

**GAME AND FISH DEPARTMENT
HABITAT PARTNERSHIP COMMITTEE
HABITAT ENHANCEMENT AND WILDLIFE MANAGEMENT PROPOSAL**

Game Branch / HPC Project Number:	11-219
Possible Funding Partners:	

PROJECT INFORMATION

Project Title: Restoration of Dirt Tank 3 on House Rock Wildlife Area	
Region and Game Management Unit: Region II. 12A-East.	
Local Habitat Partnership Committee (LHPC): • None in this area.	Was the project presented to the LHPC? YES[] NO[X]
Has this project been submitted in previous years? YES[] NO[X] If Yes, was it funded? YES[] NO[] → HPC Project #: N/A	
Project Type: Maintenance of Dirt Tank #3 on House Rock Wildlife Area (HRWA)	
Brief Project Summary: To clean out the existing Dirt Tank #3 (pond) and line with Bentonite clay. Recover mineral sealant with soil.	
Big Game Wildlife Species to Benefit: Mule Deer (70%), Bison (25%), and Pronghorn (5%).	
Implementation Schedule (Month/Day/Year): Project Start Date: April , 2012 Project End Date: April , 2012	Environmental Compliance: NEPA Completed: YES[] No[] N/A[X] Projected Completion Date: <u>N/A. See below:</u> State Historic Preservation Office - Archaeological Clearance: YES[X] No[] N/A[] Projected Completion Date: <u>2010 by North Kaibab Ranger District</u> Arizona Game and Fish Department EA Checklist: N/A[] To be Completed by: <u>Carrie King</u> Projected Completion Date: <u>February 2012</u>

PROJECT FUNDING

Special Big Game License Tag Funds Requested:	\$9,000.
Cost Share or Matching Funds:	Forest Service archeology crew has already surveyed area, for the Travel Management Plan, and District Archeologist consulted with SHIPO (estimated cost: \$3,330.00).
Total Project Costs:	\$ 12,330.00 Any funds remaining after the project is complete will be returned to the special big game buffalo tag fund.

PARTICIPANT INFORMATION

Applicant (please print): Carrie King/Carl Lutch	Address: PO Box 834 Fredonia, Arizona 86022	E-mail: cking@azgfd.gov
Telephone: (928) 606-2080		Date: 08/29/2011

AGFD Contact and Phone No. (If applicant is not AGFD personnel):

N/A

Project has been coordinated with:

Development Branch: Ed Jahrke.

Arizona Game Fish Department: Wildlife Program Manager, Carl Lutch. Regional Supervisor, Ron Sieg

Kaibab National Forest Service: District Wildlife Biologist, District Archeologist, Forest Archeologist, and Range Specialist.

NEED STATEMENT – PROBLEM ANALYSIS:

Dirt Tank #3 on House Rock Wildlife Area (HRWA) has historically been a man-made pond supplied with water from the overflow at the adjacent concrete trough (or vault), called Trough #3. Both the concrete drinker and the dirt tank are supplied with water, from the main waterline, that is fed by South Canyon Spring. Dirt Tank #3 has always held water until the winter of 2008/2009 when the decision to allow the pond to dry up due to a lack of water needed to supply all the troughs and dirt tanks, the residence on HRWA, and neighboring Kane Ranch, on BLM land north of the Wildlife Area.

South Canyon Spring supplies water for the main waterline, consisting of 7 drinkers (with overflow capacity for 6 dirt tanks – three ponds currently have water); and the spur waterline, with 3 drinkers (all have overflow capacity – no ponds currently have water); the residence at head quarters; and Kane Ranch, who shares the water right with the Wildlife Area with every other winter.

Dirt Tank #3 is the deepest and largest pond on HRWA and requires the most water to maintain, primarily due to seepage but also evaporation. Allowing Dirt Tank #3 to dry up in the past avoided conflict for two reasons: 1) it allowed equal distribution of the 10 gallons per minute, when the water right is shared, by giving Kane Ranch 5 gallons per minute and reserving 5 gallons per minute for HRWA; both parties could maintain operations and 2) there is not enough water to charge the secondary waterline, called the spur waterline, that supplies water to Navajo Tank and Tanks #6 and #7, located on far eastern portion of the Wildlife Area.

Since the decision was made to let Dirt Tank #3 dry up, two 20,000 gallon water storage tanks have been buried on HRWA. One water storage tank is for the main waterline, and the other water storage tank gravity feeds the three drinkers off the spur waterline. Given the reduction of *demand* for water because of the 20,000 gallon water storage tanks, there would now be enough water to fill and maintain Dirt Tank #3.

If the pond were lined (sealed) with Bentonite to reduce seepage, it would be possible to keep Dirt Tank #3 full year round using minimal gallons per minute off the main waterline – even in periods of drought, high demand, or when the waterline is being repaired. When repairs occur on the waterline, water is not supplied to the drinkers and water levels in existing dirt tanks drop rapidly due to seepage and evaporation. Most ponds on HRWA no longer contain water after a day to three days depending on depth, season, and amount of use by whom (bison, deer, pronghorn).

The benefit to wildlife include increasing the availability of water to enhance the quality of habitat for seasonal bison, (overwintering) mule deer (and a few year-round residents), and some pronghorn with a more permanent and “natural” source of water (i.e. a pond/dirt tank instead of a concrete drinker).

PROJECT OBJECTIVES:

Even though Dirt Tank #3 is adjacent to Trough #3, bison compete over water at the small, concrete trough and cannot submerge themselves and wallow like they prefer to do in the ponds/dirt tanks. Having a deep dirt tank to wallow in again may encourage bison to stay longer on HRWA before returning to the top of the Kaibab Plateau and Grand Canyon National Park.

Deer, bison, and pronghorn seem to prefer drinking water from the more “natural” dirt tanks than being concentrated around the concrete drinkers, likely due to fear of predation.

When there is a waterline break, Dirt Tank #3 could hold water for a longer period of time (if it were lined) than the other smaller, shallower, ponds with high seepage rates. The other ponds on the Wildlife Area are unlined and require a gallon to two gallons per minute to maintain current levels, which vary from 1-3 feet deep and are a fraction of the size and depth of Dirt Tank #3.

PROJECT DESCRIPTION AND STRATEGIES:

Conduct four soil analysis tests to determine if the correct application rate and purity of Bentonite is selected for the soil type. Four test plots \$75.00 each = \$300.00. I can collect the samples and send off to Redmond Mines. Clean sands require higher application rates (lb/) than silty sands, or silts (NRCS Practice and Standards: Pond Sealing with Bentonite, Arizona. Code 521-C).

To clean out and deepen Dirt Tank #3 using a loader, bobcat, backhoe, tractor, or any combination of the equipment listed above. Line (or seal) the pond with Bentonite clay mineral to improve water holding capacity while compiling with all Federal and State laws and regulations.

Remove debris that has blown and or washed into the basin of the pond and set aside. Deepen dirt tank not to exceed 2:1 ratio so Bentonite mineral does not slough off. One half pound of Bentonite per square foot with a free swell of 14mm will be used, pending results of soil tests. Disk, harrow, or rotor in at least 3” of Bentonite into top 3” of soil, creating a 6” liner (or sealant) of Bentonite. Compact with machinery tires. Replace material that was cleaned out of the pond on top of Bentonite for further protection not to exceed 6-8”. Compact with machinery tires again.

A “safety margin”, to prevent leaking and seepage out of the bottom of the pond, was considered since Bentonite tends to shrink and crack if the pond dries up or ungulate hooves crack the mineral layer. Three extra inches of Bentonite will be used to seal the basin and a protective layer of dirt 6-8” will be applied on top of the Bentonite layer to prevent bison hooves from cracking the mineral sealant.

PROJECT LOCATION:

Dirt Tank #3 is located on Forest Service Road 211 in South Canyon drainage, along the migration route the bison use to get from the high elevations of the Kaibab Plateau (>8000) down to HRWA, 5700 feet. Dirt Tank #3, located in T 34 N, R3E, Section 27 and is at approximately 6350 feet. (See attached map).

LAND OWNERSHIP AT PROJECT SITE (Please state specifically if PRIVATE PROPERTY and provide landowner's name):

Dirt Tank #3 is situated within the 65,000 acre Wildlife Area, located on U.S. Forest Service land. The Department does hold 40 acres of private land within the Wildlife Area, where the residence and head quarters can be found.

IF PRIVATE PROPERTY, IS THERE A STEWARDSHIP or LANDOWNER AGREEMENT BETWEEN THE LANDOWNER AND THE DEPARTMENT?

YES[] NO[]

N/A

HABITAT DESCRIPTION:

Dirt Tank #3 is a artificial riparian area and is surrounded by rabbit brush, sage, and pinyon/juniper trees. The pond is in the South Canyon drainage and is on the edge of the pinyon juniper woodland and sage brush/grassland habitat type. It is an important cover component for overwintering and resident mule deer and bison that return to calve on HRWA. Pronghorn have occasionally been seen watering at this dirt tank then returning to the nearby open grasslands.

ITEMIZED USE OF FUNDS:

Special Big Game License Tag Funds

- 1) Conduct soil analysis test to determine if the correct application rate and purity of Bentonite is selected for this project. Four test plots \$75.00 each = \$300.00
- 2) Prime Excavating, from St George, Utah will dig out and grade pond and install Bentonite liner and cover with dirt \$5,200.00.
- 3) Redmond Minerals, Inc. in Heber City, Utah, will provide Bentonite (\$54.10 per ton in August 2011). Would need roughly 25 tons (depending on how far out they line the basin at current application rate of 6") * \$54.10/ton = \$1,352.50.
- 4) Prime Excavating or Jerry and Sons Trucking, from Kanab, will deliver Bentonite from mine to Dirt Tank #3 for \$1,000.00 (500 miles round trip) based on gas being \$3.77 per gallon (as of August 2011).

TOTAL: \$7,852.50 Asking for \$9,000.00 (just in case more Bentonite is needed or the operator wants more money for deeper application, which would require more time, if the recommendations from the soil results reveal something different than what was planned for this project).

****Any funds remaining after the project is complete will be returned to the special big game buffalo tag fund****

Cost Share or Matching Funds

Forest Service Archeologist has already surveyed the area, for the Travel Management Plan, and consulted with SHIPO (estimated cost: \$3,300.00). (See email, Exempt Undertaking document, and letter to District Ranger below).

LIST COOPERATORS AND DESCRIBE POTENTIAL PARTICIPATION:

The following specialists on the Kaibab National Forest support this project District Wildlife Biologist, District Archeologist, Forest Archeologist, and Range Specialist. The Forest Service archeology crew has already surveyed area, for the Travel Management Plan, and District Archeologist consulted with SHIPO

(estimated cost: \$3,300.00).

PROJECT MONITORING PLAN:

Once Dirt Tank #3 is full, measure how many gallons of water it takes to maintain water level in the pond during the summer when evaporative rates are the greatest. Seepage rates should remain the same (minimal) whether in winter or summer season, once lined. Try to measure the amount of water when big game use is the lightest to get an accurate figure.

PROJECT MAINTENANCE:

Maintenance will include cleaning out the overflow intake pipe (and sometimes the output if it freezes or becomes clogged).

PROJECT COMPLETION REPORT TO BE FILED BY:

May 5th, 2012 or as soon as Dirt Tank #3 fills up.

WATER DEVELOPMENT PROJECTS (*see attached worksheet*):

See worksheet.

TREE SHEARING (AGRA-AXE, PUSH) PROJECTS (*see attached worksheet*):

N/A

ARIZONA GAME AND FISH DEPARTMENT **WATER DEVELOPMENT WORKSHEET**

PROJECT NAME: Restoration of Dirt Tank #3 on House Rock Wildlife Area

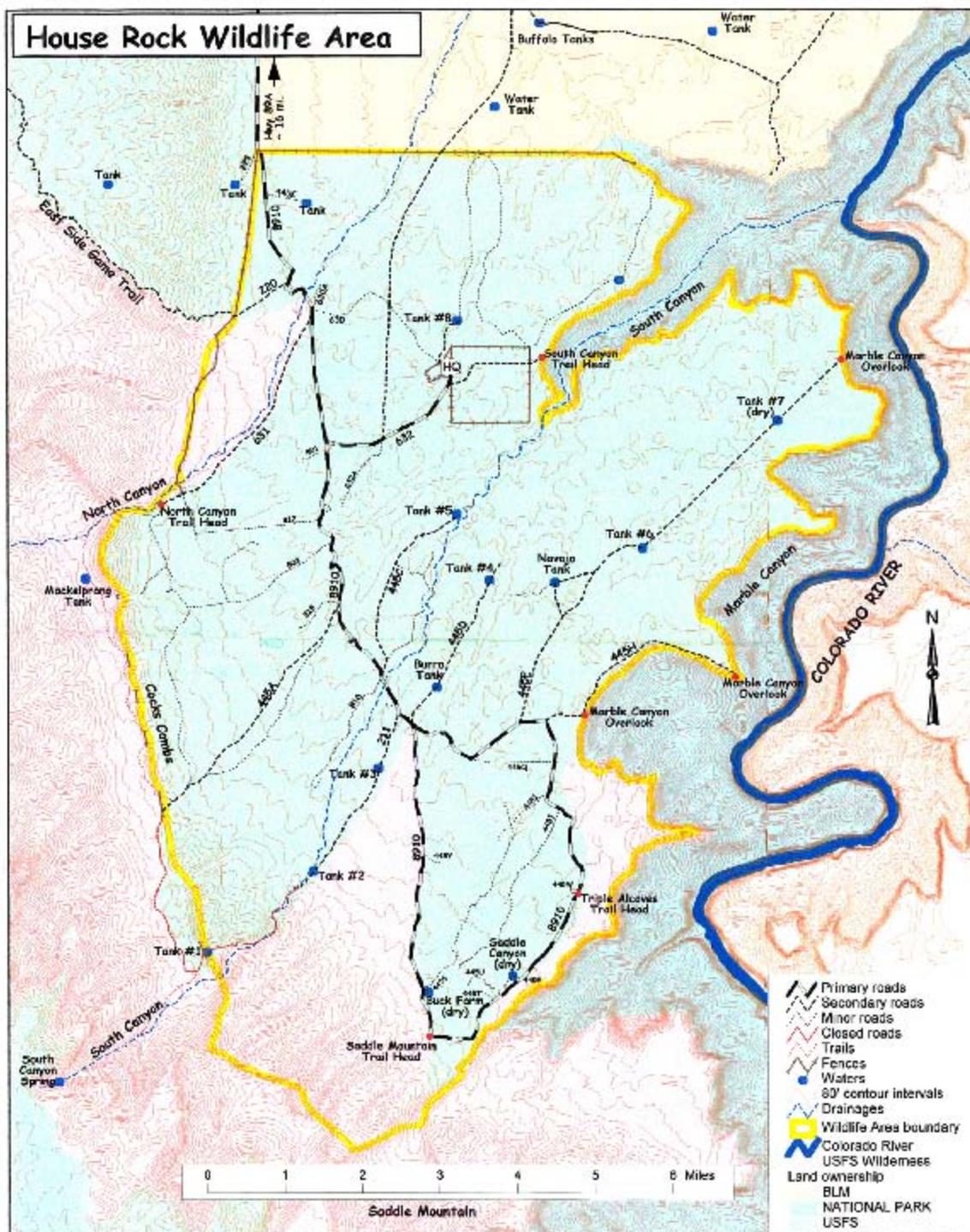
- 1) **Is the water development listed as a priority in the most recent “Wildlife Water Development Annual Implementation Schedule?”**
No.
- 2) **Please list the Development Branch personnel and date coordinated with for this project.**
Ed Jahrke.
- 3) **What is the estimated annual inches of precipitation for the area? (mark one)**
2-4 4-6 6-8 8-10 10-12 12-14 14-16 >16
- 4) **Is there a perennial water source available to big game within four miles of this project?**

YES (please complete #5 below) NO (skip #5 below)
- 5) **For the accessible, perennial water source nearest this project:**
Name of water source: Trough #3 (See Needs Statement above)
Type of water source (catchment, spring, dirt tank):
Concrete vault (trough, or drinker) holds 540 gallons
Ownership of water source: Arizona Game and Fish Department
Distance in miles from project: 100 yards
- 6) **Is the target wildlife species a result of transplant efforts? YES NO**
While bison are considered “transplants”, they do not meet the definition of a true transplant.
- 7) **Please list any special land management status for the project site (i.e. Wilderness, National Park, National Monument). If private land, list landowner.**
The Department’s grazing allotment for bison on HRWA is with the Forest Service.
- 8) **Please provide the following information about access to the proposed site:**
Type of access (mark one): 2x4 vehicles 4x4 only foot only**
**If foot access only: Distance in miles: _____ Approximate hiking time: _____

-- Does access to this site require crossing private or tribal lands? YES NO

-- Please describe any restrictions to public access: N/A
- 9) **Please list below (or on a separate sheet) the material type and dimensions of each component proposed to be added, modified, or repaired.**
Fifteen tons of Bentonite.
- 10) **Was a site visit completed? Yes No**
If Yes, please list personnel that attended and date.

Yes, Carl Lutch has visited Dirt Tank #3 in July 2010.



Estimate

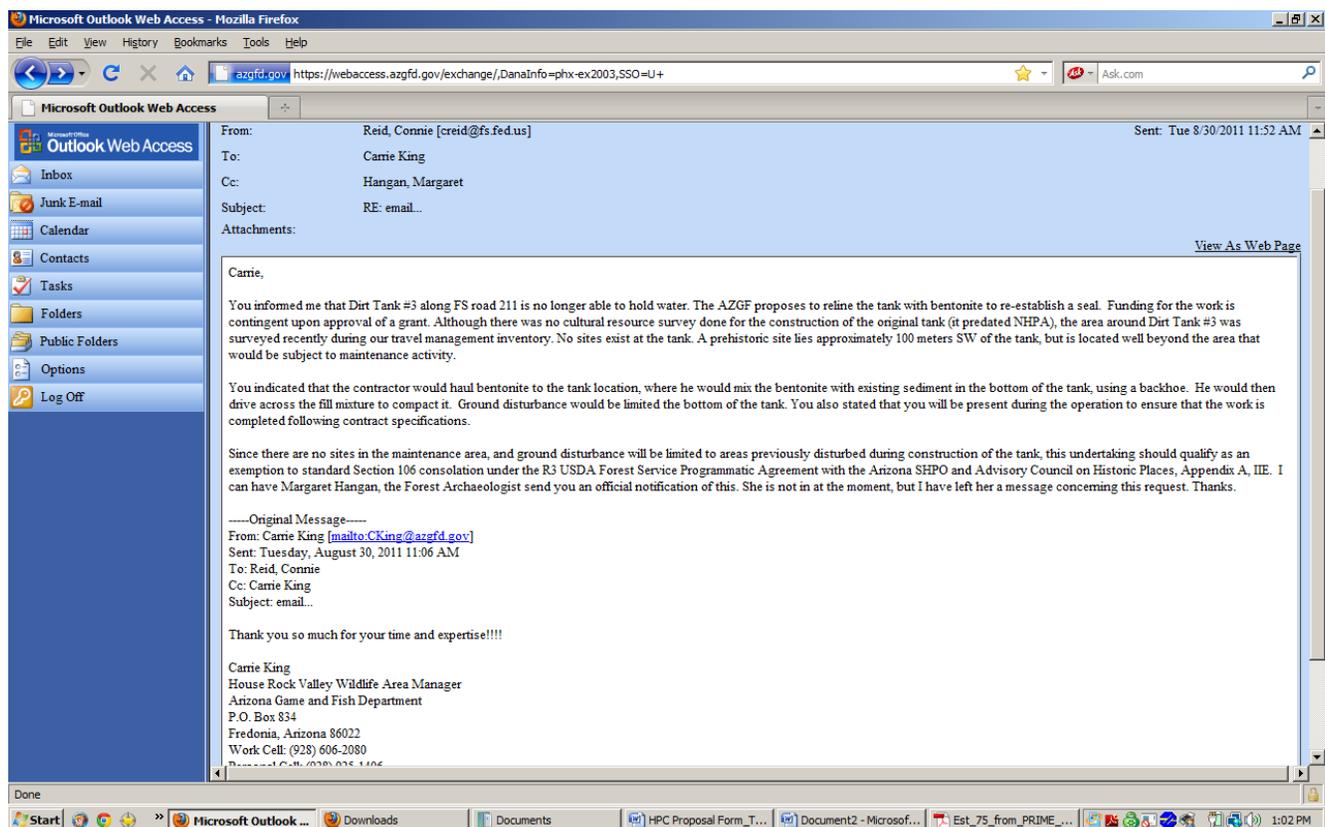
8/29/2011

Carrie King
House Rock Valley Wildlife Area Manager
Arizona Game and Fish Department
P.O. Box 834
Fredonia, Arizona 86022
PRIME EXCAVATING
P.O. BOX 911494
ST. GEORGE, UT 84791

Thank you for your business.
Phone # 435-705-0232 Fax # 435-986-1294 primexcavating@gmail.com
Total

Dig Out & Grade Pond & Replace With Bentonite Liner &
Compacting & Grading Pond
5,200.00

Customer will be obtain estimates for Bentonite & trucking cost



**KAIBAB NATIONAL FOREST
FY2011
EXEMPT UNDERTAKING
UNDER FIRST AMENDED PROGRAMMATIC AGREEMENT REGARDING HISTORIC
PROPERTY PROTECTING AND RESPONSIBILITIES AMONG
NEW MEXICO HISTORIC PRESERVATION OFFICER
AND
ARIZONA HISTORIC PRESERVATION OFFICER
AND
TEXAS HISTORIC PRESERVATION OFFICER
AND
OKLAHOMA HISTORIC PRESERVATION OFFICER
AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
AND
UNITED STATES DEPARTMENT OF AGRICULTURE FOREST SERVICE REGION 3**

Project Name: Exempt Undertaking, Arizona Game and Fish Department Dirt Tank 3 Relining.

Description of Project: The AZGF proposes to reline Dirt Tank #3 with bentonite to re-establish a seal. The process would involve a contractor hauling bentonite to the tank location, where the bentonite would be mixed with the existing sediment in the bottom of the tank, using a backhoe. Then the backhoe would be driven across the fill mixture to compact it. Ground disturbance would be limited the bottom of the tank. Funding for the work is contingent upon approval of a grant.

Although there was no cultural resource survey done for the construction of the original tank (it predated NHPA), the area around Dirt Tank #3 was surveyed recently during our travel management inventory. No sites exist at the tank. A prehistoric site lies approximately 100 meters SW of the tank, but is located well beyond the area that would be subject to maintenance activity. This project qualifies as a screened exempt undertaking pursuant to the Region 3 First Amended Programmatic, Appendix A, Section II (B).

Legal Location of Project: T 35 N, R. 4 E. Sec 27.

Prepared by: Margaret Hangan Date: 8/31/2011

Screened Exemption Category: Appendix A, Section II (B)- Activities where previous natural or human disturbance has modified the landscape so extensively that the likelihood of finding historic properties is negligible (for example, vertical expansion of existing pits).

I certify that the above project is an exempt undertaking under terms of the Region 3 First Amended Programmatic Agreement and can be implemented without further review or consultation.

/s/ Margaret Hangan

Approved by: Margaret Hangan **Date:** 8/31/2011

Heritage Resources Program Manager

**United States Department of Agriculture Forest Service Kaibab National Forest 800 South Sixth Street Williams,
AZ 86046-2899 (928) 635-8200 Caring for the Land and Serving People** Printed on Recycled Paper

File Code: 2360 **Date:** August 31, 2011
Route To: Carrie King
Subject: Exempt Undertaking, Arizona Game and
Fish Department Dirt Tank #3 Relining,
Coconino County, Arizona. Project

To: Tim Short, District Ranger

Attached, please find a copy of the "Exempt Undertaking Form" for the above referenced project. The proposed undertaking may be implemented without further Section 106 consultation or review, in accordance with the provisions in the Programmatic Agreement (PA) for Compliance with Section 106 of the National Historic Preservation Act for Undertakings in Region 3.

In the event that the scope or design of the proposed project is altered or changed, additional review by the Heritage Resources Program will be required. Please keep a copy of this letter and Exempt Undertaking Form in the project planning and implementation files. If you have any questions, please contact me at (928) 635-8342 or Connie Reid at (928) 643-8165.

/s/ Margaret Hangan
MARGARET HANGAN
Heritage Resource Program Manager
cc: Connie Reid