United States Department of Agriculture | Forest Service | Santa Fe National Forest | 1474 Rodeo Road
Santa Fe, NM 87504-1689
FAX: (505) 438-7834
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File Code: 2550-3/6520
Route To:

Final Report

Date: July 25, 1997

Subject: Dome Fire Burned Area Emergency Rehabilitation, Final Report

To: Regional Forester, Region 3

As requested by your May 6, 1997 letter, the Santa Fe National Forest is providing you a final report covering the Dome Fire rehab.

The Santa Fe National Forest has completed all treatments developed, planned, and approved through the Burned Area Emergency Rehabilitation process as covered in FSH 2509.13. These efforts include seeding 4000 acres of the high intensity burn areas in 1996 and seeding aproximately 100 acres of concern in 1997, construction of log terraces over 150 acres, two loose rock check dams, closure of atleast 13 miles of travelways, and replacement of culverts and drainage structures on existing roads. Working with the regional office we have successfully implemented the planned treatments and successfully applied them to the land. The results after 15 months are very impressive with a stablizing watershed years ahead of the 3 to 5 year recovery schedule originally planned. This conclusion is further supported by a visit to the area by Russ LaFayette from the WO. The costs of the treatments are also much below authorized spending estimates giving the American public good results for their dollars. These savings were generated by doing much of the work with Forest assets.

Penny Luehring, of your staff, has been very supportive of our efforts through some difficult times and provided the Santa Fe with more of her time and expertise than we could expected. She should be commended for her professionalism and team work.

s/ LEONARD ATENCIO
Forest Supervisor

Enclosure

cc:

USDA-FOREST SERVICE Date of Report: July 25, 1997

BURNED-AREA REPORT
(Reference FSH 2509.13, Report FS-2500-8)

PART I - TYPE OF REQUEST

A. Type of Report

[ ] 1. Funding request for estimated EFFS-FW22 funds
[X] 2. Accomplishment Report
[ ] 3. No Treatment Recommendation

B. Type of Action

[ ] 1. Initial Request (Best estimate of funds needed to complete eligible rehabilitation measures)

[ ] 2. Interim Report
[ ] Updating the initial funding request based on more accurate site data and design analysis
[ ] Status of accomplishments to-date

[X] 3. Final report - following completion of work

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Dome B. Fire Number: NM SNF 026

C. State: New Mexico D. County: Sandoval
E. Region: R-03 F. Forest: Santa Fe
G. District: Jemez

H. Date Fire Started: 4/25/96 I. Date Fire Controlled: 5/20/96
J. Suppression Cost: $4,600,000 est

K. Fire Suppression Damages Repaired with EFFS-PF12 Funds:
1. Fireline waterbarred (miles) 4
2. Fireline seeded (miles) 2
3. Other (identify) _____

L. Watershed Number: 13020201038

M. NFS Acres Burned: 12,000 Total Acres Burned: 17000
Ownership type:
( )State ( )BLM ( )PVT (5000)NPS _____

N. Vegetation Types: Ponderosa Pine/Douglas Fir
Ponderosa Pine/Pinyon Pine
O. Dominant Soils: Mollic Eutroboralfs/Andic Ustochrepts/Typic Ustorthents frigid to mesic in the lower sites
P. Geologic Types: Andesite/rhyolite/pumice/tuff/basalt

Q. Miles of Stream Channels by Order or Class:
32 miles 6th 40 miles 7th _____ _____

R. Transportation System:
Trails: 40 (miles) Roads: 195 (miles)

PART III - WATERSHED CONDITION

A. Fire Intensity (Acres): 8,000 (low) 4,000 (moderate) 5,000 (high)

B. Water Repellant Soil (Acres): 1050

C. Soil Erosion Hazard Rating (Acres):
4000 (low) 6,000 (moderate) 7000 (high)

D. Erosion Potential: 136.9 tons/acre
E. Sediment Potential: 14,929 cu. yds/sq. mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period: 5 years.
B. Design Chance of Success: 85 percent.
C. Equivalent Design Recurrence Interval: 5 years.
D. Design Storm Duration: 24 hours.
E. Design Storm Magnitude: 2.2 inches.
F. Design Flow: 845 cfsm.
G. Estimated Reduction in Infiltration: 21 percent.
H. Adjusted Design Flow: 1022 cfsm.

PART V - SUMMARY OF ANALYSIS

A. Describe Emergency:
Human caused wildfire that threatened Los Alamos NM on the southeast side of the Jemez Mountains. The fire burned about 17,000 acres in the headwaters of Capulin Canyon and in the upper watershed of Alamo Canyon, two perennial tributaries to the Rio Grande. These streams enter the Rio Grande approximately 7 miles from fire boundary, which then drains into Cochiti Lake (6 miles downstream), a popular fishing and recreation lake. The fire also burned about 2,000 acres in the Dome Wilderness. Bandelier National Monument lies east and downstream of the Forest. Approximately 5000 acres burned in the Monument, primarily in the middle portions of the Alamo and Capulin watersheds. The potential exists for large amounts of sediments to enter the Rio Grande and Cochiti Lake.

Slopes within the burned area are predominantly moderately steep to steep, with smaller amounts of flat slopes on the ridge tops. The tuff and pumice derived soils are very productive but have very high erosion potentials due to the low bulk density of the the extrusive volcanic parent material.

The area contains critical habitat for Mexican spotted owl and also contains some known nesting sites. Preservation of this habitat is tied to protection of site productivity.

Both Bandelier and the adjacent National Forest contain extremely high densities of cultural resource sites. Increased flows and sediment pose a threat to archeological sites on NFS and adjacent Bandelier National Monument lands.

The area contains many miles of forest roads and trails. They provide access to Dome Lookout and the Dome wilderness area which are popular recreational areas, especially with the nearby town of Los Alamos. Increased water and concentrated flows threaten the transportation system within the fire area.

B. Emergency Treatment Objectives:

Minimize damage to site productivity.
Reduce sedimentation from the high intensity burn areas.
Prevent damage to cultural resources and the transportation system

C. Probability of Completing Treatment Prior to First Major Damage Producing Storm:

Land 90 % Channel _____ % Roads 75 % Other _____ %

D. Probability of Treatment Success

	<----Years after treatment-----> 1	3	5
Land	50	80	80
Channel			
Roads	90	90	90
Other			

E. Cost of No-Action (Including Loss): $ 2,815,600

F. Cost of Selected Alternative (Including Loss): $ 1,990,377

G. Skills Represented on Burned-Area Survey Team:

[x] Hydrology	[x] Soils	[ ] Geology	[x] Range
[x] Timber	[x] Wildlife	[ ] Fire Mgmt.	[x] Engineering
[ ] Contracting	[ ] Ecology	[ ] Research	[x] Archaeology
[x] Recreation	[x] National Park Service		[x] Biologic Survey

Team Leader: **Steve McWilliams**
Phone: **(505) 438-7854** DG Address: **R03F10A**

H. Treatment Narrative:
Describe the emergency treatments, where and how they will be applied, and what they are intended to do. This information helps to determine qualifying treatments for the appropriate funding authorities. For seeding treatments, include species, application rates and species selection rationale.

Note: Additions to the initial request are identified in BOLD typeface.

LAND TREATMENTS

Purpose: Seed where apropriate to minimize soil erosion by providing vegetative surface cover. This will help maintain site productivity, protect T&E habitat and reduce sediment delivery to streams and Cochiti Lake.

Treatment: Treat high intensity burn areas with seeding mix using helicopter application on NFS non-wilderness lands. (rate is 40 seeds per sqft PLS)

Popos/Psmeg Mix	38% Annual rye	15 seeds/sqft
	25% Slender Wheatgrass	10
	10% Sideoats Grama	4
	5% Little bluestem	2
	20% Mountain Brome	8

	2%	Purple Prairie Clover	1
Pipos/Pied Mix			
	38%	Annual Rye	15 seeds/sqft
	25%	Slender Wheatgrass	10
	25%	Sideoats Grama	10
	5%	Little Blue Stem	2
	5%	Indian Ricegrass	2
	2%	Purple Pairie Clover	1

NPS employees were a part of the team and aided in the selection of the mix since their lands adjoins and is below NFS lands. This mix is considered native to this part of the Santa Fe National Forest except for the annual rye. Experience with annual rye on other projects on the Forest indicates that the rye will sprout fast and provide quick cover, but not persist beyond a few years.

Purpose: To provide barriers to overland flow, store sediment and aid establishment of seeding treatments by improving microclimate and providing some protection from raindrop impact.

Treatment: Fall and secure 6-8" diameter burned logs on the contour in critical sites within the high intensity burn areas to control erosion on areas of productive soils. Falling of smaller material would also be done in critical areas where larger logs are not available for contour felling. These treatments would target specific critical sites such as deep, productive soils or above improvements such as roads and trails. Much of this work will be focused on the hillslopes above FR 142, the road to the Dome lookout. This treatment is being proposed in the firts interim request based on additional needs identified after the initial request was submitted.

ROAD DRAINAGE TREATMENTS

Purpose: Prevent materials from plugging culverts to reduce the hazard of channel blockage and road washouts into streams. Provide additional drainage features in system roads to allow for passage of increased flows.

Treatment: Improve existing culverts by either enlarging or replacement with larger diameter. Armor stream crossings and culvert outlets. Construct water bars or drainage dips in roads, as appropriate for designated road maintenance levels. Additional miles of travelways were surveyed and found in need of drainage work since the initial request was submitted.

MAY 1997 UPDATE

The Santa Fe NF and Bandelier National Monument commissioned an assessment of the Dome fire area following the storms of the summer, fall, and winter to determine if addition treatment would be needed to address existing site concerns and reduce impacts to down-stream values. This interim request reflects the findings of that assessment (BAER Winter Damage Survey 4/28-5/5 by Pete Stewart & Earl Ruby) and additional steps needed to protect treatments. This additional funding is needed due to original treatment failure as a result of high intensity and localized storms that occurred last fall. This request is within the one-year time frame that allows for additional funding for re-treatment. The proposed treatments are as follows:

LAND TREATMENTS

Purpose: To reduce overland flow by providing reductions in slope lengths.

Treatment: Construct contour log terraces on 100 acres within the high intensity burn areas to control overland runoff on potential flood source areas. Current conditions are 300+ stems per acre of various sized boles. This treatment would place approximately 40 6-8" diameter tree stems per acre on the ground parallel to the contour of the slope. Only burned trees would be used and the logs would be backfilled with soil on the upslope side to prevent water flow beneath the log. This treatment would target specific sites that were highlighted in the BAER Winter Damage Survey of the Dome fire.

Treatment: Hand seeding 100 acres will be done following the construction of the contour log terraces. Seed purchased will consist of certified weed free seed that meets the requirements of the New Mexico State Dept of Agriculture and will be tested for weed composition. Proposed seeding mix:

50% Annual Rye
25% Mountain Brome
25% Side oats grama

This will result in 25 seeds per sqft PLS and should be adequate based on the results of the seeding from 1996.

CHANNEL TREATMENTS

Purpose: Prevent downcutting of channel and provide partial storage of flood sediments in the upper headwaters portion of Capulin Canyon.

Treatment: Construct two loose rock check dams to stabilize the gully forming in Capulin Canyon. The fire exaserbated storm effects and insufficient recovery at specific locations was not adequate to prevent damaging overland flow. This additional treatment is required to prevent further resource damage through the loss of site productivity, reduction in water quality, and the deposition of sediments into drainages.

TREATMENT PROTECTION

Purpose: To protect especially sensitive treated areas from surface disturbance and destruction of treatments by humans.

Treatment: Construct .75 miles of fencing along gaps on major travel routes to restrict access and gates to close areas following treatments close to existing travelways.

PART VI - EMERGENCY REHABILITATION TREATMENTS AND SOURCE OF FUNDS BY LAND OWNERSHI

NOTE: Emergency rehabilitation is work done promptly following a wildfire and i not to solve watershed problems that existed prior to the wildfire.

Line Items	Units	Unit Cost $	NFS Lands: Number of Units	NFS Lands: WFSU-FW22 $	NFS Lands: Other $ ident.	Other Lands: Number of Units	Other Lands: Fed $ ident.	All Total $
A. LAND TREATMENTS								
Seeding: applica. (hand)	acre	78.10	100	7,810				7,810
1997 seed	acre	15.96	100	1,596				1,596
1996 applica. (air)	acre	1.50	4000	6,000				6.000*
1996 seed	acre	20.92	4000	83,677				83,677
					*est. charged to fire			
Contour log terrace 97	acre	214	70	15,005				15,005
Contour log terrace 96	acre	145	100	14,509				14,509
Protective Fence/Gates	job	4309	1	4,309				4,309
B. CHANNEL TREATMENTS								
Rock check dams 97	ea	3750	2	7,500				7,500
C. ROADS AND TRAILS								
road closures & culverts 96	job	44140	1	44,140				44,140
D. STRUCTURES								
E. BAER EVALUATION/ ADMINISTRATIVE SUPPORT/								
FY 96 support salary				25,136				25,136
consultation 97				6,015				6,015
travel 96				885				885
F. TOTALS				216,582				216,582

PART VII - APPROVALS

1. /s/ Leonard Atencio 7/25/97
Forest Supervisor (Signature)

2. /s/ _____ _____

Regional Forester (Signature) Date

MESSAGE SCAN FOR PENNY LUEHRING

To P.LUEHRING:R03A
CC J.PETERSON:R03F10D03A

From: Steve McWilliams:R03F10A
Postmark: Jul 25,97 9:12 AM Delivered: Jul 25,97 9:27 AM
Status: Certified
Subject: FINAL DOME REPORT

Comments:
The last actions agreed to on the Dome Fire Rehab have been completed. The final report has been reviewed both at the SO and at the District. Field inspections by FS and NMED personnel have concluded that the measures were appropriate, applied properly, and the results were excellent. We will be having a field trip to the Dome with members of the Bandelier National Monument staff on September 18, 1997 to conclude this effort. Penny, with the District's concurrance I would like to invite you and anyone you feel would like to accompany us on a trip to the Dome on the 18th of September.
Take Care

-------========X========-------

United States Department of Agriculture | Forest Service | Southwestern Region | 517 Gold Avenue SW.
Albuquerque, NM 87102-0084
FAX: (505) 842-3800
V/TTY: (505) 842-3292

File Code: 2520-3/6520 Date: May 8, 1996
Route To:

Subject: Dome Fire, Burned Area Emergency Rehabilitation

To: Forest Supervisor, Santa Fe National Forest

After receiving additional information on your request for Burned Area Emergency Rehabilitation funding, I am revising the authorization granted to you on May 6, 1996. Since aggregate replacement is not a qualifying treatment for emergency watershed rehabilitation, your spending authorization has been adjusted to reflect the removal of this item. You are authorized to spend up to $135,777 for the treatments shown in Part IV of the enclosed report.

/s/ John R. Kirkpatrick

JOHN R. KIRKPATRICK
Deputy Regional Forester

Enclosure

cc:
PDB

Printed on Recycled Paper
FS-6200-28b (12/93)

United States Department of Agriculture | Forest Service | Washington Office | 14th & Independence SW
P.O. Box 96090
Washington, DC 20090-6090

Reply to: 2520-3/6520 Date: May 23, 1996

Subject: Burned Area Emergency Rehabilitation - Dome Fire, Supplement
Santa Fe National Forest

To: Regional Forester, R-3

We have received your supplemental request for Burned Area Emergency Rehabilitation (BAER) funding to address additional treatment needs for the Dome Fire on the Santa Fe National Forest (enclosed).

We approve the portion of your supplemental request of $51,000 for the following treatments:

Land Treatments (log terraces and slashing)	$40,000
Roads and Trails (Surface drainage and culvert armoring)	11,000
	$51,000

The Fund/Activity codes for this action are WFSU-FW22.

We cannot approve your request for additional funds for archeological surveys as outlined in your letter and report. While the Santa Fe NF contains extensive and exceptional cultural resources, we feel the request exceeds the scope of BAER authority for the following reasons:

1. The second specific objective of BAER is: "2. Alleviate emergency watershed conditions following wildfire to help stabilize soil, control water, sediment, and debris movement, and to prevent threats to life, property, and other downstream values, both on-site and off-site." (emphasis added) (FSM 2523.02.2)

2. Part of your stated purpose, "Assess cultural property damage..." is definitely outside the scope of BAER authority.

3. An archeologist was part of the original BAER team and performed a reconnaissance survey necessary to meet the stated goals of BAER.

4. Specific treatments to limit surface erosion and channel damage have been approved by the Region. Implementation of the seeding portion of the treatments to limit surface soil erosion in intensely burned was completed on May 17. Additional log terraces and slash placement are designed to further limit erosion on these areas.

5. 100% survey of 3,200 acres is a level of intensity beyond the short-term emergency needs to prevent damage to resources on-site or downstream. BAER surveys are by design a reconnaissance or sample procedure to quickly respond to short timetables and urgency to perform treatments. While the assessment of fire damages on cultural resources is certainly recommended, and a very intensive survey may uncover a few watershed effects missed during the reconnaissance survey, regular program funds should be used to perform the more intense levels of survey.

6. Your request lumped three levels of survey costs into one unit cost, making the true cost of the three types of survey you propose impossible to evaluate.

This office is willing to entertain a revised proposal for further reconnaissance survey in specific landscapes in those watersheds where there exists a high liklihood of damage to cultural resources by soil loss or water movement not already addressed by currently prescribed treatments. Additional detail in both location and survey costs is required for this office to evaluate the acceptability of your request.

Send your final 2500-8 describing treatment units completed and their costs within 60 days after completing the treatments. If submitting additional supplemental requests, a brief status report of accomplishments to date will aid review of the request.

/s/ Arthur Bryant

ARTHUR BRYANT, Acting Director
Watershed and Air Management

Enclosure

cc:
P.Luehring:R03A
L.Gadt:W01C
A.Sartori:W01C
A.Wojtasek:W01C
C.Kirkpatrick:R03A
A.Carter:R03A

WSA:R.LAFAYETTE:ral:5/21/96
BAER:FY 96 BAER AUTHORIZATIONS:R3:DOME:SANTA FE NF:SUPP