdiction i.e., JD 200575462, and then an assessment of the direct impacts of 0.26 acre. At this point the indirect impacts were not reviewed. However, the 0.26 ac associated with SPK-2008-00722 were authorized. The problem was that the indirect or secondary impacts were not analyzed through the permitting process. This second task allows the ACOE to select the most appropriate permit option (NWP, RGP, or IP). In this specific case, the application was presented as extremely time sensitive due to financial constraints by the applicant. Instead of considering all direct and indirect impacts to aquatic resources caused by this project, the ACOE chose to only review direct impacts at the dam site. They then segmented the review of indirect/secondary impacts to be considered at a later time. This resulted in the issuance of NWP 3 for the dam footprint impact and NWP 14 for minor impacts associated with road improvements. The permitting options for this secondary impact to wetlands include 1) modification of the existing NWP that was issued if impacts can be demonstrated to be minor. Under 33 CFR Part 330.5 (b) 2, the following is stated.

2) Procedures. (i) When considering whether to modify or revoke a specific authorization under an NWP, whenever practicable, the DE will initially hold informal consultations with the permittee to determine whether special conditions to modify the authorization would be mutually agreeable or to allow the permittee to furnish information which satisfies the DE's concerns. If a mutual agreement is reached, the DE will give the permittee written verification of the authorization, including the special conditions. If the permittee furnishes information which satisfies the DE's concerns, the permittee may proceed. If appropriate, the DE may suspend the NWP authorization while holding informal consultations with the permittee.

or 2) revocation of the NWP and processing of an after-the-fact Individual Permit.

It is my recommendation that we proceed with the first option rather than the second. Below you will find a formal request for NWP modification identified in Section 6. The table below presents the analysis described above in tabular format.

Table 3. Agency/Entity Issues Matrix

Agency/Entity	Issue	Procedural Completion
US Forest Service		
	Administration of 1891 Easement and appurtenant requirements	Completed with Special Use Authorization
	Acceptable Plan of Development	Accepted and Permitted
	Adequate Mitigation of Adverse Impacts to Public Resources	Accepted and Permitted
	Appropriate Level of Environmental Analysis	CE - Decision Memo on File
	Approval and Administration of Special Use Permit ID:CGJ601	Authorized 6/9/2009
State Engineers Office		
	Approval of Dam Engineering Plans and Specifications	Plans Accepted Summer 08
	Requirement to Assure Dam Operation is safe to the public	Dam safe if project constructed as planned/Construction 2009
	Oversight of 2005 Fill Restriction 8/18/05	Restriction Removed pending new dam certification
Colorado Division of Water Resources		
	Administration of Water Rights through Court System	Removal of rights from abandonment list
	Stipulation Agreement (2005)	Removal and newly adjudicated rights for 1 and 2 in BC4
	Implementation of formal abandonment proceeding if Stipulations not met	No need to complete abandonment proceedings
Army Corps of Engineers		
	Issuance of Jurisdictional Determination Letter 200575462	JD Authorized
	Issuance and Administration of Nationwide Permit SPK-2008-00722	Dam Construction Authorized
	Review and Acceptance or Denial of Mitigation Plan for SPK-2008-00722	Review of this document to modify permit if applicable
Colorado Water Conservation Board		
	Issuance and administration of Loan to Bull Creek Reservoir, Canal and Power Company in the amount of 1.2M	Construction loan approve - Dam planned and built with funds
Bull Creek Reservoir, Canal and Power Company		
	Compliance with ID:CGJ601	Permit authorized and issued
	Compliance with SEO restrictions until New Dam is Certified	See above
	Compliance with Water Rights Stipulations	See above
	Compliance with Permit SPK-2008-00722 as currently stated	Inability to meet stipulation requirements full loss of 229 AF
		Inability to meet loan requirements potential default
		Inability to comply meet purpose and need requirements of permit
		Inability to implement mitigation as proposed - Mitigation area inundated
		Inability to fully utilize 1891 Easement and rights as vested
	Compliance with Permit SPK-2008-00722 with modification as proposed	Compliance with all requirements and avoidance of loss of rights as stated above

6.0 RECOMMENDATIONS TO MODIFY PERMIT NO. SPK-2008-00722

As stated above, Bull Creek Reservoir has been in operation since the summer of 1901. In its history, it has operated at a level far higher (35.04 SA) than that presented (22.1 SA) in this submittal. Because of the natural landscape position and ecological character of the Bull Creek Reservoir site, it is probable that the wetlands and fen habitat certainly predate the reservoir. The springs and seeps in these areas would have provided adequate hydrology for their establishment and persistence. That said, having undergone 105 years of continuous operation, the wetlands and fen habitat have continued to persist.

Through discussions with representatives of the Bull Creek Reservoir, Canal and Power Company, associated project personnel, representatives of the FS, SEO, and an extremely detailed review of the respective project files, it is apparent that management of this reservoir will not substantially change from that which has been done for over a century. One can therefore assume that the wetlands/fen habitats that have been inundated before and will continue to persist through inundation associated with this proposal. This again leads one to conclude that **impacts will either be negligible or non-existent**. Further, there is direct anecdotal evidence of this occurring on many reservoir basins located on the Grand Mesa (Mesa) (Pers. Comm. Linda Bledsoe 2009). In addition, a detailed study known as the periodic inundation report (Exhibit 19.) completed by western engineers and WestWater Engineering in 2010 at a site known as Overland Reservoir, indicate that wetlands/fens persist even though they may be inundated for a significant portion of the growing season.

Operation of Bull Creek #4 begins in earnest in late July. Prior to that, precipitation that has fallen as snow, is melting and is filling the basin much faster than can be released. In fact, it has been recorded that the reservoir has filled to capacity in all but 3 years beginning in 1901, and continuing through the present. Beginning in late July, water in Bull Creek #4 begins to be released into Bull Creek #3. Bull Creek #4 under the current restriction is typically fully drained, below the outlet by mid August. Under this scenario, wetlands and fens persist immediately adjacent to the reservoir and green up essentially follows the water line into the reservoir basin. In years prior to the "restricted years", there is detail in the historical record indicating the wetland i.e., willows were persistent to the point of needing to be removed and burned as part of the annual maintenance recommendations. Given this scenario, **it is difficult to say that the periodic inundation of the wetlands at Bull Creek will result in a significant impact to them**.

The project record is clear in the development and support for both a legal and physical water rights supply. The administration and formal plat recorded with the FS under an 1891 easement and vesting with the SEO for 35.04 SA and 428 acre-feet storage capacity in 1943 is of considerable importance. Of primary importance is the known loss of 228.96 acre-feet of storage capacity which may actually result in more impact to the wetland system then the approved rehabilitation and subsequent operation of the dam. To not act in this case does not necessarily result in no impact to wetlands and waters of the US as is mandated in the 404 regulations.

Finally, we believe there is ample evidence in both the project and ecological records to indicate an impact to wetlands and waters below a level of "significance" as evidenced through written documentation and field conditions at the site. This is the necessary test required to indicate an appropriate permit mechanism (i.e., NWP 3 and 14) was used. In addition, it is also the evidence necessary for the removal of the fill restriction identified in the current authorization. That said, Bull Creek Reservoir offers the following terms to be entered into the 404 permit record in further support of the modification proposal

Modification Proposal

- Remove the fill restriction as identified in the current SPK-2008-00722 which states "**The raising of the existing water level from the existing elevation is not authorized.**"

- Establish the Surface Area Requirement of Bull Creek #4 at the 35.04 SA level. This would establish a baseline level that all parties above can work from.

- As a requirement, condition the permit to formally record a voluntary partial relinquishment of the 1891 easement to that actually needed to support the development proposal. The portion not needed will be seceded back to the FS and to the public trust. (Voluntary Relinquishment Process, Exhibit 20)

- Formalize through the submittal of a new plat dated summer 2010 and formal recordation to BLM Land Status Records incorporated into the ACOE File SPK-2008-00722 and the FS File associated with 2720 Bull Creek #4 Easement and BLM Land Status Records.

7.0 SUMMARY

Of chief concern to the ACOE permit issuance process, was the segmentation of the project with regards to the rehabilitation of the dam from the "raising of the existing water level. It was clear that the previous agent did not want to review secondary impacts associated with the filling of the reservoir during the review process for the direct impacts associated with the dam. Based on the project file review and numerous discussions with parties involved, I believe they thought the review would be too cumbersome to process. Given the time restrictions associated with funding, and the potential risk of water rights loss, they chose to use a more streamlined nationwide permit process with a commitment to review secondary impacts at a later date.

It is also clear that the ACOE recognized a need for an expedited process and segmented the project in order to fulfill the perceived timing issue placed on the approval of funds that would have resulted in the loss of 229 acre-feet of senior storage rights in the Bull Creek Drainage.

Given the situation that ensued, it became unclear how to proceed with a secondary permit that authorizes and proposes to regulate water as fill when a direct fill had already been authorized.

Based on my analysis, it is apparent that had secondary impacts been reviewed, the conclusion that would have been made is that impacts were insignificant and the permitting would have followed a similar path. It is this conclusion that leads me to propose a prudent and efficient pathway to filling the reservoir. I request a modification to the existing permit through the determination that impacts to wetlands and waters of the US are not significant. Through this analysis I have shows that the permit mechanism used is in fact appropriate, however, I also propose to incorporate the bulleted items in section 6 be formally incorporated as conditions of the modified permit.

Exhibit 1
Secretary of State Certificate

OFFICE OF THE SECRETARY OF STATE
OF THE STATE OF COLORADO

CERTIFICATE

I, Ginette Dennis, as the Secretary of State of the State of Colorado, hereby certify that, according to the records of this office,

BULL CREEK RESERVOIR CANAL & POWER COMPANY

is a
Nonprofit Corporation

formed or registered on 03/07/1895 under the law of Colorado, has complied with all applicable requirements of this office, and is in good standing with this office. This entity has been assigned entity identification number 19871034325 .

This certificate reflects facts established or disclosed by documents delivered to this office on paper through 12/15/2006 that have been posted, and by documents delivered to this office electronically through 12/20/2006 @ 03:30:52 .

I have affixed hereto the Great Seal of the State of Colorado and duly generated, executed, authenticated, issued, delivered and communicated this official certificate at Denver, Colorado on 12/20/2006 @ 03:30:52 pursuant to and in accordance with applicable law. This certificate is assigned Confirmation Number 6660196 .

Ginette Dennis

Secretary of State of the State of Colorado

**********End of Certificate**********

Notice: A certificate issued electronically from the Colorado Secretary of State's Web site is fully and immediately valid and effective. However, as an option, the issuance and validity of a certificate obtained electronically may be established by visiting the Certificate Confirmation Page of the Secretary of State's Web site, http://www.sos.state.co.us/biz/CertificateSearchCriteria.do entering the certificate's confirmation number displayed on the certificate, and following the instructions displayed. Confirming the issuance of a certificate is merely optional and is not necessary to the valid and effective issuance of a certificate. For more information, visit our Web site, http://www.sos.state.co.us/ click Business Center and select "Frequently Asked Questions."

Exhibit 2
Final Stipulation Agreement

District Court, Water Division No.5 Colorado
Court Address: 109 8TH Street, Glenwood Springs, Colorado
Phone: 970-945-5075

FOR COURT USE ONLY

IN THE MATTER OF THE APPLICATION OF BULL CREEK RESERVOIR CANAL AND POWER COMPANY

IN MESA COUNTY, COLORADO

Case Number: 01CW337
AND CONSOLIDATED
CASES NOS. 02CW158
AND 02CW159

ORDER

Balancing the response of the Engineers and the needs of the Court to get this case to completion, the Court hereby approves the Second Amendment to Stipulation and Agreement filed December 9, 2005, with the exception that the Protestant shall have until May 31, 2006 within which to demonstrate compliance with the other terms of that Stipulation.

Dated: February 23, 2006

BY THE COURT:

T. PETER CRAVEN
DISTRICT JUDGE

I certify that I served the foregoing on COUNSEL OF RECORD on Thursday, February 23, 2006.

DISTRICT COURT, WATER DIVISION 5, COLORADO Court Address: 109 Eighth Street #104, Glenwood Springs, CO 81601 Telephone: (970) 945-5075	
Concerning the Application of Water Right of: **BULL CREEK RESERVOIR CANAL AND POWER COMPANY** **IN MESA COUNTY.**	**COURT USE ONLY** Case Number: 01CW337 and Consolidated Case Nos. 02CW158 and 02CW159 Div.: 5 Ctrm:
JOHN W. SUTHERS, Attorney General AMY STENGEL, #34565* Assistant Attorney General 1525 Sherman Street, 5th Floor Denver, CO 80203 (303) 866-5361 *Counsel of Record	

RESPONSE TO PROTESTANT'S MOTION FOR RELIEF FROM ORDER

The State and Division Engineers ("Engineers"), through undersigned counsel, hereby submits this Response to Protestant's Motion for Relief from Order.

1. Pursuant to C.R.S. § 37-92-401 (2000), the Office of the Division Engineer filed the decennial abandonment list ("2000 Revised Abandonment List") with the water clerk on or about December 31, 2001, including portions of the Bull Creek Reservoir No. 1, No. 2, No. 3 and No. 4 water rights on that list.

2. Protestant filed a timely protest to the inclusion of those water rights on the 2000 Revised Abandonment List as well as an application for a change in a portion of the subject water rights.

3. In a Stipulation dated October 31, 2003 between the parties, the State and Division Engineers agreed to recommend that the Court withdraw certain portions of those water rights from the 2000 Revised Abandonment List and Protestant agreed that certain portions of those rights would be abandoned. Protestant also agreed to file an application for a change in water rights with the Water Court within one year of entry of the Stipulation and committed to putting the water rights to beneficial use within one year of the change of water rights being decreed.

4. As part of the October 31, 2003 Stipulation, Protestant agreed to report in writing to the Division Engineer on a bi-monthly basis on progress made toward fulfilling each stop of the construction plan for the reservoir project, and included seven specific deadlines for various stages of the project. Parties agreed that failure of the Protestant to complete construction of the entire project by October 31, 2004 or otherwise failing to comply with the terms of the Stipulation would result in abandonment of Bull Creek Reservoir Nos. 1, 2, 3 and 4 without the need for further proceedings. The Stipulation

did recognize that Protestant may request an extension of the October 31, 2004 deadline to October 31, 2005 by making such a request in writing to the Division Engineer no later than October 1, 2004.

5. Although consistent bi-monthly reporting had not been submitted to the Engineers and no progress made on the project, under a Stipulation dated October 1, 2004, the Engineers did agree to allow the Protestant an additional year to October 31, 2005 in which to complete construction of the project.

6. On or about December 6, 2005, the Engineers agreed to again delay seeking an order of abandonment of the subject water rights and allowed Protestant until July 31, 2006, to produce preliminary engineering sufficient to outline the costs of the proposed project, to demonstrate they have completed the requisite environmental review and permitting processes, and to submit a timeline for completion of the project. The Engineers support that agreement.

7. For the duration of this case the Engineers have worked with the Protestant in an effort to allow them to move forward with their reservoir project, recognizing that Protestant has spent a significant amount of money and that significant water rights are at stake. However, the Engineers are not willing to allow this case to remain unresolved indefinitely to the detriment of potential water users while the Protestant attempts to put a project together.

8. The Engineers support the Protestant's Motion to Approve Second Amendment to the Stipulation and Agreement and entry of the Second Amendment to Stipulation and Agreement by this Court. However if Protestant fails to produce the submittals required under the terms of that Stipulation by July 31, 2006, the Engineers will move for an order of abandonment of the water rights for Bull Creek Reservoir Nos. 1, 2, 3 and 4.

WHEREFORE the State and Division Engineers request that the Court enter the Second Amendment to Stipulation and Agreement and allow the Protestant until July 31, 2006 to demonstrate compliance with the terms of that Stipulation.

Submitted this 6th day of February, 2006.

JOHN W. SUTHERS
Attorney General
Signed original on file with the Office of the Attorney General for the State of Colorado
/s/ Jennifer Mele, #30720 for

AMY STENGEL, No. 34565
Assistant Attorney General
Water Rights Unit
Natural Resources & Environment Section
Attorneys for the State and Division Engineers

CERTIFICATE OF SERVICE

This is to certify that on the 6*th* day of February, 2006, I caused a true and correct copy of the foregoing to be served electronically via LexisNexis File & Serve or first class U.S. Mail ("*") to each of the following:

Rosemarie Heidenreich Parker, Esq.
P.O. Box 125
Freburg, IL 62243

Signed original on file with the Office of the Attorney General for the State of Colorado
/s/ Dawn M. Heher

DISTRICT COURT, WATER DIVISION 5, COLORADO Court Address: 109 Eighth Street #104, Glenwood Springs, CO 81601 Telephone: (970) 945-5075	06 JAN 18 PM 12:36 CLERK
Concerning the Application of Water Right of: **BULL CREEK RESERVOIR CANAL AND POWER COMPANY** **IN MESA COUNTY.**	OPPOSING PARTIES SHALL RESPOND UNDER CRCP 121. COURT USE ONLY
Attorney for Protestant: Rosemarie Heidenreich Parker PO Box 125 Freeburg, IL 62243 Phone Number: (618) 539-9956 Fax Number: (618) 539-9954 Atty. Reg. #: 31750	So Ordered 1/30/06 Date T. Peter Craven
	Case Number: 01CW337 and Consolidated Case Nos. 02CW158 and 02CW159 Div.: 5 Ctrm:

E-FILED 1/31/06 DATE

PROTESTANT'S MOTION FOR RELIEF FROM ORDER

Protestant, Bull Creek Reservoir Canal and Power Company, by and through its counsel, Rosemarie Heidenreich Parker, (hereinafter "Counsel), respectfully requests that this Court pursuant to CRCP 60 relieve the Protestant of the Order of January 17, 2006 on the grounds of excusable neglect and accept the Protestant's Rule 6(b) Motion filed with the Court on January 3, 2006, to approve the Second Amendment to Stipulation and Agreement filed by the parties on December 9, 2005 on the grounds of excusable neglect.

1. The State and Division Engineer and the Protestant, Bull Creek Reservoir Canal and Power Company, entered into a Stipulation and Agreement dated October 31, 2003.

2. Said Stipulation was amended on October 1, 2004 for another year.

3. On September 1, 2005, the State and Division Engineer and the Protestant verbally agreed to extend the Stipulation until July 31, 2006 with certain requirements.

4. The Motion to Approve Second Amendment to Stipulation and Agreement was filed on December 9, 2005 after the October 31, 2005 deadline.

5. The Court, by Order of December 14, 2005, directed that the Protestant demonstrate excusable neglect as that term was used in Rule 6(b)(2) in the late filing of the Motion to approve the Stipulation. Protestant's Rule 6(b) Motion was due on January 6, 2006.

5. On January 3, 2006, Protestant filed by facsimile transmission its Protestant's Rule 6(b) Motion with this court.

Protestant alleges excusable neglect on the filing of the Protestant's Rule 6(b) Motion as follows:

1. Counsel prepared Protestant's Rule 6(b) Motion and filed it by facsimile transmission with this Court on January 3, 2006. The facsimile cover sheet and transmission verification report showing 8 pages received by the Court at the telephone number (970) 945-8756 are attached as Exhibit 1.

2. Upon seeing the transmission verification report, Counsel believed that the Motion had been received by the Court. Counsel has previously filed many documents by facsimile transmission with the Court without any difficulty, always relying on the transmission verification report that the document had been received. All documents previously filed this way had been received on a timely basis and filed by the Court on a timely basis.

3. Upon receiving the Court's Order of January 17, 2006, Counsel spoke with the Division 5 Water Clerk who did not have a record of the filing of Protestant's Rule 6(b) Motion. Counsel also spoke with the Garfield Combined Court Clerk concerning whether a log was kept of facsimile transmissions received on January 3, 2006 and was told that if a log was kept it would have been destroyed by now.

4. Counsel was unable to determine the reason why the Motion was not received by the Court and filed properly.

WHEREFORE, Protestant respectfully requests that this Court pursuant to CRCP 60 relieve the Protestant of the Order of January 17, 2006 on the grounds of excusable neglect, accept the Protestant's Rule 6(b) Motion filed with the Court on January 3, 2006, and approve the Second Amendment to Stipulation and Agreement filed by the parties on December 9, 2005 on the grounds of excusable neglect.

Dated this 18th day of January, 2006.

Rosemarie Heidenreich Parker
Attorney for Protestant
PO Box 125
Freeburg, IL 62243
Phone: (618) 539-9956
Fax: (618) 539-9954

Copy of the foregoing mailed to all Counsel of Record, Water Referee, Div. Engineer and State Engineer Date 1/18/06

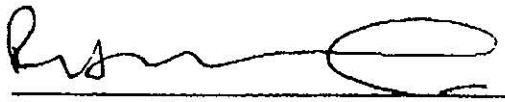
Deputy Clerk, Water Div. 5

CERTIFICATE OF SERVICE

I, Rosemarie Heidenreich Parker, hereby certify that on the 18th day of January, 2006, a true and accurate copy of the foregoing Protestant's Motion for Relief from Order was served on the following:

Attorney for State and Division Engineers:
Amy Stengel
Assistant Attorney General
Natural Resources & Environment Section
1525 Sherman St., 5th Floor
Denver, CO 80203
(303) 866-5361

Dated this 18th day of January, 2006.



Rosemarie Heidenreich Parker

Exhibit 3
Attorney General Abandonment List

Copy: Irwin Johnson
268-5551

KEN SALAZAR
Attorney General

DONALD S. QUICK
Chief Deputy Attorney General

ALAN J. GILBERT
Solicitor General

STATE OF COLORADO
DEPARTMENT OF LAW
OFFICE OF THE ATTORNEY GENERAL

STATE SERVICES BUILDING
1525 Sherman Street - 5th Floor
Denver, Colorado 80203
Phone (303) 866-4500
FAX (303) 866-5691

February 25, 2003

BY MAIL AND FACSIMILE TO: (970) 268-5086

Rosemarie Heidenreich Parker, Esq.
P.O. Box 489
Mesa, Colorado 81643

RE: Protest of Bull Creek Reservoir Canal and Power Company, Consolidated Case Nos. 02CW158 and 02CW159

Dear Ms. Parker:

This letter is in response to your counteroffer dated February 17, 2003. The State and Division Engineers (Engineers) are authorized pursuant to C.R.S. § 37-92-401(4)(c) (2000) to seek abandonment of water rights that are not put to beneficial use. The subject storage rights were placed on the abandonment list because the evidence establishes that those rights have not been used in more than 10 years, if at all.

The counteroffer from the Bull Creek Reservoir Canal and Power Company (Company) has slightly different storage volumes than have been surveyed by the Division of Water Resources. If the Company wishes to dispute these numbers, they must hire a licensed surveyor qualified in topographic mapping and volume estimation to conduct a stage-capacity curve in accordance with C.R.S. § 37-84-117. The following Table lists the three Bull Creek Reservoirs where the existing storage volume is less than the decreed storage volume and the amount subject to abandonment for each of the reservoirs. The existing storage volumes reflect recent reconstruction by the Company.

Reservoir Name	Existing Storage (ac-ft)	Decreed Storage (ac-ft)	Abandon Storage (ac-ft)
Bull Creek Reservoir No. 1	80.00	153.67	73.67
Bull Creek Reservoir No. 2	75.10	120.20	45.10
Bull Creek Reservoir No. 4	202.5	312.69	110.19

The counteroffer by the Company states they are considering raising the respective dams to increase the storage capacity of the reservoirs. The Engineers have reviewed the counteroffer and the costs for increasing the height of the dams. It is the Engineers' position that the Company has not considered all the technical and environmental requirements for increasing the

height of the dams and has significantly underestimated the cost of the additional storage. However, the State and Division Engineers are willing to consider removing all or a portion of the storage volume from the abandonment list if the Company can increase the height of the dams before September 2005. The amount of storage volume to be removed from the abandonment list would be contingent on the measured capacity of the reservoirs in September 2005.

Another term of this settlement offer is that the Company will also be required to conduct an analysis which includes feasibility level design, environmental assessment and cost estimate of raising Bull Creek No. 1, No. 2 and No. 4 dams. Because the Company proposes to raise Bull Creek Reservoir No. 1 and No. 2 to jurisdictional dam heights and Bull Creek Reservoir No. 4 is a jurisdictional dam, the Company must hire a licensed engineer qualified in dam rehabilitation design and environmental assessments to conduct this analysis. The Company must submit the above-referenced analysis report to the State and Division Engineers with a cover letter describing the reservoirs the Company will raise and a schedule for commencement and completion of each step of the project, including dam safety permitting, environmental permitting, loan requirements, and construction by September 1, 2003.

The Company also disputes abandonment of domestic use of Bull Creek Reservoir No. 3 and No. 4. The Engineers have no evidence to indicate the reservoirs have been used for domestic purposes. Since the reservoirs only provide water for a portion of the year and domestic use is a year round use, the reservoirs cannot be used for domestic purposes without a separate supply of water. The Engineers are aware the reservoirs have been used for livestock purposes. If the Company wishes to propose the change in use from domestic to livestock for Bull Creek Reservoirs No. 3 and No. 4 and file a change in water right application with the Water Court, the Engineers will support this application.

In the alternative, as provided in the proposed stipulation, the Engineers are still willing to allow the Company to transfer 32.42 af from Bull Creek Reservoir No. 1 to Bull Creek Reservoir No. 5 for irrigation use, and the Engineers would agree to remove that portion of the water right from the abandonment list

At the status conference on February 28, 2003, I intend to request that this matter be set for another status conference in 45 days to allow the parties additional time to either reach a stipulated settlement or to discuss pre-trial procedures and set this matter for trial.

Please let me know your client's response and feel free to contact me if you have any questions or wish to discuss this matter further.

Sincerely,

FOR THE ATTORNEY GENERAL

MATTHEW S. POZNANOVIC
Assistant Attorney General
Natural Resources and Environment Section
(303) 866-5065
(303) 866-3558 (FAX)

cc: John Sikora-Div. 5
Alison Needham-SEO

Exhibit 4
JD Letter

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

August 18, 2005

Regulatory Branch (200575462)

Mr. Steve Dahmer
Environmental Solutions
600 CR 216
Rifle, Colorado 81650

Dear Mr. Dahmer:

We are responding to your request for an approved jurisdictional determination for the Bull Creek Reservoir #4 site. This approximately 50-acre site is located on or near Bull Creek within Section 20, Township 11 South, Range 95 West, Latitude 39° 4' 35.3", Longitude 108° 2' 12.9", Mesa County, Colorado.

MEZEI 8-18
JACOBSON 8-18-05

Based on available information, we concur with the estimate of wetland type waters of the United States (U.S.), as depicted on drawings WM2 through WM5 dated February 2004, titled Dam Rehabilitation Existing Wetlands prepared by Environmental Solutions, and Water Resource Consultants, LLC. There are approximately 3.73 acres of wetlands along the periphery of the reservoir, not counting the reservoir itself, which is also a waters of the U.S. up to the level of the ordinary high water elevation. We regulate these waters under Section 404 of the Clean Water Act.

This verification is valid for five years from the date of this letter, unless new information warrants revision of the determination before the expiration date. A *Notification of Administrative Appeal Options and Process and Request for Appeal* form is enclosed. If you wish to appeal this approved jurisdictional determination, please follow the procedures on the form. You should provide a copy of this letter and notice to all other affected parties, including any individual who has an identifiable and substantial legal interest in the property.

This determination has been conducted to identify the limits of Corps of Engineers' Clean Water Act jurisdiction for the particular site identified in this request. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

Please refer to identification number 200575462 in correspondence concerning this project. If you have any questions, please contact Nicholas A. Mezei at our Colorado/Gunnison Basin Regulatory Office, 400 Rood Avenue, Room 142, Grand Junction, Colorado 81501-2563, email Nick.Mezei@usace.army.mil, or telephone 970-243-1199, extension 13. You may also use our website: *www.spk.usace.army.mil*/regulatory.html.

Sincerely,

Ken Jacobson
Chief, Colorado/Gunnison Basin
Regulatory Office
400 Rood Avenue, Room 142
Grand Junction, Colorado 81501-2563

Enclosure

Copy furnished without enclosure:

Mr. Irv Johnson, Bull Creek Reservoir & Power Company, Post Office Box 25, Mesa, Colorado 81646
Mesa County Engineering Department, Post Office Box 20,000, Grand Junction, Colorado 81501

Exhibit 5
USACE Nationwide #3 404 Permit

Fax Header Sheet

U.S. Army Corps of Engineers, Sacramento District
Colorado West Regulatory Branch
400 Rood Avenue, Room 142
Grand Junction, Colorado 81501-2563
Phone: 970-243-1199
Fax: 970-241-2358

Date: 7-1-08

To: Paul Currier

From: Barb
Colorado West Regulatory Branch

Releaser's Signature:

Number of pages including cover: 4

Comments:

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
COLORADO WEST REGULATORY BRANCH
400 ROOD AVENUE, ROOM 142
GRAND JUNCTION, COLORADO 81501-2563

REPLY TO
ATTENTION OF

July 1, 2008

Regulatory Division (SPK-2008-00722)

Mr. Irv Johnson
Bull Creek Reservoir, Canal and Power Company
Post Office Box 25
Molina, Colorado 81646

Dear Mr. Johnson:

We are responding to a request for a Department of the Army permit for work related to dam rehabilitation at Bull Creek Reservoir number 4. This project involves activities, including discharges of dredged or fill material, in waters of the United States. The sites are located within Sections 21 and 29, Range 95 West, Township 11 South, Grand Mesa National Forest, Mesa County, Colorado.

Based on the information provided, the proposed activity in approximately .28 acres is authorized by Nationwide General permit (NWP) numbers 3 and 14. **This letter authorizes rehabilitation of certain physical structure of the dam itself. The raising of the existing water level from the existing elevation is not authorized. Specifically, you are authorized to undertake the following work:**

1. Broadening the crest of the dam from the current width of approximately 8 feet to a new width of 15.5 feet.

2. Raising the height of the dam by 4 feet

3. Lining of the existing outlet works.

4. Raising the existing service spillway to 6.6 feet.

5. Construction of an emergency spillway.

6. Re-routing portions of existing Forest Service Road as described in the February 19, 2008 USFS Plan of Development (POD) .

Your work must comply with the general terms and conditions listed on the enclosed NWP information sheets and the following **special conditions**:

1. Construction of the approved mitigation site (final plan submitted May 28, 2008), shall be conducted in accordance with the approved mitigation plan (dated April 28, 2008).

2. Standard BMPs (Best Management Practices), such as the use of silt fencing, sediment barriers, etc. will be utilized where appropriate to prevent unintended impacts to aquatic resources.

3. You must allow representatives from the Corps of Engineers to inspect the authorized activity and any mitigation, preservation, or avoidance areas at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit verification.

4. To document pre- and post-project construction conditions, you shall submit pre-construction and post-construction photos of the project site within 30 days after project completion.

5. The responsibility to complete the required compensatory mitigation will not be considered fulfilled until you have demonstrated mitigation success and have received written verification from the U.S. Army Corps of Engineers.

You must sign the enclosed Compliance Certification and return it to this office within 30 days after completion of the authorized work.

This verification is valid for two years from the date of this letter or until the Nationwide Permit is modified, reissued, or revoked, whichever comes first. Failure to comply with the General Conditions of this NWP, or the project-specific Special Conditions of this authorization, may result in the suspension or revocation of your authorization.

We appreciate your feedback. At your earliest convenience, please tell us how we are doing by completing our customer survey at *http://www.spk.usace.army.mil/customer_survey.html.* Your passcode is "conigliaro".

Please refer to identification number SPK-2008-00722 in any correspondence concerning this project. If you have any questions, please contact Steve Moore at the above letterhead address, email at *stephen.a.moore@usace.army.mil*, or by telephone at (970) 243-1199 extension 13. You may also use our website: *www.spk.usace.army.mil/regulatory.html*.

Sincerely,

Ken Jacobson
Chief, Colorado West
Regulatory Branch

Enclosures

Copy furnished without enclosures:

Ms. Linda Bledsoe, U.S. Forest Service, Grand Valley Ranger District, 2777 Crossroads Blvd. Unit 1, Colorado 81506
Mr. Garrett Jackson, Colorado State Engineers Office, 2754 Compass Drive #175, Grand Junction, Colorado 81506
Mr. Steve Dahmer, Environmental Solutions, 600 CR 216, Rifle, Colorado 81650

Exhibit 6
Special Use Permit Authorization ID CGJ601

Authorization ID: CGJ601
Contact ID: BULL_CR_RES
Expiration Date: 12/31/2011
Use Code: 921

FS-2700-4 (03/06)
OMB 0596-0082

U.S. DEPARTMENT OF AGRICULTURE
Forest Service
SPECIAL USE PERMIT
AUTHORITY:
FEDERAL LAND POLICY AND MGMT ACT, AS AMENDED October 21, 1976

BULL CREEK RESERVOIR, CANAL & POWER COMPANY of PO Box 25, Molina, CO 81646 (hereinafter called the Holder) is hereby authorized to use or occupy National Forest System lands, to use subject to the conditions set out below, on the Grand Mesa National Forest of the National Forest System.

This permit covers approximately 3 acres and is described as: portions of Sections 20 and 29, T. 11 S., R. 95 W., 6th Principal Meridian, as shown on the location map attached to and made a part of this permit as Exhibit B, and is issued for the purpose of:

Rehabilitation and reconstruction of the dam at Bull Creek Reservoir #4 according to the specifications approved by the State Engineer's Office.

If needed, a work camp is also authorized at the reservoir site.

The foot and horse trail that has been widened for access by equipment will be reduced in size upon completion of the dam project in accordance with Forest Service specifications.

Holder shall comply with all conditions included in Exhibit A, Additional Specifications for Bull Creek Reservoir No. 4 Dam Rehabilitation"

The above described or defined area shall be referred to herein as the "permit area".

TERMS AND CONDITIONS

I. AUTHORITY AND GENERAL TERMS OF THE PERMIT

A. Authority. This permit is issued pursuant to the authorities enumerated at Title 36, Code of Federal Regulations, Section 251 Subpart B, as amended. This permit, and the activities or use authorized, shall be subject to the terms and conditions of the Secretary's regulations and any subsequent amendment to them.

B. Authorized Officer. The authorized officer is the Forest Supervisor or a delegated subordinate officer.

C. License. This permit is a license for the use of federally owned land and does not grant any permanent, possessory interest in real property, nor shall this permit constitute a contract for purposes of the Contract Disputes Act of 1978 (41 U.S.C. 611). Loss of the privileges granted by this permit by revocation, termination, or suspension is not compensable to the holder.

D. Amendment. This permit may be amended in whole or in part by the Forest Service when, at the discretion of the authorized officer, such action is deemed necessary or desirable to incorporate new terms, conditions, and stipulations as may be required by law, regulation, land management plans, or other management decisions.

E. Existing Rights. This permit is subject to all valid rights and claims of third parties. The United States is not liable to the holder for the exercise of any such right or claim.

F. Nonexclusive Use and Public Access. Unless expressly provided for in additional terms, use of the permit area is not exclusive. The Forest Service reserves the right to use or allow others to use any part of the permit area, including roads, for any purpose, provided, such use does not materially interfere with the holder's authorized use. A final determination of conflicting uses is reserved to the Forest Service.

G. Forest Service Right of Entry and Inspection. The Forest Service has the right of unrestricted access of the permitted area or facility to ensure compliance with laws, regulations, and ordinances and the terms and conditions of this permit.

H. Assignability. This permit is not assignable or transferable. If the holder through death, voluntary sale or transfer, enforcement of contract, foreclosure, or other valid legal proceeding ceases to be the owner of the improvements, this permit shall terminate.

I. Permit Limitations. Nothing in this permit allows or implies permission to build or maintain any structure or facility, or to conduct any activity unless specifically provided for in this permit. Any use not specifically identified in this permit must be approved by the authorized officer in the form of a new permit or permit amendment.

II. TENURE AND ISSUANCE OF A NEW PERMIT

A. Expiration at the End of the Authorized Period. This permit will expire when the work is completed and accepted by the Forest Service and State Engineer's Office or at midnight on **12/31/2011**, whichever comes first. Expiration shall occur by operation of law and shall not require notice, any decision document, or any environmental analysis or other documentation.

B. Minimum Use or Occupancy of the Permit Area. Use or occupancy of the permit area shall be exercised at least 1 days each year, unless otherwise authorized in writing under additional terms of this permit.

C. Notification to Authorized Officer. If the holder desires issuance of a new permit after expiration, the holder shall notify the authorized officer in writing not less than six (6) months prior to the expiration date of this permit.

D. Conditions for Issuance of a New Permit. At the expiration or termination of an existing permit, a new permit may be issued to the holder of the previous permit or to a new holder subject to the following conditions:

1. The authorized use is compatible with the land use allocation in the Forest Land and Resource Management Plan.
2. The permit area is being used for the purposes previously authorized.
3. The permit area is being operated and maintained in accordance with the provisions of the permit.
4. The holder has shown previous good faith compliance with the terms and conditions of all prior or other existing permits, and has not engaged in any activity or transaction contrary to Federal contracts, permits laws, or regulations.

E. Discretion of Forest Service. Notwithstanding any provisions of any prior or other permit, the authorized officer may prescribe new terms, conditions, and stipulations when a new permit is issued. The decision whether to issue a new permit to a holder or successor in interest is at the absolute discretion of the Forest Service.

~~F. Construction. Any construction authorized by this permit may commence by _____ and shall be completed by _____. If construction is not completed within the prescribed time, this permit may be revoked or suspended.~~

III. RESPONSIBILITIES OF THE HOLDER

A. Compliance with Laws, Regulations, and other Legal Requirements. The holder shall comply with all applicable Federal, State, and local laws, regulations, and standards, including but not limited to, the

Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., the Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq., the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S. C. 9601 et seq., and other relevant environmental laws, as well as public health and safety laws and other laws relating to the siting, construction, operation, and maintenance of any facility, improvement, or equipment on the property.

B. Plans. Plans for development, layout, construction, reconstruction, or alteration of improvements on the permit area, as well as revisions of such plans, must be prepared by a qualified individual acceptable to the authorized officer and shall be approved in writing prior to commencement of work. The holder may be required to furnish as-built plans, maps, or surveys, or other similar information, upon completion of construction.

C. Maintenance. The holder shall maintain the improvements and permit area to standards of repair, orderliness, neatness, sanitation, and safety acceptable to the authorized officer and consistent with other provisions of this authorization. If requested, the holder shall comply with inspection requirements deemed appropriate by the authorized officer.

D. Hazard Analysis. The holder has a continuing responsibility to identify all hazardous conditions on the permit area which would affect the improvements, resources, or pose a risk of injury to individuals. Any non-emergency actions to abate such hazards shall be performed after consultation with the authorized officer. In emergency situations, the holder shall notify the authorized officer of its actions as soon as possible, but not more than 48 hours, after such actions have been taken.

E. Change of Address. The holder shall immediately notify the authorized officer of a change in address.

F. Change in Ownership. This permit is not assignable and terminates upon change of ownership of the improvements or control of the business entity. The holder shall immediately notify the authorized officer when a change in ownership or control of business entity is pending. Notification by the present holder and potential owner shall be executed using Form SF-299 Application for Transportation and Utility Systems and Facilities of Federal Lands, or Form FS-2700-3a, Holder Initiated Revocation of Existing Authorization, Request for a Special Use Permit. Upon receipt of the proper documentation, the authorized officer may issue a permit to the party who acquires ownership of, or a controlling interest in, the improvements or business entity.

IV. LIABILITY

For purposes of this section, "holder" includes the holder's heirs, assigns, agents, employees, and contractors.

A. The holder assumes all risk of loss to the authorized improvements.

B. The holder shall indemnify, defend, and hold the United States harmless for any violations incurred under any such laws and regulations or for judgments, claims, or demands assessed against the United States in connection with the holder's use or occupancy of the property. The holder's indemnification of the United States shall include any loss by personal injury, loss of life or damage to property in connection with the occupancy or use of the property during the term of this permit. Indemnification shall include, but is not limited to, the value of resources damaged or destroyed; the costs of restoration, cleanup, or other mitigation; fire suppression or other types of abatement costs; third party claims and judgments; and all administrative, interest, and other legal costs. This paragraph shall survive the termination or revocation of this authorization, regardless of cause.

C. The holder has an affirmative duty to protect from damage the land, property, and interests of the United States.

D. In the event of any breach of the conditions of this authorization by the holder, the authorized officer may, on reasonable notice, cure the breach for the account at the expense of the holder. If the Forest Service at any time pays any sum of money or does any act which will require payment of money, or incurs any expense, including reasonable attorney's fees, in instituting, prosecuting, and/or defending any

action or proceeding to enforce the United States rights hereunder, the sum or sums so paid by the United States, with all interests, costs and damages shall, at the election of the Forest Service, be deemed to be additional fees hereunder and shall be due from the holder to the Forest Service on the first day of the month following such election.

E. With respect to roads, the holder shall be proportionally liable for damages to all roads and trails of the United States open to public use caused by the holder's use to the same extent as provided above, except that liability shall not include reasonable and ordinary wear and tear.

F. The Forest Service has no duty to inspect the permit area or to warn of hazards and, if the Forest Service does inspect the permit area, it shall incur no additional duty nor liability for identified or non-identified hazards. This covenant may be enforced by the United States in a court of competent jurisdiction.

V. TERMINATION, REVOCATION, AND SUSPENSION

A. General. For purposes of this permit, "termination", "revocation", and "suspension" refer to the cessation of uses and privileges under the permit.

"Termination" refers to the cessation of the permit under its own terms without the necessity for any decision or action by the authorized officer. Termination occurs automatically when, by the terms of the permit, a fixed or agreed upon condition, event, or time occurs. For example, the permit terminates at expiration. Terminations are not appealable.

"Revocation" refers to an action by the authorized officer to end the permit because of noncompliance with any of the prescribed terms, or for reasons in the public interest. Revocations are appealable.

"Suspension" refers to a revocation which is temporary and the privileges may be restored upon the occurrence of prescribed actions or conditions. Suspensions are appealable.

B. Revocation or Suspension. The Forest Service may suspend or revoke this permit in whole or part for:

1. Noncompliance with Federal, State, or local laws and regulations.
2. Noncompliance with the terms and conditions of this permit.
3. Reasons in the public interest.
4. Abandonment or other failure of the holder to otherwise exercise the privileges granted.

C. Opportunity to Take Corrective Action. Prior to revocation or suspension for cause pursuant to Section V (B), the authorized officer shall give the holder written notice of the grounds for each action and a reasonable time, not to exceed 90 days, to complete the corrective action prescribed by the authorized officer.

D. Removal of Improvements. Prior to abandonment of the improvements or within a reasonable time following revocation or termination of this authorization, the holder shall prepare, for approval by the authorized officer, an abandonment plan for the permit area. The abandonment plan shall address removal of improvements and restoration of the permit area and prescribed time frames for these actions. If the holder fails to remove the improvements or restore the site within the prescribed time period, they become the property of the United States and may be sold, destroyed or otherwise disposed of without any liability to the United States. However, the holder shall remain liable for all cost associated with their removal, including costs of sale and impoundment, cleanup, and restoration of the site.

VI. FEES

A. Termination for Nonpayment. This permit shall automatically terminate without the necessity of prior notice when land use rental fees are 90 calendar days from the due date in arrears.

B. The holder shall pay an annual fee of $126.64 for the period from June 8, 2009, to December 31, 2009, and thereafter annually on January 1, $126.64: Provided, charges for this use shall be made or readjusted whenever necessary to place the charges on a basis commensurate with the fair market value of the authorized use.

C. Payment Due Date. The payment due date shall be the close of business on January 1 of each calendar year payment is due. Payments in the form of a check, draft, or money order are payable to USDA, Forest Service. Payments shall be credited on the date received by the designated Forest Service collection officer or deposit location. If the due date for the fee or fee calculation statement falls on a non-workday, the charges shall not apply until the close of business on the next workday.

D. Late Payment Interest, Administrative Costs and Penalties Pursuant to 31 U.S.C. 3717, et seq., interest shall be charged on any fee amount not paid within 30 days from the date the fee or fee calculation financial statement specified in this authorization becomes due. The rate of interest assessed shall be the higher of the rate of the current value of funds to the U.S. Treasury (i.e., Treasury tax and loan account rate), as prescribed and published by the Secretary of the Treasury in the Federal Register and the Treasury Fiscal Requirements Manual Bulletins annually or quarterly or at the Prompt Payment Act rate. Interest on the principal shall accrue from the date the fee or fee calculation financial statement is due.

In the event the account becomes delinquent, administrative costs to cover processing and handling of the delinquency will be assessed.

A penalty of 6 percent per annum shall be assessed on the total amount delinquent in excess of 90 days and shall accrue from the same date on which interest charges begin to accrue.

Payments will be credited on the date received by the designated collection officer or deposit location. If the due date for the fee or fee calculation statement falls on a non-workday, the charges shall not apply until the close of business on the next workday.

Disputed fees are due and payable by the due date. No appeal of fees will be considered by the Forest Service without full payment of the disputed amount. Adjustments, if necessary, will be made in accordance with settlement terms or the appeal decision.

If the fees become delinquent, the Forest Service will:

Liquidate any security or collateral provided by the authorization.

If no security or collateral is provided, the authorization will terminate and the holder will be responsible for delinquent fees as well as any other costs of restoring the site to it's original condition including hazardous waste cleanup.

Upon termination or revocation of the authorization, delinquent fees and other charges associated with the authorization will be subject to all rights and remedies afforded the United States pursuant to 31 U.S.C. 3711 *et seq.* Delinquencies may be subject to any or all of the following conditions:

Administrative offset of payments due the holder from the Forest Service.

Delinquencies in excess of 60 days shall be referred to United States Department of Treasury for appropriate collection action as provided by 31 U.S.C. 3711 (g), (1).

The Secretary of the Treasury may offset an amount due the debtor for any delinquency as provided by 31 U.S.C. 3720, *et seq.*)

VII. OTHER PROVISIONS

A. Members of Congress. No Member of or Delegate to Congress or Resident Commissioner shall benefit from this permit either directly or indirectly, except when the authorized use provides a general benefit to a corporation.

B. Appeals and Remedies. Any discretionary decisions or determinations by the authorized officer are subject to the appeal regulations at 36 CFR 251, Subpart C, or revisions thereto.

C. Superior Clauses. In the event of any conflict between any of the preceding printed clauses or any provision thereof and any of the following clauses or any provision thereof, the preceding printed clauses shall control.

D. Nondiscrimination in Employment and Services (R2-B-108). During the performance of this permit, the holder agrees that:

1. The holder and employees shall not discriminate by segregation or otherwise against any person on the basis of race, color, sex (in educational activities), national origin, age or disability, by curtailing or by refusing to furnish accommodations, facilities, services, or use privileges offered to the public generally and that the holder and employees shall comply with the provisions of Title VI of the Civil Rights Act of 1964, as amended, section 504 of the Rehabilitation Act of 1973, as amended, Title IX of the Education Amendments, and the Age Discrimination Act of 1975.

2. The holder shall include and require compliance with the above nondiscrimination provisions in any third party agreement made with respect to the operations under this permit.

3. Signs setting forth this policy of nondiscrimination to be furnished by the Forest Service will be conspicuously displayed at the public entrance to the premises, and at other exterior or interior locations as directed by the Forest Service.

The Forest Service shall have the right to enforce the foregoing nondiscrimination provisions by suit for specific performance or by any other available remedy under the laws of the United States or the State in which the breach or violation occurs.

In addition to the above non-discrimination policy, the holder agrees to insure that its program and activities are open to the general public on an equal basis and without regard to any non-merit factor.

E. Noxious Weed Control (R2-D-103). 1. The holder shall be responsible for the prevention and control of noxious weeds and/or exotic plants of concern on the area authorized by this authorization and shall provide prevention and control measures prescribed by the Forest Service. Noxious weeds and exotic plants of concern are defined as those species recognized by the Grand Mesa, Uncompahgre and Gunnison National Forests and Mesa County, Colorado, in which the authorized use is located.

2. When determined to be necessary by the authorized officer, the holder shall develop a site-specific plan for noxious weed and exotic plant prevention and control. Such plan shall be subject to Forest Service approval. Upon Forest Service approval, the noxious weed and exotic plant prevention and control plan shall become a part of this authorization, and its provisions shall be enforceable under the terms of this authorization.

3. The holder shall also be responsible for prevention and control of noxious weed and exotic plant infestations which are not within the authorized area, but which are determined by the Forest Service to have originated within the authorized area.

F. Use of Certified Noxious Weed Free Hay, Straw or Mulch (R2-X-107). Only hay, grain, straw, cubes or mulch certified as noxious weed free or noxious weed seed free by an authorized State Department of Agriculture official or designated county official may be used. Each individual bale or container must be tagged or marked as a certified weed free product and reference a written certification, if one exists.

The following are exempted from this requirement:

1. Pelletized feed or grain products.
2. Persons with a permit specifically authorizing the prohibited act.
3. Transporting straw, hay or mulch on Federal, State, and County roads that are not National Forest System roads and trails.

G. Surveys, Land Corners (D4). The holder shall protect, in place, all public land survey monuments, private property corners, and Forest boundary markers. In the event that any such land markers or monuments are destroyed in the exercise of the privileges permitted by this authorization, depending on the type of monument destroyed, the holder shall see that they are reestablished or referenced in accordance with (1) the procedures outlined in the "Manual of Instructions for the Survey of the Public Land of the United States,"
(2) the specifications of the county surveyor, or (3) the specifications of the Forest Service.

Further, the holder shall cause such official survey records as are affected to be amended as provided by law. Nothing in this clause shall relieve the holder's liability for the willful destruction or modification of any Government survey marker as provided at 18 U.S.C. 1858.

H. Removal and Planting of Vegetation and Other Resources (D5). The holder shall obtain prior written approval from the authorized officer before removing or altering vegetation or other resources. The holder shall obtain prior written approval from the authorized officer before planting trees, shrubs, or other vegetation within the authorized area.

I. Revegetation of Ground Cover and Surface Restoration (D9). The holder shall be responsible for prevention and control of soil erosion and gullying on lands covered by this authorization and adjacent thereto, resulting from construction, operation, maintenance, and termination of the authorized use. The holder shall so construct permitted improvements to avoid the accumulation of excessive heads of water and to avoid encroachment on streams. The holder shall revegetate or otherwise stabilize all ground where the soil has been exposed as a result of the holder's construction, maintenance, operation, or termination of the authorized use and shall construct and maintain necessary preventive measures to supplement the vegetation.

J. Archaeological-Paleontological Discoveries (X17). The holder shall immediately notify the authorized officer of any and all antiquities or other objects of historic or scientific interest. These include, but are not limited to, historic or prehistoric ruins, fossils, or artifacts discovered as the result of operations under this authorization, and shall leave such discoveries intact until authorized to proceed by the authorized officer. Protective and mitigative measures specified by the authorized officer shall be the responsibility of the holder.

K. Superseded Authorization (X18). This authorization supersedes a special-use authorization designated: Bull Creek Reservoir, Canal and Power Company, Reservoir Rehabilitation, issued April 8, 2008.

The Privacy Act of 1974 (5 U.S.C. 552a) and the Freedom of Information Act (5 U.S.C. 552) govern the confidentiality to be provided for information received by the Forest Service.

This permit is accepted subject to the conditions set out above.

HOLDER NAME: BULL CREEK RESERVOIR, CANAL & POWER COMPANY

By: _____
(Holder Signature)

Title: President

Date: June 9, 2009

U.S. DEPARTMENT OF AGRICULTURE
Forest Service

By: _____
(Authorized Officer Signature)

Title: for Connie Clementson, District Ranger
(Name and Title)

Date: June 9, 2009

EXHIBIT A

Additional Specifications for
Bull Creek Reservoir No. 4 Dam Rehabilitation

General

1. Work shall not begin until the Forest Service issues a notice to proceed. The notice to proceed will not be issued until all required plans outlined in this exhibit are submitted to and approved by the Forest Service. Additionally, a copy of the 404 Permit issued by the Corps of Engineers for this project must be given to the Forest Service before permission to begin work will be given.

2. The Authorized Officer's Representative for this permit is Linda Bledsoe, Realty Specialist. Her phone numbers are (office) 970-263-5802 and (cell) 970-596-5690.

3. The Permittee shall designate an on-the-ground person with authority to implement any changes that might be needed, as instructed by the authorized officer's representative, in order to meet the terms and conditions of this permit.

4. Permittee shall obtain a mineral materials contract from the Forest Service (contact is Liz Mauch, 970-263-5823) for excavation of borrow and riprap materials to be used in project prior to commencement of construction.

Air

1. Air quality will be maintained by permitting of all regulated air pollution sources through the Colorado Department of Public Health and Environment (CDPHE), Air Pollution Control Division, assuring compliance with all federal and state standards. Federal and hence State law requires that fugitive dust be controlled on contiguous construction sites where more than 25 acres of ground are disturbed and the project is longer than six (6) months in duration. The BCR#4 site will not have more than 25 acres of disturbance at any given time or in totality, and the duration of construction is not anticipated to last more than 6 months. Therefore, no Air Pollution Emissions Notice will be required.

2. Such additional methods and devices as are reasonable to prevent, control and otherwise minimize atmospheric emissions or discharges of air contaminants will be used, including:

- No burning of combustible construction materials and rubbish. Burning of slash may be allowed, pending USFS approval, provided the risk of fire spreading is extremely low, and any USFS and appropriate local burn permits are obtained.

- A dust-preventative treatment or water may periodically be applied to access and haul roads as needed to minimize dust.

Noise

1. Noise pollution will be minimized by compliance with applicable laws and regulations regarding the prevention, control and abatement of harmful noise levels.

Historical and Archaeological Resources and Paleontology

2. All employees of the Company, its contractors, subcontractors, consultants or other parties associated with the project will be instructed that, upon discovering evidence of possible prehistorical, historical or archeological objects, work will cease immediately at that location and the Company's engineer or his representative will be notified, and provided with the location and nature of the findings.

engineer or his representative will be notified, and provided with the location and nature of the findings. The FS will be notified as soon as practicable. Care will be exercised so as not to disturb or damage artifacts or fossils uncovered during excavation operations.

3. Equipment operators will be informed that the removal, injury, defacement or alteration of any object of archaeological or historic interest is a federal crime and may be punishable by fine and/or imprisonment.

4. During project implementation, in the unlikely event of an inadvertent encounter of Native American remains or grave objects, the Native American Graves Protection and Repatriation Act (NAGPRA) requires that all activities must cease in their discovery area, that a reasonable effort be made to protect the items found or unearthed, and that immediate notification be made to the FS Authorized Officers as well as appropriate Native American group(s). Notice of such a discovery may be followed by a 30-day construction delay (NAGPRA Section 3(d)). Further actions may also require compliance under provisions of the National Historic Preservation Act of 1966 (NHPA) and the Archaeological Resources Protection Act.

Water/Hydrology

1. Implementation of Best Management Practices as described in the soils section below would minimize effects, such as sedimentation, on Bull Creek from construction activities.

Soils

1. A Stormwater Management Plan (SWMP) is incorporated into the design drawings. The final, approved design drawings will be submitted to the Forest Service upon approval by the SEO, and at least 30 days prior to the anticipated start of construction. The plan describes how wastewater from general construction activities, such as drain water collection, drilling, grouting or surface runoff from disturbed areas or other construction operations will not enter flowing or dry watercourses without the use of approved turbidity control or containment methods. Approved turbidity control methods for surface runoff include Best Management Practices such as drainage swales and ditches, detention basins, straw or coconut fiber wattles placed in swales, weed free hay bales placed to trap sediment, and guard or drainage trenches surrounding disturbed areas when suitable to the topography of the land. No discharge is anticipated from drilling operations. The only geotechnical drilling that will be required will be installation of piezometers in the embankment and in the foundation of the dam after construction of the embankment is complete. This will not require any discharge of free flowing water. Grouting is anticipated in the lining the outlet pipe. Care shall be taken by the contractor to contain all grout from entering any flowing water while in a liquid or semi-liquid or erodable state.

2. Sediment and erosion control Best Management Practices will be installed to the extent practicable prior to work involving site clearing, stripping, grubbing and stockpiling topsoil, excavation and earthwork. The sediment and erosion controls shall be maintained in functional condition and repaired as needed during the course of construction.

3. A Spill Prevention, Containment and Countermeasure Plan (SPCC plan) will be prepared and submitted to the Forest Service for approval at least 30 days prior to the anticipated start of construction. The SPCC shall state that refueling or lubricating and storage of hazardous materials, chemicals, fuels, etc., will only take place in designated locations that are more than 100 feet from wetlands and other water bodies or drainages. Secondary containment will only be required if tanks are non-mobile. Mobile lubricating and fuel units will not require secondary containment. The SPCC plan shall outline what actions and BMPs should be taken in case of a fuel or lubricant or other hazardous material spill.

4. Excavated materials or other construction materials will not be stockpiled or wasted near or on stream banks, lake shorelines or other watercourse perimeters where they can be washed away by high water or storm runoff, or can in any way encroach upon the watercourse itself. In the case of BCR#4, the reservoir is currently empty, but the West Branch of Bull Creek runs through the reservoir basin, through

the existing outlet works and continues towards Bull Creek. The SWMP referenced above addresses sediment control issues related to keeping sediment from entering the stream.

5. Soil disturbing actions will be avoided during long periods of heavy rain or wet soils to prevent excessive rutting and mobilization of sediment during runoff events. Rutting in the project area is acceptable to the extent that it is not contradictory to obtaining compaction standards required by the SEO.

6. During construction activities, initial clearing operations will fully contain material on-site and not allow material to move into wetlands or into the riparian zone. Excess excavated material and construction debris developed along roads near streams will be disposed of in an area outside of the riparian and wetland areas.

7. Upon completion of construction, the Company will re-grade, prepare a seed bed and reseed temporary road improvements that are intended to be abandoned. No temporary road improvements are anticipated.

8. No mobilization of equipment or use of equipment will be allowed when it will cause undue damage to existing roads and trails. Undue damage done to roads must be repaired by the Contractor per USFS requirements.

Reclamation

A comprehensive reclamation plan is included in the Contract Specifications. The Specifications will be submitted to and approved by the FS prior to construction.

1. Seed

Grass seed will be from the same or previous year's crop. When available, certified weed-free seed will be provided. All seed will be free of prohibited noxious weeds (as defined by the State), and will contain no greater than 1% other weeds. All sites will be seeded with the following mixture as required by the USFS:

Revegetation Seed Mix

Habitat type	Elevation	Species	Lbs/acre (PLS)	% of Mixture
Aspen/Spruce-Fir	8,000-9,500	Mountain Bromegrass	5	26
		Slender Wheatgrass	3	16
		Thickspike Wheatgrass	3	16
		Canby Bluegrass	3	16
		Blue Wildrye	5	26
		Total	19	100

Temporary Revegetation	Elevation	Species	Lbs/acre (PLS)
Regreen (brand name)	All	Tall wheatgrass/winter wheatgrass	20 lbs/acre
Pioneer (brand name)	All	Tritacale/winter wheat	20 lbs/acre

***Possible seed sources*:**
Arkansas Valley Seed Solutions: 877-957-3337; 4625 Colorado Blvd, Denver, CO 80216;
Pawnee Butte Seed Co.: 970-356-7002; P.O. Box 1604, Greeley, CO 80632;
Granite Seed Co.: (801) 531-1456; 1697 W 2100 N, Lehi, UT 84043

Seed will be furnished and delivered premixed in the indicated proportions. Seed bag tags, or the equivalent, shall be provided for each delivery of seed. Tags shall show the guaranteed percentages of purity, weed content, germination, net weight, date of seed testing and date of shipment.

2. Seedbed Preparation

If possible, a minimum of 6 inches of topsoil, borrowed on-site, will be placed over all areas disturbed during construction, with exception of borrow areas within the reservoir basin, which shall be smoothed over, but not reseeded. The seeding will be limited to those areas of disturbance above the normal pool elevation.

Topsoil will not be placed in water or while frozen or muddy conditions exist.

Topsoil shall be track compacted to approximately 80 to 90 percent standard Proctor Density, ASTM D-698, to an appropriate tilth, density, consistency and friability to provide a suitable growth medium for sprouting and seedling survival.

All areas will be graded to drain. The maximum slope steepness will be 2.5H:1V unless otherwise shown on the project drawings or approved in writing by the Company's engineer.

The final surface of the topsoil will be graded to a relatively smooth surface using mechanical or hand raked methods. Localized low spots shall be regraded to allow water to drain.

3. Seed Application

Seeding will typically be accomplished between September 1st and October 30th. No seeding will take place when soils are frozen or excessively wet or dry.

4. Monitoring and Completion of Reclamation

All seeded areas shall be maintained in good condition, reseeded and mulched if and when necessary, until a good, healthy, uniform growth is established over the entire area seeded and until vegetation is established.

On slopes, washouts and rills deeper than three (3) inches deep shall be re-graded and reseeded and the reseeded area maintained until vegetation is established.

An area will be considered to be satisfactorily reclaimed when: a) soil erosion resulting from the operation has been stabilized and b) a vegetative cover at least equal to that present prior to disturbance and a plant species composition at least as desirable as that present prior to disturbance has been established.

Areas not demonstrating satisfactory reclamation as outlined above, will be renovated, reseeded and maintained meeting all requirements as specified above.

Vegetation

1. Preventative actions will include the cleaning of vehicles and equipment prior to bringing them into the project area. This will include washing of transport tractors and trailers and all equipment prior to entering all USFS lands. Inspection of washed equipment will be required by the FS, at least initially.

2. Certified weed-free seed mixtures shall be used for all reclamation, as described above.

3. Treatments will be developed using integrated weed management principles for each species and situation. Treatments may include hand pulling, grubbing, mowing, mulching, seeding, burning, herbicide application and soil management.

4. Monitoring of noxious weeds will be conducted on a scheduled basis to detect new infestations, evaluate prevention and/or treatment success, and identify the need for retreatment.

Wildlife (including Aquatic Wildlife and Special Status Species)

1. Pre-construction surveys have been conducted. If any special status species or habitat is found to be present, the Company will coordinate with the FS to determine the most effective means of mitigating or precluding impacts. No special status species have been located.

2. For the Colorado River fishes, construction practices which maintain existing stream flows and minimize siltation and pollution will protect these species. Best Management Practices described above for soil and water will meet this objective.

Hazardous Materials and Emergency Response

1. The Company will prepare and submit to the FS for approval, a Spill Prevention, Containment and Countermeasure Plan (SPCC plan) to satisfy applicable Federal and State requirements.

2. A Fire/Emergency Response/Health and Safety Plan that addresses the potential for accidents and injuries, and other emergencies will be prepared and submitted to the FS for approval and kept onsite. This plan will be made available to the FS prior to construction and kept on all active locations.

Solid and Sanitary Waste

1. All solid wastes (trash) that result from construction activities shall be contained in a metal bear-proof trash cage. All material in the trash cage shall be removed from the location and deposited in an approved sanitary landfill.

2. Portable toilets will be provided for construction workers at the construction site and the work camp. These will be maintained and removed by the Company via their designated Contractor as appropriate.

Travel Management and Roads

1. The Company will obtain a Forest Service Road Use Permit in advance and approved in writing a minimum of 30 days before construction begins.

2. Project-related vehicular traffic will be restricted to approved locations. Operational equipment will be restricted to the road prism and construction site at all times.

3. Mobilization and demobilization of heavy equipment will be scheduled during the week and not on weekends or Federal holidays to avoid high public traffic periods.

4. Management of surface water run-off, soil stabilization and limiting travel to a single, recognized route will be priorities. All stream crossings and soft areas shall be armored and permanently stabilized unless otherwise directed by the USFS.

5. Road Maintenance: NFSRs and NFSTs will be maintained according to Forest Service road management objectives. Existing NFSRs currently open for use will also receive pre-haul maintenance depending upon their condition and the needs of the project. Pre-haul maintenance will not include road reconstruction or repairs of an extraordinary nature, but may include maintenance of drainage structures, grading the road surface, corrections to cut/fill failures, spot rock applications and rolling dips, etc. The

Company will consult with the FS on the degree and manner of preconstruction maintenance, road reconstruction, and ongoing maintenance that will be required. The details of intended road improvements are contained within this document (above).

6. No berms of material will be left on the sides of the roadway during maintenance activities that will impede surface drainage.

7. Maintenance and reconstruction of roads will be done in a manner so as to minimize sediment discharge into streams, lakes and wetlands.

8. The Company's contractor will sign the project area roads in accordance with the "Manual on Uniform Traffic Control Devices" (MUTCD), latest edition, to notify the public to expect occasional construction traffic.

9. The Company will consult with the FS on the removal of road improvements and the eventual degradation of the roads to their pre-construction condition.

EXHIBIT B
PROJECT LOCATION MAP

GMUG National Forest

Bull Creek Reservoir No. 4 Location Map and
Location of Minimum Required Road / Trail Improvements

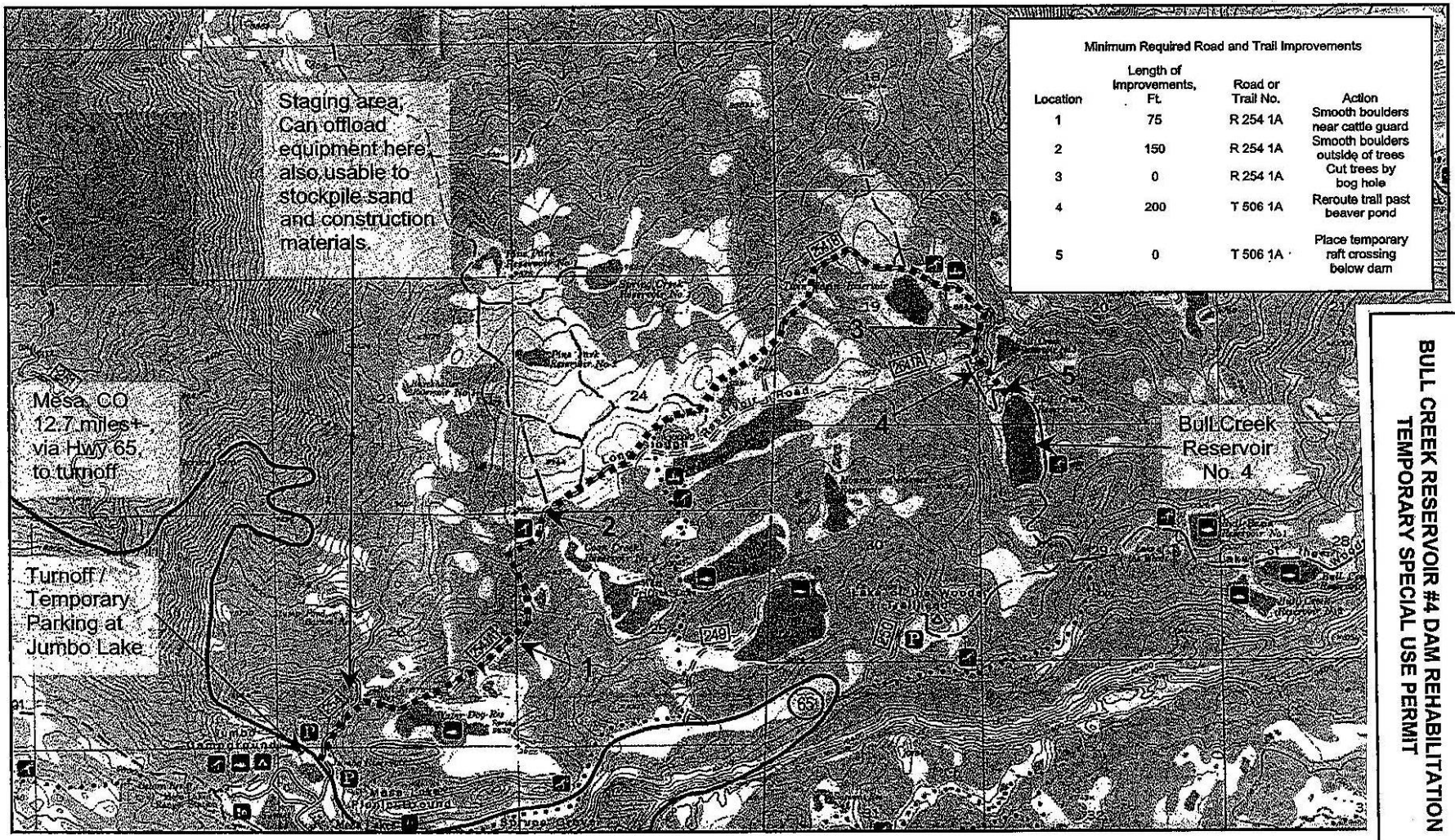


EXHIBIT B
PROJECT LOCATION MAP W/ACCESS ROUTES
BULL CREEK RESERVOIR #4 DAM REHABILITATION
TEMPORARY SPECIAL USE PERMIT

WATER RESOURCE CONSULTANTS, LLC

Authorization ID: CGJ491
Contact ID: BULL_CR
Expiration Date: 04/30/2009
Use Code: 922

FS-2700-25 (03/06)
OMB NO. 0596-0082

U.S. DEPARTMENT OF AGRICULTURE
Forest Service
TEMPORARY SPECIAL - USE PERMIT
(FSH 2709.11, sec. 54.6)

AUTHORITY:
Federal Land Policy and Management Act of October 21, 1976 (as amended)
Organic Act of June 4, 1897

BULL CREEK RESERVOIR, CANAL AND POWER COMPANY, hereinafter called the Holder, is hereby authorized to use, subject to the terms and conditions of this permit, National Forest System land identified within the Grand Mesa National Forest and described as a portion of Sections 20 and 29, T. 11 S., R. 95 W., 6th P.M. as shown on the attached Exhibit B. This authorization covers approximately 2 acres.

The holder is authorized to conduct the following activities and/ or install the following temporary improvements on the permitted area:

Rehabilitation and reconstruction of the dam at Bull Creek Reservoir #4 according to the specifications approved by the State Engineers Office.

If needed, a work camp is also authorized at the reservoir site.

TERMS AND CONDITIONS

1. Use under this permit shall begin on June 15, 2008, and end on June 14, 2009. The permit shall not be extended.

2. The fee for this use is $124.28. It shall be paid in advance and is not refundable.

3. The holder shall conduct the authorized activities according to the attached approved plans and specifications, Exhibit A.

4. The holder shall not install any improvements not specifically identified and approved above.

5. No soil, trees, or other vegetation may be destroyed or removed from National Forest System lands without specific prior written permission from the authorized officer.

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6. The holder shall comply with all Federal, State, county, and municipal laws, ordinances, and regulations which are applicable to the area or operations covered by this permit.

7. The holder shall maintain the improvements and premises to standards of repair, orderliness, neatness, sanitation, and safety acceptable to the authorized officer. The holder shall fully repair and bear the expense for all damage, other than ordinary wear and tear, to National Forest System lands, roads and trails caused by the holder's activities.

8. The holder has the responsibility of inspecting the use area and adjoining areas for dangerous trees, hanging limbs, and other evidence of hazardous conditions which would pose a risk of injury to individuals. After securing permission from the authorized officer, the holder shall remove such hazards.

9. The holder shall be liable for any damage suffered by the United States resulting from or related to use of this permit, including damages to National Forest resources and costs of fire suppression.

10. The holder shall hold harmless the United States from any liability from damage to life or property arising from the holder's occupancy or use of National Forest lands under this permit.

11. The holder agrees to permit the free and unrestricted access to and upon the premises at all times for all lawful and proper purposes not inconsistent with the intent of the permit or with the reasonable exercise and enjoyment by the holder of the privileges thereof.

12. This permit is subject to all valid existing rights and claims outstanding in third parties.

13. This permit may be revoked upon breach of any of the conditions herein or at the discretion of the authorized officer. Upon expiration or revocation of this permit, the holder shall immediately remove all improvements except those owned by the United States, and shall restore the site within day(s), unless otherwise agreed upon in writing. If the holder fails to remove the improvements, they shall become the property of the United States, but that will not relieve the holder of liability for the cost of their removal and restoration of the site.

14. This permit is a license for the use of federally owned land. It does not grant any interest in real property. This permit is not transferable. The holder shall not enter into any agreements with third parties for occupancy of the authorized premises and improvements.

15. Appeal of any provisions of this permit or any requirements thereof shall be subject to the appeal regulations at 36 CFR 251, Subpart C, or revisions thereof.

16. This permit is accepted subject to the conditions set forth herein, condition(s) and Exhibit(s) attached to and made a part of this permit.

17. The above clauses shall control if they conflict with additional clauses or provisions.

18. Nondiscrimination in Employment and Services (R2-B-108). During the performance of this permit, the holder agrees that:

1. The holder and employees shall not discriminate by segregation or otherwise against any person on the basis of race, color, sex (in educational activities), national origin, age or disability, by curtailing or by refusing to furnish accommodations, facilities, services, or use privileges offered to the public generally and that the holder and employees shall comply with the provisions of Title VI of the Civil Rights Act of 1964, as amended, section 504 of the Rehabilitation Act of 1973, as amended, Title IX of the Education Amendments, and the Age Discrimination Act of 1975.

2. The holder shall include and require compliance with the above nondiscrimination provisions in any third party agreement made with respect to the operations under this permit.

3. ~~Signs setting forth this policy of nondiscrimination to be furnished by the Forest Service will be conspicuously displayed at the public entrance to the premises, and at other exterior or interior locations as directed by the Forest Service.~~

The Forest Service shall have the right to enforce the foregoing nondiscrimination provisions by suit for specific performance or by any other available remedy under the laws of the United States or the State in which the breach or violation occurs.

In addition to the above non-discrimination policy, the holder agrees to insure that its program and activities are open to the general public on an equal basis and without regard to any non-merit factor.

19. Noxious Weed Control (R2-D-103).

1. The holder shall be responsible for the prevention and control of noxious weeds and/or exotic plants of concern on the area authorized by this authorization and shall provide prevention and control measures prescribed by the Forest Service. Noxious weeds and exotic plants of concern are defined as those species recognized by Mesa County and/or Grand Mesa, Uncompahgre and Gunnison National Forests in which the authorized use is located.

2. When determined to be necessary by the authorized officer, the holder shall develop a site-specific plan for noxious weed and exotic plant prevention and control. Such plan shall be subject to Forest Service approval. Upon Forest Service approval, the noxious weed and exotic plant prevention and control plan shall become a part of this authorization, and its provisions shall be enforceable under the terms of this authorization.

3. The holder shall also be responsible for prevention and control of noxious weed and exotic plant infestations which are not within the authorized area, but which are determined by the Forest Service to have originated within the authorized area.

20. Use of Certified Noxious Weed Free Hay, Straw or Mulch (R2-X-107). Only hay, grain, straw, cubes or mulch certified as noxious weed free or noxious weed seed free by an authorized State Department of Agriculture official or designated county official may be used. Each individual bale or container must be tagged or marked as a certified weed free product and reference a written certification, if one exists.

The following are exempted from this requirement:

1. Pelletized feed or grain products.
2. Persons with a permit specifically authorizing the prohibited act.
3. Transporting straw, hay or mulch on Federal, State, and County roads that are not National Forest System roads and trails.

21. Archaeological-Paleontological Discoveries (X17). The holder shall immediately notify the authorized officer of any and all antiquities or other objects of historic or scientific interest. These include, but are not limited to, historic or prehistoric ruins, fossils, or artifacts discovered as the result of operations under this authorization, and shall leave such discoveries intact until authorized to proceed by the authorized officer. Protective and mitigative measures specified by the authorized officer shall be the responsibility of the holder.

22. . WATER RIGHTS (R2-X-103). This authorization confers no right to the use of water by the Holder; such rights must be obtained under State law.

I have read and understand the terms and conditions and agree to abide by them.

HOLDER: BULL CREEK RESERVOIR, CANAL & POWER COMPANY

By: [signature]

Title: Pres. Int

Phone No.: 970-268-5560

Date: 4/8/08

U. S. DEPARTMENT OF AGRICULTURE
Forest Service

By: [signature]
Name: CONNIE CLEMENTSON

Title: District Ranger
(Authorized Officer)

Date: 4-8-08

Exhibit 7
Forest Service Letter to Regional Forester Accepting 1942 Dam Construction

U
USES
Bull Creek Reservoir,
Canal & Power Co.
Reservoirs 8/12/07
Denver 052197
E
IMPROVEMENTS - Grand Mesa
Dams
Bull Creek Res. No. 4

Grand Junction, March 19, 1943.

Regional Forester, Denver:

Your letter dated March 17 is received.

The Bull Creek Reservoir Company has completed their enlargement according to specifications. The State Engineer's office had Mr. Hotchkiss on the job during construction work, and the dam is safe and substantially built, according to the State Engineer's specifications. The status of the case is as follows:

The original construction work was not completed under the first filing; and in 1937 the Company undertook to complete the reservoir. They exceeded the original specifications and were requested to file an enlargement for the project. They were also informed that they could not lawfully construct the dam without such filings. Considerable delay occurred in making the filings, and the matter was taken up by this office several times, as the case folder will show.

Since the dam has been constructed under the State Engineer's supervision, it would appear that it would be unnecessary at this time to require the Company to submit further plans and specifications for additional approval.

RAY PECK
Forest Supervisor.

RPeck:KJK

cc Mesa

Exhibit 8
2006 State Engineers Office Report

ENGINEERS INSPECTION REPORT

INSPECTOR: GOJ

OFFICE OF THE STATE ENGINEER - DIVISION OF WATER RES... - DAM SAFETY BRANCH 1313 SHERMAN ST... ROOM 818, DENVER, CO 80203, (303) 866-3581

DAM NAME:	BULL CREEK #4			T: 110S R: 0950W S: 20		COUNTY: MESA		DATE OF INSPECTION:	8/8/2005
DAM ID:	720115	YRCompl:	1901	DAM HEIGHT(FT):	27.5	SPILLWAY WIDTH(FT):	10.0	PREVIOUS INSPECTION:	7/19/2004
CLASS:	1			DAM LENGTH(FT):	900.0	SPILLWAY CAPACITY(CFS):	3500.0	CAPACITY(AF):	202.0
DIV:	5	WD:	72	CRESTWIDTH(FT):	4.0	FREEBOARD (FT):	7.0	SURFACE AREA(AC):	27.0
EPP:	11/6/2000			CRESTELEV(FT):	9855.0	DRAINAGE AREA (AC.):	1020.0	OUTLET INSPECTED:	10/4/1999

CURRENT RESTRICTION -- NONE --

OWNER: BULL CREEK RES. CO. CONTACT NAME: IRV JOHNSON

ADDRESS: P.O. BOX 25 CONTACT PHONE: (970) 268-5560

MOLINA CO 81646

INSPECTION PARTY: Irv Johnson; Tom Brigham, Garrett Jackson

REPRESENTING: owner; DWR

FIELD CONDITIONS OBSERVED

WATER LEVEL: BELOW DAM CREST ____ FT. Above Spillway ~.25 FT. GAGE ROD READING 18.14

GROUND MOISTURE CONDITION: DRY [x] WET [ ] SNOWCOVER [ ] OTHER ____

DIRECTIONS: MARK AN X FOR CONDITIONS FOUND AND UNDERLINE WORDS THAT APPLY

Conditions Observed: GOOD | ACCEPTABLE | POOR

UPSTREAM SLOPE

Conditions Observed: ACCEPTABLE [X] POOR [X]

PROBLEMS NOTED: [ ] (0)NONE [ ] (1)RIPRAP - MISSING, SPARSE, DISPLACED, WEATHERED [ ] (2) WAVE EROSION - WITH SCARPS [ ] (3) CRACKS WITH DISPLACEMENT [ ] (4) SINKHOLE [x] (5) APPEARS TOO STEEP [x] (6) DEPRESSIONS OR BULGES [ ] (7) SLIDES [ ] (8) CONCRETE FACING - HOLES, CRACKS, DISPLACED, UNDERMINED [x] (9) OTHER brush

Uniform brushy slope. (5) Very steep above NWL. (6) Large bulge left of outlet of unknown age or cause, no indication of recent movement.

CREST

Conditions Observed: POOR [X]

PROBLEMS NOTED: [ ] (10) NONE [ ] (11) RUTS OR PUDDLES [ ] (12) EROSION [ ] (13) CRACKS - WITH DISPLACEMENT [ ] (14) SINKHOLES [x] (15) NOT WIDE ENOUGH [x] (16) LOW AREA [ ] (17) MISALIGNMENT [ ] (18) IMPROPER SURFACE DRAINAGE [x] (19) OTHER brush

Generally good alignment. (15) Crest narrows to less than 4' at bend, width appears to be decreasing due to erosion. (16) Crest elevation slopes off for ~25' to spillway channel.

DOWNSTREAM SLOPE

Conditions Observed: POOR [X]

PROBLEMS NOTED: [ ] (20) NONE [x] (21) LIVESTOCK DAMAGE [ ] (22) EROSION OR GULLIES [ ] (23) CRACKS - WITH DISPLACEMENT [ ] (24) SINKHOLE [x] (25) APPEARS TOO STEEP [x] (26) DEPRESSIONS OR BULGES [ ] (27) SLIDE [ ] (28) SOFT AREAS [x] (29) OTHER brush and trees

Generally uniform (except at outlet) brushy slope, very steep. Livestock trail above rock wall at outlet where slope above wall is wet with apparent lateral bulges. Rock wall appears to be slumping. Slope movement subtle, no visible impacts on crest.

SEEPAGE

Conditions Observed: POOR [X]

PROBLEMS NOTED: [ ] (30) NONE [ ] (31) SATURATED EMBANKMENT AREA [ ] (32) SEEPAGE EXITS ON EMBANKMENT [ ] (33) SEEPAGE EXITS AT POINT SOURCE [x] (34) SEEPAGE AREA AT TOE [ ] (35) FLOW ADJACENT TO OUTLET [ ] (36) SEEPAGE INCREASED / MUDDY

DRAIN OUTFALLS SEEN [ ] No [ ] Yes Show location of drains on sketch and indicate amount and quality of discharge. [ ] (37) FLOW INCREASED / MUDDY [ ] (38) DRAIN DRY / OBSTRUCTED [ ] (39) OTHER

No seepage observed other than at outlet, where piezometers indicate phreatic surface is at or above ground surface at toe. Standing water and heavy willows right of outlet.

OUTLET

Conditions Observed: ACCEPTABLE [X] POOR [X]

PROBLEMS NOTED: [ ] (40) NONE [ ] (41) NO OUTLET FOUND [ ] (42) POOR OPERATING ACCESS [ ] (43) INOPERABLE [x] (44) UPSTREAM OR DOWNSTREAM STRUCTURE DETERIORATED (45) OUTLET OPERATED DURING INSPECTION [ ] YES [x] NO

INTERIOR INSPECTED [x] (120) NO [ ] (121) YES [ ] (46) CONDUIT DETERIORATED OR COLLAPSED [ ] (47) JOINTS DISPLACED [ ] (48) VALVE LEAKAGE [ ] (49) OTHER

Conduit can not be fully inspected due to irregular cross-section. (44) Timbers on crest control structure are badly deteriorated, concrete conduit at downstream end is damaged and deteriorated.

SPILLWAY

Conditions Observed: ACCEPTABLE [X] POOR [X]

PROBLEMS NOTED: [ ] (50) NONE [ ] (51) NO EMERGENCY SPILLWAY FOUND [x] (52) EROSION WITH BACKCUTTING [ ] (53) CRACK - WITH DISPLACEMENT [ ] (54) APPEARS TO BE STRUCTURALLY INADEQUATE [ ] (55) APPEARS TOO SMALL [ ] (56) INADEQUATE FREEBOARD [ ] (57) FLOW OBSTRUCTED [ ] (58) CONCRETE DETERIORATED / UNDERMINED [x] (59) OTHER brush and debris in channel

Spillway channel has been cut down to limit reservoir level, subsequent erosion of crest has further reduced storage.

See Guidelines on Back of this Sheet

GUIDELINES FOR DETERMINING CONDITIONS

CONDITIONS OBSERVED - APPLIES TO UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, OUTLET, SPILLWAY

GOOD

In general, this part of the structure has a near new appearance, and conditions observed in this area do not appear to threaten the safety of the dam.

ACCEPTABLE

Although general cross-section is maintained, surfaces may be irregular, eroded, rutted, spalled, or otherwise not in new condition. Conditions in this area do not currently appear to threaten the safety of the dam.

POOR

Conditions observed in this area appear to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO SEEPAGE

GOOD

No evidence of uncontrolled seepage. No unexplained increase in flows from designed drains. All seepage is clear. Seepage conditions do not appear to threaten the safety of the dam.

ACCEPTABLE

Some seepage exists at areas other than the drain outfalls, or other designed drains. No unexplained increase in seepage. All seepage is clear. Seepage conditions observed do not currently appear to threaten the safety of the dam.

POOR

Seepage conditions observed appear to threaten the safety of the dam. Examples:
1) Designed drain or seepage flows have increased without increase in reservoir level.
2) Drain or seepage flows contain sediment, i.e., muddy water or particles in jar samples.
3) Widespread seepage, concentrated seepage, or ponding appears to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO MONITORING

GOOD

Monitoring includes movement surveys and leakage measurements for all dams, and piezometer readings for Class I dams. Instrumentation is in reliable, working condition. A plan for monitoring the instrumentation and analyzing results by the owner's engineer is in effect. Periodic inspections by owner's engineer.

ACCEPTABLE

Monitoring includes movement surveys and leakage measurements for Class I & 11 dams; leakage measurements for Class III dams. Instrumentation is in serviceable condition. A plan for monitoring instrumentation is in effect by owner. Periodic inspections by owner or representative. OR, NO MONITORING REQUIRED.

POOR

All instrumentation and monitoring described under "ACCEPTABLE" here for each class of dam, are not provided, or required periodic readings are not being made, or unexplained changes in readings are not reacted to by the owner.

CONDITIONS OBSERVED - APPLIES TO MAINTENANCE AND REPAIR

GOOD

Dam appears to receive effective on-going maintenance and repair, and only a few minor items may need to be addressed.

ACCEPTABLE

Dam appears to receive maintenance, but some maintenance items need to be addressed. No major repairs are requirecl

POOR

Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair has begun to threaten the safety of the dam.

OVERALL CONDITIONS

SATISFACTORY

The safety inspection indicates no conditions that appear to threaten the safety of the dam, and the dam is expected to perform satisfactorily under all design loading conditions. Most of the required monitoring is being performed.

CONDITIONALLY SATISFACTORY

The safety inspection indicates symptoms of structural distress (seepage, evidence of minor displacements, etc.), which, if conditions worsen, could lead to the failure of the dam. Essential monitoring, inspection, and maintenance must be performed as a requirement for continued full storage in the reservoir.

UNSATISFACTORY

The safety inspection indicates definite signs of structural distress (excessive seepage, cracks, slides, sinkholes, severe deterioration, etc.), which could lead to the failure of the dam if the reservoir is used to full capacity. The dam is judged unsafe for full storage of water.

SAFE STORAGE LEVEL

FULL STORAGE

Dam may be used to full capacity with no conditions attached.

CONDITIONAL FULL STORAGE

Dam may be used to full storage if certain monitoring, maintenance, or operational conditions are met.

RESTRICTION

Dam may not be used to full capacity, but must be operated at some reduced level in the interest of public safety.

CLASSIFICATION OF DAMS

CLASS I

Class I - Loss of human life is expected in the event of failure of the dam, while the reservoir is at the high water line.

CLASS 11

Class II - Significant damage to improved property is expected in the event of failure of the dam while the reservoir is at the high water line, but no loss of human life is expected.

CLASS III

Class III - Loss of human life is not expected, and damage to improved property is expected to be small, in the event of failure of the dam while the reservoir is at high water fine.

Class IV - No loss of life or damage to improved property, or loss of downstream resource is expected in the event of failure of the dam while the reservoir is at the high water line.

MONITORING

EXISTING INSTRUMENTATION FOUND ☐ (110) NONE ☑ (111) GAGE ROD ☑ (112) PIEZOMETERS ☐ (113) SEEPAGE WEIRS / FLUMES
☑ (114) SURVEY MONUMENTS ☑ (115) OTHER outlet flume
MONITORING OF INSTRUMENTATION ☐ (116) NO ☑ (117) YES PERIODIC INSPECTIONS BY: ☑ (118) OWNER ☐ (119) ENGINEER

No monitoring reports have been submitted.

	GOOD	ACCEPTABLE	POOR
MONITORING		X	X

MAINTENANCE AND REPAIR

PROBLEMS NOTED: ☐ (60 NONE ☐ (61) ACCESS ROAD NEEDS MAINTENANCE ☑ (62) CATTLE DAMAGE
☑ (63) BRUSH ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE ☑ (64) TREES ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE
☑ (65) RODENT ACTIVITY ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE ☑ (66) DETERIORATED CONCRETE - FACING, OUTLET SPILLWAY
☑ (67) GATE AND OPERATING MECHANISM NEED MAINTENANCE ☐ (68) OTHER

	GOOD	ACCEPTABLE	POOR
MAINTENANCE AND REPAIR		X	X

OVERALL CONDITIONS

Apparent continued movement of downstream slope and unknown condition of outlet conduit are serious dam safety concerns.

Based on this Safety Inspection and recent file review, the overall condition is determined to be:

☐ (71) SATISFACTORY ☐ (72) CONDITIONALLY SATISFACTORY ☑ (73) UNSATISFACTORY

The State Engineer, by providing this dam safety inspection report, does not assume responsibility for any unsafe condition of the subject dam. The sole responsibility for the safety of this dam rests with the reservoir owner or operator, who should take every step necessary to prevent damages caused by leakage or overflow of waters from the reservoir or floods resulting from a failure of the dam.

ITEMS REQUIRING ACTION BY OWNER TO IMPROVE THE SAFETY OF THE DAM

MAINTENANCE - MINOR REPAIR - MONITORING

- ☐ (60) PROVIDE ADDITIONAL RIPRAP:
- ☑ (81) LUBRICATE AND OPERATE OUTLET GATES THROUGH FULL CYCLE: **full cycle every year.**
- ☑ (82) CLEAR TREES AND/OR BRUSH FROM: **slopes, crest, toe, and groins**
- ☑ (83) INITIATE RODENT CONTROL PROGRAM AND PROPERLY BACKFILL EXISTING HOLES:
- ☐ (84) GRADE CREST TO A UNIFORM ELEVATION WITH DRAINAGE TO THE UPSTREAM SLOPE:
- ☐ (85) PROVIDE SURFACE DRAINAGE FOR:
- ☑ (86) MONITOR: **movement monuments, reservoir level, piezometers, and seepage.**
- ☑ (87) DEVELOP AND SUBMIT AN EMERGENCY PREPAREDNESS PLAN: **existing plan is 5 years outdated**
- ☐ (88) OTHER
- ☐ (89) OTHER

ENGINEERING - EMPLOY AN ENGINEER EXPERIENCED IN DESIGN AND CONSTRUCTION OF DAMS TO: (Plans and Specifications must be approved by State Engineer prior to construction.)

- ☑ (90) PREPARE PLANS AND SPECIFICATIONS FOR REHABILITATION OF THE DAM: **deadline passed**
- ☐ (91) PREPARE AS -BUILT DRAWINGS OF:
- ☑ (92) PERFORM A GEOTECHNICAL INVESTIGATION TO EVALUATE THE STABILITY OF THE DAM: **study completed, report not submitted**
- ☑ (93) PERFORM A HYDROLOGIC STUDY TO DETERMINE REQUIRED SPILLWAY SIZE: **deadline passed**
- ☑ (94) PREPARE PLANS AND SPECIFICATIONS FOR AN ADEQUATE SPILLWAY: **deadline passed**
- ☑ (95) SET UP A MONITORING SYSTEM INCLUDING WORK SHEETS, REDUCED DATA AND GRAPHED RESULTS: **submit annual summary report**
- ☑ (96) PERFORM AN INTERNAL INSPECTION OF THE OUTLET: **inspect full length of outlet conduit**
- ☑ (97) OTHER: **submit plans and specifications for replacement of outlet conduit (deadline passed)**
- ☐ (98) OTHER:
- ☐ (99) OTHER:

SAFE STORAGE LEVEL RECOMMENDED AS A RESULT OF THIS INSPECTION

- ☐ (101) FULL STORAGE
- ☐ (102) CONDITIONAL FULL STORAGE
- ☑ (103) RECOMMENDED RESTRICTION
- ☐ (104) CONTINUE EXISTING RESTRICTION

RESTRICTED LEVEL OFFICIAL ORDER TO FOLLOW → 3 FT. BELOW DAM CREST; _ FT. BELOW SPILLWAY CREST; _ FT. GAGE HEIGHT; ☐ NO STORAGE-MAINTAIN OUTLET FULLY OPEN

REASON FOR RESTRICTION

Movement of the downstream slope, significant seepage and uplift pressures at downstream toe, deteriorated outlet, inadequate cross-section.

ACTIONS REQUIRED FOR ~~CONDITIONAL FULL STORAGE OR~~ CONTINUED STORAGE AT THE RESTRICTED LEVEL:

Complete the required maintenance and enginnering items. All past deadlines for action have been exceeded. The recommended restriction is temporary, pending the results of enigneering analyses by the SEO to determine the safe storage level for this dam.

Engineer's Signature _____ INSPECTED BY

Owner's Signature _____ OWNER/OWNER'S REPRESENTATIVE DATE: /

ENGINEERS INSPECTION REPORT

INSPECTOR: GOJ

OFFICE OF THE STATE ENGINEER - DIVISION OF WATER RES[illegible]S - DAM SAFETY BRANCH 1313 SHERMAN ST[illegible]OOM 818, DENVER, CO 80203, (303) 866-3581

DAM NAME:	BULL CREEK #4		T: 110S R: 095OW S: 20	COUNTY:	MESA			DATE OF INSPECTION:	7/19/2004
DAM ID:	720115	YRCompl: 1901	DAM HEIGHT(FT):	27.5	SPILLWAY WIDTH(FT):	10.0		PREVIOUS INSPECTION:	8/14/2003
CLASS:	1		DAM LENGTH(FT):	900.0	SPILLWAY CAPACITY(CFS):	2024.0		CAPACITY(AF):	202.0
DIV:	5	WD: 72	CRESTWIDTH(FT):	4.0	FREEBOARD (FT):	7.0		SURFACE AREA(AC):	27.0
EPP:	11/6/2000		CRESTELEV(FT):	9855.0	DRAINAGE AREA (AC.):	1020.0		OUTLET INSPECTED:	10/4/1999

CURRENT RESTRICTION -- NONE --

OWNER: BULL CREEK RES. CO. CONTACT NAME: IRV JOHNSON

ADDRESS: P.O. BOX 25 CONTACT PHONE: (970) 268-5560

MOLINA CO 81646

INSPECTION PARTY: Tim Balok, Carlyle Currier, Danny Hawkin | Ron Luehring | Tom Brigham, Garrett Jackson

REPRESENTING: owner | USFS | DWR

FIELD CONDITIONS OBSERVED

WATER LEVEL: BELOW DAM CREST ____ FT. Above Spillway ____ FT. GAGE ROD READING 7.42

GROUND MOISTURE CONDITION: DRY [x] WET [ ] SNOWCOVER [ ] OTHER ____

DIRECTIONS: MARK AN X FOR CONDITIONS FOUND AND UNDERLINE WORDS THAT APPLY

Conditions Observed

UPSTREAM SLOPE

PROBLEMS NOTED: [ ] (0)NONE [x] (1)RIPRAP - MISSING, SPARSE, DISPLACED, WEATHERED [x] (2) WAVE EROSION - WITH SCARPS

[ ] (3) CRACKS WITH DISPLACEMENT [ ] (4) SINKHOLE [x] (5) APPEARS TOO STEEP [ ] (6) DEPRESSIONS OR BULGES [x] (7) SLIDES

[ ] (8) CONCRETE FACING - HOLES, CRACKS, DISPLACED, UNDERMINED [ ] (9) OTHER

Very steep slope above NWL. (1) Riprap has slid off steep slope. (2, 7) Old wave erosion and minor surface slumping in steep section of slope.

Conditions Observed: GOOD [ ] ACCEPTABLE [X] POOR [X]

CREST

PROBLEMS NOTED: [ ] (10) NONE [ ] (11) RUTS OR PUDDLES [x] (12) EROSION [ ] (13) CRACKS - WITH DISPLACEMENT [ ] (14) SINKHOLES

[x] (15) NOT WIDE ENOUGH [x] (16) LOW AREA [ ] (17) MISALIGNMENT [ ] (18) IMPROPER SURFACE DRAINAGE [ ] (19) OTHER

(15) Crest has become too narrow for vehicle in places. (16) Erosion of shoulders in narrow places has reduced dam cross section and created low spots.

Conditions Observed: GOOD [ ] ACCEPTABLE [ ] POOR [X]

DOWNSTREAM SLOPE

PROBLEMS NOTED: [ ] (20) NONE [x] (21) LIVESTOCK DAMAGE [x] (22) EROSION OR GULLIES [ ] (23) CRACKS - WITH DISPLACEMENT [ ] (24) SINKHOLE

[x] (25) APPEARS TOO STEEP [x] (26) DEPRESSIONS OR BULGES [x] (27) SLIDE [ ] (28) SOFT AREAS [ ] (29) OTHER

Very steep slope with grass cover. (21, 22) Past erosion on steep slope along old cow paths. (26, 27) Somewhat uneven, hummocky slope in maximum section adjacent to outlet above rock toe.

Conditions Observed: GOOD [ ] ACCEPTABLE [X] POOR [X]

SEEPAGE

PROBLEMS NOTED: [ ] (30) NONE [ ] (31) SATURATED EMBANKMENT AREA [ ] (32) SEEPAGE EXITS ON EMBANKMENT

[ ] (33) SEEPAGE EXITS AT POINT SOURCE [x] (34) SEEPAGE AREA AT TOE [ ] (35) FLOW ADJACENT TO OUTLET [ ] (36) SEEPAGE INCREASED / MUDDY

DRAIN OUTFALLS SEEN [ ] No [ ] Yes Show location of drains on sketch and indicate [ ] (37) FLOW INCREASED / MUDDY [ ] (38) DRAIN DRY / OBSTRUCTED

[ ] (39) OTHER

Saturated ground and heavy willows downstream of toe right of outlet indicate high phreatic surface at toe of dam. No evidence of piping observed.

Conditions Observed: GOOD [ ] ACCEPTABLE [X] POOR [X]

OUTLET

PROBLEMS NOTED: [ ] (40) NONE [ ] (41) NO OUTLET FOUND [ ] (42) POOR OPERATING ACCESS [ ] (43) INOPERABLE

[x] (44) UPSTREAM OR DOWNSTREAM STRUCTURE DETERIORATED (45) OUTLET OPERATED DURING INSPECTION [ ] YES [x] NO

INTERIOR INSPECTED [x] (120) NO [ ] (121)YES [ ] (46) CONDUIT DETERIORATED OR COLLAPSED [ ] (47) JOINTS DISPLACED [ ] (48) VALVE LEAKAGE

[ ] (49) OTHER

Concrete conduit with at least 3 different cross-sections along its length. (44) Timbers on upstream operator are deteriorating, concrete box at discharge end is severly damaged.

Conditions Observed: GOOD [ ] ACCEPTABLE [X] POOR [X]

SPILLWAY

PROBLEMS NOTED: [ ] (50) NONE [ ] (51) NO EMERGENCY SPILLWAY FOUND [x] (52) EROSION WITH BACKCUTTING [ ] (53) CRACK - WITH DISPLACEMENT

[ ] (54) APPEARS TO BE STRUCTURALLY INADEQUATE [ ] (55) APPEARS TOO SMALL [ ] (56) INADEQUATE FREEBOARD [x] (57) FLOW OBSTRUCTED

[ ] (58) CONCRETE DETERIORATED / UNDERMINED [ ] (59) OTHER

Open channel at left end of dam, in acceptable overall condition. (52) Channel invert is being eroded to lower elevation yearly. (57) Minor willows in channel.

Conditions Observed: GOOD [ ] ACCEPTABLE [X] POOR [ ]

See Guidelines on Back of this Sheet

MONITORING

EXISTING INSTRUMENTATION FOUND ☐(110) NONE ☑(111) GAGE ROD ☑(112) PIEZOMETERS ☐(113) SEEPAGE WEIRS / FLUMES
☑(114) SURVEY MONUMENTS ☐(115) OTHER
MONITORING OF INSTRUMENTATION ☐(116) NO ☑(117) YES PERIODIC INSPECTIONS BY: ☐(118) OWNER ☑(119) ENGINEER

Piezometers installed November 2003 during geotech investigation. No monitoring reports have been submitted.

	GOOD	ACCEPTABLE	POOR
MONITORING		X	X

MAINTENANCE AND REPAIR

PROBLEMS NOTED: ☐(60 NONE ☐(61) ACCESS ROAD NEEDS MAINTENANCE ☐(62) CATTLE DAMAGE
☑(63) BRUSH ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE ☑(64) TREES ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE
☑(65) RODENT ACTIVITY ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE ☑(66) DETERIORATED CONCRETE - FACING, OUTLET, SPILLWAY
☑(67) GATE AND OPERATING MECHANISM NEED MAINTENANCE ☐(68) OTHER

	GOOD	ACCEPTABLE	POOR
MAINTENANCE AND REPAIR		X	X

OVERALL CONDITIONS

The dam appears to be generally stable, with no indications of significant active slides or piping. However, the steep slopes, narrow cross- section, deteriorated outlet conduit, and high phreatic surface at the toe are serious dam safety concerns.

Based on this Safety Inspection and recent file review, the overall condition is determined to be:

☐(71) SATISFACTORY ☑(72) CONDITIONALLY SATISFACTORY ☐(73) UNSATISFACTORY

The State Engineer, by providing this dam safety inspection report, does not assume responsibility for any unsafe condition of the subject dam. The sole responsibility for the safety of this dam rests with the reservoir owner or operator, who should take every step necessary to prevent damages caused by leakage or overflow of waters from the reservoir or floods resulting from a failure of the dam.

ITEMS REQUIRING ACTION BY OWNER TO IMPROVE THE SAFETY OF THE DAM

MAINTENANCE - MINOR REPAIR - MONITORING

☐(80) PROVIDE ADDITIONAL RIPRAP:
☑(81) LUBRICATE AND OPERATE OUTLET GATES THROUGH FULL CYCLE: at least yearly
☑(82) CLEAR TREES AND/OR BRUSH FROM: spillway channel, dam slopes, and downstream toe
☑(83) INITIATE RODENT CONTROL PROGRAM AND PROPERLY BACKFILL EXISTING HOLES:
☐(84) GRADE CREST TO A UNIFORM ELEVATION WITH DRAINAGE TO THE UPSTREAM SLOPE:
☐(85) PROVIDE SURFACE DRAINAGE FOR:
☑(86) MONITOR: reservoir level, piezometers, and monuments, submit results to this office
☑(87) DEVELOP AND SUBMIT AN EMERGENCY PREPAREDNESS PLAN: update existing plan (dated 2000) annually as necessary
☐(88) OTHER
☐(89) OTHER

ENGINEERING - EMPLOY AN ENGINEER EXPERIENCED IN DESIGN AND CONSTRUCTION OF DAMS TO: (Plans and Specifications must be approved by State Engineer prior to construction.

☑(90) PREPARE PLANS AND SPECIFICATIONS FOR REHABILITATION OF THE DAM: construction to be completed by 10/31/2005
☐(91) PREPARE AS -BUILT DRAWINGS OF:
☑(92) PERFORM A GEOTECHNICAL INVESTIGATION TO EVALUATE THE STABILITY OF THE DAM: Submit results of November 2003 investigation
☐(93) PERFORM A HYDROLOGIC STUDY TO DETERMINE REQUIRED SPILLWAY SIZE:
☐(94) PREPARE PLANS AND SPECIFICATIONS FOR AN ADEQUATE SPILLWAY:
☑(95) SET UP A MONITORING SYSTEM INCLUDING WORK SHEETS, REDUCED DATA AND GRAPHED RESULTS: submit annual summary report
☐(96) PERFORM AN INTERNAL INSPECTION OF THE OUTLET:
☑(97) OTHER: Submit plans for replacement of outlet, construction to be completed by 10/31/2005
☐(98) OTHER:
☐(99) OTHER:

SAFE STORAGE LEVEL RECOMMENDED AS A RESULT OF THIS INSPECTION

☐(101) FULL STORAGE
☑(102) CONDITIONAL FULL STORAGE
☐(103) RECOMMENDED RESTRICTION
☐(104) CONTINUE EXISTING RESTRICTION

→ { _____ FT. BELOW DAM CREST; _____ FT. BELOW SPILLWAY CREST; _____ FT. GAGE HEIGHT; ☐ NO STORAGE-MAINTAIN OUTLET FULLY OPEN

REASON FOR RESTRICTION

ACTIONS REQUIRED FOR CONDITIONAL FULL STORAGE OR CONTINUED STORAGE AT THE RESTRICTED LEVEL:

Complete maintenance and engineering items noted above. Deadlines for (90) and (97) will not be extended again. Plans must be approved and construction completed by October 31, 2005, or a storage restriction will be ordered.

Engineer's Signature _____ INSPECTED BY Owner's Signature _____ OWNER/OWNER'S REPRESENTATIVE DATE: 7/19/04

MONITORING

EXISTING INSTRUMENTATION FOUND ☐(110) NONE ☑(111) GAGE ROD ☑(112) PIEZOMETERS ☐(113) SEEPAGE WEIRS / FLUMES
☑(114) SURVEY MONUMENTS ☐(115) OTHER
MONITORING OF INSTRUMENTATION ☐(116) NO ☑(117) YES PERIODIC INSPECTIONS BY: ☐(118) OWNER ☑(119) ENGINEER

Piezometers installed November 2003 during geotech investigation. No monitoring reports have been submitted.

	GOOD	ACCEPTABLE	POOR
MONITORING		X	X

MAINTENANCE AND REPAIR

PROBLEMS NOTED: ☐(60 NONE ☐(61) ACCESS ROAD NEEDS MAINTENANCE ☐(62) CATTLE DAMAGE
☑(63) BRUSH ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE ☑(64) TREES ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE
☑(65) RODENT ACTIVITY ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE ☑(66) DETERIORATED CONCRETE - FACING, OUTLET, SPILLWAY
☑(67) GATE AND OPERATING MECHANISM NEED MAINTENANCE ☐(68) OTHER

	GOOD	ACCEPTABLE	POOR
MAINTENANCE AND REPAIR		X	X

OVERALL CONDITIONS

The dam appears to be generally stable, with no indications of significant active slides or piping. However, the steep slopes, narrow cross- section, deteriorated outlet conduit, and high phreatic surface at the toe are serious dam safety concerns.

Based on this Safety Inspection and recent file review, the overall condition is determined to be:

☐(71) SATISFACTORY ☑(72) CONDITIONALLY SATISFACTORY ☐(73) UNSATISFACTORY

The State Engineer, by providing this dam safety inspection report, does not assume responsibility for any unsafe condition of the subject dam. The sole responsibility for the safety of this dam rests with the reservoir owner or operator, who should take every step necessary to prevent damages caused by leakage or overflow of waters from the reservoir or floods resulting from a failure of the dam.

ITEMS REQUIRING ACTION BY OWNER TO IMPROVE THE SAFETY OF THE DAM

MAINTENANCE - MINOR REPAIR - MONITORING

☐(80) PROVIDE ADDITIONAL RIPRAP:
☑(81) LUBRICATE AND OPERATE OUTLET GATES THROUGH FULL CYCLE: at least yearly
☑(82) CLEAR TREES AND/OR BRUSH FROM: spillway channel, dam slopes, and downstream toe
☑(83) INITIATE RODENT CONTROL PROGRAM AND PROPERLY BACKFILL EXISTING HOLES:
☐(84) GRADE CREST TO A UNIFORM ELEVATION WITH DRAINAGE TO THE UPSTREAM SLOPE:
☐(85) PROVIDE SURFACE DRAINAGE FOR:
☑(86) MONITOR: reservoir level, piezometers, and monuments, submit results to this office
☑(87) DEVELOP AND SUBMIT AN EMERGENCY PREPAREDNESS PLAN: update existing plan (dated 2000) annually as necessary
☐(88) OTHER
☐(89) OTHER

ENGINEERING - EMPLOY AN ENGINEER EXPERIENCED IN DESIGN AND CONSTRUCTION OF DAMS TO: (Plans and Specifications must be approved by State Engineer prior to construction.

☑(90) PREPARE PLANS AND SPECIFICATIONS FOR REHABILITATION OF THE DAM: construction to be completed by 10/31/2005
☐(91) PREPARE AS -BUILT DRAWINGS OF:
☑(92) PERFORM A GEOTECHNICAL INVESTIGATION TO EVALUATE THE STABILITY OF THE DAM: Submit results of November 2003 investigation
☐(93) PERFORM A HYDROLOGIC STUDY TO DETERMINE REQUIRED SPILLWAY SIZE:
☐(94) PREPARE PLANS AND SPECIFICATIONS FOR AN ADEQUATE SPILLWAY:
☑(95) SET UP A MONITORING SYSTEM INCLUDING WORK SHEETS, REDUCED DATA AND GRAPHED RESULTS: submit annual summary report
☐(96) PERFORM AN INTERNAL INSPECTION OF THE OUTLET:
☑(97) OTHER: Submit plans for replacement of outlet, construction to be completed by 10/31/2005
☐(98) OTHER:
☐(99) OTHER:

SAFE STORAGE LEVEL RECOMMENDED AS A RESULT OF THIS INSPECTION

☐(101) FULL STORAGE
☑(102) CONDITIONAL FULL STORAGE
☐(103) RECOMMENDED RESTRICTION
☐(104) CONTINUE EXISTING RESTRICTION

→ { _____ FT. BELOW DAM CREST; _____ FT. BELOW SPILLWAY CREST; _____ FT. GAGE HEIGHT; ☐ NO STORAGE-MAINTAIN OUTLET FULLY OPEN

REASON FOR RESTRICTION

ACTIONS REQUIRED FOR CONDITIONAL FULL STORAGE OR CONTINUED STORAGE AT THE RESTRICTED LEVEL:

Complete maintenance and engineering items noted above. Deadlines for (90) and (97) will not be extended again. Plans must be approved and construction completed by October 31, 2005, or a storage restriction will be ordered.

Engineer's Signature _____ INSPECTED BY Owner's Signature _____ OWNER/OWNER'S REPRESENTATIVE DATE: 7/19/04

STATE OF COLORADO

DIVISION OF WATER RESOURCES
WATER DIVISION 5
Office of the State Engineer
Department of Natural Resources
P O Box 396 (50633 U S Highway 6 & 24)
Glenwood Springs CO 81602
Phone (970) 945-5665
FAX (970) 945-8741 (call first)

August 20, 2003

IRV JOHNSON
BULL CREEK RESERVOIR CO.
P. O. BOX 25
MOLINA, CO. 81646

RE: BULL CREEK NO. 4
W. Div. 5, DAMID: 720115

Dear Mr. Johnson:

Enclosed is a copy of my report for the inspection of the Bull Creek No. 4 Dam conducted on August 14, 2003. Please note and implement my recommendations on Page 2 of the inspection report. Also, please sign and return the extra copy of page 2 of the inspection report.

The inspection revealed that there might now be signs of instability with a phreatic line close to the surface of the downstream slope of this steep and narrow dam when the reservoir is full. This activity appears slow and subtle and seemed more apparent to me since I have not inspected this dam in 6 years. However, this problem is now more of a concern, because over the last few years, the reservoir has been lower for longer periods of time due to the draught conditions than it has been in the late 1990s and it has not been inspected at full conditions since 1997.

In any event, due to these apparent subtle changes, the timing is good for an enlargement of the dam (as planned), which will require a major rehabilitation. Even if the reservoir company should decide not to enlarge the dam, it will need to be rehabilitated. Failure to perform the engineering requirements by March 1, 2004 so that the dam can be rehabilitated in 2004 (or at least started) may result in a storage restriction being imposed. I plan to inspect this dam early next summer or spring to see how it performs during full storage, which will also help determine the need for a restriction.

It is important to note the condition of this dam depends on numerous and constantly changing conditions, both external and internal and is very evolutionary in nature. It would be incorrect to assume that the past and present condition of the dam will continue to represent the condition of the dam in the future. If you have any questions regarding this report, please contact me.

Sincerely,

John L. Blair

John Blair, P.E.
Division 5 Dam Safety Engineer

Cc: Alan Martellaro, Division Engineer
John Sikora, Assistant Division Engineer
Doug Boyer, Chief, Dam Safety Branch
Steve Pope, Water Commissioner
Tom Brigham, Water Commissioner
Ron Luehring, USFS, Rocky Mountain Region Headquarters
Connie Clementson, USFS, District Ranger Collbran/Grand Junction District

ENGINEERS INSPECTION REPORT

INSPECTOR: JGB

OFFICE OF THE STATE ENGINEER - DIVISION OF WATER RESOURCES - DAM SAFETY BRANCH 1313 SHERMAN ST, ROOM 818, DENVER, CO 80203, (303) 866-3581

DAM NAME:	BULL CREEK #4			T: 110S R: 0950W S: 20	COUNTY:	MESA		DATE OF INSPECTION:	8/14/2003
DAM ID:	720115	YRCompl:	1901	DAM HEIGHT(FT):	27.5	SPILLWAY WIDTH(FT):	10.0	PREVIOUS INSPECTION:	8/14/2002
CLASS:	1			DAM LENGTH(FT):	900.0	SPILLWAY CAPACITY(CFS):	2024.0	CAPACITY(AF):	202.0
DIV:	5	WD:	72	CRESTWIDTH(FT):	4.0	FREEBOARD (FT):	7.0	SURFACE AREA(AC):	27.0
EPP:	11/6/2000			CRESTELEV(FT):	9855.0	DRAINAGE AREA (AC.):	1020.0	OUTLET INSPECTED:	10/4/1999

CURRENT RESTRICTION -- NONE --

OWNER: BULL CREEK RES. CO. CONTACT NAME: IRV JOHNSON

ADDRESS: P.O. BOX 25 CONTACT PHONE: (970) 268-5560

MOLINA CO 81646

INSPECTION PARTY: 2 Water Users | Tom Brigham | John G. Blair

REPRESENTING: Bull Creek Reservoir Company | Reservoir Commissioner | Div. 5 Dam Safety Engineer

FIELD CONDITIONS OBSERVED

WATER LEVEL: BELOW DAM CREST 11.25 FT. Below Spillway 18.25 FT. GAGE ROD READING 0

GROUND MOISTURE CONDITION: DRY ☑ WET ☐ SNOWCOVER ☐ OTHER

DIRECTIONS: MARK AN X FOR CONDITIONS FOUND AND UNDERLINE WORDS THAT APPLY

Conditions Observed: GOOD | ACCEPTABLE | POOR

UPSTREAM SLOPE

PROBLEMS NOTED ☐(0)NONE ☑(1)RIPRAP - MISSING, SPARSE, DISPLACED, WEATHERED ☑(2) WAVE EROSION - WITH SCARPS

☐(3) CRACKS WITH DISPLACEMENT ☐(4) SINKHOLE ☑(5) APPEARS TOO STEEP ☐(6) DEPRESSIONS OR BULGES ☑(7) SLIDES

☐(8) CONCRETE FACING - HOLES, CRACKS, DISPLACED, UNDERMINED ☐(9) OTHER

Conditions Observed: ACCEPTABLE X, POOR X

Very steep slope has contributed to displaced riprap near the narrowest section as it falls down the slope creating a bulge at 10' below the crest. See photo. Old wave erosion and surface slides occur off of the dam crest - No significant change noted.

CREST

PROBLEMS NOTED ☐(10) NONE ☐(11) RUTS OR PUDDLES ☐(12) EROSION ☐(13) CRACKS - WITH DISPLACEMENT ☐(14) SINKHOLES

☑(15) NOT WIDE ENOUGH ☑(16) LOW AREA ☐(17) MISALIGNMENT ☐(18) IMPROPER SURFACE DRAINAGE ☐(19) OTHER

Conditions Observed: ACCEPTABLE X, POOR X

Crest appears to be getting narrower gradually at the narrowest section due to gradual surface sloughing off of the steep slopes. Low area at the narrowest section also due to gradual surface sloughing. See photo.

DOWNSTREAM SLOPE

PROBLEMS NOTED ☐(20) NONE ☐(21) LIVESTOCK DAMAGE ☑(22) EROSION OR GULLIES ☐(23) CRACKS - WITH DISPLACEMENT ☐(24) SINKHOLE

☑(25) APPEARS TOO STEEP ☑(26) DEPRESSIONS OR BULGES ☑(27) SLIDE ☐(28) SOFT AREAS ☑(29) OTHER Holes in rock toe

Conditions Observed: ACCEPTABLE X, POOR X

An increase in surface sloughs mostly left of the outlet due to the steep slope is subtly apparent. Depression and bulge around the rock toe is possibly due to increased sloughing. See photos

SEEPAGE

PROBLEMS NOTED ☑(30) NONE ☐(31) SATURATED EMBANKMENT AREA ☐(32) SEEPAGE EXITS ON EMBANKMENT

☐(33) SEEPAGE EXITS AT POINT SOURCE ☐(34) SEEPAGE AREA AT TOE ☐(35) FLOW ADJACENT TO OUTLET ☐(36) SEEPAGE INCREASED / MUDDY

DRAIN OUTFALLS SEEN ☑No ☐Yes Show location of drains on sketch and indicate amount and quality of discharge. ☐(37) FLOW INCREASED / MUDDY ☐(38) DRAIN DRY / OBSTRUCTED

☑(39) OTHER Seepage not rated due to empty reservoir

Conditions Observed: GOOD | ACCEPTABLE | POOR

No apparent seepage problems seen wih drained reservoir. However water grass in surface slough areas of downstream slope indicate that the phreatic line may be closer to the surface of the downstream slope than in years past during fuller conditions

OUTLET

PROBLEMS NOTED ☐(40) NONE ☐(41) NO OUTLET FOUND ☐(42) POOR OPERATING ACCESS ☐(43) INOPERABLE

☐(44) UPSTREAM OR DOWNSTREAM STRUCTURE DETERIORATED (45) OUTLET OPERATED DURING INSPECTION ☐YES ☑NO

INTERIOR INSPECTED ☑(120) NO ☐(121)YES ☐(46) CONDUIT DETERIORATED OR COLLAPSED ☐(47) JOINTS DISPLACED ☐(48) VALVE LEAKAGE

☑(49) OTHER severe spalling at D/S end of outlet

Conditions Observed: ACCEPTABLE X, POOR X

Outlet is operated regularly for irrigation. A 1999 internal inspection shows some wear. The fact there are 3 sections of pipe with different size, shape, and material is a long term concern. The pipe will most likely need to be replaced in the future

SPILLWAY

PROBLEMS NOTED ☐(50) NONE ☐(51) NO EMERGENCY SPILLWAY FOUND ☐(52) EROSION WITH BACKCUTTING ☐(53) CRACK - WITH DISPLACEMENT

☐(54) APPEARS TO BE STRUCTURALLY INADEQUATE ☐(55) APPEARS TOO SMALL ☐(56) INADEQUATE FREEBOARD ☑(57) FLOW OBSTRUCTED

☐(58) CONCRETE DETERIORATED / UNDERMINED ☐(59) OTHER

Conditions Observed: ACCEPTABLE X

Scattered willow growth in the spillway channel. See photo.

See Guidelines on Back of this Sheet

MONITORING

EXISTING INSTRUMENTATION FOUND ☐(110) NONE ☑(111) GAGE ROD ☐(112) PIEZOMETERS ☐(113) STAGE WEIRS / FLUMES
☑(114) SURVEY MONUMENTS ☐(115) OTHER
MONITORING OF INSTRUMENTATION ☑(116) NO ☐(117) YES PERIODIC INSPECTIONS BY: ☑(118) OWNER ☐(119) ENGINEER

No apparent monument survey since 2000. Due to the narrow - steep embankment with surface sloughing. Monument surveys are critical to seeing if any subtle deep-seeded movement is occuring.

GOOD ACCEPTABLE X POOR — MONITORING

MAINTENANCE AND REPAIR

PROBLEMS NOTED: ☐(60 NONE ☐(61) ACCESS ROAD NEEDS MAINTENANCE ☐(62) CATTLE DAMAGE
☑(63) BRUSH ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE ☑(64) TREES ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE
☑(65) RODENT ACTIVITY ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE ☐(66) DETERIORATED CONCRETE - FACING, OUTLET SPILLWAY
☑(67) GATE AND OPERATING MECHANISM NEED MAINTENANCE ☐(68) OTHER

(63): Willows near the southwest side of the dam. (64): Small aspen trees near the northeast side of the dam. (65): Scattered rodents on D/S slope & larger holes in the rock toe left of the outlet. (67): Deteriorated timbers of operator. See photo

GOOD ACCEPTABLE X POOR — MAINTENANCE AND REPAIR

OVERALL CONDITIONS

It appears that there has been subtle movement on the surface of this steep & narrow dam & signs that the phreatic level is close to the surface. This indicates that the dam should be rehablitated soon. The timing is good for a planned enlargment.

Based on this Safety Inspection and recent file review, the overall condition is determined to be:

☐(71) SATISFACTORY ☑(72) CONDITIONALLY SATISFACTORY ☐(73) UNSATISFACTORY

OVERALL CONDITIONS

The State Engineer, by providing this dam safety inspection report, does not assume responsibility for any unsafe condition of the subject dam. The sole responsibility for the safety of this dam rests with the reservoir owner or operator, who should take every step necessary to prevent damages caused by leakage or overflow of waters from the reservoir or floods resulting from a failure of the dam.

ITEMS REQUIRING ACTION BY OWNER TO IMPROVE THE SAFETY OF THE DAM

MAINTENANCE - MINOR REPAIR - MONITORING

☐(80) PROVIDE ADDITIONAL RIPRAP:
☐(81) LUBRICATE AND OPERATE OUTLET GATES THROUGH FULL CYCLE
☑(82) CLEAR TREES AND/OR BRUSH FROM: dam
☑(83) INITIATE RODENT CONTROL PROGRAM AND PROPERLY BACKFILL EXISTING HOLES:
☐(84) GRADE CREST TO A UNIFORM ELEVATION WITH DRAINAGE TO THE UPSTREAM SLOPE:
☐(85) PROVIDE SURFACE DRAINAGE FOR:
☑(86) MONITOR: embankment for additional sloughing and seepage coming from the D/S slope especially when it is full
☑(87) DEVELOP AND SUBMIT AN EMERGENCY PREPAREDNESS PLAN: Updated plan
☑(88) OTHER Survey monuments and submit results to this office
☐(89) OTHER

ENGINEERING - EMPLOY AN ENGINEER EXPERIENCED IN DESIGN AND CONSTRUCTION OF DAMS TO: (Plans and Specifications must be approved by State Engineer prior to construction.)

☑(90) PREPARE PLANS AND SPECIFICATIONS FOR REHABILITATION OF THE DAM: March 1, 2004 including outlet replacement
☐(91) PREPARE AS -BUILT DRAWINGS OF:
☑(92) PERFORM A GEOTECHNICAL INVESTIGATION TO EVALUATE THE STABILITY OF THE DAM: by December 31 2003
☐(93) PERFORM A HYDROLOGIC STUDY TO DETERMINE REQUIRED SPILLWAY SIZE:
☐(94) PREPARE PLANS AND SPECIFICATIONS FOR AN ADEQUATE SPILLWAY:
☐(95) SET UP A MONITORING SYSTEM INCLUDING WORK SHEETS, REDUCED DATA AND GRAPHED RESULTS:
☐(96) PERFORM AN INTERNAL INSPECTION OF THE OUTLET:
☐(97) OTHER:
☐(98) OTHER:
☐(99) OTHER:

SAFE STORAGE LEVEL RECOMMENDED AS A RESULT OF THIS INSPECTION

☐(101) FULL STORAGE
☑(102) CONDITIONAL FULL STORAGE
☐(103) RECOMMENDED RESTRICTION → { _ FT. BELOW DAM CREST; _ FT. BELOW SPILLWAY CREST; _ FT. GAGE HEIGHT
☐(104) CONTINUE EXISTING RESTRICTION NO STORAGE-MAINTAIN OUTLET FULLY OPEN

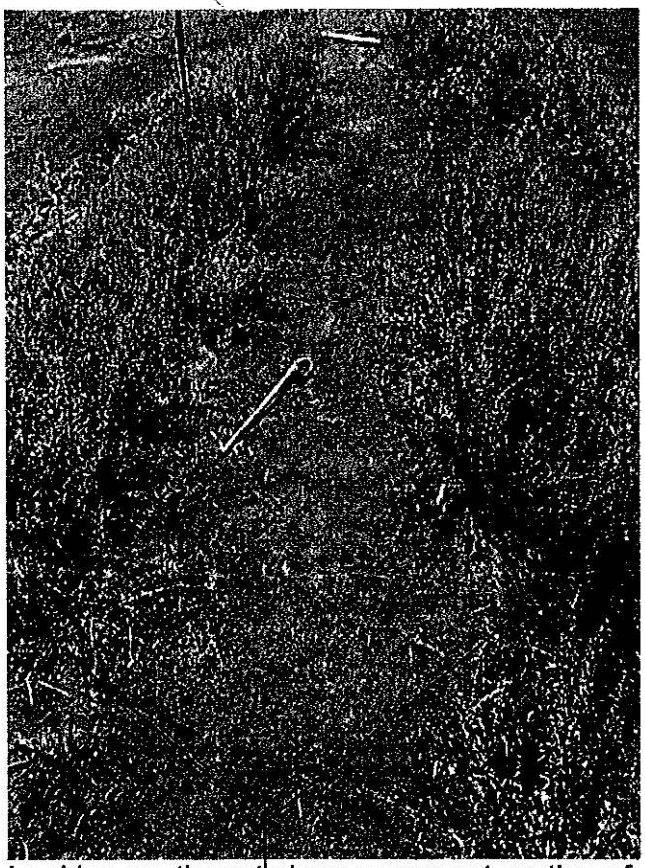
REASON FOR RESTRICTION

ACTIONS REQUIRED FOR CONDITIONAL FULL STORAGE OR ~~CONTINUED STORAGE AT THE RESTRICTED LEVEL~~

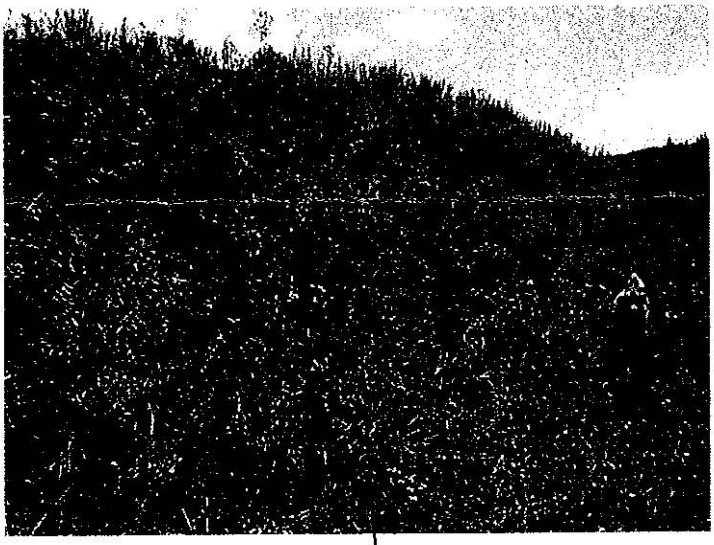
Items (90) & (92) or a storage restriction may be imposed. Item (86) & (88) in the interm
The dam should be re-inspected as early as possible next year to evaluate its condition when it is full.

Engineer's Signature: John G. Blair — INSPECTED BY
Owner's Signature: _____ — OWNER/OWNER'S REPRESENTATIVE
DATE: / /

Looking southwest along the upstream slope near the narrowest section between the outlet and spillway. Note displaced riprap creating a bulge as it migrates down the steep slope.



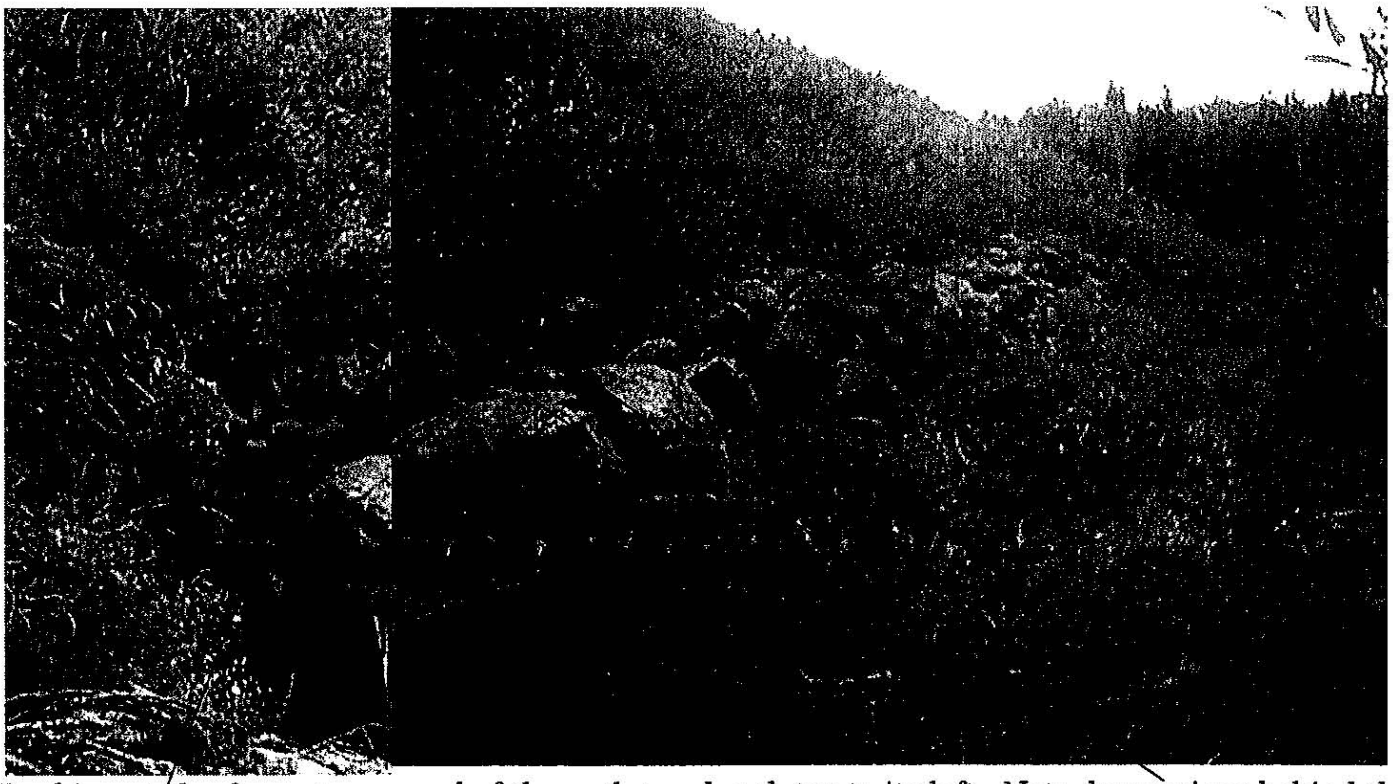
Looking southwest along narrowest section of crest. Note local surface sloughing, which has made the crest slightly lower and narrower here. In the past one could drive an ATV over this area without the wheels overlapping onto the slopes. This is now not possible.



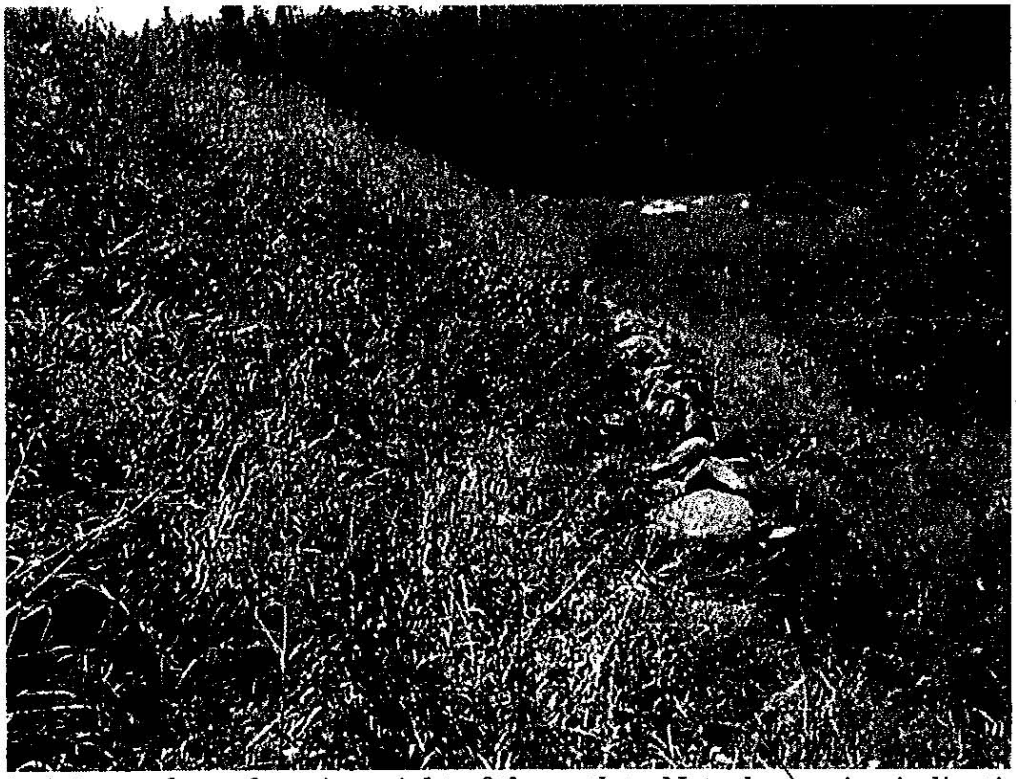
Looking at a possible surface slough that is void of grass with irregularities near narrow section southwest of the outlet.

Another possible surface slough closer to the outlet and maximum section of the dam.

Bull Creek #4
August 14, 2003

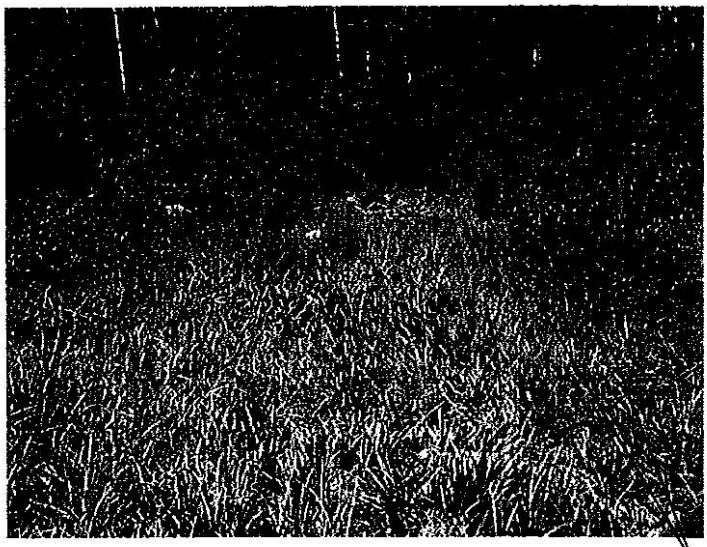


Looking at the downstream end of the outlet and rock toe to its left. Note depressions behind the toe and bulge in embankment material below the toe, which indicates the downward migration of surface material through the rock toe. Also, there are signs of movement in the rock. Also note deteriorated D/S end of the outlet tunnel.



Looking at the bulging rock toe from just right of the outlet. Note depression indicating surface slide activity above the rock toe.

Looking at the reservoir basin from the dam crest. All fill material for an enlargement and/or rehabilitation of the dam is to come from here.



Looking downstream along the spillway channel from its crest. Note willow growth that needs to be removed.

Willow growth on the northwest side of the dam that needs to be removed.

Deteriorating timbers for the outlet operator are buckling when the wheel is operated. Note gap between steel structure and timbers that was created by this buckling.

Bull Creek #4
August 14, 2003

ENGINEERS INSPECTION REPORT

OFFICE OF THE STATE ENGINEER · DIVISION OF WATER RESOURCES · DAM SAFETY BRANCH 1313 SHERMAN STREET, ROOM 818, DENVER, CO 80203, (303) 866-3581

DAM NAME: BULL CREEK #4 CLASS: 2 EPP ON FILE: N DATE OF INSPECTION: 7/21/93

DAM ID: 720115 W.DIV: 5 W.DIST: 72 DATE OF LAST INSPECTION: 09/02/92

FOREST ID: 04010023 LOCATION: Section 29, 11S, 95W SIXTH Meridian

CURRENT RESTRICTION: SURFACE AREA: 27 AC CAPACITY: 200 Ac

HEIGHT: 27.5 FT CREST LENGTH: 900 FT CREST WIDTH: 4.0 FT SPILLWAY WIDTH: 10 FT FBD: 7.5

OWNER: BULL CREEK RES. CO. need EPP BM FS JJZ CONTACT NAME: BETTY HAWKINS

ADDRESS: P.O. BOX 25, MOLINA, CO 81646 CONTACT PHONE: 268-5452

Owner #: 00148

INSPECTION PARTY REPRESENTING: Betty Hawkins, Danny Hawkins, Irv Johnson Bull Creek Res Company; Wayne Wells, Tom Brigham Water Commissioners

FIELD CONDITIONS OBSERVED

WATER LEVEL: BELOW DAM CREST 7.02 FT., ~~BELOW~~ Above SPILLWAY .48 FT., GAGE ROD READING 18.73

GROUND MOISTURE CONDITION: DRY X WET ____ SNOWCOVER ____ OTHER Windy

DIRECTIONS: MARK AN X FOR CONDITIONS FOUND AND UNDERLINE WORDS THAT APPLY.

Conditions Observed: GOOD / ACCEPTABLE / POOR

UPSTREAM SLOPE

PROBLEMS NOTED: ☐ (0) NONE ☐ (1) RIPRAP - MISSING, SPARSE, DISPLACED, WEATHERED ☒ (2) WAVE EROSION-WITH SCARPS ☐ (3) CRACKS-WITH DISPLACEMENT ☐ (4) SINKHOLE ☒ (5) APPEARS TOO STEEP ☐ (6) DEPRESSIONS OR BULGES ☒ (7) SLIDES ☐ (8) CONCRETE FACING-HOLES, CRACKS, DISPLACED, UNDERMINED ☐ (9) OTHER

Comments (2.) well above the highwater line, additional riprap has been added (5) & (7) near the steep narrow area. Slides are well above the high water line. No change from previous years

CREST

PROBLEMS NOTED: ☐ (10) NONE ☐ (11) RUTS OR PUDDLES ☐ (12) EROSION ☐ (13) CRACKS - WITH DISPLACEMENT ☐ (14) SINKHOLES ☒ (15) NOT WIDE ENOUGH ☐ (16) LOW AREA ☐ (17) MISALIGNMENT ☐ (18) IMPROPER SURFACE DRAINAGE ☐ (19) OTHER

Comments (15) only 4' wide near the left side in steep narrow area. No change from last year. Since spillway was cut in 1984 this has not been a safety problem

DOWNSTREAM SLOPE

PROBLEMS NOTED: ☐ (20) NONE ☐ (21) LIVESTOCK DAMAGE ☐ (22) EROSION OR GULLIES ☐ (23) CRACKS - WITH DISPLACEMENT ☐ (24) SINKHOLE ☒ (25) APPEARS TOO STEEP ☐ (26) DEPRESSION OR BULGES ☐ (27) SLIDE ☐ (28) SOFT AREAS ☐ (29) OTHER

Comments (25) No signs of instability seen at the steep section near the left (spillway side)

SEEPAGE

PROBLEMS NOTED: ☐ (30) NONE ☐ (31) SATURATED EMBANKMENT AREA ☐ (32) SEEPAGE EXITS ON EMBANKMENT ☐ (33) SEEPAGE EXITS AT POINT SOURCE ☒ (34) SEEPAGE AREA AT TOE ☐ (35) FLOW ADJACENT TO OUTLET ☐ (36) SEEPAGE INCREASED/MUDDY

DRAIN OUTFALLS SEEN ___ No ___ Yes Show location of drains on sketch and indicate amount and quality of discharge. ☐ (37) FLOW INCREASED/MUDDY ☐ (38) DRAIN DRY/OBSTRUCTED ☐ (39) OTHER

Comments (34) Very minor trickle on the right side of the outlet is the same as previous years regardless of water level. Boggy area to the left of the outlet channel is minor and only appears at full Res Co

OUTLET

PROBLEMS NOTED: ☒ (40) NONE ☐ (41) NO OUTLET FOUND ☐ (42) POOR OPERATING ACCESS ☐ (43) INOPERABLE ☐ (44) UPSTREAM OR DOWNSTREAM STRUCTURE DETERIORATED (45) OUTLET OPERATED DURING INSPECTION ☐ YES ☒ NO

INTERIOR INSPECTED ☒ (120) NO ☐ (121) YES ☐ (46) CONDUIT DETERIORATED OR COLLAPSED ☐ (47) JOINTS DISPLACED ☐ (48) VALVE LEAKAGE ☐ (49) OTHER

Comments (45) Outlet is operated regularly. Wheel is partially broken as in previous years but still very functional. Tom reported last year there is no problem in operating the outlet

SPILLWAY

PROBLEMS NOTED: ☒ (50) NONE ☐ (51) NO EMERGENCY SPILLWAY FOUND ☐ (52) EROSION-WITH BACKCUTTING ☐ (53) CRACK - WITH DISPLACEMENT ☐ (54) APPEARS TO BE STRUCTURALLY INADEQUATE ☐ (55) APPEARS TOO SMALL ☐ (56) INADEQUATE FREEBOARD ☐ (57) FLOW OBSTRUCTED ☐ (58) CONCRETE DETERIORATED/UNDERMINED ☐ (59) OTHER

Spillway adequacy for hydrology

Comments Hydrology The spillway adequacy will be checked by this office at a later date.

There are no major obstructions in the spillway

See Guidelines on Back of this Sheet

As far as Bull Creek No. 3 is concerned, it appears the repair work Wade did last fall is satisfactory. The seepage has been significantly reduced and the outlet pipe is performing well. However, there is still a small amount of seepage that should be monitored using V-notch weirs. This monitoring might allow the Reservoir Company to catch an unforseen seepage problem in the future before it becomes a major problem requiring a major repair.

Another item not previously discussed, but is now required by the State Engineer's Office for Class 2 dams such as Bull Creek #4 and #5 is the preparation and submittal of an Emergency Preparedness Plan (EPP). I am enclosing a copy of our guidelines and two sets of data sheets for both Bull Creek #4 and #5 to be used in developing an EPP.

I greatly appreciate your cooperation and all the work you have done to improve and maintain the safety of these dams. If you have any questions, please contact me.

Sincerely,

John G. Blair

John G. Blair, P.E.
Division V Dam Safety Engineer

JGB/bsw

Encl.

pc: Marc Klocker, Water Commissioner
Gary Barta, Dam Safety Branch, Denver
Gene Grossman, U.S. Forest Service, Collbran Dist.

ROY ROMER
Governor

JERIS A. DANIELSON
State Engineer

DIVISION OF WATER RESOURCES

WATER DIVISION V
ORLYN J. BELL
DIVISION ENGINEER
P.O. BOX 396
1429 GRAND AVENUE
GLENWOOD SPRINGS, COLORADO 81602
945-5665

COLLBRAN DISTRICT
RECD
JUL 12 1990
RGR
RGE
WLB
TBR
FOR
FT

July 10, 1990

Rhoda Springer
Bull Creek Reservoir Co.
P.O. Box 116
Molina, CO 81646

Send to filing in note book binder and case file for each Res.

RE: Bull Creek #3 Dam,
ID No. 720114
Bull Creek #4 Dam,
ID No. 720115
Bull Creek #5 Dam,
ID No. 720116

Dear Mrs. Springer:

Enclosed are the copies of my inspection reports of the Bull Creek Nos. 3, 4, and 5 dams conducted on July 3, 1990. Please note and implement the recommendations on Page 2 of each inspection report. Also, please sign, date and return the extra copy of Page 2 of each inspection report to the address shown at the top of this letter.

During the inspection of Bull Creek No. 5, I noticed a few items of concern. The most important item is the appearance that the depression on the downstream slope may slowly be getting larger. Marc Klocker also suspects this from previous visits. This may be only because the grass was shorter during this inspection or maybe something is happening. The only way to possibly tell without spending a lot of money is to install some monitoring stakes around the perimeter and in the center of the depression and take periodic measurements. This recommendation is described in more detail in the report. Another item of concern is the new beaver dam and pond which exist to the right of the outlet below the toe of the dam as you look downstream. This should be destroyed and proper drainage restored to prevent saturation of the toe. Also the drainage channel that has been excavated to drain the pond near the spillway does not adequately drain the pond. The channel needs to be excavated approximately 0.5 feet deeper from where the snowmobile road crosses it to where it meets the spillway channel.

ENGINEERS INSPECTION REPORT

OFFICE OF THE STATE ENGINEER · DIVISION OF WATER RESOURCES · DAM SAFETY BRANCH · 1313 SHERMAN STREET, ROOM 818, DENVER, CO 80203, (303) 866-3581

DAM NAME: BULL CREEK #4 W.DIV: 5 W.DIST: 72 DATE OF INSPECTION: 2/7/1990
DAM ID: 720115 FOREST ID: 4010023 DATE OF LAST INSPECTION: 07/17/89
OWNER NAME: BULL CREEK RES. CO. LOCATION: S PM - TWN - RNG - SEC 20
ADDRESS: P.O. BOX 116 MOLINA CO ZIP-CODE: 81646 11S 95W

CONTACT NAME: RHODA SPRINGER CONTACT PHONE: 268-5452

CLASS: 2 CAPACITY: 313 AF SURFACE AREA: 35 AC HEIGHT: 29.5 FT CREST LENGTH: 900 FT CREST WIDTH: 4.0 FT
SIZE: SMALL CURRENT RESTRICTION: NO LEVEL: EPP ON FILE: N SPILLWAY WIDTH: 20.0 FT FBD: 7.5 FT

INSPECTION PARTY REPRESENTING: Marc Klocker, Water Commissioner

FIELD CONDITIONS OBSERVED — WATER LEVEL: BELOW DAM CREST 2.0 FT., BELOW SPILLWAY 0.5 Above FT., GAGE ROD READING 19.5
GROUND MOISTURE CONDITION: DRY X WET ____ SNOWCOVER ____ OTHER ____

DIRECTIONS: MARK AN X FOR CONDITIONS FOUND AND UNDERLINE WORDS THAT APPLY.

Conditions Observed: GOOD / ACCEPTABLE / POOR

UPSTREAM SLOPE

PROBLEMS NOTED: ☐ (0) NONE ☒ (1) RIPRAP - MISSING, SPARSE, DISPLACED, WEATHERED ☒ (2) WAVE EROSION-WITH SCARPS
☐ (3) CRACKS-WITH DISPLACEMENT ☐ (4) SINKHOLE ☐ (5) APPEARS TOO STEEP ☐ (6) DEPRESSIONS OR BULGES ☐ (7) SLIDES
☐ (8) CONCRETE FACING-HOLES, CRACKS, DISPLACED, UNDERMINED ☐ (9) OTHER

Comments: 1) Riprap is adequate To 2.5 feet above Water level. 2) Scarps are large near right side but are well above water level and was not changed since Spillway was lowered

Conditions Observed: ACCEPTABLE

CREST

PROBLEMS NOTED: ☐ (10) NONE ☐ (11) RUTS OR PUDDLES ☐ (12) EROSION ☐ (13) CRACKS - WITH DISPLACEMENT ☐ (14) SINKHOLES
☒ (15) NOT WIDE ENOUGH ☐ (16) LOW AREA ☐ (17) MISALIGNMENT ☐ (18) IMPROPER SURFACE DRAINAGE ☐ (19) OTHER

Comments: (15) Narrowness of Crest is no longer a safety problem since Spillway was lowered. No changes from last year

Conditions Observed: ACCEPTABLE

DOWNSTREAM SLOPE

PROBLEMS NOTED: ☐ (20) NONE ☐ (21) LIVESTOCK DAMAGE ☐ (22) EROSION OR GULLIES ☐ (23) CRACKS - WITH DISPLACEMENT ☐ (24) SINKHOLE
☒ (25) APPEARS TOO STEEP ☐ (26) DEPRESSION OR BULGES ☐ (27) SLIDE ☐ (28) SOFT AREAS ☐ (29) OTHER

Comments: (25) No signs of recent problems since Spillway was cut. Slope appears stable

Conditions Observed: ACCEPTABLE

SEEPAGE

PROBLEMS NOTED: ☐ (30) NONE ☐ (31) SATURATED EMBANKMENT AREA ☐ (32) SEEPAGE EXITS ON EMBANKMENT
☒ (33) SEEPAGE EXITS AT POINT SOURCE ☒ (34) SEEPAGE AREA AT TOE ☐ (35) FLOW ADJACENT TO OUTLET ☐ (36) SEEPAGE INCREASED/MUDDY
DRAIN OUTFALLS SEEN X No ___ Yes Show location of drains on sketch and indicate amount and quality of discharge. ☐ (37) FLOW INCREASED/MUDDY ☐ (38) DRAIN DRY/OBSTRUCTED
☐ (39) OTHER

Comments: Very minor Trickle seep out of rock Toe To the right of the outlet. This seep is immeasurable. Minor boggy area To the left of The outlet

Conditions Observed: ACCEPTABLE

OUTLET

PROBLEMS NOTED: ☐ (40) NONE ☐ (41) NO OUTLET FOUND ☐ (42) POOR OPERATING ACCESS ☐ (43) INOPERABLE
☐ (44) UPSTREAM OR DOWNSTREAM STRUCTURE DETERIORATED ☐ (45) OUTLET NOT OPERATED DURING INSPECTION? YES ☐ NO ☒
INTERIOR INSPECTED ☒ (120) NO ☐ (121) YES ☐ (46) CONDUIT DETERIORATED OR COLLAPSED ☐ (47) JOINTS DISPLACED ☒ (48) VALVE LEAKAGE
☒ (49) OTHER

Comments: Outlet is Submerged by Beaver Dam could not inspect down-Stream side. Bubbles in Pond indicate There maybe some minor Valve leakage. Outlet wheel is broken partially but it still looks very operational and well greased. It is operated regularly for irrigation.

not rated.

Conditions Observed: ACCEPTABLE

SPILLWAY

PROBLEMS NOTED: ☒ (50) NONE ☐ (51) NO EMERGENCY SPILLWAY FOUND ☐ (52) EROSION-WITH BACKCUTTING ☐ (53) CRACK - WITH DISPLACEMENT
☐ (54) APPEARS TO BE STRUCTURALLY INADEQUATE ☐ (55) APPEARS TOO SMALL ☐ (56) INADEQUATE FREEBOARD ☐ (57) FLOW OBSTRUCTED
☐ (58) CONCRETE DETERIORATED/UNDERMINED ☐ (59) OTHER

Hydrology → UNK
STRUCTURAL → X

Comments: Hydrology: The Spillway adequacy will be checked by This office. Rules & Regs require it To pass a 50% PMP flood for Class 2 dams.

Conditions Observed: ACCEPTABLE

See Guidelines on Back of this Sheet

DC-22-2649a-86

DAM NAME: Bull Creek #4 DAM 720115 DATE 7/13/90

MONITORING

EXISTING INSTRUMENTATION FOUND ☐ (110) NONE ☒ (111) GAGE ROD ☐ (112) PIEZOMETERS ☐ (113) SEEPAGE WEIRS/FLUMES

☐ (114) SURVEY MONUMENTS ☐ (115) OTHER

MONITORING OF INSTRUMENTATION: ☐ (116) NO ☐ (117) YES PERIODIC INSPECTIONS BY: ☒ (118) OWNER ☐ (119) ENGINEER

Comments: No Measurable seepage. No weir needed

MONITORING: ☐ GOOD ☒ ACCEPTABLE ☐ POOR

MAINTENANCE AND REPAIR

PROBLEMS NOTED: ☐ (60) NONE ☐ (61) ACCESS ROAD NEEDS MAINTENANCE ☐ (62) CATTLE DAMAGE

☐ (63) BRUSH ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE ☐ (64) TREES ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE

☒ (65) RODENT ACTIVITY ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE ☐ (66) DETERIORATED CONCRETE-FACING, OUTLET, SPILLWAY

☐ (67) GATE AND OPERATING MECHANISM NEED MAINTENANCE ☐ (68) OTHER

Comments: only small rodent activity. Owners have good maintenance program. 3' deep rodent hole seen last year was not found

MAINTENANCE AND REPAIRS: ☐ GOOD ☒ ACCEPTABLE ☐ POOR

OVERALL CONDITIONS

REMARKS: Beaver Pond submerging the outlet and Toe of Dam is reason for conditionally satisfactory rating

Based on this Safety Inspection and recent file review, the overall condition is determined to be:

☐ 71 SATISFACTORY ☐ 72 CONDITIONALLY SATISFACTORY ☐ 73 UNSATISFACTORY

OVERALL CONDITIONS

The State Engineer, by providing this dam safety inspection report, does not assume responsibility for any unsafe condition of the subject dam. The sole responsibility for the safety of this dam rests with the reservoir owner or operator, who should take every step necessary to prevent damages caused by leakage or overflow of waters from the reservoir or floods resulting from a failure of the dam.

ITEMS REQUIRING ACTION BY OWNER TO IMPROVE THE SAFETY OF THE DAM

MAINTENANCE - MINOR REPAIR - MONITORING

☐ (80) PROVIDE ADDITIONAL RIPRAP:

☐ (81) LUBRICATE AND OPERATE OUTLET GATES THROUGH FULL CYCLE:

☐ (82) CLEAR TREES AND/OR BRUSH FROM:

☒ (83) CONTINUE ~~INITIATE~~ RODENT CONTROL PROGRAM ~~AND PROPERLY BACKFILL EXISTING HOLES~~:

☐ (84) GRADE CREST TO A UNIFORM ELEVATION WITH DRAINAGE TO THE UPSTREAM SLOPE:

☐ (85) PROVIDE SURFACE DRAINAGE FOR:

☐ (86) MONITOR:

☒ (87) DEVELOP AND SUBMIT AN EMERGENCY PREPAREDNESS PLAN. as no required for class 2 dams

☒ (88) OTHER: Destroy the Beaver Dam and drain Pond away from outlet and Toe

☐ (89) OTHER:

ENGINEERING - EMPLOY AN ENGINEER EXPERIENCED IN DESIGN AND CONSTRUCTION OF DAMS TO: (Plans & Specification must be approved by State Engineer prior to construction.)

☐ (90) PREPARE PLANS AND SPECIFICATIONS FOR THE REHABILITATION OF THE DAM:

☐ (91) PREPARE AS-BUILT DRAWINGS OF:

☐ (92) PERFORM A GEOTECHNICAL INVESTIGATION TO EVALUATE THE STABILITY OF THE DAM:

☐ (93) PERFORM A HYDROLOGIC STUDY TO DETERMINE REQUIRED SPILLWAY SIZE:

☐ (94) PREPARE PLANS AND SPECIFICATIONS FOR AN ADEQUATE SPILLWAY:

☐ (95) SET UP A MONITORING SYSTEM INCLUDING WORK SHEETS, REDUCED DATA AND GRAPHED RESULTS:

☐ (96) PERFORM AN INTERNAL INSPECTION OF THE OUTLET:

☐ (97) OTHER:

☐ (98) OTHER:

☐ (99) OTHER:

SAFE STORAGE LEVEL RECOMMENDED AS A RESULT OF THIS INSPECTION

☐ (101) FULL STORAGE

☒ (102) CONDITIONAL FULL STORAGE

☐ (103) RECOMMENDED RESTRICTION → RESTRICTED LEVEL OFFICIAL ORDER TO FOLLOW

- ____ FT. BELOW DAMS CREST
- ____ FT. BELOW SPILLWAY CREST
- ____ FT. GAGE HEIGHT
- ____ NO STORAGE-MAINTAIN OUTLET FULLY OPEN

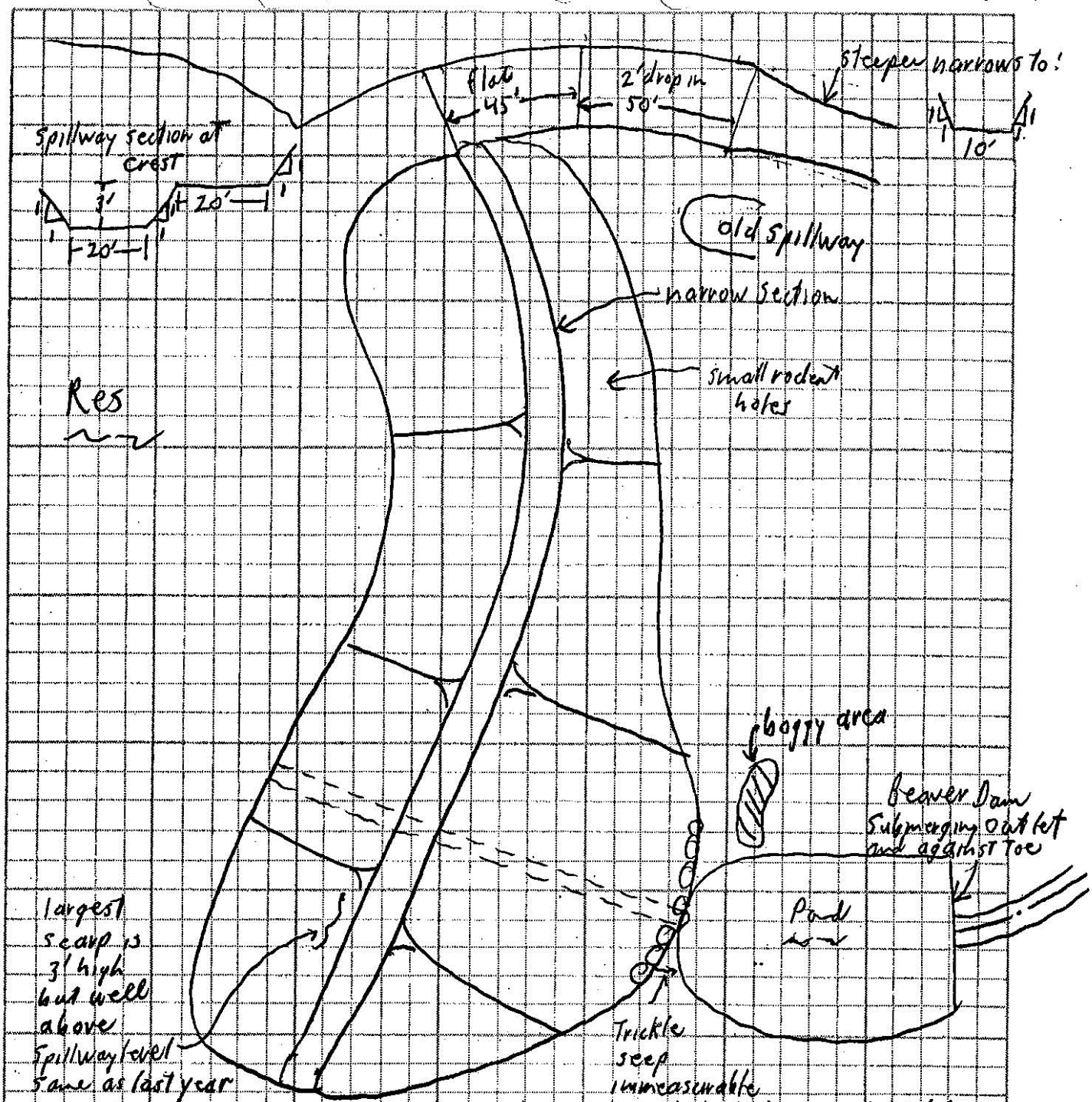
REASON FOR RESTRICTION:

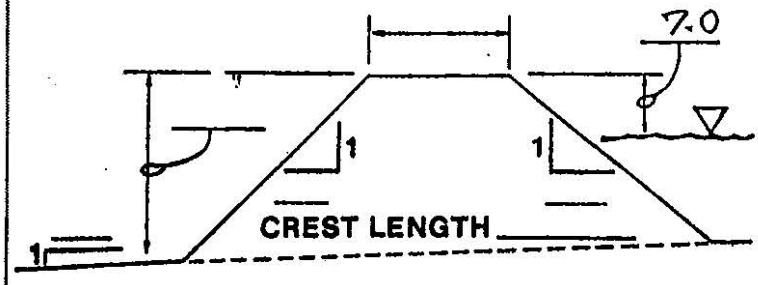
ACTIONS REQUIRED FOR CONDITIONAL FULL STORAGE OR CONTINUED STORAGE AT THE RESTRICTED LEVEL: Item (88)

Engineer's Signature John G. Blair INSPECTED BY Owner's Signature OWNER/OWNER'S REPRESENTATIVE DATE: / /

DC-22-2649a-86

DAM NAME BK Creek #4 720115 DATE 7/3/90





FIELD MEASUREMENTS

Pictures 22, 23

USDA -Forest Service

DAM INSPECTION REPORT

Name of Dam:	Region	Forest	R.D.	Number	Ranger District
BULL CREEK NO. 4	02	04	01	23	Collbran

Class	Hazard	Height	Capacity (A.F.)	Authority	Owner
A	MOD	27	313	JE	Bull Creek Reservoir & Canal Co.

Definitions: Priority 1 - Maintenance items critical to the continued safety of the dam.
Priority 2 - Items of preventive maintenance for continued safe operation.

	PRIORITY	1	2
EMBANKMENTS			
same as reported before - no work has been done			2
small rodent activity			2
several aspen & willows growing on right side			2
narrow crest & beaching at HWL			2
OUTLET WORKS			
SPILLWAYS			
RESERVOIR			
Dry			

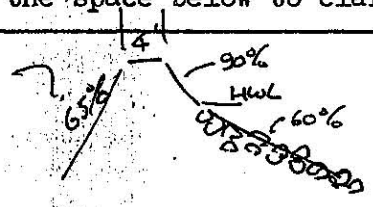
INSPECTOR: Gary Dillon 10/18/79 DATE:

R2-7500-2 (1/77)

GENERAL CHECKLIST FOR DAM INSPECTION (Items found deficient should be explained on front side)

EMBANKMENTS	Slumps	Cracks	Drains	Seepage	Piping	Trees	Barriers	Traffic Damage	Backwater
	Slides	Riprap	Debris	Erosion	Brush	Grass	Gage Rod	Animal Burrows	Settlement
	Downstream Boils								
OUTLET WORKS	Locks	Gates	Valves	Controls	Structures	Outlet Conduit		Dissipator	Trashrack
	Downstream Channel		Accessibility		Stilling Basin	Are Controls Operable?			
SPILLWAYS	Valves	Riprap	Gates	Erosion	Dissipator	Structures	Obstructions		Debris Barr
	Downstream Channel		Stilling Basin		Vegetation				
RESERVOIR	Water Surface Level		Shoreline Debris		Sediment	Shore Erosion		State Restrictions	

DRAWING SPACE (Use the space below to clarify your description of discrepancies with the dam)



Cross-section at critical spot

USDA - FOREST SERVICE
LAND USES INSPECTION REPORT SUMMARY

District COLLBRAN
Case Designation 2750 BULL CREEK RESERVOIR, CANAL & POWER COMPANY
RESERVOIRS 8/12/07
RESERVOIR, BULL CREEK #4

Construction Insp. ☐
Administ. Insp. ☐

Permitted rights, including improvements A 35.04 ACRE RESERVOIR

Location (Legal & Geographic as needed)

SECTIONS 20, 29, T11S, R95W, 6TH P.M.

Aerial Photo No.

Insp. Frequency 1 Years

Permit (easement) clauses or stipulations used for inspection criteria. (List clause or stipulation number)

INSPECTION RECORD

Inspection Number	1	2	3	4	5
Date of Inspection	7/24/69				
Initials of Inspector	[illegible]				
Permittee or Grantee present	No				
Date Inspection letter sent Permittee or Grantee					
*Date corrective action completed					
Date first follow-up letter					
*Date corrective action completed					
Date second follow-up letter					
*Date corrective action completed					
Date S.O. notified for further action					

*Show date permittee or grantee is notified that his corrective action has been accepted.

SEE REVERSE SIDE FOR INSTRUCTIONS

R2-2700-12 (3/68)

LAND USES INSPECTION REPORT

INSTRUCTIONS FOR USE OF FORM

1. Use for both construction and administrative inspections. This sheet will be used as a cover sheet for five inspections. R2-2700-13 will be filed behind this cover sheet for each inspection recorded on the "Inspection Record" in the Ranger's inspection notebook. Correspondence should be filed in case folder.

2. Review the special use (easement, etc.) before starting the inspection and determine inspection criteria clauses. Enter stipulation number in appropriate space with a short explanation of content, e.g. 35 Erosion. The clauses or stipulations used as inspection criteria may change, for instance, when a use progresses from the construction stage to the operation stage or when the permit is revised. When new inspection criteria is used, a new cover sheet should be prepared. When construction has been completed, start new cover page for administrative inspections. Permit must be used in making inspections.

3. R2-2700-13 will be used to report desirability and adequacy of the permit. See FSM 2719.62. Also to record noncompliance with the terms and conditions of the permit and propose corrective measures. Show the clause or stipulation number in left hand margin, followed by a brief discussion of how the requirement is not met and the compliance action needed. Be specific. When more than one structure or improvement is to be discussed in relation to a specific clause or stipulation, discuss each one separately. If compliance with the clause is satisfactory, show by "OK."
   When applicable, the following should be included:
   a. Action needed to bring permitted use up to acceptable standard.

   b. Action necessary to bring construction in line with plans and specifications.

   c. Needed amendments to the instrument.

   d. Whether non-resource items are being fulfilled such as payments, bonds, insurance, non-discrimination, etc.

   e. Presence of safety hazards or practices not specifically covered by the instrument.

   f. Any other pertinent recommendation engendered by the conditions found by the inspector.

4. When completed, send copy of R2-2700-13 and copies of all pertinent correspondence with permittee to Forest Supervisor. (The Form need not be typed, legible copies in ink will be sufficient.) Forest Supervisor will file 2700-13 behind his copy of R2-2700-12 and keep "inspection record" current.

USDA – FOREST SERVICE

LAND USES INSPECTION REPORT

District COLLBRAN

Case Designation 2750 BULL CREEK RESERVOIR, CANAL, & POWER COMPANY, RESERVOIR BULL CREEK #4 8/12/07

Inspector H O Mayberry

Inspection Date 7/24/69

Yes ☑ No ☐ Is this permitted use desirable for this Land? If no, explain and make recommendations

☑ ☐ Does the permit accurately describe the use being made of the area? If no, explain how and to what extent the use violates the rights granted and make recommendations

☑ ☐ Is charge for this use correct? If no, make recommendations

☐ ☑ Do the conditions and terms of the permit adequately protect the interests of the Government? If no, recommend permit amendment clause(s) to correct the condition.

Stipulations need updating

Compliance with Terms and Conditions of the Permit and Necessary Corrective Action

Dam crest needs widening
Rip-rap needed on spillway & on the face of the dam
Clean willows off of dam
Clean up & burn debris.

See instructions for use of this form on reverse of Form R2-2700-12

R2-2700-13 (3/68)

GPO 847-484

U. S. DEPARTMENT OF AGRICULTURE
Forest Service

(23)

Forest GRAND MESA
District COLLBRAN

BULL CREEK RESERVOIR, CANAL, & POWER Co.
RESERVOIRS, BULL CREEK #4
EASEMENT 052197 8/12/07

(Case Designation)

LAND USE INSPECTION REPORT & RECORD

Use Information

Location SEC. 20, 29, T11S, R95W, 6TH PM.
(Legal and Geographical Location, Aerial Photo No.)

Description of Permitted Improvements
A 35.04 ACRE RESERVOIR

Coordinating Action Required

Inspection Frequency (1) 2 3 (Circle One)

Inspection Record

Initial, Date, or Check Applicable Items

	LJB	T.L.M.	MAR	GDM	GDM
Calendar Year	1963	1965	1966	1967	1968
Date Inspected	7/22/63	10/27/65	10/21	8/10	8/7
All Inspection criteria covered?	X	X	X	YES	YES
Conditions satisfactory?					
Unsatisfactory?	X	X	X	✓	✓
Permittee present on Inspection?		NO	No	No	No
Date follow-up completed		11/18/65			
Date corrective action completed*		11/29/65			
Date corrective action completed*		3-5-66			
Date corrective action completed*					

NARRATIVE RECORD

(Explain unsatisfactory condition, key to criteria designation, show inspection date and inspector's name)

LOUIS J. BERTLSHOFER, ADR, 7/22/63
THE STRUCTURAL DEFECTS THAT WERE POINTED OUT BY THE ENGINEER IN HIS INSPECTION OF 7/21/61 STILL EXIST. THE SPILLWAY NOW APPEARS CLEAR.
(INSPECTION OF 7/21/61 BY J. KIRBY LEE, FOREST ENGINEER) THIS RESERVOIR HAS A VERY NARROW TOP WIDTH AND SHRUBS ARE GROWING ON THE DAM FOR ITS HEIGHT. CONTROLS ARE ALSO INADEQUATE AND SIDE SLOPES VERY STEEP. THE CONTROLS' SUPPORTS ARE ROTTEN AND HAVE BEGUN TO FAIL. THE RODENTS ARE BURROWING IN THE BACKSLOPE OF THE DAM AND WITH THE NARROW TOP WIDTH AND STEEP SLOPES THIS COULD PROVE FATAL. THE SPILLWAY ALSO HAS SHRUBS CLOGGING IT.
1964 Reservoir inspected by Engineering
10/27/65 T.LM. STRUCTURAL DEFECTS POINTED OUT IN 7/21/61 INSPECTION STILL EXIST. SOME EFFORT TO BURN TRASH IN SPILLWAY HAS BEEN MADE BUT SMALL AMOUNT

*List items A-1, B-2, etc. in space and show dates in blocks.

A - GENERAL
(Applicable to all Uses)

1. All improvements covered by permit and accurately shown on map?
2. Improvements maintained to standard?
3. Permit used as authorized?
4. Permit modified as needed?
5. Inspected for safety hazards?
6. Erosion prevention and control provided?
7. Is public access denied?
8. Is the special use area needed for higher public use?
9. Have all conditions of the permit been complied with?

NARRATIVE RECORD CONTINUED

[illegible] NEW TRASH HAS ACCUMULATED. BRUSH (MINOR) GROWING ON FACE OF DAM. TRASH ON EAST [illegible] STORY OF RESERVOIR AND DEAD TREES STANDING. GATES BE PULLED AND SERVICED. DISCUSSED NOTICE [illegible] RESERVOIR AT THIS INSPECTION. RESERVOIR ABOUT 2/3 FULL AT TIME OF INSPECTION. CONTROL GATE WAS LOCKED.

10/21/68 MILTON [illegible]

SOME CLEANUP WORK HAS BEEN DONE BUT THERE IS STILL DEAD STANDING TREES, TRASH AND BRUSH AND BURN PILES SHOULD BE PULLED AND BURNED. (NOT A GOOD BURN). STILL SOME SCATTERED SMALL BRUSH ON DAM. 2 GATES BUT POSSIBLE WORK ON DAM.

8/10/69 - [illegible]

6/11/70 - STILL SAME NEEDS ARE NOTED, CLEAN UP AND BURN.

U. S. DEPARTMENT OF AGRICULTURE
Forest Service

2700

Grand Mesa
Forest
Collbran
District

Bull Cr. Res., Canal & Power Co.
Permittee
Reservoir (Bull Creek #4)
Kind
Easement. 8/12/07
Date
052197

Inspection Frequency (1) 2 3
(Circle One)

Hazard - High
Type A.

SUPERVISORS RECORD OF RANGERS
LAND USE INSPECTIONS

Inspection Date	Inspectors Name	(Check) Use is: Sat.	Unsat.	Remarks:
7/22/63	Bertlshofer			Structural defects still exist; spillway appears clear.
9/64	Miller		X	Down timber along E side; debris in spillway;
10/27/65	La May		X	No change - trash & debris 11/18/65
10/21/66	Robertson		X	Some cleanup has been done. Still dead trees on east side. Burn pile should be repiled and burned. still small brush on dam. Some rodent work on dam.
8/10/67	Mayberry		X	about the same
8/7/68	"			Still some debris to and trees to clean up and burn.

R2-2700-1
8/63

Exhibit 9
1/8/2010 Bull Creek Letter

John Groo
Bull Creek Reservoir, Canal, and Power Company
P.O. Box 25
Molina, CO 81646

via e-mail: jwgworld@yahoo.com

January 8, 2010

Susan Bachini Nall
Branch Chief
Colorado West Regulatory Branch
US Army Engineer District, Sacramento
400 Rood Avenue, RM 142
Grand Junction, CO 81501

Via Email: Susan Nall

SUBJECT: File Request for Permit No. SPK-2008-00722 Bull Creek Reservoir #4

Dear Ms. Nall:

As representative of the Bull Creek Reservoir, Canal and Power Company, I respectfully request that any and all documentation pertaining to our permit identified as SPK-2008-00722, be released to our **new** authorized agent WestWater Engineering (WWE). Our original application was prepared by other players that are no longer involved or available (Paul Currier and Steve Dahmer). It has come to our attention that the file we have given to WWE and assume was complete, may in fact not have all of the records that were submitted to you on our behalf by the previous consultants.

I believe all of these records are on file at the local Colorado West Regulatory Branch in Grand Junction, CO. It has also come to my attention that the original wetland delineation was prepared and submitted under a separate permit number. I was unaware of this fact and I would also like for WWE to be able to review and copy any and all documentation associated with that file as well. To be clear, we would like for WWE to have access to the following permit files.

	Project	Corps File Number
•	Bull Creek Reservoir	2005754462
•	Bull Creek Reservoir	SPK-2008-00722

I have been informed that processing fees for these types of requests under the typical FOIA request include professional search and review at $44.00 per hour (billable on the ¼ hour) and reproduction costs at $0.15 per page for standard copies and $1.00 each for oversized and colored copies. I am willing to pay fees involved in the processing of this request.

I look forward to receiving your offices permission as soon as possible. Please send verbal, written, or email correspondence to either Mike Villa (970)250-5486 mjv@westwaterco.com or Brett Fletcher ((970)241-7076 - bff@westwaterco.com at your earliest convenience.

Sincerely,

John Groo
Bull Creek Reservoir, Canal and Power Company

Exhibit 10
1/22/2010 WestWater Engineering ACOE Clarification Letter

WestWater Engineering
Environmental Consulting Services

2516 FORESIGHT CIRCLE, #1 GRAND JUNCTION, COLORADO 81505 (970) 241-7076 FAX: (970)241-7097

December 22, 2009

Mrs. Susan Bachini Nall
Branch Chief
Colorado West Regulatory Branch
400 Rood Avenue, Room 142
Grand Junction, CO 81501

RE: Permit No. SPK-2008-00722 Bull Creek Reservoir #4

Dear Sue,

As you know I am the new Ecological Program Coordinator for WestWater Engineering. In that capacity, I have been tasked with reviewing the current permitting processes and projects that are in various stages of completion. I recently reviewed the above referenced permit and have a few questions with regards to how we should proceed.

It is my understanding that prior to my arrival, WWE was contracted by Bull Creek Reservoir Canal and Power to act on their behalf in this and future permitting processes. Brett Fletcher of our office has completed a Wetland Delineation in anticipation of a future expansion to decreed water levels. At this time, we are submitting the wetland delineation as background documentation for the wetlands that exist within the reservoir basin.

Based on my review, I am confused on why the permit for dam construction was issued with a subsequent restriction to not allow the reservoir to be filled. In my experience, and with regards to many other permits that I have reviewed, I have never seen a situation in which water has been regulated as a fill. Please advise WWE on how best to proceed with a review process or permitting mechanism for the filling of the reservoir. I have discussed the situation with others here at WWE who have worked out an operations plan that the permittee is willing to implement. The plan ensures a drawdown that will expose the existing wetlands within the reservoir basin for no less than 50% of the growing season. Based on the research conducted at Overland Reservoir entitle Periodic Inundation at Overland Reservoir, Sept 2007, this is sufficient for the wetlands to persist. It is our suggestion that including an additional condition to the existing permit to comply with the plan may be the most prudent way to handle the issue at hand.

We would like to meet with you at your convenience on December 23rd to discuss this or other potential solutions to the situation we have identified. Thank You for your review.

Sincerely,

Michael J. Villa
Ecological Program Coordinator

Exhibit 11
1/22/2010 ACOE Response Email Memo Letter

Michael Villa

From: Nall, Susan SPK [Susan.Nall@usace.army.mil]
Sent: Monday, January 11, 2010 9:33 AM
To: Michael Villa
Cc: Sheata, Carrie A
Subject: Bull Creek Reservoir #4, USACE #2008-722

Importance: High

Mike –
I am responding to your submittal dated December 22, 2009, regarding permit number 2008-722 for Bull Creek Reservoir #4. This permit was issued in July 2008 and verified the use of NWPs #3 (maintenance) and #14 (road crossings) for work related to the dam and portions of the FS access road to this reservoir. The permit specifically states that "**The raising of the existing water level from the existing elevation is not authorized.**" As you state, water is not a regulated fill. However, the impacts to wetlands caused by reservoir inundation is regulated as a *secondary impact* associated with direct fill for dam rehabilitation. In this particular case, we separated the two and considered only the direct fill at the dam with an indication that secondary impacts to other wetlands would be considered at a later time with another permit submittal. The intent of this email is to explain our permit decision and advise you, as new consultant for the applicant Bull Creek Reservoir, Canal and Power Company, on how to proceed.

This action was handled uniquely as a two part activity - one for direct impacts at the dam and road (NWPs) and two for the indirect impacts associated with reservoir filling (IP to be submitted later). A clear intent for a two part analysis exists due to the emergency status of the request and indication by the applicant (through their consultant Environmental Solutions) to provide a later permit submittal for secondary impacts to wetlands due to reservoir filling. Basically, our breach in protocol for permit handling was done as a stop gap measure so that funding would not be lost by the applicant.

When a permit application is received by our office, our first task is to assess jurisdiction (Do waters exist? If so, how much and what kind?) and then we assess the direct and indirect impacts to aquatic resources. This second task allows us to select the most appropriate permit option (NWP, RGP, or IP). In this specific case, the application was presented as time sensitive due to financial constraints by the applicant. Instead of considering all direct and indirect impacts to aquatic resources caused by this project – only direct impacts at the dam site were considered. This resulted in a NWP#3 verification for the direct impacts *only* with an understanding and promise by the applicant to provide additional details later for our assessment and permitting of the indirect impacts that the dam rehabilitation activities allowed (i.e. reservoir filling). The permitting options for this secondary impact to wetlands include 1) modification of the existing NWP#3 if impacts are minor; or 2) revocation of NWP#3 and processing of an after-the-fact IP.

Before we proceed with advice for next steps, our file record indicates some missing information. Specifically,

a. When was work completed on the dam and FS roads? Is all fill work within waters complete?
b. Has construction of the approved mitigation site been completed as planned and approved (Special Condition #1)? Please note that written confirmation of mitigation success is required by our office (Special Condition #5).
c. Where are the pre- and post-construction photographs of the project sites as requested (Special Condition #4)?
d. Where is the signed Compliance Certification form? We have not yet received this required item.

Moving on…
Our current understanding is that: 1) the applicant wishes for us to verify a delineation prepared by your office for wetlands at this site; and 2) the applicant wishes to fill the reservoir to decreed water levels. These requests were just recently submitted, but present some problems for our office. First, verification of jurisdictional determination in the winter months is not possible. JDs are done in the spring and summer and sometimes fall months. This timing issue presents a problem as reservoir filling to the 1984 level is requested for next spring. Our preferred option is to have the applicant fill the reservoir this spring to the restricted water level, allow us to field verify the mapped reservoir fringe wetlands this spring/summer, and then proceed in assessing impacts for the future 1984 level inundation of these wetlands. We also

discussed another less preferred option of accepting a preliminary JD. This would require you to generously reassess mapped wetlands and have the applicant sign and submit our preliminary JD form. If this were accepted by our office, we would then need to use this wetland mapping to consider the indirect impacts to these aquatic resources caused by reservoir filling. Again, the regulated activity for this review was fill activities within waters at the dam, but the indirect impacts were not considered at the time of submittal and they must be assessed before reservoir filling to 1984 levels occurs.

In summary, our verification of NWP#3 for reservoir work only allowed for the direct impact to aquatic resources at the dam. A permit modification or revocation and IP processing is now required by us to assess the secondary impacts to other aquatic resources caused by the dam rehab and filling the reservoir above the restricted level. In order for us to proceed, we ask that West Water Engineering do the following:

1. Discuss our preferred option of filling the Bull Creek Reservoir #4 this spring to the restricted water level with your client. Provide us the applicant's response to this strategy.
2. Provide the additional information missing as identified above (items a-d) to ensure good compliance standing for the applicant. Please submit this information by the end of this month.
3. Coordinate a spring/summer field visit to this site with our office to verify the reservoir fringe wetland mapping effort. As you know, field flags must be numbered and intact after snow melt and the applicant may prefer to request this delineation verification under our preliminary JD procedures.
4. Provide an assessment of the indirect impacts that will occur to aquatic resources at this site due to reservoir filling to the 1984 level – even with a revised operation plan. For unavoidable impacts, compensatory mitigation will be required.
5. Provide timelines and a reservoir operation plan for the 1984 reservoir level as well as any monitoring plans.

Please provide the information requested in this email as soon as possible. Feel free to contact me if you have any questions or wish to discuss this email further. If our NWP verification must be revoked and an individual permit processed, be aware that there may be a need for the applicant to make adjustments to the dam. Please know that our handling of permitting at this reservoir was unique. The file indicates that it was clearly the intent of the applicant to get a second permit in order to allow evaluation for 1984 level reservoir filling impacts. It was always our intent to handle this action in two parts. Of course this "piece mealing" of sorts is not a good way to handle permits and causes confusion. Even though we did not follow our normal permitting procedures in this instance, we expect to complete proper assessment now and ensure full CWA compliance. Your cooperation and assistance with this task is appreciated.

Susan Bachini Nall
Chief, Colorado West Regulatory Branch
U.S. Army Corps of Engineers
400 Rood Avenue, Room 142
Grand Junction, CO 81501
(970) 243-1199, #16
(970) 241-2358 fax
Email: susan.nall@usace.army.mil
Website: www.spk.usace.army.mil/regulatory.html

*** *CORPS ENVIRONMENTAL PRINCIPLES* ***
- Strive to achieve environmental sustainability
- Recognize the interdependence of life and the physical environment
- Seek balance and synergy among human development activities and natural systems
- Continue to accept corporate responsibility and accountability under the law
- Seek ways and means to access and mitigate cumulative impacts to the environment
- Build and share an integrated scientific, economic, and social knowledge base
- Respect the views of individuals and groups interested in Corps activities

Please let us know how we are doing by submitting a customer service survey at http://per2.nwp.usace.army.mil/survey.html

Exhibit 12
1935 Special Use Permit Application

Form 866.

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

SPECIAL USE APPLICATION

(Case Designation.)

Application is hereby made for permit to use the following described lands: Sections 19 & 20 also sections 28 & 29 T. 11 S. R 95 W. 6th P. M.

for the purpose of raising the dams of the Bull Creek Res. & Canal and Palmer Cr. reservoir for the purpose of storing more water

(State fully the nature of the intended use.)

Construction of intended improvements will begin within 12 months and be completed within 2 years ~~months~~; the premises will be used at least 30 days each year; the contemplated improvements will cost approximately fifteen thousand dollars and will consist of the following: earth, wash and rock faced dams.

Nov. 22 1935
(Date of application.)

E. L. Stewart Jr. Secy
(Signature of applicant.)

Bull Creek Reservoir
(Post-office address.)

and Canal Co

Mesa, Colo.

(See reverse side for general conditions under which permits are granted.)

8—3430

Permits are usually granted subject to the following general conditions and such special conditions as may be found desirable:

1. That there will be compliance with the regulations of the Department of Agriculture governing the National Forest and with all sanitary laws and regulations applicable to the premises.

2. That the premises will be kept in a neat and orderly condition and all refuse disposed of and outhouses and cesspools located as directed by the forest officers.

3. That all reasonable precautions will be observed to prevent and suppress forest fires.

4. That if engaged in business the permittee will conduct same in an orderly manner and in accordance with State as well as Federal laws.

5. That the permit is granted subject to valid claims.

6. That no timber will be cut or destroyed except under permit obtained from the forest officers.

7. That an annual rental charge will be paid.

8. That when requested by forest officers, a way across the land, covered by permit, will be provided for the free ingress or egress of forest officers and the users of National Forest and purchasers of National Forest products.

8—3430

Exhibit 13
1942 Special Use Permit Application

Form 964
(Revised May 1929)

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

REPORT ON APPLICATIONS FOR SPECIAL-USE PERMITS AND RIGHTS OF WAY

U
Uses Granted: Bull Creek Reservoir, Canal & Power Co.
Bull Creek Reservoir No.4.
Denver 052197
(Class designation)

9/17/40
(Date of examination)

1. Applicant:

Name and address; if corporation or association, name and address of representative.

Bull Creek Reservoir, Canal, & Power Co. Neal B. Johnson, Molina, Colo.- Pres. President of Co., E.D. Stewart, Secretary.

2. Kind of permit and intended use:

As reservoir, stating approximate area and capacity; conduit, length, and size; hotel or residence, size and kind of construction; power, irrigation, summer home; if pasture, drift fence or corral, state whether applicant has grazing permit and for what number of stock, also whether other lands are enclosed and number of acres; state what use is to be made of proposed structure.

Reservoir to be used for the storage of irrigation water. Length of dam - 620 ft. Height - 27 ft. Depth of water - 22 ft. Capacity - 312.69 Acre ft. Earth dam, rock riprapped in front. Pipe laid for 3:1 front and 2:1 back slope.

3. Location, and status of land affected:

If no map is filed with application, sketch map should be made on Form 878 if required by Supervisor; status should be shown on map when one is made, also any claims or improvements; terminal points of roads and trails should be given.

Sec. 20 & 29 as shown on map submitted by company. All National Forest land. This is an enlargement of a reservoir already owned by the company. No other uses are involved. No roads or trails are affected.

4. Character of land:

General description, with discussion of adaptability for proposed use.

Location of reservoir is on the main Bull Creek drainage. It is a small basin suitable for the storage of water. The stream is small, but provides ample water to fill the reservoir.

5. Timber:

State approximate amount and kinds of timber which will be destroyed; what charge should be made for it. If large amount of timber will be destroyed it may be scaled later as directed by Supervisor.

8—552

No commercial timber will be destroyed.

6. Conditions in permit:

State fully with reasons therefor, if not apparent, with reference to character of structures, sanitation, care with fire, etc. Bond required in sawmill cases, not usual in others; if recommended, give reasons and amount; time for beginning and completing construction; what annual rental; no charge made for easements.

~~The stipulations already agreed to by the company in the original easement filing are sufficient to protect National Forest interests.~~

The stipulations already agreed to by the company in the original easement filing are sufficient to protect National Forest interests.

7. Other remarks:

State any facts of which you have knowledge which might affect granting of permit or future use of the land.

There are no objectionable features which would make this enlaggement undesirable. The stream is too small to move timber over and the site is already occupied by the present reservoir.

8. Recommendations

I recommend that this application be approved.

October 29, 1942
(Date)

Gordon D. Harp
(Signature)

Forest Ranger
(Title)

Approved, _____, 19____

_____
(Signature)

_____
(Title)

NOTE.—The subheadings are intended to be suggestive and are not exhaustive of the points which should be discussed. The discussion under each heading should be full and appropriate to the case under consideration. If this form does not provide sufficient space, additional sheets may be used and attached to this form.

U. S. GOVERNMENT PRINTING OFFICE 8—552

Exhibit 14
Forest Service Scope of Work

APPENDIX C

Scope of Work

I. Work Plan

This schedule assumes that a decision memo (DM) documenting a categorical exclusion (CE) will be prepared for this project. If the Forest Service (USFS) determines, based on scoping or subsequent analysis, that an Environmental Assessment (EA) is required, or if other developments require a revised schedule, necessary revisions will be prepared and attached to this document as an amendment.

Many of the actions listed below have already occurred. The proposal for this project first came in on December 20, 2006, as an enlargement of the Bull Creek No. 4 Reservoir's dam. The Bull Creek Reservoir, Canal and Power Company's water rights were placed on the State's abandonment list in 2000, and the company wanted to enlarge Bull Creek #4 Reservoir in order to capture those water rights.

We held a meeting in the Grand Junction office to discuss the project in June 2007. In order to determine what the scope of the work to be done would be and to be able to determine a fair cost recovery amount, we had a site visit in August 2007. It was during that trip that we discovered the existence of fens in and around the reservoir basin. Some of the fens had been impacted since the construction of the dam in the early 1900s; however, new inundation of fens would occur if the dam and reservoir were enlarged. Because of our difficulty in moving forward with the Hunter Reservoir EIS because of the fen issue, we were uncertain at that time whether an EA would be adequate for the project. As a result of the various meetings held between the company, its consultants and Forest Service specialists, the company decided in December 2007 to amend their proposal to only rehabilitate the dam so that the reservoir could store water again to its pre-1984 level and not enlarge it. They have a loan from the CWCB, and getting construction at least started this year is required by the terms of that contract.

The Forest Service's wildlife biologist has been reviewing several drafts of the BE and MIS reports and will be preparing the BA for this project. Because improvements will need to be made to the road and trail accessing the reservoir in order to accommodate heavy equipment, the District's Civil Engineering Technician will be working with the company on a road use permit.

Task	Date	Expected Completion Date
Review Application and Plan of Development	12/20/2006	01/2007
Revision:	12/09/2007	01/2008
Preliminary response to application to applicant	05/2007	
Revision:	01/2008	01/04/2008
Enter Project into Special Uses Database (SUDS)	05/2007	05/16/2007
Revision:	12/2007	12/09/2007
Establish Cost Recovery Estimation	03/2008	03/06/2008
Scope of Work Preparation	03/2008	03/06/2008
Submit for Review/Concurrence SO + RO	03/2008	03/06/2008
Complete Transmittal for Reimburseable Advance		
Collection Agreement (RACA) Team in Albuquerque		04/07/2008
Obtain Signature on Agreements from Applicant/SO		04/07/2008
Mail to RACA for Processing/Billing	04/2008	04/08/2008
RACA notifies District Payment is Received	04/2008	04/21/2008

Initiate NEPA

Public Scoping Scoping Letters/Telephone Calls	07/2007	07/11/2007
Resource Specialist/Contractor IDT Meeting Pre Field Review	06/2007	06/19/2007
Resource Specialists Field Review with Contractor	07/2007	07/15/2007
Specialist Reports Due	03/15/2008	
Review Specialist Reports	03/16/2008	
Prepare Catagorical Exclusion/Decision Memo	03/31/2008	

If Approved

Prepare Authorization Operation and Maintenance Plan	04/01/2008	
Establish Cost Recovery Estimation for Monitoring	04/15/2008	
Enter into SUDS Scope of Work Preparation	05/01/2008	
Submit for Review/Concurrence SO + RO	05/01/2008	
Complete Transmittal for Reimburseable Advance Collection Agreement (RACA) Team in Alburquerque Obtain Signature on Agreements from Applicant/SO Mail to RACA for Processing/Billing for Monitoring		05/20/2008
RACA notifies District Payment is Received		07/01/2008
Notify Holder of Authorization to Initiate Construction		07/2008
Monitor Construction		07/2008
End Cost Recovery		2009 (weather dependent)

Information to be supplied by Applicant

BE/MIS
As built drawings of rehabilitated dam
Copy of the 404 Permit issued by Corps of Engineers

II. FINANCIAL PLAN
(Agency cost for processing application)

Estimate for Fiscal Year 2008

PROCESSING

	Estimated Hours	Daily Rate/Estimated Cost
Case Manager/Permit Administrator	72	319.00/day, 39.88/hr., 2,871.36
Engineer/Engineering Tech	40	263.00/day, 32.88/hr., 1,315.20
Biologist	80	305.00/day, 38.13/hr.,3,050.40
Archeologist	8	130.00/day, 16.25/hr.,130.00
Soil Scientist	16	377.00/day, 47.12/hr., 753.92
Timber/Silviculture	16	251.00/day, 31.38/hr., 502.08
Total Labor Cost - Processing	**232**	**8,622.96**

Estimated Operating Costs
Travel: Vehicle Mileage/Fuel Costs
Estimated Trips 3 @ (2x45) 90 miles = 360 miles @ $0.34/mile = $122.40

Miscellaneous Supplies $_____
Printing/Publication $_____
Total Operating Costs **$ 122.40**

Final Calculations
Total Labor Costs $ 8,622.96
Total Operating Costs $ 122.40
Total Direct (Labor and Operating) Costs **$ 8,745.36**

Indirect Cost Rate 8 % (Determined by ASC) $ 699.63 (please correct the percentage if need be) 130.00

PROCESSING GRAND TOTAL $ 9,444.99 rounded to **$ 9,445**

381.

Program of Work

FY2006

Summary			
Project/work Description:	Bull Creek Dam Rehabilitation	**Objective/Goal:**	
Agreement Number:	08MJ-11020402381	**Proposed Target:**	
Proposed Fund Code:		**PAR Code:**	
Forest Priority:		**Unit of Measure:**	
Work Activity:	Bull Creek Dam Rehab	**Program Area:**	Lands
Project Leader:	Linda Bledsoe		
Proposed Expenditures:	$ 8,745.36	**Subunit/District:**	Grand Valley

Personnel costs (Perm. Appts. only)				
Employee Name	**# of Days**	**Daily Rate**	**Total Costs**	**Comments**
Linda Bledsoe	10	$319.00	$ 2,871.00	
Julie Grode	10	$305.00	$ 3,050.00	
Cindi Range	5	$ 263.00	$ 1,315.00	
Dea Funka	1	$ 130.00	$ 130.00	
Christie LaDue	2	$ 251.00	$ 502.00	
Terry Hughes	2	$ 377.00	$ 754.00	
			$ -	
	Total Personnel costs:		$ 8,622.00	

Agreements			
Description	**Cooperator**	**Contributed dollars**	**Appropriated dollars**
	Total Agreement costs:		$ -

Temporary Personnel costs				
Employee Name	**# of Days**	**Daily Rate**	**Total Costs**	**Comments**
			$ -	
			$ -	
			$ -	
			$ -	
			$ -	
			$ -	
			$ -	
			$ -	
			$ -	
	Total Temp. Pers. costs:		$ -	

Vehicle Costs				
Vehicle #	**FOR**	**#Months**	**Total Costs**	**Comments**
			$ -	
			$ -	
			$ -	
			$ -	
Vehicle #	**Use**	**#Mi/Hrs**	**Total Costs**	**Comments**
	0.34	$ 360.00	$ 122.40	
			$ -	
			$ -	
			$ -	
	Total Temp. Pers. costs:		$ 122.40	

Processing	Amendment# :	Type of NEPA : CE		
Item	**Item Description**		**Est. Hours**	
PERMIT ADMINISTRATOR	PERMIT PREP, NEPA		72	
ENGINEER/ENGINEERING TECH	ROAD USE PERMIT PREP, SITE VISIT		40	
WILDLIFE BIOLOGIST	BE & MIS REPORT REVIEW, BA PREP, SITE VISIT		80	
ARCHAEOLOGIST/CULTURAL RESOURCES	SITE VISIT, CULTURAL RESOURCE SURVEY, REPORT		8	
SOIL SCIENTIST	SITE VISIT, REPORT		16	
TIMBER/SILVICULTURE SPEC/TECH	SITE VISITS, CONTRACT PREP		16	
	Total Hours :		**232**	**Category :** 6

For Categories 5 or 6 Determine Estimated and Actual Costs:

Item	Item Description	Hourly Rate	Estimated Hours	Estimated Cost	Actual Hours	Actual Cost	Comments
ARCHAEOLOGIST/CULTURAL RESOURCES	SITE VISIT, CULTURAL RESOURCE SURVEY, REPORT	$16.25	8	$130.00			
ENGINEER/ENGINEERING TECH	ROAD USE PERMIT PREP, SITE VISIT	$32.88	40	$1,315.20			
PERMIT ADMINISTRATOR	PERMIT PREP, NEPA	$39.88	72	$2,871.36			
SOIL SCIENTIST	SITE VISIT, REPORT	$47.12	16	$753.92			
TIMBER/SILVICULTURE SPEC/TECH	SITE VISITS, CONTRACT PREP	$31.38	16	$502.08		$0.00	
WILDLIFE BIOLOGIST	BE & MIS REPORT REVIEW, BA PREP, SITE VISIT	$38.13	80	$3,050.40			
	Sub - Totals :		**232**	**$8,622.96**		**$0.00**	
Other Expenses	**Item Description**			**Estimated Cost**		**Actual Cost**	**Comments**
VEHICLE	MILEAGE			$122.40			
	Sub - Totals :			**$122.40**			
	Totals :			**$8,745.36**		**$0.00**	
	Add Burden Rate :	**8 %**		**$699.63**		**$0.00**	
	Grand Totals :			**$9,444.99**		**$0.00**	

Exhibit 15
Decision Memo For CE Authorizing Construction

DECISION MEMO
BULL CREEK RESERVOIR, CANAL AND POWER COMPANY
BULL CREEK RESERVOIR #4 DAM REHABILITATION

USDA, FOREST SERVICE
GRAND MESA, UNCOMPAHGRE & GUNNISON NATIONAL FORESTS
GRAND VALLEY RANGER DISTRICT, COLORADO

Proposed Action

The Bull Creek Reservoir, Canal and Power Company (the Company) proposes to repair the dam and outlet works on Bull Creek Reservoir No. 4 (BCR#4) in order to meet current USFS and Colorado State Engineer's Office (SEO) safety standards. The reservoir is currently under two filling restrictions enforced by the SEO. The restrictions effectively result in a zero fill order for the reservoir until such time safety improvements are completed.

Bull Creek Reservoir No. 4 is located in Sections 20 and 29, T. 11 S., R. 95 W., 6th P.M. The reservoir is located approximately 5 miles from Colorado State Highway 65 near the Mesa Lakes Recreation Complex. The area of NFS lands affected would be between two and three acres.

A fill restriction was placed on the reservoir in 1984 because of a substandard dam crest width. Following a 2005 State dam safety inspection, the SEO ordered a further reduction of the active storage level of the reservoir. Both filling restrictions result in decreased storage. The initial filling restriction and consequent reduction in storage has resulted in a temporary loss of storage that was included in the 2000 decennial water rights abandonment proceedings initiated by the SEO wherein the Division Engineer claimed that the storage capacity of the reservoir was not as large as stated in the perfected decrees for the reservoir. Repairing the dam will prevent the senior water rights placed on the abandonment list from being abandoned.

The current proposal presented herein is the result of a Stipulation Agreement between the State and Division Engineers and the Company to restore BCR#4 to its historical normal water surface elevation of 9861.0 feet Mean Sea Level (MSL).

The proposed action will accomplish the following:

1. Remove a fill restriction imposed by the State Engineers Office (SEO) on BCR #4 which has also resulted in a filing by the Division Engineer for partial abandonment of senior water rights.

2. Address a potential additional restriction of BCR #4, which was identified by a Dam Safety inspection in 2005.

3. Restore the reservoir to its original full functioning historical capacity (pre-1984 fill restriction level) and meet current SEO safety requirements.

The work is anticipated to be done during Summer 2008.

Scoping and Public Involvement

Analysis of the proposal by the District Specialists indicated no significant issues. A biological assessment (BA), biological evaluation (BE) and management indicator species (MIS) report were prepared for the project. A cultural resource survey of the dam and reservoir area was completed during 2007, and no cultural resources were discovered.

A scoping letter was mailed to 25 individuals and entities on July 11, 2007. Two responses in support of the project were received from members of the board for the Bull Creek Reservoir, Canal and Power Company. This proposal was also listed in the Schedule of Proposed Actions for the Forest.

Decision

It is my decision to issue a temporary special use permit to the Bull Creek Reservoir, Canal and Power Company for rehabilitation of the dam on Bull Creek Reservoir #4. The permit will also authorize use of NFS lands for a worker camp onsite. The applicant has submitted all necessary documents and has met all Forest requirements to be a holder of this special use authorization. This action has been categorically excluded from documentation in an Environmental Impact Statement (EIS) or an Environmental Assessment (EA) under FSH 1909.15, Section 31.2, Item 3.

Specific design criteria (see Exhibit A) and stipulations are being included in the temporary special use permit in order to minimize or eliminate environmental effects from this project.

The Bull Creek Reservoir, Canal and Power Company is also being required to obtain a road use permit, mineral materials contract, and timber sale contract from the Forest Service prior to the start of construction.

Reasons for Categorical Exclusion

This is an administrative action as defined under FSH 1909.15, Section 31.2, Item 3, "Approval, modification, or continuation of minor special uses of National Forest System lands that require less than five contiguous acres of land.

The effects of implementing this action will be of limited context to either the physical or biological components of the environment. Analysis has shown that this project will have no extraordinary circumstances that might cause significant effects under the guidelines and direction found within FSH 1909.15. Therefore, this action can be categorically excluded from documentation in an environmental assessment or environmental impact statement.

Findings Required by Other Laws

The proposed action is consistent with the management direction for management area 6B (emphasis on livestock grazing) for the area where the reservoir is located and management area 2B (emphasis on roaded natural and rural recreation opportunities) along the access route in the Grand Mesa, Uncompahgre, and Gunnison Forest Land and Resource Management Plan, FSM 2700, and FSH 2709.11.

Implementation

Pursuant to 36 CFR 215.8(a)(4), this decision is not subject to a higher level of appeal. Implementation of this decision may begin immediately after receiving a notice to proceed from the Forest Service.

Contact Person

For further information concerning this decision, contact Linda Bledsoe, Realty Specialist, Grand Valley Ranger District, 2777 Crossroads Blvd., Unit 1, Grand Junction, CO 81506, by telephone (970) 263-5802, or by e-mail at lbledsoe@fs.fed.us.

Connie Clementson

CONNIE CLEMENTSON
District Ranger
Grand Valley Ranger District
Grand Mesa, Uncompahgre and Gunnison
National Forests

4-8-08
DATE

EXHIBIT A

Additional Specifications for
Bull Creek Reservoir No. 4 Dam Rehabilitation

General

1. Work shall not begin until the Forest Service issues a notice to proceed. The notice to proceed will not be issued until all required plans outlined in this exhibit are submitted to and approved by the Forest Service. Additionally, a copy of the 404 Permit issued by the Corps of Engineers for this project must be given to the Forest Service before permission to begin work will be given.

2. The Authorized Officer's Representative for this permit is Linda Bledsoe, Realty Specialist. Her phone numbers are (office) 970-263-5802 and (cell) 970-596-5690.

3. The Permittee shall designate an on-the-ground person with authority to implement any changes that might be needed, as instructed by the authorized officer's representative, in order to meet the terms and conditions of this permit.

4. Permittee shall obtain a mineral materials contract from the Forest Service (contact is Liz Mauch, 970-263-5823) for excavation of borrow and riprap materials to be used in project prior to commencement of construction.

Air

1. Air quality will be maintained by permitting of all regulated air pollution sources through the Colorado Department of Public Health and Environment (CDPHE), Air Pollution Control Division, assuring compliance with all federal and state standards. Federal and hence State law requires that fugitive dust be controlled on contiguous construction sites where more than 25 acres of ground are disturbed and the project is longer than six (6) months in duration. The BCR#4 site will not have more than 25 acres of disturbance at any given time or in totality, and the duration of construction is not anticipated to last more than 6 months. Therefore, no Air Pollution Emissions Notice will be required.

2. Such additional methods and devices as are reasonable to prevent, control and otherwise minimize atmospheric emissions or discharges of air contaminants will be used, including:

- No burning of combustible construction materials and rubbish. Burning of slash may be allowed, pending USFS approval, provided the risk of fire spreading is extremely low, and any USFS and appropriate local burn permits are obtained.

- A dust-preventative treatment or water may periodically be applied to access and haul roads as needed to minimize dust.

Noise

1. Noise pollution will be minimized by compliance with applicable laws and regulations regarding the prevention, control and abatement of harmful noise levels.

Historical and Archaeological Resources and Paleontology

2. All employees of the Company, its contractors, subcontractors, consultants or other parties associated with the project will be instructed that, upon discovering evidence of possible prehistorical, historical or archeological objects, work will cease immediately at that location and the Company's engineer or his representative will be notified, and provided with the location and nature of the findings. The FS will be notified as soon as practicable. Care will be exercised so as not to disturb or damage artifacts or fossils uncovered during excavation operations.

3. Equipment operators will be informed that the removal, injury, defacement or alteration of any object of archaeological or historic interest is a federal crime and may be punishable by fine and/or imprisonment.

4. During project implementation, in the unlikely event of an inadvertent encounter of Native American remains or grave objects, the Native American Graves Protection and Repatriation Act (NAGPRA) requires that all activities must cease in their discovery area, that a reasonable effort be made to protect the items found or unearthed, and that immediate notification be made to the FS Authorized Officers as well as appropriate Native American group(s). Notice of such a discovery may be followed by a 30-day construction delay (NAGPRA Section 3(d)). Further actions may also require compliance under provisions of the National Historic Preservation Act of 1966 (NHPA) and the Archaeological Resources Protection Act.

Water/Hydrology

1. Implementation of Best Management Practices as described in the soils section below would minimize effects, such as sedimentation, on Bull Creek from construction activities.

Soils

1. A Stormwater Management Plan (SWMP) is incorporated into the design drawings. The final, approved design drawings will be submitted to the Forest Service upon approval by the SEO, and at least 30 days prior to the anticipated start of construction. The plan describes how wastewater from general construction activities, such as drain water collection, drilling, grouting or surface runoff from disturbed areas or other construction operations will not enter flowing or dry watercourses without the use of approved turbidity control or containment methods. Approved turbidity control methods for surface runoff include Best Management Practices such as drainage swales and ditches, detention basins, straw or coconut fiber wattles placed in swales, weed free hay bales placed to trap sediment, and guard or drainage trenches surrounding disturbed areas when suitable to the topography of the land. No discharge is anticipated from drilling operations. The only geotechnical drilling that will be required will be installation of piezometers in the embankment and in the foundation of the dam after construction of the embankment is complete. This will not require any discharge of free flowing water. Grouting is anticipated in the lining the outlet pipe. Care shall be taken by the contractor to contain all grout from entering any flowing water while in a liquid or semi-liquid or erodable state.

2. Sediment and erosion control Best Management Practices will be installed to the extent practicable prior to work involving site clearing, stripping, grubbing and stockpiling topsoil, excavation and earthwork. The sediment and erosion controls shall be maintained in functional condition and repaired as needed during the course of construction.

3. A Spill Prevention, Containment and Countermeasure Plan (SPCC plan) will be prepared and submitted to the Forest Service for approval at least 30 days prior to the anticipated start of construction.

The SPCC shall state that refueling or lubricating and storage of hazardous materials, chemicals, fuels, etc., will only take place in designated locations that are more than 100 feet from wetlands and other water bodies or drainages. Secondary containment will only be required if tanks are non-mobile. Mobile lubricating and fuel units will not require secondary containment. The SPCC plan shall outline what actions and BMPs should be taken in case of a fuel or lubricant or other hazardous material spill.

4. Excavated materials or other construction materials will not be stockpiled or wasted near or on stream banks, lake shorelines or other watercourse perimeters where they can be washed away by high water or storm runoff, or can in any way encroach upon the watercourse itself. In the case of BCR#4, the reservoir is currently empty, but the West Branch of Bull Creek runs through the reservoir basin, through the existing outlet works and continues towards Bull Creek. The SWMP referenced above addresses sediment control issues related to keeping sediment from entering the stream.

5. Soil disturbing actions will be avoided during long periods of heavy rain or wet soils to prevent excessive rutting and mobilization of sediment during runoff events. Rutting in the project area is acceptable to the extent that it is not contradictory to obtaining compaction standards required by the SEO.

6. During construction activities, initial clearing operations will fully contain material on-site and not allow material to move into wetlands or into the riparian zone. Excess excavated material and construction debris developed along roads near streams will be disposed of in an area outside of the riparian and wetland areas.

7. Upon completion of construction, the Company will re-grade, prepare a seed bed and reseed temporary road improvements that are intended to be abandoned. No temporary road improvements are anticipated.

8. No mobilization of equipment or use of equipment will be allowed when it will cause undue damage to existing roads and trails. Undue damage done to roads must be repaired by the Contractor per USFS requirements.

Reclamation

A comprehensive reclamation plan is included in the Contract Specifications. The Specifications will be submitted to and approved by the FS prior to construction.

1. Seed

Grass seed will be from the same or previous year's crop. When available, certified weed-free seed will be provided. All seed will be free of prohibited noxious weeds (as defined by the State), and will contain no greater than 1% other weeds. All sites will be seeded with the following mixture as required by the USFS:

Revegetation Seed Mix

Habitat type	Elevation	Species	Lbs/acre (PLS)	% of Mixture
Aspen/Spruce-Fir	8,000-9,500	Mountain Bromegrass	5	26
		Slender Wheatgrass	3	16
		Thickspike Wheatgrass	3	16

		Canby Bluegrass	3	16
		Blue Wildrye	5	26
		Total	19	100

Temporary Revegetation	**Elevation**	**Species**	**Lbs/acre (PLS)**
Regreen (brand name)	All	Tall wheatgrass/winter wheatgrass	20 lbs/acre
Pioneer (brand name)	All	Tritacale/winter wheat	20 lbs/acre

***Possible seed sources*:**
Arkansas Valley Seed Solutions: 877-957-3337; 4625 Colorado Blvd, Denver, CO 80216;
Pawnee Butte Seed Co.: 970-356-7002; P.O. Box 1604, Greeley, CO 80632;
Granite Seed Co.: (801) 531-1456; 1697 W 2100 N, Lehi, UT 84043

Seed will be furnished and delivered premixed in the indicated proportions. Seed bag tags, or the equivalent, shall be provided for each delivery of seed. Tags shall show the guaranteed percentages of purity, weed content, germination, net weight, date of seed testing and date of shipment.

2. Seedbed Preparation

If possible, a minimum of 6 inches of topsoil, borrowed on-site, will be placed over all areas disturbed during construction, with exception of borrow areas within the reservoir basin, which shall be smoothed over, but not reseeded. The seeding will be limited to those areas of disturbance above the normal pool elevation.

Topsoil will not be placed in water or while frozen or muddy conditions exist.

Topsoil shall be track compacted to approximately 80 to 90 percent standard Proctor Density, ASTM D-698, to an appropriate tilth, density, consistency and friability to provide a suitable growth medium for sprouting and seedling survival.

All areas will be graded to drain. The maximum slope steepness will be 2.5H:1V unless otherwise shown on the project drawings or approved in writing by the Company's engineer.

The final surface of the topsoil will be graded to a relatively smooth surface using mechanical or hand raked methods. Localized low spots shall be regraded to allow water to drain.

3. Seed Application

Seeding will typically be accomplished between September 1st and October 30th. No seeding will take place when soils are frozen or excessively wet or dry.

4. Monitoring and Completion of Reclamation

All seeded areas shall be maintained in good condition, reseeded and mulched if and when necessary, until a good, healthy, uniform growth is established over the entire area seeded and until vegetation is established.

On slopes, washouts and rills deeper than three (3) inches deep shall be re-graded and reseeded and the reseeded area maintained until vegetation is established.

An area will be considered to be satisfactorily reclaimed when: a) soil erosion resulting from the operation has been stabilized and b) a vegetative cover at least equal to that present prior to disturbance and a plant species composition at least as desirable as that present prior to disturbance has been established.

Areas not demonstrating satisfactory reclamation as outlined above, will be renovated, reseeded and maintained meeting all requirements as specified above.

Vegetation

1. Preventative actions will include the cleaning of vehicles and equipment prior to bringing them into the project area. This will include washing of transport tractors and trailers and all equipment prior to entering all USFS lands. Inspection of washed equipment will be required by the FS, at least initially.

2. Certified weed-free seed mixtures shall be used for all reclamation, as described above.

3. Treatments will be developed using integrated weed management principles for each species and situation. Treatments may include hand pulling, grubbing, mowing, mulching, seeding, burning, herbicide application and soil management.

4. Monitoring of noxious weeds will be conducted on a scheduled basis to detect new infestations, evaluate prevention and/or treatment success, and identify the need for retreatment.

Wildlife (including Aquatic Wildlife and Special Status Species)

1. Pre-construction surveys have been conducted. If any special status species or habitat is found to be present, the Company will coordinate with the FS to determine the most effective means of mitigating or precluding impacts. No special status species have been located.

2. For the Colorado River fishes, construction practices which maintain existing stream flows and minimize siltation and pollution will protect these species. Best Management Practices described above for soil and water will meet this objective.

Hazardous Materials and Emergency Response

1. The Company will prepare and submit to the FS for approval, a Spill Prevention, Containment and Countermeasure Plan (SPCC plan) to satisfy applicable Federal and State requirements.

2. A Fire/Emergency Response/Health and Safety Plan that addresses the potential for accidents and injuries, and other emergencies will be prepared and submitted to the FS for approval and kept onsite. This plan will be made available to the FS prior to construction and kept on all active locations.

Solid and Sanitary Waste

1. All solid wastes (trash) that result from construction activities shall be contained in a metal bear-proof trash cage. All material in the trash cage shall be removed from the location and deposited in an approved sanitary landfill.

2. Portable toilets will be provided for construction workers at the construction site and the work camp. These will be maintained and removed by the Company via their designated Contractor as appropriate.

Travel Management and Roads

1. The Company will obtain a Forest Service Road Use Permit in advance and approved in writing a minimum of 30 days before construction begins.

2. Project-related vehicular traffic will be restricted to approved locations. Operational equipment will be restricted to the road prism and construction site at all times.

3. Mobilization and demobilization of heavy equipment will be scheduled during the week and not on weekends or Federal holidays to avoid high public traffic periods.

4. Management of surface water run-off, soil stabilization and limiting travel to a single, recognized route will be priorities. All stream crossings and soft areas shall be armored and permanently stabilized unless otherwise directed by the USFS.

5. Road Maintenance: NFSRs and NFSTs will be maintained according to Forest Service road management objectives. Existing NFSRs currently open for use will also receive pre-haul maintenance depending upon their condition and the needs of the project. Pre-haul maintenance will not include road reconstruction or repairs of an extraordinary nature, but may include maintenance of drainage structures, grading the road surface, corrections to cut/fill failures, spot rock applications and rolling dips, etc. The Company will consult with the FS on the degree and manner of preconstruction maintenance, road reconstruction, and ongoing maintenance that will be required. The details of intended road improvements are contained within this document (above).

6. No berms of material will be left on the sides of the roadway during maintenance activities that will impede surface drainage.

7. Maintenance and reconstruction of roads will be done in a manner so as to minimize sediment discharge into streams, lakes and wetlands.

8. The Company's contractor will sign the project area roads in accordance with the "Manual on Uniform Traffic Control Devices" (MUTCD), latest edition, to notify the public to expect occasional construction traffic.

9. The Company will consult with the FS on the removal of road improvements and the eventual degradation of the roads to their pre-construction condition.

Exhibit 16
Geotech Test Hole Special Use Permit Stipulations

EXHIBIT A

DETAILED STIPULATIONS
For
BULL CREEK CANAL, POWER AND RESERVOIR COMPANY
TEST HOLE/PIT TEMPORARY SPECIAL USE PERMIT

These stipulations are hereby made a part of the temporary special use permit dated September 29, 2003, 2003, issued to the Bull Creek Canal, Power and Reservoir Company authorizing the company to dig test holes/pits to determine suitability of the soils for enlargement and/or repair of the dams at Bull Creek Reservoir Nos. 1, 2 and 4.

1. Permittee shall take all reasonable precautions to prevent pollution of air, soil, and water during reconstruction activities. In the event that the Permittee's operations or servicing of equipment result in pollution to soil or water, permittee shall conduct cleanup to restore the polluted site to the satisfaction of the Forest Service.

2. Permittee shall maintain all equipment operating in good repair and free of abnormal leakage of lubricants, fuel, coolants, and hydraulic fluid. Permittee shall not service tractors, trucks, or other equipment on National Forest System lands where servicing is likely to result in pollution to soil or water. Permittee shall furnish oil-absorbing mats, approved by the Forest Service, for use under all stationary equipment or equipment being serviced to prevent leaking or spilled petroleum-based products from contaminating soil and water resources. Permittee shall remove from National Forest System lands all contaminated soil, vegetation, debris, vehicle oil filters (drained of free-flowing oil), batteries, oily rags, and waste oil resulting from use, servicing, repair, or abandonment of equipment.

3. If Permittee maintains storage facilities for oil and oil products in the permit area, Permittee shall take appropriate preventive measures to ensure that any spill of such oil or oil products does not enter any stream or other waters of the United States or any of the individual States. Permittee shall notify appropriate agencies, including Authorized Officer, of all reportable (40 CFR 110) spills of oil or oil products on or in the vicinity of the permit area that are caused by Permittee's employees or contractors, directly or indirectly, as a result of Permittee's operations. Permittee will take whatever initial action that may be safely accomplished to contain all spills.

4. The test holes/pits will be recontoured to as natural a condition as possible, subject to approval by the authorized officer.

5. The following seed mixture shall be used for revegetation of the disturbed area, if directed to do so by the authorized officer:

Wildflowers – any mixture of at least three of the following forb species:

Lupinus alpestris or *argenteus* –	2.5 lbs/acre
Penstemon strictus –	2 lbs/acre
Thermopsis montanus –	2.5 lbs/acre
Vicia Americana –	2 lbs/acre

Grasses

Fairly dry sites	
Elymus trachycaulus – Slender wheatgrass	3 lbs/acre
Bromus carinatus – Mountain brome	6 lbs/acre
Festuca arizonica or *thurberi*	2 lbs/acre
Poa canbyi (P. secunda)	2 lbs/acre

Certified, blue tagged seed shall be used. Lightly rake in soil from the surrounding area over the top of the disturbed site to facilitate germination of the local native seeds on the site.

Exhibit 17
CWCB Loan Document Memo

STATE OF COLORADO

Colorado Water Conservation Board
Department of Natural Resources
1313 Sherman Street, Room 721
Denver, Colorado 80203
Phone: (303) 866-3441
FAX: (303) 866-4474
www.cwcb.state.co.us

MEMORANDUM

TO: Colorado Water Conservation Board Members

FROM: Kirk Russell, P.E.
Mike Serlet, P.E., Chief
Water Supply Planning and Finance Section

DATE: January 16, 2007

SUBJECT: **Agenda Item 9b, January 23-24, 2007 Board Meeting**
Water Supply Planning and Finance Section – New Loans
Bull Creek Reservoir, Canal & Power Company
Reservoir No. 4 Rehabilitation & Enlargement

Introduction

The Bull Creek Reservoir, Canal & Power Company (Company) is applying for a loan in the amount of $1,200,000 from the CWCB to rehabilitate and enlarge Reservoir No. 4. The Company is located in Mesa Colorado (near Grand Junction) and has a system of canals and reservoir on the north side of the Grand Mesa. The project is called the Bull Creek Reservoir No. 4 Rehabilitation and Enlargement Project (Project) and will include the planning, permitting, engineering, and construction. The total Project cost is estimated at $1,333,000. The Project is necessary to comply with the requirements of a Stipulation and Agreement with the State Engineers Office (SEO). The Stipulation, in part, requires the Company to repair Reservoir No. 4 dam to avoid abandonment of 229 acre-feet of restricted storage rights. See attached Project Data Sheet.

The Company received approval of a CWCB loan in September of 2004 for a project which included the repair of Reservoir No. 4 and the enlargement of Reservoirs No. 1 and No. 2. As the project proceeded, it became apparent that enlarging Reservoirs 1 and 2 was not cost effective. In 2006, the Company decided to change the scope of the project and request a new loan for the repair and enlargement of Reservoir No. 4 and no improvements to 1 and 2. This new approach will return the Company's reservoir system yield to its historic level.

Background

The Company has operated five reservoirs (Bull Creek Reservoirs 1 through 5) for nearly 100 years. The water is used for late season irrigation. In 2001 the Division of Water Resources, Division 5 filed a decennial abandonment list with the water court claiming the abandonment of a portion of the storage right in Reservoir No. 4. The water right listed for abandonment was a result of a SEO filling restriction placed on the reservoir due to dam safety concerns in 1984. The abandonment list also

included portions of the decreed storage rights in Reservoirs No. 1 and No. 2. This was due to the fact that both of these reservoirs did not provide the necessary volume for the decreed water storage right. The enlargement of Reservoir No. 4 will return the Company's yield to historic levels.

In October 2003, the Company entered into an agreement with the SEO to restore the capacity of the three reservoirs. Several amendments to the agreement have occurred over the last 3 years and the Company will file an additional amendment to request that the Company be allowed time to repair the Reservoir No. 4; return it to its original capacity and remove it from the abandonment list. In addition, the Company has filed an application in Case No. 06CW261, Division No. 5, for adjudication of an additional 115 ac-ft of storage in Reservoir No. 4. It is our understanding that the requests will likely be granted by the Division 5 Water Court.

Reservoir No. 4 is located on the west branch of Bull Creek above Bull Creek Reservoir No. 3 and Big Beaver Reservoir. The Reservoir is located within the Grand Mesa National Forest. The SEO placed the fill restriction on the reservoir due to a substandard dam crest width and a high phreatic water level in the dam, which may create an unstable embankment and possible failure. In a subsequent inspection, the SEO indicated, that without the needed repairs, a breach order is likely in the next two years.

Feasibility Study

Paul Currier, PE, Water Resource Consultants, LLC of Rifle, has completed the loan feasibility study in accordance with CWCB guidelines. The study includes: a compilation of the stipulations and agreements, preliminary design drawings, cost estimates, and financial analysis. The cost estimate has been prepared by Jeff Allen, PE and Dana Miller, PE of E&C Services of Buena Vista, Colorado. Garrett Jackson, P.E., Dam Safety Engineer (Division 5) has provided valuable input regarding the corrective actions necessary and has indicated that the concept of the proposed repairs is realistic.

The Bull Creek Reservoir, Canal & Power Company

The Company is located in the Town of Mesa, approximately 30 miles east of Grand Junction. The Company provides irrigation water to approximately 800 acres of agricultural land primarily used for cattle ranching. The Company was registered in the State of Colorado in 1895 and is a non-profit corporation in good standing. The Company currently has 19 shareholders and a total of 500 shares of stock. The Company has the power to set members' annual assessments, cut off water deliveries to shareholders that fail to pay assessments, and to sell stock to pay back assessments.

On December 9, 2006, the Company held a Shareholders meeting, which was attended by Kirk Russell. Irvin Johnson, President, described the current scope and cost of the project to the attendees. Shareholders voted unanimously to proceed with the project and CWCB financing.

Water Rights

The Bull Creek Reservoirs hold the senior storage rights on Bull Creek and tributaries to Bull Creek. Many of the senior rights on the creek are also owned and used by shareholders of the Company. Other senior water rights of significance are irrigation rights owned by the Grand Valley Irrigation Company on the Colorado River near Palisade CO. However these senior rights seldom need to place a call during winter and spring snowmelt when the reservoirs fill. The table below shows a summary of existing reservoir capacities, water rights owned by the Company and the potential loss of the rights if corrective action is not taken.

Reservoir Storage Water Rights Summary

Reservoir	Capacity (ac-ft)	Storage Right (ac-ft)	Potential Loss (ac-ft)*
Bull Creek No. 1	80	154	74
Bull Creek No. 2	75	120	45
Bull Creek No. 3	59	59	0
Bull Creek No. 4	203	313	110
Bull Creek No. 5	247	204	0
Total	664	850	229

* Potential loss figures are taken from the Stipulation and Agreement dated 10/31/03

The Company has applied for a 2006 storage right of 115 ac-ft for Reservoir No. 4 and may also apply to have a portion of the senior rights from Reservoir No. 1 & 2 moved to Reservoir No. 4.

Project Description

Three alternatives were analyzed in the feasibility study:

1) No action alternative
2) Rehabilitate and enlarge Bull Creek Reservoir No. 4 ($1.3 million)
3) Enlarge Bull Creek Reservoir Nos. 1 & 2 and rehabilitate Reservoir No. 4 ($600,000)

The Company originally determined that Alternative 3 provided the best value to the shareholders. As the project continued to develop, the cost and difficulties associated with enlarging Reservoirs 1 & 2 became insurmountable. The Company has decided to pursue Alternative 2 which will provide a better benefit cost ratio. The rehabilitation and enlargement of Reservoir 4 will retain the Company's valuable senior water rights by repairing the dam and will replace the abandoned water rights from Reservoir 1 & 2, with the enlargement. Access to the reservoir is difficult and the timing of construction will be critical to maintain the use of the water during the irrigation season.

PROJECT COST ESTIMATE	
Planning/Engineering	$157,000
Construction	$984,000
Contingency	$137,000
Construction Services/Management	$55,000
Total	$1,333,000

Construction is expected to begin during the summer of 2007 and be completed by October 2007. This is a very aggressive schedule and will require final design plan approval by the SEO, Forest Service permitting, and other reservoir project hurdles prior to starting the project. As a result, the Company has decided to pre-qualify bidders and thoroughly evaluate each bidder's approach and assumptions prior to awarding a contract. If the contractor fails to complete the project during the summer construction season of 2007, significant cost to the project and impact to the water users will result.

Financial Analysis

Table 1 shows a summary of the financial aspects of the loan request. The Company qualifies for an Agricultural interest rate of 2.5% for 30-years. Ute Water Conservancy District owns 7% of the Company stock. This low percentage of municipally owned stock does not materially impact the

stated interest rate. The Company will finance 90% of the total Project cost with a CWCB loan. The remaining cost will be paid by a special assessment of the shareholders and Company cash reserves. The Company has adjusted the assessment rates as needed for the last four years in order to cover operating and repair costs resulting in an overall average financial strength. Rate increases were as follows: 2000 - $5/share; 2001 - $7/share; 2002 - $20/share; 2004 - $30/share; 2005 – Current $50/share.

Table 1. Financial Summary

PROJECT/LOAN		
Total Project Cost		$1,333,000
CWCB Loan (90% of Total Project Cost)		$1,200,000
CWCB Annual Loan Payment		$57,300
CWCB Loan Obligation (including 10% debt reserve funding)		$63,030
Special Assessment per Share (500 shares)		$270/share
Annual Assessment per Share for Project Only (500 shares)		$126/share
Total Cost per Acre-Foot of Recovered/New Storage (418 AF)		$3,200/AF
COMPANY	**Current**	**Future**
Share Assessment	$50/share	$150/share
Annual Water Delivery	650 ac-ft	900 ac-ft

Creditworthiness: The Company will pay off a current loan of $160,000 held by the Palisades National Bank (PNB) in Palisade, Colorado with a portion of the CWCB loan. The PNB loan was used to begin reconnaissance work on this Project. The Company will have no other debt service on this Project. Repayment will be accomplished by increasing share assessments as necessary.

Table 2 shows the Financial Ratios for the Company. Cash reserves are weak which is typical of irrigation companies since they attempt to set assessment rates at or near operating costs.

Table 2. Financial Ratios

Financial Ratio	***Without Project***	***With Project Future Years***
Operating Ratio (revenues/expenses) weak: <100% - average: 100% - 120% - strong: >120%	100%(Average) $10K/10K	100%(Average) $10K/10K
Debt Service Coverage Ratio (revenues-expenses)/debt service weak: <100% - average: 100% - 120% - strong: >120%	No Debt	103%(Average) $75-10K/63K
Cash Reserves to Current Expenses weak: <50% - average: 50% - 100% - strong: >100%	40%(Weak) $4K/10K	40%(Weak) $4K/10K
Annual Operating Cost per Acre-Ft Delivered* weak: >$20 - average: $10 - $20 - strong: <$10	$15(N/A) $10K/650	$83(N/A) $75K/900

** based on current delivery of 650 AF and a future delivery of 900AF*

Collateral: As security for this loan, the Company will pledge assessment revenues backed by an assessment covenant. In addition, the Shareholders will pledge individual stock certificates representing no less than 90% of the Company stock. Ute Water Conservancy District has shown support for the project and indicates a value of this stored water at $3,000/ac-ft. The value of 500 shares of Company stock which produces 900 ac-ft of water is $2,700,000. This security is in compliance with CWCB Loan Policy #5 (Collateral).

Staff Recommendation

Staff recommends a loan not to exceed $1,212,000 ($1,200,000 for project costs and $12,000 for the 1% Loan Service Fee) to the Bull Creek Reservoir, Canal and Power Company for project costs, not to exceed 90% of the costs associated with the Bull Creek Reservoir No. 4 Rehabilitation and Enlargement Project from the Severance Tax Trust Fund Perpetual Base Account. Loan funds may be used for qualifying project expenses previously incurred. The loan terms shall be based on the current agricultural rate of 2.50% per annum for a 30-year term. Final approval of the loan shall be conditioned upon all standard contracting provisions of the CWCB Loan Program. Security for the loan shall be collateral in compliance with CWCB Loan Policy #5.

Staff further recommends the following approval conditions:

1) Shareholders shall convey a security interest in the Company stock certificates to CWCB in a quantity that exceeds 90% of all Company stock.

2) Company will payoff the current loan held by the Palisades National Bank (PNB) in Palisade, Colorado, with an estimated balance of $160,000.

3) As part of this loan approval, Staff recommends de-authorization of the previous Severance Tax Trust Fund Perpetual Base Account loan to the Bull Creek Reservoir, Canal and Power Company (Agenda Item 4d, September 2004) for $599,940 for the Reservoir Nos. 1, 2 and 4 Rehabilitation & Enlargement project.

Email copy: Irvin Johnson, Company President
Paul Currier, PE, Water Resources Consultants, LLC
Lori Satterfield, Legal Counsel, Holland & Hart
Alan Martellaro, SEO Division 5 Division Engineer
Garrett Jackson SEO Division 5 Dam Safety
Amy Stengel, AGO

Attachment: Water Project Construction Loan Program – Project Data Sheet

CWCB Construction Loan Program
PROJECT DATA SHEET

Borrower: Bull Creek Res. Canal & Power Co. **County:** Mesa

Project Name: Res. No. 4 Rehabilitation/Enlarge **Project Type:** Reservoir Rehabilitation

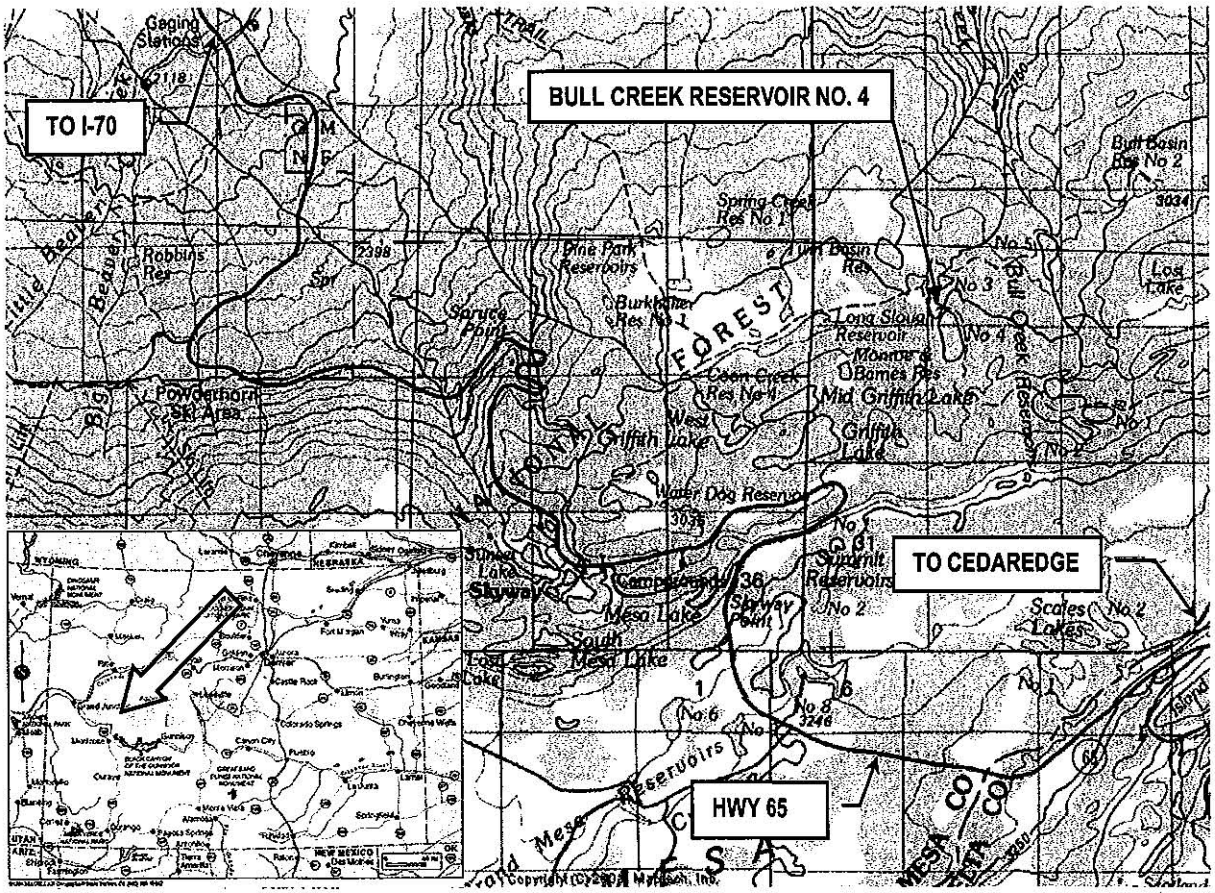
Drainage Basin: Colorado River **Water Source:** Bull Creek

Total Project Cost: $1,333,000 **Funding Sources:** CWCB & Company

Type of Borrower: Agricultural **Company Delivery:** 900 acre-feet

Loan Amount: $1,200,000 **Interest Rate:** 2.5% **Term:** 30 years

The Bull Creek Reservoir, Canal and Power Company is located in Mesa, Colorado, and has a service area of approximately 800 acres. The Company operates the Bull Creek Reservoirs that provide irrigation water to shareholders. The Company plans to repair and enlarge Reservoir No. 4. This will remove the current restriction on the reservoir and provide additional storage necessary to store the Company's decreed rights. The Company has a Stipulation and Agreement with the SEO that requires the Company to repair Reservoir No. 4 in order to avoid abandonment of a portion of the senior water rights. The Project is located on the US Forest Service property and will require a Special Use Permit for access roadway work and dam construction. The reservoir is remote and located at 10,000 feet elevation and will require special mobilization techniques. Construction is scheduled for the Summer of 2007.



LOCATION MAP

Exhibit 18
CWCB Loan Application

APPENDIX E

Alternative Financing and
Commitment of Collateral

Bull Creek Reservoir, Canal and Power Company

THE BULL CREEK RESERVOIR, CANAL AND POWER COMPANY

Irvin D. Johnson, President
Wallace Currier, Vice President
Betty Hawkins, Secretary- Treasurer
Carlyle Currier, Board Member
Martin Woodring, Board Member

March 16. 2004

To Whom it May Concern:

The regular meeting of the Bull Creek Reservoir, Canal and Power Company was held March 13, 2004, at the home of Irvin Johnson in Molina, Colorado. Shareholders representing 439 shares, out of a total of 500 shares were present. All present voted to seek an interim loan, up to fifty thousand dollars, and to seek long term financing for the completion of the required work on the Bull Creek reservoirs.

Irvin D. Johnson, President — Date 3/30/04

Carlyle Currier, Board Member — Date 3/30/04

Betty Hawkins, Secretary - Treasurer — Date 3/30/04

Re: LOAN APPLICATION:
BULL CREEK RESERVOIR, CANAL AND POWER COMPANY

Part C – 5

The Bull Creek Reservoir, Canal and Power Company offers as collateral Bull Creek Reservoir Number Four with its associated water rights, 156.26 acre feet of water with the water rights dating to 1901, and 156.43 acre feet of water with the water rights dating to 1930, for a total of 312.69 acre feet of water. It is estimated that the value of this water exceeds $1,600.00 per acre foot.

There are 500 shares of stock in the corporation. Water assessments will be set at a rate per share to make annual payments on the principal and interest for this indebtedness as well as operating costs of the company.

Irvin D. Johnson, President — Date 5/27/04

Betty L. Hawkins
Betty Hawkins, Secretary, Treasure — Date 5/27/04

Carlyle Currier
Carlyle Currier, Board Member — Date 5/27/04

The forgoing instrument was acknowledged before me this 26th day of May, 2004 by Irvin D. Johnson, Betty Hawkins, Carlyle Currier.

Witness my hand and official seal.

Kathy L Harris
Notary Public
My commission expires: 6-9-06

APPENDIX F

CWCB Construction Loan Application

Bull Creek Reservoir, Canal and Power Company

COLORADO WATER CONSERVATION BOARD
CONSTRUCTION FUND LOAN APPLICATION

Instructions: This application should be typed or printed neatly with black ink. Attach additional sheets as necessary to fully answer any question or to provide additional information that would be helpful in the evaluation of this application. When finished, please return this application to:

THE COLORADO WATER CONSERVATION BOARD
Water Supply Planning and Finance Section
1580 Logan St., Suite 750
Denver, CO 80203
Attn: Kirk Russell, P.E. or Bruce Johnson, P.E.
Phone Number (303) 866-3449 Fax Number (303) 894-2578
e-mail : kirk.Russell@state.co.us or bruce.Johnson@state.co.us

Part A. - Description of the Applicant (Generally, the applicant is also the prospective owner and sponsor of the proposed project. If this is not the case, please contact the CWCB staff before completing this application.)

1. Name of applicant: **Bull Creek Reservoir, Canal and Power Company**

   Mailing Address: **POB 25, Molina, CO 81646**

   Business Phone Number **(970) 268-5560** Fax Phone Number **(970) 268-5551**

   Federal ID Number **84 0729190** e-mail Address **pinon5551@aol.com**

2. Person to contact regarding this application, if different from above:

   Name **Paul C. Currier, P.E. c/o Water Resource Consultants, LLC**

   Position/Title **Project Engineer**

   Address **244 Hutton Ave., Rifle, CO 81650**

   Business Phone Number **(970) 625-5433** Home Phone Number (____)

   e-mail Address **pcurrier@wrc-llc.com**

3. Type of organization (Ditch Co., Irrigation District, Municipality, etc.): **Non-profit Corporation**

   Date of Annual Meeting **March**

   Is the organization incorporated in the State of Colorado? YES **XX** NO____ (If YES, please include a copy of the articles of incorporation, and the bylaws with this application form.)

Articles of Incorporation and Bylaws are included in the attached Feasibility Study

4. Please provide a brief description of the owner's existing water supply facilities and describe any existing operational or maintenance problems. Attach separate sheets if needed, and a map of the service area. **See Feasibility Study**

For existing facilities indicate:

Number of shareholders **19** or Number of customers served _____

Current Assessment per share **$ 50** Number of shares **500**

Number of acres irrigated **800+**

Part B. - Description of the Project

1. Name of the project or facility:

Rehabilitation and Enlargement of Bull Creek Reservoir No. 4

2. Purpose of this loan application. Check one.

_____ New project

XX Rehabilitation or replacement of existing facility

XX Enlargement of existing facility

XX Emergency Repair

_____ Other (describe) _____

3. If the project is for rehabilitation of an existing reservoir, is the reservoir currently under a storage restriction order from the State Engineer? YES **XX** NO ___

4. General location of the project. (Please include county, and approximate distance and direction from nearest town, as well as legal description, if known. **See Figure 1, page 2, attached Feasibility Study**

5. Please provide a brief narrative description of the proposed project including purpose, need, facilities, type of water uses to be served and service area. Attach separate sheet, if needed. **See attached Feasibility Study**

6. Will the acquisition of additional water rights be necessary? YES **XX** NO____

   If YES, please explain. **Junior water rights are required to allow an enlargement to Bull Creek Reservoir No. 4 to completely fill. See Feasibility Study.**

7. Please list the names, addresses and phone numbers of the Applicants' engineer(s) and attorney(s).

   NAME ADDRESS and PHONE

   See introduction to Feasibility Study for Project Contact Information

8. List any feasibility studies or other investigations that have been completed or are now in progress for the proposed project. Please submit one copy of each completed study with this application.

   Feasibility Study is attached

9. Estimated cost of the project. Please include estimated engineering costs, and estimated construction costs, if known.

Estimated Engineering and permitting Costs:	$ **350,000**
Estimated Construction Costs:	$ **985,000**
Estimated Total Costs:	$ **1,335,000**

10. Loan amount and terms you are requesting.

Requested Loan Amount:	$ **1,200,000**	(Usually 75% of Estimated Total Costs)
Term (length) of loan:	**30** years	(Usually 10, 20, or 30 years)
Interest Rate:	**2.5 %, agricultural**	(Please call for our current rates)

Part C. - Project Sponsor Financial Information

Because the CWCB Construction Fund is a revolving fund, it is important that the project sponsor have the financial capacity to repay any loans made by the CWCB. The following information is needed to assist the CWCB in a preliminary assessment of the applicant's financial capacity. It is also requested that the project sponsor submit with this application copies of the three most recent annual reports, financial statements, corporate reports or other current documentation of financial condition and operations.

1. List any existing long-term liability (multi-year) or indebtedness that exceeds one thousand dollars. For example, bank loans, government agency loans, bond issues, accounts payable, etc. Include names and addresses of lenders, amounts, due dates and maturity dates. Attach a separate schedule, if needed.

Lender Name & Address	Remaining Amount	Annual Payment	Maturity Date
Palisades National Bank	**$135,000**	**Interest only, 7.75%**	**Mar 22, 2007**
600 West 8th Street, Palisade, CO 81526			
(970) 464-5701			

Note: This is a bridge loan to be repaid when the CWCB construction loan is granted.

2. Are any of the above liabilities now in default, or been in default at any time in the past? YES____ NO **XX**. If YES, please give detailed explanation. _____

3. Please provide a brief narrative description of sources of funding, in addition to the CWCB, which have been explored for this project (Examples would be Banks, Rural Development, NRCS, Colorado Water Resources and Power Development Authority, Colorado Division of Local Government, etc.). **Bridge loan, Palisades National Bank (Palisade, CO)**

4. What collateral will you be offering for this loan? Possibilities include the project itself, pledge of revenues, real estate, water rights. **See Feasibility Study. Bull Creek Reservoir No. 4 is being offered as Collateral**

The above statements are true, to the best of my knowledge:

Signature of Applicant _____

Printed Name **Irvin D. Johnson**

Title **President**

Date **Nov 29, 2006**

Exhibit 19
CWCB Overland Inundation Report

PERIODIC INUNDATION OF WETLANDS AT OVERLAND RESERVOIR TECHNICAL REPORT DECEMBER, 2008 REVISED JANUARY, 2010

Prepared for:

Overland Ditch and Reservoir Company
26093 Moss Rock Road
Hotchkiss, Co 81419

Prepared by:

Western Engineers, Inc.
2150 Highway 6 and 50
Grand Junction, CO 81505
and
WestWater Engineering, Inc.
2516 Foresight Circle, #1
Grand Junction, Colorado 81505

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TABLES

FIGURES

1.0 INTRODUCTION

Overland Reservoir is located 20 miles north of Highway 139 from Paonia, Colorado, and 7 miles west on Forest Service Road 705 (Figure 1). The reservoir was built in 1905 by the Overland Ditch and Reservoir Company (ODRC) to provide agricultural water to farmers and ranchers in the Redlands Mesa Area near Hotchkiss, Colorado. ODRC currently hold 6,200 acre-feet of absolute water rights and 971 acre-feet of conditional water rights. The existing reservoir has an active capacity of 6,163 acre-feet with an inundated area of approximately 254 surface acres. ODRC is proposing to enlarge the capacity of the reservoir to a total active storage capacity of 7,171 acre-feet. The reservoir footprint would increase by 14 acres to a total of 268 surface acres. The water level of the reservoir would be increased by approximately 3.8 feet. The additional storage would satisfy requirements to adjudicate existing conditional water rights to absolute water rights. Overland Reservoir's storage is used for irrigation and its water level decreases rapidly each year once water is released from storage in order to satisfy irrigation demands.

The Department of the Army, acting through the U.S. Army Corps of Engineers (COE), has authority to permit the discharge of dredged or fill material in waters of the United States under Section 404 of the Clean Water Act (CWA), and permit work and the placement of structures in navigable waters of the United States under Sections 9 and 10 of the Rivers and Harbors Act of 1899 (RHA).

In November of 2007, WestWater Engineering (WWE) submitted the Jurisdictional Determination (JD) Request to the COE for the proposed Overland Reservoir Enlargement Project (WWE 2007). Wetland areas were identified in accordance with the January 1987 Corps of Engineers Wetlands Delineation Manual and related supplements. The purpose of the JD is to identify and locate waters (including wetlands) in the project design which are jurisdictional under Section 404. The JD request identified wetlands (including fen) present in the vicinity of the reservoir. The delineation also identified wetlands located below the current Ordinary High Water Level (OHWL) as shown in Figure 2.

Fen is an ongoing topic of study by the Forest Service (FS) and others. The FS has an ongoing fen committee and working group to further define and monitor fen in Grand Mesa Uncompahgre and Gunnison National Forest (GMUG) (FS 2008). Fen is defined as wetlands with organic soils dependent on direct contact with mineral enriched groundwater for nutrients and consistent moisture. Fens in the Rocky Mountains have extremely slow rates of peat accumulation (approximately 1 to 2 inches/100 years) due to a cold dry climate.

2.0 OBJECTIVE

The objective of this report is to present technical data from ongoing operations at Overland Reservoir that demonstrate effects of periodic inundation on wetlands, including fen. The intention of this report is to bring attention to the persistence of wetland (including fen) during periodic episodes of inundation by reservoirs. Overland Reservoir has close to twenty years of operating records showing when wetlands and fen have been submerged (under water) by annual reservoir filling events. This report also identifies the portion of the inundation period which has occurred outside the window of the growth period.

3.0 RESERVOIR HISTORY

The Overland Ditch and Reservoir Company was established in 1895 with the purpose of completing ditch construction and building two reservoirs. Ditch construction was initiated in 1893, which is the appropriation date, and continued through 1905. The reservoir has an "1891" easement because it was constructed under an easement issued by the General Land Office, pursuant to the Act of March 3, 1981. The original dam, at the site of the existing Overland Dam, was started in 1903 and completed in 1905, with a capacity of about 2,500 acre-feet for irrigation water. Dam construction continued and, in the 1950s the reservoir was enlarged to a total active capacity of 5,960 acre-feet. The dam's original features degraded throughout the years in spite of the many improvements made. A detailed history of these efforts is provided in Appendix A. In 1984, Western Engineers, Inc. performed feasibility studies that led to rehabilitation of the dam in 1986-1987, including new improvements and enlargement of the spillway to conform to Colorado dam safety regulations. Progress in the 1980s and 90s led to further construction and improvements, resulting in the conditional storage right for a total volume of 6,186 acre-feet (6,163 acre-feet active of storage). The construction to allow that additional storage was completed in 1991.

The ODRC provides irrigation water to an area that encompasses about 20 square miles and is physically located such that it can provide water to a much larger area of about 450 square miles which extends from Paonia Reservoir on the east to Orchard City on the west, north of the North Fork of the Gunnison River. Irrigated acreage within the service area is primarily used to raise pasture, and crops such as hay, grains, corn and fruit. The ODRC system provides water to a total of over 6,000 irrigated acres. There are a total of 122 water users irrigating farm areas varying from 1 to 700 acres, averaging about 70 acres.

4.0 ENVIRONMENTAL SETTING

Overland Reservoir is located on the Grand Mesa, a large flat plateau, within National Forest Service (NFS) lands (Figure 1), east of Grand Junction, Colorado. The Grand Mesa lies in the northeastern corner of the Colorado Plateau and encompasses over 1,000 square miles. The Colorado Plateau is a desert region covering portions of the four-corner states defined by large plateaus, buttes, mountains, steeply incised canyons, and is dissected by the Colorado and Green Rivers. Grand Mesa and Battlement Mesa to the northeast are bisected by Plateau Creek, a tributary of the Colorado River, forming steep side slopes and narrow canyons. Due to the elevation and the geographic position (Yeend 1969); the Grand Mesa is classified as a forested mountain and alpine ecosystem. Grand Mesa rises above the surrounding valleys by about 5,000 feet with a maximum elevation of 11,086 feet above sea level (ASL). Much of the NFS lands within the Grand Mesa are at the higher elevations (9,000 to 11,000 feet elevations) and are relatively flat. Overland Reservoir is located at approximately 10,000 feet ASL.

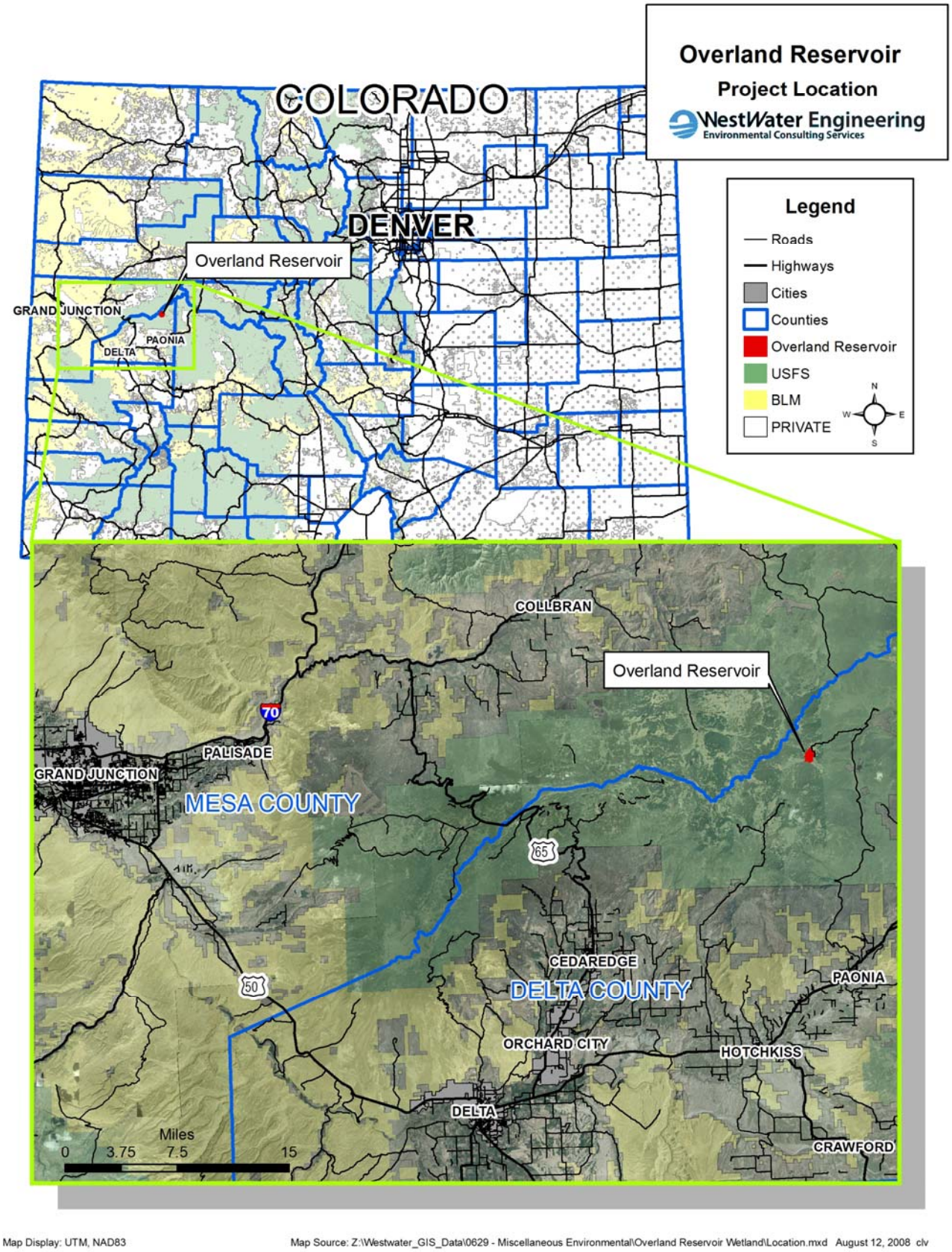

Figure 1. Project Location Map

Weathering and movement of the bedrock, basalt flows, and glacial till have resulted in the present topography of the Grand Mesa. Topographic features include: incised valleys, steep talus slopes of basalt boulders, and gentle slopes of colluviums and valley fill deposits. Glaciated terrain has a natural tendency to have slumps and depressions that fill up with water and result in the many lakes and reservoirs present in the area. The lakes deposit sediment and create a favorable condition for moss growth and peat accumulation (Johnston et al. 2007). Thus, Grand Mesa wetlands have the characteristics of peat-forming wetlands, which are called fen. Fen is wetlands with organic soils dependent on direct contact with mineral enriched groundwater for nutrients and consistent moisture. Fens in the Rocky Mountains have extremely slow rates of peat accumulation (ranging from 240 to 540 mm/1000 years, or .94 to 2.12 inches/100 years) due to a cold dry climate (GSA 2002).

The distinctive climate on the Grand Mesa is created by its geographic position between two large valleys. Depending upon the season, moisture-laden storm systems move across the Grand Mesa from three different directions. There is no well-defined wet season on the Grand Mesa, but the maximum precipitation occurs (generally in the form of snow) in March, April, and into May. A secondary spike in precipitation occurs in August and September as a result of summer thunderstorms fed by moisture-laden air coming up from the Gulf of Mexico.

Based on generalized U.S. Geological Survey maps of mean annual precipitation for the Upper Colorado River Basin, the Grand Mesa receives 19 to 39 inches per year, averaging 28 inches per year (NOAA 2008). The cool Pacific storm fronts that come in from the west during the winter provide considerable snow pack on the Grand Mesa with the greatest snow depth readings occurring in April. The average minimum temperatures for the higher elevations can be expected to range from 0 to 20˚ F in the winter, while the lower elevation valley bottoms to the east and west have average minimum temperatures from 15 to 30˚ F in the winter months. The maximum summer temperatures on the Grand Mesa can be expected to average from 65 to 85˚ F at the higher elevations, while the surrounding valley bottoms average 85 to 95˚ F.

5.0 WETLAND DELINEATION FINDINGS

The delineation (WWE 2007) identified 19 wetland areas, representing four wetland types: fringe wetland, forested wetland, wet meadows, and fens (Figure 2). Table 1 summarizes these wetland types. Note that the delineation included areas below and adjacent to the current OHWL as well as other areas distant from the reservoir perimeter which might possibly be impacted by reservoir construction and operation (See Figure 2). Table 1 includes only those areas located below and adjacent to the current OHWL. Methods used in the delineation are described in WWE 2007 and are from the COE Wetlands Delineation Manual. Appendix B provides photographs of the delineation effort and the wetland areas. Appendix C provides an estimation of the growing season at Overland Reservoir.

Table 1. Wetlands Identified during Overland Reservoir Wetland Delineation

Wetland Type	Total Area Below and Adjacent to Current OHWL (acres)	Area Below Current OHWL (acres)	Area Above Current OHWL (acres)
Fringe and Forested Wetland	49.18	49.18	5.91
Fen	1.21	0.96	0.25

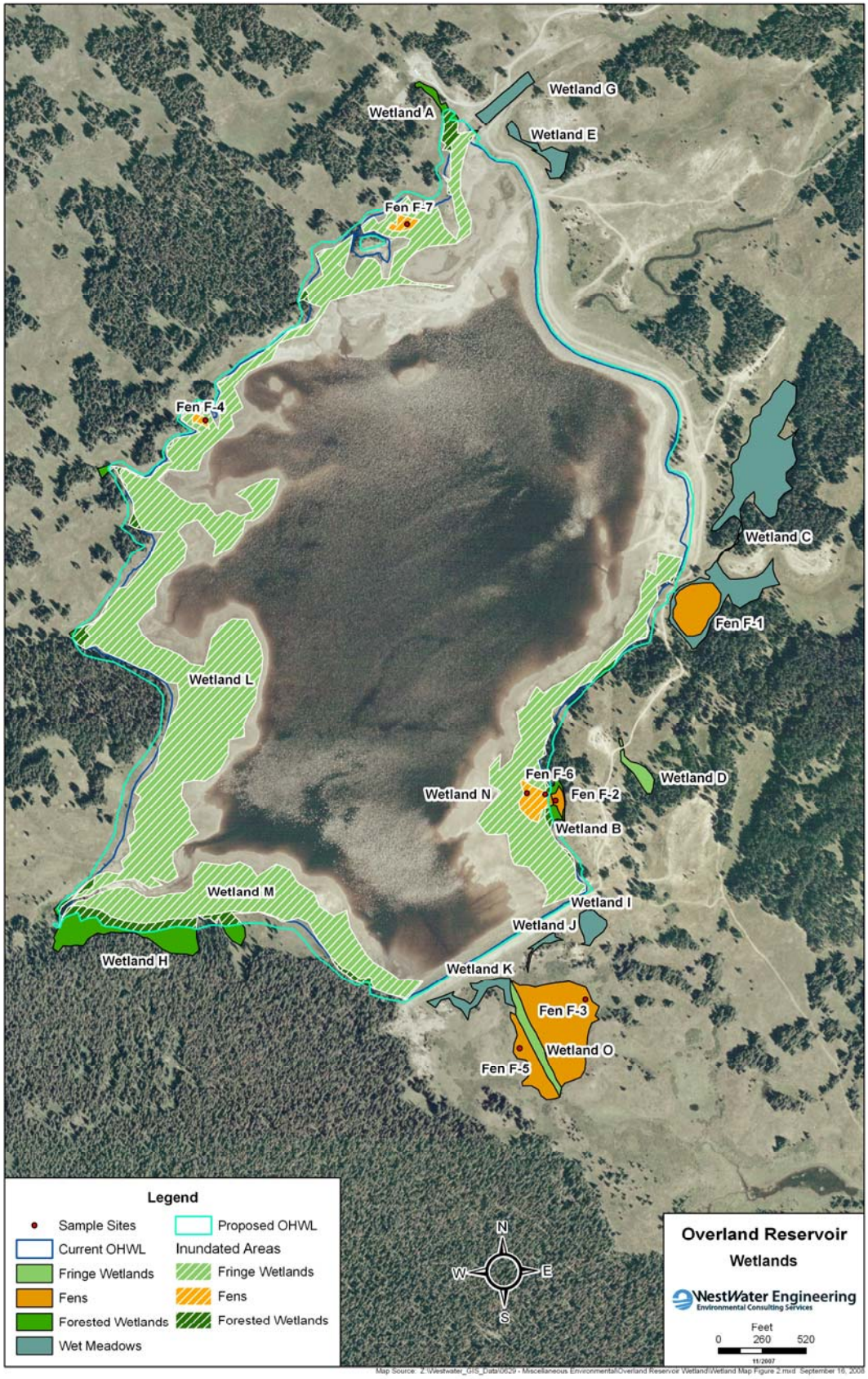

Figure 2. Overland Reservoir Wetlands

5.1 Growing season

Growing season at Overland is estimated to be from June 2 to September 19. Appendix C provides details on the derivation of this range. The significance of the growing season is paramount to this study because the wetlands, including fen, have generally been exposed to the atmosphere during much of the growing season in spite of their periodic inundation. This is detailed in later paragraphs.

5.2 Fringe and Forested Wetlands

Fringe and Forested wetlands around the reservoir represent the largest wetland wetland area in the project area. These wetland types are depicted on Figure 2 (see Fringe wetlands L, M, and N and Forested wetlands A, B and H). Fringe wetlands are also associated with the ditch below the south dam; seepage from under the dam maintains a flow of water through the creek to wetland O, which is 0.75 acres. Fringe wetland soils showed light oxidation in pore linings and rhizospheres, 2-4% within the first 6 inches. During initial site visits Fringe wetlands were inundated below current OHWL and vegetation appeared to be emergent littoral. Rapid decline in reservoir water levels continually exposed wetland vegetation throughout the growing season. Figure 2 shows wetlands L, M and N within the boundary of the current OHWL (or Ordinary High Water Line). Dominant species in annually inundated wetlands were *Carex utriculata, C. aquatilis.* Soils in Forested wetlands showed a loamy gleyed matrix and oxidation within the first 6 inches, along with exhibiting a strong hydrogen sulfide odor. Dominant species associated with the reservoir fringe were *Picea engelmannii, Salix planifolia, Salix monticule, Carex utriculata, C. aquatilis* and *Caltha leptosepala.*

5.3 Wet Meadow Wetlands

Wet meadow wetlands occurred beyond the footprint and perimeter of the reservoir which totaled 9.14 acres. The soils in wetland C (Figure 2), which were typical of all wet meadow wetlands, showed a histic epipedon above dark low chroma and gleyed soil. Dominant species *include, Salix planifolia, Salix monticule, Salix geyeriana, Carex utriculata, C. aquatilis, Caltha leptosepala, and Pedicularis groenlandica.*

5.4 Fens

Fens were surrounded by other wetland types within the project area and total 1.21 acres below or adjacent to the current OHWL (Figure 2 and Table 1). Table 2 shows the results of laboratory tests performed on undisturbed samples from the fen locations (Figure 2). The area of F-6 was expanded to the edge of F-2 after soil test results indicated that this area has organic soils. Fens F-6 and F-2 abut (Figure 2), but have differences in vegetative composition, structure, and topography. The total acreage of fens that exist at or below the current OHWL is 0.96 acres. The forested portion of wetland B contained one fen (F-2), with an area of 0.17 acres. F-1, F-2 and F-3 are located above the current OHWL. Soil tests revealed properties of histosols, organic soils, in all suspected fen areas. Dominant species within fens were *Carex utriculata, C. aquatilis,* and 2 species of moss *Tomentypnum nitens* and *Dreplanocladus adunces.*

Table 2. Fen Soils TOC, Texture Test Results and Sample Locations

Sample ID	TOC	Mineral Texture	% Sand	% Silt	%Clay	Easting	Northing

F-6	24.83	Sandy Loam	76	12	12	271383	4329087
F-2	32.34	Sandy Loam	66	26	8	271401	4329075
F-3.1	36.73	Sandy Loam	78	8	14	271375	4328619
F-3.2.1	22.19	Sandy Loam	76	8	16	271445	4328714
F-3.2.2	37.30	Sandy Loam	76	8	16	271445	4328714
F-4 3	30.05	Sandy Loam	74	10	16	270790	4329780
F-5.1	30.95	Loamy Sand	82	8	10	271324	4328630
F-5.2	35.29	Sandy Loam	76	12	12	271324	4328630
F-6	32.61	Sandy Loam	76	12	12	271350	4329090
F-7.1	17.49	Sandy Loam	74	10	16	271163	4330124
F-7.2	39.04	Sandy Loam	74	10	16	271163	4330124

6.0 SUMMARY OF WATER LEVEL DATA

Appendix A includes a detailed description of the historical water levels, along with statistical comparisons. Graphs are provided to display this data in Figures A-1 through A-3. Observations, tests and evaluations are provided in Appendix A and summarized below. Appendix A also includes a comprehensive analysis of the inundation time increments and durations that Overland wetland (including fen) areas have endured historically.

The analysis of water levels in Appendix A is summarized in the following table (Table 3). The following noteworthy observations can be drawn from the information in Appendix A and summarized in Table 3, and Figure 3:

1. Historically, wetland submergence duration has varied up to 134 days, with a median duration of 93 days and fen submergence duration has ranged up to 99 days, typically lasting 56 days based on the median inundation period. The historically inundated wetlands and fens have persisted for nearly twenty (20) years throughout these periods of inundation. This is likely due to the fact that although submerged periodically, the wetlands are sufficiently exposed during a portion of each growing season as discussed in following paragraphs.

2. The year during which the maximum submergence period occurred (2005) is critical (refer to Appendix A). That is because, during the year with the longest inundation period, the portion of the growing season during which existing wetlands are exposed to the atmosphere is at its minimum.

6.1 Wetland and Fen Exposure During the Growing Season

It is instructive to note the percentage of the wetlands growing season during which the Overland Reservoir wetlands (including fens) are not inundated (exposed to the atmosphere). Exposure during the growing season is obviously a significant factor in the on-going survivability and viability of existing wetlands. The wetlands growing season was estimated as described in Appendix C. The period during which the wetlands growing season and wetlands exposure coincide is summarized in Table 4. The following noteworthy observations are made regarding the growing season tabulations and chart (Table 4 and Figure 3):

- A significant portion of the inundation period occurs prior to the growing season. The lowest elevation wetlands generally start to become inundated in late March and early April.

- Wetlands currently persist in the reservoir basin at an elevation where exposure during the growing season is as short as 26 days (24 percent of the growing season) in the year with the shortest exposure during the growing season (2005). At this elevation (9876.04), the median period during which the wetlands are exposed during the growing season has historically been 44 days (40% of the total growing season).

- Fens currently survive in the reservoir basin at an elevation where exposure during the growing season is as short as 44 days (40 percent of the total growing season) in the year with the shortest exposure during the growing season (2005). At this elevation (9886.73), the median period during which the wetlands are exposed during the growing season has historically been 63 days (58 percent of the total growing season).

Table 3. Inundation Period (days) of Wetland/Fen at Minimum and Maximum Elevations

Reservoir Operation Year	Inundation Period (Days) At Elevation 9,896.5 feet (Current OHWL)	Inundation Period (Days) at Elevation 9,886.73 feet (Minimum Fen Elevation)	Inundation Period (Days) at Elevation 9,876.04 feet (Minimum Wetland Elevation)
Minimum Year (1990)	**0** (did not fill)	**37** (6/4 through 7/11, 1990)	**79** (5/16 through 8/3, 1990)
Maximum Year (2005)	**60** (5/17 through 7/16, 2005)	**99** (4/30 through 8/7, 2005)	**134** (4/12 through 8/24, 2005)
Median	**17**	**56**	**93**

Table 4. Exposure Period (days and percent of growing season) During Growing Season of Wetland/Fen at Minimum and Maximum Elevations

Reservoir Operation Year	Exposure Period (Days) At Elevation 9,896.5 feet (Current OHWL)	Exposure Period (Days) at Elevation 9,886.73 feet (Minimum Fen Elevation)	Exposure Period (Days) at Elevation 9,876.04 feet (Minimum Wetland Elevation)
Minimum Year (1990)	**6/2-9/19=109 days (100%)** (did not fill)	**7/11-9/19=70 days (64%)**	**8/3-9/19=47 days (43%)**
Maximum Year (2005)	**7/16-9/19=65 days (60%)**	**8/6-9/19=44 days (40%)**	**8/24-9/19=26 days (24%)**
Median	**6/21-9/19=90 days (83%)**	**7/18-9/19=63 days (58%)**	**8/6-9/19=44days (40%)**

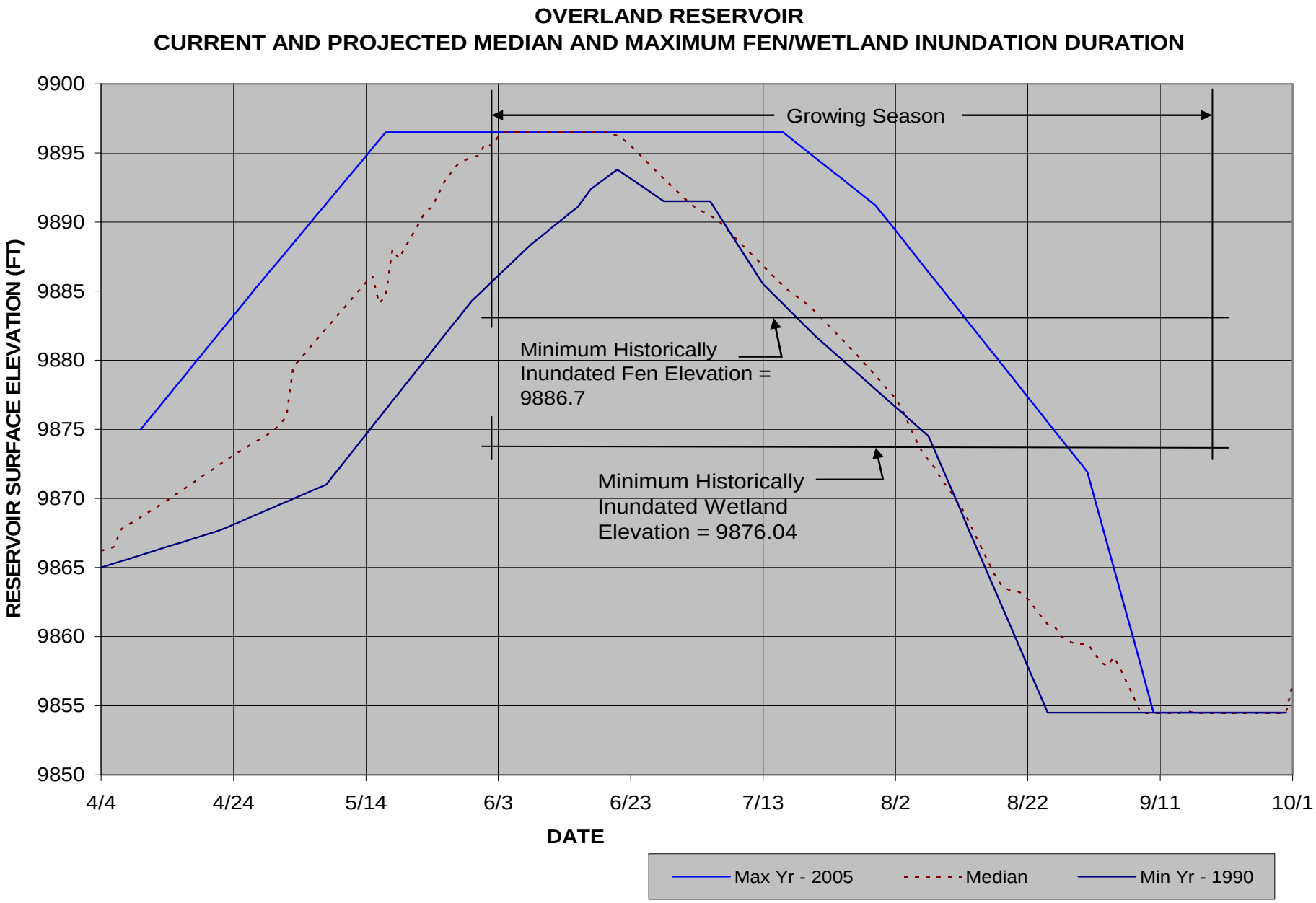

Figure 3. Fen/Wetland Inundation Duration

7.0 DISCUSSION

The delineation of the historically inundated wetland (including fen) areas (WWE 2007) suggest that these areas have remained functional and differences are relatively minimal compared to areas not previously inundated. In a letter dated March 25, 2008, the COE confirmed the boundaries of the wetland delineation, and therefore is aware of the historically inundated wetland (including fen) areas. The historical inundation evidence encountered at the Overland reservoir site suggests that the periodic inundation of these wetlands and fens may not have resulted in significant changes. Other researchers (Hill, Keddy & Wisheu, 1998; Keddy, 1983; Keddy & Reznicek, 1986; Keddy, 2000; Keddy & Fraser, 2000; Nilsson & Keddy, 1988; Obot, 1989; Wilcox & Meeker, 1991) have found that, while the richness and diversity of vegetation species may be affected by fluctuating water levels and periodic inundation, wetlands (including fen) can persist under such conditions.

There were both similarities and differences between the inundated wetlands and fens, and those not inundated. Again, the delineation indicated that fens F-4, F-7, and part of F-6 are lower than the current OHWL, and have been historically inundated (Figure 2). The fens, which have been historically inundated, have similar densities of Carex aqualtilils, Carex utriculata and mosses to those fens which have not been inundated (see photographs in Appendix B). Also, the organic content is similar between the fens that were inundated and the non-inundated fens. All fens appear to be accumulating more peat with each growing season. The differences between the inundated and non-inundated fens are 1) none of the inundated fens had willows (Salix) present, but willows are present in some of the non-inundated fens and 2) some non-inundated fens had a more diverse species assemblage (i.e. more mosses). Although the wetlands delineation has been the only assessment to date, the observations made suggest that the effects of historic inundation may have been relatively minimal.

In respect to the wetlands delineation (WWE 2007), there were relatively minimal noted differences between wetlands that had been inundated by ongoing reservoir operations and those that had not. However, it should be noted that there are no previous wetlands delineations with associated soil sampling for comparison.

In conclusion, the observations provided in this report are intended to be used for future decision making regarding the inundation of wetlands and fens. It should be noted that any projections made at this time must be extrapolated from a combination of historical hydrology data and present-day comparisons between previously inundated areas and similar, adjacent areas which have not been subjected to inundation. Following are some additional considerations:

1. It is recognized that the observations made in this report do not constitute rigorous research regarding the impact of historic inundation on existing wetlands and fens in the Overland Reservoir. However, sufficient observations have been made to suggest that historically inundated wetlands and fens in the Overland Reservoir basin continue to remain functional.

2. Many of the wetlands identified below the current OHWL probably would not exist without the reservoir operation because the reservoir provides at least a portion of the wetland hydrologic regime for the existing wetlands.

3. Potentially, there may be other wetlands and fens found within similar irrigation reservoirs (reservoirs with annually fluctuating reservoir levels) at other locations in the Grand Mesa area which continue to function in a similar manner to those examined at the Overland Reservoir site.

8.0 SUMMARY

- Wetlands (including fens) located at lower elevations than the current OHWL continue to exist while experiencing annual transient inundation.

- Based on initial observations, the temporarily submerged wetlands and fens appear to exhibit characteristics and plant communities similar to adjacent and nearby wetlands and fens.

- The average wetlands growing season at Overland Reservoir was estimated using four data sets (see Appendix C). The first data set included a combination of NRCS WETS station in surrounding counties and high elevation WETS stations from around the state of Colorado. The growing season estimated by using the WETS station data was validated based on records from two nearby climatological stations located on the Grand Mesa at approximately the same elevation as Overland Reservoir. Data from Bonham Reservoir produced the exact same growing season length as the WETS stations analysis. The growing season length based on data from Mesa Lakes was 15 days (19 percent) longer than that resulting from the WETS stations data. The fourth data set was from a SNOTEL (Snowpack Telemetry) station located very near Overland Reservoir. The length of growing season resulting from the SNOTEL data analysis was 28 days (35 percent) longer than that resulting from the WETS stations data. Because the SNOTEL station is located practically at Overland Reservoir and there is a long period of record, it was judged that it best represented the local conditions and was used as the basis for the growing season interval presented in this report. In spite of the variation in growing season length from the various data sets, they all lie well within the 95 percent prediction intervals produced by analysis of the WETS station data. Therefore, there is a relatively high degree of confidence in the estimated normal wetlands growing season, from June 2 to September 19.

- Depending on the year and the elevation of specific wetlands, delineated wetlands are exposed to the atmosphere (not submerged) for a range of time from 24 percent of the normal growing season up to 100 percent of the growing season. Similarly, delineated fens are exposed between 40 and 100 percent of the growing season.

- Considering inundation periods for an average year, wetlands continue to survive with exposure duration of 40 percent of the normal growing season. However, a more detailed examination of wetlands areas during drawdown might reveal the existence of wetlands at lower elevations than identified during the delineation which would further reduce the percent of average-year growing season exposure for existing wetlands.

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APPENDIX A

Analysis of Historical Water Levels
Western Engineers, Inc.

Historical Information

The Overland Ditch and Reservoir Company was established on July 1, 1895, with the purpose of completing ditch construction and building two reservoirs identified as Overland Reservoir No. 1 and Overland Reservoir No. 2. Ditch construction was initiated in 1893, which is the appropriation date, and continued through 1905. The reservoir has an "1891" easement because it was constructed under an easement issued by the General Land Office, pursuant to the Act of March 3, 1981. Overland Dam No. 1 (the original dam at the site of the existing Overland Dam) was started in 1903 and completed in 1905, with a capacity of about 2,500 acre-feet of irrigation water. Two dams were constructed to form the reservoir, the main dam across Cow Creek and Auxiliary Dam No. 1, crossing Hubbard Creek. During 1950 the reservoir was enlarged to a total active capacity of 5,960 acre-feet by enlarging the main dam and Auxiliary Dam No. 1 and adding a small Auxiliary Dam No. 2, located in a saddle just to the left of the main dam. The main dam and Auxiliary Dam No. 2 were connected as part of this project. Construction in 1950 included replacing the old wood stave outlet pipe and construction of a new spillway. An attempt was also made to install a second outlet pipe in the Auxiliary Dam No. 1. However, due to difficult and unstable excavation conditions, efforts to install this second outlet were abandoned. The presently existing ditch downstream from the current Auxiliary Dam is a remnant from this attempt. Approximately seven years after the enlargement and during the first complete filling, a settlement of four feet occurred on the crest near the right side of the outlet works. The State Engineer's Office restricted the maximum storage to gage height 40 (5,690 acre-feet). This restriction was in effect from 1957 to 1963. In 1963, a new wooden spillway was constructed near the left abutment to limit the filling to 5,690 acre-feet, or five feet below the reservoir capacity after the 1950 enlargement. The reservoir storage level was further restricted to gauge height 35 in 1982 after surficial cracking was observed in the right embankment and abutment. This reduced the allowable storage capacity to about 4,517 acre-feet. Since 1957, several studies have been conducted involving either construction of a new dam or rehabilitation of the existing dam. Since 1966, it was determined that the cost to repair the existing dam would be greater than construction of a new dam, approximately one-quarter (0.25) mile downstream. In 1976, McDermith and Schuster, Consulting Engineers, prepared a report entitled "Small Reclamation Project Application and Report and Feasibility Study for the Overland Ditch and Reservoir Company." The purpose of this study was to secure funding for a new dam. Plans and Specifications were prepared in 1982 for the new dam. It was subsequently determined that the cost of the new dam would result in annual costs greater than the repayment capabilities of the Overland Ditch and Reservoir Company and, subsequently, the plans to construct a new dam were abandoned. Western Engineers, Inc., was retained in early 1984 to perform an investigation of the existing Overland Dam to determine the feasibility of rehabilitating the structure and to identify the potential soils. This investigation led to construction work in 1986 and 1987, during which the main dam was rehabilitated and the spillway was rebuilt and enlarged in conformance with Colorado dame safety regulations. The storage capacity of the reservoir after rehabilitation was 5,811 acre-feet (5,788 acre-feet of active storage). This left 292 acre-feet of the previous absolute storage decree un-restored as well as an additional conditional decree of about 1,051 acre-feet that could not be stored. The rehabilitation design included provisions to accommodate future restoration projects that would allow storage of the full complement of water rights. However, funds were not available at that time to allow for the needed additional construction work. In 1987, the ODRC was able to buy out the USBR Small Projects loan at a significantly discounted amount. This was made possible by a second loan from CWCB. A secondary benefit of doing so was that dam safety jurisdiction was

transferred from the USBR to the Colorado State Engineer. The effect was that minimum flood surcharge requirements were reduced, which allowed increasing of the normal water storage level by 1.5 feet and provided for storing the remaining 292 acre-feet of the absolute storage right along with 83 acre-feet of the conditional storage right for a total volume of 6,186 acre-feet (6,163 acre-feet of storage). The construction to allow that additional storage was completed in 1991.

The ODRC provides irrigation water to an area that encompasses about 20 sq miles and is physically located such that it can provide water to a much larger area of about 450 sq miles, which extends from Paonia Reservoir on the east to Orchard City on the west, north of the North Fork of the Gunnison River. Irrigated acreage within the service area is primarily used to raise pasture and crops such as hay, grains, corn and fruit. The ODRC system provides water to a total of over 6,000 irrigated acres. There are a total of 122 water users irrigating farm areas varying from 1 to 700 acres, averaging about 70 acres.

Historical Reservoir Level Elevation versus Fill/Drawdown Time

In order to evaluate the time increments during which wetlands and fen areas have historically been inundated by the reservoir, fill/drawdown data was collected for the period since 1987. This data was obtained from: 1) Official storage records maintained by the Colorado Division of Water Resources; 2) Instrument monitoring records from the files of the ODRC and the Colorado Division of Water Resources, Dam Safety Department; 3) Official ditch diversion records from the Colorado Division of Water Resources; 4) Personal records of the local water commissioner of Colorado Division of Water Resources) (CDWR 2007); and 5) First-hand observations of ODRC and Western Engineers.

The historical records provide nineteen (19) years of water level history data (from 1988 through 2007) for Overland Reservoir (no records were available for the year 1991). Because the measurements are periodic, the exact dates for fill and start of drawdown are not generally identified. These dates were interpolated using a combination of the following methods:

- The fill and drawdown Reservoir Level Elevation (RLE) vs. time (month/day) slopes were extended to full stage (Figure A1, in Appendix) as appropriate.

- It was possible to compare the interpolated fill RLE vs. time slopes with the range of typical slopes to judge their reasonableness. This was possible because of the consistency in fill RLE vs. time slopes between known data points (Figure A1).

- Time brackets were estimated when drawdown would have likely started. This estimation was made from the records of ditch diversions (both diversion initiation date and quantity). The rate of ditch diversions also provided a means to check the RLE vs. time slope during the early stages of drawdown.

- The magnitude of spills provided a means to estimate time brackets for both fill date and date of drawdown initiation. This estimate was made possible by records maintained by the local water commissioner (CDWR 2007) of spill flows since 2004.

It should be noted that there was generally sufficient data so that the actual date for either fill or start of drawdown would not deviate from the estimated date based on the interpolation by more than a few days.

The resulting historic RLE vs. time patterns are shown on Figure A1. The lowest point of the historically inundated wetlands and fens experiences the greatest inundation time of the wetland/fen areas. In other words, these points have historically been and will continue to be subject to longest submergence. The lowest point for historically inundated wetlands is delineation point N11 (refer to the JD request, WWE 2007) at an elevation of 9,876.04 feet. The lowest point for historically inundated fen is delineation point F6-9 (WWE 2007) at an elevation of 9,886.73 feet. The wetland and fen delineation elevation is shown in Figures A1-A3 for comparison.

Estimate of Wetland (Including Fen) Inundation Duration

In order to visualize the range of historic wetlands inundation time intervals, the RLE vs. time data was normalized so that each year is centered at its maximum fill point (Figure A2). This was done by shifting the time reference for each year's data so that a zero date occurs either at the point of maximum storage or at the middle of the full stage time period. This also allowed for determination of a median RLE vs. time relationship. It should be noted that there were no individual years which closely matched the median of the daily data, so the median RLE vs. time curve was determined based on connection of daily median values rather than selection of a single year's data to represent the median. The normalized data are shown on Figure A2. The zero date shown was determined as described above with the negative date values representing the fill part of the cycle and the positive date values being the drawdown portion of the cycle. The following conclusions can be drawn from the data:

- The reservoir did not fill for four (4) of the 19 years evaluated (1988, 1990, 2000 and 2002). This means that during these 4 years the upper-most portion of the historically inundated wetlands and fen areas were not submerged. In 2002, the driest year during this period of record, the reservoir filled to only about half of its capacity and the maximum reservoir level elevation was 9,882.58 ft, significantly below the lowest elevation point in the fen areas. Therefore, in 2002 none of the fen areas were submerged.

- Excluding the year 2002, the year which exhibited the shortest duration of wetland/fen inundation was 1990 (Figure A3).

- The year during which the greatest duration of wetland/fen inundation occurred was 2005 (Figure A3).

- The median curve, determined as described above, is also shown on Figure A3.

Summary of Historical Overland Reservoir Wetland/Fen Inundation

Table 2, below, tabulates a summary of the range of wetlands inundation periods at the current OHWL elevation (9,896.5 feet), at the minimum historically inundated wetland elevation (9,886.73 feet) and at the minimum historically inundated fen elevation (9,876.04 feet) for the historic data at the current OHWL.

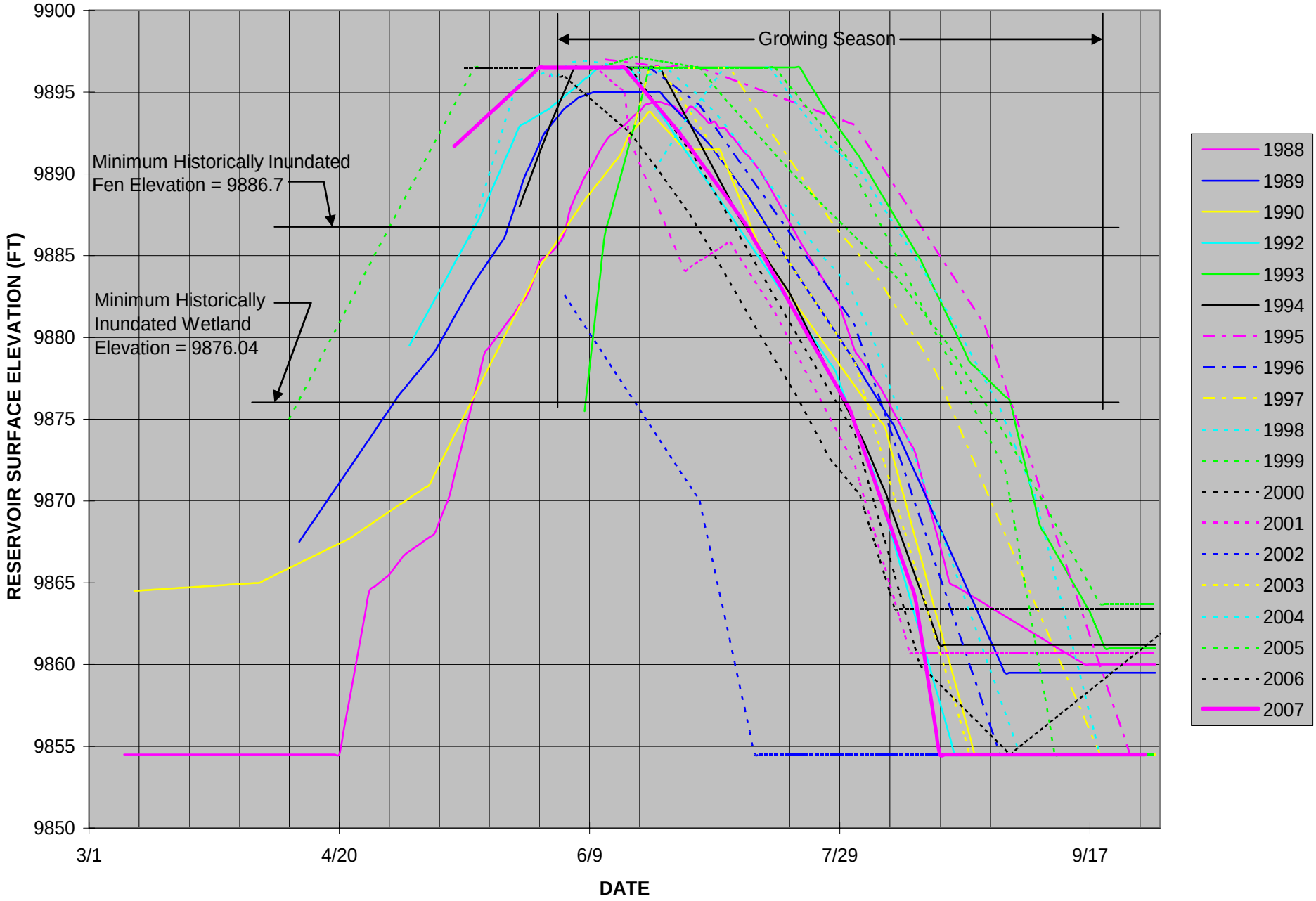
Table 2. Inundation Period (days) of Wetland/Fen at Minimum and Maximum Elevations

Reservoir Operation Year	Inundation Period (Days) At Elevation 9,896.5 feet (Current OHWL)	Inundation Period (Days) at Elevation 9,886.73 feet (Minimum Fen Elevation)	Inundation Period (Days) at Elevation 9,876.04 feet (Minimum Wetland Elevation)
Minimum Year (1990)	**0** (did not fill)	**37** (6/4 through 7/11, 1990)	**79** (5/16 through 8/3, 1990)
Maximum Year (2005)	**60** (5/17 through 7/16, 2005)	**99** (4/30 through 8/7, 2005)	**134** (4/12 through 8/24, 2005)
Median	**17**	**56**	**93**

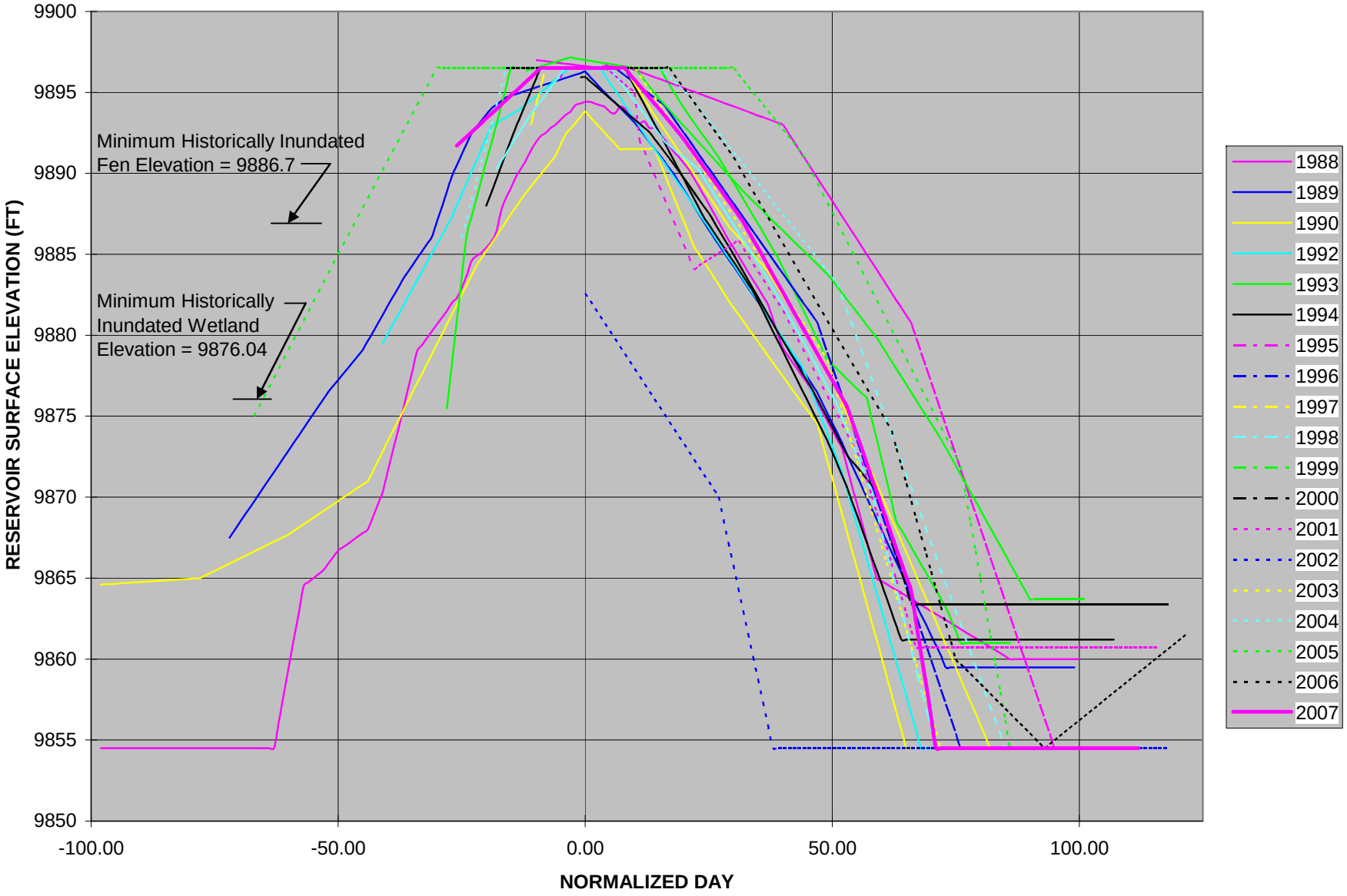
Conclusions

Historically, wetland submergence duration has varied up to 134 days, with a median duration of 93 days and fen submergence duration has ranged up to 99 days, typically lasting 56 days based on the median inundation period. The historically inundated wetlands and fens have persisted for nearly twenty (20) years throughout these periods of inundation.

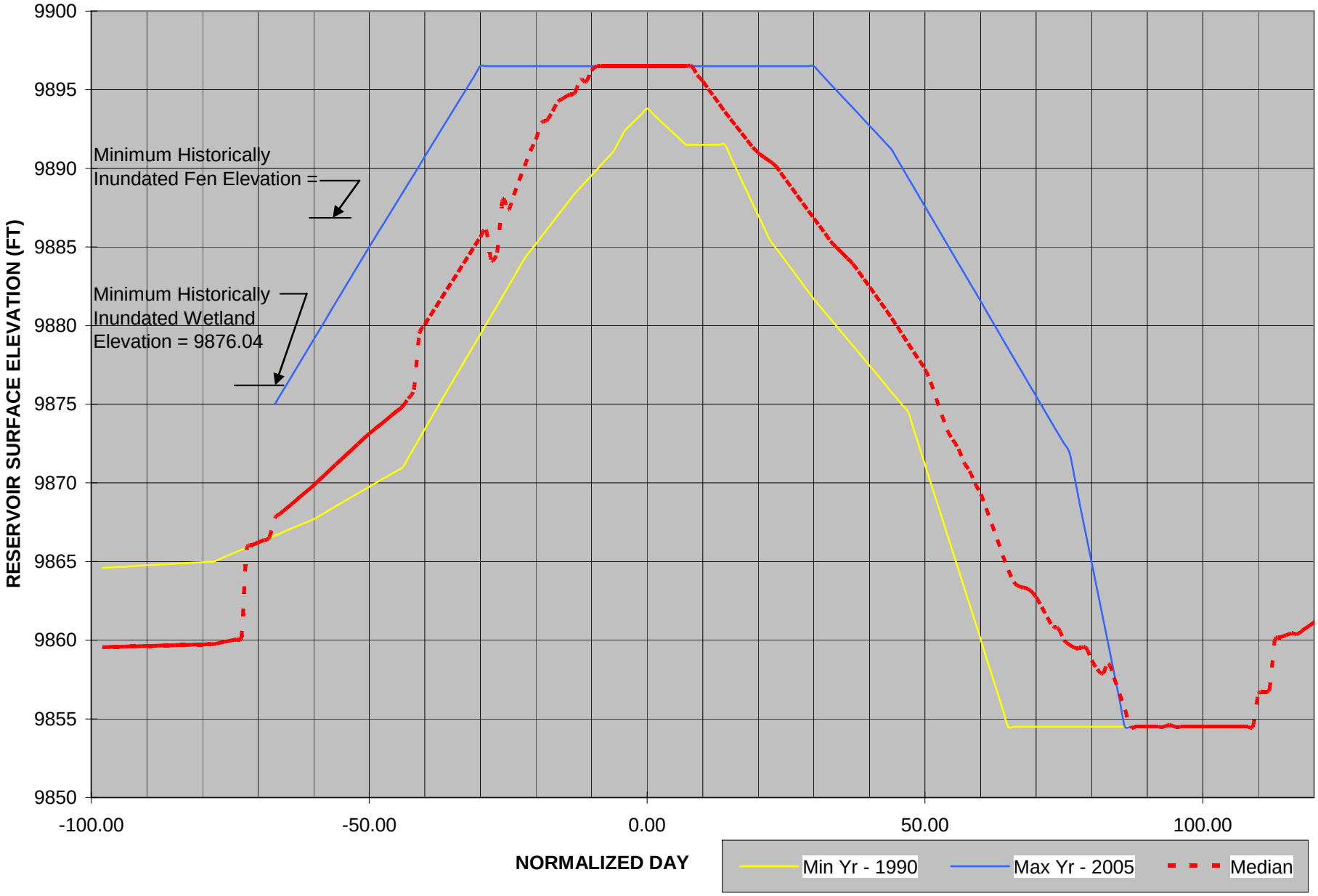
OVERLAND RESERVOIR
HISTORIC RESERVOIR LEVEL DATA



OVERLAND RESERVOIR
NORMALIZED HISTORIC RESERVOIR LEVEL DATA



OVERLAND RESERVOIR
HISTORIC MINIMUM AND MAXIMUM FEN INUNDATION DURATION



APPENDIX B - PHOTOGRAPHS OF OVERLAND RESERVOIR WETLAND

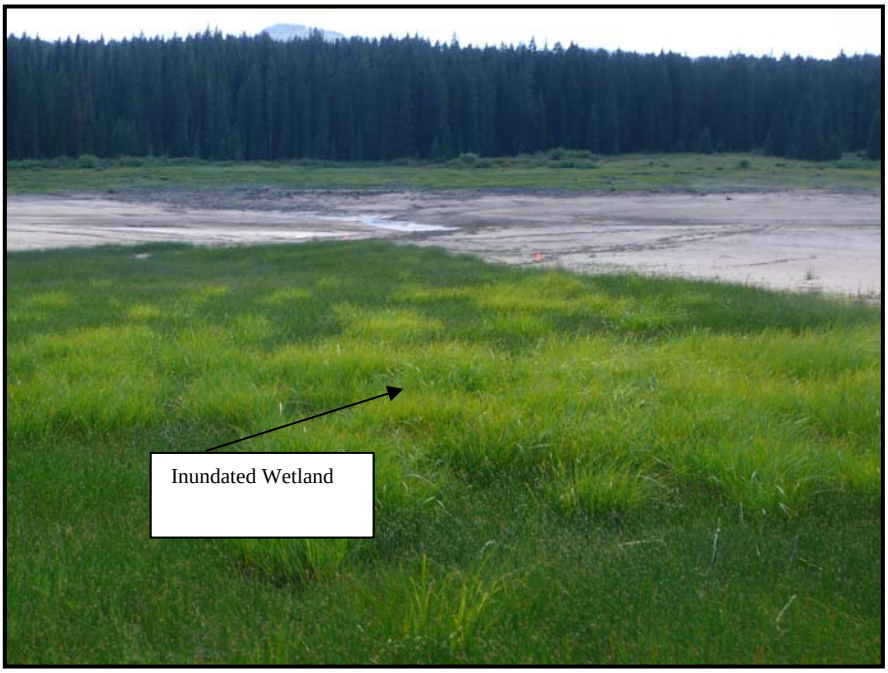
Carex in Fen 7

Carex in Fen 7 – Exposed to Growing Season

Carex in Fen 7

Sampling Soils in Fen 2

Sampling Soils in Fen 6



Looking west below Fen 6
Nearby lowest fen elevation

APPENDIX C

Estimation of Growing Season

Western Engineers, Inc.

General

For the purpose of this report, the wetlands growing season is defined as recommended by the Corps of Engineers (COE 1992):

> "Growing season starting and ending dates will generally be determined based on the '28 degrees F or lower' temperature threshold at a frequency of '5 years in 10'."

Since no U.S. National Resource Conservation Service WETS (Wetland Determination) station is located near the Overland Reservoir, it was necessary to estimate the growing season indirectly. This was accomplished by comparing the results of three methods which are described in the following paragraphs.

Correlation Using Applicable WETS Stations

The data was obtained for all of the WETS stations in the local county (Delta) and the immediate adjacent counties (Garfield, Gunnison, Mesa, Montrose and Pitkin). The growing season was correlated against station elevation. Correlations were produced for each of the WETS growing season probabilities (50% - average, 70% - likely) and index temperatures (24, 28 and 32 degrees F). Following is the list of WETS stations within this local county area:

Delta County:
- Delta
- Paonia 1 SW

Garfield County:
- Altenbern
- Glenwood Springs # 2
- Rifle
- Shoshone

Gunnison County:
- Blue Mesa Lake
- Cimarron
- Cochetopa Creek
- Crested Butte
- Gunnison 1 N
- Taylor Park

Mesa County:
- Collbran
- Colorado National Monument
- Fruita 1 W
- Gateway 1 SE
- Grand Junction WSO
- Grand Junction 6 ESE
- Palisade

Montrose County:
Montrose 2
Uravan

Pitkin County:
Aspen 1 SW

The 21 WETS stations listed above included only one station above the 9,200 ft elevation – Taylor Park in Gunnison County. The reference elevation used for Overland wetlands is 9,890. Therefore, the data from the WETS stations in the six local and adjacent counties did not include sufficient information to satisfactorily extend the correlation to elevations at and above that for Overland Reservoir. Therefore, the data set was expanded by including all other WETS stations in Colorado near and above elevation 8,000. This added the 28 stations listed below:

Alamosa County:
Great Sand Dunes, Elev 8120

Boulder County:
Gross Reservoir, Elev 7,920

Chaffee County:
Buena Vista, Elev 7,930

Clear Creek County:
Cabin Creek, Elev 10,020

Custer County:
Westcliffe, Elev 7,860

Dolores County:
Rico, Elev 8,780

Eagle County:
Meredith, Elev 7,830

El Paso County:
Ruxton Park, Elev 9,050

Fremont County:
Guffey, Elev 8,200

Grand County:
Grand Lake 1 NW, Elev 8,720
Grand Lake 6 SSW, Elev 8,290

Hinsdale County:
- Lake City, Elev 8,670
- Rio Grande Reservoir, Elev 9,460

Jackson County:
- Spicer, Elev 8,340
- Walden, Elev 8,120

Lake County:
- Climax, Elev 11,350
- Leadville, Elev 9,940
- Sugarloaf Reservoir, Elev 9,740
- Twin Lakes Reservoir, Elev 9,200

Mineral County:
- Hermit, Elev 9,000
- Wolf Creek Pass, Elev 10,640

Park County:
- Antero Reservoir, Elev 8,920
- Grant, Elev 8,670
- Lake George, Elev 8,520

Rio Grande County:
- Del Norte, Elev 7,880

Routt County:
- Pyramid, Elev 8,010
- Yampa, Elev 7,890

Saguache County:
- Sargents, Elev 8,470

San Juan County:
- Silverton, Elev 9,270

San Miguel County:
- Telluride, Elev 8,800

Summit County:
- Breckenridge, Elev 9,580
- Dillon, Elev 9,060

The Winter Park WETS station (Grand County) was not included in the data set even though it is at elevation 9,060 because it clearly falls well outside a trend established by the data from stations listed above. Polynomial regression curves were calculated for this set of data. The

95% and 50% confidence intervals were also determined for the regression curves. The confidence intervals represent statistical ranges of the growing season start and end dates which possess the specified probability that the values would continue to lie within the range with either the addition of data or a different data set from the same region. Additionally, calculations were made for the 95% prediction interval, which represents the range within which there is a 95% probability that all data points from unrepresented locations (locations not included in the data set) within the region would lie. The resulting data points, regression curves and statistical intervals are shown on Figures C-1 through C-6. Tables 1 and 2 below summarize the resulting growing season dates along with the calculated statistical parameters at the Overland wetlands reference elevation (9,890):

Table 1. Estimate of Growing Season Based on Regression

Index Temperature (ºF)	Probability that the Growing Season Will Fall Within the Dates (%)	Growing Season Limit	Date of Growing Season Limit	Regression Curve Correlation Coefficient (R^2)
24	50	Begin	5/31	0.83
24	50	End	9/18	0.71
28	50	Begin	6/18	0.83
28	50	End	9/7	0.73
32	50	Begin	7/4	0.78
32	50	End	8/23	0.73
24	70	Begin	5/25	0.83
24	70	End	9/24	0.79
28	70	Begin	6/12	0.83
28	70	End	9/12	0.75
32	70	Begin	6/12	0.79
32	70	End	9/12	0.73

Table 2. Growing Season Regression Statistical Parameters

Index Temperature (ºF)	Probability that the Growing Season Will Fall Within the Dates (%)	Growing Season Limit	95% Confidence Interval (Days Prior to or After Regression Date)	50% Confidence Interval (Days Prior to or After Regression Date)	95% Prediction Interval (Days Prior to or After Regression Date)
24	50	Begin	5.5	2.5	20
24	50	End	4.5	2	17.5
28	50	Begin	5.5	2.5	22
28	50	End	5.5	2.5	20.5
32	50	Begin	6.5	3	25
32	50	End	5.5	2.5	22
24	70	Begin	5.5	2.5	20
24	70	End	4.5	2	17.5
28	70	Begin	5.5	3	21
28	70	End	5	2	19
32	70	Begin	6	3	24.5
32	70	End	5.5	3	21.5

Correlation Using Nearby Climatological Stations

It is seen from the previous paragraph that, even though the confidence intervals using data from the WETS stations listed are quite narrow, the prediction intervals are relatively wide. This means that, although the addition of data from other locations would not be expected to result in substantial changes in the regression curves, the actual growing season dates for Overland Reservoir could vary within a fairly wide range. There are two climatological stations that are close to Overland Reservoir and at about the same elevation, but are not included within the WETS system because their periods of record are shorter than the minimum 30 years required for the WETS system. One of these stations is Bonham Reservoir located about 14 miles west of Overland Reservoir at elevation 9,915 with a useable period of record from March, 1970 through May, 1971 and September, 2003 through July, 2008. The second nearby station is Mesa Lakes, approximately 24 miles west of Overland Reservoir at an elevation of 9,806 with a useable period of record from September, 1971 through March, 1979. Daily minimum and maximum temperature records are available for these stations from the National Oceanic and Atmospheric Administration (NOAA), National Climate Data Center (NCDC). The growing season was calculated from the data for these two stations using the NRCS WETS procedure as follows:

> The growing season is defined as the period for each year during which the temperature has not fallen below the index value. The beginning of the growing season is the last occurrence of the index temperature on, or prior to, July 31. The end of the growing season is the first occurrence of the index temperature on, or after, August 1.

In order to determine the 50% and 70% probability for each of the index temperatures, a normal distribution curve was best-fit to the frequency/date histogram for each individual index temperature. The 70%, 50% and 30% percentile values were then determined from the normal distribution of the data.

Because the temperature data records for these two stations do not overlap, it was possible to combine the two data sets and effectively extend the combined period of record. Combining the data from the two stations seemed appropriate for the following reasons:

- The two stations are generally within the same meteorological regime.
- The two stations are within 110 feet in elevation and bracket the Overland wetlands reference elevation.

Therefore, the growing season dates were also determined for this combined data set in a similar manner to that described above for the separated data.

The results of the growing season data analysis for Bohnam Reservoir, Mesa Lakes and the combined data are shown on Figures C-1 through C-6 and are summarized in Table 3 below and compared with the result of the WETS station regression evaluation:

Table 3. Comparison of Growing Season Characteristics Resulting From Various Evaluation Methods

Index Temperature (ºF)	Probability that the Growing Season Will Fall Within the Dates (%)	Growing Season Limit	Date of Growing Season Limit From WETS Station Regression	Date of Growing Season Limit From Bonham Reservoir Data	Date of Growing Season Limit From Mesa Lakes Data	Date of Growing Season Limit From Combined Data
24	50	Begin	5/31	5/28	6/5	6/1
24	50	End	9/18	9/14	9/30	9/23
28	50	Begin	6/18	6/14	6/9	6/11
28	50	End	9/7	9/3	9/13	9/8
32	50	Begin	7/4	7/2	6/30	7/1
32	50	End	8/23	8/29	9/1	8/31
24	70	Begin	5/25	5/20	5/30	5/25
24	70	End	9/24	9/21	10/3	9/30
28	70	Begin	6/12	6/7	6/2	6/5
28	70	End	9/12	9/8	9/22	9/16
32	70	Begin	6/12	6/19	6/18	6/19
32	70	End	9/12	9/6	9/11	9/8

It is seen that the results of the regression analysis performed on data from the Colorado WETS stations compare closely (within a few days) with the growing season values calculated from the Bonham Reservoir and Mesa Lakes data. Therefore, the WETS regression analysis and Bonham Reservoir/Mesa Lakes evaluation are mutually validating. In general, the Bonham Reservoir/Mesa Lakes data produces either essentially no change or an increase in growing season length. Only the data for the 70% probability that the growing season will fall within the indicated time period for the 32 degree index temperature exhibits a slight decrease in growing season length.

Data From The Overland Reservoir SNOTEL Station

The U.S. National Resource and Conservation Service (NRCS) operates Snowpack Telemetry (SNOTEL) stations which collect continuous climatological data including snow depth, snow water equivalent, precipitation, and temperature. There is a SNOTEL station very close (less than a mile) from Overland Reservoir and at about the same elevation (elevation = 9840 – 50 feet below the reference elevation used for Overland wetlands of 9,890). SNOTEL data is not included in the WETS system. The Overland Reservoir SNOTEL data includes a useable period of record from October, 1989 through the present. The SNOTEL temperature sensors were inoperable for the period from the last half of 2006 through the middle of 2007 resulting in a useful period of record of 18 years. Daily minimum and maximum temperature records are available for this station from the NRCS, National Water and Climate Center (NWCC). The growing season was calculated from the data for these two stations using the NRCS WETS procedure as previously described.

In order to determine the 50% and 70% probability for each of the index temperatures, a normal distribution curve was best-fit to the frequency/date histogram for each individual index temperature. The 70%, 50% and 30% percentile values were then determined from the normal distribution of the data.

The results of the growing season data analysis for the Overland Reservoir SNOTEL station are shown on Figures C-1 through C-6 and are summarized in Table 4 below and compared with the result of the WETS station regression evaluation as well as the analysis of data from the Mesa Lakes and Bonham Reservoir climatological stations:

Table 4. Comparison of Growing Season Characteristics Resulting From Various Evaluation Methods

Index Temperature (°F)	Probability that the Growing Season Will Fall Within the Dates (%)	Growing Season Limit	Date of Growing Season Limit From WETS Station Regression	Date of Growing Season Limit From Bonham Reservoir Data	Date of Growing Season Limit From Mesa Lakes Data	Date of Growing Season Limit From Overland Reservoir SNOTEL Data
24	50	Begin	5/31	5/28	6/5	5/21
24	50	End	9/18	9/14	9/30	9/27
28	50	Begin	6/18	6/14	6/9	6/2
28	50	End	9/7	9/3	9/13	9/19
32	50	Begin	7/4	7/2	6/30	6/30
32	50	End	8/23	8/29	9/1	9/11
24	70	Begin	5/25	5/20	5/30	5/15
24	70	End	9/24	9/21	10/3	10/4
28	70	Begin	6/12	6/7	6/2	5/24
28	70	End	9/12	9/8	9/22	9/25
32	70	Begin	6/12	6/19	6/18	6/13
32	70	End	9/12	9/6	9/11	9/17

The above tabulation shows that the results of the Overland Reservoir SNOTEL data analysis indicated a growing season consistently longer than the results from evaluation of the other data sets. For example, the growing season for the pertinent wetlands index temperature and frequency (28 degrees F or lower temperature threshold at a frequency of 5 years in 10) based on the Overland SNOTEL data is longer than that determined using the other data sets by a range of 13 to 28 days (longer by 14 to 34 percent). However, it should also be noted that the growing season based on the Overland SNOTEL data falls well within the 95 percent prediction intervals which resulted from analysis of the applicable WETS stations throughout Colorado as previously described (See figures C-1 through C-6). There could be a number of reasons for the differences between the Overland SNOTEL data and the Mesa Lakes/Bonham Reservoir data. Even though all three stations are located in the Grand Mesa vicinity and are at about the same elevation, Mesa lakes and Bonham Reservoir are located on the northern flank of the Mesa while Overland Reservoir is on the eastern (downwind) end. It would, therefore, not be unexpected for the climatological regimes to vary significantly. The combined data for the Mesa Lakes and Bonham Reservoir stations encompassed 11 years. Only four of those years overlapped with the 18 year useable period of record from the Overland SNOTEL station. Consequently, the

Overland SNOTEL period of record not only extended to a much longer time range, but practically represented a different time interval. The regression analysis from the WETS station data compares closely (16 days difference or less) with the growing season lengths calculated from the Bonham Reservoir and Mesa Lakes data. The results of the data analyses from the Overland
SNOTEL station are used for the estimate of the growing season for Overland Reservoir as presented in this report for the following reasons:

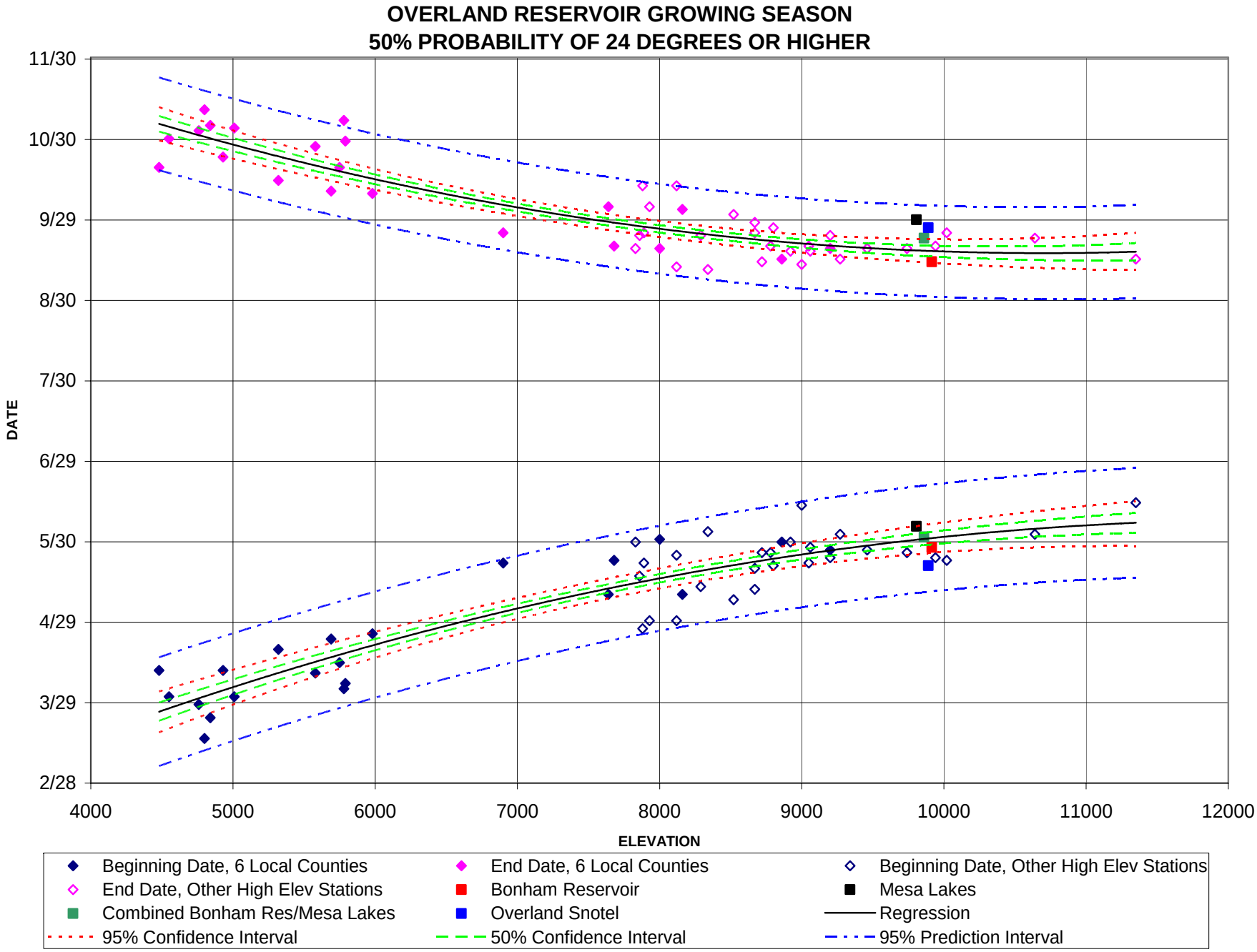
- The data from the Overland SNOTEL station represents the longest period of record of the Grand Mesa stations evaluated (Bonham Reservoir, Mesa Lakes and Overland SNOTEL).

- The Overland SNOTEL station is very near the Overland Reservoir and likely provides the best representation of the climatological conditions at Overland.

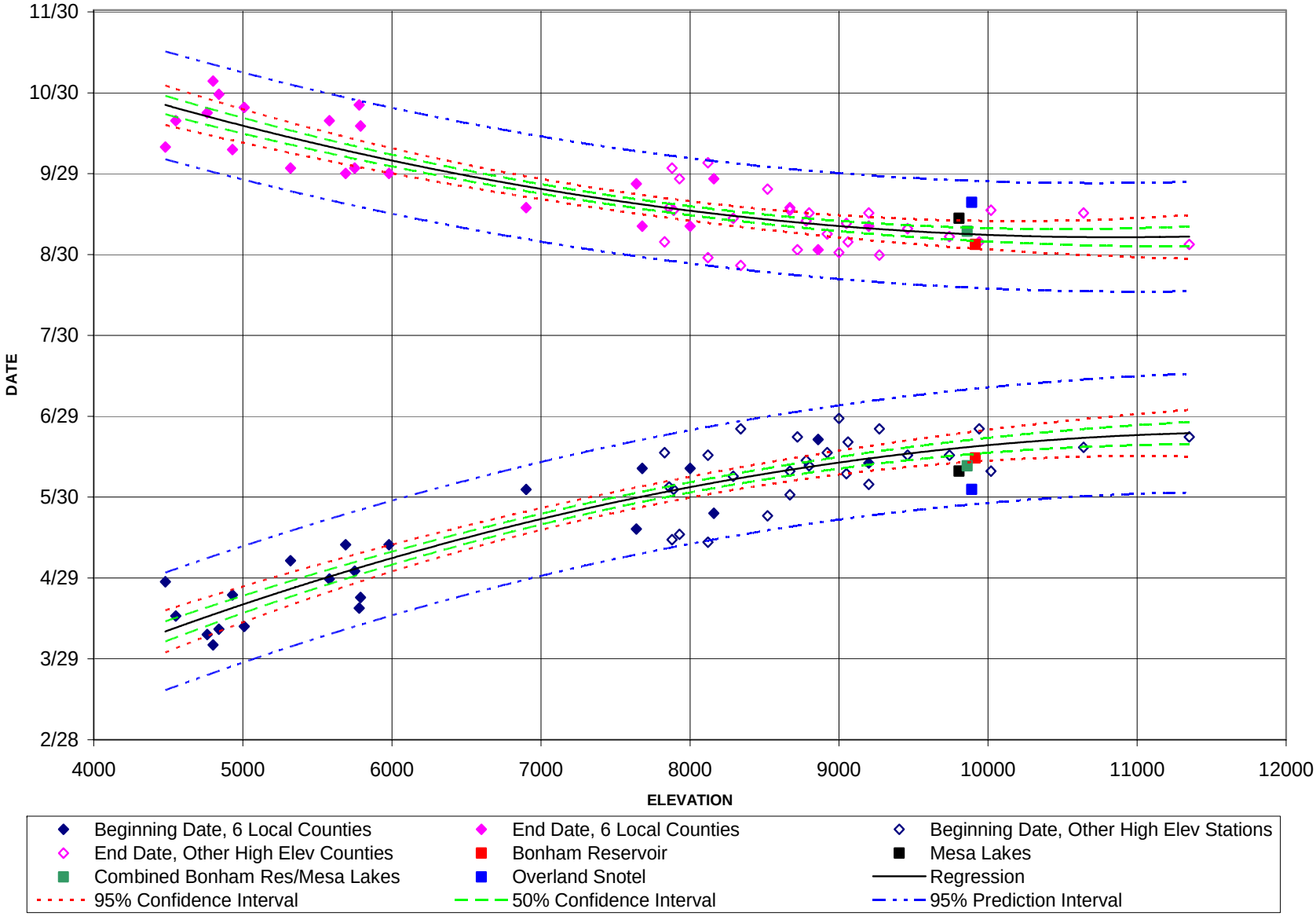
- There is a relatively long useable period of record (18 years) for the Overland SNOTEL station.

- The results of the growing season analysis performed on the data from the Overland SNOTEL station produced beginning and ending dates that were well within the 95 percent prediction intervals resulting from growing season analyses of applicable Colorado WETS stations.

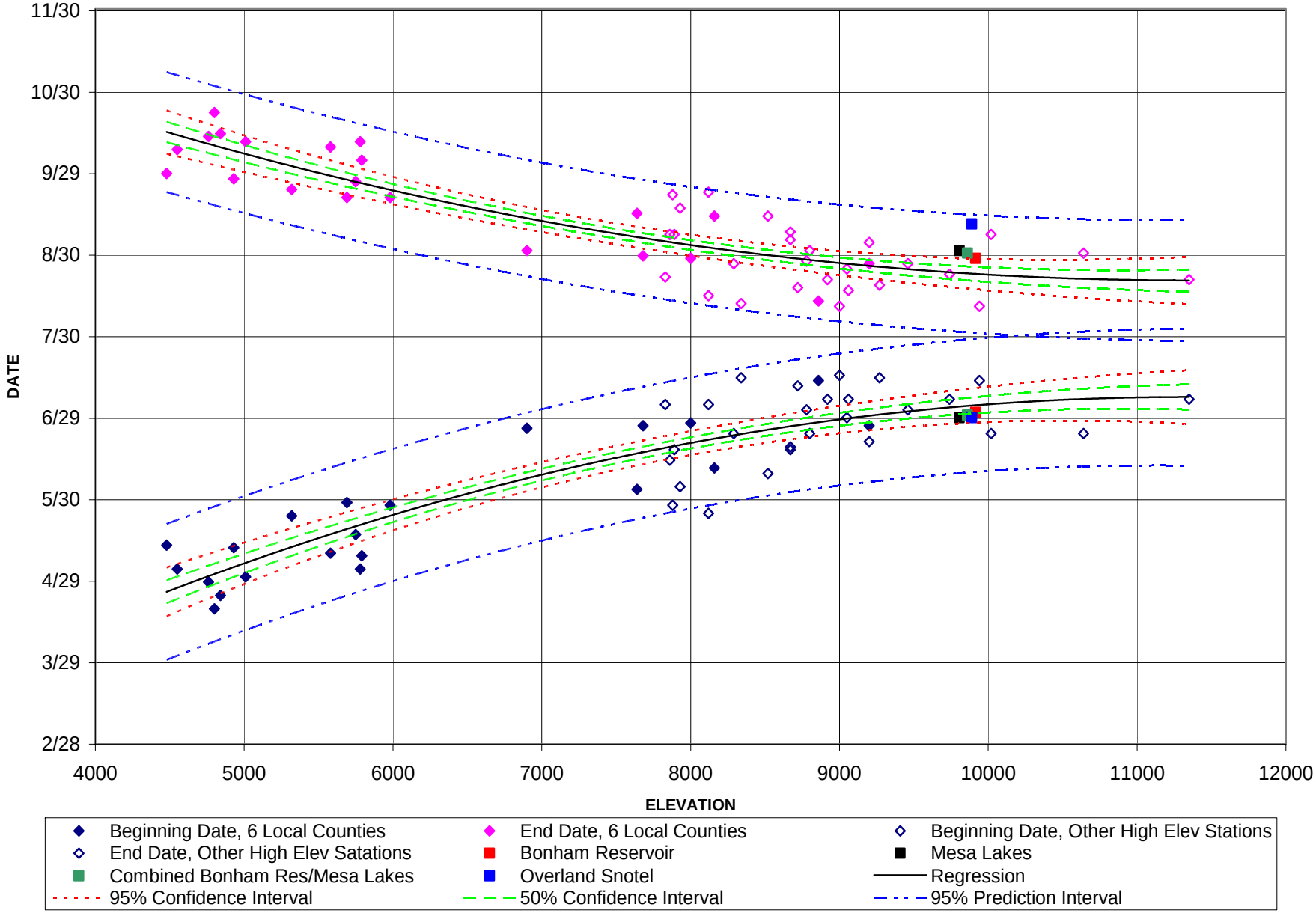
It is interesting to not that all three of the Grand Mesa stations which were evaluated (Bonham Reservoir, Mesa Lakes and Overland SNOTEL) produced growing season lengths which were exactly the same, or longer than the growing season intervals resulting from analyses of the applicable Colorado WETS stations. This suggests a possibility that the Grand Mesa climate for elevations near 10,000 ft MSL produces growing season intervals longer than typical for areas at the same elevation in other locations of Colorado.


OVERLAND RESERVOIR GROWING SEASON
50% PROBABILITY OF 24 DEGREES OR HIGHER
DATE
11/30
10/30
9/29
8/30
7/30
6/29
5/30
4/29
3/29
2/28
4000
5000
6000
7000
8000
9000
10000
11000
12000
ELEVATION
Beginning Date, 6 Local Counties
End Date, 6 Local Counties
Beginning Date, Other High Elev Stations
End Date, Other High Elev Stations
Bonham Reservoir
Mesa Lakes
Combined Bonham Res/Mesa Lakes
Overland Snotel
Regression
95% Confidence Interval
50% Confidence Interval
95% Prediction Interval

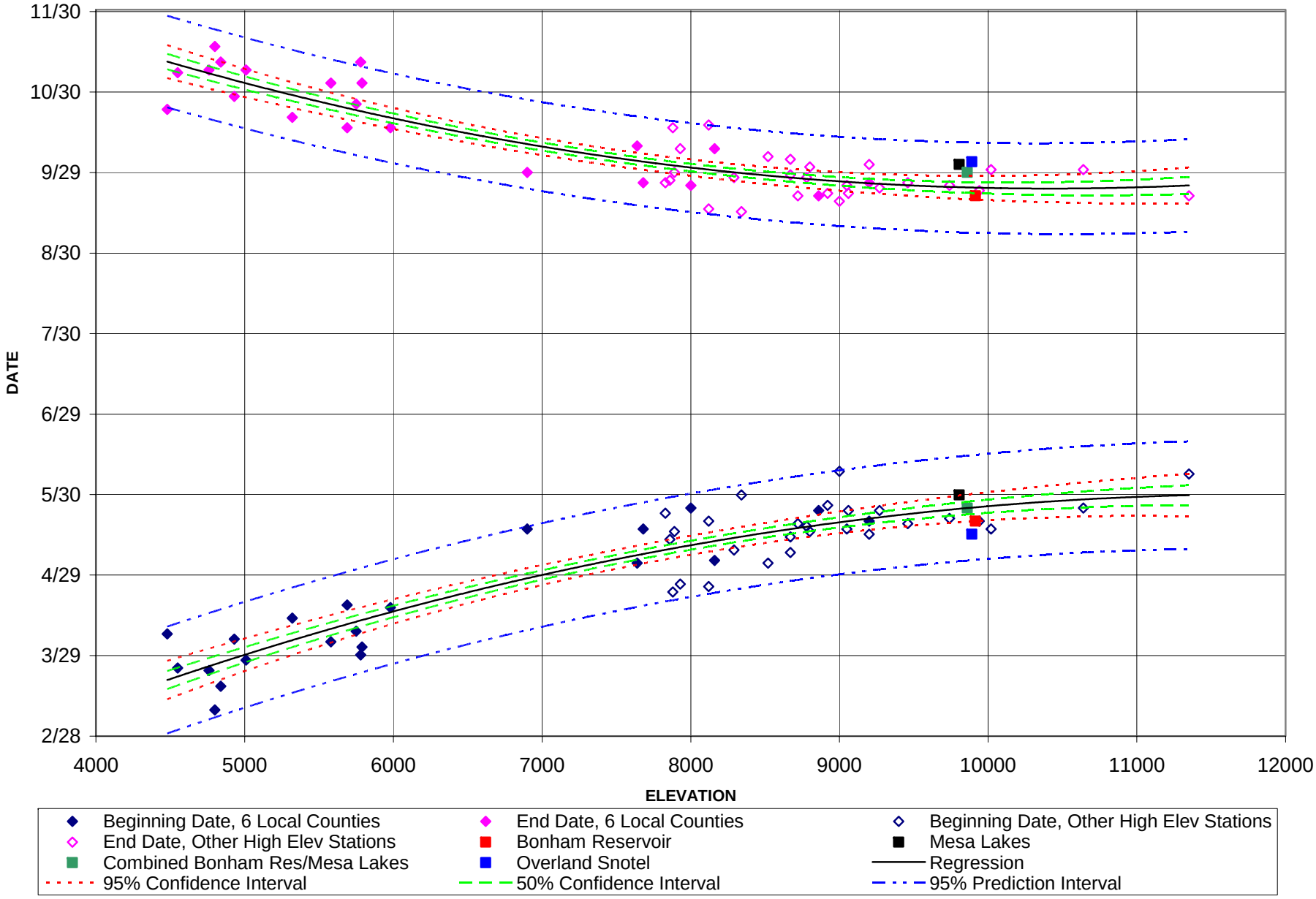
OVERLAND RESERVOIR GROWING SEASON
50% PROBABILITY OF 28 DEGREES OR HIGHER



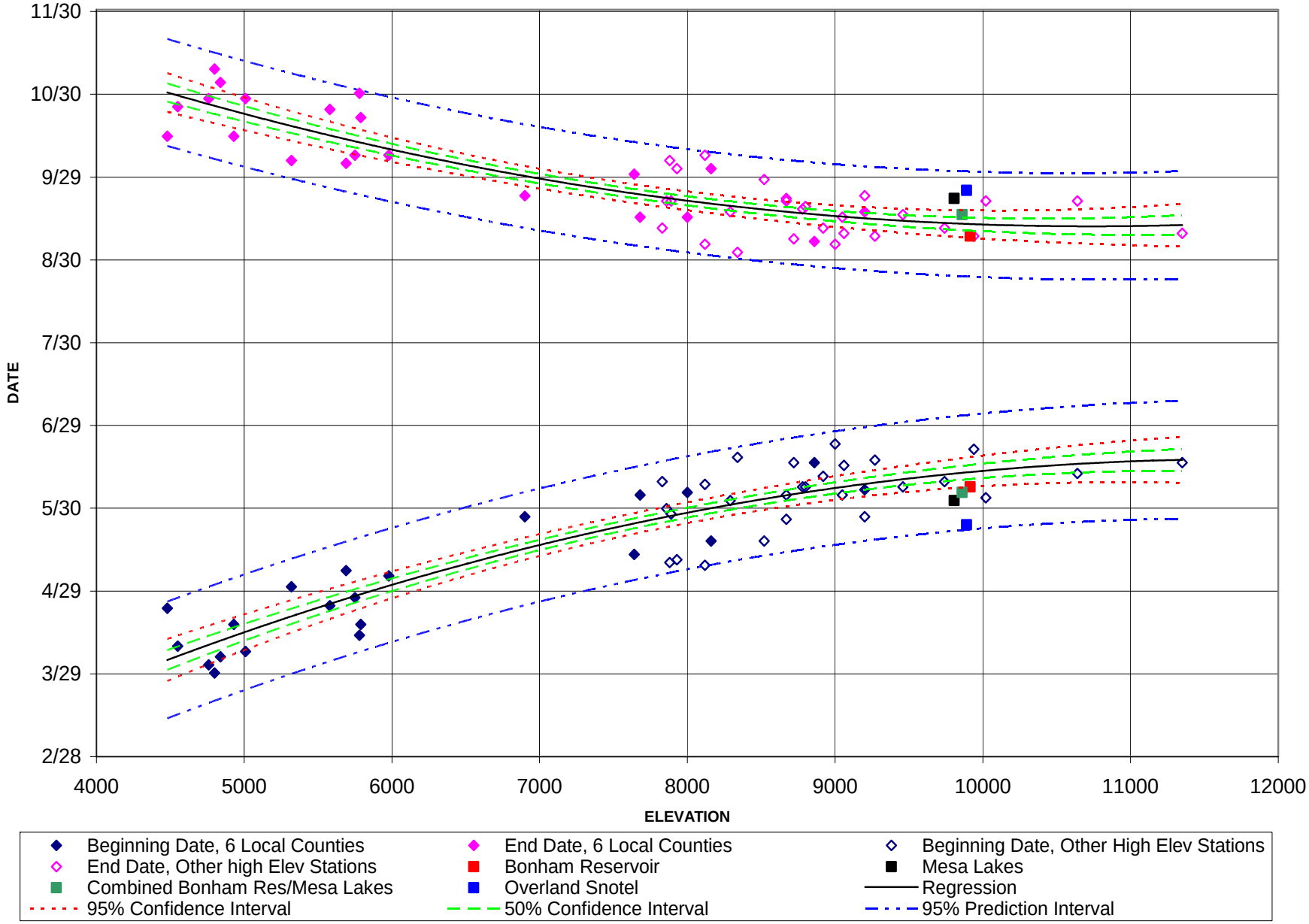
OVERLAND RESERVOIR GROWING SEASON
50% PROBABILITY OF 32 DEGREES OR HIGHER



OVERLAND RESERVOIR GROWING SEASON
70% PROBABILITY OF 24 DEGREES OR HIGHER



OVERLAND RESERVOIR GROWING SEASON
70% PROBABILITY OF 28 DEGREES OR HIGHER



OVERLAND RESERVOIR GROWING SEASON
70% PROBABILITY OF 32 DEGREES OR HIGHER

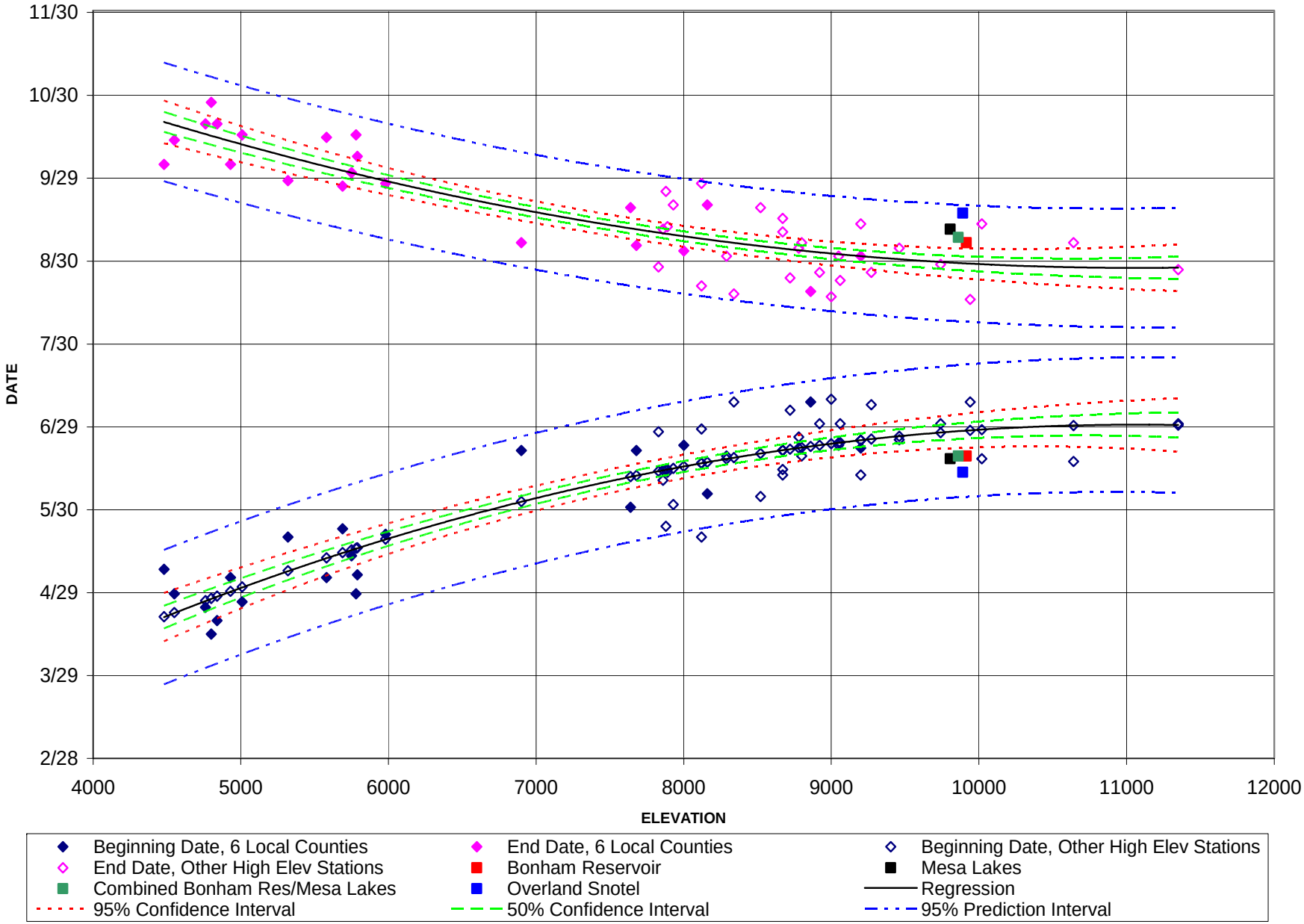


Exhibit 20
Voluntary Relinquishment of 1891 Easment

RELINQUISHMENT

Reservoir #5
Montrose 126401

Colorado State Office
Bureau of Land Management
New Custom House
Denver, Colorado

Gentlemen:

We are the owners of all improvements constructed under Easement No. Montrose 126401, and hereby relinquish all right, title and interest to the Easement granted to Cole, John E., August 4, 1905, for a reservoir under the Act of March 3, 1891, in Section 13, Township 12 S., Range 94 W., 6th P.M., Colorado.

Barbara L. Ford
(Name of Witness)
CEDAREDGE, COLORADO
(Address)

W. G. Burgess
(Name of Grantee)
Austin Colo.
(Address)

Barbara L. Ford
(Name of Witness)
CEDAREDGE, COLORADO
(Address)

Herschel J. Burgess
(Name of Grantee)
Austin, Colo.
(Address)

Barbara L. Ford
(Name of Witness)
CEDAREDGE, COLORADO
(Address)

H. L. Palmer
(Name of Grantee)
Cedaredge, Colo.
(Address)

Exhibit 21
2010, Forest Service Clarification Letter Vesting 1891 Easement at 35.04 Acres

USDA United States Department of Agriculture | Forest Service | Grand Valley Ranger District | 2777 Crossroads Blvd Unit 1 Grand Junction, CO 81506 970-242-8211

File Code: 2720-3/5520
Date: March 12, 2010

MICHAEL J VILLA
WESTWATER ENGINEERING
2516 FORESIGHT CIRCLE #1
GRAND JUNCTION, CO 81505

Dear Mr. Villa:

This letter is being sent in response to your request for a review of Forest Service files concerning the Bull Creek No. 4 Reservoir and, specifically, the area authorized by the easement granted by the General Land Office (GLO) pursuant to the Act of March 3, 1891 (1891 Act). You have made this request in your capacity as the agent for the Bull Creek Reservoir, Power and Canal Company for 404 permitting processes involving the rehabilitation of the Bull Creek No. 4 Reservoir dam.

As part of our processing of ditch bill easement applications, Linda Bledsoe of my staff reviewed the files for all of the Bull Creek Reservoirs, although the only ditch bill easement application received was for the enlargement of Bull Creek No. 5 Reservoir. Linda documented her findings in a summary of that research. In that document, Linda noted: "There are documents in the file that indicate the plat submitted to the GLO for the enlargement showed what actually existed on the ground, which was a reservoir approximately 35 acres in size. However, the inspection done during 2007 by the reservoir company's engineer did not show any evidence that the reservoir had ever been that large. Instead, it appears that the pre-1984 size (prior to the fill restrictions imposed by the State Engineer) of 29.73 acres is more accurate and is what actually vested under the amended 1891 Act easement in 1943."

Until the engineer submitted plats showing overlaying the various water levels, the Forest Service was going to state that the easement that had vested under the 1891 Act easement covered approximately 35 acres. It is not uncommon when dealing with these old files to find that the present day reservoir is not as large as what was shown on the 1891 Act application plat. There are a few instances where the reservoir was built to a larger size than what was approved, but it is far more common that the reservoir is smaller. Additionally, surveying techniques are far more advanced now than they were in 1906 or even 1942. Presented with the plats submitted by the engineer, we made the call that the reservoir was smaller than the 35.04 acres shown on the 1942 plat.

My understanding is that the current project engineer for the Bull Creek Reservoir No. 4 rehabilitation project disputes the finding of the previous engineer, and that is the basis for your request for a review of our previous findings.

As you state in your request, the plat submitted as the application for the amendment to the original 1891 Act easement indicates that the reservoir was to be 35.04 acres in size. There are also documents in the file that indicate the reservoir company never stopped construction on the dam for Bull Creek No. 4 Reservoir once it reached the size applied for under the original 1891 Act easement in 1906. It could be that the 1942 plat showed what had actually been constructed.

Additionally, as you noted, the Forest Supervisor of the Grand Mesa National Forest in March 1943 wrote a letter to the Regional Forester stating that the reservoir enlargement had been completed and that it had been done under State Engineer's approval and according to the State Engineer's specifications. However, there was some discussion afterwards as to whether or not there actually had been any plans submitted to the State for the enlargement. Our files, however, do contain a plat submitted to the State Engineer's Office on November 26, 1930. That plat indicates the enlarged reservoir would cover an area of about 35.05 acres.

Several letters were exchanged between the Regional Office of the Forest Service, the Grand Mesa National Forest and the State Engineers Office between March and August 1943 discussing the status of the reservoir enlargement. The last piece of correspondence during that time is dated August 27, 1943, and it states that the State Engineers Office representative (Mr. Hotchkiss), the local water commissioner (George Saunders), a representative from the Regional Office (Mr. Whiting) and the Forest Supervisor (Ray Peck) made an inspection of the reservoir. The letter says that Mr. Whiting took all the measurements and would talk the matter over with the Regional Forester and submit a memo. No copy of that memo is contained in our files. The letter also states that Mr. Hotchkiss was unaware that the enlargement of the reservoir had not been approved and that he considered the reservoir safe "from an engineering standpoint."

Absent any additional information from that time, we believe that it was probably found that the reservoir was constructed substantially in accordance with the 1930 plat.

As you noted, the State Engineers and Forest Service inspection reports show a reservoir about 35 acres in size until at least 1990. The next state inspection report in our file is dated 1993, and the surface area of the reservoir is shown to be 27 acres. The State Engineer's Office has informed us over the years that its office has not always had the actual surface acreage correct in its reports, but the Forest Service uses those reports to compare our inspection reports to the State's.

As a result of the above discussion, the Forest Service will recognize that the 1891 Act easement that was amended in 1942 (D-052197) authorized an inundated area of about 35 acres. That acreage is also shown on the Serial Register Page in the BLM's LR2000 database.

I would ask that an updated plat of the Bull Creek Reservoir No. 4 be submitted to my office prior to work being done this summer. I would like to ensure that no Forest Service facilities, including the foot and horse trail on the east side of the reservoir, are affected by the additional water being stored in the reservoir following completion of the dam rehabilitation.

If you have any questions, please contact Linda Bledsoe at 263-5802 or via e-mail at lbledsoe@fs.fed.us.

Sincerely,

Connie Clementson

CONNIE CLEMENTSON
District Ranger