

Date of Report: March 13, 2012

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

- ☐ 1. Funding request for estimated emergency stabilization funds
☒ 2. Accomplishment Report
☐ 3. No Treatment Recommendation

B. Type of Action

☐ 1. Initial Request (Best estimate of funds needed to complete eligible stabilization measures)

☒ 2. **Interim Report # 1 Items remain Bolded & Blue Font**

Interim Report # 2 Items are Bolded & Red Font

Interim Report #3 Items are Bolded & Green Font

Interim Report #4 Items are Bolded & Purple Font

☒ Updating the initial funding request based on more accurate site data or design analysis

☒ Status of accomplishments to date **Accomplishments to date are Bolded & Black Font (as of 10/01/11)**

☐ 3. Final Report (Following completion of work)

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Murphy Complex

B. Fire Number: AZ-CNF-011057

C. State: Arizona

D. County: Santa Cruz

E. Region: 3

F. Forest: Coronado

G. District: Nogales

H. Fire Incident Job Code: P3F4EJ

I. Date Fire Started: 5/30/11

J. Date Fire Contained: 6/14/11

K. Suppression Cost: \$5,692,555

L. Fire Suppression Damages Repaired with Suppression Funds

1. Fireline waterbarred (miles): 0

2. Fireline seeded (miles): 0

3. Other (identify): 0

M. Watershed Number: 1508020001, 150503005, 1505030104

N. Total Acres Burned: 68,079

NFS Acres(66,465) Other Federal () State (852) Private (762)

O. Vegetation Types: Desert and semi-desert grassland, Grass mix, Oak-juniper-pinyon mix

P. Dominant Soils: Lithic Ustochrepts, Aridic Ustochrepts, Fluventic Ustochrepts

Q. Geologic Types: Rhyolite, Alluvium

R. Miles of Stream Channels by Order or Class: first order 389 miles, second order 27 miles

S. Transportation System

Trails: 6 miles Roads: 90.2 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 51,107 (low) 15,284 (moderate) 1688 (high)

B. Water-Repellent Soil (acres): 1688

C. Soil Erosion Hazard Rating (acres):
51107 (low) 15284 (moderate) 1688 (high)

D. Erosion Potential: 3.76 tons/acre

E. Sediment Potential: 1605 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 3-5

B. Design Chance of Success, (percent): 80

C. Equivalent Design Recurrence Interval, (years): 25

D. Design Storm Duration, (hours): 1

E. Design Storm Magnitude, (inches):

F. Design Flow, (cubic feet / second/ square mile): 180 (Sycamore Canyon WS)

G. Estimated Reduction in Infiltration, (percent): 27%

H. Adjusted Design Flow, (cfs per square mile): 229 (Sycamore Canyon WS)

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

1. Human Life and Safety – John Hayes of Santa Cruz County Flood Control District and Floodplain Administration has been contacted by the team. He is aware of the potential for flash floods, sediment delivery and debris in channels on the east side of the district. Mr. Hayes work with private landowners, the sand and gravel operation, and the Calabasas School to let them know of the flooding conditions expected following the first few rain fall events. At risk are the Lowell Ranch, Commings Ranch, and Kane Ranch and all buildings at these locations are on terraces approximately 4 feet or higher above the active channel. The Rock Corral Ranch lower and closer to the channel, however, it is along a small tributary that was predominantly unburned, or had low severity. The team did not evaluate the Aliso Ranch, Mr. Hayes will contact them. Mr. Hayes will work with the school to develop an evacuation plan as the school has flooded in the past. The property in the Walker Canyon area may be at risk and Mr. Hayes has been asked to contact property owners in this area.

Bridges –

Agua Fria Bridge is well outside of the fire area on private land. The bridge appears to have ample clearance for large flow events. The channel is relatively free from woody debris.

Sycamore Bridge is on FS. The riparian area in the vicinity of the bridge did not burn. Much of the channel and tributaries were unburned or low severity. It appears the bridge can withstand relatively large flood events. There was no accumulative of woody debris in the channels.

Peck Canyon Bridges are well outside the fire on private land. These bridges have endured several large flow events.

Rock Corral Culverts are well outside the fire on private land. These culverts have endured several large flow events.

El Paso Natural Gas Pipeline –

The pipeline crosses several canyon bottoms and there is the potential for the pipeline to wash out and interrupt service. The EPNG should be notified of the potential for flooding and scouring so they can conduct an assessment of pipeline safety.

Forest Service roads

FS roads exist throughout the burn area and there is a risk to the roads and crossings from increased runoff, associated sediment.

Risk Assessment – Threats to Forest Roads

Probability of Damage or Loss: Very Likely – multiple crossings and parallel sections in the floodplain

Magnitude of Consequence: Major – water could channel down road with possible wash outs and there is a potential for crossings to be damaged or destroyed.

Risk Level: High– Implement Storm Inspection and Response.

2. Recreation Resources

Pena Blanca Lake. The lake is a popular recreation area. The lake is threatened by sedimentation from the burned area, hazard trees in the vicinity of visitor facilities.

Atascosa Lookout and Trail. Although not included in the National Register listing for Atascosa Lookout, the trail to the lookout was evidently built by the CCC and is considered to be a related historic feature.

3. Natural Resources

Soils. Most of the area burned with low to moderate severity. Approximately 1600 acres burned with high severity around the Atascosa Lookout. These polygons are interspersed with moderate severity areas and in two different watersheds. Accelerated soil erosion is expected after the first few rainfall events. The low and moderate burn severity areas are expected to have some soil movement during the first few events, and vegetation on these sites is expected to begin recovery immediately, and fully recover within approximately 3 years.

Invasive Plants. The burned areas and travel corridors are at an elevated risk for invasion by invasive plant species. Species of particular concern are: buffelgrass, Lehmann's lovegrass, and tamarisk.

TES Species.

Frogs. Loss of Chiricahua leopard frog (threatened) and lowland leopard frog (FS sensitive) habitat in various tanks, ponds and springs. Loss of Sonora chub (threatened) designated critical habitat in Sycamore Canyon and in Penasco Canyon. This is the only US population of this species. Several tanks serve as habitat for Chiricahua and lowland leopard frogs: Summit, Thumb Butte, Ronquillo Pond (Pena Blanca Spring) and Pena Blanca Lake are proposed critical habitat for the Chiricahua leopard frog. Yank, Summit, Lookout, Bear Valley Ranch, Tinker, Bellota, and Mesa Tanks; as well as Waterfall Spring, Ronquillo Pond and Pena Blanca Lake are occupied by Chiricahua and/or lowland leopard frogs and warrant protection.

MSO. There are designated Mexican Spotted Owl habitat in the burned area.

Jaguar. There is potential jaguar habitat in the area. There have been several observations of jaguars in the area.

Alamo Canyon Sediment Trap. This sediment trap is upstream from occupied leopard frog habitats at Pena Blanca Lake and Pena Blanca Spring. The sediment trap was installed to reduce sediment going into the lake as part of a CERCLA project to reduce mercury from entering the Lake. It also services to protect recreation resources and wildlife habitat.

4. Cultural Resources

The Atascosa Lookout house (AR03-05-02-126), the primary feature at a site that is listed on the National Register of Historic Places, was destroyed during the Murphy Complex wildfire. Several other historical features comprise the lookout complex, and a few of these were damaged as well, although far less severely than the cabin. The lookout house was built by the Forest Service in 1930 based on the standard L-4 lookout house plans. The majority of the ancillary features, mainly of rock and concrete masonry, and the trail were evidently installed by the CCC a few years later.

Lookout House. The lookout house, or cabin, was nearly completely consumed by fire. It appears that the structure collapsed in on itself and burned at a high intensity. Melted glass was observed. The cabin sat upon a stone masonry foundation, and several of the stones exhibit spalling on their interior sides. The tree stump within the foundation's west wall that supported the cistern's retaining wall was consumed by fire, creating a void in the foundation. The wood-burning stove that was in the structure's northwest corner now lies below the level where the wood floor existed. The foundation is now filled with debris from the recently reconstructed roof, charcoal, two bed frames, melted remnants of the windows, and many nails and other fasteners.

Upper Cistern. The upper cistern was largely unaffected by the fire, but its structural integrity has been compromised. A retaining wall of dry-laid stone at the base of the feature was tied into the lookout cabin's foundation by a length of thick wire attached to an old stump incorporated in the foundation. The stump was consumed by fire, and the wire is now loose and provides no support to the retaining wall. The masonry façade of the cistern has a previously existing crack, but further damage to the retaining wall could exacerbate the damage.

Lower Cistern. The cement cap on the lower cistern appears to have been damaged during the fire. Previous examinations of the cistern found it to be intact, but about one-third of the cement cover is badly damaged. This could pose a hazard to the public and/or wildlife, as well as hasten damage of the feature.

Outhouse. The outhouse has been in the process of reconstruction. The wooden structure that had fallen into disrepair was re-built in the 1970s or 1980s. The stone masonry foundation was partially reconstructed and was not damaged by the fire.

Incinerator. This feature primarily consists of a stone masonry structure with a concrete cover and a metal hatch. The feature was not damaged by fire.

Underground Storage. This feature consists of dry stacked masonry walls built into the hillside. The feature has been devoid of any roof or wooden elements for many years. It was not affected by the fire.

Risks:

Using the BAER Risk Assessment Table in exhibit 02, FSM Interim directive 2520-2010-1, the following assessment is made.

	Probability	Magnitude	Risk	BAER EMERGENCY?
Human Life and Safety				
Forest Trails	Very Likely	Major	Very High	Yes. Hazard trees (burned snags) and the risk of falling rocks present a significant risk to human life and safety along many trail segments.
Forest Roads	Very Likely	Major	High	Yes. Road 39 has culverts and fords that are subject to wash outs and there is a potential for crossings to be damaged or destroyed.
Private Homes	Likely	Moderate	High	Yes. Three private landowners have homes constructed in close proximity to drainages where bank erosion may cause the channel to encroach on structures.
Campgrounds	Possible	Major	High	Yes. White Rock CG is located in a potential flood zone below the confluence of Alamo and Pena Blanca Creeks. These are major drainages of the Murphy, Bull and

	Probability	Magnitude	Risk	BAER EMERGENCY?
				Pena fires.
Property				
Agua Fria, Peck Canyon Bridges; Rock Corral culverts	Unlikely	Major	Intermediate	Yes. These bridges and culverts are the access between Nogales, Rio Rico, Tumacacori, Tubac, and Tucson. They have endured many flood events.
Sycamore Bridge	Unlikely	Moderate	Low	No. This bridge is the access to Ruby and Arivaca. There are other routes. This location was a low water ford for many years.
El Paso Natural Gas line	Unlikely	Major	Intermediate	No. This pipeline is an important part of the infrastructure for the area. The El Paso Natural Gas Co. should be notified of the potential for flooding and scouring so they can conduct an assessment of pipeline safety
Recreation				
Pena Blanca Lake.	Possible	Major	Intermediate	Yes. The lake is a popular recreation area. The lake is threatened by sedimentation from the burned area, hazard trees in the vicinity of visitor facilities
Atascosa Lookout and Trail.	Possible	Major	High	Yes. A popular recreation hike destination. Damage to the lookout complex and trees along the trail make this an unsafe situation for the public.
Natural Resources				
Soils.	Possible	Major	High	Most the area burned with low to moderate severity. Approx 1600 acres burned with high severity around Atascosa Lookout. These polygons are interspersed with moderate severity areas and in two different watersheds. Accelerated soil erosion is expected after the first few rainfall events. The low and moderate burn severity areas are expected to have some soil movement during the first few events, and vegetation on these sites is expected to begin recovery immediately, and fully recover within approximately 3 years.
Invasive Plants.	Unlikely	Major	Intermediate	Yes. The burned areas and travel corridors are at an elevated risk for invasion by invasive plant species. Species

	Probability	Magnitude	Risk	BAER EMERGENCY?
				of particular concern are: buffelgrass and tamarisk
TES Species. <i>Frogs and fish.</i>	Possible	Major	High	Yes. Loss of Chiricahua leopard frog (threatened) habitat in various tanks, ponds and springs. Loss of Sonora chub (threatened) designated critical habitat in Sycamore Canyon and in Penasco Canyon.

B. Emergency Treatment Objectives:

Mitigate effects of changed post-fire watershed response on forest roads and drainages.
Mitigate effects of changed post-fire watershed response on long-term soil productivity and hydrologic function.
Mitigate effects of changed post-fire watershed response on recreation facilities and infrastructure.
Mitigate effects of changed post-fire watershed response on historic properties and cultural resources.
Mitigate effects of changed post-fire watershed response on adjacent property owners.
Mitigate effects of changed post-fire watershed response on the spread of invasive plant species.
Mitigate effects of wildfire on visitor safety.

C. Probability of Completing Treatment Prior to Damaging Storm or Event:

Land % Channel % Roads/Trails **70** % Protection/Safety **90** %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land			
Channel			
Roads/Trails	70	90	90
Protection/Safety	90	90	90

E. Cost of No-Action (Including Loss):_ \$1,038,600

F. Cost of Selected Alternative (Including Loss):_ \$276,590

G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input type="checkbox"/> Geology	<input checked="" type="checkbox"/> Range
<input type="checkbox"/> Forestry	<input checked="" type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input type="checkbox"/> Engineering
<input type="checkbox"/> Contracting	<input checked="" type="checkbox"/> Ecology	<input checked="" type="checkbox"/> Botany	<input checked="" type="checkbox"/> Archaeology
<input type="checkbox"/> Fisheries	<input type="checkbox"/> Research	<input type="checkbox"/> Landscape Arch	<input checked="" type="checkbox"/> GIS

Team Leader: Robert Lefevre

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.)

Land Treatments:Noxious Weed Detection Surveys:

Surveys will begin in 2011 after the monsoon season, during the resprouting and flowering periods of weed species. Because of differences in flowering times for all potential species, two visits may be required during the growing season. Completion of surveys in riparian areas, dozerlines, and known pre-existing invasive and sensitive plant populations would be the first priority. The fire area is in close proximity to the Pajarita Wilderness and it is essential to target the known invasive species populations that are along Interstate 19 that is used to access the wilderness area and was a main access to the fire area during suppression. Interim #1 used data copied from a different fire specialist report. Correct costs are itemized here. The total needed for Noxious weed detection surveys is \$12,724, or \$8,024 more than identified in Interim # 1.

Corrected Noxious Weed Detection Survey Costs:

Item	Unit	Unit Cost	# of Units	Cost
GS-11 Botanist	Days	\$380	6	\$2,280
2 GS-09 Botanists	Days	\$250	24	\$6,000
Per diem and lodging	Days	\$135	24	\$3,240
Vehicle	Miles	\$0.43	2800	\$1,204
Total Cost				\$12,724

This work is currently ongoing by a contractor. The weed detection surveys started in late August. Sharon Biedenbender, Invasive Species Coordinator, is COR.

A spring survey will be necessary. Estimated cost of this survey is \$12,500.

Approximately 20 acres of Johnson grass has been located at Pena Blanca Lake. This is considered a new population increase post-fire. Initial estimate for treatment with herbicide in spring of 2012 is approximately \$4,000 (Labor \$170/acre, \$500-\$600 herbicide - ~\$3400+\$600 = \$4,000)

Pena Blanca Lake. Close the area until it is determined to be safe. This area needs additional assessment of facilities and trails. The dock burned and sank. It has been retrieved and portions may be able to be salvaged. District staff are planning to conduct additional surveys.

Place wattles along the bank above the sidewalk between the road and in the Lower Thumb Rock area. Wattles may also be needed along the bank on the east side of Lower Thumb Rock.

Remove hazard trees from riparian area at Lower Thumb Rock that could potentially fall into the sidewalk or picnic area. Leave large, non-hazardous trees for cavity nesting birds.

Remove small dead trees, downed trees, and dead brush and limb up surviving trees around the lake and in the picnic and camping areas to make the recreation area safer for the public when the closure is lifted. If in doubt as to whether a tree will recover it can be left standing and removed later if needed as long as it is not a hazard. Some dead large trees should be left for wildlife habitat.

***See “Human Life and Resource Protection” under “Protection/Safety Treatments” section for treatments regarding Pena Blanca Lake.**

As of October 1, 2011 all treatments around Pena Blanca Lake have been completed, see attached report “Accomplishments for the Murphy Complex BAER.”

Chiricahua leopard frog:

Two small inlets at Pena Blanca Lake were identified as critical habitat for the Chiricahua Leopard frog, which is a Threatened and Endangered Species. The hill slopes above these two critical habitats are denude of vegetation. These hill slopes have a high erosion rating and have the potential to be a direct source of sediment into the critical habitat.

The BAER team recommends seeding and mulching with agricultural straw to stabilize the hill slope directly above the inlet. Also, place a compost filter sock below each site to catch additional sediment that might directly enter the inlet.

Hill slope Stabilization at Pena Blanca Lake Costs:

Item	Unit	Unit Cost	# of Units	Cost
Type 2 Crew	Day	\$5,000	5	\$25,000
Mileage	Mile	\$1.00	300	\$300
Biologist GS-11	Day	\$380	1	\$380
Mileage	Mile	\$0.35	60	\$21
Ag Straw	Bale	\$15	300	\$4,500
Seed	Acre	\$35	5	\$175
Miscellaneous Materials – filter sock, stakes, etc.	Linear Foot	\$1.50	2000	\$3,000
Total Cost				\$33,376

All hill slope treatments around Pena Blanca Lake have been completed as of October 1, 2011.

Ramanote Canyon. District staff observed that Ramanote Canyon burned with higher severity than other areas. Additional work is needed to determine if action must be taken.

Penasco Canyon/Summit Motorway Areas. Some of these areas have loamy soils and were completely burned. Additional work is needed to determine if action must be taken.

Water Sources –

Several stock tanks may need sediment traps in order to maintain water for livestock and wildlife. Tanks for treatment include: Split, H6, Summit, coyote, Negro and Rock Dam. District personnel are continuing to evaluate priority tanks and would like to treat a total of 15-20 in order to maintain sufficient water.

Tanks that provide habitat and proposed critical habitat for the Chiricahua leopard frog and the lowland leopard frog should be treated to reduce sediment. Sediment traps above the following tanks/ponds are recommended: Thumb Butte, Ronquillo Pond, Yank, Lookout, Bear Valley Ranch, Tinker, Bellota, and Mesa Tanks.

There were a number of stock tanks originally assessed for treatment. Only some of these treatments were needed (see attached report “Accomplishments for the Murphy Complex BAER”). As of October 1, 2011 all these treatments have been completed.

Alamo Canyon Sediment Trap. Remove as much sediment as possible from the gabion pre-monsoon. Remove new accumulated sediment after each substantial rainfall event. If there are structures that can be placed between the sediment trap and Ronquillo Pond to keep the water from going around the gabion and washing through the pond these should be constructed.

Possibly a filter sock (See this website for info:

http://www.files.georgia.gov/SWCC/Files/GSWCC_Compost_Filter_Sock_Specs.pdf) or concrete barriers could be used.

The treatment recommendation for the Alamo Canyon sediment traps associated with Ronquillo pond and Pena Blanca Lake is to clean them prior to the monsoon season. The objective is to remove pre-loaded material from the sediment traps so they are functioning at maximum capacity when the monsoon season hits.

Cleaning Ronquillo Pond Sediment Traps Costs:

Item	Unit	Unit Cost	# of Units	Cost
Front End Loader	Day	\$2750	1	\$2750
GS-11 Biologist	Day	\$387	1	\$387
Installation of Filter Sock – crew and supplies	Each	\$3,000	1	\$3,000
Total				\$6137

The district and engineer on the BAER implementation team deemed this treatment to be unnesscary. As of October 1, 2011 all these treatments have been completed.

Wells –

Peck Canyon and Ramanote wells are located in the channels. These belong to the United States. Structures such as jersey barriers fortified with rammed earth are recommended.

The district and engineer on the BAER implementation team deemed this treatment to be unnesscary at one of the wells. As of October 1, 2011 all these treatments have been completed (see attached report “Accomplishments for the Murphy Complex BAER,” and notes from Lance Haubrick BEAR Implementation Engineering)

Seeding – Additional assessment is being conducted to determine if seeding is appropriate.

Seeding – There was supposed to be an additional assessment completed on whether or not seeding was needed around Pena Blanca Lake. I am not sure what happened with this and cannot find any record. The district/forest may need to complete this analysis. If it was completed the first implementation leader, Paul Guarnaccia ((530)208-8007) may

have information on this assessment and whether or not it was completed. I have not been able to get a hold of Paul. It is also my opinion that this seeding is not needed.

Channel Treatments:

No channel treatments are planned at this time.

Roads and Trail Treatments:

Atascosa Trail. If work is planned for the lookout area, remove hazard trees and trees blocking the trail. Monitor the trail for damage from erosion following the summer rains and repair the trail as necessary. Replace mileage marker signs along the trail.*

***See “Atascosa Lookout” under “Protection/Safety Treatment” section.**

As of October 1, 2011 all trail treatments have been completed (see attached report “Accomplishments for the Murphy Complex BAER”)

Forest Roads. Install warning signs to alert forest users of hazards such as flash floods. Assessment of culverts is continuing.

Road Treatments:

Storm Inspection and Response: Roads within the Murphy Fire contain drainage structures that cross streams located in watersheds that have a low to moderate burn severity. These streams now have the potential for increased runoff and debris flows. These increases in flows pose a threat to the existing crossings which may result in plugging drainage structures or exceeding their maximum flow capacity. If these flows plug drainage structures the result could be massive erosion and debris torrents further down the drainage due to the failure.

Also, there is an immediate and future threat to travelers along these roads within the burned area due to the increased potential for rolling and falling rock from burned slopes and increased potential for flash floods and mudflows. With the loss of vegetation normal storm frequencies and magnitudes can more easily initiate rill and gully erosion on the slopes and it is likely that this runoff will cover the roads or cause washouts. These events make for hazardous access and put the safety of users at risk.

The patrols are used to identify those road problems such as plugged culverts and washed out roads and to clear, clean, and/or block those roads that are or have received damage. The storm patrollers shall have access to at least a backhoe and dump truck that can be used when a drainage culvert is plugged or soon to be plugged and to repair any road receiving severe surface erosion.

Work should be performed in the morning and early afternoon. Leave drainages when chance of rain is moderate or higher. Store equipment and materials out of flood plains and where chance of loss is low.

Line Item	UNIT	UNIT COST	# OF UNITS	COST
Storm Patrol	Days	\$3,500	5	\$17,500
Travel Perdiem	Days	\$135	5	\$675
Total Cost				\$18,175

Storm patrol is ongoing and is expected to continue through winter.

Forest Trails. Install warning signs to alert forest users of hazards such as flash floods and falling debris.

Trail Treatments:

There are approximately 2 miles of trail in moderate and high burn severity in need of tread stabilization followed by administrative closure. Treatment consists of installing or improving water control features (dips, low water crossings etc) in the trail where needed to protect the tread and reduce stream capture potential; minor amounts of hazard tree removal exist for safety of crews performing the work. Despite recommendation for administrative closure to alleviate life and safety hazards to the public, trail stabilization is recommended to prevent loss of significant portions of the trail as infrastructure.

Trail Treatment Costs:

Item	Unit	Unit Cost	# of Units	Cost
1 WG-7 Rec. Tech for 2 days to lead Type II Crew	Days	\$300	2	\$600
1 – Type II Crew	Days	\$5,000	3	\$15,000
Vehicle – Implementation	Miles	\$0.53	6,000	\$3,180
Hazard Tree Removal – 1 Engine Crew	Day	\$3,000	2	\$6,000
Total Cost				\$24,780

As of October 1, 2011 all trail treatments have been completed (see attached report “Accomplishments for the Murphy Complex BAER”)

Protection/Safety Treatments:

Atascosa Lookout. Despite the extensive damage to the lookout cabin, the location is expected to continue to attract future visits from the public. Furthermore, several other features associated with the lookout sustained only minor damage and maintain sufficient integrity to convey the historical significance of the lookout. The following recommendations are intended to insure public safety and preserve the remaining components of the site:

- Remove the burned debris from within the cabin’s foundation (collect the wood stove).
- Cover the voids in the lookout house’s foundation.
- Provide new anchoring for the retaining wall below the upper cistern and monitor the existing crack on the concrete façade.
- Cover the lower cistern.

Because of the damage to the Atascosa Lookout, a site on the National Register of Historic Places, as well as a popular NFS trail used by the public to access the lookout, the BAER team recommends treatment. The Atascosa Lookout area needs stabilizing to prevent hazardous material from entering and degrading the watershed. The BAER team recommends using Compost filter socks, a three-dimensional tubular sediment control and storm water filtration device, to be installed down slope of any disturbed area requiring erosion and sediment control and filtration of soluble pollutants from runoff for the Atascosa Lookout area, or straw wattles. The WG-7 should prepare any trails work with the Archeologist and line out the crew for trails work for the historical trail leading to the Atascosa Lookout.

Atascosa Lookout Costs:

Item	Unit	Unit Cost	# of Units	Cost
------	------	-----------	------------	------

1 – Engine Crew for implementation for Atascosa Lookout	Days	\$3,000	1	\$3000
Vehicle – Implementation	Miles	\$0.55	300	\$165
Materials – filter sock, stakes, tools, etc.	Each	\$3,000	1	\$3,000
GS-11 Archeologist	Days	\$380	2	\$760
			Total Cost	\$6,925

As of October 1, 2011 all treatments around Atascosa Lookout have been completed (see attached report “Accomplishments for the Murphy Complex BAER”)

Interagency Coordinator:

Throughout the monsoon season and the following winter, the Forest should continue coordinating with cooperating agencies, relaying the BAER Assessment findings, and providing input as rain events are predicted.

Interagency Coordinator Costs:

Line Item	UNIT	UNIT COST	# OF UNITS	COST
Personnel Cost	Days	\$400	5	\$2,000
Travel Per diem	Days	\$600	2	\$1,200
Total Cost				\$3,200

Interagency coordination started in Mid-July and is complete for now.

I. Monitoring Narrative:

(Describe the monitoring needs, what treatments will be monitored, how they will be monitored, and when monitoring will occur. A detailed monitoring plan must be submitted as a separate document to the Regional BAER coordinator.)

The monitoring plan is being developed.

Treatment Effectiveness Monitoring: Utilizing the two GS- 7 FPO's who will be patrolling the areas to enforce the Forest Closure, they will also be conducting treatment effectiveness monitoring for BAER treatments to see what may need corrective action after any damaging storms during monsoon season. The patrols will check signs, information boards, temporary fencing, gate closures. Monitor conditions and initiate corrective action, when safe to do so, after storm events, including BAER trail treatments. The # of Units, 10, indicate the average number of storms throughout the monsoon season. An interim funding request would be submitted if additional treatments are needed.

Treatment Effectiveness Monitoring Costs:

Item	Unit	Unit Cost	# of Units	Cost
Post-storm event Monitoring	Days	\$440	10	\$4400

Total Cost				\$4400

The treatment effectiveness monitoring has not yet been started as of October 1, 2011.

The costs in Part VI have been modified to actual costs as of October 14, 2011 based on the accomplishment report of July 21, 2011 (attached). This action was taken to demonstrate the savings available for redirection.

Part VI – Emergency Stabilization Treatments and Source of Funds

Interim # 4

Install sediment traps at tanks	ea	5000	0	\$0	\$0		\$0		\$0	\$0
Clean Alamo Canyon Sediment Trap	ea	579	1	\$579	\$0		\$0		\$0	\$579
Well Protection	ea	3400	1	\$3,400	\$0		\$0		\$0	\$3,400
straw wattles		1.4	1600	\$2,240	\$0		\$0		\$0	\$2,240
Hill Slope Stabilization	Lump Sum	33376	1	\$33,376	\$0		\$0		\$0	\$33,376
Cleaning Ronquillo Pond Sediment Traps	Lump Sum	1486	1	\$1,486	\$0		\$0		\$0	\$1,486
<i>Subtotal Land Treatments</i>				\$80,305	\$0		\$0		\$0	\$53,805
B. Channel Treatments										
C. Road and Trails										
Roads Treatment (Storm Patrol)	Lump S	18175	1	\$18,175						\$18,175
Trail Treatment (stabilization)	Lump Sum	2831	1	\$2,831	\$0		\$0		\$0	\$2,831
<i>Subtotal Road & Trails</i>				\$21,006	\$0		\$0		\$0	\$21,006
D. Protection/Safety										
Install hazard signs for roads	ea	350	2	\$700	\$0		\$0		\$0	\$700
Install hazard signs for trails	ea	350	18	\$6,300	\$0		\$0		\$0	\$6,300
Install 'area closed' signs	ea	100	0	\$0	\$0		\$0		\$0	\$0
Atascosa Lookout Treatment	Lump Sum	1018	1	\$6,925	\$0		\$0		\$0	\$6,925
Interagency Coordinator	Lump Sum	3200	1	\$3,200	\$0		\$0		\$0	\$3,200
<i>Subtotal Structures</i>				\$17,125	\$0		\$0		\$0	\$17,125
E. BAER Evaluation										
Assessment				\$51,673			\$0		\$0	\$51,673
<i>Subtotal Evaluation</i>				\$51,673	\$0		\$0		\$0	\$51,673
F. Monitoring										
Invasive species				\$0	\$0		\$0		\$0	\$0
Treatment Effectivness Monitoring	Lump Sum	4400	1	\$4,400	\$0		\$0		\$0	\$4,400
<i>Subtotal Monitoring</i>				\$4,400	\$0		\$0		\$0	\$4,400
G. Totals				\$122,836	\$0		\$0		\$0	\$96,336
Previously approved				\$155,507						
This Request				\$0						
Cost Savings Realized				-\$27,332						
Total savings redirected to land treatments				\$26,500						
Total Requested to Date				-\$832						

PART VII - APPROVALS

- | | | |
|----|-------------------------------------------------------------|--------------------------|
| 1. | <u>/s/ Jim Upchurch</u>
Forest Supervisor (signature) | <u>3/13/2012</u>
Date |
| 2. | <u>/s/ C.L. Newman, Jr</u>
Regional Forester (signature) | <u>3-20-2012</u>
Date |

Accomplishments for the Murphy Complex BAER
(As Of July 21, 2011)
Nogales Ranger District
Coronado National Forest



Paul Guarnaccia Team Leader
7/21/2011

Introduction

Using the West Coronado BAER Assessment team's information (documented in the specialist's reports for the Murphy Complex and the approved Initial and Interim #1 FS-2500-8 reports) the implementation treatments for the Murphy Complex began by ground checking the project areas and cataloging details of each site. Each site was evaluated looking at current conditions, terrain, access (roads and trails), and other factors that can impact each treatment area. Once all site information was collected and compiled, treatment options were formulated utilizing local knowledge of the District staff of the burn area. A quick feasibility evaluation for being able to install effective treatments on the ground was also completed, and a plan of action was created based upon the spending authority in the FS-2500-8 Interim #1. The following are the treatments that were installed on the Murphy Complex for immediate post fire treatments.

Noxious Weed Detection Surveys

Post monsoon detection surveys for noxious weeds needs to be developed and put in place. Utilize local District staff that is charged with noxious weed work.

There is a total of \$4700 dollars that can be applied toward these surveys. See Interim #1 for a cost break down of this number.

Cleaning Alamo Canyon Sediment Traps

The two sediment traps were identified by the assessment team to be treated by being cleaned out to recharge them to maximum potential. The traps are located just to the south of the 39 road (Pena Blanca wash and Alamo Canyon wash. Each trap was evaluated as to the depth to remove the accumulated sediment, where to place this excess sediment, and mass calculations figured for what was going to need to be removed. A rubber tired front end loader was selected as the best piece of machinery to be used in this work. This was chosen for its capability and speed, making it the best piece of equipment to effectively treat each structure prior to a monsoon event.

This treatment was not completed based upon the decision of the District Ranger and Forest Roads Engineer. There are concerns about the effects of this treatment down channel to the 39 road. The roads proximity to the existing down channel area is being impacted by the effects of both sediment traps up channel. The road is currently starting to be undercut in 1 location, and the Forest Roads Engineer felt that recharging the sediment traps will increase this under cutting to a point that it closes the road. A longer term permanent solution will need to be devised to remedy this issue. There is also some scouring happening at the low water crossing on the down channel side of the crossing on the 39 road. This again will need to be addressed at a forest and district level on how it is treated to keep the road serviceable.

Out of the total of \$5000.00 that was allowed for this treatment, \$579 dollars have been spent in the planning and evaluation for this treatment site. No implantation costs have been spent to date.

Well Protection

There are two wells that were identified by the assessment team that were in need of treatment, Ramanote Well and Peck Well. There was a concern that increased flows in each canyon where each well is located could impact each well, and possibly rendering them unserviceable in supplying water. Upon a detailed inspection by the engineer attached to the BAER implementation team, only Peck well was deemed in need of treatment to better protect the well. See appendix #1 for the rational for no treatment at Ramanote well at the end of this document.

At Peck well, an embankment that was created long ago to protect the well on a secondary channel was failing at a critical point. It was determined that any increase water flow would further degrade this critical point, and eventually allow water and sediment to impact the well. A treatment of rebuilding the embankment at this point to match the rest of the embankment wall was implemented. Class III and larger riprap was installed on this rebuilt area to further strengthen it. The channel was out sloped away as best as possible from this rebuild section, as well as widened by 4 feet to reduce any velocity that could occur from increased water flow. In the main Peck Canyon channel adjacent to the well, a class III and larger riprap wall was created to add shielding to the structure of the actual well. All materials for both treatments were collected from on site.

Both treatments were carried out under the Coronado Roads Maintenance IDIQ contract, with Trinity Southwest Contractors as the chosen contractor to do the work. A front end loader and backhoe were utilized in this treatment. Both pieces of equipment were chosen due to their mobility in accessing the well site, and ability to handle the road into the area. The work was completed in one day.

Out of the total of \$6800 allowed for this treatment, \$3629 dollars have been spent in the planning, evaluation, and treatment of this site.



Straw Wattles

Straw wattles were purchased for various treatment sites. A total of 2000 linear feet of wattle was ordered, along with 873 wooden stakes. Due to the rocky ground around Ronquillo Pond, and in places where wattle was installed at Pena Blanca Lake, rebar was used to stake the wattle in place. Rebar caps are being used as a safety measure to mitigate any issues with the general public that uses these areas.

Out of the total of \$2240 allowed for this acquiring wattle, \$1948 dollars have been spent purchasing all materials.

Hill slope Stabilization (at Pena Blanca Lake)

It was identified in the assessment that the hill slope area around the recreation areas of Pena Blanca Lake were at risk due to the burning off of the existing vegetation during the fire. The two inlets on the south end of the lake (Lower Thumb and old boat ramp areas) were identified specifically for Chiricahua leopard frog habitat. The 1st treatment installed in these areas was a watering system, with the intent to provide early and available water for vegetation to resprout. One watering system was at the lower boat ramp area, and one was at the upper cap area just above the new boat ramp and the Lower Thumb area. Both watering systems operated for 3 days prior to watering being ordered suspended.

The next treatment installed was straw wattles. They were installed along the main road in areas that showed evidence of flow from the upper cap area, along the path leading from the new boat ramp down to the Lower Thumb recreation area, along the trail in the Lower Thumb, from the Lower Thumb trail across the riparian area, and in a drainage that opens up into the old boat ramp area. A total of 1500 linear feet of wattle has been installed to date. All wattles were installed by District staff (Engine 522 crew, Recreation technician, and the AFMO).

The third treatment installed was a light reseeding with a native grass mix. This grass mix was acquired from a local source used by the Forest, and currently being used on other BAER projects with reseeding as a treatment. It is a species mix, the basis of which was formulated during last major fire restoration efforts on the Nogales District. Species include: *Aristida purpurea* / Purple Three, *Bouteloua curtipendula* / Sideoats Grama, *Bouteloua gradilis* / Blue Grama, *Bouteloua rothrockii* / Rothrock Grama, *Leptochloa dubia* / Green Sprangletop, *Plantago insularis* / Indian Wheat, *Schizyachrium scoparium* / Little Bluestem, *Setaria macrostachys* / Plains Bristlegrass, and *Sporobolus cryptandrus* / Sand Dropseed. This native grass mix is weed free, and applied at a rate of about 40% to 50% coverage. Straw mulch was intended to be installed on top of the seed, mainly on the upper cap area above the lake. But due to exposed nature of the area (wind conditions and flat terrain), it was deemed that this would be an unsuccessful treatment, and it was not installed.

Out of the total of \$33,376 allowed for this treatment, \$6,044 dollars have been spent in the planning and implementation of these treatments.



Cleaning Ronquillo Pond Sediment Traps

It was identified in the assessment report that the Ronquillo Pond and sediment trap was in need of treatment. Please refer to the documentation above concerning the Alamo Canyon Sediment trap and the decision for no treatment. Also as part of this overall treatment, the Ronquillo pond area was identified as needing protection from surface water flow. The idea is to keep sediment from infiltrating into the Chiricahua Leopard frog habitat of the pond itself thru the monsoon rain season. Upon evaluation of the site, it was determined that wattle installation would be the appropriate treatment to protect the pond. A total of 275 feet of 12" wattle was installed around the pond using local Nogales Ranger District staff (Engine 522, and Recreation Staff) in one day. This was not a complete circling of the pond, but installation of wattle so that the most likely source of any overland flow would be intercepted by the installed wattle. This was also the day that the media was covering the Murphy Complex BAER treatments.

Out of the total of \$6137 allowed for this treatment, \$1486 dollars have been spent in the planning, evaluation, materials, and treatment installation around the pond. No funds have been spent cleaning out the identified sediment traps.



Trail Treatment (Stabilization)

The Atascosa trail was broken into three parts based upon the conditions of the trail, and the feasibility of applying treatment to the trail. From the trail head to the gate, or the bottom part of the trail, treatment consisted of cleaning out the existing water bars, and armoring or maintaining the armor that is present in each water bar. Also, dissipaters were installed or reinstalled in the out flow of each water bar to break any velocity of water coming off the trail. Due to the rockiness of the trail and other past improvement made to this part of the trail using concrete, out sloping of the trail was not feasible. The amount of work required to reconfigure the trail is beyond the scope of BAER treatments to fix these problems. But due diligence was given to the current features in place.

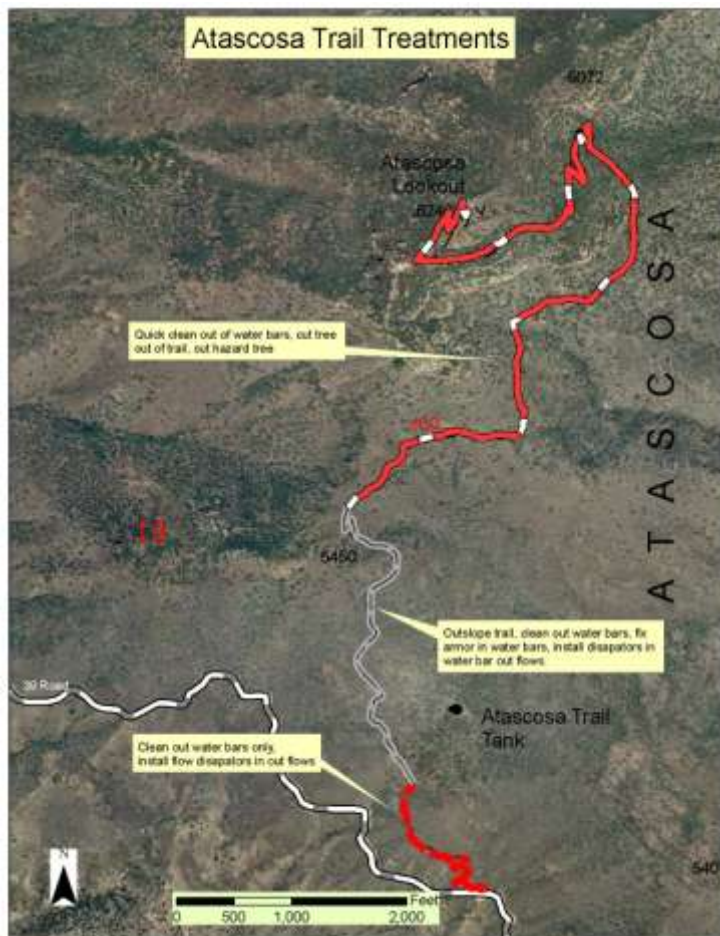
The middle section of the trail from the gate up to the first switch back on the east facing slope had treatments applied that consisted of: creating new water bars, armoring new and existing water bars, installing dissipaters in the water bar out flows, and out sloping the trail in numerous places so that water will now flow over the trail. All work was successfully completed on this portion of the trail.

The upper section of the trail all the way up to the heli spot, was treated by cleaning out the existing water bars and installing dissipaters in the out flows, improving two switch back areas so that water sheds better off the trail, and minor reconstruction of 2 water bars. One tree that was partially across the trail was cut out of the trail pathway, and some suppression garbage was hauled out.

The entire trail was assessed for any tree that could pose a hazard by falling on the trail, and all of these hazards were mitigated by cutting and scattering the tree remains as best as possible. Bigger pieces of tree material were left where they fell so as to not cause any damage to the trail in their removal.

All work on the trail was completed by the Northern Colorado Severity crew that was staged at the Nogales Ranger Station. This mixed CWN crew had 3 National Park employees' that specialize in trails and their maintenance. These folks help work out and directed the bulk of the trail work for their crew based upon the proscribed treatment. The trail work was completed in two days.

Out of the total of \$24,780 allowed for this treatment, a total of \$2831 has been spent weatherizing the trail to the Atascosa Lookout.



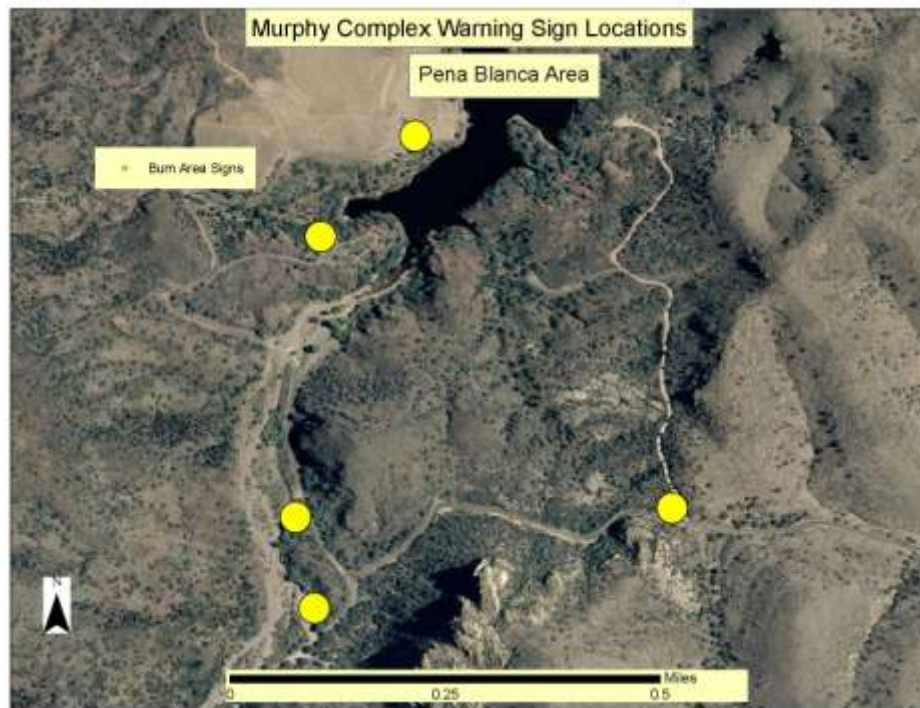
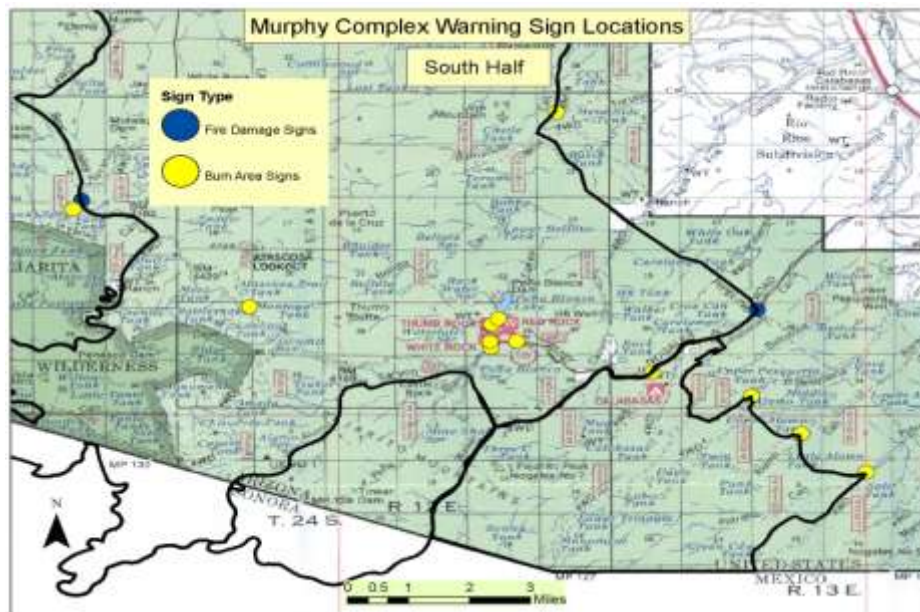
Protection / Safety (Signs)

The assessment for the Murphy Complex identified the need to install warning signs in strategic locations around the burn area. The goal is to warn the recreating public about the dangers that exist post fire. There will be two types of signs installed: a few large diamond signs warning of floods and debris flows along Hwy 289 (staying off the State Hwy right of way) coming west into the fire area, and on the 39 Road coming east into the fire area from Arivaca; multiple medium rectangle signs in specific locations leading into burn areas on all major identified road accesses, and on the sign boards for all campground, picnic, and other recreation areas.

There will be two types of installation of these signs. For the recreation areas in the burn, the local Recreation staff will install signs that were in storage (basically the same sign that is being ordered) on the information sign boards for each recreation area. The other installation will be completed thru a purchase of services. Recently, three quote requests have been received and the sign order and installation will be purchased. Local Nogales staff will check on the final installation of the signs once the chosen vendor indicates all work thru installation has been completed.

Out of the total of \$31750 allowed for this treatment, a total of \$4057 will be spent for sign specification write up, construction, and installation.





Atascosa Lookout Treatment

The assessment report for the fire identified the Atascosa Lookout and the hazards the burnt residual material from the Lookout as needing treatment. The goal is to prevent any hazardous materials from leaching into the watershed below the lookout site.

The installation of straw wattle was placed around the western slope just below the foundation of the lookout. The wattle was installed by the Nogales Crew 5-2. 75 feet of wattle (doubled up) was installed, with all work completed in 6 hours from start to finish.

Out of the total of \$6925 allocated for this treatment, \$1018 has been spent in installing the wattle below the Atascosa Lookout.



Interagency Coordinator

A total of \$3200 dollars can be applied toward an Interagency Coordinator for oversight and coordination with cooperating agencies, and relaying the BAER Assessment findings. This position will provide a conduit for contact with the Santa Cruz County Flood Control District, and Pima County.

Treatment Effectiveness Monitoring

There will be a need to assess the effectiveness of the treatments installed within the Murphy Complex burn area. Areas needing monitoring will include: Pena Blanca Lake recreation areas where wattles were installed and grass seeded; Ronquillo Pond where wattles were installed; Peck well to evaluate if the work completed to improve protection of the well is adequate; the Atascosa Lookout trail to monitor any effects rains will have on the trail; the Atascosa Lookout site itself to see if the installed wattles are capturing sediment. It was predicted that there would be 10 storm events where monitoring of treatments would be needed, and that each day doing so would only be attempted if safety in accessing the area was assured, and that no additional damage to the area being monitored was incurred. This plan will need to be set up with people and days assigned.

There is a total of \$4400 dollars available to fund monitoring of installed treatments.

Part VI – Emergency Stabilization Treatments and Source of Funds

Initial, Interim

1

Line Items	Approved in initial and 1 st interim reports PLANNED					Completed as of July 16, 2011 IMPLEMENTED				
		Unit	# of		Other	# of	Fed	# of	Non Fed	Expended By Imp and Plan
	Units	Cost	Units	BAER \$	\$	units	\$	Units	\$	
A. Land Treatments										
Noxious Weed detection Surveys	Lump Sum	4700	1	\$4,700	\$0	0	0	0	0	0
Clean Alamo Canyon Sediment Traps	Ea	5000	1	\$5,000	\$0	0	\$579	0	0	\$579
Well Protection	Ea	3400	2	\$6,800	\$0	1	\$3629	0	0	\$3629
Straw Wattles	LF	1.4	1600	\$2,240	\$0	2275	\$3412	0	0	\$3412
Hill Slope Stabilization	Lump Sum	33376	1	\$33,376	\$0	1	\$6044	0	0	\$6044
Cleaning Ronquillo Pond Sediment Traps/Wattles	Lump Sum	6137	1	\$6,137	\$0	1	\$1726	0	0	\$1726
Subtotal Land Treatments			1,082	\$58,253			\$15390			\$15390
B. Channel Treatments										
C. Road and Trails										
Trail Treatment (stabilization)	Lump Sum	24780	1	\$24,780	\$0	1	\$2831	0	0	\$2831
Subtotal Road & Trails				\$24,780	\$0		\$2831	0	0	\$2831
D. Protection /Safety										
Install hazard signs for roads	Ea	350	35	\$12,250		20	\$1413	0	0	\$1413
Install hazards signs for trails	Ea	350	50	\$17,500		2	\$1413	0	0	\$1413
Install 'area closed' signs	ea	100	20	\$2,000		0	0	0	0	0
Atascosa Lookout Treatment	Lump Sum	6925	1	\$6,925		1	\$1018	0	0	\$1018
Interagency Coordinator	Lump Sum	3200	1	\$3,200		1	0	0	0	
Subtotal Structures				\$24,000	\$0		\$3844	0	0	\$3844
E. BAER Evaluation										
Assessment						0	0	0	0	\$0
Subtotal Evaluation				\$0		0	0	0	0	\$0
F. Monitoring										
Invasives species		\$0	0	\$0			\$0	0	\$0	\$0
Treatment Effectiveness Monitoring	Lump Sum	4400	10	\$4,400			\$0	0	0	\$0
Subtotal Monitoring			10	\$4,400		0	0	0	0	\$0
G. Totals				\$129,308	\$0		\$22,065		\$0	\$22,065

Previously approved			\$45,790					0	0
Total for this request			\$83,518					0	0

Appendix #1

Brief Description of the Ramonote Well Site

After inspecting Ramonote Well located off of FSR #4198, which is located just off of the road, there is a small inlet channel to a wash just East of the well and a larger channel further East. From looking at the site there appears to be a large amount of unburned vegetation (i.e., shrubs, grass and trees) upstream at the bottom of the channel to sufficiently slow the velocity of any increased water flow.

In addition, while in the field, I ran into the local rancher who is very familiar with the Perk and the Ramonote well sites. He stated that there have been fires within this canyon throughout his lifetime and that the Ramonote well has had no problems in the past which indicates a low disturbance to this area.

Based on the combined information stated above, in my opinion there appears to be no need for emergency treatment to prevent the loss of the Ramonote Well.

Lance Haubrick
Engineer
Murphy Complex BAER