DECISION NOTICE
FOR
USDA FOREST SERVICE

BITTERROOT NATIONAL FOREST

ENVIRONMENTAL ASSESSMENT
TIN CUP DAM REPAIR

RAVALLI COUNTY
DARBY RANGER DISTRICT
712 Highway 93 North
P.O. Box 388
Darby, Montana 59829
(406) 821-3913

July, 1997

I. INTRODUCTION

The Tin Cup Dam is owned and operated by the Tin Cup Water Company which was incorporated November 7, 1952. The 25-foot high by 437-foot wide earthen dam impounds 2,420 acre feet of irrigation water at normal pool level, with a reservoir surface area of 127 acres. This provides late summer irrigation water for approximately 1,300 acres of private land. Water rights are owned by shareholders of the Tin Cup Water Company.

The dam owners have applied for a USDI easement under the Ditch Bill and have included in that application an assertion that they have an outstanding right that existed prior to the proclamation of the National Forest. A decision on the standing of this easement has not been reached at this time.

The facility is located on the Bitterroot National Forest and is currently authorized with a special use permit issued by the Forest Supervisor. The original dam construction was authorized with a special use permit for the Tin Cup Water Users Association on August 3, 1906. File data indicates that the original structure was 300 feet long and 20 feet high and consisted of a rock fill with dry rubble masonry on the downstream face and earth fill on the upstream face.

II. LOCATION

The Tin Cup Lake Dam is located at the headwaters of Tin Cup Creek near the Montana-Idaho border, approximately 14 miles southwest of Darby, Montana. The dam is located in Township 2 North, Range 23 West, Sections 1 and 12, Principle Meridian Montana, Ravalli County. The dam and lake are in the Selway-Bitterroot Wilderness of the Bitterroot National Forest. This wilderness was

established by Congress with the Wilderness Act in 1964. Access to the site is via Forest Service Trail #96.

The project is located approximately ten miles southwest of the Tin Cup Creek Trailhead where the trail joins FS Road #639. The dam is about seven miles within the Selway-Bitterroot Wilderness (refer to maps, figures 1 and 2) at an elevation of 6,290 feet. The immediate area affected at the dam site is approximately two to three acres.

III. DECISION

I have selected Alternative 2 to implement repair work of the Tin Cup Dam. The actions are limited to the Tin Cup dam site, Bitterroot National Forest. This alternative is designed to repair deficiencies with the outlet pipe. Detailed technical specifications and plans have been prepared and submitted by Druyvestein, Johnson, and Anderson, Consulting Engineers. These are available for review in the Project File. Photos of the project site are also available in the Project File.

Alternative 2 is the proposal submitted by the Tin Cup Water Company and described in Chapter 1 of the Tin Cup Dam Repair Environmental Assessment (EA). Mitigation measures to minimize the environmental effects would be included with this alternative, and they are listed in Chapter 2 of the EA. These mitigation measures would be designed to address the environmental issues listed in this Decision Notice.

Work would begin in September, 1997, and would last approximately two weeks

A. Description of Work

The primary task is the repair of the water transmission pipe that goes through the dam. Currently, the pipe is a mortar and rock composition, with a 28-foot long corrugated metal arch pipe extension on the downstream side of the dam. The metal pipe along with the entire outlet would be sleeved with 110 feet of 18" high density polyethylene plastic pipe.

Repair work includes:

1. Lowering the reservoir water level.
2. Removing the existing control gate, trash rack, and walkway.
3. Excavating around outlet pipe entrance.
4. Pulling the plastic pipe through the existing outlet pipe.
5. Placing rip rap around new pipe inlet.
6. Filling the annular space between the new sleeve pipe and the existing stone and mortar outlet pipe with grout.
7. Installing a temporary trash rack.
8. Removing shrubs and log debris from both sides of dam.
9. Piling and burning logs and shoreline debris.
10. Drilling core samples along the face of dam.
11. Drilling and blasting a sample of rip rap from an area west of the spillway.

The core drilling is needed to determine the composition of the center of the dam. It would be completed with a Bobcat-type backhoe with a drill attachment.

Equipment that would be used for the project would include a helicopter, Bobcat backhoe, core drill, grout mixer and pump, generator, air compressor and hammer, rock drill, chain saw, two water pumps, and 200 gallons of fuel.

The removal, piling, and burning of shrubs and shoreline debris may be completed earlier this summer with draft horses and crosscut saws, under the maintenance plan in the Water Company's special use permit.

It is estimated that it will take two weeks to complete the work. A camp for four people and a cook will be set up near the site. After the initial set up, the camp will be resupplied by an outfitter with horses.

B. Access to Site

A helicopter will transport the heavy equipment and will fly within the Tin Cup Canyon. For smaller items and for resupplying the camp, a pack string will be used along the Tin Cup Trail.

C. Camp and Storage Area

A camp for the reconstruction crew would be located near the dam, along with a helicopter landing area and a site for storing and staging equipment and supplies. This site would be used for the storage of up to 200 gallons of diesel fuel in 55 gallon drums. A staging and helibase would be located on private land near the mouth of the canyon. A camp management plan and a plan for air operations, safety, materials handling, and storage are a part of this alternative (see Project File)

D. Permits

The following permits will be required for the work activities:

Montana Department Fish Wildlife and Parks - 310 Permit
Montana Department of Environmental Quality - Construction Dewatering General Permit
US Army Corps of Engineers - 404 Dredge and Fill Permit

IV. RATIONALE FOR THE DECISION

A. Decision Criteria

Four alternatives were evaluated in detail for this project. They are: 1) No Action; 2) Proposed Action (as proposed by Tin Cup Water Company), with added mitigation and monitoring measures; 3) Proposed Action with Horses and Crosscut Saws; and 4) Defer New Pipe Installation Until 1998.

My decision to implement Alternative 2 was guided by the purpose and need for the project, the issues, the need for meeting requirements for dam safety, protecting wilderness resource values, and maintaining the function of the

irrigation reservoir. Alternative 2, when compared with the other alternatives, is most responsive to these factors.

My selection of Alternative 2 is based on the information provided on the dam reconstruction requirements and engineering strategy to achieve them, current resource conditions, expected effects, and planned mitigations.

In summary, the following criteria were used in making the decision:

1) How each alternative meets the purpose and need for action and the desired conditions as stated in Chapter 1 of the EA.

2) How the alternative provides consistency with the Forest Plan and complies with the Dam Safety Act and the Wilderness Act.

3) How well the alternative responds to the environmental issues contained in the EA; public concerns and comments; and Forest Service other agency, and tribal concerns.

B. Summary of Rationale and Comparison of Alternatives

No Action Alternative

I did not select the No Action alternative because no repair work would occur, leaving the dam in its current unsafe condition. The needs identified to safely operate this high hazard dam would not be addressed. This would result in non-compliance with Federal Dam Safety standards by the owner. Under this alternative, the Forest Service would condemn the dam and breach it in order to remove a public safety hazard. There is Region One direction (FSM 2322.03, 6/3/92), and direction in the Bitterroot Forest Plan (Selway-Bitterroot Wilderness General Management Direction, 2/11/92), for maintaining wilderness dams. The Wilderness Act authorizes existing private rights, which includes the water rights owned by the Tin Cup Water Company, and it allows for the operation and maintenance of irrigation reservoirs. The Tin Cup Water Company is also eligible for an easement under the Ditch Bill for storing and transmitting water.

Alternatives 2 and 3

The primary differences between Alternatives 2 and 3 focus on the use of the minimum tool in conducting the repair work and core drill testing in the Selway-Bitterroot Wilderness. Alternative 2 proposes the use of a backhoe in replacing the outlet pipe and the core drilling. Alternative 2 also allows the use of chainsaws in the clearing of debris and brush from the dam site. Alternative 3 proposes the use of draft horses for the replacement of the outlet pipe; draft horses and crosscut saws for the clearing of debris and brush from the dam site; and a small portable rock drill to conduct the core drilling.

I believe that Alternative 2 includes the use of equipment, tools, and methods that the engineers for the Forest Service and the Tin Cup Water Company agree are the minimum for ensuring a safe structure. Alternative 2 uses the minimum equipment to implement the needed repair work, within the short operating conditions that can be expected at the high elevation and climate, and with

reasonable assurance that the equipment and skills needed will be available for successful completion of the project.

Initially, I preferred Alternative 3 for implementing the repair work, as stated in the cover letter (6/2/97) for the EA. This alternative was designed to use draft horses and crosscut saws to complete some of the repair tasks at the dam, and to eliminate the need for the Bobcat backhoe, in order to reduce impacts to wilderness resources. The description of this alternative in the EA disclosed that it may not be possible for draft horses to complete all the repair work within the short operating period, and a backhoe may be required. Alternative 3 would include the added expense of retaining a backhoe that could be helicoptered to the site with short notice.

During the EA comment period, the Tin Cup Water Company solicited interest from draft horse and primitive tool contractors through newspaper advertisements and with phone calls to known contractors. There are a small number of individuals with the skills needed to complete this operation; and a few, if any, that are familiar with dam repair work. At this time, the Tin Cup Water Company does not have reasonable assurance that the contractors with the equipment and skills needed will be available for successful completion of the project within the short operating period (due to weather constraints) that can be expected at the high elevation.

The interdisciplinary team researched the possibility of completing the repair operations with primitive tools and skills to address concerns about impacts to wilderness. I feel that if the operating season were longer, and if the Tin Cup Water Company members and engineering representatives had more time to develop and gain confidence in draft horse operators and contractors with primitive tools and skills, this project may be successfully completed with horses and primitive skills. I did not select Alternative 3 because I cannot reasonably assure the Water Company that the outlet pipe replacement work could be completed with primitive tools, or that draft horse contractors would be available to provide that service.

All repair and maintenance tasks were evaluated for completion with the minimum tool. This included:

Repair work on the outlet pipe. The need to ensure that the outlet pipe can successfully repaired is of critical importance in this decision. Once started, the pipe repair work would be a serious public health and safety issue if not successfully completed within the narrow time frame available (McClelland, 7/7/97). Engineering reports (Druyvestein, Johnson, and Anders 6/25/97 and McClelland, 7/7/97) state that there is a risk of not being able successfully complete the pipe repair if a small backhoe is not used.

Alternative 2 allows the use of the backhoe as the minimum tool for completing the pipe repair and the core drilling.

Clearing debris and brush from the dam site. The Tin Cup Water Company may complete these tasks, which can be done with horses and crosscut saws prior the backhoe operations, under the terms of their special use permit. They use the backhoe and chain saw for this task because I do not believe there would be a significant reduction in disturbance to the wilderness values of apparent naturalness, remoteness, or solitude by requiring the use of draf

horses and crosscut saws when the backhoe will be operating concurrently on the site.

Core drilling. Using a backhoe with a drilling attachment will allow the Water Company to complete a more thorough sample of the dam core. Hand or small portable drilling methods were explored with Alternative 3. These methods were not capable of producing the number or depth of exploratory holes that could be accomplished with the backhoe. If it can be proven that the dam contains a self-supporting rock core, additional future work to raise the dam crest and to enlarge the spillway capacity for safety standards would be reduced. This would result in fewer future effects to wilderness resources. There is a greater chance that a determination on the composition of the dam core can be made using the backhoe with drill attachment.

The duration of the project and the duration of disturbance to wilderness would be longer with Alternative 3. With Alternative 3, some level of disturbance from other motorized equipment (the grout pump, generator, pumps, and the helicopter) would occur intermittently.

Alternative 4

Alternative 4 would defer the pipe installation until 1998, to consolidate all of the major work that requires helicopter transport and heavy equipment work into one operating season. This would reduce the 1997 effects and concentrate the major effects to wilderness resources into 1998. I did not select this alternative because engineers from the Forest Service and the Tin Cup Water Company have strongly recommended that the proposed improvements and schedule be considered critical. The existing outlet pipe has deteriorated to the point that patching it in 1997 as a temporary repair measure leaves a risk of dam failure that I am not willing to take. The work this summer is needed to correct an immediate deficiency, and is not connected to the 1998 work that may be needed to bring the dam into compliance with federal law.

C. Meeting the Purpose and Need

The maintenance, repair, and sampling work is needed to bring the dam to a sa condition that will protect life and property, comply with federal dam safety standards, and provide and maintain irrigation water to dependent ranchers an agricultural lands. The core drilling work is needed to sample the internal composition of the dam. This will determine what additional work will be needed in 1998 to bring the dam up to safety standards.

The repair is needed to meet the requirements of the National Dam Inspection Act of 1972 (P.L. 92-367) and the Presidential Memorandum of October 4, 1979, directing federal agencies to implement the Federal Guidelines for Dam Safety of 1979.

The Forest Service requires all dam structures authorized by permit to be maintained to standards ensuring safe and satisfactory performance. Permitt dams are inspected for operation and maintenance deficiencies at frequencies related to their size and storage capacity. High hazard dams are inspected annually. Montana House Bill 382, passed in 1991, exempts non-federal dams located on federal lands from the Montana Dam Safety Act of 1985, provided are subject to a dam safety review by a federal agency.

The hazard potential is based on "the loss of life or property that could occur if the structure failed." The failure of the dam could affect several downstream residences and Highway 93.

Inspection reports describing the condition of the dam and outlining the need for the proposed actions are included in the Project File at the Stevensville Ranger Station. These were prepared by Druyvestein, Johnson, and Anderson, Consulting Engineers (3/15/92, 3/6/97). In addition, annual inspection reports completed by the Forest Service are filed at the Stevensville Ranger Station.

D. Consistency with the Forest Plan and Compliance with the Dam Safety Act and Wilderness Act

The Forest Service is responsible for ensuring the Company's compliance with Federal Dam Safety standards. As acknowledgement of their responsibility, the Company has submitted this proposal for bringing the dam into compliance, and this analysis is conducted in response to that proposal and reasonable alternatives to the proposal.

Alternative 2 is consistent with the standards, goals, and objectives of the Bitterroot National Forest Land and Resource Management Plan. It responds to the desired condition described in the Selway-Bitterroot Wilderness General Management Direction (pages M 2-4); maintains irrigation water; and minimizes direct, indirect, and cumulative impacts to the Selway-Bitterroot Wilderness.

The repair and associated activities are consistent with Forest Plan standards, goals, and objectives for Management Area 7c (Selway-Bitterroot Wilderness). The activities are also consistent with the findings from the Forest Plan 5-Year Review published in 1994. All practical means to avoid or minimize impacts from the Selected Alternative are being employed through features in the Selected Alternative, mitigation, protection, and rehabilitation. Alternative 2 employs the minimum tools necessary to accomplish the purpose and need for action. Alternative 2 adheres to the Prevention of Significant Deterioration Approach (PSD). This is consistent with the minimum tool principal, and the PSD approach described on page A-1 of the General Management Direction.

The Selected Alternative meets Forest Service policy and direction related to reconstruction of dams in designated wilderness (FSM 2326.1--8). This allows the use of motorized/mechanized equipment when one or more of the following conditions apply: 1) emergencies; 2) when impacts to wilderness and/or resources therein would be greater using non-motorized/non-mechanized methods (including duration of impacts); 3) when physically infeasible to use non-motorized methods; and, 4) when costs make the use of primitive methods infeasible. Condition 3 was found to apply following consideration of alternatives that used primarily primitive/non-motorized means. The technical standards required to meet dam safety goals could not be guaranteed using non-motorized methods.

E. Response to Issues, the Public and Other Governments

Five issues were identified as a result of scoping. Issues were surfaced from the permittee, public comments, and Forest Service responsibilities to meet the intent of the Dam Safety Act, Wilderness Act, other pertinent laws, and site specific resource concerns. The issues are: 1) dam safety; 2) preserving wilderness values; 3) watershed and aquatic ecosystems; 4) vegetation and noxious weeds; and 5) economics.

1. Dam Safety

What is needed to keep the dam in a safe operating condition that will meet federal and state standards while providing irrigation water for the dam owners? Will all engineering and technical dam work comply with the Federal Guidelines for Dam Safety? What are the risks involved with delaying portions of the proposed actions?

The implementation of Alternative 2 will correct safety problems and it will minimize the risk of not completing the project within the short operating period.

2. Wilderness Values

How can the dam be repaired to safety standards while preserving and protecting wilderness values? This includes minimizing effects on wilderness resources and values; effects on the area surrounding the dam; the length of time required to complete the project (duration of the impact); effects to recreation users; and the feasibility of using primitive/historical tools instead of motorized equipment. What are the minimum tools necessary to complete the work? What will the effects be at the dam and base camp site? Related concerns include: duration of impacts, location of the camp site, camp management, the effects of livestock use, numbers of workers and livestock, and staging/storage areas.

Helicopter activity, equipment operation, and the two weeks of repair work and other associated activities will create negative effects to the remoteness, solitude, and apparent naturalness of the portion of the Selway-Bitterroot Wilderness within the Tin Cup canyon and around the lake basin. Effects to the Selway-Bitterroot Wilderness are localized to the dam site and access corridor. Alternative 2 requires less time for completion of the work than Alternative 3.

A minimum tool analysis was completed for the project. Although certain tasks could be completed with draft horses and crosscut saws, the backhoe is also needed for certain tasks. There would not be a significant reduction in disturbance to the wilderness values of apparent naturalness, remoteness, or solitude by requiring the use of draft horses and crosscut saws when the backhoe will be operating concurrently on the site.

Agreements for managing and mitigating the effects of the camp, corral helicopter flights, fuel storage, and related effects to wilderness are being developed with the Tin Cup Water Company.

There will be social effects to recreationists from activities occurring along the trail and at the dam site. These effects include temporary displacement during the construction period and a lower quality wilderness experience for trail users and lake visitors during the two week period.

3. Watershed/Aquatic Ecosystems

What effects will the Tin Cup Dam outlet replacement and drilling have on the watershed and aquatic ecosystems? This includes the effects of the dam repair on soil and wetlands, water quality, and fisheries in Tin Cup Creek and Tin Cup Lake Reservoir.

The effects of the project to aquatic ecosystems was raised as an issue by the interdisciplinary team and the public. Mitigation measures will be employed around the outlet pipe entrance to reduce the amount of sediment flowing through the pipe. Water will be diverted to a temporary impoundment on the exposed lake bed. A settling pond and filter cloth will be used below and above the dam to trap sediment. Minor sedimentation and turbidity is expected in the first 1,000 feet of Tin Cup Creek below the dam. The effect is expected to last 2-3 weeks. Effects from sediment will be short term, localized, and not of a magnitude that would cause detectable changes in stream habitat quality or channel equilibrium. Sediment monitoring plans are included in the Project File (Jakober, 7/7/97)

There are no significant direct, indirect, or cumulative adverse effects associated with implementation of the Selected Alternative to watershed and fisheries resources.

4. Vegetation

How will the project affect the spread of noxious weeds and what impacts will there be to native vegetation? This issue addresses noxious weed introduction and spread.

Knapweed is present along the trail and at the dam site. All equipment used on the project will be thoroughly steam cleaned and inspected for the removal of potential noxious weed seeds prior to being used on the project. Grass seeding along with monitoring for noxious weeds will continue at the dam site and along the trail, following completion of the project.

5. Economics

What will the project and the alternatives cost, and how can expenses for the dam owner and the government be minimized? What will the effects of the alternatives be on the supply of irrigation water for dependent ranches?

Economics and social effects were raised as an issue by many members of the public and by the Tin Cup Water Company. Alternative 2 will address the repair work on the dam, as well as providing a continuous supply of irrigation water for dependent ranches. Costs for Alternative 2 have

been provided by the Tin Cup Water Company and are estimated to be $100,000. The cost for Alternative 3 was estimated to be $115,000 in the EA. Additional costs could be incurred in Alternative 3 because contingencies would need to be made if the draft horses were not able to complete the necessary work.

V. ALTERNATIVES CONSIDERED BUT NOT GIVEN DETAILED STUDY

A wide variety of alternatives were explored and considered to meet the purpose and need for action, and to be responsive to the issues. Four alternatives were considered and eliminated from detailed study.

An alternative that would implement watershed restoration to bring Tin Cup Creek nearer to natural, pre-European conditions was recommended for consideration. This alternative was not considered in detail because restoration of the entire Tin Cup watershed is beyond the scope of the analysis for the proposal. The majority of the watershed is within wilderness, and the only major affect to the watershed is the dam. The Forest Service does not have the authority to remove the dam unless the dam is not meeting safety standards. The Forest Service could pursue that option if the Water Company was not attempting to keep the dam maintained in a safe condition.

An alternative was also suggested to complete the core drilling and soil sampling early in summer. Depending on results, possibly no other work would be needed until 1998. This alternative was not considered in detail because it is known that some level of pipe repair work is needed in 1997 in order to meet safety standards. The results of the sampling will determine the repair work that is needed in 1998. Completing the pipe repair work and the core drilling concurrently would minimize and confine disturbance. An alternative that will minimize the 1997 work by only patching the pipe in 1997 and then postponing the outlet pipe replacement until 1998, when other repair work may be needed, was considered in detail (Alternative 4).

An alternative to delay all the work until 1998 was suggested to concentrate the effects to wilderness to one time period. This alternative was not considered in detail, because it is important that the pipe repair and the debris removal be completed in 1997 in order to meet safety standards. It is also important for the dam owners to complete the investigations of the dam interior, so they can plan their 1998 work. An alternative that would do the minimal amount of repair work in 1997 was considered in detail (Alternative 4)

An alternative was considered that attempted to eliminate helicopter flights and that would further optimize the use of non-mechanized tools. This alternative was not considered in detail because it was not feasible to eliminate several of the motorized tools, such as the compressor, grout pump, and drill. Also, the integrity of the new outlet pipe would be jeapordized if it were broken into sections that would be small enough to pack in with stock. The drill rig and compressor would also need to be flown in, as these are also too heavy to pack in, and there are no feasible substitutes for for these mechanized tools. Other factors that led me to not consider this alternative in more detail were the impacts to the Tin Cup trail caused by the pack trains and safety concerns.

VI. IMPLEMENTATION, MITIGATION MEASURES, AND MONITORINGS

The Tin Cup Water Company will enter into a short-term Construction Special Use Permit to authorize and control the repair work. This permit will stipulate on-site mitigations and required rehabilitation work. The conditions, provisions, and plans contained in the special use permit will ensure that impacts to wilderness are minimized and other resources are protected. Mitigation and monitoring measures are listed in Chapter 2 of the EA.

A. Campsite Management

An agreement for campsite management will be developed between the Forest Service and the Tin Cup Water Company. This agreement will identify campsite location, period of use, numbers of people and stock, stock containment, waste water, garbage, and human waste disposal. It will also address firewood gathering, campfires, and food storage. It will become part of the special use permit.

B. Air Operations, Safety, and Materials Handling Plan

A plan for air operations, safety, and materials handling will be developed. This plan will address helicopter operations associated with Alternative 2. It specifically will address communications, public information, public safety, medical evacuation, flight paths, helispot management, best management practices for materials transport and storage, and diesel fuel transportation, transfer, and storage. As with the Camp Plan, this Plan will be part of the special use permit, and will identify mitigations needed to ensure resource protection.

VII. FINDING OF NO SIGNIFICANT IMPACT

The direct, indirect, and cumulative impacts of these actions have been reviewed as documented in this Decision Notice, the EA, and the Project File. The setting for these proposals is in a localized area, with implications only for the immediate drainage area. Consideration of these actions is based on the impacts on the ecosystem, local communities, county, and at the affected resource level. They do not have any large or lasting affect on society as a whole, the nation, nor the state.

Based on this review, it has been determined that there are no significant beneficial or adverse impacts on the physical, biological, or social portions of the human environment. The Selected Alternative is consistent with the management direction, standards, and guidelines outlined in the 1987 Bitterroot Forest Plan.

The determination of no significant impact is based upon the following review of the criteria of 40 CFR 1508.27:

Significant impacts that may be both beneficial and adverse:

The Selected Alternative entails the maintenance and repair of an existing it does not entail a large reconstruction effort nor impact the site significantly. The dam was a pre-existing structure within the wilderness

the area was enacted, and provisions have allowed for those pre-existing structures and uses.

The action by the Selected Alternative prevents a possible future catastrophic dam failure which could result in the loss of property and life and environmental damage.

Impacts associated with the Selected Alternative are discussed in Chapter 4 of the EA. The actions would not have significant impacts on other resources identified and described in the EA. The context of the decision to be made is non-significant in the long and short term (EA, Chapters 3 and 4).

The degree to which the proposed action affects public health or safety:

The action is designed to protect public health and safety in that the repair work on the dam will prevent a possible future catastrophic dam failure which could result in the loss of property and life. Mitigation measures will also close the work site to public use while work is being completed and thus assure public safety.

Issues concerning public health and safety raised by members of the public regarding this proposal have been addressed. Activities will result in temporary and low-impact effects.

No significant increase in the water yields or sedimentation in the analysis area streams is expected and State water quality guidelines will be met. There is a low risk of producing channel changes downstream from the proposed activities. Implementation of Inland Native Fish Strategy standards and guidelines will protect stream courses from sedimentation (EA, Chapter 4).

It is my determination that the Selected Alternative will have no significant effects on public health and safety.

Unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farms, wet lands, wild and scenic rivers, or ecologically critical area:

The action occurs within the Selway-Bitterroot Wilderness. The Selected Alternative entails a repair of an existing dam on a previously disturbed site. It does not entail a large reconstruction effort nor impact undisturbed sites. The dam was a pre-existing structure (est. 1906) within the wilderness when the area was enacted, and provisions have allowed for those pre-existing structures and uses.

The action is near historical or cultural resources, but there will be no surface disturbance to those sites or ecologically critical areas. The maintenance and repair work will have no additional long-term negative effect on the wilderness features and attributes.

Based on these factors, I have concluded that the Selected Alternative will have no significant effects on unique resource characteristics.

The degree to which the effects on the quality of the human environment are likely to be highly controversial:

The effects of this action are not deemed highly controversial. The effects of past or similar repair efforts are consistent with the estimated effects of the proposed activities.

The effects of this action on the quality of the human environment are not highly controversial. Past monitoring has determined that actual effects of similar projects are consistent with estimated effects of the proposed activities. There is wide professional and scientific agreement on the scope and effects of these actions on the various resources (EA, Chapter 4).

The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risk:

This action resembles past or similar repair work that has been conducted on the high mountain lake dams within wilderness on the Bitterroot National Forest, and the effects will be similar to those of past actions. It is my conclusion that there are no unique or unusual characteristics of the area which have not been previously encountered that would constitute an unknown risk upon the human environment.

The analysis considered the effects of past actions as a frame of reference, in conjunction with scientifically accepted analytical techniques, available information, and best professional judgement to estimate effects of the proposal.

The degree to which the action may establish a precedent for future actions with significant effects or presents a decision in principle about future consideration:

The Selected Alternative is not setting a precedent for future actions with significant effects. If further repair or maintenance work is needed as a result of the dam core investigations, the environmental effects of those actions will be considered through the National Environmental Policy Act. Further evaluation of the dam's compliance with the Federal Dam Safety Act will occur in the future; however, this immediate repair action is necessary for the maintenance of the dam in a safe condition until the evaluation and possible work can be completed.

Whether the action is related to other actions with individual insignificant but cumulative significant impacts:

The repair work on the dam is not related to other actions with individual insignificant but cumulative significant impacts. The repair of the outlet pipe must be completed in order for the dam to operate safely, and the outlet repair work does not bind me to authorize future actions. Future repair or reconstruction work may be needed on the dam, but it will be subject to additional analysis and approval. Future work will be similar to other repair or reconstruction work that has been completed within the Selway-Bitterroot Wilderness, without significant cumulative effects. Future repair work would be limited to the existing dam site, and would be limited in duration.

The core drilling of the dam is related to future actions because the tests resulting from the dam will determine the degree to which the dam needs repair

and work to meet the dam safety regulations. The testing may show greater or lesser needs for work and does not contribute to cumulative significant impacts.

The combined effects of past, other present, and reasonably foreseeable actions are discussed in Chapters 3 and 4 of the EA. There is no indication of significant adverse cumulative effects to the environment.

The degree to which the action may adversely affect districts, sites, highway structures, or objects listed in or eligible for listing in the National Register of Historic Places, or may cause loss or destruction of significant scientific, cultural, or historic resources:

There are no features in the area affected that are listed on the National Register of Historic Places. A cultural resource inventory has been completed in the area, and all known cultural resource will be protected. An evaluation of the dam as an eligible historic site has not been completed; however, the repair of the dam will have no effect upon its potential for listing.

The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973:

It was determined that the proposed projects would not affect any endangered, threatened, or proposed fish, wildlife, or plant species which may occur in the area. Endangered species having suitable habitat within the analysis area include Gray Wolf and Peregrine Falcon. Threatened species with habitat in the analysis area include Grizzly Bear, and the dam is within the Bitterroot Grizzly Bear Recovery Area (USFWS DEIS, 7/97). There are no current confirmed records of these species residing in the project area. No critical habitat for any listed species occurs within the project area.

Biological Evaluations and Biological Assessments were completed for proposed and sensitive wildlife, fish, and plant species which could be affected by the proposed project. Westslope Cutthroat Trout and Bull trout are sensitive fish species that inhabit the project area. Bull Trout is currently proposed for listing as a threatened species by the U.S. Fish and Wildlife Service. The Biological Assessment documents the determination that these species would not be affected by the Selected Alternative.

Whether the proposed action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment:

The proposal meets federal, state, and local laws for dam safety, water quality, riparian areas, cultural resources, and threatened and endangered species. It also complies with the National Environmental Policy Act.

VIII. PUBLIC INVOLVEMENT

A videotape was developed in 1992 to display the affected environment and to present issues and concerns for the Tin Cup and Bass Lake Dam projects to groups and individuals who may not be able to visit the project sites. This videotape is available for viewing at the Stevensville Ranger Station.

The scoping and public involvement strategy was developed at the Interdisciplinary Team meeting on March 13, 1997.

Individuals interested in this analysis were identified by contacting people who expressed interest in the Northern Region Wilderness Dam Policy Review completed in 1991 and 1992, and those that were on the Wilderness Dams Mailing List. Offers for information and scoping meetings were made to key interest groups and individuals.

The scoping notice was sent to 13 organizations and 40 individuals and groups on March 25, 1997. Nine comment letters were received.

A legal notice describing the project and requesting comments was published in the Ravalli Republic on March 25, 1997, and again on April 1, 1997.

A meeting with Wilderness Watch, Friends of the Bitterroot, and the Montana Wilderness Association was held on June 18, 1997, to listen to their comments on the EA.

The comment period on the EA ended July 2, 1997. A total of 150 comment letters were received. There were 136 form letters in support of not using horses or crosscut saws for repair work. Eight other letters expressed concerns about Alternative 3, and they preferred using motorized equipment for safety and economic reasons. Two letters expressed approval for Alternative 3. Two letters (Wilderness Watch/Friends of the Bitterroot and Alliance for the Wild Rockies/Ecology Center/American Wildlands) expressed a need for an EIS and for a broader range of alternatives, among other wilderness and resource concerns.

IX. APPEAL PROVISIONS AND IMPLEMENTATION

This Decision is subject to appeal pursuant to the Code of Federal Regulations 36 CFR 215.7, or 36 CFR 251.82 (for specific parties, (251.86). As stated in 36 CFR 215.11 an appeal may be filed by any person who, or any non-federal organization or entity that, has provided comment or otherwise expressed interest in a particular proposed action by the close of the comment period specified in CFR 215.6. A written notice of Appeal must be submitted within 45 days of the legal notice published date for this Decision. Appeals should be sent to:

USDA, Forest Service, Northern Region
ATTN: Appeals Deciding Officer (RFO)
P.O. Box 7669
Missoula, MT, 59807

Appeals must meet content requirements of 36 CFR 215.14 or for other specific parties, 36 CFR 251.90. Detailed records of the environmental analysis are available for public review at the Stevensville Ranger Station, Stevensville MT. For additional information regarding this Decision, contact District Ranger Tom Wagner at the Darby Ranger Station, or Interdisciplinary Team Leader David Silvieus at the Stevensville Ranger Station, 88 Main Street, Stevensville, MT 59870.

If no appeal is received, implementation of this decision may occur on, but not before, five business days from the close of the appeal filing period. If an appeal is received, implementation may not occur for 15 days following the date of appeal disposition.

Stephen K. Kelly
Forest Supervisor

7/16/97
Date

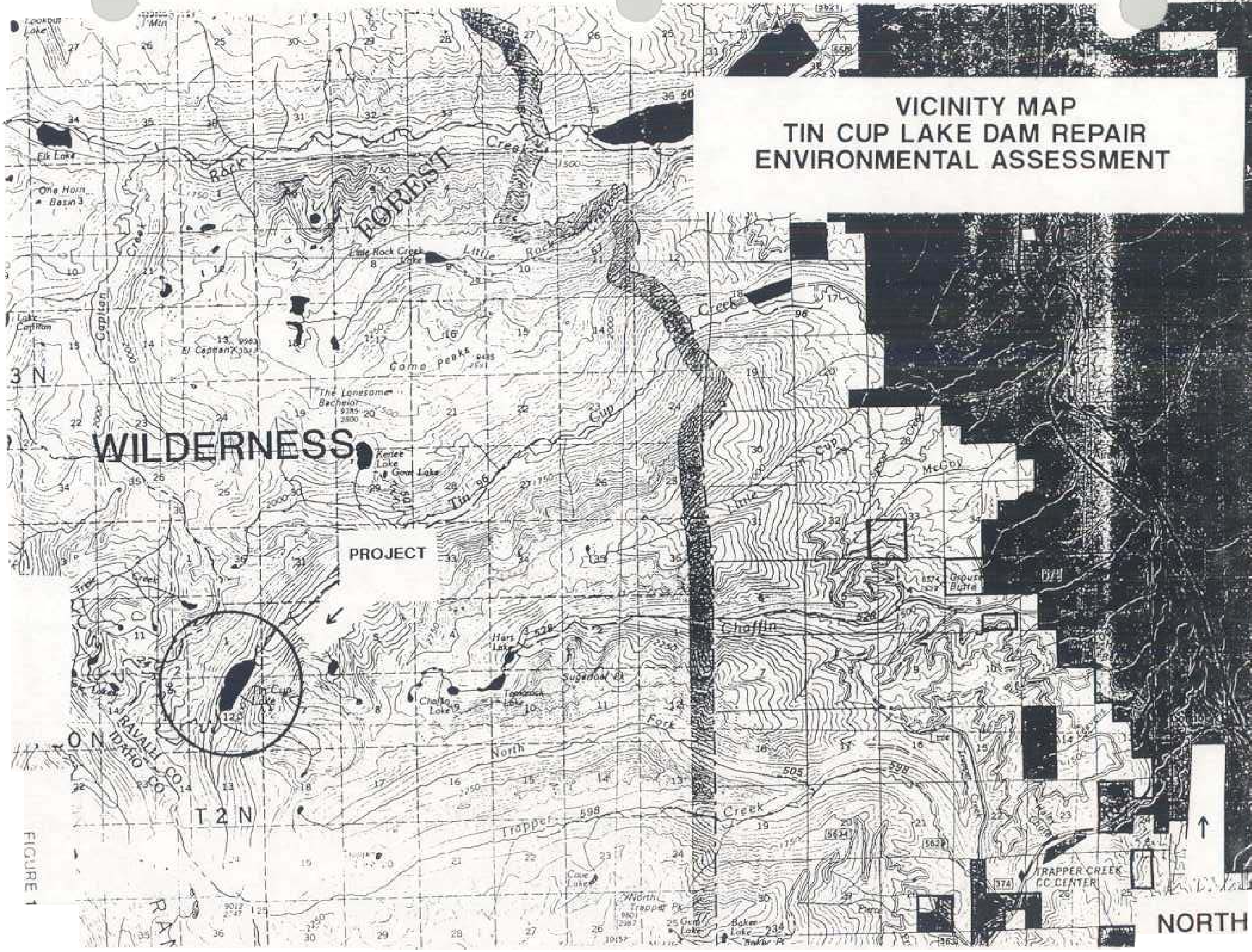
VICINITY MAP
TIN CUP LAKE DAM REPAIR
ENVIRONMENTAL ASSESSMENT
WILDERNESS
FOREST
PROJECT
Tin Cup Lake
Elk Lake
Little Rock Creek Lake
Kenee Lake
Chaffin Lake
Hart Lake
Tamarack Lake
Sugarloaf Pk
Como Peaks
The Lonesome Bachelor
El Capitan
Lake Capitan
Capitan
Rock Creek
Little Rock Creek
Tin Cup Creek
McCoy
Chaffin
North Fork
Trapper Creek
TRAPPER CREEK CC CENTER
Grouse Butte
Cave Lake
North Trapper Pk
Baker Lake
RAVALLI CO.
IDAHO CO.
T 3 N
T 2 N
NORTH

FIGURE 1

TIN CUP LAKE DAM REPAIR
ENVIRONMENTAL ASSESSMENT

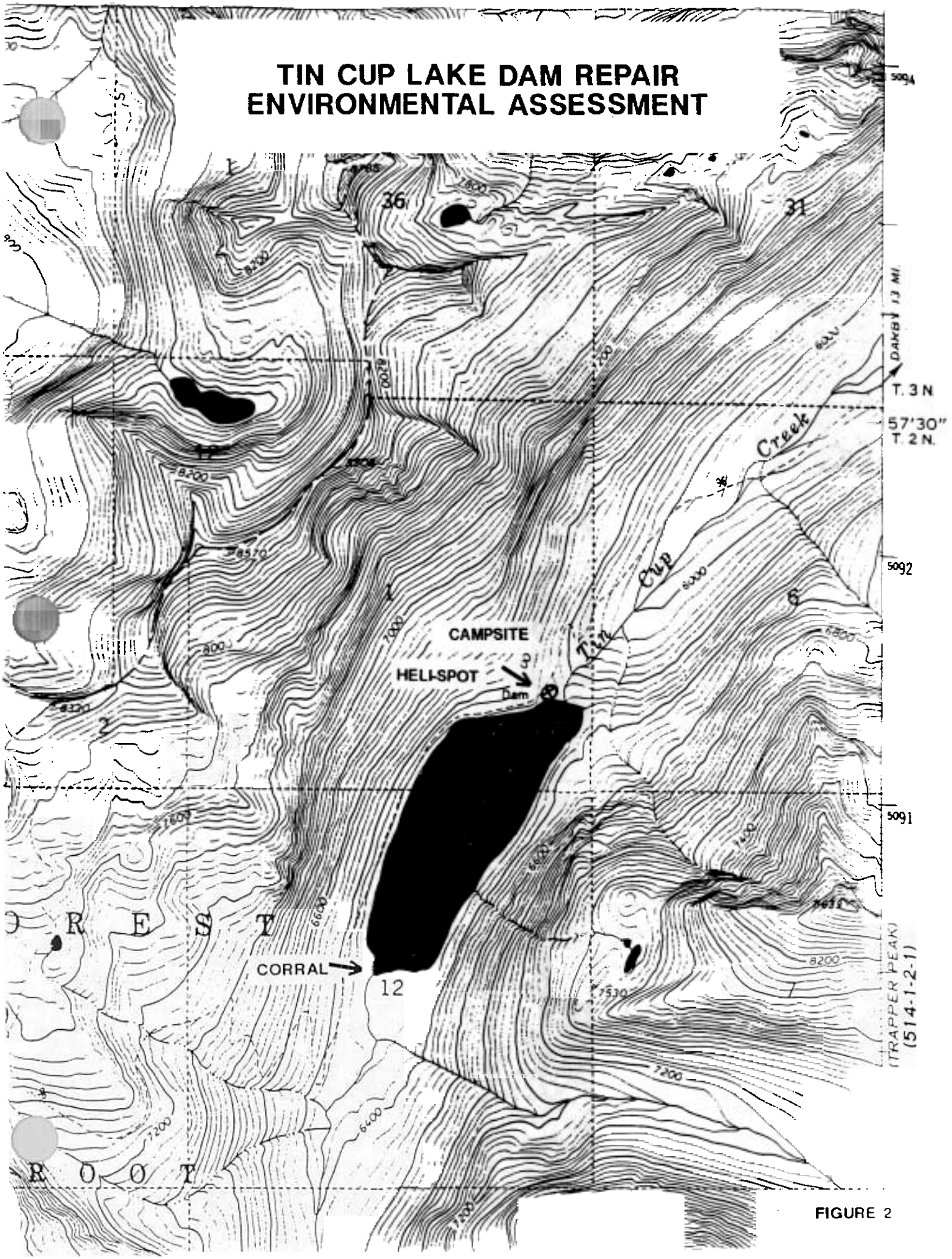

FIGURE 2

APPENDIX B

LIST OF PREPARERS

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The Forest Service received comments on the Tin Cup EA from 150 individuals or groups. Some groups submitted joint comments. Of the 150 comments received, 136 were made on a standardized form letter (see item j below); these comments were lumped together because they were identical. An alphabetical identifier was assigned to each responder (a-l), as well as a notation to show which paragraph of their letter that the comment was taken from (P1, P2,...) [see below]. The original letters from the public are located in the Project File.

List of Public that Commented:

a = Doris Milner - Montana Wilderness Assoc. Rep./Bitterroot National Forest
b = Dennis Palmer
c = Doyle Gerrard
d = Earl Sullivan - Tin Cup Water Company (TCWC)
e = Tom Ruffato - Bass Lake Reservoir Company
f(1) & f(2) = Terry Forest - Engineer, Druyvestein, Johnson and Anderson
g = Tonya Bumbarger - Attorney, TCWC
h = Wilderness Watch and Friends of the Bitterroot
i = Alliance for the Wild Rockies, The Ecology Center, and American Wildlands
j = Standardized letter from 136 individuals
k = Scott Hackett - Fred Burr Water Users
l = Brian Langton - Bitterroot Water Cooperative

The comments have been grouped by the following categories:

- General Comments on the EA
- Comments Related to the Schedule
  - Failure to Meet the Schedule
  - Financial Consequences of Not Meeting the Schedule
  - The Need to Use Machinery to Meet the Schedule
- Comments Related to Using Machinery vs. Horses
  - Economics of Using Machinery
  - Minimizing Impacts by Using Machinery
  - Feasibility of Using Machinery
  - Minimum Tool Analysis
  - Feasibility of Using Horses
  - Significant Impacts Caused by Using Machinery
- Rights of the Dam Owners
- Range of Alternatives in the EA
- Conformance with Wilderness Laws
- Economic Analysis in the EA
- Project Design Features (Including Mitigations and Monitoring)
- Fisheries

General Comments on the EA

The Forest Service "decision on methods and tools" in the EA appears to meet legal requirements. Using horses to do the work where it is feasible is a good idea (a).

Response:

The alternatives presented are consistent with the standards, goals, and objectives of the Bitterroot National Forest Land and Resource Management Plan, Forest Service policy and direction related to reconstruction of dams in designated wilderness, Federal Dam Safety standards, and other applicable laws.

"I support the maintenance, repair, and sampling work that is needed to bring the dam to a safe condition that will protect life and property, comply with federal dam safety standards, and provide and maintain irrigation water to dependent ranchers and agriculture lands" (b).

Response:

Thank you for your comment.

"I like the Preferred Alternative for repairing and upgrading the Tin Cup Dam. Its option, however, using machinery for pulling through a plastic liner should horses fail, may become problematical rather than necessary, simply because machinery is made available?" (c).

Response:

The Selected Alternative meets Forest Service policy and direction related to repair of dams in designated wilderness. This allows the use of motorized/mechanized equipment when it is physically infeasible to use non-motorized methods. The technical standards required to meet dam safety goals could not be guaranteed using non-motorized methods.

Alternative 2 is the most cost efficient and will create the least amount of impact (e, P4). The project as proposed by TCWC would meet dam safety guidelines, minimize Phase II design unknowns, meet Forest Plan objectives, minimize overall environmental impacts, and minimize and preserve wilderness (f(1), P22).

Response:

Alternative 2 is the Selected Alternative.

Alternative 3, unless further modified, is not feasible technically and consequently is an unreasonable restriction on the dam owner's activities (g, P1).

Response:

It has been determined that Alternative 3 is not technically feasible, and therefore Alternative 2 has been selected.

The soil testing and exploration proposed by TCWC is critical to provide soil data so that design alternatives for Phase II of construction would minimize the potential of recurring sink holes in the dam. These design alternatives could significantly reduce the potential for a major dam failure and/or major preventative or reconstructive work in the future (f(2), P2). The soil testing and exploration is also necessary to provide information about the rock core surface, which could

potentially result in a re-classification of the dam as a "low hazard" structure. A re-classification would significantly impact proposed work during Phase II (f(2), P3).

Response:

The soil testing and exploration work proposed by the TCWC is approved with the selection of Alternative 2.

"Short-term maintenance needs of the dam are unknown, but could be substantial." This year's decision could prejudice future decisions (h, P2).

"We disagree with the finding...that there are no cumulative effects of connected actions that need to be analyzed along with this year's proposed project. In fact, much of this year's proposal is to support follow-up actions" (h, P13).

Response:

The Selected Alternative is not setting a precedent for future actions with significant effects. If further repair or maintenance work is needed as a result of the dam core investigations, the environmental effects of those actions will be considered through the National Environmental Policy Act. Further evaluation of the dam's compliance with the Federal Dam Safety Act will occur in the future; however, this immediate repair action is necessary for the maintenance of the dam in a safe condition until the evaluation and possible work can be completed.

The repair work on the dam is not related to other actions with individual insignificant but cumulative significant impacts. The repair of the outlet pipe must be completed in order for the dam to operate safely, and the outlet repair work does not bind the Forest Service to authorize future actions. Future repair or reconstruction work may be needed on the dam, but it will be subject to additional analysis and approval. Future work will be similar to other repair or reconstruction work that has been completed within the Selway-Bitterroot Wilderness, without significant cumulative effects.

The combined effects of past, other present, and reasonably foreseeable actions are discussed in Chapters 3 and 4 of the EA. There is no indication of significant adverse cumulative effects to the environment (DN-13).

<u>Failure to Meet the Schedule</u>

Because of the tight schedule related to the NEPA process, the proposed Phase I restoration project may not be completed by the projected start date of September 1997 (d, P4).

The continual deterioration of the inlet/outlet pipe is increasing the risk of catastrophic dam failure (d, P5). If the September schedule is not met, a special request needs to be processed for an emergency repair of the dam inlet/outlet pipe for this year to reduce the dam liability situation (d, P7). The project needs to proceed using TCWC proposals in order to avoid catastrophic deterioration of the dam. "The liability exposure associated with not completing the...(project as proposed)...is extensive (f(1), P18 and 20).

Response:

It is the intention of the Forest Service to allow the repair work to begin and to be completed in September, 1997.

Financial Consequences of Not Meeting the Schedule

While the EA states that the timing of this project is essential, a course of action is proposed that may delay repairs and ultimately cost more that other alternatives that "would effectively and efficiently complete the project" (k, P1).

"The financial risks to the TCWC associated with the use of draft horses and primitive tools are considerable. The liability of not completing the ...(project)... could have catastrophic consequences to the livelihood of the TCWC water users" (f(1), P19).

There would be serious financial consequences to the TCWC if the September schedule is not met (d, P6).

Response:

It is the intention of the Forest Service to allow the repair work to begin and to be completed in September, 1997. It has been determined that Alternative 3 is not technically feasible, and therefore Alternative 2 has been selected.

The Need to Use Machinery to Meet the Schedule

Using primitive tools rather than machinery would adversely affect the construction schedule, and result in delays in the work planned for 1998. The window available to complete the tasks is limited, and delays would result in continued deterioration (e, P7; e, P8; f(1), P17). The timing of work is important because conditions can be unpredictable and equipment (i.e. helicopters) could be scarce (e, P6).

Response:

The Selected Alternative includes the use of equipment, tools, and methods that the engineers for the Forest Service and the TCWC agree are the minimum for ensuring a safe structure. The Selected Alternative uses the minimum equipment to implement the needed repair work, within the short operating conditions that can be expected at the high elevation and climate, and with reasonable assurance that the equipment and skills needed will be available for successful completion of the project (DN-4).

Economics of Using Machinery

The EA states that "there is a possibility that draft horses will not be able to pull the plastic pipe sleeve", yet elsewhere in the document it shows that this alternative "will cost another $15,000" (k, P2). "An additional week and an additional cost of $15,000 isn't warranted nor is it efficient use of the projects resources" (l, P4).

The means to accomplish this project are experimental and the Forest Service should not require the TCWC to finance it or accept the risk. "Perhaps the Forest Service or some other organization should first attempt this experiment on a project that is not critical in nature" (k, P3).

Response:

It has been determined that Alternative 3 is not technically feasible, and therefore Alternative 2 has been selected. Feasibility for the use of primitive equipment is based on the technical requirements of the project. While a part of this analysis will include economic considerations, economics is not an overriding factor in the justification for the use of motorized equipment (Selway-Bitterroot Wilderness General Management Direction, M-2, 1992).

Minimizing Impacts by Using Machinery

While the EA states that the "potential for disturbance from project activities (proposed action) would be slight...", the optimal alternative would minimize the amount of time that the area will be impacted. "Also, if a person wanted to experiment with horses, wouldn't it be better to do it someplace other that in the wilderness?" (k, P4).

Since using other motorized equipment is proposed (compressors, generators, drills, water pumps, and a grout mixer), adding a Bobcat and chain saw should be allowed. It would result in less environmental impact because the job would be accomplished more quickly (l, P5).

Response:

It has been determined that Alternative 3 is not technically feasible, and therefore Alternative 2 has been selected.

Feasibility of Using Machinery

Allowing the use of chain saws to cut debris would be faster and more efficient and would not be likely to increase the impacts since there will already be other motorized equipment at the site (pumps, generators, and drills) (e, P5). The TCWC needs to "complete repairs on the dam using the most efficient, modern means available" (j, P1).

A Bobcat is needed for the following tasks:

- **Handle and move the grout pump and mixer, water pumps, and bags of grout to construction locations (f(1), P7).**
- **Collect, transport, and place rip-rap (f(1), P8).**
- **Excavate, transport, and compact soil (f(1), P9).**
- **Dismantle and haul the existing timber walkway and crib structures (f(1), P10).**
- **Remove and haul the cast iron gate, frame, stem, and control wheel (f(1), P11).**
- **Remove and haul all of the debris from the downstream face of the dam (f(1), P12).**
- **Provide adequate power when pulling the pipe through the existing stone/masonry pipe (f(1), P5).**

The prospect of obtaining adequate information on the dam core is virtually non-existent if using a "mobile tri-pod type" auger and/or boring equipment is required (f(2), P4). A Bobcat with a

hammer and auger attachment is needed to collect adequate information on the dam core. Additionally, "the chances of locating the dam's rock core increases significantly", which could result in reduced construction in Phase II, as well as a reduction in the dam's hazard classification (f(2), P5 and P6).

The Bobcat and chain saws should be included in the preferred alternative for the following reasons: (l, P1).

- **Work on Big Creek with mechanized equipment has shown it is more efficient, less costly, and uses less manpower and time (l, P2).**
- **"The Bobcat can pull the new sleeve through the outlet pipe more efficiently and will be much quicker in moving and replacing gravel and rock fill." Using draft horses for this task at Tin Cup Dam would not be feasible (e, P5; l, P3).**
- **Past experiences have shown that "when tackling a project of this magnitude in the wilderness, taking the best tools available is the best solution" (l, P6).**

Response:

We agree there would not be a significant reduction in disturbance to the wilderness values of apparent naturalness, remoteness, or solitude by requiring the use of draft horses and crosscut saws when the backhoe will be operating concurrently on the site (DN-8). It has been determined that Alternative 3 is not technically feasible, and therefore Alternative 2 has been selected.

Minimum Tool Analysis

"The EA lacks information to determine the need for individual pieces of equipment or possible alternatives (i.e. primitive means) to their use." "Every piece of equipment should have been analyzed and justified as the minimum necessary" (h, P8).

Response:

A minimum tool analysis was completed for the project (Project File). Although certain tasks could be completed with draft horses and crosscut saws, the backhoe is also needed for certain tasks. There would not be a significant reduction in disturbance to the wilderness values of apparent naturalness, remoteness, or solitude by requiring the use of draft horses and crosscut saws when the backhoe will be operating concurrently on the site.

Feasibility of Using Horses

Using draft horses or mules to accomplish all of the necessary tasks associated with the project could result in injuries to the stock (f(1), P13). An advertisement placed in local newspapers by the TCWC soliciting interest from potential draft horse and primitive tool contractors for this project only yielded two responses (f(1), P14). A local draft horse authority has indicated that he feels accomplishing all of the tasks with draft horses would be too risky to the animals, and that there were no qualified contractors locally (f(1), P15).

Response:

The interdisciplinary team researched the possibility of completing the repair operations with primitive tools and skills to address concerns about impacts to wilderness. The conclusion was reached that if the operating season were longer, and if the TCWC members and engineering

representatives had more time to develop and gain confidence in draft horse operators and contractors with primitive tools and skills, this project may be successfully completed with horses and primitive skills. Alternative 3 was not selected because there is no reasonable assurance that the outlet pipe replacement work could be completed with primitive tools, or that draft horse contractors would be available to provide that service.

Significant Impacts Caused by Using Machinery

The environmental analysis is inadequate, and an environmental impact statement is needed. There is no doubt that the project can potentially have a significant impact on wilderness. Using heavy equipment in the wilderness constitutes a potentially significant impact (h, P3). Nowhere does the document acknowledge the significant impacts to wilderness caused by the project and by the use of heavy equipment (h, P11).

Response:

The Selected Alternative entails the maintenance and repair of an existing dam; it does not entail a large reconstruction effort nor impact the site significantly. The dam was a pre-existing structure within the wilderness when the area was enacted, and provisions have allowed for those pre-existing structures and uses (DN-12).

Impacts to the wilderness attributes of solitude, remoteness, natural integrity, apparent naturalness, and special features associated with the Selected Alternative are discussed in Chapter 4 of the EA. The actions would not have significant impacts on other resources identified and described in the EA. The context of the decision to be made is non-significant in the long and short term (EA, Chapter 4).

Rights of Dam Owners

Reservoir owners have the right to maintain and repair wilderness reservoirs. Using motorized equipment that is recommended and reviewed by qualified engineers and the Forest Service to repair wilderness dams makes repairs faster, safer, and more cost efficient (e, P3).

TCWC is authorized to occupy the dam and reservoir site and is the owner of private water storage rights. The engineer retained by TCWC states that Alternative 3 is "not advisable from an engineering standpoint and a liability standpoint" (g, P2).

The serious safety problem at the dam exists partially because the Forest Service has prevented the dam owner from maintaining the dam in a reasonable manner for many years. Because proper maintenance was prevented, a large accumulation of debris is threatening the dam's integrity. Under the analytic scheme presented by the Region One Wilderness Dams Policy, mechanized equipment is the minimum tool necessary to complete the required work (g, P3).

"Limiting a dam owner's choices in maintaining a high hazard facility to ineffective and questionable techniques would be excessive and unreasonable regulation of the dam owner's easements, privileges, and other property interests. The TCWC must be allowed to employ repair methods that will complete the tasks necessary to make the dam safe this year and to allow long term repairs to be done in compliance with sound engineering principles next year" (g, P4).

Wilderness dams, although allowed by Congress, are not compatible with "pure wilderness interest". "While all parties need to be sensitive to the wilderness, it is doubtful that the Forest Service has discretion through its regulatory power to unreasonably limit the needs of the dam owners to maintain their water-diversion structures." Dam owners are allowed to maintain their structures using "adequate" methods ("those methods that will serve the reasonable purposes for which the occupation of the site exists"). These methods are "not limited to established uses or to means consistent with wilderness uses" (g, P5).

Prohibitions stated by the Wilderness Act do not apply to dam owners. The Wilderness Act protects both the existing and implied rights of the dam owners. The Forest Service doesn't have the authority to prohibit the dam owner from "doing what is reasonably necessary to store and release water safely and to maintain dam safety." "Alternative 3 will have to be modified in order for TCWC to do what is reasonably necessary with construction tools and methods adequate to achieve a safe facility..." (g, P6).

"A more realistic reason to keep the dam in place is to provide water for legal water claims." These legal rights, as well as "the historic precedent of using that water" should not be jeopardized. However, a meaningful discussion should take place regarding whether the Forest Service could work with the TCWC to remove the dam while still preserving important values and characteristics. While a "thorough analysis of such an alternative may reveal that removing the dam is impractical,...unless such an analysis is done,...the full range of alternatives has not been considered" (i, P4 and P5).

"There are no private rights (except State water rights) associated with the dam other than those that may be conveyed with the special use permit." The Forest Service has complete control over the decision (h, P2).

Response:

Regarding the reference of TCWC as owner of certain licenses and easements, the TCWC has had its dam and reservoir authorized by special use permit from the Forest Service for the past 90 years. A special use permit is a permissive license used to grant non-proprietary occupancy and use of National Forest lands. The earliest records, that Forest Service research has located, place construction of the Tin Cup facility in 1906. Water Rights records for TCWC date 1898, 1908, and 1914. All three of these dates are after the proclamation of the Forest Reserves which was February 22, 1897.

The timely application by the TCWC for a Ditch Bill Easement is currently being evaluated against the criteria set forth by Congress. The easement will be granted upon completion of this evaluation and the Water Rights Adjudication. Prior to issuance of the "Ditch Bill Easement", an Operation and Maintenance Plan will be completed as required in the provisions of the easement. The current authorization for the facility continues to be the special use permit until the Water Rights Adjudication is complete.

Tin Cup Reservoir was permitted after the creation of the National Forest. The fact that the reservoir has a storage right for water does not mean that the Forest Service has no regulatory

authority over the facility. The Forest may determine the terms and conditions of the use, in order to protect other National Forest uses and resources. This is the purpose of the environmental assessment.

Alternative 3 meets Forest Service policy and direction related to repair of dams in designated wilderness. This allows the use of motorized/mechanized equipment when it is physically infeasible to use non-motorized methods. The technical standards required to meet dam safety goals could not be guaranteed using non-motorized methods. The Wilderness Act authorizes existing private rights, which includes the water rights owned by the TCWC, and it allows for the operation and maintenance of irrigation reservoirs.

In reference to the need to fully analyze an alternative that proposes removing the dam (i, P4 and P5), see the Range of Alternatives category discussed below.

Range of Alternatives

Because every action alternative involves using motorized equipment in the wilderness, the EA lacks an adequate range of alternatives. The EA failed to consider other reasonable alternatives such as breaching the dam or acquiring water rights and restoring the lake to its pre-1900 condition (h, P4 and 7).

"The range of fully analyzed alternatives is incomplete and inadequate." Although "we recognize that full watershed restoration is beyond the scope of this analysis,...we would like to see an action alternative analyzed and fully considered that includes the removal of the dam..." The EA provides an inadequate explanation of why this alternative was not fully considered (i, P3).

Response:

The No Action alternative was not selected because it would result in no repair work which would leave the dam in its current unsafe condition. The needs identified to safely operate this high hazard dam would not be addressed. This would result in non-compliance with Federal Dam Safety standards by the owner. Under this alternative, the Forest Service would condemn the dam and breach it in order to remove a public safety hazard. The Forest Service could pursue that option if the TCWC was not attempting to maintain the dam in a safe condition. There is Region One direction (FSM 2322.03, 6/3/92), and direction in the Bitterroot Forest Plan (Selway-Bitterroot Wilderness General Management Direction, 2/11/92), for maintaining wilderness dams. The Wilderness Act authorizes existing private rights, which includes the water rights owned by the TCWC, and it allows for the operation and maintenance of irrigation reservoirs. The TCWC is also eligible for an easement under the Ditch Bill for storing and transmitting water.

An alternative was considered that would eliminate helicopter use and further optimize the use of non-mechanized equipment. It is not possible to meet the purpose and need for action with this alternative (DN-10).

An alternative that would implement watershed restoration to bring Tin Cup Creek nearer to natural, pre-European conditions was recommended for consideration, but was not considered in detail because restoration of the entire Tin Cup watershed is beyond the scope of the analysis for the proposal. The majority of the watershed is within wilderness, and the only major affect to the

watershed is the dam. The Forest Service does not have the authority to remove the dam unless the dam is not meeting safety standards.

Conformance with Laws

"The Forest Service is charged by law with protecting the wilderness character of the Selway-Bitterroot Wilderness" (h, P2).

The EA should provide detailed documentation regarding the prior encroachments on the wilderness with the small D-4 dozer that was previously used in maintenance (h, P10).

"The EA isn't adequate to support any action on the dam beyond routine maintenance and patching of the outlet pipe using primitive tools and access." The analysis needs to explain if and how the proposed action is consistent with the Wilderness Act and other laws (h, P16 and P17).

Alternative C is the only alternative presented that "meets the spirit and integrity of wilderness as defined in the 1964 Wilderness Act" (i, P2).

"The Forest Service should require that the lands serviced by the dam be retained as open space in order to keep the dam in wilderness." This commitment would justify the sacrifice of wilderness that the continued operation of the dam would require (h, P12).

Response:

Alternative 2 is consistent with the standards, goals, and objectives of the Bitterroot National Forest Land and Resource Management Plan. It responds to the desired condition described in the Selway-Bitterroot Wilderness General Management Direction (pages M 2-4); maintains irrigation water; and minimizes direct, indirect, and cumulative impacts to the Selway-Bitterroot Wilderness.

The repair and associated activities are consistent with Forest Plan standards, goals, and objectives for Management Area 7c (Selway-Bitterroot Wilderness). The activities are also consistent with the findings from the Forest Plan 5-Year Review published in 1994. All practical means to avoid or minimize impacts from the Selected Alternative are being employed through features in the Selected Alternative, mitigation, protection, and rehabilitation. Alternative 2 employs the minimum tools necessary to accomplish the purpose and need for action. Alternative 2 adheres to the Prevention of Significant Deterioration Approach (PSD). This is consistent with the minimum tool principal, and the PSD approach described on page A-1 of the General Management Direction.

The Selected Alternative meets Forest Service policy and direction related to reconstruction of dams in designated wilderness (FSM 2326.1--8). This allows the use of motorized/mechanized equipment when one or more of the following conditions apply: 1) emergencies; 2) when impacts to wilderness and/or resources therein would be greater using non-motorized/non-mechanized methods (including duration of impacts); 3) when physically infeasible to use non-motorized methods; and, 4) when costs make the use of primitive methods infeasible. Condition 3 was found to apply following consideration of alternatives that used primarily primitive/non-motorized means. The technical standards required to meet dam safety goals could not be guaranteed using non-motorized methods.

Documentation regarding past authorizations for maintenance or repair work is on file at the Darby Ranger Station.

The use and occupancy of the private lands served by the dam are beyond the scope of the analysis.

Economic Analysis in the EA

The economics of the alternatives were not adequately analyzed. The document does not indicate how the costs of the alternatives were generated. The Environmental Consequences section of the document does not discuss the impacts to the water users under each of the alternatives, although the Alternatives section lists this as a major economic concern. Documentation of the economic benefits of the agricultural use of the land served by the dam is not provided (h, P5 and 6).

Response:

Alternative 2 will address the repair work on the dam, as well as providing a continuous supply of irrigation water for dependent ranches. Costs for Alternative 2 have been provided by the TCWC and are estimated to be $100,000. The cost for Alternative 3 was estimated to be $115,000 in the EA. Additional costs could be incurred in Alternative 3 because contingencies would need to be made if the draft horses were not able to complete the necessary work.

All of the action alternatives would provide a continuous supply of irrigation water. Additional cost information is contained in the project file.

Project Design Features

The location of the corral, helicopter staging area, and campsite area need to be mutually discussed and agreed upon prior to construction (f(1), P21).

Is it significantly safer to dig a pit to store the 50 gallons of fuel needed in Alternative C rather than carefully storing the fuel above ground in a heavy plastic liner? If dug, will the pit be refilled and revegetated? (i, P6).

How often will the wilderness ranger that will be monitoring the access and repair progress be visiting the site? How will they keep public information current? Will there be adequate coverage by wilderness rangers to monitor this activity as well as perform their usual duties? Could a crew of trained public volunteers perform the monitoring? (i, P7).

The "discussion of wilderness ethics and agreement on resource protection (for campsite management)" need to be reinforced by the Forest Service to ensure these agreements are not breached. The public needs to be involved in the development of this agreement (i, P8).

"The EA doesn't describe the number of helicopter trips under each alternative, or what kind of materials will be shuttled by air or over land", nor does it quantify "the number of pack animal trips necessary" (h, P9).

"The EA notes that work on the dam could cause knapweed to spread, but doesn't require any mitigation measures to deal with this concern" (h, P14).

"The only mention of monitoring is after-the-fact. There is no explanation of how monitoring will be done during the project to ensure the project is done in compliance with rules, regulations, and other safeguards" (h, P15).

Response:

An agreement for campsite management will be developed between the Forest Service and the TCWC. This agreement will identify campsite location, period of use, numbers of people and stock, stock containment, waste water, garbage, and human waste disposal. It will also address firewood gathering, campfires, and food storage. It will become part of the special use permit.

The pit for fuel storage will be more like a dike. It will be just large enough to hold up the liner around the drums. The drums will be held up on pallets, above ground.

A wilderness ranger and other Forest Service resource specialists will be monitoring the work to ensure compliance with laws and mitigation measures. Duration and frequency of monitoring will vary by the progress of the activity but should occur at least daily.

A helicopter will transport the heavy equipment and will fly within the Tin Cup Canyon. For smaller items and for resupplying the camp, a pack string will be used along the Tin Cup Trail. Approximately 60 helicopter flights will be needed over the two week operating period.

Knapweed is present along the trail and at the dam site. All equipment used on the project will be thoroughly steam cleaned and inspected for the removal of potential noxious weed seeds prior to their use on the project. Grass seeding along with monitoring for noxious weeds will continue at the dam site and along the trail, following completion of the project.

Fisheries

The EA states that westslope cutthroat trout populations in Tin Cup drainage will not be significantly affected so as to contribute to federal listing, "yet their populations are sufficiently diminished that a petition for listing is currently pending." Although the EA claims that there will be no impact to bull trout from this project, "a conference with the U.S. Fish and Wildlife Service on the impacts to bull trout is required by the recent opinion to list the Columbia River Basin population of bull trout as threatened" (i, P9).

Response:

The petition to list westslope cutthroat trout will have no effect on the determination made in the Biological Evaluation (BE). Until the species is formally proposed, potential impacts from projects will be assessed using the current BE protocol. Westslope cutthroat trout are abundant and widespread in the Tin Cup Creek drainage (EA, page 3-4, 3-5), and generally common-to-abundant in all fish-bearing streams on the Bitterroot National Forest. The petition-to-list primarily concerns populations east of the Continental Divide in the upper Missouri River drainage. These populations are in much worse shape than those on the Bitterroot National Forest.

In my opinion, at present, it will be difficult to justify listing westslope cutthroat trout in western Montana because of their wide distribution on national forest lands.

Bull trout were formally proposed for listing on June 13, 1997 (Federal Register), after the public release of the EA. A Biological Assessment (BA) has been completed for bull trout and is contained in the Project File. Because a "non-jeopardy" determination was made in the BA, conferencing with the U.S. Fish and Wildlife Service is not required. However, with your request, we will conduct informal conferencing with the U.S. Fish & Wildlife Service on the impacts to bull trout from this project.