

Sierra Pacific Industries

Forestry Division • P.O. Box 496014 • Redding, California 96049-6014
Phone (530) 378-8000 • FAX (530) 378-8139

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OCT 15 2003

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M.P.

October 14, 2003

Ms. Mary Marshall
Bureau of Reclamation
2800 Cottage Way
Sacramento, CA 95825

RE: Comments on Battle Creek Salmon and Steelhead Restoration Project Draft EIS/EIR

Dear Ms. Marshall,

I am a forester responsible for timberland management on Sierra Pacific Industries' ownership within the Battle Creek watershed. This ownership amounts to several thousand acres.

As a stakeholder in the Battle Creek watershed, we are very interested in the successful restoration of this anadromous fishery. In reviewing the Draft EIS/EIR with the assistance of Steve Self, wildlife biologist for Sierra Pacific Industries, there is a concern with the release of sediments stored behind the dams proposed for removal. Three aspects regarding this sediment release are listed below.

1. The EIS/EIR indicates that 58,000 cubic yards of stored sediment will be released into South Battle Creek (page 4.1-31) as a result of removal of Coleman and South diversion dams. Our concern is that this exceedingly large amount of sediment will not flush out of the system but will be deposited in low gradient areas, filling pools and spawning gravel areas. This has been documented many times in sediment rich systems. The sediment that is flushed through to the Sacramento River will then impact endangered winter run chinook and steelhead spawning in the Sacramento River. The release of stored sediment into these streams would appear to have a significant adverse impact to the primary intent of the Restoration Project, that of expanding and enhancing anadromous fishery habitat. These stored sediments must be removed from the dams prior to dam removal and stored off-site so that they cannot reenter the system.

NGO14-1

2. The metered release of sediment during high water flow years called for in the preferred proposal would also jeopardize the success of future plans to place spawning gravel in lower Battle Creek. This reach of Battle Creek has a low gradient and would be susceptible to aggradation thus negating the efforts to enhance spawning opportunities.

NGO14-2

3. The release of significant amounts of sediment into the Battle Creek watershed as proposed in the five dam removal project would have an adverse impact on forest management activities in the upper watershed. All private timberland owners are required to submit a timber harvest plan (THP) prepared by a Registered Professional Forester (RPF) to the California Department of Forestry and

NGO14-3

Fire Protection (CDF) prior to harvest operations. The CDF in conjunction with the California Department of Fish and Game, California Regional Water Quality Board, Department of Conservation Division of Mines and Geology and possibly other government agencies review these THPs to ensure that the timber operations and mitigations proposed comply with the Forest Practice Rules and adequately protect the environment. The Forest Practice Rules include extensive regulations governing construction of new roads, maintenance of existing roads and other measures designed to reduce erosion and protect the environment. A section of these regulations also requires that the RPF analyze the cumulative effect of the proposed THP in combination with past, present and future projects within the watershed and determine if there is a reasonable potential to cause significant cumulative impacts to resources.

NGO14-3
cont

The five dam preferred proposal of the Restoration Project with the release of 58,000+ cubic yards of sediment could constrain harvest activities within the watershed due to the potential for significant cumulative effects. This cumulative effect could be mitigated with the removal and proper storage of the stored sediment behind the dams slated for removal.

The Draft EIS/EIR does not adequately address these issues.

Sincerely,



Steve du Chesne
RPF

Comment Letter NGO14— Sierra Pacific Industries, Forestry Division, Steve du Chesne, RFP (October 14, 2003)

Response to Comment NGO14-1

The sedimentation report that was completed for Battle Creek (Bureau of Reclamation 2001b) suggests that the 58,000 cy³ of sediments, estimated to be stored behind South and Coleman Diversion Dams on South Fork Battle Creek, would be released slowly from bank storage during high flow events after the two dams are removed. The annual sediment transport past South Diversion Dam is estimated to be about 100,000 cy³.

Adverse effects of sediment movement will be minimized to some extent at Coleman and South Diversion Dams with excavation of pilot channels in the sediment that has collected behind the dams. Excess sediment will be placed along the stream banks to be distributed downstream during large flood events. The excavated pilot channels would minimize initial sediment movement but would not be stable channels (i.e., sediment would move at higher flows). Reclamation's sediment study suggests the excess sediment will be released slowly from bank storage during high flow events (Bureau of Reclamation 2001b). The study also suggests that much of the sediment is large gravel and cobble material that slowly would migrate downstream in a very normal sediment transport process. In the first couple of years after dam decommissioning, a large fraction of the stored sediments is expected to be released.

The fine material that would be released during large storms will not substantially increase the net downstream movement of sand and gravel materials. These materials are the basic geomorphic input for the gravel bars, which provide spawning and rearing habitat. Pools and low-gradient areas in Battle Creek do not remain filled with gravel and cobble because during high storm events the water actually scours these pools and deposits gravels along the sides of the channel, supplying the raw materials for gravel bars that provide habitat.

Substrate size ranges from sand to boulder with predominantly gravel and cobble throughout the system. The total estimated area of spawning gravel is 57,000 square feet in the mainstem above Coleman Powerhouse; 81,000 square feet in the North Fork up to the barrier waterfall; and 28,000 in the South Fork Battle Creek up to Panther Creek (Thomas R. Payne and Associates 1998a). Concentration and types of gravel deposits are directly correlated to stream gradient. Mobility studies imply that gravel in Battle Creek moves with enough frequency to keep it clean of fine sediment and loose enough to support spawning. For more information, see Master Response C.

Response to Comment NGO14-2

The metered release of sediments during high flow events would be complimentary to the placement of spawning-sized gravels in lower Battle Creek. Larger cobbles that are released would find areas with appropriate hydraulic conditions for the deposition of cobbles and fill the cascades and channel margins of Battle Creek. Some of the released material would be spawning-sized gravel, which would be sorted naturally by the stream hydraulic forces and deposited in bars with similar spawning-sized gravels. Thus, the release of sediments during high flow events would not negate efforts to enhance spawning opportunities.

Response to Comment NGO14-3

The 58,000 cy³ of sediment behind the dams would be released slowly during major storm events. In the first couple of years after dam decommissioning, a large fraction of the stored sediments is expected to be released. Additional release from behind the removed dams is not expected to significantly increase the annual sediment transport in South Fork Battle Creek, which is estimated to be about 100,000 cy³ per year. No reduction in upstream regulated forest harvesting practices would result from the increased potential for sediment movement caused by the dam removals. The analysis of sediment yield from forest harvesting would be regulated and mitigated exactly as it is under current conditions. Effects related to the dam removals would be measured directly, and appropriate mitigation will be implemented to manage the stored sediments. Removing the diversion dams would be accompanied by short-term turbidity measurements and longer-term sediment-movement monitoring and photographs. This mitigation monitoring is described in Section 4.4, Water Quality, under Impact 4.4-5 in Volume I of this Final EIS/EIR.

Kerry L. Burke
 40652 Highway 36 East
 Mill Creek, CA 96061

Ms. Mary Marshall
 Bureau of Reclamation
 2800 Cottage Way
 Sacramento, CA 95825

Mr. Jim Canaday
 State Water Resources Control Board
 1001 I Street
 Sacramento, CA 95814

October 15, 2003

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Subject: Comments on the Draft Environmental Impact Statement/ Environmental Impact Report for the Battle Creek Salmon and Steelhead Restoration Project

Dear Ms. Marshall and Mr. Canaday,

Thank you for this opportunity to comment on the EIS/EIR document. These comments and questions have been prepared on behalf of Outfitters Properties, the new owners of the Rocky Springs Ranch, formerly known as the Lazy R Bahr Ranch. The Battle Creek Restoration Project has been in the planning stages for almost a decade and it has been a challenging endeavor to become familiar with the multitude of Project materials and information in a short period of time. We are trying to understand the magnitude of potential impacts and benefits of the Restoration Project for the Rocky Springs Ranch property. The recent community meetings held in Manton were very helpful in providing an overview of the project and process. Also a site meeting with Carl Werder and separate meeting with Harry Rechtenwald of Department of Fish and Game were useful in providing some additional details regarding the project.

The landowner is generally supportive of the proposed action to restore Battle Creek, however the lack of detail and specific information regarding construction impacts to Rocky Springs Ranch in the environmental document causes some significant concerns. Without the specific information regarding construction activities it is difficult to determine if the proposed mitigation measures are adequate to reduce project impacts to Rocky Springs Ranch. The EIS/EIR is very general in nature and does not provided precise information regarding construction impacts for the Rocky Springs Ranch. In many cases, consequences, mitigation and restoration are not anticipated nor addressed.

NGO15-1

NGO15-2

We are also concerned that the request from the Battle Creek Watershed Conservancy was not granted for a ninety-day extension to the comment period. The purpose of the requested extension was to allow participation in the Oct. 7-8 Scientific Panel regarding the Coleman National Fish Hatchery and the relationship to the Restoration Project. An additional extension would allow a reasonable amount of time to attend the panel workshop, digest the workshop information and to include information from the workshop into the EIS/EIR comments. An additional extension would provide time to address some of our concerns raised in these comments. We also requested the Project specifications from Carl Werder, but was informed on October 7, 2003 that specific project information would not be able until November, 2003, after the close of the comment period. This restriction is unacceptable.

NGO15-3

As you will see in the following comments, the "Project" is so loosely defined and is lacking in specificity with regard to the implementation measures and the alternative measures for implementation, that one can only conclude that you intend your EIS/EIR to be a tiered document. It would appear that a subsequent NEPA/CEQA process will be necessary to cover the construction details and implementation measures contemplated for the Rocky Springs Ranch property, including but not limited to acquisition of the necessary interests in real property and access required, long before commencing the Project. If that subsequent process were not intended and planned, the "project" description would be inadequate and so vague and uncertain that it would not permit the identification of significant environmental impacts in the comments. In regard to CEQA, as Remy, et al Guide to the California Environmental Quality Act 10th Edition, page 360-1 points out, the project description must be accurate, definite and detailed. Without such definition, the informed public participation process is not possible (County of Inyo v City of Los Angeles (3d Dist. 1977) 71 Cal App3d 185, 193)

NGO15-4

In regard to NEPA, alternatives to the Project and mitigation measures must be included and fully discussed. In this case as can be seen from the following comments and questions, it is assumed that the overall benefits of improving fishery conditions and water conditions justify any level of environmental harm to existing/allowed land uses and species which are land based...including humans. Again, we hope that you intend and rely upon that intention, that your EIS/EIR is to be a tiered document. An additional specific project NEPA /CEQA analysis in regard to the work and mitigation measures associated with the Rocky Springs Ranch and project impacts to other landowners within the area appears to be required to fully address the entire scope of potential impacts. If this were not in fact your intention, the following comments would evidence the legal insufficiency of this document under both NEPA and CEQA. We like many other landowners find that only with the recent public hearings, proceedings and meetings referred to in these comments that we are discovering the full extent of the "Project." The absence of critical details, mitigation measures and identification of significant environmental impacts from this Draft puts us at a disadvantage in determining the full level of impacts to Rocky Springs Ranch. A Tiered EIS/EIR with a subsequent process in regard to the specific activities on Rocky Springs Ranch is the only lawful means of proceeding at this time.

NGO15-5

NGO15-6

Contained below are comments, questions and concerns with an EIS/EIR page reference number. The major categories include Private Property Ownership Impacts, Project Components within Rocky Springs Ranch, Construction Impacts, Community Land Use Concerns, Fishing/Recreational Impacts, Environmental Monitoring Measures and concluding remarks.

PRIVATE PROPERTY OWNERSHIP IMPACTS

The scope of the Purpose and Need of this project is too narrow. It does not encompass the private property ownership issues. This flaw affects throughout the entire document.

NGO15-7

Page 2-1 states "The purpose of the Restoration Project is to restore approximately 42 miles of habitat in Battle Creek and an additional 6 miles of habitat in its tributaries while minimizing the loss of clean and renewable energy produced by the Hydroelectric Project." This statement of purpose does not include the need to retain the ecological integrity, use and value of private property during and after completion of construction. It is critical that private property use and value be maintained throughout the project timeframe and that the final condition of private lands be restored to original pre-project condition unless otherwise agreed to by the landowner.

NGO15-8

Page 2-4 contains a list of several Project Objectives. The last item on the list is "avoid impacts on other established water users/third parties." The first Project Objective should be to do no harm to

NGO15-9

existing land uses / resources. We are concerned that the current objective is too vague and does not inspire confidence to a property owner in the middle of the project area with the potential for significant project impacts. Are property owners considered "third parties"? Who do we see about avoiding impacts? What level of acceptable mitigation can be worked out to the satisfaction of all parties?

NGO15-9
cont

The project maps throughout the document do not delineate ownership. This lack is a critical flaw since it is difficult to determine the location of project activities in relationship to private lands. All maps should indicate ownership and location easements. There is one schematic map, Figure 4.6-1, for general ownership types, however all impacted properties should be clearly identified. Figures 4.2-2 through 4.2-19 do not provide ownership information. We need more specific information regarding proposed road improvements, easements, construction site location and all facilities and uses, removal of canal and any other activities on Rocky Springs Ranch property or on the easements on the property. Detailed ownership maps are necessary to evaluate the level of impacts to private landowners.

NGO15-10

It is critical that affected landowner's property is fully assessed in the undisturbed condition and documented prior to construction to ensure that it will be restored to the original condition in the post construction period. Will there be a performance bond for landowners that agree to allow construction activities on their property? Also on-going maintenance, fire safety, site security, adherence to time frames and other measures are essential to minimize impacts and danger to private property owners. We need additional information to determine if there are adequate measures to minimize impacts to Rocky Springs Ranch.

NGO15-11

3-1 statement that "PG&E either owns the land occupied by the project sites or has legal easements of the area" is misleading. The construction phasing area depicted in Figure 4.2-12 & 13 is not owned or leased by PG & E at this time. Necessary agreements are required to ensure that the landowner is compensated and/or that all mitigation measures are completed to ensure that the land is restored after construction is completed.

NGO15-12

PROJECT COMPONENTS WITHIN ROCKY SPRINGS RANCH

SOUTH CANAL

Once the south canal is decommissioned, will the PG & E canal easements be extinguished?

Will PG&E retain access to the canal area?

Will PG&E be responsible for the condition of the restored canal area and liable for any defect in the filling in of the canal?

NGO15-13

Table 4-10 Is there a map to indicate the portion of the South Canal that is on the Rocky Springs Ranch?

How much grading activity will take place on the private property to decommission the canal?

Can we be assured that the decommissioned canal area will be fully restored to a natural, stable and safe condition?

NGO15-14

3-36 What are the criteria for removal of footings? What if the landowner wants all the footings removed? What if the available material would not be adequate to fill in the canal? What quantity of stream channel material would be utilized? What impacts will this action have on the stream and its ecosystem? Is a Corp of Engineers permit required?

NGO15-15

Table 4-11 Will the concrete material be tested to determine that no hazardous materials are presence prior to disposal on the Rocky Springs Ranch? Will the landowner be notified of the days that helicopter work will be done? How many helicopter trips are anticipated for south canal work? Are tunnels located on Rocky Springs Ranch property? If the tunnel drainage features do not work, who will improve them? Will there be a vector problem in the tunnels? Who will own the tunnels after the canal is decommission? Will they be monitored? If adjacent trees are damaged or killed, will they be replaced? | NGO15-16

Table 4-12 Are there any "20 foot clearing zones" on Rocky Springs Ranch? Will there be tree trimming, brush removal, or helicopter landing pads on Rocky Springs Ranch land? Will heavy equipment be stored adjacent to the canal during removal period? Will fill come from any off site area? Is any of the project width of 70 feet on Rocky Springs Ranch? | NGO15-17

3-39 Construction period at the South Canal is indicated as a 2.5 month period. Table 4.9-4 of the document indicates a 5-month construction duration. Which time frame is correct? What compensation will be given to the landowner if the construction/disturbance period is greater than 2.5 months? Can penalties be assessed on the contractor if the approved time frame is exceeded? What assurances does the property owner have that the contractual agreement between Bureau of Reclamation and the contractor are adequate to address landowner concerns? | NGO15-18

Are the staging areas identified in the EIS/EIR, and if so where are they mentioned? Are any permanent cut-slope present on Rocky Springs Ranch? | NGO15-19

Please explain "Areas permanently disturbed by construction generally do not require restoration." Are any permanently disturbed areas on Rocky Springs Ranch? | NGO15-20

Figure 4.2-15&17 What portion of the South Canal is on Rocky Springs Ranch? Where are the clearing areas, Helicopter areas, etc.? Please designate on maps. | NGO15-21

INSKIP DIVERSION DAM/SOUTH POWERHOUSE

FIGURE 3-2C is a schematic to assess actual impacts. The access road is shown but not the adjacent parking area. How much grading will be done for these improvements? Will there be any blasting? How much spoils will result and where will the spoils be taken? | NGO15-22

3-42 Has a visual analysis been done on the power line relocations? Is it shown on any diagrams? Figure 3-2c does not include the new powerline relocation area. | NGO15-23

3-49 At what time of year will the in-stream excavation be done? How will the fish ladder's improvements impact the adjacent land owner. For what period of time will the fishing be disrupted? After construction, how many trips per week will be made to the fish ladder? What route will be utilized for monitoring the Inskip/South Powerhouse facilities? Will all construction take place on PG&E property? Are the boundaries for the PG&E parcel marked in the field? | NGO15-24

3-50 Will the sediment basin need to be cleaned? How often will the sediment basins be cleaned and where do the spoils go? | NGO15-25

3-51 “An access point on the top of the plateau that avoids the residential area would be required for construction.” Is this the staging area? If so, there should be consistent terminology throughout the document. If it is just an “access point,” will it be also 16feet in width? What are the dimensions? What are the full range of activities that will occur in this area? What type of equipment will be stored or used here? Is this on Rocky Springs Ranch property? | **NGO15-26**

3-49 There is no map that indicates all the “Construction Considerations.” We need to know the exact location of access roads to determine level of impacts on Rocky Springs Ranch and the Mount Lassen Trout Farm facility at the Ranch. | **NGO15-27**

3-50 Where is Area A, Contractor use area? Is this proposed on Rocky Springs Ranch? If so, we need to know the exact location, size and use parameters to determine if it is compatible and how detrimental it could be to Ranch operations. | **NGO15-28**

3-52 Where is the Disposal Area, and the staging area? Is this proposed on Rocky Springs Ranch? If so, we need to know exact location, size and use parameters to determine if it is compatible and how detrimental it could be to Ranch operations. | **NGO15-29**

FIGURE 4.2-13 does not indicate the private property ownership. How much cut and fill will be necessary for all project features depicted on this map? Will there be blasting? | **NGO15-30**

How will the landowner be compensated if this portion of the project runs beyond the 19 month Construction period indicated in Table 4.9-4? | **NGO15-31**

LOWER RIPLEY CREEK

3-53 Can a map be provided of the proposed location of the access road to Lower Ripley Creek Feeder Diversion Dam? Please identify the location of the “unimproved road on private property that can be taken in a westerly direction about 3 miles to the worksite.” How much area around the Lower Ripley Creek Feeder Diversion Dam is owned by PG&E? Will any work occur on private property? | **NGO15-32**

3-54 Flows are proposed to be diverted from Cross County Canal into Lower Ripley Creek, to bypass the South Powerhouse construction zone. When will this occur and for how long? Will the high flows (50 cfs vs 3 cfs) result in damage to the natural environment? Has this measure been assessed? | **NGO15-33**

Figure 4.2-10 shows substantial road construction activity and physical disturbance. What portion is on Rocky Springs Ranch? Will the road to Lower Ripley be improved to serve Coleman Diversion Dam/ Inskip Powerhouse (Figure4.2-8), and what portion is on Rocky Springs Ranch? What will be the final width of those roads? Is there an existing PG&E easement? How will breaching Cross County Canal into Ripley Creek impact the drainage? Will erosion and sedimentation occur? What mitigation measures can reduce impacts to Ripley Creek? | **NGO15-34**

FIGURE 4.2 -10 & 11, How will the water from Ripley Creek bypass Inskip Canal? | **NGO15-35**

CONSTRUCTION IMPACTS

The proposed project has the potential to impact all the land uses on the Rocky Springs Ranch. There are grazing activities, aquaculture, residential use, hunting, fishing and other recreational activities that take place on the ranch. A family with four small children own the Ranch.

NGO15-36

MOUNT LASSEN TROUT FARM

Mount Lassen Trout Farm has a facility on the Rocky Springs Ranch property adjacent to the residential compound. We are concerned that potential construction and transportation activities may harm the operation of the existing tenant. Ranch income is derived from Mount Lassen Trout Farm and we are concerned that new activities may harm fish production.

NGO15-37

Potential impacts to this facility do not appear to be addressed in the EIS/EIR. Dust generation, vibration from large trucks and equipment, the need for additional site security, all may create problems for the on-site operation.

3-12 An abandoned access road located about 2,000 feet east of the residence is described on this page. Is this shown on the access maps? Is this the preferred access to the South Powerhouse road. Will it avoid the residential area and the Mount Lassen Trout Farm facility at Rocky Springs Ranch?

NGO15-38

The Impact Mechanism section (4.0-5) does not include vibration from trucks and equipment.

NGO15-39

Note Photo # 1 & 2 in Attachment # 2 depicts Mount Lassen Trout Farm facility at Rocky Springs Ranch and proximity to ranch road.

NGO15-40

CONSTRUCTION SITE / SCHEDULE

A construction site is delineated on Figures 4.2-12&13. This site is on Rocky Springs Ranch property.

What are the specific uses proposed for that the site? Is there a specific time limit for use of that site? Will there be penalties to the contractor if the EIR/EIS time frame is exceeded as delineated in ES-11?

NGO15-41

How will be landowner be compensated if the time frames are exceeded?

Note Photos 7 - 10 of proposed construction site on Rocky Springs Ranch in an undisturbed condition in Attachment # 2.

TRANSPORTATION

Has the EIR/EIS considered alternative locations for access to South Powerhouse and South Canal? What level of mitigation is required?

NGO15-42

4.10-9 Please identify Old Ranch Road on a map? Is it on Rocky Springs Ranch property?

NGO15-43

TABLE 4.9-3 – What are the dates of counts done within Manton community? Is this information timely?

NGO15-44

4.9-15 South Powerhouse Road is not included in the traffic analysis assumptions. Will it not be used at all it the project? There are references in other portions of the document that it may be used.

NGO15-45

Table 4.9-4 – South Powerhouse indicates 20 construction workers and only 22 estimated average Daily round trips. There will be more trips generated than just coming and going from the job site. There will be numerous trips with construction materials, inspectors, and other activities. This figure appears to be vastly understated for this site and many others on this table.

NGO15-46

Figure 4.9-2 – Does this map indicate all possible access alternatives for the project?

NGO15-47

Table 4.9-5 Average Daily Trips for Manton School Road only assumes trips for South Powerhouse. Will access for some of the South Canal work come on Manton School Road?

NGO15-48

4.9-10 Indicated that Lower Ripley Creek could be accessed by South Powerhouse Road, but it is not included in Table 4.9-5.

NGO15-49

Note Photos 3 – 6 in attachment #2 that indicate proximity of PG & E trucks to Rocky Springs Ranch residence.

NGO15-50

NOISE

4.10-3 When and where will blasting be used?

NGO15-51

4.10-5 Rocky Springs Ranch will also be impacted by noise, vibration, safety issues, blasting impacts to Fish and wildlife. These issues are not considered? In no event should there be any blasting during fishing and hunting seasons, holidays or weekends!

NGO15-52

4.10-9 There is not enough specific information regarding blasting / impacts. Ranch Springs Ranch is also a noise sensitive land use. Land uses include residential, grazing, aquaculture, hunting, fishing and other recreational activities.

NGO15-53

What happens if there are more than 5 helicopter flights to Inskip site? The document does not include impacts due to helicopter use for work on South Canal.

NGO15-54

Table 4-12.5 Noise levels are not listed for helicopters.

NGO15-55

Table 4-10-4 does not include helicopters or cement batch plant operations. The Rocky Springs Ranch Residence is within 50 feet of the access road and will be greatly impacted. The Mount Lassen Trout Farm facility at Rocky Springs Ranch is adjacent to the access Road and will be heavily impacted by noise.

NGO15-56

Table 4-10.5 should be in Transportation section also.

NGO15-57

4.10-12 Any approved construction must have hours of operation should not exceed 8am - 5 pm. Even approved activities outside these times would have an especially great impact on surrounding private land uses.

NGO15-58

Note Photos 3-6 in attachment #2 that indicate proximity of PG & E trucks to Rocky Springs Ranch residence.

NGO15-59

AIR QUALITY

Table 4.11-4 – Change the “should” to “shall” in “The following controls are applicable to the Battle Creek project and should be implemented.” Without a requirement for dust control, significant damage can occur in the residences and at the Mount Lassen Trout Farm facility at Rocky Springs Ranch. We need a tough dust control plan in place to mitigate the issue.

NGO15-60

PUBLIC HEALTH AND SAFETY

4.12-3 Rocky Springs Land owner wants to notified of any hazardous materials that are found on the property or of any spills on the ranch or adjacent project area that accesses through the ranch. PG&E and Bureau of Reclamation will be responsible for all clean up and removal of hazardous materials.

NGO15-61

4.12-4 No standing water from project facilities will be allowed on Rocky Springs Ranch.

NGO15-62

4.12-7 Development of a Spill Prevention, Containment, and Countermeasure Plan needs to be evaluated prior to the project commencement.

NGO15-63

4.12-8 The proposed traffic plan needs to be evaluated in the EIS/EIR to determine if it is adequate to reduce the significant traffic impacts on private landowners and the community.

NGO15-64

4.12-10 What penalties and enforcement will there be for violations of speed zone near Rocky Springs Ranch residential / Mt. Lassen Trout Farm facility? Trucks accessing the powerhouse today travel at speeds significantly in excess of posted limits. This cannot be allowed to continue.

NGO15-65

CONSTRUCTION-RELATED EFFECTS ON RESIDENT FISH

What are the anticipate impacts to native resident trout population?

What if the recovery time exceeds the construction time? These projections must be quantified and verified to assess the probabilities of enhancements and costs of potential failure. What mechanism will there be to compensate landowners

that relied upon historic fishing opportunities/conditions?

Will a database of pre-construction trout counts be done for monitoring purposes?

NGO15-66

SEDIMENT LOADS

What happens if sediment redistribution takes more than 3 years? Will there be adequate Monitoring to determine impacts? Will there be a funding source to address the problem?

NGO15-67

STREAMBED & FLOWS

What evidence supports the statement that "all natural hydrologic processes would return to their normal dynamic equilibrium within 1 year"?

NGO15-68

AESTHETICS AND VISUAL RESOURCES – Chapter 4.8

There is no mention of the power line relocation visual resources in this chapter. This omission makes it impossible to determine the potential impacts.

NGO15-69

ES-19 states that "the construction and operation of the Proposed Action associated with South Powerhouse and Inskip Diversion Dam improvements would result in a significant and unavoidable aesthetic impact on the Oasis Springs Lodge."

NGO15-70

In addition to aesthetics, there are massive impacts from noise, other disruptions and the potential of project failure or adverse outcomes from changing the nature of the stream. Mitigation measures are recommended to partially reduce the aesthetic effect on these facilities and its operations. What is the extent of the mitigation? The impacts to the Rocky Springs Ranch property were not considered including loss of aesthetic values, loss of access and loss of private recreational use. What level of mitigation is available for these losses?

NGO15-70
cont

COMMUNITY LAND USE CONCERNS

LAND USE – Chapter 4.6 deals with Land Use within the project area. The document states the majority of property is private however Figure 4.6-1 does not provide the property lines of individual property holdings. In the project area on Rocky Springs Ranch there is grazing, aquaculture activities, residential use and commercial hunting and fishing use. These range of uses have not be addressed in the document.

NGO15-71

The local community of Manton is approximately 400 people with limited services. How will the town handle a doubling of its population size during the 3 year construction period? Will there be adequate services to deal with human waste, solid waste, traffic, water, fire and police services? Where will workers live? How will this intense use for a three year period impact the town?

NGO15-72

NATIONAL WILD AND SCENIC

South Battle Creek is eligible and classified as recreational. At the completion of the Restoration Project, will the public agencies promote additional recreational use of Battle Creek? A specific commitment and clarification of intent is mandatory for landowners and community members to understand the implications of this project in this regard.

NGO15-73

MANTON WATER SUPPLY

4.13-2 Is the surface water supply from Cross County Canal and Digger Canal adequate for the additional 380 workers that will be present in the community? Impacts from additional domestic water use were not addressed in the document.

NGO15-74

SOLID WASTE

4.13-3 Are the solid waste facilities within Manton adequate for the addition of 380 workers? Impacts from additional solid waste from were not addressed in the document. Many of the workers will pass through Manton and use the limited services.

NGO15-75

FIRE PROTECTION

4.13-8 Fire hazard is considerable and significant, Mitigation necessary and a Fire Suppression Plan must be reviewed and approved by private landowners and surrounding communities prior to commencement of construction.

NGO15-76

WASTEWATER

4.13-5 How many and where will septic systems or portable toilets be located at Rocky Springs Ranch?

NGO15-77

360 WORKERS

4.13-7 - Construction workers will double the population of Manton.

Does the 360 figure include all the mitigation/monitoring personnel, agencies, etc.

NGO15-78

SOLID WASTE

4.13-8 – Where will the 3,000 cubic yards of construction waste be generated from? What are the trucking off site removal trips included in Table 4.9.4?

NGO15-79

COLEMAN FISH HATCHERY COMPATIBILITY WITH RESTORATION PLAN 4.17-1

At the October 7-8 Science Panel Review at Red Bluff, some concerns were raised that there is not a "standard format" for Adaptive Management Plans. Will the plan be reviewed by the stakeholders and others and will they be allowed adequate time and participation?

NGO15-80

FISHING / RECREATIONAL IMPACTS

HARVEST

Are there any plans to change trout fishing regulations on Battle Creek as a result of this project? What regulations will be imposed on other species?

NGO15-81

CUMULATIVE IMPACTS

The EIS/EIR anticipates that the project will "substantially benefit fish populations in the Battle Creek watershed" Within what time frame? What will be the magnitude of improvement? Aside from populations, what will be the effect on fishermen given changes in flows, water levels, in-stream habitat, etc.?

NGO15-82

BLM- RECREATIONAL USE

Will BLM try to expand recreational use within project area? Will the South Fork continue to be deemed "non-navigable?"

NGO15-83

FISHING

3-36.1 Eliminate statement "Fishing is also permitted on private land" suggest: Fishing on private property is subject to the permission of the landowner and adherence to all Fish and Game regulations.

NGO15-84

Does PG&E allow access to canals and other properties to anyone for fishing? If so, who?

NGO15-85

4.14-5 Where and when does DF&G stock South Battle Creek? What other resort owner stocks the canals?

NGO15-86

KAYAKING

4.14-11 EIR/EIS did not consider adverse impacts from increased kayaking and rafting on private property. For example, trespassing, waste generation, fire danger and site security have not been addressed.

NGO15-87

ENVIRONMENTAL MITIGATION MEASURES

GENERAL ENVIRONMENTAL PROTECTION MEASURES

Beginning of chapter 4 - too general

NGO15-88

ENVIRONMENTAL PROTECTION STRATEGY -

The five listed strategies on 4.0-7 are not specific enough to address potential impacts to Rocky Springs Ranch. The Restoration project will impact a majority of the Ranch for the entire project period. The project will include the following activities on Rocky Springs Ranch, additional access development, staging areas, South canal removal, Lower Ripley removal, Cross County Canal water into Lower Ripley at 50 cfs, South Powerhouse and Inskip improvements. All the construction work will impact Rocky Springs Ranch throughout the entire project period of three years. We expect that there will be increased monitoring, inspections and management for years following the completion of the project.

NGO15-89

DEFERRED MITIGATION PROGRAMS

4.0-8 TO 4.0-10 include several mitigation programs including Develop a Worker Environmental Education program, Develop an Environmental Compliance Monitoring Program, Design Work Zones and Develop an Implementation Plan. It is not adequate to say you will do something that is critical to reducing significant impacts. How can a private property owner be assured that these Programs and Plans will be adequate to reduce impacts if there are not included in the EIS/EIR? Deferred Mitigation Programs cannot provide a reassurance of reduction of construction impacts to an acceptable level.

NGO15-90

WORKER ENVIRONMENTAL EDUCATION PROGRAM

Expand program to include fire safety, site security issues, treatment of livestock, no hunting/fishing on private property, no disturbance of private property owners, adherence to any private property agreements, etc.

NGO15-91

ENVIRONMENTAL COMPLIANCE MONITORING PROGRAM

What amount of budget is designated for Environmental Compliance Monitoring and Construction Monitoring? Will landowners be given copies of all Monitoring reports?

NGO15-92

DESIGNATED WORK ZONES

What is the penalty for violation of designated work zones?

NGO15-93

IMPLEMENTATION PLAN

When will the implementation plan be available? What input will a private landowner have if the implementation plan is not adhered to?

NGO15-94

MITIGATION FUNDING

Is there adequate mitigation funding to address the restoration of private property to the original condition or agreed upon condition? Who is the responsible party for negotiations and enforcement?

NGO15-95

MONITORING

ES-5 Who will administer the Water Acquisition Fund and the Adaptive Management Fund?

NGO15-96

E-S 10 mentions a "10 - year period following the initiation of prescribed instream flow releases" When does the 10-year period begin? What happens after the 10-year period? Who will be responsible for project related monitoring activities?

NGO15-97

ES-15 - Will PG&E be responsible for the 40% if they are held in the minority opinion? Who will pay for representation of the Adaptive Management Fund's interests in disputed actions?

NGO15-98

WATER ACQUISITION FUND

Will impacted landowners have any input regarding beneficial flow changes per Table 4-13?

NGO15-99

How can you evaluate impacts to plants after construction? Will pre-construction condition be documented prior to construction?

NGO15-100

ADAPTIVE MANAGEMENT PLAN

At the October 7-8 Science Panel Review at Red Bluff, some concerns were raised that there is not a "standard format" for Adaptive Management Plans. Will the plan be reviewed by the stakeholders and others?

NGO15-101

POST CONSTRUCTION EVALUATION

Pre-construction conditions on private lands need to be documented to verify post construction condition and level of restoration required.

NGO15-102

In conclusion it appears that more specific and detailed information regarding construction impacts is needed prior to obtaining approval for additional access and use of Rocky Springs Ranch property. We have contacted Carl Werder and requested the project specifications, however, he was not able to meet with us until November to discuss project specifics. Our concern is that we can not fully evaluate the project components and potential impacts to the ranch. How do we know that all elements have been considered? The complexity of this project requires that some of the project specifications need to be disclosed to determine if assumptions in the EIS/EIR for mitigation are adequate.

If there is cooperation on determining the adequate level of mitigation for construction impacts to Rocky Springs Ranch, we could be assured that the many and major detrimental impacts that will occur as a result of this project can be satisfactorily addressed. If no attempt is made to clarify the extent of specific construction activities on the Ranch and/or the level of mitigation is unacceptable, the project impacts to the Ranch will be significant and this EIS/EIR is not adequate to assess the adverse impacts and the required compensatory actions.

NGO15-103

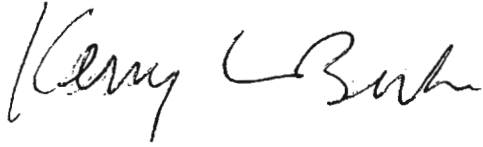
This project will last a minimum of three years. Three key project elements, South Canal, Lower Ripley, and South Powerhouse/Inskip will impact Rocky Springs Ranch for the entire length of the Project. There will be substantial post construction activity in monitoring the new facilities in excess of the three year construction period. This is an enormous intrusion on private property use and enjoyment. How will property owners be compensated for loss of income/use of their property? This property was recently purchased with the expectation of full use, enjoyment, and retention and expansion of ranch income.

NGO15-104

We are also concerned that the Bureau of Reclamation has not been able to gain the support of the Battle Creek Watershed Conservancy or the Tehama County Board of Supervisors. The local community appears concerned about the larger context of this project. A key feature of this project is "Regulatory Certainty" for PG&E, it seems only fair and fitting that there would be Impact Mitigation Certainty for landowners and the local impacted community.

These comments were prepared to address our concerns for the short term and long term impacts to the Rocky Springs Ranch. It is a complex project and not all issues have been understood or addressed. I appreciate your work on the environmental document and process and look forward to reviewing your response to comments. If you have any questions regarding these comments, please contact me at 530-595-4470 or via e-mail at BurkeLandUse@aol.com. Also could you please provide Final EIS/EIR documents to the others copied below. Thank you.

Respectfully submitted:



Kerry L. Burke

Attachment # 1 - Map of Rocky Springs Ranch

Attachment # 2 - Rocky Springs Ranch photos 1 - 10 taken 10-6-03

Cc: Outfitters Properties

C/o Kerry Burke

40652 Highway 36 East, Mill Creek, CA 96061

Paul Minasian,

Minasian, Spruance, Baber, Meith, Soares & Sexton, LLP

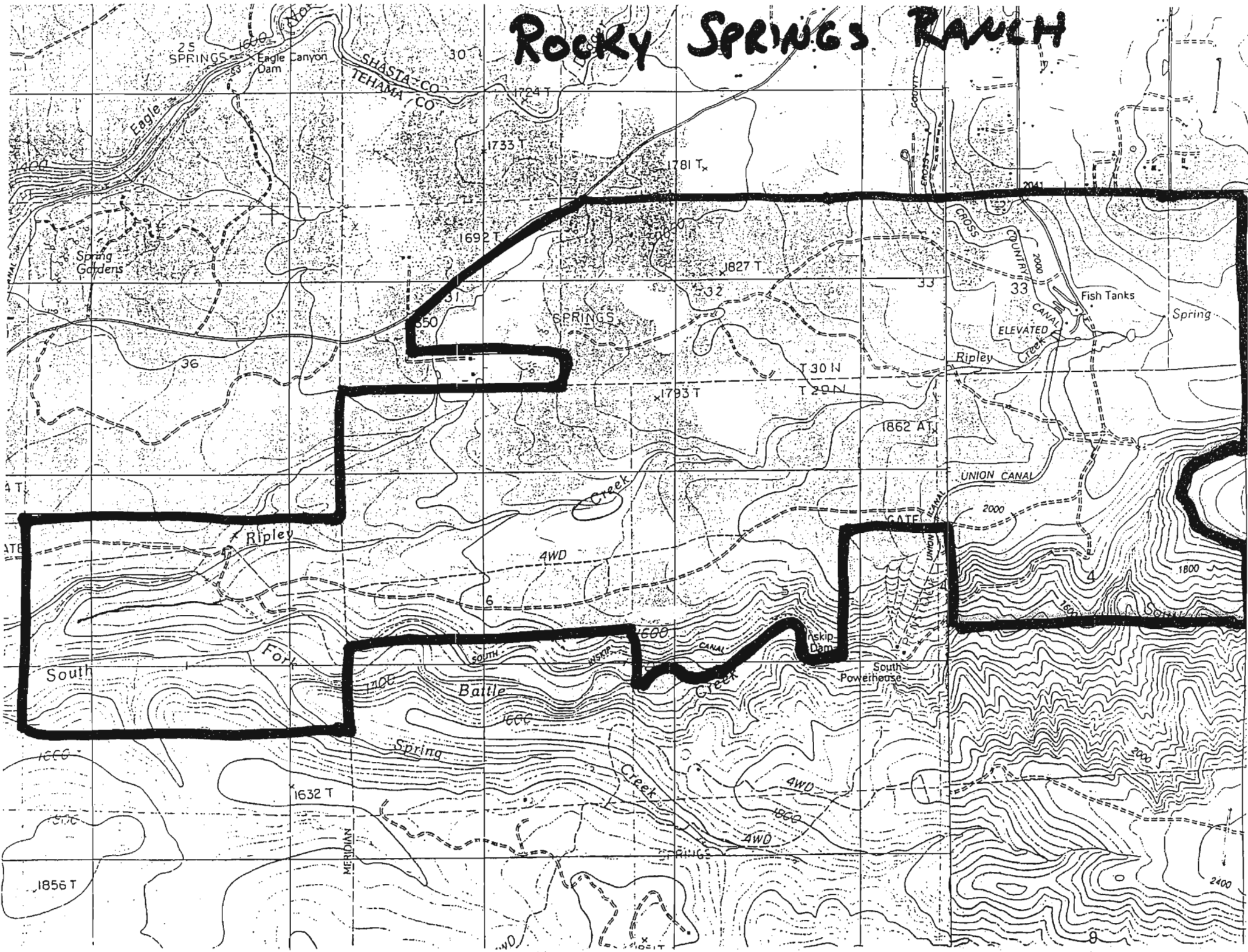
P. O. Box 1679, Orville, CA 95965

Terry Hundemer,

The Chickering Company

P. O. Box 238, Nevada City, CA 95959

Rocky Springs Ranch



ROCKY SPRINGS RANCH
Attachment # 2 - Comments to Battle Creek Restoration Project EIS/EIR

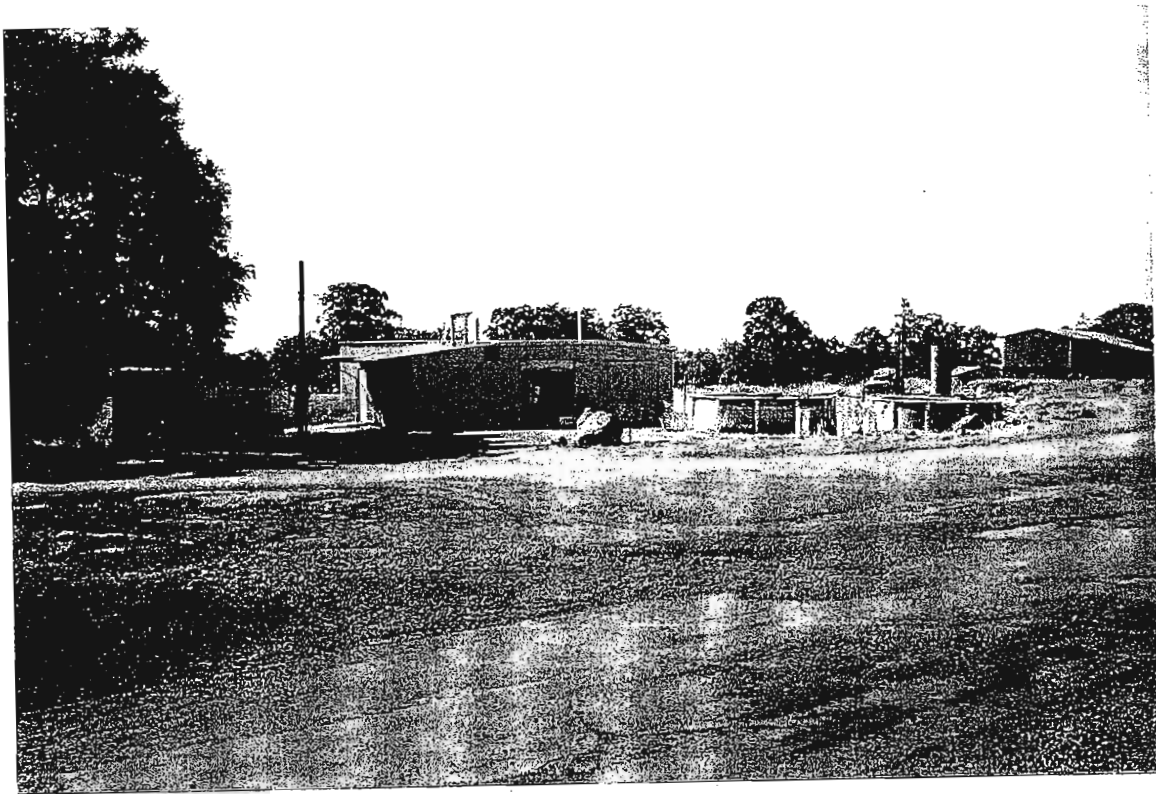


Photo # 1 - Mount Lassen Trout Farm facility adjacent to access road, Rocky Springs Ranch



Photo # 2 - Mount Lassen Trout Farm facility adjacent to access road, Rocky Springs Ranch.

ROCKY SPRINGS RANCH
Attachment # 2 - Comments to Battle Creek Restoration Project EIS/EIR



Photo # 3 - Rocky Springs Ranch primary residence, proximity of access road / PG&E trucks



Photo # 4 - Rocky Springs Ranch primary residence, proximity of access road / PG&E trucks

ROCKY SPRINGS RANCH
Attachment # 2 - Comments to Battle Creek Restoration Project EIS/EIR

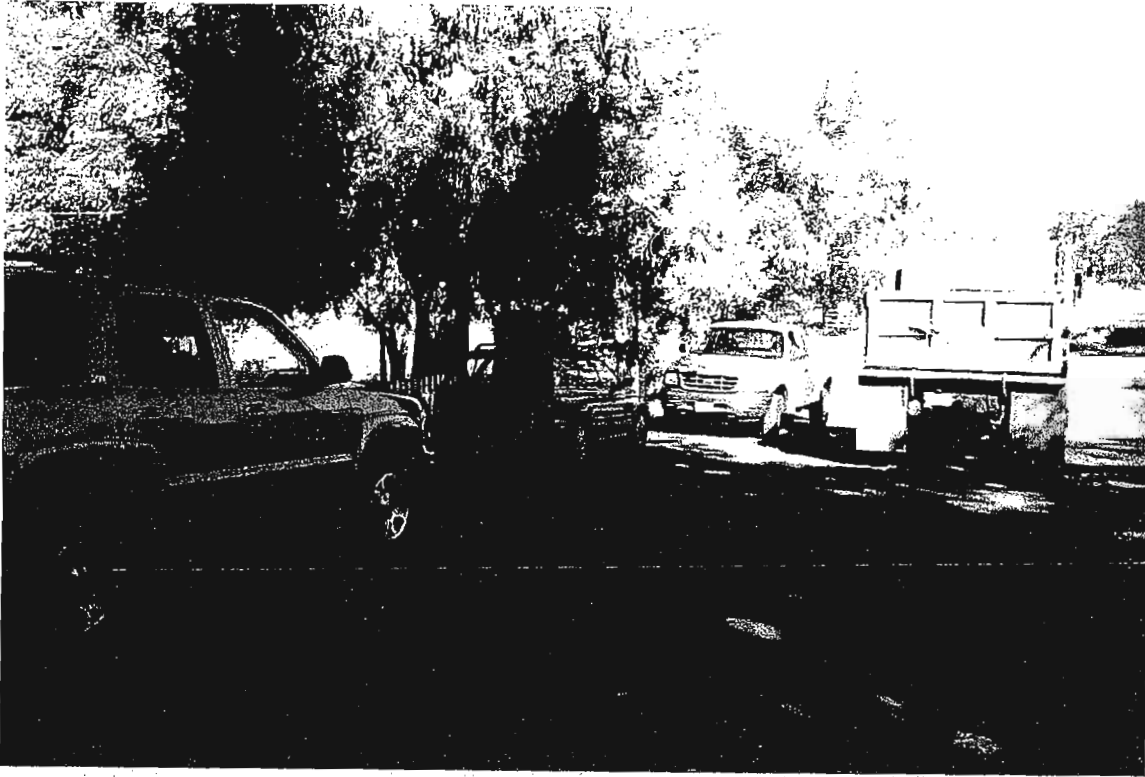


Photo # 5 - Rocky Springs Ranch primary residence, proximity of access road / PG&E trucks

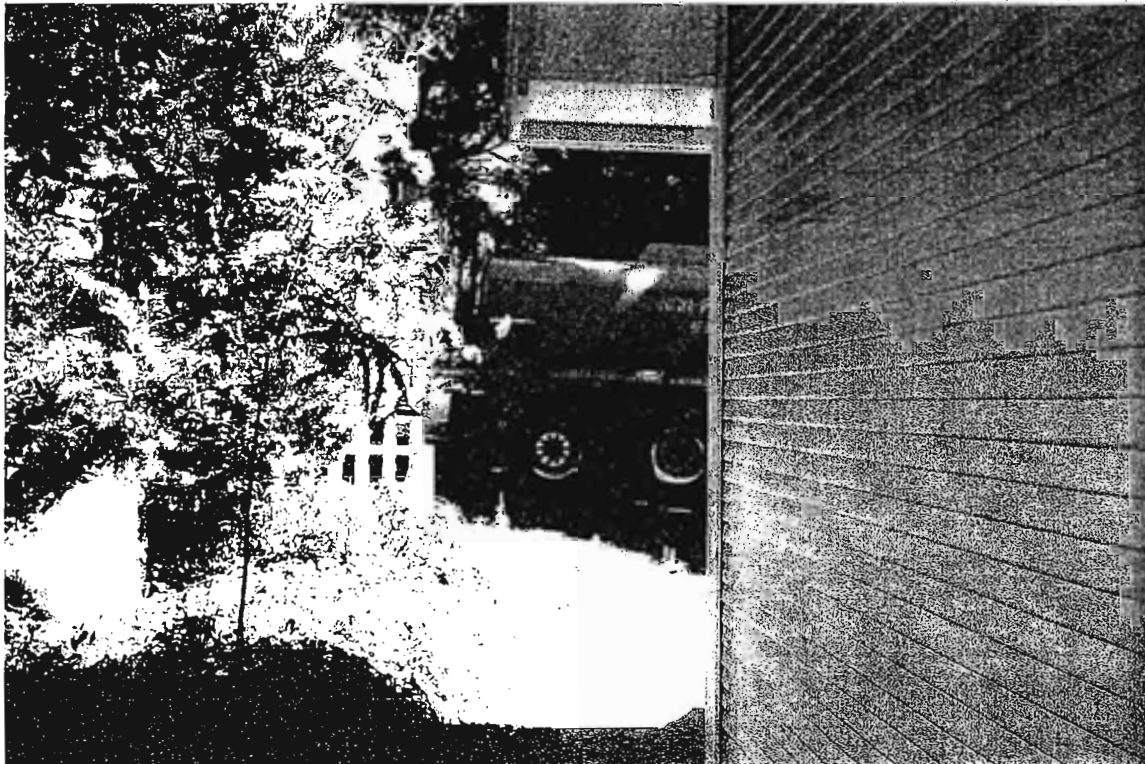


Photo # 6 - Rocky Springs Ranch primary residence, proximity of access road / PG&E trucks

ROCKY SPRINGS RANCH
Attachment # 2 - Comments to Battle Creek Restoration Project EIS/EIR



Photo # 7 - Rocky Springs Ranch - approximate location of construction staging area



Photo # 8 - Rocky Springs Ranch - approximate location of construction staging area

ROCKY SPRINGS RANCH
Attachment # 2 - Comments to Battle Creek Restoration Project EIS/EIR



Photo # 9 - Rocky Springs Ranch - approximate location of construction staging area

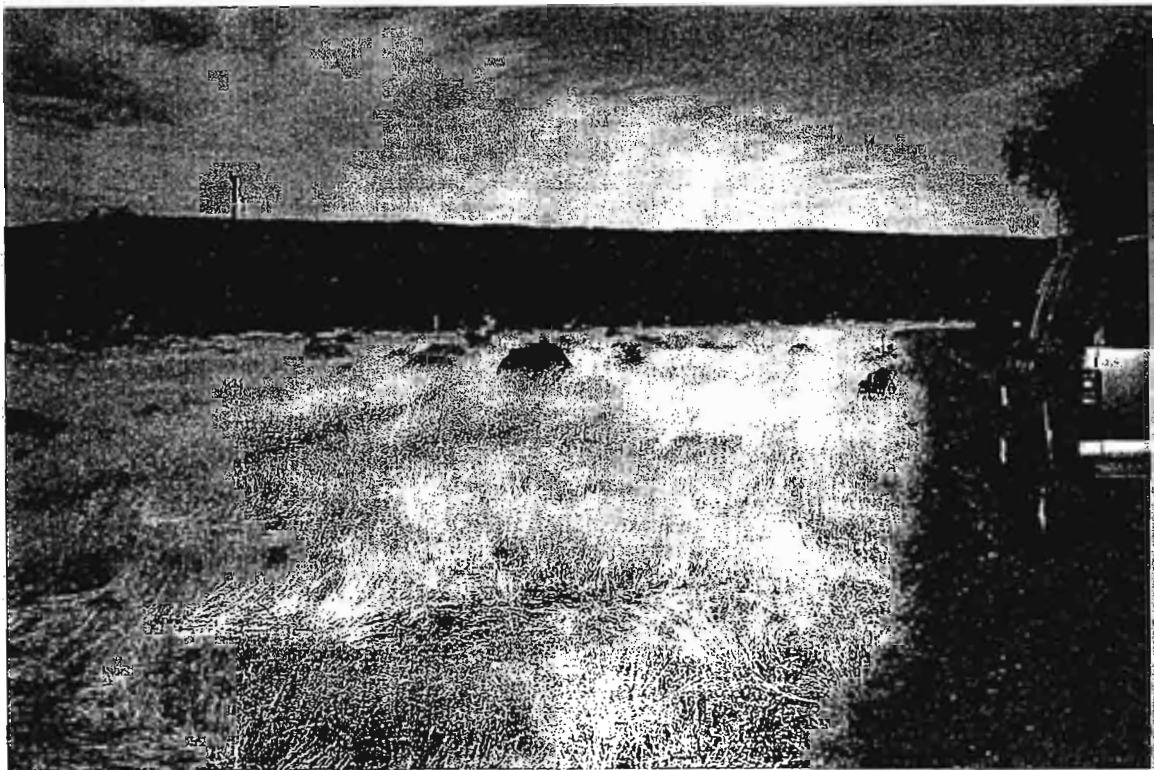


Photo # 10 - Rocky Springs Ranch - approximate location of construction staging area

Comment Letter NGO15—Outfitters Properties, Kerry L. Burke (October 15, 2003)

Response to Comment NGO15-1

This comment has been noted. Reclamation and the State Water Board thank the reviewer for support of the Five Dam Removal Alternative.

Response to Comment NGO15-2

Impacts relating to Rocky Springs Ranch are similar to those that would occur at the Oasis Springs Lodge (see the responses to Comment Letter NGO9). However, the degree of impact on the Oasis Springs Lodge is expected to be greater because of its relative proximity to the Inskip Diversion Dam/South Powerhouse project site. In addition, Oasis Springs Lodge is an operating business. The impacts that would affect Rocky Springs Ranch are identified below:

- Impact 4.10-1, “Exposure of noise-sensitive uses to noise and vibration from blasting,” less than significant with mitigation; and
- Impact 4.10-2, “Exposure of noise-sensitive land uses to noise from on-site construction activities,” less than significant with mitigation.

In addition, impacts that would result in general from implementation of the Restoration Project have been addressed in the following sections:

- Section 4.1, Fish;
- Section 4.2, Botanical, Wetland, and Wildlife Resources;
- Section 4.3, Hydrology;
- Section 4.4, Water Quality;
- Section 4.5, Groundwater;
- Section 4.6, Land Use;
- Section 4.7, Geology and Soils;
- Section 4.9, Transportation;
- Section 4.11, Air Quality;
- Section 4.12, Public Health and Safety;
- Section 4.13, Public Services and Utilities; and
- Section 4.15, Cultural Resources

Construction of the access road proposed for the north side of the creek at the Inskip Diversion Dam site is discussed under Impact 4.8-1. Although mitigation is proposed in the Final EIS/EIR, the impact associated with this road is considered significant and unavoidable.

Impacts resulting from increased construction traffic are discussed under Impact 4.9-1. The impact on private roads was determined to be less than significant because of the small existing traffic volumes on the roads and because Reclamation will comply with the Standards as described in Section 4.9, Transportation, in Volume I of this Final EIS/EIR.

Impacts on air quality and public health and safety will be reduced to less-than-significant levels with implementation of the mitigation measures proposed and described in Sections 4.11 and 4.12, respectively.

For more information regarding landowner concerns, see Master Response F.

Response to Comment NGO15-3

For information regarding the request to extend the public review period and the relationship between the Coleman National Fish Hatchery and the Restoration Project, see the responses to Comments NGO4-3 and 8-2.

Sufficient detail is available to fully analyze the potential environmental effects of the Proposed Action and alternatives as evidenced by the several hundred pages of environmental analysis and supporting information. Detailed engineering design information is not required to assess the potential environmental effects of an action. The likely locations of facilities are known with sufficient detail to allow for complete analysis of potential environmental effects and to describe appropriate mitigation measures, many of which require incorporation of requirements that may affect the site-specific design and location of project features in order to minimize potential environmental effects. The Draft EIS/EIR and Draft Supplemental EIS/Revised EIR are in full compliance with NEPA and CEQA. In addition, see the response to Comment NGO9-2.

Response to Comment NGO15-4

As the project proponents, Reclamation and the State Water Board feel that the project description is adequate to assess the potential environmental effects of the Proposed Action. For a discussion of the impacts that directly affect Rocky Springs Ranch, please see the response to Comment NGO15-2. The detail provided in these discussions has allowed for a project-level analysis.

In addition, new figures are presented in Appendix F in Volume II of this Final EIS/EIR that identify the construction activities to take place at each project site.

In the event that any new impacts are identified as the Restoration Project is implemented, Reclamation and the State Water Board will complete the appropriate environmental review. For more information regarding landowner concerns, please see Master Response F.

Response to Comment NGO15-5

The alternatives to the Proposed Action and the recommended mitigation measures are fully discussed in the Draft EIS/EIR. As mentioned in the response to Comment NGO15-4, upon completion of the project design, in the event that implementation of the project would result in new or more significant environmental effects, Reclamation and the State Water Board will conduct the appropriate environmental review. While a goal of the project is to restore habitat for federally listed anadromous fish species, the project proponents feel that the project has been designed to minimize and avoid impacts on humans when possible. For more information regarding landowner concerns, see Master Response F.

Response to Comment NGO15-6

As mentioned in the responses to Comments NGO15-4 and NGO15-5, if any new or more significant impacts are found to result from implementation of the Proposed Action, Reclamation and the State Water Board will conduct the appropriate environmental review.

With regard to public information, the intent of CEQA and NEPA is to inform the public through public hearings and meetings. The project proponents have offered several meetings throughout the process and are glad to know that the information was successfully conveyed by this means.

As the project proponents, the State Water Board and Reclamation feel that the level of detail disclosed in the EIS/EIR was sufficient to analyze the environmental impacts associated with the Restoration Project. The project proponents also included appropriate mitigation measures as well as environmental commitments to reduce when possible these impacts to a lesser level. For more information regarding landowner concerns, see Master Response F.

Response to Comment NGO15-7

As the project proponents, the State Water Board and Reclamation feel that the purpose and need statement accurately reflects the purpose of the Restoration Project to be restoring habitat while minimizing the loss of hydroelectric power. As part of the project's objectives listed in Chapter 2, Project Objectives, in

Volume I of this Final EIS/EIR, the State Water Board and Reclamation will implement the project in a way to minimize the impacts on the third parties. This includes the interests of the private landowners that could be affected by the Restoration Project. For more information regarding landowner concerns, see Master Response F.

Response to Comment NGO15-8

The Proposed Action is a restoration project and does not intend to increase public access to private property. The section titled Project Objectives, in Chapter 2 in Volume I of this Final EIS/EIR, mentions third-party users, which is meant to encompass the concerns of private property owners. For more information regarding landowner concerns, see Master Response F.

Response to Comment NGO15-9

Please see the response to Comment NGO15-8.

Response to Comment NGO15-10

New figures are presented in Appendix F in Volume II of this Final EIS/EIR that identify the construction activities to take place at each project site. Appendix F includes figures of the construction footprints and an explanation of the activities to occur at each site. For more information regarding landowner concerns, see Master Response F.

Response to Comment NGO15-11

State agencies are required to mitigate impacts resulting in physical changes compared with the baseline conditions, which are defined as those existing at the time of the NOP for non-flow-related resources. Therefore, they would not be required to return the project site to pre-Hydroelectric Project conditions.

PG&E and Reclamation will develop a construction management plan as part of the FERC license. A component of that plan will be a QCIP. The QCIP provides quality control requirements for construction of the Hydroelectric Project to ensure quality and compliance with the specifications and environmental and regulatory requirements. The QCIP includes the following:

- organization and responsibilities,
- inspection plan and field inspection guidelines,
- environmental compliance plan,

- water diversion and control,
- erosion and sediment control, and
- documentation and training.

For more information regarding landowner concerns, see Master Response F.

Response to Comment NGO15-12

While PG&E either owns or has access rights to the land for its current facilities, portions of the Proposed Action facilities will require additional easements or temporary rights of way. Reclamation and PG&E are working with the landowners to secure the necessary easements for any project facilities that are planned on lands not currently owned or covered by adequate land rights. All appropriate and necessary agreements will be acquired from landowners prior to the initiation of any construction activities.

Response to Comment NGO15-13

Ownership of the easements along South Canal will be determined pursuant to landowner meetings, negotiations, and agreements with PG&E. As part of decommissioning, accessible portions of South Canal will be backfilled and sloped for drainage, according to construction BMPs. The decommissioned canal, as well as every construction aspect of the project, will be inspected upon its completion to ensure that it meets established standards, prior to cessation of temporary construction easements and transference of lands to the owners.

Response to Comment NGO15-14

New figures are presented in Appendix F in Volume I of this Final EIS/EIR that identify the construction activities to take place at each project site. Appendix F includes figures of the construction footprints and an explanation of the activities to occur at each site. For more information regarding landowner concerns, see Master Response F.

Accessible portions of the South Canal are to be backfilled using site materials and sloped for drainage.

Response to Comment NGO15-15

The discussion under South Diversion Dam and South Canal Areas, Project Elements in Chapter 3 in Volume I of this Final EIS/EIR, describes how the canal will be decommissioned and notes that several sections will be either left or

removed at the request of the landowner. The last flume on the South Canal could be removed easily if desired. All other concrete footings and transition sections along the South Canal flumes are more difficult to remove and are planned to remain in place. Canal sections will be either backfilled using site materials or left alone if inaccessible. Existing drainage paths are to remain across the canal alignment.

State agencies are required to mitigate impacts resulting in physical changes compared with the baseline conditions, which are defined as those existing at the time of the NOP for non-flow-related resources. Therefore, they would not be required to return the project site to pre-Hydroelectric Project conditions and remove all miscellaneous wood along the pipeline. For more information regarding landowner concerns, see Master Response F.

The impacts on the stream from construction are discussed under Impact 4.2-3 and Impact 4.4-1. The mitigation measures identified would reduce this impact to a less-than-significant level as discussed in Section 4.2 in Volume I of this Final EIS/EIR.

Although the canals are human-made and are not natural waterways, the U.S. Army Corps of Engineers (Corps) has determined that the canals are under their jurisdiction because of their hydrologic connection with the Battle Creek system. As a result, the canals will be covered by the Section 404 permit for the Clean Water Act (CWA). However, it is anticipated that the Restoration Project will be self-mitigating to a large extent because of benefits resulting from the project.

Response to Comment NGO15-16

No hazardous materials are anticipated to be found at any of the project sites. It is believed that the dams were constructed of rock and natural materials found on site that would not pose a hazardous materials threat to workers or residents. For more information regarding landowner concerns, see Master Response F.

With respect to notification of helicopter work, Mitigation Measure 4.10-2 states that residents and other noise-sensitive receptors will be notified of the approximate dates of construction and the potential resulting increase in noise at least 2 weeks in advance.

New figures are presented in Appendix F in Volume II of the Final EIS/EIR that illustrate the construction footprints and describe the location and type of construction activities to take place at each project site, including the location of the tunnels.

With respect to the concern about mosquitoes and vector problems, under South Diversion Dam and South Canal Areas, Project Elements in Chapter 3 in Volume I of this Final EIS/EIR, it is stated that the tunnel closures would incorporate drainage features at the base to prevent buildup of any groundwater

within the closed tunnel. The risk of vector problems from mosquitoes at various project sites is addressed in Impact 4.12-4 in Section 4.12 in Volume I of this Final EIS/EIR. Mitigation Measure 4.12-4 will reduce this risk to a less-than-significant level.

As discussed under Impact 4.2-1, woody riparian vegetation will be avoided to the maximum extent possible. In the event that woody riparian vegetation is permanently affected, mitigation measures will be implemented to compensate for this loss.

Response to Comment NGO15-17

New figures are presented in Appendix F in Volume II of this Final EIS/EIR that illustrate the construction footprints and describe the location and type of construction activities to take place at each project site. For more information regarding landowner concerns, see Master Response F.

Response to Comment NGO15-18

The majority of the work can be completed within 2.5 to 3 months, but the overall contract duration period, including mobilization and submittals, is assumed to be 5 months. Liquidated damages may be assessed if the contract duration is exceeded, based on actual damages to the government. For more information regarding landowner concerns, see Master Response F.

Response to Comment NGO15-19

Please see the response to Comment NGO15-17.

Response to Comment NGO15-20

A permanent effect is from a designed feature that requires no further treatment or restoration. Only temporary site impacts need to be restored to preconstruction conditions.

Response to Comment NGO15-21

Please see the response to Comment NGO15-17.

Response to Comment NGO15-22

Figure F-7 of Appendix F better illustrates the construction footprints and describes the activities taking place at the South Powerhouse/Inskip Diversion Dam site.

With respect to grading the access road and parking lot at this site, discussion under Inskip Diversion Dam/South Powerhouse, Project Elements in Chapter 3 in Volume I of this Final EIS/EIR states that construction of the access road and excavation of the proposed tunnel would result in approximately 25,000 cy³ of material. This material would be used when possible for road improvements, and to the extent possible, for various project features. The remainder of the waste material would be spread over an area up to 300 feet by 400 feet, piled as high as practical, in accordance with landowner requirements, and in order to minimize permanent impacts. Discussion under Inskip Diversion Dam/South Powerhouse, Construction Considerations in Chapter 3 in Volume I of this Final EIS/EIR describes the site where excess materials would be stored near the access road along the top of the plateau.

The South Powerhouse site will require blasting for tunnel excavation and at the two tunnel portals. Some minor blasting may be required for access road construction. No blasting for dike construction is anticipated. This blasting would likely occur over an 8-month period during the fall and winter months. Some blasting for the fish screen and ladder work, including boulder removal, would be required at the Inskip Diversion Dam. This work is anticipated to last 4 months over the following summer. The impact associated with exposure of noise-sensitive land uses to blasting is discussed under Impact 4.10-1. Implementation of the mitigation discussed under this impact will reduce the impact to less than significant.

Response to Comment NGO15-23

Impacts on the visual resources at the Inskip Diversion Dam/South Powerhouse site were analyzed in Section 4.8 under Impact 4.8-1 in Volume I of this Final EIS/EIR. Power lines will be in the general vicinity of existing lines and are not considered to result in significant visual impacts compared to existing conditions. Impact 4.8-1 has been updated to clarify the impacts from power line relocation.

Response to Comment NGO15-24

Instream work at the South Powerhouse/Inskip Diversion Dam site is expected to take place sometime between May 1 and November 1. The following summarizes the current construction schedule at this site:

- Instream work, which includes numerous activities involving excavation, placing riprap, constructing cofferdams, box culvert, etc., would be

conducted in the South Powerhouse and peninsula areas from May 1 to November 1, 2006.

- Construction of the new access road to the fish facility and the tunnel work would occur through that fall, and the following winter and spring, November 1, 2006, through June 2007.
- Around July 1, 2007, the flows from South Powerhouse would be routed through the completed tunnel.
- In summer 2007 (June through November 1), construction on the upstream side of the dam at the headworks would be completed.
- In summer 2008 (June through November 1), instream work would be performed at the fish ladder entrance, which would require diversion structures in the vicinity below the dam.
- In summer 2009, no instream work is currently anticipated. Construction of the fish ladder and fish screen will resume and are projected to be complete in January 2009.

Figure 3-2c shows the location of the fish ladder. The aesthetic impacts of the fish ladder are described under Impact 4.8-1 and are considered significant and unavoidable. As indicated in the response to Comment NGO9-15, fishing is currently not allowed within 250 feet of a fish ladder, and this regulation will not change as a result of the Restoration Project. Fishing and other recreational activities could resume within the designated areas once construction is complete. The impact on recreational fishing is addressed under a new impact, Impact 4.14-5 in Section 4.14, Recreation in Volume I of this Final EIS/EIR.

It is uncertain how many trips would be made to maintain the fish screens and ladders at Inskip Diversion Dam. PG&E accesses Inskip Diversion Dam nearly daily under current operations. It is anticipated that PG&E will access Inskip Diversion Dam with daily or multiple trips daily post restoration. A portion of the construction of the facilities at Inskip Diversion Dam will take place on private property. Construction boundaries would be marked in the field prior to the initiation of construction activities. The boundaries for PG&E parcels are not marked in the field.

Response to Comment NGO15-25

The comment refers to a sediment basin on page 3-50 of the Draft EIS/EIR; however, this page does not have a reference to a sediment basin. A sediment basin is mentioned on page 3-45 of the Draft EIS/EIR in the discussion under the heading Sluiceway. If this is the sediment basin that the commentor is referring to, the response is that the sediment would be removed by opening the gate in the basin during high flow periods and allowing the sediment to redistribute naturally downstream.

Response to Comment NGO15-26

The access point referred to in the comment is for the road that would be used to access this site. Figure F-7 of Appendix F shows the access road (LRC-1) that connects to the Lower Ripley Creek site. SPH-14, SPH-15, and SPH-16 refer to contractor staging areas. Appendix F details the specifications of these construction areas to the extent that they are known. For more information, please see Appendix F.

Response to Comment NGO15-27

Please see the response to Comment NGO15-17.

Access roads are shown in the project construction area maps presented in Appendix F. In addition, clarification of the roads to be used for project construction and access has been made to Figure 4.9-2.

Response to Comment NGO15-28

Please see the response to Comment NGO15-17.

Response to Comment NGO15-29

Please see the response to Comment NGO15-17.

Response to Comment NGO15-30

Figure F-7 of Appendix F in Volume II of this Final EIS/EIR includes information about the location and type of construction activity to take place at the South Powerhouse/Inskip Diversion Dam site, including estimations of cut and fill where applicable.

The South Powerhouse site will require blasting for tunnel excavation and at the two tunnel portals. Some minor blasting may be required for access road construction. No blasting for dike construction is anticipated. This blasting would likely occur over an 8-month period during the fall and winter months. Some blasting for the fish screen and ladder work, including boulder removal, will be required at Inskip Diversion Dam. This work is anticipated to last 4 months over the following summer. The impact associated with exposure of noise-sensitive land uses to blasting is discussed under Impact 4.10-1. Implementation of the mitigation discussed under this impact will reduce the impact to less than significant.

Response to Comment NGO15-31

Please see Master Response F.

Response to Comment NGO15-32

Figure 4.9-2 shows the access roads that would be used during construction of the Restoration Project. The road that will be used to access Lower Ripley Creek Feeder Diversion Dam is shown in blue and runs east to west about a half a mile south of Manton Road. This access road is also shown in Figure F-8 in Appendix F in Volume II of this Final EIS/EIR. This is the road described on page 3-53 of the Draft EIS/EIR that was referred to in this comment. None of the land at the Lower Ripley Creek Feeder site is owned by PG&E. PG&E has a 50-foot-wide right-of-way, 25 feet on each side of the centerline of the ditch or canal, flume or tunnel, along with access rights. The proposed work would all occur within PG&E's existing easement.

Response to Comment NGO15-33

Water from the Cross Country Canal would be diverted into Lower Ripley Creek to bypass water around the South Powerhouse construction zone to accommodate construction at this site. Lower Ripley Creek would convey uncharacteristic, but not unprecedented, high flows (50 cfs versus 3 cfs) for up to several months. Higher flows occur naturally in Lower Ripley Creek during winter storm runoff periods. The diversions during construction should not cause higher-than-normal erosion. Thus, no mitigation measures are necessary to reduce the erosion impacts on Lower Ripley Creek.

Response to Comment NGO15-34

Activities to occur along the access road at the Lower Ripley Creek site include grading and graveling as needed to improve construction access. This road extends to the headworks for Inskip Powerhouse at the confluence of Eagle Canyon Canal and Inskip Canal and is shown in Figure F-8 of Appendix F as LRC-1. PG&E has rights to this road, but Reclamation and PG&E will collaborate with the landowner to ensure a mutually acceptable approach to road maintenance for the duration of the Restoration Project, as well as to decide upon a final road width (the road width will not exceed 15 feet). For more information on the specifics of the road construction, please see Construction Considerations under the Lower Ripley Creek Feeder Diversion Dam discussion in Chapter 3 in Volume I and Appendix F in Volume II of this Final EIS/EIR.

PG&E may breach the Cross Country Canal as an exercise of their spillway right under FERC license no. 1121. Spillway practices are routine and must be

practiced regularly in order for PG&E to retain their spillway rights. Breaching the Cross Country Canal would occur by removing a plate on the flume above Ripley Creek to allow the canal to drain into the creek at a rate of approximately 50 cfs.

Higher flows occur naturally in Lower Ripley Creek during winter storm runoff periods. The diversions from Cross Country Canal into Lower Ripley Creek during construction should not cause higher-than-normal erosion. Thus, no mitigation measures are necessary to reduce the erosion impacts on Lower Ripley Creek.

Response to Comment NGO15-35

The Appurtenant Facilities section in Chapter 3, Volume 1 describes how, after removal of the diversion dam, the feeder canal would be filled in using the existing canal bank materials. Where the feeder canal discharges into Inskip Canal, the transition would be shaped and armored with riprap or concrete to ensure stability of Inskip Canal.

Response to Comment NGO15-36

The lead agencies acknowledge the proximity of Rocky Springs Ranch to a portion of the proposed construction activities. As analyzed in Section 4.6, Land Use, in Volume I of this Final EIS/EIR, the Restoration Project is not expected to have long-term impacts on the land uses present at Rocky Spring Ranch, including hunting, fishing, residential, recreational, and grazing activities, because no permanent land use changes are expected as a result of the Restoration Project. Potential impacts on recreational activities, including hunting and fishing, are described in Impacts 4.14-1 through 4.14-5 of Section 4.14, Recreation, in Volume I of this Final EIS/EIR. Potential residential and grazing impacts are addressed in Impact 4.6-1 of Section 4.6, Land Use, in Volume I of this Final EIS/EIR and would not be significant. Potential impacts on aquaculture facilities are analyzed in Section 4.6, Land Use, under Impact 4.6-2 and are also described in Section 4.16, Other NEPA Analyses, in Volume I of this Final EIS/EIR under the socioeconomics section titled Five Dam Removal Alternative (Proposed Action).

For more information regarding landowner concerns, see Master Response F.

Response to Comment NGO15-37

Please see the response to Comment NGO1-1.

Response to Comment NGO15-38

The abandoned access road is shown in Figure 4.9-2 and is known as Old Ranch Road. Access to South Powerhouse and Inskip Diversion Dam from the town of Manton would be as follows: Construction vehicles would first travel south on South Powerhouse Road, then east on Hazen Road, then south on Old Ranch Road. This proposed access route would avoid impacts on residents and the MLTF by avoiding travel on South Powerhouse Road to a point south of the MLTF.

Response to Comment NGO15-39

The list of Impact Mechanisms in the introduction to Chapter 4, “Affected Environment and Environmental Consequences,” in Volume I of this Final EIS/EIR lists construction-related noise from equipment and helicopters, which includes vibration from trucks and other construction-related noise.

Response to Comment NGO15-40

Please refer to the response to Comment NGO15-38.

Response to Comment NGO15-41

New figures are presented in Appendix F that illustrate the construction footprint and describe in detail the type of construction activity to take place at each site. Liquidated damages may be assessed if the contract duration is exceeded, based on actual damages to the government. For more information regarding landowner concerns, see Master Response F.

Response to Comment NGO15-42

Reclamation considered several alternatives for access to the South Powerhouse and South Canal. It is proposed that these existing roads will be improved where appropriate to allow safe passage of construction equipment and vehicles. It is proposed that any damage to existing roads will be repaired. A discussion of the alternatives that were considered, but eventually eliminated, for the access road to Inskip Diversion Dam from the South Powerhouse have been added to Chapter 3 under Project Elements for this site in Volume I of this Final EIS/EIR.

Response to Comment NGO15-43

Old Ranch Road is identified on Figure 4.2-9 and appears to be at least in part on Rocky Springs Ranch property.

Response to Comment NGO15-44

The traffic counts listed in Table 4.9-3 represent the most current information available to Tehama County Public Works and Shasta County Public Works.

Response to Comment NGO15-45

A portion of South Powerhouse Road will be used to access the Inskip Diversion Dam/South Powerhouse site. The anticipated route includes South Powerhouse to Hazen Road to Old Ranch Road. Therefore, these roads have been added to the traffic analysis assumptions in Section 4.9 and to Tables 4.9-1 and 4.9-5 in Volume I of this Final EIS/EIR.

Response to Comment NGO15-46

The estimation of 20 construction workers is an average over the project construction period. It does not represent peak numbers.

Response to Comment NGO15-47

Figure 4.9-2 shows all allowable access roads that could be used by construction crews within the project area. Updates to Figure 4.9-2 are presented in Section 4.9, Transportation, in Volume I of this Final EIS/EIR.

Response to Comment NGO15-48

Manton School Road no longer would be used to access any of the project sites as previously indicated in the Draft EIS/EIR. South Powerhouse Road will be used in its place. Therefore, the new route to the Inskip Diversion Dam/South Powerhouse site has been added to Table 4.9-5 in Volume I of this Final EIS/EIR. In this table, the number of truck trips previously attributed to Manton Road will now take place on the South Powerhouse Road/Hazen Road/Old Ranch Road segment. In determining this count, it was assumed that most traffic accessing the South Canal would be via Forward Road/Ponderosa Way.

Response to Comment NGO15-49

Table 4.9-10 lists all public roads that could be used during construction of the Restoration Project and does not include private roads.

Response to Comment NGO15-50

See the response to Comment NGO15-38.

Response to Comment NGO15-51

The South Powerhouse site will require blasting for tunnel excavation and at the two tunnel portals. Some minor blasting may be required for access road construction. No blasting for dike construction is anticipated. Blasting would likely occur over an 8-month period during the fall and winter months. Some blasting for the fish screen and ladder work, including boulder removal, will be required at Inskip Diversion Dam. This work is anticipated to last 4 months over the following summer. The impact associated with exposure of noise-sensitive land uses to blasting is discussed under Impact 4.10-1. Implementation of the mitigation discussed under this impact will reduce the impact to less than significant.

Response to Comment NGO15-52

In addition to Oasis Springs Lodge, this Final EIS/EIR notes that there are residences located near the project site that would be considered noise-sensitive receptors. Rocky Springs Ranch was added to the setting discussion in Section 4.10, Noise, in Volume I of this Final EIS/EIR as a potentially noise-sensitive receptor. As described in the setting discussion, the Rocky Springs Ranch residence is located approximately 2.5 miles from the Inskip Diversion Dam/South Powerhouse construction site. This distance would cause construction noises to be attenuated to ambient levels and inaudible at the Rocky Springs Ranch residence. Thus, the impact analysis in Section 4.10, under Impacts 4.10-1 and 4.10-2, respectively, does not include Rocky Springs Ranch as a potential sensitive receptor to construction noise.

Response to Comment NGO15-53

Rocky Springs Ranch was added to the setting discussion in Section 4.10, Noise, in Volume I of this Final EIS/EIR as a potentially noise-sensitive receptor. As described in the setting discussion, the Rocky Springs Ranch residence is located approximately 2.5 miles from the Inskip Diversion Dam/South Powerhouse

construction site. This distance would cause construction noises to be attenuated to ambient levels and inaudible at the Rocky Springs Ranch residence. Thus, the impact analysis in Section 4.10, under Impacts 4.10-1 and 4.10-2, respectively, does not include Rocky Springs Ranch as a potential sensitive receptor to construction noise. For more information about blasting, please see the response to Comment NGO15-51. For more information regarding landowner concerns, see Master Response F.

Response to Comment NGO15-54

Impact 4.10-2 has been updated to clarify which sites are planned to use helicopters during construction. Of all these sites, none are located near noise-sensitive land uses. Therefore, the impact on noise sensitive land uses from helicopter use is considered to be less than significant. As noted in Section 4.10, under Impact 4.10-2, the overall impact from construction activity is significant. Implementation of the mitigation measures presented to address Impact 4.10-2 would reduce the impact to a less-than-significant level.

Response to Comment NGO15-55

Text has been added under Impact 4.10-2 in Section 4.10, Noise, of the Final EIS/EIR that discusses possible helicopter types that may be used for the project and the noise levels associated with these helicopters.

Response to Comment NGO15-56

As mentioned in the response to Comment NGO15-55, potential helicopter noise levels and types have been added to the Impact 4.10-2 discussion in Section 4.10, Noise, in Volume I of this Final EIS/EIR.

Noise impacts from construction-related activities along access roads are discussed under Impact 4.10-3. Because the truck noise level would exceed Reclamation's daytime and nighttime construction noise standards of 70 and 50 dBA, respectively, and would exceed the ambient noise level by more than 5 dBA, this impact is considered to be significant. However, implementation of Mitigation Measure 4.10-3 would reduce this impact to a less-than-significant level.

Response to Comment NGO15-57

The number of truck trips in Table 4.10-5 is a more detailed breakdown of the number of trips listed in Table 4.9-4 for the Inskip Diversion Dam/South Powerhouse site. Therefore, while Table 4.10-5 provides a greater level of detail,

the information is captured in Table 4.9-5. It should be noted that the numbers of truck trips in Table 4.10-5 are much higher than those listed in Table 4.9-4. Table 4.9-4 is considered to be more accurate. However, because the number estimated in Table 4.10-5 is higher, and therefore, more conservative for determining noise impacts, Table 4.10-5 will remain unchanged in Volume I of this Final EIS/EIR.

Response to Comment NGO15-58

Limiting the hours of construction to between 8:00 a.m. and 5:00 p.m. would lengthen the construction period. In the interest of minimizing the duration of construction activities, Reclamation will maintain the specified construction schedule.

Response to Comment NGO15-59

Please see the response to Comment NGO15-38.

Response to Comment NGO15-60

The second sentence in Table 4.11-4 in Volume I of this Final EIS/EIR was changed to read *shall* in place of *should*.

Response to Comment NGO15-61

No hazardous materials are anticipated to be found at any of the project sites. It is believed that the dams were constructed of rock and natural materials found on site that would not pose a hazardous materials threat to workers or residents. In the event that any hazardous materials are discovered, the construction contractor will follow the appropriate protocol. For more information regarding landowner concerns, see Master Response F.

Response to Comment NGO15-62

During construction, areas will be excavated that might be below the groundwater table. Water may flow into the hole but dewatering measures will be implemented to return water to the creek, ensure the stability of the area, and ensure that the quality (e.g., turbidity) of the water pumped back into the creek meets pollution discharge requirements. A “still” pond is usually required to allow for settlement of suspended particles. This detention pond will be closely monitored to ensure that it does not become a breeding ground for mosquitoes.

After construction, all disturbed areas will be graded to prevent ponding and reseeded or revegetated in some manner to promote restoration of areas affected by the construction.

Response to Comment NGO15-63

The SPCP mentioned in the comment is referenced under the Mitigation Measure for Impact 4.12-1 in the Draft EIS/EIR. This plan will be evaluated by Reclamation prior to its implementation.

Response to Comment NGO15-64

The traffic impacts of the action have been evaluated in Section 4.9 in Volume I of this Final EIS/EIR and were found to be less than significant. Implementation of the traffic plan referenced in the comment will be required, in addition to other traffic control and road improvements, as a component of the Standards that will be a part of the construction contract. Compliance with these Standards mitigates the identified impacts of the increased traffic that would otherwise occur on local roads as a result of construction activities to a less-than-significant level.

Implementation of the traffic component of the Standards will ensure safe traffic operations during construction. Without specification of any potentially significant impacts that might occur, Reclamation feels that this comment is adequately addressed.

Response to Comment NGO15-65

As identified in the joint NEPA/CEQA document and Standards, Reclamation will post designated speed signs and require that all construction vehicles adhere to the posted speed limits. Regulation of vehicle speed will be enforced according to the Standards. In addition, government staff will set the example for the construction operations. The speed and other safety requirements will be coordinated closely with the landowner, and stipulations would be included in any temporary easements that are required. Reclamation policies for construction contracts mandate a rigorous safety program of which speeding/traffic control is considered an important element. Initial safety plans are submitted by the contractor for government review and approval. Regularly scheduled “toolbox” briefings are held among contractor staff, and the contractor is required to employ a full time safety professional whose duty is to devote his/her entire time to accident prevention. The contractor will be aware of speed limits, and Reclamation will make sure they are obeyed. The contractor will also be required to carry liability insurance, and it is common that the landowner be named as an additional insured. The stretch of road in front of the Rocky Springs residence and the MLTF facility are not located along the primary access by the

construction contractor. The primary contractor access will be the Old Ranch Road.

Response to Comment NGO15-66

Please see the response to Comment NGO9-13.

Response to Comment NGO15-67

An AMP has been created for the Restoration Project and is available at:

<http://calwater.ca.gov/Programs/EcosystemRestoration/EcosystemBattleCreek.shtml>.

In section VI of the plan, a sediment monitoring plan is detailed. Monitoring will begin at least one complete water year prior to dam removal. The sediment monitoring will continue until a determination is made that the majority of the sediments once stored behind the dams has been transported downstream and is no longer causing significant channel changes either downstream or upstream of the site of the former dam. Therefore, monitoring may continue for more than 3 years. Funding for implementation of the AMP is provided by the CALED Monitoring Fund, the Water Acquisition Fund, the Adaptive Management Fund, and PG&E.

Response to Comment NGO15-68

In response to the comment, text has been added to the discussion of Impact 4.3-1 in Section 4.3, Hydrology, in Volume I of this Final EIS/EIR that details the expected hydrologic and sediment transport processes that would occur following the proposed dam removals.

Response to Comment NGO15-69

Please see the response to Comment NGO15-23.

Response to Comment NGO15-70

The mitigation proposed to lessen the aesthetic impacts on the Oasis Springs Lodge is discussed under Impact 4.8-1 and includes reseeded, applying rock-aging compounds, and monitoring tree-planting sites. However, implementation of the recommended mitigation measure will not reduce the impact to a less-than-significant level. The impacts on Oasis Springs Lodge were analyzed because it is a business that would affect a large number of people who pay specifically to

use the lodge for recreational activities. For more information regarding landowner concerns, see Master Response F.

Response to Comment NGO15-71

The range of land uses analyzed in Section 4.6, Land Use, in Volume I of this Final EIS/EIR includes timber, agriculture, grazing, and private and public uses. Recreational land uses are discussed in Section 4.14, Recreation.

While individual property lines are not included in Appendix F in Volume II of this Final EIS/EIR, the figures presented do show the construction footprint at each project site and describe the type of activity to take place.

Response to Comment NGO15-72

Because Manton is a small town, it is not anticipated that the construction crews will stay in Manton during construction of the project. In addition, the contractor will provide waste disposal facilities and other water supply needs for the workers at the project sites.

The various impacts on public services and utilities were discussed in Section 4.13 in Volume I of this Final EIS/EIR. The impact on fire and police services was analyzed under Impact 4.13-1 and was found to be less than significant after incorporation of mitigation for Impact 4.13-1. The impact on hazardous and solid waste disposal was analyzed under Impact 4.13-2 and was found to be less than significant. It is mentioned that it is expected that contractors would provide self-contained collection facilities and transport the minimal quantities of worker-generated solid waste to the appropriate disposal service facilities. The disposal facilities for solid waste in Shasta and Tehama Counties were also deemed to have adequate space to handle the waste generated by the project. The impacts on traffic were analyzed under Section 4.9. In this analysis all impacts on traffic were found to be less than significant, and all roadways and roadway systems were found to be sufficient for implementation of the Proposed Action.

Response to Comment NGO15-73

The Proposed Action is a Restoration Project. The lead agencies will not promote recreational use of the area upon completion of the project.

Response to Comment NGO15-74

Please see the response to Comment NGO15-72.

Response to Comment NGO15-75

Please see the response to Comment NGO-15-72.

Response to Comment NGO15-76

In Section 4.12 in Volume I of this Final EIS/EIR, it is stated that Section 10 of Reclamation's Standards requires the preparation and implementation of a fire prevention plan for each job site. In addition, the Standards require that the plan include provision for fire suppression equipment and, where community fire department services are not available, a trained firefighting brigade. Fire safety will be included in the worker environmental education program mentioned under the Five Dam Removal Alternative, Environmental Commitments section, in Chapter 3 in Volume I of this Final EIS/EIR. In addition, the discussion of this program lists several topics to be included in the training but does not specifically limit the training to these topics. As identified in the joint NEPA/CEQA document, Reclamation will implement the fire plan according to the specifications of the Standards.

Response to Comment NGO15-77

The level of detail provided in the Draft EIS/EIR is deemed appropriate for an analysis of the impacts on environmental resources under CEQA and NEPA. The construction contractor will determine the specific location of septic systems at the time of construction. For more information regarding landowner concerns, see Master Response F.

Response to Comment NGO15-78

The figure of 360 construction workers involved with the Restoration Project constitutes the estimated maximum number of workers during the peak of construction. Mitigation/monitoring and maintenance personnel would be active after the completion of construction and would be much fewer in number and present much less often. Details of the monitoring program are discussed in the AMP.

Response to Comment NGO15-79

The 3,000 cy³ of construction waste mentioned under Impact 4.13-2 would come from standard construction waste, concrete, litter, and miscellaneous reinforcing steel and metal from removal of the dams.

Footnote 2 at the bottom of Table 4.9-4 notes that the truck trips include delivery of construction materials and equipment, such as concrete, rebar, riprap, gravel, mechanical and electric materials, earthmoving equipment, etc., and transport of materials to be disposed of or salvaged over the entire construction period (not daily).

Response to Comment NGO15-80

Restoration Project proposals for Coleman National Fish Hatchery diagnostic studies and a Coleman National Fish Hatchery adaptive management plan were submitted to the CBDA in May 2004. See Master Response C in Chapter 2 of this volume for more information on the proposal to develop an adaptive management plan for the Coleman National Fish Hatchery. The USFWS is committed to a Coleman National Fish Hatchery adaptive management plan development process that will be as transparent as possible with ample opportunity for stakeholder review and participation.

Response to Comment NGO15-81

There will be no change in trout or salmon fishing regulations within the Restoration Project area. Please see the response to Comment NGO9-15.

Response to Comment NGO15-82

Presently fishery science lacks the ability to reliably predict population abundance for each future generation of anadromous fish in the coming decade. Many of the factors controlling the productivity of anadromous fish in both freshwater and ocean environments cannot be controlled by the Restoration Project. The AMP for the Restoration Project focuses on identifying controllable factors that will contribute to attaining the goals of the project.

Under the Restoration Project, the flow fluctuations that currently occur during powerhouse outages would be eliminated in the Inskip and South Reaches. Changing the flow regime by stabilizing these flow levels will provide more angling opportunities in the Inskip and South reaches. By isolating the power system from the stream, the Restoration Project will also provide a safer environment for wading anglers. Outages occur in the power system at unpredictable times and the amount of water that can be discharged into the stream can be substantial (e.g., hundreds of cfs). During normal operations of PG&E's Hydroelectric Project during the fishing season, natural runoff events frequently cause spill conditions at Inskip Diversion Dam that are in the range of the prescribed instream flow releases for the Restoration Project. Anglers have been observed fishing and wading in the stream at flows in the range of that included under the Proposed Action.

Response to Comment NGO15-83

The Bureau of Land Management (BLM) will not encourage recreational use of the project area. The goal of the Restoration Project is to promote habitat restoration for anadromous fish while minimizing the loss of hydropower. This is not a recreation project. Over the past 3 years BLM has implemented many strategies to prohibit inappropriate uses within the Battle Creek watershed, including:

- placing boulder barriers and gates on and along Coleman Road and closed old, unimproved roads leading from Spring Branch Road to the south side of Battle Creek,
- prohibiting all motorized vehicles from driving off-road, and
- limiting target shooting to one location on Spring Branch Road.

These actions have been implemented to minimize impacts on the Battle Creek watershed from inappropriate recreational and other human uses. BLM has no plans to “expand recreation use” within the project area, nor does BLM plan to further restrict the currently permitted forms of low-impact recreation. BLM has been able to greatly reduce the level of off-road vehicle use; garbage dumping; squatting; inappropriate shooting; and nighttime trespassing. All of the above actions help improve the health of the watershed (Williams pers comm.).

The determination of the navigability of a waterway is made by the Corps. Navigable waters are defined as waters that have been used in the past, are now used, or are susceptible to use as a means to transport interstate or foreign commerce up to the head of navigation. The current status of Battle Creek is non-navigable. Implementation of the Restoration Project would not change this status.

Response to Comment NGO15-84

The reference to the comment could not be found because page 3-36.1 because this page does not exist in the Draft EIS/EIR. However, in Section 4.6, Land Use, the Draft EIS/EIR does state that fishing is allowed only on private land with the purchase of trespass rights from the existing landowner.

Response to Comment NGO15-85

PG&E allows public fishing as specified in the Battle Creek Project’s FERC license and as permitted by DFG Code. There are many fishing access sites within the Battle Creek Hydroelectric Project. The designated areas located within both the Hydroelectric Project and the Restoration Project

areas are the Asbury Pump Fishing Access, Cross Country Canal Access, and North Battle Creek Fishing Access.

Response to Comment NGO15-86

Battle Creek is not stocked with hatchery trout within the range of anadromous fish described in the Restoration Project MOU (1999). DFG is not aware of any individuals stocking fish in canals within the Restoration Project area. As discussed in the response to Comment NGO9-15, Oasis Springs Lodge currently holds a stocking permit to stock trout upstream of the Inskip Diversion Dam; however, this permit will expire in December 2006 and would not be renewed regardless of whether the Restoration Project is implemented.

Response to Comment NGO15-87

Please see the response to Comment NGO9-12.

Response to Comment NGO15-88

As the project proponents, the State Water Board and Reclamation feel that Chapter 4 is sufficient for the purpose of identifying the environmental resources that could potentially be affected by the Proposed Action. The section on General Environmental Protection Measures as it appeared in Section 4.0 of the Draft EIS/EIR was renamed Environmental Commitments and moved to Chapter 3, "Project Alternatives," in Volume I of this Final EIS/EIR to more clearly make the measures a requirement of implementation of the project. Without more specific information from the commentator about what is too general or what needs to be more specific, it is not possible to address this comment further.

Response to Comment NGO15-89

The strategies previously listed in Chapter 4 in the Draft EIS/EIR are now considered Environmental Commitments and are listed in Chapter 3 in Volume I of this Final EIS/EIR. As stated in this chapter, all temporary impacts resulting from construction of the Restoration Project will be restored. Some of these sites will require continued monitoring as described in Chapter 3 and in Mitigation Measure 4.2.

Response to Comment NGO15-90

As mentioned in responses to Comments NGO15-88 and NGO15-89, the General Environmental Protection Measures have been moved to Chapter 3 of the Final EIS/EIR and are now called Environmental Commitments. As identified in the joint NEPA/CEQA document, these measures will be implemented as part of the Proposed Action along with the mitigation measures identified in Chapter 4 in Volume I of this Final EIS/EIR. Chapter 4 also includes an analysis of the level of significance of the environmental impacts before and after the implementation of mitigation. The project proponents feel that the appropriate mitigation has been identified to reduce these construction impacts to the maximum extent possible. When analysis revealed that a potentially significant impact could not be reduced to a less-than-significant level, it was disclosed that the impact was considered to be significant and unavoidable. For more information regarding landowner concerns, see Master Response F.

Response to Comment NGO15-91

As mentioned under the Five Dam Removal Alternative, Environmental Commitments section, in Chapter 3 in Volume I of this Final EIS/EIR, the development of the worker environmental education program will include, but is not limited to: (1) awareness regarding federal, state, and local environmental laws and regulations and permits, as well as the penalties for noncompliance with environmental requirements and conditions; (2) threatened and endangered species and special-status species, as well as their habitats; (3) cultural resource sites; and (4) environmental commitments, mitigation, compensation, and restoration. Upon completion of each training session, each employee will be required to sign a statement indicating that he/she has received the training. For more information regarding landowner concerns, see Master Response F.

Response to Comment NGO15-92

\$5.05 million is budgeted for environmental compliance mitigation, maintenance, and monitoring related to construction activities. Copies of the monitoring reports will be distributed to landowners who request them.

Response to Comment NGO15-93

The construction contractor will be required to comply with the Standards and will be penalized accordingly for violations. For accidental violations, if there is no environmental consequence/damage, the offender will be issued a reminder/warning, or be trained to prevent another occurrence. If there is a serious consequence/damage, an applicable mitigation measure may be implemented. For intentional violations, the federal government may

permanently remove the offender from the project. The landowner may have other recourse of a criminal or civil action nature.

Response to Comment NGO15-94

An implementation plan will be completed after each construction contract is awarded to a contractor and prior to the beginning of construction at each project site. It is required that the contractor adhere to the overall implementation plan, as well the individual items in the implementation plan.

Response to Comment NGO15-95

State agencies are required to mitigate impacts resulting in physical changes to the environment compared with the baseline conditions, which are defined as those existing at the time of the NOP for non-flow-related resources. Therefore, the state lead agency and, if the federal lead agency adopts any appropriate mitigation measures, the federal lead agency, would be responsible for implementing the mitigation measures proposed as part of the Restoration Project in Chapter 4 in Volume I of this Final EIS/EIR. As part of the project, and where in accordance with applicable state and federal laws, funding will be provided for construction as well as implementation of the proposed mitigation measures.

Response to Comment NGO15-96

Restoration Project funds, including the Water Acquisition Fund, are planned to be managed by Reclamation. The Water Acquisition Fund would be administered per the direction of the Resource Agencies (DFG, NOAA Fisheries, and USFWS) and under an agreement between PG&E and Reclamation. The AMPT would administer the Adaptive Management Fund.

Response to Comment NGO15-97

This phrase is not found on page ES-10 in the Draft EIS/EIR; however, it can be found on page ES-13, second to last paragraph. This description is related to the Water Acquisition Fund, which is described in the Restoration Project MOU in Appendix A in Volume II of this Final EIS/EIR (page 40 of the MOU). The MOU states that the period the Water Acquisition Fund is available for flow changes will begin 10 years after initiation of the prescribed instream flow. The prescribed instream flow will begin in each reach of Battle Creek at the time the installation of a new fish ladder and fish screen at the downstream end of each reach is complete. Any additional water flow changes will not occur until 2026 when PG&E's FERC license for the Hydroelectric Project will expire. Table 23

in the AMP outlines who will be responsible for project-related monitoring activities.

Response to Comment NGO15-98

PG&E will be responsible for the 40% for actions resolved by FERC, in which PG&E is in the minority opinion (opposing a proposed action expenditure). The Adaptive Management Fund will contribute 60% of any resulting facility modifications costs.

The Adaptive Management Fund will be represented jointly by the Resource Agencies, PG&E, and the third party (the Nature Conservancy). Each party will pay for its own participation.

Response to Comment NGO15-99

The AMP states that adaptive management actions will comply with NEPA and CEQA and provides for input from advisories to the BCWG on AMP actions that might be contemplated. The determination to conduct a public review of an action would occur by means of the review process associated with completion of an environmental compliance document for that action. The determination of the type of environmental document that would be necessary would depend on the action being proposed and how significant it would be considered under the guidelines for NEPA and CEQA.

Response to Comment NGO15-100

The impacts on woody riparian vegetation and associated wildlife habitat are discussed under Impact 4.2-1. This impact was determined to be potentially significant. Implementation of Mitigation Measure 4.2-1 would reduce this impact to a less-than-significant level. Mitigation Measure 4.2-1 includes practices to minimize removal and disturbance of riparian habitat and also to avoid long-term impacts on woody riparian vegetation and the associated habitat. Monitoring of the Restoration Project is discussed in the AMP.

Response to Comment NGO15-101

Please see the response to Comment NGO15-80.

Response to Comment NGO15-102

Please see the response to Comment NGO15-95.

Response to Comment NGO15-103

The Draft EIS/EIR and Draft Supplemental EIS/Revised EIR appropriately address the potential environmental effects of the Proposed Action and action alternatives. Where appropriate and feasible, mitigation measures are identified to minimize those environmental effects. Where such measures are not available or have been determined to be infeasible, the impacts are described as unavoidable.

Reclamation and PG&E are interested in working with the landowners to discuss their concerns about the Restoration Project. For more information regarding landowner concerns, see Master Response F.

Response to Comment NGO15-104

Postconstruction monitoring is expected to occur infrequently (from annually to every 5 years) and would involve few people at each visit. Therefore, no effect was assessed under CEQA or NEPA. For more information regarding landowner concerns, see Master Response F.

October 15, 2003

RE: Comments on the Battle Creek Restoration project EIR/EIS

Ms. Mary Marshall
Bureau of Reclamation
2800 Cottage Way
Sacramento, CA 95825

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CODE	ACTION	SUBMITTER & DATE
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Mr. Jim Canaday
State Water Resources Control Board
1001 I St.
Sacramento, CA 95814

Dear Ms. Marshall and Mr. Canaday,

The Battle Creek Salmon and Steelhead Restoration Program Draft EIR/EIS represents a significant level of cooperation and an effort to balance the many perspectives of a complex resource management issue. The document summarizes the available information to allow selection between the alternatives and facilitates progress towards shared goals. Although The Nature Conservancy has some concerns about operations and activities in the greater Battle Creek watershed, The Nature Conservancy supports the restoration project and the shared goals it represents. After review of the DEIR/EIS and related appendices, our comments cover a number of topics. These topics include representation of local stakeholder concerns, cumulative impacts, technical analysis and the adaptive management process, fish hatchery management, and re-vegetation activities.

NGO16-1

Local Stakeholder Concerns

Potential affects to local trout farming operations in the project area are designated as less than significant, thus requiring no mitigation. Although the Bureau of Reclamation and others are making efforts to address these stakeholder concerns, including evaluating alternative locations for trout farm re-location, trout farms may be negatively affected. To avoid a breach of trust to the local interests, this potential impact should be addressed in the document.

NGO16-2

Cumulative Impacts

The document omits Red Bluff Diversion Dam from the cumulative impacts analysis. This dam probably has a greater effect on Battle Creek spring-run than the Coleman Hatchery Barrier Weir. The average delay at the Red Bluff dam is 21 days and the Hatchery barrier dam ladder is open during the spring migration period. The relationship of the Red Bluff Dam to the restoration should be disclosed in the cumulative impacts section. This section also needs to disclose the potential impact of future upstream

NGO16-3

activities on the continued recruitment of spawning gravel, a critical habitat component discussed in more detail below. New water development should also be discussed in terms of impact to the flow regime and new projects should include the potential to alter the flow regime and habitat conditions for additional ecological benefit.

**NGO16-3
cont**

Technical Analysis and the Adaptive Management Process

Initial assumptions are necessary to perform the technical analysis used in the planning and development of a restoration project such as Battle Creek. In general, the assumptions made and the contemporary technical tools used, are sufficient to select among the project alternatives. We recognize that assumptions and model simulation are a necessary initial step and do not criticize the approach. However, better informing these initial assumptions and validating the tools used, or selecting tools more appropriate to the Battle Creek setting, needs to be the focus of the follow-up adaptive management process. Examples of assumptions to inform through monitoring data collection and analysis include the use of a discharge per unit area relationship and water quantity accounting methods in place of stream gauge data in the hydrology analysis, the assumption of an ideal temperature in the temperature and fish production models, and the use of IFIM simulated water velocities to characterize usable habitat. In general, the technical analyses presented in the appendices are characterized by a majority of estimated or simulated data, as opposed to measured data. Measured data should form the foundation of future analysis. The Battle Creek restoration project is precedent setting in many ways. The adaptive management and monitoring process is an opportunity to not only address scientific uncertainties such as flow and habitat relationships in the Battle Creek drainage but may inform other restoration projects as well. Informing these relationships is, in fact, identified in the adaptive management plan however, the responsible party and funding to do so remains unidentified.

NGO16-4

NGO16-5

An example of future adaptive management and monitoring issues is tracking of habitat quality not limited to water temperature but also including sediment characteristics. The current discussions of sediment characteristics and potential alterations to the transport regime are in the context of dam removal. Hydraulic modeling results indicate that the sediment transport regime will return to natural equilibrium relatively quickly after dam removal. Although it may be appropriate to further evaluate this finding as part of the adaptive management process, impacts of dam removal will likely be short term as stated. However, the long term issue of future management of the gravel resource in the Battle Creek watershed is not addressed. Existing upstream projects and potential new development projects may further impact this habitat quality component in the future because the volcanic lithologies of the Battle Creek watershed are not expected to produce large amounts of gravel. A previous spawning gravel report found the resource was in generally good condition in the late 1980's. The report also identified potential negative impacts of dredging activities, the importance of a well documented and managed sediment sluicing program at the remaining dams, and negative affects of the upstream reservoirs continuing to function as sediment traps. The report documented the occurrence of appropriate sized spawning gravel above Macumber reservoir. Therefore,

NGO16-6

NGO16-7

the cumulative impact section should discuss impacts of potential upstream infrastructure development on habitat quality and overall maintenance of the important gravel resource of the Battle Creek watershed. Perhaps a well documented and managed sediment sluicing program should also be formalized within the accompanying Federal Energy Regulatory Commission re-license process. Further investigation of sediment routing after dam removal, a better understanding of the sediment transport regime and sediment budget in general, and tracking sediment conditions through time should be conducted within the adaptive management framework.

**NGO16-7
cont**

Fish Hatchery Management

The document identifies a number of potential negative affects of the Coleman National Fish Hatchery on restoration project success. The Nature Conservancy has continually raised many of the same issues within the workgroup and remains concerned about hatchery impacts on the overall success of the restoration project. We recognize that individual workgroups are meeting to address issues such as modification of the barrier weir as identified in the document. However, the document omits discussion of the larger management issue of the hatchery managed as fully integrated or isolated from the restoration project. A number of other issues are omitted from the document and these are more or less pertinent as a function of whether the hatchery is fully integrated or isolated. These issues include exploring the potential of Gover Ditch as a means to reduce impacts on Battle Creek, moving production of some of the runs to Livingston Stone, marking all hatchery fish, finding ways to reduce the handling of natural fish at the hatchery, and ensuring that any improvements to the barrier weir meet the standards of the restoration project. It may be most effective to explore some of these issues on a parallel track as project implementation proceeds.

NGO16-8

Re-vegetation Activities

Replanting of riparian species, including elderberry plants, is identified as a mitigation measure to replace lost habitat. Plant stock provided for erosion control measures, replanting of habitat, or any other uses should be derived from local stock and free of Argentine ants (*Linepithema humile*) from the supplier. Introduction of this exotic ant is detrimental to Valley Elderberry Longhorn beetles, and introduction through re-vegetation efforts can lead to an increase in the ant's range.

NGO16-9

Thank you,



Mike Roberts
The Nature Conservancy

Comment Letter NGO16—The Nature Conservancy, Mike Roberts (October 15, 2003)

Response to Comment NGO16-1

This comment has been noted. Reclamation and the State Water Board thank the Nature Conservancy for their support of the Five Dam Removal Alternative.

Response to Comment NGO16-2

Please see the response to Comment NGO1-1.

Response to Comment NGO16-3

Currently, the Red Bluff Diversion Dam is open from September 15 through May 15, which is when the majority of spring-run Chinook salmon migrate. Additionally, Reclamation and cooperating fish agencies (including DFG, USFWS, and NOAA Fisheries) have identified several mandates to improve fish passage at the Red Bluff Diversion Dam. A discussion on the Red Bluff Diversion Dam fish passage improvement project has been included in Chapter 6, “Related Projects,” in Volume I of this Final EIS/EIR under the discussion titled Projects That Support the Restoration Project Purpose and Need.

With respect to future projects that may affect spawning gravel recruitment, no activities are known to be located upstream of the project area. Furthermore, Reclamation and the State Water Board are not aware of any new active water developments that would affect existing operations and the ability to meet standards and criteria to protect Chinook salmon and steelhead.

Response to Comment NGO16-4

A detailed AMP is being developed in a parallel process. The AMP developed during the draft stage of this document has been substantially revised or reconceived since preparation of the Draft EIS/EIR. The AMP will, where appropriate, include studies and processes to address uncertainty of the initial assumptions and confirmation of expected outcomes of project components, such as effects of increased flow. A detailed section in the AMP (Section I.D.) directly addresses scientific uncertainties, includes a thorough evaluation of initial assumptions, and also validates the use of particular monitoring tools/approaches through careful logical development. The AMP for the

Restoration Project is presented in Appendix C in Volume II of this Final EIS/EIR.

Response to Comment NGO16-5

The AMP incorporated measured data within nearly all of its monitoring programs. Additional monitoring programs have been added to the AMP since preparation of the Draft EIS/EIR (please see Sections III.B and III.C for details on the AMP's planned use of measured data in future analyses.

Each step of the revised AMP identifies responsible parties and funding sources. For example, the revised AMP now identifies the responsible party and funding source under "Responsibility/Funding" within each adaptive management objective, Section III.A.1 provides a description of components for adaptive management objectives, Section III.D.3 details AMP roles and responsibilities, and Section III.D.4 identifies funding responsibilities.

Response to Comment NGO16-6

The effects of dam removal and flow changes on sediment transport will be addressed through the AMP. Although effects are likely to be short term, studies are currently identified in the sediment monitoring plan included as part of the AMP that will document the extent and duration of changes in sediment transport, including gravel resources and sediment routing. Please refer to Section III.C.1 of the revised AMP for a description of the sediment monitoring studies. Although changes are likely to have minimal effect on sediment conditions in Battle Creek, the information may be helpful in planning future projects on other systems.

Response to Comment NGO16-7

The AMTT has determined that a significant amount of scientific uncertainty exists regarding sediment transport and gravel management in Battle Creek. As a result, the AMTT has developed a focused study and sediment monitoring plan considering the management of gravel resources at existing dams a component of the Restoration Project. Please refer to Section II.C.1 of the revised AMP for more information.

The Cumulative Impacts section describes all likely foreseeable future projects. No projects have been identified that have the potential to reasonably affect recruitment and movement of gravel resources through the stream. McCumber Reservoir is part of the existing baseline and therefore is not included in future effects. It is considered in the overall cumulative impact analysis.

Response to Comment NGO16-8

Reclamation is aware of potential negative effects the Coleman National Fish Hatchery may have on the success of the Restoration Project. The Battle Creek PMT developed the *Proposal to Facilitate and Develop an Adaptive Management Plan for Coleman National Fish Hatchery for consideration by Greater Battle Creek Watershed Working Group* draft dated April 7, 2004.

The purpose of this proposal is to request CBDA funding to facilitate the development of an adaptive management plan for Coleman National Fish Hatchery in a process that would: a) be inclusive of responsible agencies and interested stakeholders, b) conform to the goals and objectives of the Restoration Project and legally managed hatchery-specific goals and objectives, c) be reviewed by the Coleman National Fish Hatchery Technical Panel and other principal scientific bodies, and d) include the scoping and prioritization of diagnostic studies necessary for Coleman National Fish Hatchery adaptive management.

Issues related to Coleman National Fish Hatchery are being addressed through separate Section 7 consultations. Consequently, effects of Coleman National Fish Hatchery operations are not addressed in this EIS/EIR.

Response to Comment NGO16-9

In response to the comment, the mitigation measures to address Impact 4.2-5 in Section 4.2 in Volume I of this Final EIS/EIR have been revised to provide additional valley elderberry longhorn beetle protection from Argentine ants (*Linepithema humile*). Plant stock provided for revegetation or erosion control measures should be derived from local stock and free of Argentine ants because introduction of this exotic ant is detrimental to valley elderberry longhorn beetles, and introduction through revegetation efforts can lead to an increase in the ant's range.



**Pacific Gas and
Electric Company**

Letter NGO17

Power Generation

245 Market Street
San Francisco, CA 94105

Mailing Address
Mail Code N11C
P.O. Box 770000

San Francisco, CA 94177

OCT 16 2003

October 15, 2003

Ms. Mary Marshall
U.S. Bureau of Reclamation
2800 Cottage Way
Sacramento, CA 95825

Mr. James Canaday
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

DATE	ACTED	REMARKS
203	✓	

**Comments on the Battle Creek Salmon and Steelhead Restoration Project – Draft
Environmental Impact Statement and Environmental Impact Report.**

Dear Ms. Marshall and Mr. Canaday:

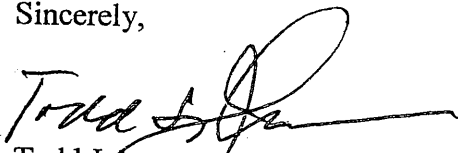
This letter provides Pacific Gas and Electric Company's (the Company) comments on the Battle Creek Salmon and Steelhead Restoration Project – Draft Environmental Impact Statement and Environmental Impact Report (DEIS/EIR) dated July 2003.

The DEIS/EIR analyses six alternatives and identifies the Five Dam Removal Alternative as the Preferred Alternative. The analysis of Preferred Alternative also serves as "Exhibit E" for PG&E's proposed license amendment application for the Battle Creek Hydroelectric Project (FERC No. 1121). Because of the dual nature of the DEIS/EIR, PG&E assisted in the preparation of the DEIS/EIR. PG&E appreciates the opportunity to provide information for the preparation of the DEIS/EIR and the opportunity to provide comments on the DEIS/EIR.

PG&E has grouped its comments into two categories. The first category is a set of general comments and the second category is a set of more specific comments.

If you have any questions or need additional information, please contact me at (415) 973-5314.

Sincerely,



Todd Johnson
Project Manager

cc: Mr. T.J LoVullo
Federal Energy Regulatory Commission
Mail Code: 6B-02
888 First Street, N.E.,
Washington, DC 20426

Battle Creek Salmon and Steelhead Restoration Project
Pacific Gas and Electric Company Comments on the
Draft Battle Creek EIR/EIS (July 2003)

General Comments

California Bay-Delta Authority Ecosystem Restoration Program Technical Review Panel Report

California Bay-Delta Authority Ecosystem Restoration Program convened a Technical Review Panel to review the restoration project for the Battle Creek Project. The Technical Review Panel Report dated September 2003 provided the panel's key findings and recommendations. After reviewing the Technical Review Panel Report PG&E believes that the findings and recommendations should be thoroughly evaluated and appropriate changes should be made to the Final EIS/EIR. PG&E is interested in continuing the collaborative process to address the issues raised in the Technical Review Panel Report.

NGO17-1

Adaptive Management Plan

The Draft Adaptive Management Plan provided in the DEIS/EIR should be revised to address the concerns raised by the Technical Review Panel Report and others. PG&E is fully committed to its role in both the Adaptive Management Policy Team and the Adaptive Management Technical Team to assist in revising the Adaptive Management Plan.

NGO17-2

Mitigation and Protection Measures

Mitigation and protection measures for terrestrial impact may be very broadly applied. PG&E recommends that the mitigation and protection measures be reviewed and modified as appropriate. For example, given the fact that the Valley Elderberry Longhorn Beetle is not known to occur in the Restoration Project area, it may be appropriate to scale back the protection zones for the Valley Elderberry shrubs from 100 feet to a more appropriate distance.

NGO17-3

Hydrological Model

The area-flow method or flow per unit area method of watershed modeling is generally considered an initial approach toward global characterization of flow dynamics within drainages having little or no historical hydrographic data. Essentially, this method assumes that a linear relationship exists between each square mile of drainage area as it relates to the total flow at the mouth of the drainage. Given that the Battle Creek drainage varies significantly in elevation, gradient and climate from semi-arid to mountainous, uniform flow per area assumptions do not hold true when attempting to define each aspect of the drainage. Expectations of accuracy should be limited to the resolution of the data available beyond a linear type model.

NGO17-4

**Battle Creek Salmon and Steelhead Restoration Project
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Chapter and Section	Page	Paragraph	Line	Remarks
Executive Summary	ES-14 & ES-15	Last paragraph on E14 and first paragraph on E15		This full paragraph is copied from the Adaptive Management Plan (AMP); therefore the AMP technical team should review this issue. The issue is – does the minority opinion always mean opposition to a proposed project? And conversely, does majority opinion always mean equal support for the proposed action?
Executive Summary	ES-23	4	3	The sentence should read “The increased annual going-forward cost of Hydroelectric Project power <u>is estimated to be</u> more than the annual power benefits ...”
Executive Summary	ES-25	3	3	The sentence should read “The increased annual going-forward cost of Hydroelectric Project power <u>is estimated to be</u> more than the annual power benefits ...”
4.1	4.1-1	2	7-8	Last sentence should read “Flow /habitat relationships were developed for rainbow trout <u>and suckers for all project effected streams</u> , and for smallmouth bass in the mainstem
4.1	4.1-6	6	1	Allowing all naturally spawned adult steelhead to pass above the barrier at CNFH is a relatively new action for the hatchery. This sentence should include the word “currently” before “allowed”. This paragraph should briefly discuss the history of allowing fish passage above the barrier.
4.1	4.1-8	2	3	Third sentence should read “Adults spawn in August through October (Figure 4.1-1) <u>depending on water temperature</u> ”.
4.1	4.1-10/11	7/3		These two paragraphs seem out of place. Suggest moving them to beginning of discussion of “Key Habitat Quantity”.
4.1	4.1-11	2	1	Battle Creek is a relatively high gradient stream. It is surprising that gravel and sand dominate the substrate types through out the system. Consider revising this sentence if appropriate.
4.1	4.1-12	5	5	This sentence should read “Seven diversion dams <u>partially</u> block passage of.....”
4.1	4.1-13	3	2	Should this sentence read 42 or 55 miles?
4.1	4.1-20	2		To compare the relative benefits that each alternative will have to restoring fish habitat and fish passage, this section relies on a series of models to establish fish production indices. A simpler approach could have been to compare actual physical habitat improvements like the potential increase in acres of spawning and rearing habitat, number of miles of stream of opened to migrating fish, and improvements in the temperature regime. This

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NGO17-15

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Chapter and Section	Page	Paragraph	Line	Remarks
				approach would eliminate the need to rely on model assumptions and simplification of data to develop models of fish production indices that can reliably discern differences between the various alternatives. These comparisons would be better suited as a secondary level of comparison. Much of this information already exists in the Appendix material.
4.1	4.1-26	2	1	Assumptions for the No Action Alternative (and other action alternatives as well) preclude access to the Keswick reach by spring-run and winter-run salmon. Although it is understandable that the No Action Alternative would likely preclude salmon from this reach due to the presence of low flow natural barriers, it is unclear why this assumption has been made for the other action alternatives. Table 4.1-7 shows potential fish passage beyond North Battle Creek Feeder Dam to be unimpeded for all of the action alternatives. The increased minimum flows and new fish ladders associated with the various action alternatives should allow access to this reach.
4.1	-	Figures 4.1-4-7; Appendix F		Figures showing capacity and production indices for spring-run and winter-run Chinook salmon do not include values for the Keswick reach—see comment above for page 4.1-26, paragraph 2. It will be important to document in the EIR/EIS that the combined flows from releases at Keswick Diversion and accretion flows from Rock and Bailey Creeks provide significant flows in this reach (See Appendix L, Table L-4) and capacity and production indices should be developed accordingly for steelhead, spring-run and winter-run salmon using these flows. If not, there should be additional discussion for the reader clarifying why this analysis did not occur and what the potential use and production could be for this reach. Although the minimum release requirement at Keswick Diversion is 3 cfs, the accretion flows from Rock Creek, Bailey and ground water flows cannot be ignored.
4.1	-	Table 4.1-6		This table discusses estimated survival of fry and juvenile life stages of steelhead and salmon attributable to water temperatures provided in the various reaches for each alternative. For spring-run salmon fry, survival estimates range from 20 to 35 percent. These estimates appear to be low and are likely the results of inappropriate assumptions associated with the timing of spawning in the various reaches. Logic would tell us that spring-run salmon would migrate into the project area and over-summer in suitable reaches until water temperatures become suitable for spawning in the fall. Depending on the reaches, water temperatures would become suitable for spawning in late September and October. This behavior is well documented in streams like Butte Creek,

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NGO17-18

Battle Creek Salmon and Steelhead Restoration Project
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Chapter and Section	Page	Paragraph	Line	Remarks
				Deer Creek, and Chico Creeks. The model assumption used for the timing of spawning (or proportion of the population spawning each month) needs to be revised for this species relative to the reach involved.
4.3	4.4-2	4	2	The first update of the model included calibration and verification using four years of data including 1988, 1989, 1995, and 1999. A second update was performed in the fall 2000 by calibrating the stream section between NFBCF Diversion and Digger Creek.
4.3	4.4-2	4	14	The last sentence states, "since the SNTMP model requires many data files and operates as a separate modeling system, a simplified, yet accurate, temperature prediction method was developed for the monthly fish production model (Appendix M)". Because the SNTMP model to date represents the most accurate representation of the temperature profiles in each reach under the No Action and each Action Alternative, we believe that the EIR/EIS should at a minimum compare the temperature regimes or warming estimates developed for each reach in Appendix M using DWR data collected in the last five years (1998-2002) with those of the PG&E TRPA SYNTMP model. Initial review of the information presented in Appendix M suggests that this analysis maybe over predicting stream heating in the various reaches. The comparison could be designed to compare reach average temperatures or water temperature at the top and bottom of the reaches.
4.1	4.1-41	6	1	Under the No Action Alternative, the summer stream surface area is approximately <u>110</u> acres; not 175 acres as indicated (See Table 4.1-10).
4.16	4.16.6	1	10	Add the following sentence: "Due to the rapidly changing electricity market in California, the replacement power cost of 5.11 cents per kwh will be updated in the final EIS/EIR."
Appendix F	All			There are no page numbers for this Appendix.
Appendix F	F-3			This paragraph discusses that estimates for spawning habitat area vs. streamflow for steelhead and Chinook salmon were developed from the existing streamflow study conducted by TRPA 1998. Figures 1-8 suggest that spawning habitat area calculated for spring-run Chinook spawning habitat were also used to represent winter-run and late fall-run Chinook spawning habitat areas. The rationale for using this relationship for winter-

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NGO17-24

**Battle Creek Salmon and Steelhead Restoration Project
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Chapter and Section	Page	Paragraph	Line	Remarks
				run and late fall-run should be discussed in this section.
Appendix F		Table F-5, F-9		Table F-5 and F-9 does not include spring-run and winter-run salmon spawning and rearing areas for the Keswick reach (see comment above for Section 4.1, Figures 4.1-4-7). Also footnote iv indicates that spring-run Chinook spawning areas represent values for the month of September. It should be noted for some of the lower reaches of the North Fork and middle reaches of the South Fork, over summering salmon will spawn only after temperatures drop in late September and October.
Appendix G	G-12-13	All		This section discusses the methodology for developing the temperature regime associated with the various alternatives and refers the SNTMP temperature model developed by TRPA and PG&E. However, the results of the SNTMP temperature model are never discussed because the EIR/EIS uses a simpler, less accurate model for developing the temperature assessment. We suggest that this section be rewritten to characterize the temperature analysis described in Appendix M.
Appendix K and L	General Comment	--	--	<p>General Comments:</p> <p>Appendix K, Development and Assumptions of the Battle Creek Hydrology and Hydroelectric Power Model, and Appendix L, Results from Monthly Flow and Power Generation Model, present hydrographic data, flow assumptions used to estimate flow conditions in the Battle Creek watershed under the different restoration alternatives considered in the EIR/EIS (July 2003), and the results of the analysis. The model used to simulate watershed conditions is a simplified flow per unit area approach commonly used to determine flow distribution in watersheds that have limited data sets available. However, the Battle Creek watershed is unique with two distinctly different watershed forks with paradoxical delivery patterns throughout the year. In this case, the flow per unit area model over simplifies the actual behavior of watershed conditions.</p> <ol style="list-style-type: none"> 1. In general, further refinement is needed to represent actual watershed conditions. Further discussion with Resource Agencies and PG&E is needed. 2. The flow per unit area method of watershed modeling is generally considered an initial approach toward global characterization of flow dynamics within drainages having little or no historical hydrographic data. Essentially, this method assumes that a linear relationship exists between each square mile of drainage area as it relates to the total flow at the mouth of the drainage. Given that the Battle Creek

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Battle Creek Salmon and Steelhead Restoration Project
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Chapter and Section	Page	Paragraph	Line	Remarks
				drainage varies significantly in elevation, gradient and climate from semi-arid to mountainous, uniform flow per area assumptions do not hold true when attempting to define each aspect of the drainage. Expectations of accuracy should be limited to the resolution of the data available beyond a linear type model. A statement needs to be added to this Section describing the limitations of the flow per unit area model and the application of model in the context of evaluating alternatives considered in the EIR/EIS.
Appendix K Section 2, Monthly Hydrology	K-3	Para 2	6	Specific Comments: Appendix K states that these "diversions are for the Volta power plants and have a combined capacity of 128 cubic feet per second (cfs)." Based on actual diversion capacities for the Al Smith and Keswick canals, the combined capacity of these diversions is approximately 90 cfs.
Section 2, Monthly Hydrology	K-4	Para 2	--	Appendix K, Section 2, Para 2, states that "flows at the USGS gage below Coleman National Fish Hatchery are the best source of flow data for the entire Battle Creek watershed" because there is no missing data for the period from October 1, 1961 through September 30, 2002. While this long-term data set provides insight to watershed dynamics as a whole, it cannot provide adequate resolution of the complex network of tributaries, springs and seasonally varying delivery patterns driving micro events within the watershed. Therefore, the flow per unit area watershed modeling approach and consequential uniform flow assumptions are incapable of accurately characterizing the hydrology in this unique watershed. A statement should be added to: 1) emphasize that the modeling methodology is limited in approximating unique nature of the Battle Creek watershed and 2) is being used to determine relative hydrology and hydroelectric power values to evaluate alternatives considered in the EIR/EIS.
Section 2, Monthly Hydrology	K-4	Para 3	2	Appendix K states: " The PG&E records from recent years (Water Years [WY] 1998–2002) have been used to confirm the area-flow estimates." The hydrographic records collected by PG&E are <u>limited to partial range gaging stations which cannot be applied toward full range model calibration beyond minimum instream compliance flows.</u> Additionally, the records collected by PG&E are not representative of unimpaired flows. A statement needs to better represent the limitations and

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NGO17-32

Battle Creek Salmon and Steelhead Restoration Project
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Chapter and Section	Page	Paragraph	Line	Remarks
				approximations being used to estimate hydrographic values.
Section 3, Calculated North Fork Battle Creek Flows and Diversions	K-5	Para 3	2	Appendix K, Section 3, Para 3 assumes 5 cfs spring flow between North Battle Creek Feeder and Eagle Canyon Diversion Dams yet the average flows at Eagle Canyon are exponentially higher. Digger Creek is not capable of providing supplemental flows of that magnitude year around to make up that large a difference.
Appendix L				General Comment: One indication that the flow per unit area approach is deficient in approximating future conditions are the results shown in Table L5 for Volta 2 Powerhouse Flow and North Battle Creek Feeder Diversion at the 50% exceedance values. In this case, the August through October values indicate that flow increases significantly during the driest (base flow) period of the year, which contradicts accepted hydrologic methodology in this and surrounding watersheds.
Appendix M	M-3	2	1-2	This first sentence should be revised to indicate "water temperatures were collected on Battle Creek using data loggers in <u>1998</u> and 1989 by Thomas R. Payne and Associates..."
Appendix M	M-8	3	13	This last sentence should be revised to state that "All of the monthly temperatures used in the monthly modeling can be reviewed in <u>Tables M-6 through M-10</u>

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NGO17-36

Comment Letter NGO17—Pacific Gas and Electric Company, Todd Johnson, Project Manager (October 15, 2003)

Response to Comment NGO17-1

Please see the response to Comment NGO11-2 and Master Response A.

Response to Comment NGO17-2

The Battle Creek AMP (Terraqua, Inc. 2004) has been substantially revised, or reconceived, since preparation of the Draft EIS/EIR in response to the TRP review, to which Comment NGO17-2 refers. In particular, the AMP was revised in response to other scientific reviews by ISB members and by two additional scientific technical panels established by the California Bay-Delta Authority (i.e., TRP and Coleman Science Panel). As an adaptive management participant, PG&E played an active role in revising the AMP.

Response to Comment NGO17-3

Mitigation measures for biological resources were reviewed and modified in consultation with DFG and USFWS during the preparation of the Battle Creek ASIP. Updated mitigation measures have been included in this Final EIS/EIR. A substantial amount of additional detail has been added to the mitigation measures for valley elderberry longhorn beetle habitat (i.e., elderberry shrubs; see Mitigation Measures for Impact 4.2-5), including a description of activities that will be allowed by USFWS within a 20- to 100-foot buffer of elderberry shrubs.

Response to Comment NGO17-4

Appendix I in Volume II of this Final EIS/EIR has been revised to provide a comparison of the measured flows and area-flow estimates from the upstream portions of North Fork Battle Creek at North Fork Battle Creek Feeder Diversion Dam and South Fork Battle Creek at South Diversion Dam. Although the PG&E daily stage records are complete for many stations below dams on North Fork Battle Creek and South Fork Battle Creek, the rating curves used to estimate flows are not routinely checked for flows higher than the required FERC minimum flows. Part of the Battle Creek adaptive management approach (Terraqua, Inc. 2004) would include accurate ratings and daily flow records for the higher flows along North Fork and South Fork Battle Creek. Monthly flow

estimates, based on the upstream watershed area as a fraction of the U.S. Geological Survey (USGS) flow station at the Coleman National Fish Hatchery, provides an adequate basis for comparing the instream flows and hydropower diversions for each restoration alternative.

Response to Comment NGO17-5

Comment NGO17-5 refers to identifying a funding source for facility modifications, should PG&E be the minority opinion in favor of an action. The 1999 MOU description of facility modification protocols (Section 9.2.B.3) is not clear with respect to this specific case. Therefore, should such an event take place, it would first be resolved through a dispute resolution process for facility modification issues, as described in Section 14 of the MOU. The funding details would be resolved before taking the issue to FERC because the MOU identifies a process to resolve funding details that does not require FERC's immediate involvement.

Response to Comment NGO17-6

This comment has been noted and the minor text edits suggested in the comment have been made under the Six Dam Removal Alternative in the Summary of Impacts discussion in the Executive Summary in Volume I of this Final EIS/EIR.

Response to Comment NGO17-7

This comment has been noted and the minor text edits suggested in the comment have been made under the Three Dam Removal Alternative in the Summary of Impacts discussion in the Executive Summary in Volume I of this Final EIS/EIR text has been revised as requested.

Response to Comment NGO17-8

The assessment is based on the available information. The habitat analyses conducted by Thomas R. Payne and Associates (1998a) considered three resident fish—rainbow trout, Sacramento pikeminnow, and smallmouth bass. Flow-habitat relationships were developed for rainbow trout and smallmouth bass. Information that indicates flow-habitat relationships were developed for suckers is not known.

Response to Comment NGO17-9

The Coleman National Fish Hatchery has been reintroducing steelhead into the Battle Creek system since 1995 (please see *Biological Assessment of Artificial Propagation at Coleman National Fish Hatchery and Livingston Stone National Fish Hatchery: Program Description and Incidental Take of Chinook Salmon and Steelhead Trout* prepared by the USFWS Red Bluff Fish and Wildlife Office in October 2000 for more information). Additional information pertaining to current and historical steelhead passage has been incorporated into Special Status Fish Species—Steelhead in Section 4.1 in Volume I of this Final EIS/EIR.

Response to Comment NGO17-10

The third paragraph in Selected Species Life Histories—Chinook Salmon, in Section 4.1 in Volume I of this Final EIS/EIR, has been corrected to clarify that adults spawn in August through October depending on water temperature.

Response to Comment NGO17-11

The first paragraph referred to in this comment, which describes the Battle Creek watershed, was moved to follow the first paragraph under the Affected Environment—Regional Setting section in Section 4.1 in Volume I of this Final EIS/EIR.

The other paragraph referred to in this comment, which describes substrate sizes in the watershed, was moved to precede the paragraph in the same section (Key Habitat Quantity) that begins “Rearing habitat area may limit the production of juveniles and subsequent adult abundance of some species.”

Response to Comment NGO17-12

Factors Affecting Abundance—Key Habitat Quantity in Section 4.1 in Volume I of this Final EIS/EIR states that “substrate size ranges from sand to boulder with predominantly gravel and cobble throughout the system.” Sand is not a dominant substrate type within the Battle Creek system.

Response to Comment NGO17-13

Factors Affecting Abundance—Migration Habitat in Section 4.1 in Volume I of this Final EIS/EIR has been corrected to clarify that “seven diversion dams partially block passage.”

Response to Comment NGO17-14

A clarification has been made in Factors Affecting Abundance—Migration Habitat in Section 4.1 in Volume I of this Final EIS/EIR to reflect a total of 48 miles of spawning and rearing habitat restored, including 42 miles of spawning and rearing habitat in Battle Creek, and an additional 6 miles of spawning and rearing habitat in its tributaries.

Response to Comment NGO17-15

Although a comparison of monthly acres of spawning and rearing habitat appears simpler on the surface, evaluating the differences between alternatives requires inclusion of interaction between the time of year and stream reaches over the life stage of each fish species. The assessment model simulates the interaction, including the effects of water temperature. A text description of the interaction among time of year, stream reaches, life stages, and species would be substantially more confusing to the reader than the comparison of the simulated indices that was provided.

The purpose of the EIS/EIR is to provide information that the reader can use in comparing alternatives, especially comparing them to the No Action Alternative. The assessment provided in Section 4.1, Fish, in Volume I of this Final EIS/EIR under Key Habitat Quantity and Predicted Fish Capacity Indices, is based on the flow-habitat relationships developed as part of an instream flow study (See Key Habitat Quantity in the Methods section) and on the minimum instream flow requirements for each alternative. Habitat area used to calculate capacity indices can be found in Appendix H in Volume II of this Final EIS/EIR. The benefit of allowing cold spring water to flow to Battle Creek is presented under the section on Water Temperature for each alternative.

Response to Comment NGO17-16

Flows upstream of the North Battle Creek Feeder Dam would be the same for the No Action Alternative and all other alternatives. The available data (Thomas R. Payne and Associates 1998b and Table 4.1-7) do not indicate that Chinook salmon could successfully migrate to spawning areas upstream of the Feeder Dam, even with improved passage through downstream areas. In response to this information, flow-habitat relationships were not developed for Chinook salmon in the reach upstream of the North Battle Creek Feeder Dam. The best available information does not support an alternative conclusion to that included in the EIS/EIR. Monitoring included in the AMP (Appendix C in Volume II of this Final EIS/EIR) will provide information for future evaluation of habitat use in the Keswick reach by spring- and winter-run Chinook salmon.

Response to Comment NGO17-17

Although flow-habitat relationships were developed for steelhead in the Keswick reach, they were not developed for Chinook salmon (Thomas R. Payne and Associates 1998a). Consequently, we currently do not have any information as a basis for additional habitat analysis for Chinook salmon. For more information, see the response to Comment NGO17-16.

Response to Comment NGO17-18

There is agreement that spring-run Chinook salmon would likely time spawning to water temperature conditions. However, the analysis presented in the EIS/EIR takes into consideration all spawning habitat potentially available to the specific runs through the entire window of potential spawning. The numbers provide an index of suitability over all spawning habitats during the potential spawning period and reflect the change in habitat availability relative to the No Action Alternative. Without indexing to potential habitat area, the survival could be assumed the same under all alternatives (i.e., if Chinook salmon spawn only when water temperature conditions support survival and survival would be 100%). The survival index provides a measure of the potential increase in spawning habitat area. For example, spawning habitat and resulting fry production would increase more than 100% for the Five Dam Removal Alternative relative to the No Action Alternative (i.e., an increase from 5% survival under the No Action Alternative to 12% under the Five Dam Removal Alternative). The survival index also provides relative spawning habitat availability and production. Although conditions improve for winter-run Chinook salmon under the Five Dam Removal Alternative, the benefit to winter-run is restricted to a relatively small proportion of available spawning habitat in Battle Creek during the period of possible winter-run Chinook salmon spawning (i.e., 12%).

Response to Comment NGO17-19

A new Appendix K in Volume II of this Final EIS/EIR presents the SNTEMP results and describes suitable temperature habitat for the restoration alternatives. Appendix R, "Water Temperature in the Battle Creek Restoration Area," also in Volume II of this Final EIS/EIR provides a more complete discussion of the SNTEMP modeling.

Response to Comment NGO17-20

The SNTEMP results and the monthly warming estimates are compared in the revised Appendix R in Volume II of this Final EIS/EIR. The warming estimates were modified to be a function of the equilibrium temperature, to prevent the

extreme warming predicted in the mainstem. Both the SNTEMP results and the monthly warming estimates match the observed warming in recent years, with FERC flows below South and Inskip Diversion Dams, and for interim flows of 35 cfs and FERC flows of 5 cfs below Coleman Diversion Dam.

Response to Comment NGO17-21

Table 4.1-10 has been corrected to reflect that the summer stream surface area is approximately 110 acres under the No Action Alternative.

Response to Comment NGO17-22

Since this comment, PG&E has provided more recent information with respect to Section 4.16, Other NEPA Analyses, Socioeconomics. The most recent information has been incorporated into this Final EIS/EIR.

Response to Comment NGO17-23

In response to the comment, page numbers, headers, and footers have been added to Appendix H, "Habitat Assessment Model," in Volume II of this Final EIS/EIR.

Response to Comment NGO17-24

Flow-habitat information on specific runs is not available; consequently, the assessment used in Appendix H, "Habitat Assessment Model for Chinook Salmon and Steelhead," in Volume II of this Final EIS/EIR applied the information from Thomas R. Payne and Associates (1998a) to all runs of Chinook salmon. The flow-habitat relationships used habitat preference criteria developed from observations of substrate, flow velocity, and water depth for fall-run Chinook salmon in Battle Creek and from available literature (Thomas R. Payne and Associates 1998a). The substrate, velocity, and depth preferences in Battle Creek were within the range of preferences observed for Chinook salmon in other systems. However, preferred velocities in Battle Creek were slightly lower than those described for Oregon and Idaho data, and depths were slightly less. The lower velocity and depth preferences may reflect the shallow nature of Battle Creek and the velocities and depths that are generally available. In addition, spring-run Chinook salmon are generally smaller than fall-run Chinook salmon; therefore, fall-run Chinook salmon were assumed to use slightly higher velocity and greater depth. However, the Weighted Usable Area (WUA) curves for the runs were similar, and application of either curve would not change the conclusion for the analysis of alternatives. The analysis is based on the best available information, and only actual observations of spawning in the future will

provide information that can confirm or refute similarity of habitat preference criteria for different runs of Chinook salmon that may use habitat in Battle Creek.

Response to Comment NGO17-25

Although flow-habitat relationships were developed for steelhead in the Keswick reach, they were not developed for Chinook salmon (Thomas R. Payne and Associates 1998a). Consequently, we currently do not have any information as a basis for additional habitat analysis for Chinook salmon. See the response to Comment NGO17-16.

There is agreement that spring-run Chinook salmon would likely time spawning to water temperature conditions and may not spawn until September and October. However, the analysis in the EIS/EIR takes into consideration all spawning habitat potentially available to the specific runs through the entire window of potential spawning. The numbers provide an index of suitability over all spawning habitat during the potential spawning period and reflect the change in habitat availability relative to the No Action Alternative. Please see the response to Comment NGO17-18.

Response to Comment NGO17-26

Please refer to the response to Comment NGO17-20 for more information on the SNTMP results.

Response to Comment NGO17-27

In response to the suggestion that the flow per unit area model oversimplified the actual behavior of Battle Creek watershed conditions, Appendix I, "Development and Assumptions of the Battle Creek Hydrology and Hydroelectric Power Model," was revised to include a more thorough discussion of the daily flows in Battle Creek.

Response to Comment NGO17-28

Appendix I, "Development and Assumptions of the Battle Creek Hydrology and Hydroelectric Power Model," has been revised to demonstrate the variation in runoff in the North Fork Battle Creek and South Fork Battle Creek, and to represent actual watershed conditions.

Response to Comment NGO17-29

Appendix I, “Development and Assumptions of the Battle Creek Hydrology and Hydroelectric Power Model,” has been revised to describe the limitations of the flow per unit area model and the application of the model in the context of the alternative evaluation. See also the response to Comment NGO17-4.

Response to Comment NGO17-30

Appendix I, “Development and Assumptions of the Battle Creek Hydrology and Hydroelectric Power Model,” text has been revised to clarify the diversion quantities for the Volta power plants. The diversions have a combined capacity of 90 cfs, but additional diversion from Millseat Creek increases the Volta flow to the 128 cfs capacity during periods of high runoff.

Response to Comment NGO17-31

Appendix I, “Development and Assumptions of the Battle Creek Hydrology and Hydroelectric Power Model,” text has been modified as suggested to include a discussion of the limitations of the flow per unit area modeling approach, and the application of the model to evaluate the alternatives in Volume II of this Final EIS/EIR.

Response to Comment NGO17-32

Text in Appendix I, “Development and Assumptions of the Battle Creek Hydrology and Hydroelectric Power Model,” has been revised to provide a more complete comparison of North Fork Battle Creek and South Fork Battle Creek flows to Coleman National Fish Hatchery flows, with a discussion of the accuracy of the area-flow monthly streamflow modeling method.

Response to Comment NGO17-33

The comment suggests that the example flow calculations between North Battle Creek Feeder and Eagle Canyon Diversion Dam, in Appendix I, “Development and Assumptions of the Battle Creek Hydrology and Hydroelectric Power Model,” are incorrect, particularly the assumed flow inputs from Digger Creek. However, the incremental watershed of Digger Creek and other streams between North Battle Creek Feeder and Eagle Canyon Diversion Dam is 46 square miles (~13% of the Battle Creek watershed). For the example month of January, this represents a flow of 35 cfs. Thus, Digger Creek and the other streams between the two diversion dams are capable of providing large flows.

Response to Comment NGO17-34

Examination of Table I-2, in Appendix I, “Development and Assumptions of the Battle Creek Hydrology and Hydroelectric Power Model,” showing the Coleman National Fish Hatchery minimum monthly flows indicates that the 50% September flow of 217 cfs is lower than the 50% October flow of 230 cfs. Although many September and October periods continue the summer recession of baseflow, rainfall with some runoff occurs in some years, slightly raising the flow values in these months.

Response to Comment NGO17-35

The response to this comment assumes that the commentor is referring to 1989 and 1988 temperatures. Appendix R, “Water Temperature in the Battle Creek Restoration Area,” has been revised. However, Reclamation has no record of the 1988 temperatures referred to in the comment. The original SNTMP modeling was based on the 1989 data only.

Response to Comment NGO17-36

Appendix R, “Water Temperature in the Battle Creek Restoration Area,” was revised to refer directly to the monthly temperature tables (R-8 through R-18).



FRIENDS OF THE RIVER

915 20th Street, Sacramento, CA 95814
916/442-3155 • FAX: 916/442-3396 • E-mail: info@friendsoftheriver.org • www.friendsoftheriver.org

CALIFORNIA'S
STATEWIDE RIVER
CONSERVATION
ORGANIZATION

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CODE	ACTION	SURNAME & DATE
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October 16, 2003

Ms. Mary Marshall
Bureau of Reclamation
2800 Cottage Way
Sacramento, CA 95825

Mr. Jim Canaday
State Water Resources Control Board
1001 "I" Street
Sacramento, CA 95814

Re: Comments in response to Battle Creek Restoration Project DEIS/R

Dear Ms. Marshall and Mr. Canaday:

Attached are the detailed comments of Friends of the River. If have any questions, please contact me at (916) 442-3155, Ext. 221.

Sincerely,

Steven L. Evans
Conservation Director



Friends of the River
Battle Creek Restoration Project DEIS/R Comments
October 16, 2003

- Pg. ES-3: The statement that "Private ownership of lands bordering Battle Creek discourages potential human impacts on recovered species" is unsubstantiated. In fact, private lands along Battle Creek could be subject to inappropriate use and development harmful to recovered salmon. **NGO18-1**
- Pg. ES-7: Project Objectives – Reducing straying and false attraction is an important project objective left off this list. Mixing of waters between the North and South Forks of the creek could significantly reduce the restoration potential of the project by encouraging straying and false attraction of salmon and steelhead. **NGO18-2**
- Pgs. ES-8-9: The four alternatives in the DEIS/R do not represent a reasonable range of alternatives. Public scoping comments identified additional alternatives for consideration, including Alternative 6, which called for the removal of all dams below the natural fish barriers on Battle Creek. **NGO18-3**
- Pg. ES-9 and Pg. 3-18: No Action Alternative – This alternative fails to comply with the Endangered Species Act(s), the Clean Water Act, CALFED goals and objectives, and the California Constitution's public trust doctrine by not fully restoring fish passage, fish flows, and historical habitat. **NGO18-4**
- Pgs. ES-10-14 and Pg. 3-19: Five Dam Removal Alternative – It should be noted that significant and expensive components of this alternative, including the Adaptive Management Plan and Fund, Facility Monitoring Plan, and Water Acquisition Fund would not be required under Alternative 6. **NGO18-5**
- Pg. ES-15: No Dam Removal Alternative – This alternative fails to comply with the Endangered Species Act(s), the Clean Water Act, CALFED goals and objectives, and the California Constitution's public trust doctrine by not fully restoring fish passage, fish flows, and historical habitat. **NGO18-6**
- Pg. ES-16: Six Dam Removal Alternative – This alternative fails to comply with the Endangered Species Act(s), the Clean Water Act, CALFED goals and objectives, and the California Constitution's public trust doctrine by not fully restoring fish passage, fish flows, and historical habitat. **NGO18-7**
- Pg. ES-17: Three Dam Removal Alternative – This alternative fails to comply with the Endangered Species Act(s), the Clean Water Act, CALFED goals and objectives, and the California Constitution's public trust doctrine by not fully restoring fish passage, fish flows, and historical habitat. **NGO18-8**
- Pg. ES-25: Key Issues/Potential Controversy – Friends of the River's scoping comments identified several key issues and potential areas of controversy not mentioned in this section and not addressed in the DEIS/R. They include consideration of the Remove All Dams Below Natural Fish Barriers alternative (since identified in the scoping document as Alternative 6), the cost and effectiveness of alleged "100% fail-safe" fish **NGO18-9**

screens and ladders, and the need to establish conservation easements on project-related lands, consolidate public lands along the creek, and ensure that facilities on public lands are fully decommissioned. In addition, scoping comments identified the need to address water quality issues that could significantly impact the restoration project, including upstream grazing, logging, sewage treatment ponds, and a proposed new hydroelectric project (Lassen Lodge).

NGO18-9
CONT

Pgs. ES-25-26: Environmentally Preferred/Superior Alternative – The preferred alternative is in no way the environmentally preferred/superior alternative. The Remove 6 Dams alternative restores more habitat, as does Alternative 6, as originally proposed in the scoping report.

NGO18-10

Pg. 2-9: Memorandum of Understanding – It should be noted that some stakeholders, including environmental interests, were excluded from signing the original Battle Creek MOU. It should also be noted that although the existing stakeholder process has provided an important means of communication, it has not necessarily reduced controversy or resolved issues. For example, the Battle Creek Watershed Conservancy, a publicly funded watershed group, is on record as opposing the restoration project.

NGO18-11

Pgs. 2-10-11: Ecological Restoration Considerations – Eliminating mixing of waters to avoid straying and false attraction of fish should be included in this section.

NGO18-12

Pg. 2-15: Restoration of Stream Function – The statement "...restoration of stream function to avoid false attraction would be achieved through the construction of conveyance facilities that would avoid the introduction of North Fork Battle Creek water into the South Fork Battle Creek." However, the proposed conveyance facilities (tailrace connectors) will not handle seasonal overflow or powerhouse shutdowns. Existing canals and penstocks leading to South Fork powerhouses are unable to accept all of the seasonal high flow delivered by canals from the North Fork and up-slope runoff. These seasonal overflows are routinely bypassed in an uncontrolled fashion into the South Fork. When South Fork powerhouses are not operating or are shutdown for maintenance, the overflow is also bypassed directly into the creek. The proposed tailrace connectors will not fully resolve this situation, which means that there will be periodic mixing of waters and likely continued straying and false attraction of fish.

NGO18-13

Pg. 2-16: Power Production Considerations – Hydropower is only clean and renewable if it is generated with little or no impact to the environment. The impacts to Battle Creek's environment caused by the existing hydroelectric project is well documented. Hence, the goal "To minimize the loss of clean, renewable power production..." is laudable, but not applicable to this project. A new goal should be adopted to "Modify the hydroelectric project to eliminate environmental impacts and produce clean and renewable hydroelectricity."

NGO18-14

Pg. 2-18-19: Hydroelectric Project Water Routing – In regard to powerhouse shutdowns, see comments for pg. 2-16.

NGO18-15

Pg. 2-20: Water Bypass Provisions – This section implies that water bypass due to seasonal high flows and powerhouse shutdowns will be eliminated. Is that the intent?

NGO18-16

Will the project indeed eliminate <u>all</u> bypass situations or will bypass be reduced to the extent that potential straying and false attraction will be inconsequential?	NGO18-16 cont
Pg. 2-20: Facility Reliability – Facility reliability concerns are not a factor for Alternative 6.	NGO18-17
Pg. 2-20: Operation and Maintenance – Reliable operation and maintenance are not a factor for Alternative 6.	NGO18-18
Pg. 2-21: Regulatory Certainty – Alternative 6 provides the highest level of regulatory certainty.	NGO18-19
Pg. 2-21: Enhanced Benefits – Alternative 6 provides the highest level of enhanced benefits. Funds reserved for adaptive management and water acquisition may be applied to removal.	NGO18-20
Pg. 3-8 South Diversion Dam (and appurtenant structures) – Please note that all eleven spillways designed to handle “overcharge” of the canal release North Fork water into the South Fork, a situation that will lead to continued water mixing and fish straying.	NGO18-21
Pg. 3-11: Inskip Diversion Dam/South Powerhouse – How often do scheduled powerhouse shutdowns, unscheduled shutdowns, minor operational flow mismatches, and high precipitation events occur that result in bypass spilling of North Fork water into the South Fork?	NGO18-22
Pg. 3-17: Project Alternatives Description – Footnote #1 fails to mention that the original scoping report included Alternative 6 (Remove All Dams Below Natural Fish Barriers).	NGO18-23
Pg. 3-23: North Battle Creek Feeder Dam (NBCFD) Construction Considerations – Few if any of these considerations are pertinent under Alternative 6. The NBCFD can likely be effectively removed with judicious use of explosives and hand-held power tools, alleviating the need for new road construction and road improvements.	NGO18-24
Pg. 3-26: Eagle Canyon Dam (ECD) Fish Ladder – “The combined new canal and ladder project up to 30 feet into the stream channel and require excavation into the streambed to a depth of between 15 and 20 feet.” Isn’t it more cost and environmentally effective to simply remove the dam?	NGO18-25
Pg. 3-28-29: ECD Construction Considerations – The existing unroaded access to this dam significantly increases the cost of constructing a new fish ladder and screen. The agencies are to be congratulated for not resorting to building a new road down to the existing dam site, but the proposed work still requires construction of nearly a mile of new road on the north side of the creek. Few, if any, of these considerations are pertinent under Alternative 6. The ECD can likely be effectively removed with judicious use of explosives and hand-held power tools, alleviating the need for new road construction and road improvements.	NGO18-26
Pg. 3-39: South Diversion Dam (SCD) Access Road – Would decommissioning of South Dam and Canal, as provided under Alternative 6, require less road improvements?	NGO18-27

Pg. 3-42: Inskip Dam Fish Ladder – The size of this 200 foot-long fish ladder, along with appurtenant roads and structures (including the fish screen and tailrace connector), makes it perhaps the most expensive “fix” of the project. It also represents a costly facility to operate and maintain. Wouldn’t it be cheaper and more effective in terms of restoration to simply remove the dam as provided for under Alternative 6?	NGO18-28
Pg. 3-46: Inskip Canal Wasteway – This section notes that overflows of the Inskip canal, which would mix North Fork water with South Fork water, would be of “short duration.” And yet, the existing project routinely bypasses water out of the canal into the South Fork. It is unclear how the proposed structure would limit overflow to a shorter duration.	NGO18-29
Pg. 3-55: Inskip Powerhouse Bypass Facility – This section notes that the new bypass structure would limit (but apparently not eliminate) water mixing. How often would overflow of North Fork water into the South Fork occur?	NGO18-30
Pg. 3-58: Inskip Powerhouse/Coleman Dam Construction Considerations – Much of the road improvements delineated in this section are not required under Alternative 6.	NGO18-31
Pg. 3-61: Adaptive Management Plan – Not needed under Alternative 6.	NGO18-32
Pg. 3-62: Facility Monitoring and Maintenance Plan – Not needed under Alternative 6.	NGO18-33
Pg. 3-63: Water Right – The reference to the Bluff Springs-Hazen Ditch agreement apparently associated with the Soap Creek diversion is obscure. This needs to be more fully explained, particularly if full decommissioning is considered. If Alternative 6 were implemented, PG&E water rights associated with all decommissioned facilities should be transferred to DFG.	NGO18-34
Pg. 3-63: Water Acquisition Fund – Not needed under Alternative 6.	NGO18-35
Pg. 3-64: Adaptive Management Fund – Not needed under Alternative 6.	NGO18-36
Pg. 3-91-92: Alternative Eliminated From Further Consideration – Alternative 6 should not have been eliminated from consideration. Minimizing the loss of clean and renewable energy, although a laudable project goal, is not pertinent because the project never produced clean and renewable energy. Instead the energy was produced by risking extinction of salmon and steelhead. What “Federal energy policy obstacles” are being referred to on pg. 3-92? We understand that PG&E believes that the Volta part of the project would be uneconomic to operate, but this contention is unsubstantiated in the DEIS/R (particularly by any independent third party). Common sense dictates that Volta project would cover operating costs (if not PG&E’s, then perhaps some other entity). The local economic impacts alluded to in this section are also unsubstantiated in the DEIS/R. The potential loss of PG&E jobs in the local community associated with project decommissioning are not quantified and therefore this claim is unsubstantiated.	NGO18-37
Pgs. 4.1-1-61: Fish – Overall, this section fails to quantify the level of restoration provided under each alternative in regard to number of fish restored. This is of critical	NGO18-38

importance, since there appears to be a basic assumption in the DEIS/R that retained dams with fish ladders and modified flows will provide the same level of restoration as removed dams with natural flows. **NGO18-38 cont**

Pg. 4.1-19: Beneficial Impacts Of Fish Restoration – All the beneficial criteria listed would be met or exceeded under Alternative 6, more so than any of the alternatives considered in the DEIS/R. **NGO18-39**

Pg. 4.1-22: Effective Flows At Fish Ladders – Determining effective flows for fish ladders is much more of an art than it is a science. To our knowledge, no fish ladder has been determined to be 100% effective at passing fish. Therefore, removal of all dams as provided for in Alternative 6 is the most effective alternative in providing fish passage. **NGO18-40**

Figures 4.1-2-9: Capacity Indices – Indices of this nature are somewhat subjective. The pre-hydro project Battle Creek probably did not provide optimum habitat for all life stages and species of anadromous fish, and yet it was considered to be the most important salmon spawning tributary to the Sacramento River. A broader focus on restoring the ecosystem, as opposed to meeting specific temperature targets for all life stages and species of anadromous fish, is the desired overall restoration goal. **NGO18-41**

Table 4.1-7: Potential Steelhead and Chinook Salmon Passage – This table implies that retained dams with new fish ladders will be as successful in providing fish passage as removed dams. No fish ladder is 100% effective in providing fish passage. The table should differentiate between partial and full passage provided by the removed and improved structures, as well as display the 100% effective passage that would be provided by Alternative 6. **NGO18-42**

Table 4.1-9: Proportion of Flow Diverted At Each Dam – It should be noted that the preferred alternative still allows diversion of nearly half of the flow of the North Fork by the Eagle Canyon dam and more than third of the flow of the South Fork by the Inskip dam. In comparison, no flows are diverted under Alternative 6 (except for the relatively short segment of the North Fork below the natural fish barrier affected by the Volta diversion). **NGO18-43**

Pgs. 4.1-29-34: Construction Related Significant and Non-Significant Impacts – Alternative 6 would likely produce fewer significant or non-significant impacts than the preferred alternative. **NGO18-44**

Pg. 4.1-34: MLTF Pathogen Impact On Trout Farms – Since project canals are decommissioned under Alternative 6, the potential impact of the canals acting as a vector for the MLTF pathogen to the trout farms is eliminated. **NGO18-45**

Pgs. 4.1-35-41: Beneficial Impacts – Alternative 6 would likely produce more beneficial impacts than the preferred alternative. **NGO18-46**

Pg. 4.1-60: Cumulative Impacts – This section fails to convey the cumulative level of disturbance associated with the various alternatives, particularly the preferred alternative. The alternatives requiring extensive facility construction and modification **NGO18-47**

will require thousands of feet of new road construction and existing road improvements, as well as thousands of square feet of construction landings. These activities will increase cumulative surface disturbance, accelerate erosion, and degrade water quality. A smaller percentage of road and landing construction and improvements will likely be required under Alternative 6.

NGO18-47
cont

Figure 4.2-8: Biological Resources At The Inskip Powerhouse/Coleman Diversion Dam – It should be noted that much of the more than 25 acres of habitat disturbed is associated with the construction of a new bypass facility and tailrace connector. This level of disturbance would not occur if the existing facilities were simply decommissioned, as called for under Alternative 6.

NGO18-48

Figure 4.2-12: Biological Resources At The Inskip Dam/South Powerhouse – It should be noted that much of the more than 15 acres of habitat disturbed is associated with the construction of a new bypass facility and tailrace connector. This level of disturbance would not occur if the existing facilities were simply decommissioned, as called for under Alternative 6.

NGO18-49

Pgs. 4.2-21-60: Environmental Consequences (botanical, wetland, and wildlife) – Because it removes existing structures and restores the natural flows, Alternative 6 should have the least impact on botanical, wetland, and wildlife resources.

NGO18-50

Pgs. 4.3-8-11: Environmental Consequences (hydrology) – Because it restores the natural hydrology to Battle Creek, Alternative 6 has the most positive impact on hydrological resources.

NGO18-51

Pgs. 4.4-9-19: Environmental Consequences (water quality) – Because it restores the natural hydrology to Battle Creek, restores currently disturbed areas to their natural state, and requires less ground disturbance overall to implement than the preferred alternative, Alternative 6 has the least impact on water quality.

NGO18-52

Pg. 4.6-4: Public Land – This section fails to disclose that some of the project facilities, including the South Dam canal, the Union canal, the Coleman dam canal, and associated powerlines are located on public land managed by the Bureau of Land Management (BLM).

NGO18-53

Pgs. 4.6-7-12: Environmental Consequences (land use) – Because it restores currently disturbed areas to their natural state and requires less ground disturbance to implement than the preferred alternative, Alternative 6 has the most positive impact on land use.

NGO18-54

Pgs. 4.7-10-17: Environmental Consequences (soil) – Because it restores currently disturbed areas to their natural state and requires less ground disturbance overall to implement than the preferred alternative, Alternative 6 has the least impact on soil resources.

NGO18-55

Pgs. 4.8-7-8: National Wild & Scenic Rivers System – As noted in this section, the South Fork of Battle Creek has been determined eligible by the BLM for possible inclusion in the National Wild & Scenic Rivers System. What this section fails to mention is that BLM is required by its guidelines to protect the identified outstanding scenic,

NGO18-56

<p>recreational, vegetation, and wildlife values of the creek on the public lands it manages. Alternative 6 fully restores the free flowing character of the South Fork and removes existing structures on public lands associated with the current hydro project, thereby restoring the creek and lands to their natural condition.</p>	<p>NGO18-56 cont</p>
<p>Pgs. 4.8-8-19: Environmental Consequences (aesthetics and visual resources) – Because it restores currently disturbed areas to their natural state and requires less ground disturbance overall to implement than the preferred alternative, Alternative 6 has the least impact on soil aesthetics and visual resources.</p>	<p>NGO18-57</p>
<p>Pgs. 4.9-14-29: Environmental Consequences (transportation) – Because it requires less construction traffic overall, Alternative 6 has the least impact on transportation.</p>	<p>NGO18-58</p>
<p>Pgs. 4.10-8-11: Environmental Consequences (noise) – Because it requires less construction overall, Alternative 6 has less noise impacts.</p>	<p>NGO18-59</p>
<p>Pgs. 4.11-6-12: Environmental Consequences (air quality) – Because it requires less construction overall, Alternative 6 has less air quality impacts.</p>	<p>NGO18-60</p>
<p>Pgs. 4.12-5-16: Environmental Consequences (public safety) – Because it removes structures that may pose hazards to anglers, swimmers, and whitewater boaters, Alternative 6 reduces public safety impacts.</p>	<p>NGO18-61</p>
<p>Pgs. 4.14-6: Kayaking/Rafting – Whitewater boaters running the class V stretch of the South Fork between Ponderosa Way and Manton Road must portage South dam, Inskip dam, and Coleman dam, all of which pose safety hazards if run. Removal of these structures under Alternative 6 would eliminate these safety hazards.</p>	<p>NGO18-62</p>
<p>Pgs. 4.14-7-17: Environmental Consequences (recreation) – Because it restores stream flow for recreational fisheries and whitewater boating, as well as maintains existing upstream reservoirs on the North Fork, Alternative 6 has the most positive impact on recreation.</p>	<p>NGO18-63</p>
<p>Pgs. 4.15-7-24: Environmental Consequences (cultural resources) – Because it requires less ground disturbance than the preferred alternative, Alternative 6 has fewer impacts on cultural resources. Some structures of historical significance will be removed, but the DEIS/R clearly notes that most of these structures have been modified over time. A public monument noting the historical significance of the removed structures would sufficiently mitigate their loss.</p>	<p>NGO18-64</p>
<p>Pgs. 4.16-13: Detailed Cost of Project Power (Table 4.16-8) – The comparison of alternatives in this table assumes that only the preferred alternative would result in reimbursements to PG&E for foregone power generation. Presumably, the public interest mandate to restore endangered species is serious enough to accommodate the other alternatives. Please note that PG&E's total estimated cost for modifying structures and acquiring water in the preferred alternative is \$44,413,000. In comparison, this cost under the 6 Dam Removal alternative (includes Eagle Canyon) is \$32,330,000. Of course, these costs would be zero under Alternative 6 since the structures would be removed and the natural flow restored without need to purchase</p>	<p>NGO18-65</p>

<p>additional water in the future. Although the foregone power appears serious in the context of this one project, in the statewide context of existing and future power generation, it is insignificant.</p>	<p>NGO18-65 cont</p>
<p>Pgs. 4.16-19-32: Socioeconomics – Given the previous claim on pgs. 3-91-92 that decommissioning could result in loss of local PG&E jobs and an adverse impact on the local economy, we were surprised to find no data substantiating this claim in this section.</p>	<p>NGO18-66</p>
<p>Pg. 4.16-27: MLTF Impacts On Trout Farms – Since project canals are decommissioned under Alternative 6, the potential impact of the canals acting as a vector for the MLTF pathogen to the trout farms is eliminated.</p>	<p>NGO18-67</p>
<p>Pg. 4.17-1: Coleman Fish Hatchery Compatibility – Since the Coleman Hatchery fish weir on Battle Creek acts as the “gate-keeper” dam for all salmon and steelhead that migrate up the creek, Friends of the River strongly supports agency efforts to resolve problems associated with this dam and other hatchery operations.</p>	<p>NGO18-68</p>
<p>Pg. 4.17-2: Adaptive Management Concerns – Alternative 6 eliminates the need for future adaptive management.</p>	<p>NGO18-69</p>
<p>Pg. 4.17-2: Inadequate Level of Community Involvement – The DEIS/R process included several public meetings in Manton. Battle Creek Work Group meetings are routinely held in the region. Given that the project deals with resources held in trust for the entire public (not just local residents), we believe that the process has provided for a high and fair level of local involvement.</p>	<p>NGO18-70</p>
<p>Pg. 4.17-4: Adverse Impacts On Trout Farming – See previous comments.</p>	<p>NGO18-71</p>
<p>Pg. 5-910: Clean Water Act Section 401 Water Quality Certification – This section fails to mention that the 401 certification is also based on ensuring that projects do not harm the beneficial uses of water identified for Battle Creek in the state water quality basin plan. These include contact and non-contact recreation (including canoeing and rafting), warm and cold water fisheries, migrating and spawning habitat for warm and cold water fisheries, and wildlife habitat. Other beneficial uses include power generation, irrigation, and stock watering.</p>	<p>NGO18-72</p>
<p>Pg. 6-2: Interim Flow Agreement – The interim flow agreement provides inadequate flows for threatened and endangered salmon and steelhead.</p>	<p>NGO18-73</p>
<p>Pg. 6-13: Lassen Lodge Hydropower Project – Although this proposed project would be located upstream of the natural anadromous fish barrier on the South Fork, it could effect water quality and geomorphic process to the extent that it would degrade the effectiveness of the restoration project.</p>	<p>NGO18-74</p>
<p>Pg. 7-3: Proposed Action and Six Dam Removal Alternative Summary of Impacts – This section states that removal of the Eagle Canyon dam would eliminate the potential for future adaptive management of the water temperature benefits provided by cold spring waters below Eagle Canyon dam. How can this be possible...unless this is referring to</p>	<p>NGO18-75</p>

providing colder North Fork water into the South Fork? Of course, this is contrary to the need to avoid water mixing and fish straying.

NGO18-75
cont

Pg. 7-6: Environmentally Preferred Alternative – See comments under Pgs. ES-25-26.

NGO18-76

Comment Letter NGO18—Friends of the River, Steven L. Evans, Conservation Director (October 16, 2003)

Response to Comment NGO18-1

The statement that private ownership of land bordering Battle Creek discourages potential human impacts on recovered species is meant as a relative comparison to opening the land to public uses. The majority of the private land uses are residential, meaning that the number of people with direct access to the creek is limited.

Response to Comment NGO18-2

Bullet item number six in the list of Project Objectives in the Executive Summary as presented in the Draft EIS/EIR states that a project objective is to “restore stream function by structural improvements in the transbasin diversion to provide a stable habitat and guard against false attraction of anadromous fish away from their migratory destinations.” This information has been carried into Volume II of the Final EIS/EIR.

Response to Comment NGO18-3

The four action alternatives evaluated in the Draft EIS/EIR include a reasonable range of alternatives as required by both CEQA and NEPA. NEPA defines the range of reasonable alternatives to be those that feasibly may be carried out based on technical, economic, environmental, and other factors. If an alternative has been eliminated from detailed study, the EIS must briefly discuss the reason for its elimination [40 CFR 1502.14 (a)]. CEQA states that an EIR need only examine in detail the alternatives that the lead agency determines feasibly could attain most of the basic objectives of the project, are ostensibly feasible, and would avoid or substantially lessen at least one of the significant environmental effects of the project (State CEQA Guidelines sec. 15126.6[f]). Although the other Restoration Project action alternatives were not selected (No Dam Removal, Six Dam Removal, and Three Dam Removal Alternatives), they are all considered to be feasible alternatives under CEQA and NEPA and would meet the project objectives and purpose and need of the Restoration Project as defined in the section entitled Project Objectives in Chapter 2 in Volume II of this Final EIS/EIR.

Alternative 6, as identified in the public scoping process, includes the removal of all hydroelectric dams and appurtenant facilities (except the two Volta

Powerhouses) below the natural fish passage barriers on Battle Creek. Through public scoping and interagency alternatives development discussions, Alternative 6 was eliminated from further consideration because it did not meet the Restoration Project purpose of minimizing the loss of clean and renewable energy produced by the Hydroelectric Project.

Removal of all structures below the two Volta powerhouses would likely have rendered the remaining portion of the Hydroelectric Project uneconomic for PG&E to operate, thereby requiring the entire Hydroelectric Project (including those portions above the natural barriers) to be decommissioned. The total capacity of the Battle Creek Hydroelectric Project, which consists of five powerhouses, is 36,056 kW. If, as described in Alternative 6, three of these powerhouses were decommissioned, approximately 75%, or 26,550 kW, would be eliminated. The lost generating capacity would shut down the entire Hydroelectric Project because the cost to maintain the remaining facilities could not be recovered by the revenue received for the reduced power generation. Consequently, partial decommissioning as formulated in the alternative likely would lead to a full decommissioning of the complete Hydroelectric Project, including those facilities above the natural barriers. Therefore, Alternative 6 does not meet the project objective to minimize the loss of clean and renewable energy produced by the Hydroelectric Project.

In addition, the cost of implementing Alternative 6 was significantly higher than that of the Proposed Action. In 2004, a group of economists conducted an economic analysis comparing the implementation costs of several alternatives with the Five Dam Removal Alternative at the request of the California Resources Agency. This analysis determined the cost of implementing Alternative 6 to be \$165 million compared with \$128 million for the Five Dam Removal Alternative.

For the reasons described above, Alternative 6 was eliminated from further consideration and was not analyzed in the EIS/EIR at the same level of detail as those alternatives that were deemed to be feasible and to meet the Restoration Project's objectives. This information is also presented in Chapter 3 under the heading Alternative 6 in Volume I of this Final EIS/EIR.

Response to Comment NGO18-4

Discussion of the No Action Alternative has been presented in the Draft EIS/EIR to meet the requirements of NEPA and CEQA (40 C.F.R 1502.14[c] and CEQA Guidelines secs. 15125, 15126.6[e]). Although the No Action Alternative usually does not meet the project purpose and need, its inclusion in an EIS is required by NEPA as a basis for comparison. Similarly, the purpose of evaluating the No-Project Alternative under CEQA is to allow decision-makers the opportunity to compare impacts of approving a project with impacts of not approving a project. Compliance with the CESA and ESA and CWA regulations that are appropriate for this project does not involve discussion of a No Action Alternative. Reclamation is confident discussion of the No Action Alternative in

the Draft EIS/EIR is consistent with the CALFED Program goals and objectives and is unaware of any conflicts with California's public trust doctrine.

Response to Comment NGO18-5

While the commentor is correct in stating that a Facility Monitoring Plan would not be required because there would be no fish screen or ladder facilities to maintain, Alternative 6 would still require an adaptive management plan for monitoring salmon and steelhead recovery in the project area. Implementation of Alternative 6 would also result in the requirement for an Adaptive Management Fund. In addition, a Water Acquisition Fund may also be necessary because adequate instream flows would still need to be maintained to ensure the recovery of Chinook salmon and steelhead in Battle Creek.

Response to Comment NGO18-6

Although the analyzed action alternatives (the No Dam, Three Dam, and Six Dam Removal Alternatives) may have slightly less biological benefit than would result from "fully restoring fish passage, fish flows, and historical habitat" (presumably under Alternative 6 or the Eight Dam Removal Alternative), the analysis in the Draft EIS/EIR, Section 4.1, Fish, provides a comparative evaluation of the salmon and steelhead restoration benefit of these alternatives. In general, this analysis indicates that implementation of any of the action alternatives would create substantial biological benefits for Chinook salmon and steelhead by improving flows and fish passage. These alternatives have been included in the NEPA/CEQA analysis because they meet the project purpose and need and objectives, are feasible, and would improve biological conditions in Battle Creek. Although Reclamation is not currently considering these alternatives as the Proposed Action and is not currently pursuing ESA or CWA compliance for these alternatives, it is conceivable that one of the other action alternatives could be authorized under the ESA by incorporating the appropriate conservation measures to avoid, minimize, or compensate for adverse effects on special-status species. Similarly, it is not clear that these alternatives would not meet CWA requirements. Compliance with ESA and the CWA does not require a specific level of restoration to meet the letter and spirit of the law. Reclamation believes that evaluating these alternatives in the Draft EIS/EIR is consistent with CBDA ERP goals because any one of these alternatives would: (1) contribute to recovery of Chinook salmon and steelhead, (2) improve natural process flows on Battle Creek, (3) potentially enhance Chinook salmon and steelhead populations, (4) restore historical Battle Creek habitat, and (5) improve Battle Creek water quality by increasing minimum streamflows. Reclamation is unaware of any conflicts with California's public trust doctrine.

Response to Comment NGO18-7

Please refer to response to Comment NGO18-6, above.

Response to Comment NGO18-8

Please refer to response to Comment NGO18-6, above.

Response to Comment NGO18-9

The text under the section titled Key Issues and Areas of Potential Controversy on page ES-25 has been updated to include the issues raised by the commentor.

As stated in the discussion of cumulative impacts on water quality at the end of Section 4.4, "Water Quality," no other projects could result in a cumulative decline in Battle Creek water quality (including the proposed Lassen Lodge Hydropower Project). No significant water quality changes would result from the project. Although temperatures in the diverted portion of the stream might increase slightly, temperatures downstream of the hydropower facility will likely remain the same as those observed prior to the project's implementation.

Response to Comment NGO18-10

The Five Dam Removal Alternative was previously identified as the Environmentally Preferred Alternative because the benefits of implementing this alternative were similar to those that would be achieved under the Six Dam Removal Alternative. However, with incorporation of the new impacts identified in the Draft Supplemental EIS/Revised EIR relating to MLTF and the resulting mitigation that would be required, the Six Dam Removal Alternative has been identified as the Environmentally Preferred Alternative. The Executive Summary and Chapter 7, Summary, in Volume I of this Final EIS/EIR have been updated to reflect this change.

As mentioned in Chapter 3 under the heading Alternative 6 in Volume I of this Final EIS/EIR, Alternative 6 was eliminated from further consideration, and therefore, was not analyzed as one of the Action Alternatives.

Response to Comment NGO18-11

The process of signing the original Battle Creek MOU was limited to the public resource agencies because the purpose of the MOU was ultimately to assign responsibilities for financial support and implementation of the proposed

activities. This process was appropriate for the resource agencies because they are charged with the responsibility of funding and implementing many of these actions as public government organizations.

The project proponents appreciate the recognition of their efforts to include the public in the process, but recognize that there will naturally be areas that generate public concern. Areas of Potential Controversy are discussed in Section 4.17 in Volume I of this Final EIS/EIR. Reclamation has attempted to address these concerns through various public meetings and has disclosed them when possible in this Final EIS/EIR.

Response to Comment NGO18-12

The discussion of Ecological Restoration Considerations, in Chapter 2 in Volume I of this Final EIS/EIR, includes the subsections titled Instream Flow, Flow Management, Passage, Restoration of Stream Function, and Adaptive Management. False attraction is discussed in detail under the subhead titled Restoration of Stream Function.

Response to Comment NGO18-13

The proposed modifications to the Hydroelectric Project, i.e., construction of the new tailrace connectors and penstock bypasses at South and Inskip Powerhouses, would capture and convey North Fork and South Fork Battle Creek waters to eliminate mixing in all reasonably foreseeable conditions. The modifications have been designed such that mixing might occur for brief periods during rare events such that straying and false attraction of fish is minimal. Details of the specific conditions that the modifications are designed to handle were not completely detailed in the Draft EIS/EIR. However, these details are described in Reclamation's Concept Design Report, Dam Removals and Hydropower Facility Modifications, dated June 2001 (Bureau of Reclamation 2001a). Pertinent information for the South Powerhouse project site is found on pages 18 through 21 of that report. Similar information for the Inskip Powerhouse project site is found on pages 34 through 37 of that report. A brief summary description for each site follows.

South Powerhouse. Because the existing penstock bypass spillway at this site already discharges into the powerhouse tailrace channel, a single combined structure (i.e., the tailrace connector would consist of closing off the peninsula adjacent to the South Powerhouse and diverting water into a new tunnel) would provide the necessary separation of the waters. The proposed tunnel is designed to handle 165 cfs, which is less than the original 222 cfs supplied to the powerhouse. This reduced flow is attributable to the removal of South Diversion Dam, South Canal, and Soap Creek Feeder Diversion Dam, which would no longer contribute flows to South Powerhouse totaling more than 100 cfs. The Cross Country Canal would continue to deliver water to an expected maximum of up to 168 cfs, which would provide an allowance for large precipitation events. Because of this reduced flow, it is expected that the bypass

spillway would operate infrequently. Additional modifications proposed for this site include three new structures that would allow discharge of mixed waters into the South Fork. Immediately upstream of the tunnel inlet, an uncontrolled (not gated) low water crossing/wasteway would allow an emergency release of water out of the new tailrace into South Fork Battle Creek in the event of a tunnel closure (e.g., tunnel collapse or trashracks clogged with debris). Upstream of this wasteway, a second structure, a bypass culvert, equipped with stoplogs would allow the planned release of water out of the tailrace into South Fork Battle Creek in the event that maintenance or repairs to the tunnel or Inskip Canal are needed. The third structure is an emergency wasteway located downstream of the tunnel outlet positioned on Inskip Canal. This wasteway would operate only rarely and only for a few minutes in the event of excessive water entering the canal from the diversion point at Inskip Diversion Dam and through the tunnel.

Inskip Powerhouse. At this project site, the existing penstock bypass spillway discharges into South Fork Battle Creek several hundred feet upstream of the Inskip Powerhouse discharge area. The most cost-effective arrangement to capture and convey Eagle Canyon Canal and Inskip Canal flows to Coleman Canal is to construct a separate tailrace connector and a penstock bypass. The future amount of water to be supplied to Inskip Powerhouse would remain the same as current conditions (approximately 293 cfs). The design capacity of the tailrace connector (a buried 84-inch-diameter reinforced concrete pipe) is 300 cfs. To divert powerhouse flows into the new pipe, the tailrace outlet for Inskip Powerhouse would be blocked with a vertical slide gate. Under normal conditions this slide gate would be closed. However, in the event of an emergency, the gate may be opened, which would release mixed water into South Fork Battle Creek. The penstock bypass system consists of an overflow wasteway situated on Eagle Canyon Canal that diverts water into a buried, reinforced concrete pipe. The design capacity of the penstock bypass is 340 cfs. This additional 40-cfs capacity above the powerhouse capacity is to accommodate large precipitation events and potential operational mismatches that might potentially overcharge the canal. The inlet to the existing bypass weir would be blocked with a flashboard structure to prevent flows down the existing bypass channel.

Response to Comment NGO18-14

Reclamation and the State Water Board have defined the goal of the Restoration Project to be to restore habitat for anadromous fish while minimizing the loss of hydroelectric power. Hydroelectric power is a clean and renewable energy source. Hydropower, by definition, is a renewable resource because it is produced from water, which is an elemental, natural, and recurrent resource. As is the case with wind and solar power, the energy source for hydropower is essentially infinite and is not depleted during the production of electricity.

Response to Comment NGO18-15

Please see the response to Comment NGO18-13.

Response to Comment NGO18-16

This comment is related to the intent of the penstock bypass systems, and inquires whether the Restoration Project would eliminate all bypass situations, or just reduce its occurrence to inconsequential levels.

The intent of the penstock bypass systems at South and Inskip Powerhouses is not expressly stated in the MOU. However, the tailrace connector and penstock bypass systems at South and Inskip Powerhouses have been designed to capture and convey the mixed waters contained in the canals and to eliminate mixing of these waters with South Fork Battle Creek in all reasonably foreseeable operational conditions. The modifications to the Hydroelectric Project have been designed such that mixing might occur only for brief periods during rare events so that straying and false attraction of fish is minimized.

Please see the response to Comment NGO18-13 for additional information on facilities that would be constructed at South and Inskip Powerhouses to prevent the mixing of water from PG&E's canals with South Fork Battle Creek.

Response to Comment NGO18-17

Reclamation and the State Water Board agree that there would be no need for a facility monitoring plan if there were no fish screens or ladders in Battle Creek. However, as described in the response to Comment NGO18-5, there would still be a need for the AMP, Adaptive Management Fund, and Water Acquisition Fund under Alternative 6. Alternative 6 was eliminated from further consideration and, therefore, was not evaluated in the EIS/EIR as an action alternative.

Response to Comment NGO18-18

The text in Chapter 2 under the section Operation and Maintenance, in Volume I of this Final EIS/EIR, addresses the general understanding that reliability of operations and maintenance is an important consideration for any hydroelectric facility, regardless of which action alternative is chosen as the Proposed Action. This information is provided for background. In addition, as mentioned under Alternatives Eliminated from Further Consideration in Chapter 3 in Volume I of this Final EIS/EIR, Alternative 6 was eliminated from further consideration and, therefore, was not evaluated in this EIS/EIR as an action alternative.

Response to Comment NGO18-19

It is unclear what the commentor means by "regulatory certainty"; however, Reclamation and the State Water Board will comply with the required regulations

when implementing the Proposed Action (i.e., the Five Dam Removal Alternative).

As explained in Chapter 3 under Alternatives Eliminated from Further Consideration in Volume I of this EIS/EIR and the response to Comment NGO18-3, Alternative 6 was eliminated from further consideration because it would not meet the Restoration Project's objective to minimize the loss of clean and renewable hydroelectric power. Additionally, Alternative 6 was determined not to be feasible because the cost to implement Alternative 6 would be too great. Therefore, this alternative was not evaluated in this EIS/EIR. It is also uncertain whether implementation of Alternative 6 would result in fewer adverse environmental effects or increased biological benefits compared with the Five Dam Removal Alternative.

Response to Comment NGO18-20

As explained in Chapter 3 under Alternatives Eliminated from Further Consideration in Volume I of this EIS/EIR and the response to Comment NGO18-3, Alternative 6 was eliminated from further consideration because it did not meet the Restoration Project of minimizing the loss of clean and renewable energy produced by the Hydroelectric Project. Therefore, the PMT decided not to evaluate this alternative in the EIS/EIR. It is also uncertain whether implementation of Alternative 6 would result in fewer adverse environmental effects or enhanced benefits compared with the Five Dam Removal Alternative. In addition, removal of all the appurtenant hydroelectric project facilities, as proposed by Alternative 6, would require extensive construction that could result in even greater temporary impacts than from the implementation of the Five Dam Removal Alternative.

As mentioned in the response to Comment NGO18-5, implementation of Alternative 6 would still require an AMP for monitoring the future success of the Restoration Project. An Adaptive Management Fund and Water Acquisition Fund may also be necessary to provide funds for the AMP and to guarantee minimum instream flows in dry years. Therefore, implementation of Alternative 6 would not necessarily release funding earmarked for the Adaptive Management Fund or Water Acquisition Fund for other Restoration Project activities.

Response to Comment NGO18-21

This comment expresses concern that the 11 spillways currently existing along South Canal, which are designed to prevent overcharging of the canal, may continue to allow mixing of North Fork and South Fork Battle Creek waters during large precipitation events. The 11 spillways along South Canal would not lead to continued water mixing and fish straying because the Proposed Action involves abandoning South Canal. The canal would stop being used to divert

water to the South Powerhouse. Therefore, “mixed waters” would not enter South Fork Battle Creek from these spillway locations. After implementing the Restoration Project, water from upslope runoff that had previously been captured by South Canal would now flow directly into South Fork Battle Creek.

Response to Comment NGO18-22

This comment inquires as to how often “bypass spilling” situations would occur at South Powerhouse that might result in discharge of “mixed waters” into South Fork Battle Creek. The comment is not clear as to whether it refers to conditions under the current Hydroelectric Project, or after the Restoration Project is completed.

“Bypass spilling” at South Powerhouse under the current Hydroelectric Project is a common occurrence and occurs more often during certain times of the year. Under current conditions, all flows enter the tailrace channel below the South Powerhouse discharge structure and continue downstream a few hundred feet farther to join South Fork Battle Creek. However, under the Proposed Action, the peninsula area would be raised and the tailrace channel would be blocked. Flows from both the South Powerhouse discharge and from the bypass spills would be directed into a tunnel that would convey these flows directly into Inskip Canal.

Comment NGO18-22 identifies four conditions that would result in bypass spills under the current Hydroelectric Project: 1) scheduled shutdowns, 2) unscheduled shutdowns, 3) flow mismatches, and 4) precipitation events.

- **Condition 1.** PG&E-scheduled shutdowns of the Hydroelectric Project typically occur each year during the winter. Duration of these shutdowns can be from 1 day to several weeks. Near the Inskip Diversion Dam/South Powerhouse site, PG&E might choose to continue to convey water through the Cross Country and South Canals and spill water over the bypass. This water then flows into South Fork Battle Creek and is diverted by Inskip Diversion Dam into Inskip Canal to allow continued power production at Inskip Powerhouse.
- **Condition 2.** Unscheduled shutdowns of the Hydroelectric Project can occur as a result of equipment problems at South Powerhouse, such as problems involving the regional power grid or stemming from severe weather (e.g. lightning strike). These conditions are unpredictable but typically occur several times each year, vary in duration from hours to several days, and can occur at any time of the year.
- **Condition 3.** Flow mismatches typically occur when electrical output on the powerhouse is manually varied in order to test or troubleshoot the unit. For example, if electrical output is reduced significantly on the powerhouse, this reduces water flow to the powerhouse, and the existing flow from the Cross Country Canal, which contains North Fork Battle Creek water, will now be too great for the powerhouse to handle. This additional water would be

released over the bypass spillway into the South Powerhouse tailrace and into South Fork Battle Creek. This type of flow mismatch occurs approximately two to four times per year. Additional flow mismatches will occur when South Powerhouse is started up and the bypass spillway is already releasing water. Upon startup, water begins flowing through the powerhouse and because of different travel times of the water from the bypass spillway and the powerhouse, the water from the bypass spillway and the powerhouse reaches Inskip Diversion at a rate that can temporarily exceed the capacity of Inskip Canal. The excess water will spill at Inskip Diversion and back into South Fork Battle Creek until the temporary flow mismatch passes. This occurs within minutes. Bypass spillway and powerhouse discharge flow mismatches occur each time the powerhouse is started up and happen approximately 6 times per year.

- **Condition 4.** Flow mismatches also can occur as a result of changing flow conditions in the creeks (e.g., diurnal changes, warm and cold weather changes, snow melting patterns, and associated runoff). PG&E system operators make adjustments at the diversion points as necessary to respond to these changes and operate the Hydroelectric Project as efficiently as possible. However, there is no way of knowing the actual flow changes precisely, so the adjustments made at the diversion points are based on operators' experience, weather forecasts, runoff patterns, and analyzing local field conditions. Therefore, the adjustments made at the diversion points are based on the best available information, but never exactly match changing flow conditions in the creeks. The result can be a bypass spill of North Fork Battle Creek water into South Fork Battle Creek. These types of flow mismatches usually occur only during the heavy runoff periods that occur during the spring.

Response to Comment NGO18-23

New text has been added to Chapter 3 to clarify that Alternative 6 was considered during the public scoping process but was removed from further consideration (see the discussion Alternatives Eliminated from Further Consideration in Chapter 3 in Volume I of this Final EIS/EIR).

Response to Comment NGO18-24

As explained under Alternatives Eliminated from Further Consideration in Chapter 3 in Volume I of this EIS/EIR and the response to Comment NGO18-3, Alternative 6 was eliminated from further consideration because it did not meet the Restoration Project's objective to minimize the loss of clean and renewable hydroelectric power. Additionally, Alternative 6 was determined not to be feasible because the cost of implementing Alternative 6 would be too great. Therefore, this alternative was not evaluated in this EIS/EIR and was not considered as an action alternative by the lead agencies.

Because Alternative 6 was not evaluated in the Draft EIS/EIR, an assessment of the construction requirements, engineering specifications, and potential impacts and benefits associated with this alternative was not conducted. Therefore, it is uncertain whether implementation of Alternative 6 would result in fewer adverse environmental effects or enhanced benefits compared with the Five Dam Removal Alternative. Removal of all the appurtenant Hydroelectric Project facilities, as proposed by Alternative 6, would require extensive construction that could result in even greater temporary impacts than from the implementation of the Five Dam Removal Alternative. For example, a new access road to the North Battle Creek Feeder Diversion Dam would likely still be required under Alternative 6 because it would be the most cost-effective means to bring equipment down to the site to remove the dam and appurtenant facilities.

Response to Comment NGO18-25

The Six Dam Removal Alternative is similar to the Five Dam Removal Alternative, except that it also proposes the decommissioning of Eagle Canyon Diversion Dam. Based on the analysis conducted in Chapter 4, "Affected Environment and Environmental Consequences," in Volume I of this Final EIS/EIR, it was determined that the benefits of implementing the Six Dam Removal Alternative were not substantially greater than those achieved under the Proposed Action. This information is presented in Section 4.1, Fish and depicted graphically in Figures 4.1-2 through 4.1-9.

The analysis in Chapter 4 also demonstrated that although there are some differences between the two alternatives with respect to environmental impacts, these differences were not substantial. While there would be fewer impacts under the Six Dam Removal Alternative with respect to the risk of spreading the IHN virus to other fisheries, California waters, and/or waters of the United States, these impacts are fully mitigated under the Five Dam Removal Alternative by implementing the proposed mitigation measures for Impact 4.1-8, discussed in Section 4.1, Fish, in Volume I of this Final EIS/EIR. Removal of the Eagle Canyon Diversion Dam would also constitute a significant and unavoidable impact on cultural resources.

Another difference between the two alternatives is the degree of adaptive management capability afforded under the Five Dam Removal Alternative. By leaving the diversion dam in place, it would be possible to adaptively manage flows for the benefit of spawning salmon and steelhead below the dam. This capability would not be possible under the Six Dam Removal Alternative. Furthermore, failsafe, state-of-the-art fish screens and fish ladders are being proposed under the Five Dam Removal Alternative. These facilities have been approved by the resource agencies and are expected to promote the safe passage of fish as well as what would occur under the Six Dam Removal Alternative.

Based on a cost analysis conducted by a group of economists at the request of the California Resources Agency, the cost of removing the Eagle Canyon Dam was determined to be approximately \$10 million (for more information please see

Master Response B). Because of the increased cost and the fact that there were not significantly greater benefits or fewer environmental impacts under the Six Dam Removal Alternative, there is not a substantially greater cost-benefit ratio from removing Eagle Canyon Diversion Dam. For more information, see the response to NGO6-1 and Master Response B.

Response to Comment NGO18-26

Please see the response to Comment NGO18-24.

Response to Comment NGO18-27

Please see the response to Comment NGO18-24.

Response to Comment NGO18-28

Many factors were considered in the selection of which dams would be removed. These include:

- satisfaction of Restoration Project objectives,
- ease of access,
- proximity to other PG&E facilities, and
- the potential risks.

In order to meet the project objective of minimizing the loss of power generated by the Hydroelectric Project, not every dam could be removed. Therefore, dams closer to the Manton Service Center (Eagle Canyon, Inskip, and North Battle Creek Feeder Diversion Dams) or dams that were relatively easier to access (Inskip Diversion Dam) were deemed more suitable for fitting with screens and ladders. In addition, the potential risks of removing the Inskip Diversion Dam were also considered. One concern was that down cutting of the stream/reservoir bed could reduce the stability of the stream bank and adjacent lands. Adjacent lands in the down-cutting zone support foundations for South Powerhouse facilities (tailrace) and possibly some Oasis Spring Lodge facilities. Another concern of removing the dam was that a natural fish passage barrier could be buried under the reservoir sediment. However, this is unlikely as the fish ladder was originally constructed in the early 1900s at a time when such requirements were associated with damming passable stream reaches. Although the stream reach may be considered passable, the conditions might be such that a fish ladder would be considered more easily passable. The box canyon conditions in the area of the dam site indicate that there could be the kind of steep, narrow, boulder-studded stream reach buried under the reservoir that would difficult for fish to pass through compared to a fish ladder.

As mentioned above and discussed in detail in Chapter 3 under the heading, Alternative 6, in Volume I of this Final EIS/EIR, Alternative 6 was removed from further consideration because it did not meet the basic project objective of minimizing the loss of hydropower generated by the Hydroelectric Project. For more information regarding the consideration of which dams to remove, see Master Response B.

Response to Comment NGO18-29

The new structures proposed at the Inskip Canal Wasteway offer greater flow control and reliability than the existing structures. In addition, wasteway flows would be required for emergency use.

Response to Comment NGO18-30

Mixing of flows from North Fork Battle Creek and South Fork Battle Creek would occur only during emergency overflows or periodic maintenance.

Response to Comment NGO18-31

Please see the response to Comment NGO18-24.

Response to Comment NGO18-32

Please see the response to Comment NGO18-5.

Response to Comment NGO18-33

Please see the response to Comment NGO18-5.

Response to Comment NGO18-34

The Bluff Springs/Hazen Ditch Users Association and PG&E both have rights for water from Bluff Springs. The agreement between the two parties recognizes the association's senior right to the first two cfs of water. Under this agreement, both parties have certain rights and obligations. PG&E, as the junior water user, has the responsibility to maintain its diversion structure in a manner to ensure that the association always receives 2 cfs. As PG&E's successor, DFG will be subject to the same rights and obligations that PG&E currently holds.

Alternative 6 was not considered as an alternative for the Restoration Project. In the event that any other alternative would be chosen other than the Preferred Alternative, water rights would have to be negotiated under that alternative.

Response to Comment NGO18-35

Please see the response to NGO18-5.

Response to Comment NGO18-36

Please see the response to NGO18-5.

Response to Comment NGO18-37

As discussed in the response to Comment NGO18-14, the energy produced by the Hydroelectric Project is considered clean and renewable in comparison to other energy sources such as fossil fuels. The reference to federal energy policy obstacles was removed from the section on Alternative 6 in Chapter 3 in Volume I of this Final EIS/EIR. As described in the revisions to Chapter 3, Alternatives Eliminated from Further Consideration, Alternative 6, PG&E has indicated that according to an analysis of the costs of procuring replacement energy, it would cost less to purchase replacement energy than to continue to run the remaining facilities of the Hydroelectric Project. Therefore, it would be in the best interest of PG&E's electricity consumers to obtain the lower-cost electricity through power purchases, and the remaining Volta 1 and 2 powerhouses would be closed. A more complete description of how the cost of replacement energy was calculated is available under the section discussing the Eight Dam Removal Alternative, Alternative B. In addition, the costs associated with implementation of Alternative 6 are shown in Table 3-9 under the heading Alternative A. Additional information regarding the calculation of replacement energy is presented in Section 4.16, under the section Power Generation and Economics. Socioeconomic effects are also discussed in Section 4.16 in Volume I of this Final EIS/EIR.

Response to Comment NGO18-38

Presently, fishery science lacks the ability to reliably predict population abundance for each future generation of anadromous fish in the coming decade (see response to Comment NGO15-82). However, the Draft EIS/EIR includes general goals from the Anadromous Fish Restoration Plan (U.S. Fish and Wildlife Service 2001a).

The Draft EIS/EIR concludes that there will not be a significant difference in the population level response of salmon and steelhead as a result of passage impacts associated with retaining or removing a dam. The analysis is based on a population-level response rather than an individual level, consistent with the requirements of the ESA. The general reason the proposed fish screens and fish ladders are not expected to cause an adverse affect on the population level is that the dams in Battle Creek are small relative to the stream channel morphology and the fish ladders and screens are large. More importantly, the fish screens and fish ladders meet or exceed the standards and criteria required for screens and ladders throughout the state of California. Similar installations of modern screens and/or ladders on streams have been granted approvals under the ESA that the facilities will protect the species at the population level. Any problems that may arise with the fish screens or ladders would occur for a limited amount of time and would not affect the population as a whole.

Response to Comment NGO18-39

Please see the response to Comment NGO18-3.

Response to Comment NGO18-40

As indicated in Chapter 2 in Volume I of this Final EIR/EIS, tailrace connectors and failsafe fish ladders will be constructed and installed to increase certainty about restoration components. A failsafe fish ladder incorporates features to ensure continued operation of the structure to facilitate the safe passage of fish under the same performance criteria as designed under anticipated sources of failure. Particular attention in fish ladder design would be directed toward providing attraction flows through the range of instream flows needed by adult fish to move upstream. Ladder configurations known to provide reliable performance in the field would be used. The ladders would incorporate features to allow flow adjustment during abnormally low water conditions to ensure that effective passage conditions are maintained. Protective structures to minimize the potential for damage during floods would be included. The relatively low height of the dams to be passed via a fish ladder, coupled with the conservative approach to their design, is expected to provide high passage reliability. In addition, the AMP (Appendix C in Volume II of this Final EIS/EIR) indicates that the Licensee assumes all costs for ladder repairs and replacements necessary as a result of normal wear and tear, catastrophic damage, and any other type of damage and will ensure that the ladders meet failsafe criteria.

As explained under Alternatives Eliminated from Further Consideration in Chapter 3 in Volume I of the EIS/EIR, and the response to Comment NGO18-3, Alternative 6 was eliminated from further consideration because it did not meet the Restoration Project's objective to minimize the loss of clean and renewable hydroelectric power. Additionally, Alternative 6 was determined not to be feasible because the cost of implementing Alternative 6 would be too great.

Therefore, this alternative was not evaluated in this EIS/EIR and was not considered as an action alternative by the lead agencies.

Response to Comment NGO18-41

Please refer to Appendix H, “Habitat Assessment Model for Chinook Salmon and Steelhead,” in Volume II of this Final EIS/EIR for more information on physical habitat improvements. The habitat assessment model compared habitat values by month for the various species based on the flow-habitat relationships. A monthly model was developed for Chinook salmon (i.e., winter, spring, late-fall runs) and steelhead to facilitate assessment of each alternative. The habitat assessment model considers the habitat capacity index that depends on streamflow and then links streamflow and water temperature conditions to effects on key habitat quantity and survival. A relative estimate of fry and juvenile capacity and production indices is provided for each reach. The simulated indices are not intended as accurate predictions of magnitude for each life stage, but provide sufficient information to compare the relative life stage capacity and production expected to occur under the No Action and action alternatives. The habitat assessment model links temporal water temperature and flow effects, a linkage that is not provided by month-to-month habitat estimates. The month-to-month habitat estimates are provided in Appendix H (Volume II), and habitat with suitable water temperature is described in Appendix R, “Water Temperatures in the Battle Creek Restoration Area,” in Volume II of this Final EIS/EIR.

Response to Comment NGO18-42

Based on the most recent and up-to-date engineering design information, the fish ladders and fish screens are expected to be as successful at promoting safe fish passage as removal of a dam. There may be a slight advantage without the dam in place, but this difference is thought to be small and not significant. As part of the Restoration Project, the AMP provides means to monitor the success of passage at each human-made structure and to make changes to management of the system as needed based on the principles of adaptive management.

Response to Comment NGO18-43

Please see the response to Comment NGO18-3.

Response to Comment NGO18-44

Please see the response to Comment NGO18-3.

Response to Comment NGO18-45

As explained under Alternatives Eliminated from Further Consideration in Chapter 3 in Volume I of the EIS/EIR, and the response to Comment NGO18-3, Alternative 6 was eliminated from further consideration because it did not meet the Restoration Project's objective to minimize the loss of clean and renewable hydroelectric power. Additionally, Alternative 6 was determined not to be feasible because the cost of implementing Alternative 6 would be too great. Therefore, this alternative was not evaluated in this EIS/EIR and was not considered as an action alternative by the lead agencies.

While there would be fewer impacts under the Six Dam Removal Alternative with respect to the risk of spreading the IHN virus to other fisheries, California waters, and/or waters of the United States, these impacts are fully mitigated under the Five Dam Removal Alternative by implementing the Mitigation Measure for Impact 4.1-8 in Section 4.1, Fish, in Volume I of this Final EIS/EIR. For additional explanation, please see Master Response D.

Response to Comment NGO18-46

Please see the response to Comment NGO18-3.

Response to Comment NGO18-47

The cumulative effects of all activities proposed for each project site were considered when analyzing the impacts of the Restoration Project on fish, water quality, and geology and soils. In Section 4.1, Fish, in Volume I of this Final EIS/EIR, Impacts 4.1-1 through 4.1-19 discuss how the Restoration Project could affect fish based on the cumulative construction activities at all of the project sites. In Section 4.4, Water Quality, the cumulative impacts of increased erosion from removing the diversion dams and constructing the fish facilities at all project sites were analyzed in Impact 4.4-1. In Section 4.7, Geology and Soils, Impact 4.7-1 discusses the impacts from accelerated water and wind erosion from construction at all the project sites. Similar analyses were conducted with respect to the other action alternatives. While the potential for increased erosion and sedimentation in the stream does exist, as indicated in the analyses mentioned above, the mitigation proposed under each impact reduces these impacts to a less-than-significant level. In addition, as part of the Proposed Action, a SWPPP and a sediment and erosion control plan will be implemented.

Cumulative impacts refer to the combined impacts of the Restoration Project and those of any other project proposed in the foreseeable future. Cumulative impacts were discussed at the end of each section in Chapter 4 in Volume I of this Final EIS/EIR. No cumulative impacts on fish, water quality, or geology and soils were identified from erosion or increased sedimentation because no

additional projects are known to occur at present or in the foreseeable future that might result in cumulative impacts when considered along with the Restoration Project. Therefore, no mitigation was required to address cumulative impacts.

As indicated in Chapter 3 under the heading, Alternative 6, in Volume I of this Final EIS/EIR, Alternative 6 was removed from further consideration because it did not meet the Restoration Project goal of minimizing the loss of hydroelectric power and was not considered viable.

Response to Comment NGO18-48

Please see the response to NGO18-24.

Response to Comment NGO18-49

Please see the response to NGO18-24.

Response to Comment NGO18-50

Please see the response to NGO18-24.

Response to Comment NGO18-51

Please see the response to NGO18-24.

Response to Comment NGO18-52

Please see the response to NGO18-24.

Response to Comment NGO18-53

The commentor is correct. Some of the project facilities are located on public land. Section 4.6, Land Use, in Volume I of this Final EIS/EIR has been updated to reflect this addition.

Response to Comment NGO18-54

Please see the response to NGO18-24.

Response to Comment NGO18-55

Please see the response to NGO18-24.

Response to Comment NGO18-56

While implementation of Alternative 6 would restore the free-flowing characteristics of the South Fork of Battle Creek, as explained under Alternatives Eliminated from Further Consideration, Alternative 6, in Chapter 3 in Volume of this Final EIS/EIR, and the response to Comment NGO18-3, Alternative 6 was eliminated from further consideration because it did not meet the Restoration Project's objective to minimize the loss of clean and renewable hydroelectric power.

Response to Comment NGO18-57

Please see the response to Comment NGO18-24.

Response to Comment NGO18-58

Please see the response to Comment NGO18-24.

Response to Comment NGO18-59

Please see the response to Comment NGO18-24.

Response to Comment NGO18-60

Please see the response to Comment NGO18-24.

Response to Comment NGO18-61

Please see the response to Comment NGO18-24.

Response to Comment NGO18-62

Please see the response to Comment NGO18-24.

Response to Comment NGO18-63

Please see the response to Comment NGO18-24.

Response to Comment NGO18-64

Please see the response to Comment NGO18-24.

Response to Comment NGO18-65

The cost sharing that would take place under the Five Dam Removal Alternative is provided for under the conditions of the MOU. While it is possible that another MOU could be negotiated for the other Action Alternatives, the MOU in place is for the Five Dam Removal Alternative.

As discussed in the response to Comment NGO6-1, because the incremental biological benefit of removing an additional dam, namely Eagle Canyon Diversion Dam, would be small, further consideration was given to other factors in selecting the Proposed Action, namely, the ability of an alternative to minimize the loss of hydroelectric power and maintain a reliable Hydroelectric Project. Because the Five Dam Removal Alternative minimizes the loss of hydroelectric power, provides a lower-cost alternative to PG&E's customers, and maintains a more reliable Hydroelectric Project, it was selected as the Proposed Action. For more information regarding the effects of the Restoration Project on hydropower, see the analysis under Power Generation and Economics, Environmental Consequences in Section 4.16 in Volume I of this Final EIS/EIR. For additional information regarding the factors considered in selecting which dams to remove as well as a discussion of the Eight Dam Removal Alternative, see Master Response B.

As indicated in Table 3-9 presented in Chapter 3 in Volume I of this Final EIS/EIR, the costs associated with implementation of Alternative 6 (Alternative A) are not zero. In fact, Alternative 6 is the most costly of all the alternatives that were considered at one time or another. However, as indicated in Chapter 3, Alternative 6 was eliminated from further consideration because it did not meet a basic goal of the Restoration Project to minimize the loss of hydroelectric power.

Response to Comment NGO18-66

As described on page 3-91 of the Draft EIS/EIR, decommissioning of all diversion dams in the Battle Creek project area (i.e., Alternative 6) was an alternative that was eliminated from consideration and, therefore, is not analyzed in the EIS/EIR. Additional information supporting the elimination of this alternative from further consideration was prepared by PG&E and has been

added to the section entitled Alternatives Eliminated from Further Consideration, Alternative 6 in Volume I of this Final EIS/EIR in Chapter 3. For more information regarding the assumptions made in assessing hydropower and socioeconomic effects, please see Section 4.16, in Volume I of this Final EIS/EIR.

Response to Comment NGO18-67

Please see Master Response D and the response to Comment NGO18-24 and NGO18-45.

Response to Comment NGO18-68

This comment has been noted. Reclamation and the State Water Board thank the reviewer for support of the agencies involved with the Restoration Project. Reclamation and the State Water Board acknowledge Coleman National Fish Hatchery as a project that is separate but related to the Restoration Project.

Response to Comment NGO18-69

Please see the response to Comment NGO18-5.

Response to Comment NGO18-70

This comment has been noted. Reclamation and the State Water Board thank the reviewer for the support that the public involvement process has provided for a high and fair level of local involvement.

Response to Comment NGO18-71

Please see Master Response D and the response to Comment NGO18-45.

Response to Comment NGO18-72

In the Central Valley Regional Water Quality Control Board's (CVRWQCB's) Region 5A/5B (Sacramento and San Joaquin River Basins) Basin Plan (Basin Plan), CVRWQCB defines the beneficial uses of groundwater in Region 5A/5B to include municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply. It defines the existing beneficial uses of surface water in Battle Creek as irrigation, stock watering, hydropower

generation, contact recreation and noncontact recreation (including canoeing and rafting), warm freshwater aquatic habitat, cold freshwater aquatic habitat, coldwater migration for aquatic organisms, coldwater and warmwater spawning of fish, and wildlife habitat. Implementation of the Restoration Project would not harm the beneficial uses of groundwater or surface water identified in the Basin Plan.

Response to Comment NGO18-73

The Interim Flow Agreement, described in Chapter 6, “Related Projects,” of the Draft EIS/EIR, would improve the existing habitat for salmon and steelhead by increasing the streamflows in both forks of Battle Creek. The comment confuses the purpose of the Interim Flow Agreement, which is to provide immediate habitat improvement in the lower reaches of Battle Creek as implementation of the more comprehensive Restoration Project moves forward. Reclamation understands that the 2003 Interim Flow Agreement will serve as a temporary solution and will not create as many benefits as the Restoration Project. However, the increased interim flows will provide more benefits to the fish populations than the minimum instream flows required by FERC. Additional details of the Interim Flow Agreement are included in Projects That Could Directly Affect or Be Affected by the Restoration Project section of Chapter 6.

Response to Comment NGO18-74

The Lassen Lodge Hydropower Project, as described in the Lassen Lodge Hydropower Project discussion in Chapter 6, “Related Projects,” in Volume I of this Final EIS/EIR, includes a sluice gate for silt and gravel releases so that the intake dam will not interrupt geomorphic processes and sediment transport will still occur. No significant water quality changes would result from the project. Although temperatures in the diverted portion of the stream might increase slightly, temperatures downstream of the hydropower facility will likely remain the same as those observed prior to the project’s implementation.

Response to Comment NGO18-75

Chapter 7 in Volume I of this Final EIS/EIR has been updated to clarify the differences between the Proposed Action and each Action Alternative with respect to each environmental resource analyzed in the EIS/EIR. As a result of these clarifications, Chapter 7 have been updated to state that the adaptive management benefits that result from leaving Eagle Canyon Diversion Dam in place are related to the ability to adaptively manage instream flows for the benefit of Chinook salmon and steelhead.

Response to Comment NGO18-76

Please see the response to Comment NGO18-10.

