

**Arizona Water Protection Fund
FY 2011 Grant Application Review**

Application # WPF0391 Applicant: Richard + Lois Kaler

Title of Project: E. Coli Reduction on the San Francisco River through Alternative
Livestock Water on the Kaler Ranch

Additional materials were submitted with this application that could not be reproduced and distributed for review. These materials may be reviewed in person at the Arizona Water Protection Fund offices at (3550 N. Central Avenue, 2nd Floor, Phoenix). The additional materials available are the following:

- Maps
- Photographs
- Disk
- Other



Janice K. Brewer
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007
(602) 771-2300 • www.azdeq.gov



Benjamin H. Grumbles
Director

August 25, 2010

Arizona Water Protection Fund Commission
Arizona Department of Water Resources
3550 North Central Avenue
Phoenix, Arizona 85012

Re: Letter of Support for the Kaler Ranch Well Project

To Whom It May Concern,

I am writing in support of the Gila Watershed Partnership's application for funding to implement a solar powered well at the Kaler Ranch to provide off-channel water sources for livestock. The Kaler Ranch is located along a reach of the San Francisco River that has been assessed as impaired by the Arizona Department of Environmental Quality (ADEQ) due to exceedances of the *E. coli* bacteria standard for Full Body Contact. A Total Maximum Daily Load (TMDL) report developed by ADEQ has identified livestock as a contributing source of bacteria in this reach.

The owners of the Kaler Ranch have expressed concern that grazing their cattle near and in the riparian areas of the San Francisco River may be contributing to the *E. coli* impairment, and have taken measures to provide alternative water sources for their cattle with support from two previous ADEQ Water Quality Improvement Grants (WQIGs). In addition, they have utilized WQIG funding to implement best management practices to address overall erosion from their property. The owners have also been involved in the ongoing San Francisco/Blue River Targeted Watershed Improvement Grant, a WQIG awarded to the Gila Watershed Partnership in 2009 to identify specific bacteria sources within the drainage contributing to the *E. coli* impairment. Photo and water quality monitoring associated with these projects has shown that cattle from the Kaler Ranch are a likely bacteria source. While the Kalers are willing to completely exclude their cattle from the riparian area in order to protect water quality, they are unable to do so until sufficient alternative water supplies have been established. Funding for this fourth and final solar well would allow them to isolate a documented source of *E. coli* along the San Francisco River.

Both the GWP and the Kalers have shown strong interest in and commitment to active stewardship of the lands surrounding the San Francisco River to protect its water resources. I encourage you to strongly consider their Arizona Water Protection Fund application for award.

Sincerely,

Krista Osterberg
Grant & Outreach Coordinator
Water Quality Division
Arizona Department of Environmental Quality

cc Jan Holder, Gila Watershed Partnership

Northern Regional Office
1801 W. Route 66 • Suite 117 • Flagstaff, AZ 86001
(928) 779-0313

Southern Regional Office
400 West Congress Street • Suite 433 • Tucson, AZ 85701
(520) 628-6733

WPFO391

RECEIVED

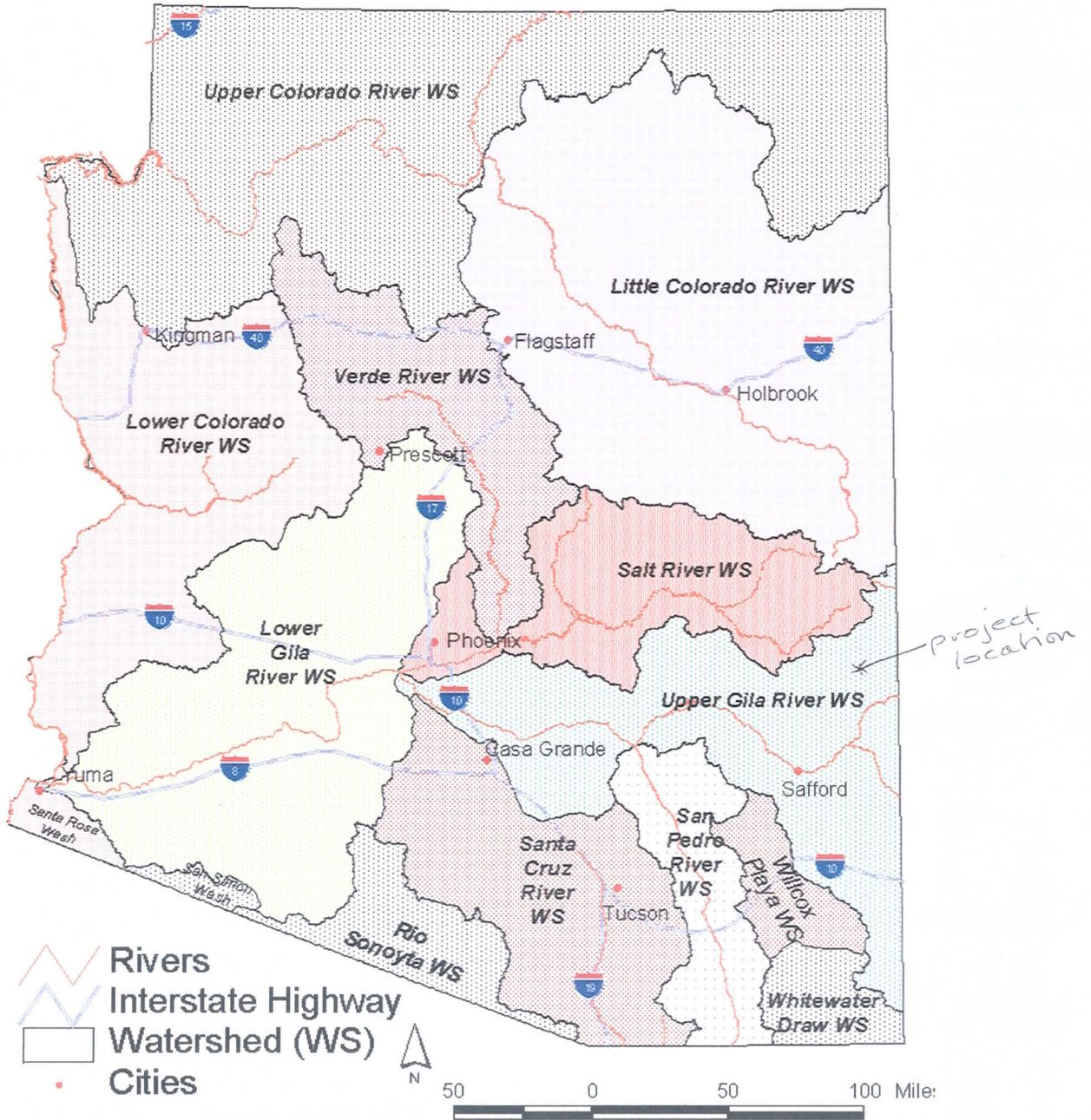
Arizona Water Protection Fund
Application Cover Page
FY 2011

AUG 31 2010

Water Protection Fund

Title of Project: E.coli Reduction on the San Francisco River through Alternative Livestock Water on the Kaler Ranch, Phase III													
Type of Project: <input checked="" type="checkbox"/> Capital or Other <input type="checkbox"/> Water Conservation <input type="checkbox"/> Research	Stream Type: <input checked="" type="checkbox"/> Perennial <input type="checkbox"/> Intermittent <input type="checkbox"/> Ephemeral												
Your level of commitment to maintenance of project benefits and capital improvements: <input type="checkbox"/> < 5 years <input type="checkbox"/> 5-10 years <input type="checkbox"/> 11-15 years <input checked="" type="checkbox"/> 16-20 years													
Applicant Information: Name/Organization: Richard and Lois Kaler Address 1: P.O. Box 1511 Address 2: City: Clifton State: Arizona ZIP Code: 85533 Phone: 928-651-5922 Fax: none Tax ID No.: available upon approval of grant application													
Inside an AMA: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, which AMA: <input type="checkbox"/> Phoenix <input type="checkbox"/> Tucson <input type="checkbox"/> Prescott <input type="checkbox"/> Pinal <input type="checkbox"/> Santa Cruz													
Type of Application: <input checked="" type="checkbox"/> New <input type="checkbox"/> Continuation													
Contact Person: Name: Jan Holder Title: Executive Director Phone: 520-395-2499 Fax: 520-829-3660 e-mail: watershedholder@yahoo.com													
Any Previous AWPf Grants: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please provide Grant #(s): 07-145WPF													
Arizona Water Protection Fund Grant Amount Requested: \$100,350.94 If the application is funded, will the Grantee intend to request an advance: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Matching Funds Obtained and Secured: <table border="1"> <thead> <tr> <th>Applicant/Agency/Organization:</th> <th>Amount (\$):</th> </tr> </thead> <tbody> <tr> <td>1. Applicant</td> <td>\$ 33,912</td> </tr> <tr> <td>2. Bureau of Land Management</td> <td>\$ 3,720</td> </tr> <tr> <td>3. ADEQ</td> <td>\$ 118,568</td> </tr> <tr> <td>4. ADA</td> <td>\$ 174,520</td> </tr> <tr> <td>Total:</td> <td>\$373,088</td> </tr> </tbody> </table>	Applicant/Agency/Organization:	Amount (\$):	1. Applicant	\$ 33,912	2. Bureau of Land Management	\$ 3,720	3. ADEQ	\$ 118,568	4. ADA	\$ 174,520	Total:	\$373,088
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4. ADA	\$ 174,520												
Total:	\$373,088												
Has your legal counsel or contracting authority reviewed and accepted the Grant Award Contract General Provisions? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A													
Signature of the undersigned certifies understanding and compliance with all terms, conditions and specifications in the attached application. Additionally, signature certifies that all information provided by the applicant is true and accurate. The undersigned acknowledges that intentional presentation of any false or fraudulent information, or knowingly concealing a material fact regarding this application is subject to criminal penalties as provided in A.R.S. Title 13. The Arizona Water Protection Fund Commission may approve Grant Awards with modifications to scope items, methodology, schedule, final products and/or budget.													
Richard and Lois Kaler	Landowner 928-651-5922												
Typed Name of Applicant or Applicant's Authorized Representative	Title and Telephone Number												
<i>Richard M. Kaler Lois D. Kaler</i>	8/29/2010												
Signature	Date Signed												

Arizona Watershed Map FY 2011



Title of Project: E.coli Reduction on the San Francisco River through Alternative Livestock Water on the Kaler Ranch Project, Phase III

Project Location & Environmental Contaminant Information FY 2011

Project Location Information

1. County: Greenlee 2. Section: 32 3. Township: T3S 4. Range: R30E

5. Watershed: Upper Gila

6. 8 or 10 Digit Hydrologic Unit Code (HUC): 1504000502

7. Name of USGS Topographic Map where project area is located: Clifton AZ - 033109a3

8. State Legislative District: 1

(Information available at:

<http://159.87.126.6/mapping/default2.asp?tname=Original.2009.Legislative.Map&org2009leg=on&service=ircmaps&init=true>)

9. Land ownership of project area: Bureau of Land Management

10. Current land use of project area: Livestock Grazing

11. Size of project area (in acres): less than 1/4 acre

12. Stream Name: San Francisco River

13. Length of stream through project area: 2200 feet

14. Miles of stream benefited: 88 miles

15. Acres of riparian habitat: 3,565 acres will be:

- Enhanced
- Maintained
- Restored
- Created

16. Provide directions to the project site from the nearest city or town. List any special access requirements:

In Clifton, on hwy 191, turn immediately after VFW bldg. Go over bridge + turn left. Follow sign to RV park. Go 6 miles + look for a down facing road on left toward river. Go down road, make a right on bottom + go approx 1/4 mile to a small stone house.

Environmental Contaminant Location Information

1. Does your project site contain known environmental contaminants? YES NO If yes, please identify the contaminant(s) and enclose data about the location and levels of contaminants: E.coli from the livestock waste

2. Are there known environmental contaminants in the project vicinity? YES NO If yes, please identify the contaminant(s) and enclose data about the location and levels of contaminants: E.coli from the livestock waste. The EPA's 303(d) list includes the San Francisco River as impaired for E.coli.

3. Are you asking for Arizona Water Protection Fund monies to identify whether or not environmental contaminants are present? YES NO

STATE HISTORIC PRESERVATION OFFICE Review Form

In accordance with the State Historic Preservation Act (SHPO), A.R.S. 41-861 *et seq.*, effective July 24, 1982, each State agency must consider the potential of activities or projects to impact significant cultural resources. Also, each State agency is required to consult with the State Historic Preservation Officer with regard to those activities or projects that may impact cultural resources. Therefore, it is understood that **recipients of state funds are required to comply with this law** throughout the project period. All projects that affect the ground-surface that are funded by AWPf require SHPO clearance, **including those on private and federal lands.**

The State Historic Preservation Office (SHPO) must review each grant application recommended for funding in order to determine the effect, if any, a proposed project may have on archaeological or cultural resources. To assist the SHPO in this review, the following information **MUST** be submitted with each application for funding assistance:

- A completed copy of this form, and
- A United States Geological Survey (USGS) 7.5 minute map
- A copy of the cultural resources survey report if a survey of the property has been conducted, and
- A copy of any comments of the land managing agency/landowner (i.e., state, federal, county, municipal) on potential impacts of the project on historic properties.

NOTE: If a federal agency is involved, the agency must consult with SHPO pursuant to the National Historic Preservation Act (NHPA); a state agency must consult with SHPO pursuant to the State Historic Preservation Act (SHPA),

OR

- A copy of SHPO comments if the survey report has already been reviewed by SHPO.

Please answer the following questions:

1. Grant Program: Arizona Water Protection Fund
2. Project Title: E.coli Reduction on the San Francisco River through Alternative Livestock Water on the Kaler Ranch Project, Phase III
3. Applicant Name and Address: Gila Watershed Partnership, 711 S. 14th Avenue, Safford, AZ 85546
4. Current Land Owner/Manager(s): Bureau of Land Management
5. Project Location, including Township, Range, Section: T3S, R30E, Section 32
6. Total Project Area in Acres (or total miles if trail): less than 1/4 of an acre
7. Does the proposed project have the potential to disturb the surface and/or subsurface of the ground? YES NO
8. Please provide a brief description of the proposed project and specifically identify any surface or subsurface impacts that are expected: The project will include a well, solar equipment, and tank, and will all be locad within 1/4 of an acre. .

9. Describe the condition of the current ground surface within the entire project boundary area (for example, is the ground in a natural undisturbed condition, or has it been bladed, paved, graded, etc.). Estimate horizontal and vertical extent of existing disturbance. Also, attach photographs of project area to document condition: The area has been utilized for over 100 years by livestock grazong.

10. Are there any known prehistoric and/or historic archaeological sites in or near the project area?
 YES NO

11. Has the project area been previously surveyed for cultural resources by a qualified archaeologist?
 YES NO UNKOWN

If YES, submit a copy of the survey report. Please attach any comments on the survey report made by the managing agency and/or SHPO

12. Are there any buildings or structures (including mines, bridges, dams, canals, etc.), which are 50-years or older in or adjacent to the project area? YES NO

If YES, complete an Arizona Historic Property Inventory Form for each building or structure, attach it to this form and submit it with your application.

13. Is your project area within or near a historic district? YES NO

If YES, name of the district:

Please sign on the line below certifying all information provided for this application is accurate to the best of your knowledge.

Richard M. Kaler
Lois J. Kaler /Date 1 8/29/2010
Applicant Signature

RICHARD M. KALER
LOIS J. KALER, LANDOWNERS
Applicant Printed Name

FOR SHPO USE ONLY

SHPO Finding:

- Funding this project will not affect historic properties.
- Survey necessary – further GRANTS/SHPO consultation required (*grant funds will not be released until consultation has been completed*)
- Cultural resources present – further GRANTS/SHPO consultation required (*grant funds will not be released until consultation has been completed*)

SHPO Comments

For State Historic Preservation Office:

Date:

**STATE OF ARIZONA
HISTORIC PROPERTY INVENTORY FORM**

Please type or print clearly. Fill out each applicable space accurately and with as much information as is known about the property.

PROPERTY IDENTIFICATION

For properties identified through survey: Site No. _____ Survey Area: _____

Historic Names (*enter the name(s), if any that best reflect the property's historic importance*): _____

Address: _____

City or Town: _____ Vicinity County: _____ Tax Parcel No.: _____

Township: _____ Range: _____ Section: _____ Quarters: _____ Acreage: _____

Block: _____ Lot(s): _____ Plat (Addition): _____ Year of plat (addition): _____

UTM Reference – Zone: _____ Easting: _____ Northing: _____

USGS 7.5' quadrangle map: _____

ARCHITECT: _____ not determined known Source: _____

BUILDER: _____ not determined known Source: _____

CONSTRUCTION DATE: _____ known estimated Source: _____

STRUCTURAL CONDITION

Good (*well maintained; no serious problems apparent*)

Fair (*some problems apparent*) Describe: _____

Poor (*major problems; imminent threat*) Describe: _____

Ruin/Uninhabitable

USES/FUNCTIONS

Describe how the property has been used over time, beginning with the original use: _____

Sources: _____

PHOTO INFORMATION

Date of photo: _____

View Direction (looking towards): _____

Attach a recent photograph of property in this space.
Additional photographs may be appended.

SIGNIFICANCE

To be eligible for the National Register, a property must represent an important part of the history or architecture of an area. The significance of a property is evaluated within its historic context, which are those patterns, themes, or trends in history by which a property occurred or gained importance. Describe the historic and architectural contexts of the property that may make it worthy of preservation.

A. HISTORIC EVENTS/TRENDS – Describe any historic events/trends associated with the property: _____

B. PERSONS – List and describe persons with an important association with the building: _____

C. ARCHITECTURE – Style: _____ no style

Stories: _____ Basement Roof Form: _____

Describe other character-defining features of its massing, size and scale: _____

INTEGRITY

To be eligible for the National Register, a property must have integrity (i.e. it must be able to visually convey its importance). The outline below lists some important aspects of integrity. Fill in the blanks with as detailed a description of the property as possible.

Location - Original Site Moved: Date: _____ Original Site: _____

DESIGN

Describe alterations from the original design, including dates: _____

MATERIALS

Describe the materials used in the following elements of the property:

Walls (structure): _____

Walls (sheathing): _____

Windows: _____

Roof: _____

Foundation: _____

SETTING

Describe the natural and/or built environment around the property: _____

How has the environment changed since the property was constructed? _____

WORKMANSHIP

Describe the distinctive elements, if any, of craftsmanship or method of construction: _____

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

Individually Listed; Contributor; Non-contributor to _____ Historic District

Date Listed: _____ Determined eligible by Keeper of National Register (date: _____)

RECOMMENDATIONS ON NATIONAL REGISTER ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property is is not eligible individually.

Property is is not eligible as a contributor to a listed or potential historic district.

More information needed to evaluate.

If not considered eligible, state reason: _____

**E.COLI REDUCTION IN THE SAN FRANCISCO RIVER THROUGH
ALTERNATIVE LIVESTOCK WATER ON THE KALER RANCH, PHASE III**

AWPF APPLICATION PACKAGE

Submitted by:

The Gila Watershed Partnership of Arizona

711 South 14th Avenue

Safford, Arizona 85546

520-395-2499

Submitted: August 29, 2010

Executive Summary

The Kaler Ranch has been the location of numerous grant projects, supported or administered by The Gila Watershed Partnership of Arizona (GWP). The Partnership supported the Kalers in a NRCS grant to level the fields adjacent to the river to reduce livestock waste reaching the river. GWP completed two ADEQ grants that addressed the erosion and sediment deposition caused by huge culverts. We implemented an Arizona Water Protection Fund and Arizona Department of Agriculture grants to address the remaining culverts. These projects have made dramatic improvements in the San Francisco river and riparian area. With this project, our goal is to continue the restoration and enhancement of the San Francisco River.

Our objective in this project is the reduction of E.coli in the San Francisco River by installing a well and adding solar equipment and pipes, tanks and a trough to water the Kaler livestock. We are currently implementing a grant for one well, funded by ADEQ and ADA. And we have grants from ADEQ and ADA for two more. We need to install one more well, which will bring the number to four, to completely exclude the Kaler livestock from the San Francisco Riparian area. This will result in the complete exclusion of the Kaler Ranch livestock for the entire year, from the riparian area of the San Francisco River. This means that all of the current amount of livestock fecal material from the Kaler livestock will be eliminated.

The Gila Watershed Partnership is currently implementing an ADEQ Targeted Watershed grant Titled "E.coli Reduction on the San Francisco and Lower Blue Rivers". In this grant, we are sampling for E.coli on the San Francisco and Blue Rivers to determine the source of an E.coli Impairment that is listed in EPA's list of impaired waters. Even though we do not yet have DNA testing complete, the preliminary samples we have tested have extremely high readings from the samples taken just below the Kaler Ranch.

This information, coupled with the physical evidence of the livestock waste present in the riparian area, point to the Kaler livestock as a significant contributing factor. The elevated E. coli levels point not only to levels of other pathogens in a stream but to sedimentation issues. Two rules apply: 1) E. coli travels with and on sediments, so that elevated levels of E. coli often indicate increased suspended sediments, and 2) E. coli is regarded as an indicator that other enteric pathogens may be present, including some that may put wildlife as well as humans at risk. In addition, the erosion and excess sedimentation caused by the livestock in the riparian area affects the fish and vegetation, as sediment particles in the water clogs the gills of fish, and decreases the amount of sunlight available to aquatic plants.

The Kaler livestock water year-round in the riparian area of the San Francisco River. The family has water rights that give them the legal right to do so. The landowner would water their cattle in away from the river; however, no other water sources are available. Through a long education process, the Kalers have agreed to exclude their cattle permanently from the riparian area when they have enough watering capacity by means of solar wells.

Background

The Kaler Ranch has been the location of numerous grant projects, supported or administered by The Gila Watershed Partnership of Arizona (GWP). The Partnership supported the Kalers in a NRCS grant to level the fields adjacent to the river to reduce livestock waste reaching the river. In 2002, the Kalers approached the GWP for help in addressing huge culverts that were eroding their property and depositing sediment in the San Francisco River. The Kalers and the NRCS worked together to develop a plan to extend the culvert to the river's edge and eliminate the erosion and sedimentation.

GWP completed two ADEQ grants that addressed the erosion and sediment at the ranch entrance and four of the culverts. We implemented Arizona Water Protection Fund and Arizona Department of Agriculture grants to address the remaining culverts. These projects have made dramatic improvements in the river and riparian to reduce the erosion and sedimentation.

However, in 2006, the GWP began planning ways to address a serious water quality issue on the San Francisco River. The San Francisco and Lower Blue Rivers are listed on the EPA's 303(d) list as impaired for E.coli. The Partnership coordinated an effort with its partners from Greenlee County, the Apache Sitgreaves Forest, The Bureau of Land Management, the NRCS, and ADEQ to determine possible causes of the impairment. The possible causes were determined to be wildlife, humans (from either outdated or ineffective septic systems, lack of restroom facilities in recreation areas), and livestock.

In 2009, the GWP wrote and was awarded a grant from ADEQ for a Targeted Watershed Grant titled "E.coli Reduction on the San Francisco and Lower Blue Rivers". In this grant, we are monitoring the water on the San Francisco and Blue Rivers to determine the source of the E.coli impairment. We are sampling the water, and testing for E.coli, and further testing samples that indicate high levels to determine the source of the E.coli. This is done by sending the samples for DNA testing, that will determine if the source is human, livestock or "other", which includes a variety of wildlife sources. Even though we do not yet have DNA testing complete, the preliminary samples we have tested have extremely high readings from the samples taken just below the Kaler Ranch.

This information, coupled with the physical evidence of the livestock waste present in the riparian area, point to the Kaler livestock as a significant contributing factor. The elevated E. coli levels point not only to levels of other pathogens in a stream but to sedimentation issues. Two rules apply: 1) E. coli travels with and on sediments, so that elevated levels of E. coli often indicate increased suspended sediments, and 2) E. coli is regarded as an indicator that other enteric pathogens may be present, including some that may put wildlife as well as humans at risk. In addition, the erosion and excess sedimentation caused by the livestock in the riparian area affects the fish and vegetation, as sediment particles in the water clogs the gills of fish, and decreases the amount of sunlight available to aquatic plants.

The Kaler livestock water year-round in the riparian area of the San Francisco River. The family has water rights that give them the legal right to do so. The landowner would water their cattle

in away from the river; however, no other water sources are available. Through a long education process, the Kalers have agreed to exclude their cattle permanently from the riparian area when they have enough watering capacity by means of solar wells.

Our objective in this project is the reduction of E.coli and sedimentation in the San Francisco River by installing a well and adding solar equipment and pipes, tanks and a trough to water the Kaler livestock. We need to install one more well, which will bring the number to four, to completely exclude the Kaler livestock from the San Francisco Riparian area. This will result in the complete exclusion of the Kaler Ranch livestock for the entire year, from the riparian area of the San Francisco River. This means that all of the current amount of livestock fecal material from the Kaler livestock will be eliminated.

Goals

Our goal is to reduce the E.coli and sediment levels in the San Francisco River by eliminating livestock from the riparian area.

Objectives

Our objective in this project is the reduction of E.coli and excess sedimentation in the San Francisco River by installing a well and adding solar equipment and pipes, a tank and a trough to water the Kaler livestock. We are currently implementing an ADEQ grant for a solar well to remove the Kaler livestock from the riparian area, which is matched by an ADA grant. In addition, we have another ADA grant for well number two, and a just-awarded grant from ADEQ for a third well. One more well needs to be installed, which will bring the number to four, to completely exclude the Kaler livestock from the San Francisco Riparian area. The four wells have been calculated to produce a minimum of 5 gallons per minute. One well is currently located on the Kalers' private land, and three are planned for BLM property (see attached map). The wells have been planned to water the number of livestock the Kalers are permitted on their BLM allotment. The BLM has written their Biological Opinion (attached) to allow for a fifth well, to allow for the possibility that the wells do not produce sufficient water to accommodate the landowner's permitted number of livestock.

Statement of Problem and Causes

In order to continue with the restoration of the San Francisco River restoration, we need to remove the Kalers livestock from the riparian area. The Kaler livestock water year-round in the riparian area of the San Francisco River. The family has water rights that give them the legal right to do so. The landowner would water their cattle in away from the river; however, no other water sources are available on their private land or on their leased land.

The Gila Watershed Partnership is currently implemented an ADEQ Targeted Watershed grant titled "E.coli Reduction on the San Francisco and Lower Blue Rivers". In this grant, we are sampling for E.coli on the San Francisco and Blue Rivers to determine the source of an E.coli Impairment that is listed in EPA's list of impaired waters. Even though we do not yet have DNA testing complete, the preliminary samples we have tested have extremely high readings from the samples taken just below the Kaler Ranch. This information, coupled with the physical

evidence of the livestock waste present in the riparian area, point to the Kaler livestock as a significant contributing factor.

The elevated E. coli levels point not only to levels of other pathogens in a stream but to sedimentation issues. Two rules apply: 1) E. coli travels with and on sediments, so that elevated levels of E. coli often indicate increased suspended sediments, and 2) E. coli is regarded as an indicator that other enteric pathogens may be present, including some that may put wildlife as well as humans at risk. In addition, the erosion and excess sedimentation caused by the livestock in the riparian area affects the fish and vegetation, as sediment particles in the water clogs the gills of fish, and decreases the amount of sunlight available to aquatic plants.

Statement of Solutions

Through a long education process, the Kalers have agreed to exclude their cattle permanently from the riparian area when they have enough watering capacity by means of solar wells. The Kalers have agreed to sign an agreement to that effect. The Kalers ranching operation will benefit, as by locating the wells away from the river, the ranch will have better distribution of the livestock, allowing for better grazing of the BLM, state land, and private land, and the river, the community, Greenlee County, the watershed and the state will benefit because the E.coli will be reduced in the San Francisco River.

The BLM has made a strong commitment to the Kaler Ranch and assisting in the environmental issues present there. The Coordinated Ranch Management Plan, developed by the BLM's range management staff, in cooperation with the landowner and the NRCS, includes the Kaler's private land and their BLM lease, their Freeport Mac Mo Ran lease and their state land lease. In addition, a Biological Evaluation has been prepared by the BLM and approved by the USFW Service for the wells . Attached is a copy of the approved BE.

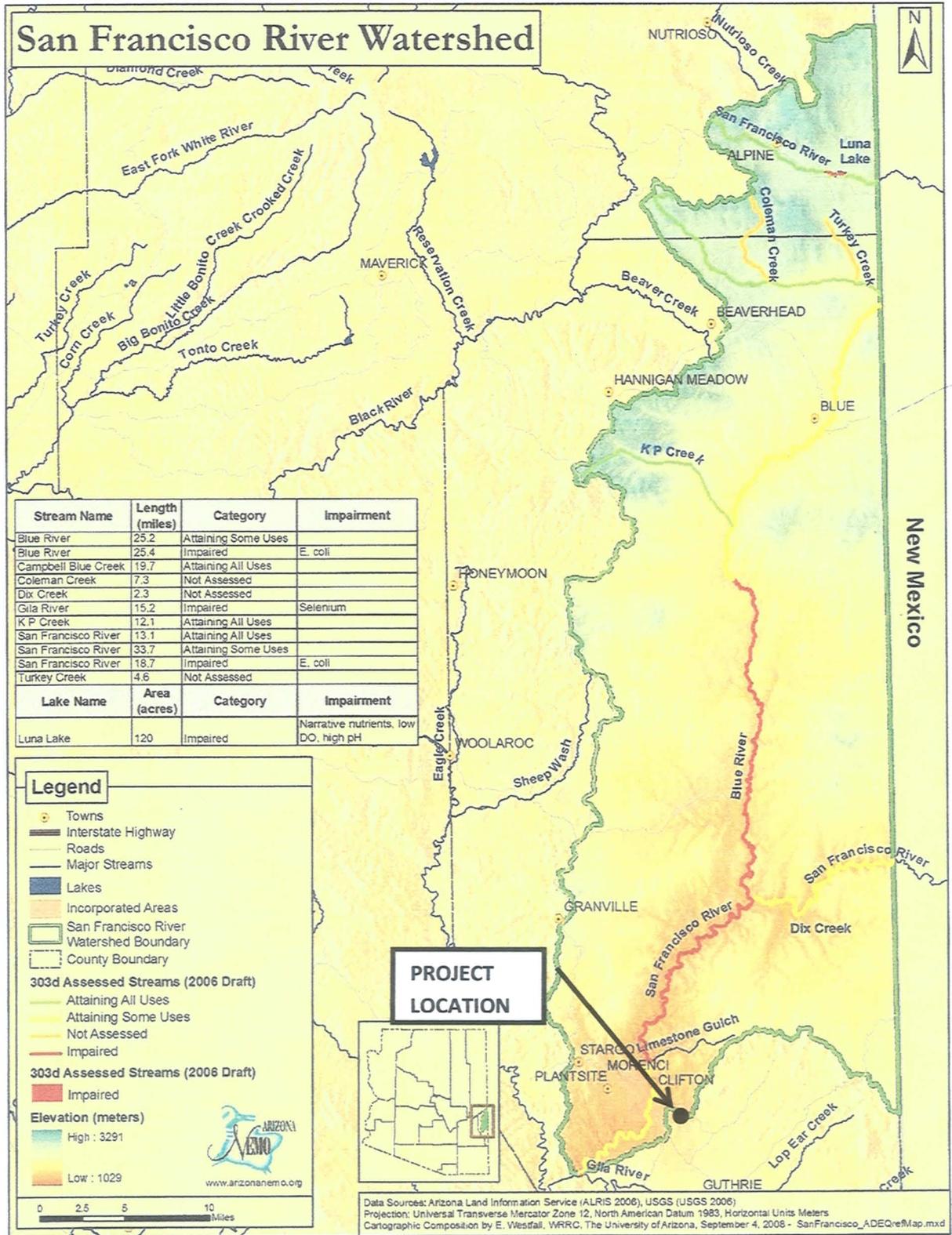
The implementation of this project will result in the reduction of E.coli in the San Francisco River. We intend to drill a well and add solar equipment and pipes, tanks and a trough to water the Kaler livestock. We are currently implementing an ADEQ grant for a solar well to remove the Kaler livestock from the riparian area, which is matched by an ADA grant. In addition, we have another ADA grant for well number two, and a just-awarded grant from ADEQ for a third well. We need to install one more well, which will bring the number to four, to completely exclude the Kaler livestock from the San Francisco Riparian area.

This will result in the complete exclusion of the Kaler Ranch livestock from the riparian area of the San Francisco River. This means that all of the current amount of livestock fecal material, and the resulting E.coli, from the Kaler livestock will be eliminated.

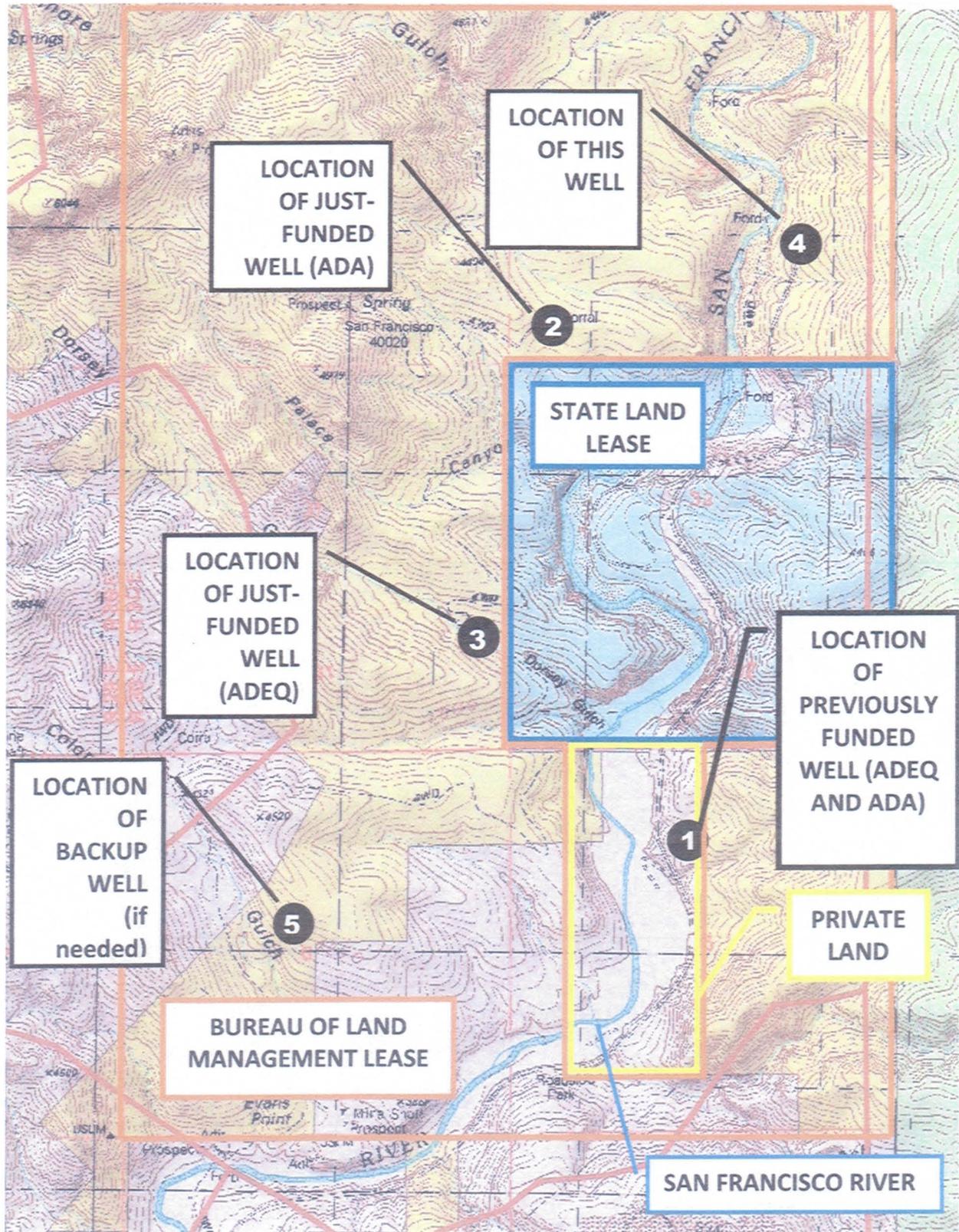
Statement of Project Years of Benefits

This project, when properly maintained, will last 20 years or more.

Project Location Map



Project Schematic



Scope of Work

Task 1: Permits, Authorizations, Clearances and Agreements

Task Description: The Gila Watershed Partnership shall obtain all permits, authorizations, environmental clearances and agreements necessary to complete the tasks listed in this Scope of Work. These include but are not limited to: archeological clearance, biological evaluation, 404 and 401 permits, county flood control permit, if necessary, BLM access agreements, operation and maintenance agreement with landowner, and a notice of intent to drill from ADWR. Since the well will be located on BLM property, the BLM will obtain all permits that are required on BLM property.

Task Purpose: To comply with all AWPF, local, state and federal permit requirements, environmental laws, and obtain legal access to project area.

Deliverable Description: Copies of all approved permits, authorizations, clearances and agreements.

Deliverable Due Date: Prior to any ground disturbing activities

Reimbursable Cost: \$3,344.25

Task 2: Develop Implementation Plan

Task Description: The Grantee shall develop an implementation plan that will include a Site Preparation Plan, Well Drilling Plan, Solar Installation Plan, Stock Tank Installation Plan, Monitoring Plan, and an Education & Outreach Plan

Task Purpose: To insure the correct design and proper installation of the improvements.

Deliverable Description: Copies of all implementation plans including the Site Preparation Plan, Well Drilling Plan, Solar Installation Plan, Stock Tank Installation Plan, Monitoring Plan, and an Education & Outreach Plan

Deliverable Due Date: March 31, 2011

Reimbursable Cost: \$5,651.60

Task 3: Implement the Site Preparation Plan

Task Description Preparation of the site including leveling and grading, as well as widening the road to the site.

Task Purpose: To provide a flat surface for the construction.

Deliverable Description: Completion report including a narrative description of completed work, copies of all invoices, timesheets and photos of the completed work.

Deliverable Due Date: May 31, 2011

Reimbursable Cost: \$2,879.60

Task 4: Implement the Well Drilling Plan

Task Description: Implementation includes mobilization of the equipment, drilling the well, utilizing a water truck to keep the equipment cool, and installing the well casing, down rod, miscellaneous fittings.

Task Purpose: To drill and outfit the well.

Deliverable Description Completion report including a narrative description of completed work, copies of all invoices, timesheets and photos of the completed work.

Deliverable Due Date: October 31, 2011

Reimbursable Cost: \$10,523.60

Task 5: Implement the Solar Installation Plan

Task Description: Implementation includes installation of solar mounting poles, solar modules, Trackers, submersible motor, solar control system, and miscellaneous fittings, connectors, etc.

Task Purpose: To install solar system to provide power for the well in the remote location of the well.

Deliverable Description Completion report including a narrative description of completed work, copies of all invoices, timesheets and photos or copies of the completed work.

Deliverable Due Date: July 31, 2011.

Reimbursable Cost: \$59,002.10

Task 6: Implement the Water Storage Tank and cattle trough Installation Plan

Task Description: Implementation includes hiring a stone mason and helper to construct a rock and mortar water storage tank, and cattle watering trough and connect them with pipe to the well pump. Stone structures, although expensive and laborious to construct, were selected instead of commercial metal tanks, as the remote site is subject to frequent vandalism. A metal tank seldom lasts through one season. The rock will be excavated from site(s) on the ranch , and transported to the site by the landowner with a backhoe. Cement will be mixed on site by the stone mason, and his helper. The rock, which is 9" and 14" in diameter. Rebar will be used to increase the structural integrity of the structures.

Task Purpose: To install a rock and mortar water tank and trough that will be resistant to the vandalism that tends to occur in remote settings.

Deliverable Description Completion report including a narrative description of completed work, copies of all invoices, timesheets and photos or copies of the completed work.

Deliverable Due Date: September 31, 2011

Reimbursable Cost: \$7,134.67

Task 7: Implement the Monitoring Plan

Task Description: Implementation includes photo monitoring of the riparian area to ensure that livestock are not present in the riparian area. Seven photo points have been established to determine if any there is evidence of livestock in the riparian area. Since the landowner has to cross the riparian are to ship his cattle, these incidents will be recorded, including the date and length of time of the occurrence and the number of animals crossing.

Monitoring for E. coli is one method of monitoring the health of a riparian system, since E. coli levels point not only to levels of other pathogens in a stream but to sedimentation issues. Two rules apply: 1) E. coli travels with and on sediments, so that elevated levels of E. coli often indicate increased suspended sediments, and 2) E. coli is regarded as an indicator that other enteric pathogens may be present, including some that may put wildlife as well as humans at risk.

E. coli monitoring is accomplished by collecting water samples from the stream and putting them through lab processes, under an established protocol. When collecting the samples, the observer takes other measurements and lists observations that will assist in determining the following: turbidity (suspended sediments), pH, flow, water and air

temperature, occasionally dissolved oxygen, and field observations such as signs of wildlife or livestock watering, open toilets in recreation areas, degradation of stream banks by animals or vehicles, etc

The observer transports the refrigerated bottles filled with stream water to a certified lab (which will be the Gila Watershed Partnership laboratory in Greenlee County that was established to process the E.coli samples for the ADEQ E.coli Reduction in the San Francisco and Lower Blue Rivers Grant Project), where the sample is combined with a reagent that feeds the E. coli. The sample water with reagent is then sealed into a multi-celled "Colilert" tray by processing through a Colilert sealing machine. The Colilert tray is incubated for 18 to 22 hours at a consistent temperature (37°C), then placed under an ultraviolet light. The cells containing E. coli colonies will fluoresce under the ultraviolet light. The observer completes a count of the fluorescing cells and records the result on a spreadsheet.

The result is a most probable number (MPN) of colony forming units (CFUs) per 100 ml. of stream water, which is compared to the number at which the scientific community and government agencies agree that stream water becomes unsafe for humans to enter. This points to the presence of other enteric pathogens that are much more expensive to monitor, including the parasites Giardia and Cryptosporidium, the bacteria Salmonella and MRSA, and the viruses Rotavirus and Adenovirus, among others. The results will be compared with the E.coli monitoring samples collected in 2010 in the ADEQ E.coli Reduction Project to determine the level of E.coli reduction.

Task Purpose: To quantify the level of E.coli reduction in the San Francisco River.

Deliverable Description Monitoring report including a narrative description of completed work, copies of all data sheets, lab reports, invoices, timesheets and photos or copies of the completed work.

Deliverable Due Date: December 31, 2011, and December 31, 2012.

Reimbursable Cost: \$7,134.67

Task 8: Implement the Education & Outreach Plan

Task Description: Implementation includes a field day at the Kaler Ranch, with a tour of the AWPF, ADEQ, ADA and NRCS grant projects, as well as a report on the vegetation and water quality monitoring results. The GWP will invite their general membership, including the local, state, and federal agencies that are partners in the watershed and involved in the E.coli reduction effort. The Greenlee County newspaper, The Copper Era, who is very supportive of our efforts to improve the rivers in our watershed, will be invited as well.

Task Purpose: To demonstrate the project's contribution to the restoration of the San Francisco River.

Deliverable Description Completion report including a narrative description of completed work, copies of all invoices, timesheets and photos or copies of the completed work.

Deliverable Due Date: December 31, 2012.

Reimbursable Cost: \$675.93

Task 9: Final Report

Task Description: The grantee shall document and summarize the entire project, including a project narrative, summarization, future recommendations, all project data, maps, photographs, etc, as required by the Arizona Water Protection Fund.

Task Purpose: To document project success.

Deliverable Description The Final report will a summary of the entire project, analysis of the project data, problems encountered, deviations from the work plan, and conclusions and recommendations for follow-up projects, and an evaluation of the project success against project purpose and objectives, copies of all invoices, timesheets and photos or copies of the completed work.

Deliverable Due Date: January 31 2013.

Reimbursable Cost: \$6,431.25

Budget

Attached

Supplemental Information

Stock tank design, Completed Bureau of Land Management Biological Evaluation, ADEQ Targeted Watershed Grant Quality Assurance Project Plan, and water rights information.

SHPO

Attached

Key Personnel

Dick Kaler is the owner of the ranch, the grant applicant, and will be acting as site supervisor, and also providing his labor and a back hoe, caterpillar, tractor, and truck for leveling the site for the well digging equipment as an in-kind match. He will also be providing match to pay the rock tank and trough labor and supplies, as well as giving them a place to stay. He will be helping in the education and outreach.

Jan Holder is the Executive Director of The Gila Watershed Partnership. Holder will be administrating the grant, overseeing the project is progressing in accordance with the approved scope of work and milestones, submitting quarterly and final reporting as well as budget and reimbursement request documents to ADEQ, providing additional load reduction and project information upon request, and serving as the day-to-day contact person regarding the project.

Katie Alessi is the monitoring specialist that will be conducting the photo monitoring.

Deborah Mendelsohn will be conducting the E.coli monitoring. Ms Mendelsohn is conducting the E.coli monitoring for the ADEQ E.coli Reduction on the San Francisco and Lower Blue Rivers grant project. She wrote the Sampling Plan, and Quality Assurance Project Plan (SAP/QAPP), lead, trained and supervised the monitoring teams for the E.coli sampling and conducted the laboratory tests at the Gila Watershed laboratory in Greenlee County.

The well drilling contractor, solar contractor, and the stone masons will be hired, and an agreement will be signed if the grant is approved and the contract is signed.

**E.coli Reduction on the San Francisco River through Alternative Livestock Water on Kaler Ranch,
Phase III**

DETAILED BUDGET BREAKDOWN

Task 1				
Permits, Authorizations, Agreements - permits and subcontractor agreements	Amount	Unit	Cost per Unit	Total Cost
Direct Labor				
Gila Watershed Coordinator	48	hrs	\$ 65.00	\$ 3,120.00
Subtotal				\$ 3,120.00
Other Direct Costs				
Office supplies, printing and postage	1	each	\$ 65.00	\$ 65.00
Subtotal				\$ 65.00
Task Subtotal				\$ 3,185.00
Administration Costs (5%)				\$ 159.25
Task Total				\$ 3,344.25

Task 2				
Prepare Implementation Plans (Site Preparation Plan, Well Drilling Plan, Solar Installation Plan, Stock Tank Installation Plan, Monitoring Plan, Education & Outreach Plan)	Amount	Unit	Cost per Unit	Total Cost
Direct Labor				
Gila Watershed Coordinator	80	hrs	\$ 65.00	\$ 5,200.00
Subtotal				\$ 5,200.00
Other Direct Costs				
Office supplies, printing and postage	1	each	\$ 65.00	\$ 65.00
Mileage (2 trips at 132 Miles round-trip each)	264	miles	\$ 0.45	\$ 117.48
Subtotal				\$ 182.48
Task Subtotal				\$ 5,382.48
Administration Costs (5%)				\$ 269.12
Task Total				\$ 5,651.60

Task 3				
Implement Site Preparation Plan	Amount	Unit	Cost per Unit	Total Cost
Direct Labor				
Gila Watershed Coordinator	40	hrs	\$ 65.00	\$ 2,600.00
Subtotal				\$ 2,600.00
Capital Outlay & Equipment				
Tractor (includes operator)	10	hr	\$ 85.00	\$ 850.00
Backhoe (includes operator)	12	hr	\$ 85.00	\$ 1,020.00
D3 Caterpillar (includes operator)	10	hr	\$ 65.00	\$ 650.00
1 ton, 4 whl drive truck (includes operator)	10	hr	\$ 45.00	\$ 450.00
water truck	60	hr	\$ 110.00	\$ 6,600.00
Subtotal				\$ 9,570.00
Other Direct Costs				
Office supplies, printing and postage	1	each	\$ 25.00	\$ 25.00
Mileage (2 trips at 132 Miles round-trip each)	264	miles	\$ 0.45	\$ 117.48
Subtotal				\$ 142.48
Task Subtotal				\$ 2,742.48
Administration Costs (5%)				\$ 137.12
Task Total				\$ 2,879.60

Task 4				
Implement Well Drilling Plan	Amount	Unit	Cost per Unit	Total Cost
Direct Labor				
Contract Well Driller (contract amount)	1	each	\$ 7,400.00	\$ 7,400.00
Well construction labor	32	hrs	\$ 45.00	\$ 1,440.00
Gila Watershed Coordinator	16	hrs	\$ 65.00	\$ 1,040.00
Subtotal				\$ 9,880.00
Capital Outlay & Equipment				
Drill Rig (Contract Amount)	1	ttl	\$ 10,600.00	\$ 10,600.00
water truck	1	ttl	\$ 3,000.00	\$ 3,000.00
Back Hoe	1	ttl	\$ 1,200.00	\$ 1,200.00
Crane Truck	1	ttl	\$ 1,150.00	\$ 1,150.00
Subtotal				\$ 15,950.00
Material & Supplies				
Well casing, down rod, discharge pipe, and misc fittings	1	ttl	\$ 10,800.00	\$ 10,800.00
down rod and discharge pipe	1	ttl	\$ 1,400.00	\$ 1,400.00
down wire and pump cable	1	ttl	\$ 2,200.00	\$ 2,200.00
casing grout and gravel pack	1	ttl	\$ 2,420.00	\$ 2,420.00
Liner, seal, nipples, couplings, misc fittings	1	ttl	\$ 2,700.00	\$ 2,700.00
Subtotal				\$ 19,520.00
Other Direct Costs				
Office supplies, printing and postage	1	each	\$ 25.00	\$ 25.00
Mileage (2 trips at 132 Miles round-trip each)	264	miles	\$ 0.45	\$ 117.48
Subtotal				\$ 142.48
Task Subtotal				\$ 10,022.48
Administration Costs (5%)				\$ 501.12
Task Total				\$ 10,523.60

Task 5				
Implement Solar Installation Plan	Amount	Unit	Cost per Unit	Total Cost
Direct Labor				
Contract Solar Installer	1	ttl	\$ 3,850.00	\$ 3,850.00
Gila Watershed Coordinator	20	hrs	\$ 65.00	\$ 1,300.00
Subtotal				\$ 5,150.00
Capital Outlay & Equipment				
Solar Modules	1	ttl	\$ 29,600.00	\$ 29,600.00
Trackers	1	ttl	\$ 10,400.00	\$ 10,400.00
Submersible Motor	1	ttl	\$ 3,300.00	\$ 3,300.00
Solar Control System	1	ttl	\$ 6,800.00	\$ 6,800.00
Subtotal				\$ 50,100.00
Material & Supplies				
Misc Solar Fittings, Connectors, etc.	1	ttl	\$ 800.00	\$ 800.00
Subtotal				\$ 800.00
Other Direct Costs				
Office supplies, printing and postage	1	each	\$ 25.00	\$ 25.00
Mileage (2 trips at 132 Miles round-trip each)	264	miles	\$ 0.45	\$ 117.48
Subtotal				\$ 142.48
Task Subtotal				\$ 56,192.48
Administration Costs (5%)				\$ 2,809.62
Task Total				\$ 59,002.10

Task 6				
Implement Stock Tank Installation Plan	Amount	Unit	Cost per Unit	Total Cost
Direct Labor				
Gila Watershed Coordinator	20	hr	\$ 65.00	\$ 1,300.00
Subtotal				\$ 1,300.00
Material & Supplies				
Pipe	10	roll	\$ 250.00	\$ 2,500.00
Connectors and fittings	2	tons	\$ 300.00	\$ 600.00
Subtotal				\$ 3,100.00
Other Direct Costs				
Office supplies, printing and postage	1	each	\$ 25.00	\$ 25.00
Mileage (1 trips at 132 Miles round-trip each)	132	miles	\$ 0.45	\$ 58.74
Subtotal				\$ 83.74
Task Subtotal				\$ 4,483.74
Administration Costs (5%)				\$ 224.19
Task Total				\$ 4,707.93

Task 7				
Implement Monitoring Plan	Amount	Unit	Cost per Unit	Total Cost
Direct Labor				
Gila Watershed Coordinator	20	hrs	\$ 65.00	\$ 1,300.00
E.coli Monitoring Specialist	48	hrs	\$ 65.00	\$ 3,120.00
Photo Monitoring Specialist	8	hrs	\$ 35.00	\$ 280.00
Subtotal				\$ 4,700.00
Material & Supplies				
E.coli Testing	2	tfl	\$ 800.00	\$ 1,600.00
Subtotal				\$ 1,600.00
Other Direct Costs				
Office supplies, printing and postage	1	each	\$ 25.00	\$ 25.00
Mileage (8 trips at 132 Miles round-trip each)	1056	miles	\$ 0.45	\$ 469.92
Subtotal				\$ 494.92
Task Subtotal				\$ 6,794.92
Administration Costs (5%)				\$ 339.75
Task Total				\$ 7,134.67

Task 8				
Implement Education & Outreach Plan	Amount	Unit	Cost per Unit	Total Cost
Direct Labor				
Gila Watershed Coordinator	8	hrs	\$ 65.00	\$ 520.00
Subtotal				\$ 520.00
Other Direct Costs				
Office supplies, printing and postage	1	each	\$ 65.00	\$ 65.00
Mileage (1 trips at 132 Miles round-trip each)	132	miles	\$ 0.45	\$ 58.74
Subtotal				\$ 123.74
Task Subtotal				\$ 643.74
Administration Costs (5%)				\$ 32.19
Task Total				\$ 675.93

Task 9				
Final Project Report	Amount	Unit	Cost per Unit	Total Cost
Direct Labor				
Gila Watershed Coordinator	80	hrs	\$ 65.00	\$ 5,200.00
Landowner	40	hrs	\$ 20.00	\$ 800.00
Subtotal				\$ 6,000.00
Other Direct Costs				
Office supplies, printing and postage	1	each	\$ 125.00	\$ 125.00
Subtotal				\$ 125.00
Task Subtotal				\$ 6,125.00
Administration Costs (5%)				\$ 306.25
Task Total				\$ 6,431.25

Total Requested AWP				\$ 100,350.94
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DETAILED MATCHING BREAKDOWN

Task 1				
Permits, Authorizations, Agreements - permits and subcontractor agreements	Amount	Unit	Cost per Unit	Total Cost
Direct Labor				
Landowner	60	hrs	\$ 20.00	\$ 1,200.00
Bureau of Land Management Range Conservationist	24	hrs	\$ 45.00	\$ 1,080.00
Bureau of Land Management archeologist	24	hrs	\$ 55.00	\$ 1,320.00
Bureau of Land Management Biologist	24	hrs	\$ 55.00	\$ 1,320.00
Subtotal				\$ 4,920.00
Task Subtotal				\$ 4,920.00
Task Total				\$ 4,920.00

Task 2				
Prepare Implementation Plans (Site Preparation Plan, Well Drilling Plan, Solar Installation Installation Plan, Stock Tank Installation Plan, Monitoring Plan, Education & Outreach Plan)	Amount	Unit	Cost per Unit	Total Cost
Direct Labor				
Landowner	60	hrs	\$ 20.00	\$ 1,200.00
Subtotal				\$ 1,200.00
Task Subtotal				\$ 1,200.00
Task Total				\$ 1,200.00

Task 3				
Implement Site Preparation Plan	Amount	Unit	Cost per Unit	Total Cost
Direct Labor				
Landowner - Site Supervision	80	hrs	\$ 20.00	\$ 1,600.00
Subtotal				\$ 1,600.00
Task Subtotal				\$ 1,600.00
Task Total				\$ 1,600.00

Task 4				
Implement Well Drilling Plan	Amount	Unit	Cost per Unit	Total Cost
Direct Labor				
Landowner - Site Supervision	80	hrs	\$ 20.00	\$ 1,600.00
Subtotal				\$ 1,600.00
Task Subtotal				\$ 1,600.00
Task Total				\$ 1,600.00

Task 5				
Implement Solar Installation Plan	Amount	Unit	Cost per Unit	Total Cost
Direct Labor				
Landowner - Site Supervision	80	hrs	\$ 20.00	\$ 1,600.00
Subtotal				\$ 1,600.00
Task Subtotal				\$ 1,600.00
Task Total				\$ 1,600.00

Task 6				
Implement Stock Tank Installation Plan	Amount	Unit	Cost per Unit	Total Cost
Direct Labor				
Landowner - Site Supervision	80	hrs	\$ 20.00	\$ 1,600.00
Landowner - Labor to connect pipe btw pump & trough	60	hrs	\$ 20.00	\$ 1,200.00
Stone Mason	220	hr	\$ 28.00	\$ 6,160.00
Masonry Helpers	220	hr	\$ 20.00	\$ 4,400.00
Subtotal				\$ 13,360.00
Equipment				
Tractor(includes operator) (for moving rock)	24	hr	\$ 75.00	\$ 1,800.00
Back Hoe (includes operator) (for moving rock)	48	hr	\$ 75.00	\$ 3,600.00
Subtotal				\$ 5,400.00
Material & Supplies				
Sand	1	ttl	\$ 12.00	\$ 12.00
Rock	1	ttl	\$ 1,500.00	\$ 1,500.00
Subtotal				\$ 1,512.00
Task Subtotal				\$ 20,272.00
Task Total				\$ 20,272.00

Task 7				
	Amount	Unit	Cost per Unit	Total Cost
Implement Monitoring Plan				
Direct Labor				
Landowner - Monitoring Assistance	80	hrs	\$ 20.00	\$ 1,600.00
Subtotal				\$ 1,600.00
Task Subtotal				\$ 1,600.00
Task Total				\$ 1,600.00

Task 8				
	Amount	Unit	Cost per Unit	Total Cost
Implement Education & Outreach Plan				
Direct Labor				
Landowner	16	hrs	\$ 20.00	\$ 320.00
Subtotal				\$ 320.00
Task Subtotal				\$ 320.00
Task Total				\$ 320.00

Task 9				
	Amount	Unit	Cost per Unit	Total Cost
Final Project Report				
Direct Labor				
Landowner	40	hrs	\$ 20.00	\$ 800.00
Subtotal				\$ 800.00
Task Subtotal				\$ 800.00
Task Total				\$ 800.00

Total Matching	\$ 33,912.00
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Additional Match from ADEQ (\$174,520) and ADA (\$118,568) Well Grants	\$ 293,088.00
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Total AWP Funds and Match	\$ 427,350.94
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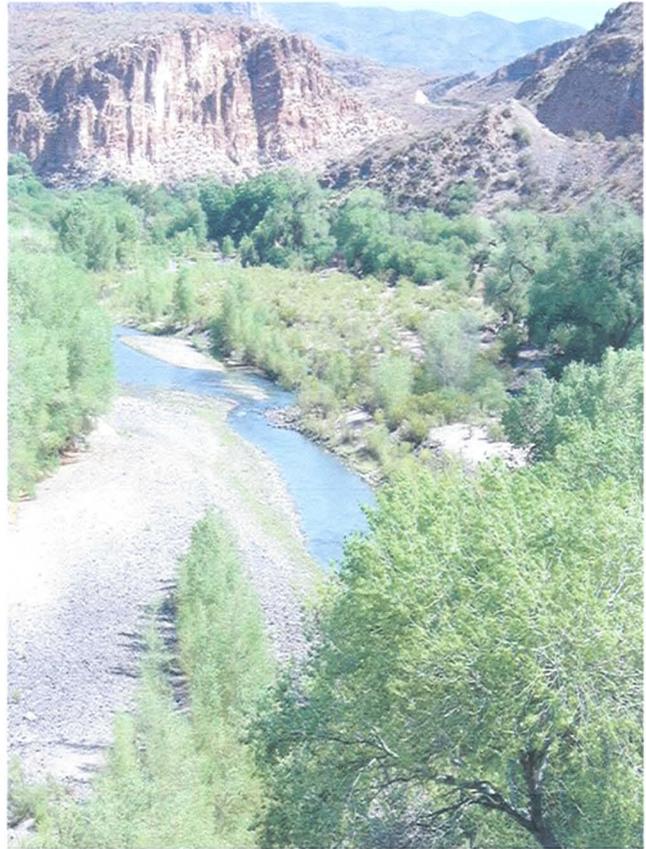
Photos



Livestock in the riparian area at the Kaler Ranch



Solar installation being completed with an ADEQ and ADA grant on the Kaler Ranch



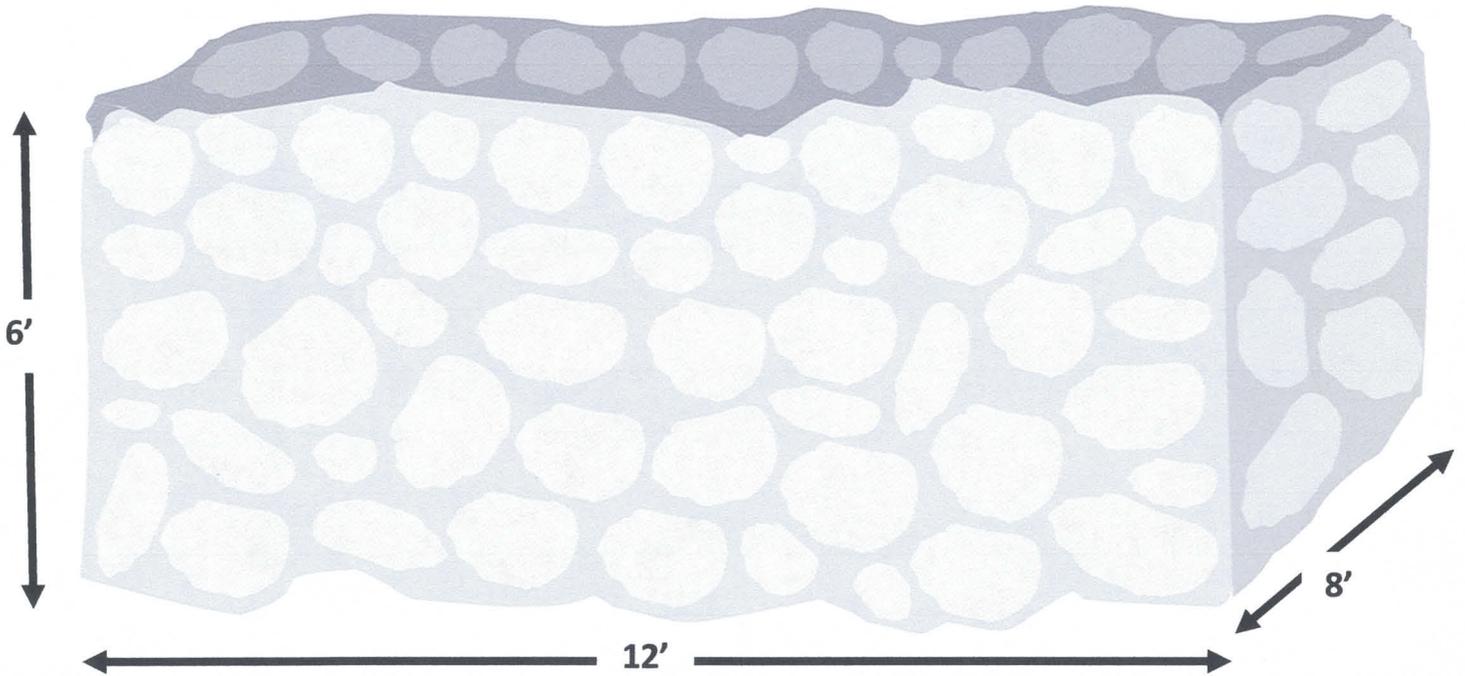
The Kaler Ranch's private land is located along the San Francisco River in Greenlee County

<p>INDEX Happenings 2 Opinions 4 Sports 6 Classified 9-10</p>	<h1 style="color: green;">THE COPPER ERA</h1> <p>Winner of the 2002 ANA General Excellence Award for small weeklies Serving Greenlee County Residents Since 1899</p> <p>Wednesday, September 30, 2009 Vol. 110, No. 39 12 pages 1 Section Clifton, Arizona 75 cents</p> <h2 style="color: green;">San Francisco, Blue rivers 'impaired'</h2> <p><i>Source of E. coli yet uncertain</i></p> <p><small>By Deborah Mendelsohn, Contributing Writer</small></p> <p>Worried about alligators? That's not all that might float by as someone fishes or swims in the San Francisco River.</p> <p>The day after Labor Day, this reporter and a friend made a trip up the San Francisco River Road to a "quad" (meant to put on croaks) when the waters are higher. What did they find there?</p> <p>Thousands of shards of sparkling glass from freshly smashed bottles, dozens of packages missing inside cut-off food packaging. Worst of all, there was the silver pile of stinking human feces, festooned with toilet paper and left in the open. Not right in the water, but in places that the water touches at least a few times each year.</p> <p>Had it rained a little harder these last few weeks, some of those feces would have already made their way to Clifton.</p> <p>Not a half-mile downstream from most of the filth is a poaty sloping pool where children splash and paddle around while their parents cart a fishing lure at a safe distance, the complete study to fight when the catch is in. Maybe they are your children. Maybe you have been handling these fish.</p> <p>Over the last four years, the Arizona Department of Environmental Quality, after testing readers water samples from the Frisco and Blue rivers, declared parts of both rivers "impaired for E. coli." That's <i>Escherichia coli</i>, that nasty little bacterium you hear about in food-spoiling sources. There are many forms of E. coli, and while most of them aren't harmful to humans, some are quite dangerous to people, especially to the very young or old and those with compromised immune systems.</p> <p>Has anyone become sick from E. coli in our rivers?</p> <p>We don't know -- people don't always go to a doctor when they get a case of diarrhea, even when it never goes away. But with that "impairment" finding, people have to start looking into what's going on -- before the state does.</p> <p>So far, all that the Department of Environmental Quality has proved is that there are very high levels of E. coli in portions of our river waters at certain times. We don't know how often those high levels are present, and we don't know just whose untreated toilets produced the bacteria that ADEQ's tests picked up. Did the E. coli found come from humans (even so-called "rainbow"?) There are different theories, and some of them are yet proven. But that is about to change.</p> <p>A very important thing to understand about the very public health experts think is that E. coli is a reliable</p> <p style="text-align: right;">See Rivers on Page 12A</p>
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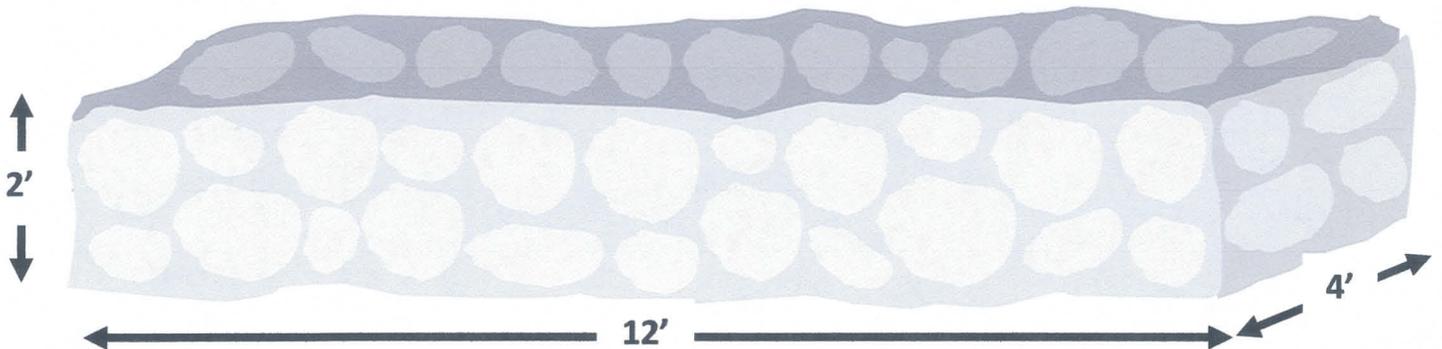
Article in the Greenlee County newspaper about the E.coli impairment in the San Francisco River

**E.coli Reduction on the San Francisco River
Through Alternative Livestock Water on the Kaler Ranch, Phase III**

Water Storage Tank Design – Built of rock and concrete – will hold approximately 2,300 gallons. Dimensions shown below are outside dimensions. Water storage capacity is based on inside dimensions, which is approximately 5 feet in depth, 10 feet in length, and 6 feet in width.



Cattle Trough Design – Built of rock and concrete – will hold approximately 740 gallons. Dimensions shown below are outside dimensions. Water storage capacity is based on inside dimensions, which is approximately 1 foot in depth, 10 feet in length, and 2 feet in width.



Existing Plans, Reports, Information Relevant to the Project

See attached

Letters of Community Support

See attached

PO Box 127 • 2100 S. Bowie Avenue • Solomon AZ 85551-0127 • (928) 428-2611 • FAX: (928) 428-7023

August 27, 2010

Arizona Water Protection Fund
3550 North Central Ave.
Phoenix, AZ 85012

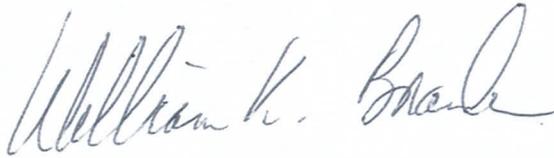
Dear Representatives of the Arizona Water Protection Fund:

I am writing this letter to express my support for the Gila Watershed Partnership and their application for grant funding for the E.coli Reduction on the San Francisco River through Alternative Livestock Water on the Kaler Ranch, Phase III, grant project. This grant is important as it will help to address the E.coli issue on the San Francisco River. Solving this issue is critical to Greenlee County and the Upper Gila Watershed.

I support their efforts to secure these grant funds and I am confident that they will be used in a very worthwhile and efficient manner.

Thank you for your consideration in this matter.

Sincerely,



Bill Brandau
Graham County Cooperative Extension Director
Area Agent, Agriculture and Natural Resources,
Graham and Greenlee County
University of Arizona Cooperative Extension
P.O. Box 127
Solomon, Arizona 85551
wbrandau@cals.arizona.edu



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Safford Field Office
711 14th Avenue
Safford, Arizona 85546
928-348-4400
www.blm.gov/az/sfo



August 21, 2010

Arizona Water Protection Fund Commission
Arizona Water Protection Fund
3550 North Central Avenue
Phoenix, Arizona 85012

Re: E.coli Reduction on the San Francisco River Through Alternative Livestock Water on the Kaler Ranch, Phase III

Dear Arizona Water Protection Fund Commissioner,

This letter is to indicate support for the Gila Watershed Partnership of Arizona's grant application for the E.coli Reduction on the San Francisco River through Alternative Livestock Water on the Kaler Ranch, Phase III project. This grant will reduce E.coli in the San Francisco River by providing alternative livestock water out of the riparian area of the San Francisco River. We agree to supply the match for the permits and clearances on the applicable BLM land. We support this grant application and we urge you to fund this project.

Thank you for your consideration. Please contact me if you have any questions.

Sincerely,

Lance R. Brady
Assistant Field Office Manager
Safford Field Office
Bureau of Land Management

Greenlee County Planning and Zoning

Director Voice - (928) 865 4762
P.O. Box 908 253 Fifth Street
Clifton, Arizona 85533

Facsimile - (928) 865 4763
email - pronnerud@co.greenlee.az.us

Clerk
Yvonne Pearson

Administrator
Deborah K. Gale

Board of Supervisors
David Gomez, District 1
Hector Ruedas, Chair, District 2
Richard Lunt, District 3

August 20, 2010

Arizona Water Protection Fund Commission
3550 North Central Avenue
Phoenix, Arizona 85012

Dear Arizona Water Protection Fund Commissioners:

I support the Gila Watershed Partnership's grant application for E.coli Reduction on the San Francisco River through Alternative Livestock Water on the Kalar Ranch, Phase III. This grant is important as it will install critical infrastructure to address the E. coli problem in the San Francisco River, which is an critical resource to us in Greenlee County and the Upper Gila Watershed.

I support their efforts to secure these grant funds, and are confident that they will be used in a very worthwhile and efficient manner.

Please call if you have questions.

Yours truly,



Philip Ronnerud
Engineer

d: kalar III.wpd

CORONADO



RESOURCE CONSERVATION AND
DEVELOPMENT AREA, INC.

656 N. Bisbee Avenue
Willcox, AZ 85643
Phone: (520) 384-2229 x122
Fax: (520) 384-2735

August 29, 2010

Arizona Water Protection Fund Commission
3550 North Central Ave.
Phoenix, AZ 85012

Dear Arizona Water Protection Fund Commissioners:

I am writing in support of the Gila Watershed Partnership's project to install a well on the Kaler property in Greenlee County. This well will allow the rancher to completely exclude livestock from the San Francisco River riparian area and restore a healthy ecosystem.

As a Council that also works on projects in southeastern Arizona to improve our natural resources, we feel that providing an alternate source of water, provides feasible options for the ranchers and allows for the protection of the riparian area. The Gila Watershed Partnership has worked on multiple phases of projects to improve the San Francisco River and this one is a much needed next step. We would recommend it for funding and appreciate your consideration of this proposal.

Sincerely,

A handwritten signature in black ink, appearing to read "John E. Hays". The signature is fluid and cursive.

John E. Hays, President

"Local People Making Things Happen"
Serving Cochise, Graham, Greenlee, Pima, and Santa Cruz Counties



Janice K. Brewer
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007
(602) 771-2300 • www.azdeq.gov



Benjamin H. Grumbles
Director

August 25, 2010

Arizona Water Protection Fund Commission
Arizona Department of Water Resources
3550 North Central Avenue
Phoenix, Arizona 85012

Re: Letter of Support for the Kaler Ranch Well Project

To Whom It May Concern,

I am writing in support of the Gila Watershed Partnership's application for funding to implement a solar powered well at the Kaler Ranch to provide off-channel water sources for livestock. The Kaler Ranch is located along a reach of the San Francisco River that has been assessed as impaired by the Arizona Department of Environmental Quality (ADEQ) due to exceedances of the *E. coli* bacteria standard for Full Body Contact. A Total Maximum Daily Load (TMDL) report developed by ADEQ has identified livestock as a contributing source of bacteria in this reach.

The owners of the Kaler Ranch have expressed concern that grazing their cattle near and in the riparian areas of the San Francisco River may be contributing to the *E. coli* impairment, and have taken measures to provide alternative water sources for their cattle with support from two previous ADEQ Water Quality Improvement Grants (WQIGs). In addition, they have utilized WQIG funding to implement best management practices to address overall erosion from their property. The owners have also been involved in the ongoing San Francisco/Blue River Targeted Watershed Improvement Grant, a WQIG awarded to the Gila Watershed Partnership in 2009 to identify specific bacteria sources within the drainage contributing to the *E. coli* impairment. Photo and water quality monitoring associated with these projects has shown that cattle from the Kaler Ranch are a likely bacteria source. While the Kalers are willing to completely exclude their cattle from the riparian area in order to protect water quality, they are unable to do so until sufficient alternative water supplies have been established. Funding for this fourth and final solar well would allow them to isolate a documented source of *E. coli* along the San Francisco River.

Both the GWP and the Kalers have shown strong interest in and commitment to active stewardship of the lands surrounding the San Francisco River to protect its water resources. I encourage you to strongly consider their Arizona Water Protection Fund application for award.

Sincerely,

Krista Osterberg
Grant & Outreach Coordinator
Water Quality Division
Arizona Department of Environmental Quality

cc Jan Holder, Gila Watershed Partnership

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DECISION RECORD

EA Number: DOI-BLM-AZ-G010-2008-0043

Serial/Case File No. 40020

BLM Office: Safford Field Office

Decision: It is my decision to implement the proposed action and drill up to four wells as a source of permanent water on the San Francisco Allotment.

Alternatives Considered: The No Action Alternative would not fulfill the purpose and need of the project.

Rational for Decision: The proposed action is specifically provided for in the Safford District RMP. The environmental assessment dated 26 November 2007, prepared for the project analyzed the potential impacts to the environment and the public should the proposed action be implemented. A Finding of No Significant Impacts (FONSI) has been signed documenting no significant impacts to the environment that would require an environmental impact statement. By selecting the proposed action, the Safford Field Office is implementing this portion of the Safford District RMP.

Mitigation Measures/ Additional Stipulations:

1. No new road construction will occur.
2. Livestock waters will not be stocked with nonnative aquatic species.
3. Water will remain accessible to wildlife
4. Any unused or discarded materials will be properly disposed.
5. Periodic inspection and continued range monitoring

Appeals:

This decision may be protested or appealed under the procedures outlined in CFR 300.4 (Appeals), 43 CFR 4.411., and 1610.5, 5-1.



Scott Cooke

Field Office Manager

6/4/10
Date

Attachments: Finding of No Significant Impact dated 6/4/10

Environmental Assessment – AZ-G010-2008-0043

FINDING OF NO SIGNIFICANT IMPACT

EA Number: DOI-BLM-AZ-G010-2008-0043

Serial/Case File No. 40020

BLM Office: Safford Field Office

Finding of No Significant Impact:

I have reviewed the environmental assessment (EA), # DOI-BLM-AZ-G010-2008-0043, dated 26 November 2007, prepared for the San Francisco Wells project, and have found through the EA that there are no potentially significant environmental impacts caused by the proposed project. I have determined that the proposed action with the mitigation measures listed below will not have any significant impacts on the human environment and that an EIS is not required. I have determined that the proposed action is in conformance with the Safford District Resource Management Plan approved in Record of Decision dated Part I, September 1992; Record of Decision Part II, July 1994.

Below are the substantive reasons for finding no significant impact:

The rationale for this decision is such that it does not conflict with the Safford Resource Management Plan. The issues that are identified are not significant and are mitigated sufficiently given the potential impacts. The "no action" alternative does not adequately meet the applicant's needs, nor is it adequate given the environmental or economic impacts that are identified.

The following elements have been analyzed and would not be affected or are mitigated sufficiently: Air Quality, ACEC's, Cultural Resources, Environmental Justice, Socio-Economics, Floodplains, Hazardous Materials, Nonnative/Invasive Plants, Native American Rel., Prime/Unique Farmlands, Solid Waste, T&E Animal Species, T&E Plant Species, VRM (Class III), Water Quality (Ground and Surface), Water Rights, Wetlands/Riparian, Wild & Scenic River, Wilderness, Standards for Rangeland Health, Lands, Wildlife, and Fisheries.

There are no pending or authorized lands actions which might conflict with this proposed action. The decision to allow the proposed action does not result in any undue or unnecessary environmental degradation and is in conformance with the Safford Resource Management Plan, and Record of Decision approved September 1992 and July 1994. This proposed action has been reviewed to determine if it conforms to the land use plan terms and conditions as required by 43 CFR 1610.5, BLM MS 1617.3.

Attachments: NEPA#: DOI-BLM-AZ-G010-2008-0043



Scott Cooke Field Office Manager

6/4/10
Date

**BIOLOGICAL EVALUATION FOR FOUR WELLS IN THE UPLANDS ALONG
THE SAN FRANCISCO RIVER GREENLEE COUNTY, ARIZONA**

Prepared for: U.S. Fish and Wildlife Service

Prepared By: Bureau of Land Management

January 2010

Background:

The Permittee for the Bureau of Land Management, San Francisco River Allotment has requested that the Bureau consider authorizing the drilling and water production from four proposed wells on the San Francisco Allotment. The San Francisco Allotment is located in Greenlee County along the San Francisco River approximately five miles north of the town of Clifton, Arizona. The allotment contains 3925 acres of public land 1020 acres of state land and 460 acres of private land. The Bureau currently permits use by 51 head of cattle. Public land grazing on this allotment has been consulted on in the Programmatic Biological Opinion for the Safford /Tucson Field Offices' Livestock Grazing Program, Southeastern Arizona #2-21-96-F-160, as amended. Since the final grazing BO came out, critical habitat for loach minnow has been designated requiring consultation. Pertinent excerpts from the referenced BO follow.

The proposed action for the reference BO in part is to implement the Bureaus Standards and Guides Regulations (pages 20-22) in part these guidelines state:

“New facilities are located away from riparian-wetland areas if they conflict with achieving or maintaining riparian-wetland function. Existing facilities are used in a way that does not conflict with riparian-wetland functions or are relocated or modified when incompatible with riparian-wetland functions”.

And

“Intensity, season, and frequency of use and distribution of grazing use should provide for growth and reproduction of those plant species needed to reach desired plant community objectives”.

Mitigation Measures stated for Loach Minnow, Pages 55-56, of BO #2-21-96-F-160

12. To protect the loach minnow and its habitat:

(a) Direct effects from livestock grazing that may jeopardize the continued existence of the loach minnow will be eliminated in the riparian areas of Bureau-administered lands on the San Francisco River and Aravaipa Creek. This may include elimination of grazing, or other range management options.

(b) The Bureau will evaluate all stock tanks on Bureau lands in the watersheds of Aravaipa Creek or the San Francisco River above Clifton for their degree of risk to introduce nonnative fish to habitats of the loach minnow. The Bureau will then, in conjunction with the Service and Arizona Game and Fish Department, develop and implement management techniques or practices for tanks in each risk category. Management techniques may include, but are not limited to, replacement of existing tanks with alternate water sources, treatments to eliminate fish, or other appropriate methods.

Proposed tanks will undergo the same evaluation for risk, and will include development of a mitigation plan to be approved by the Service.

(c) Livestock grazing will be deferred or otherwise managed to assure conditions in the watersheds of Aravaipa Creek and the San Francisco River above Clifton are maintained or improved. Action will be taken to ensure that range condition (see footnote on page 47) does not deteriorate in the South Rim, Painted Cave, and Hell Hole allotments, and in the watershed of the San Francisco River in the San Francisco, and Red Hickey Hills, and Metcalf allotments. Action will be taken within three years on Bureau lands in portions of these allotments in fair condition that will result in a long-term upward trend in range condition (see footnote on page 47).

(d) The Bureau will cooperate with the Service and Arizona Game and Fish Department to identify other site-specific measures to protect loach minnow populations from effects of the grazing program as specific effects are identified. These measures could include officially deferring riparian grazing on the Quintana, Brandenburg Mountain, Red Hickey Hills, and San Francisco allotments, surveys of stock waters for nonnative fish, replacement of nonnative fish populations with native fish in perennial stock ponds, and implementation of a prescribed fire plan in the semi-desert grassland areas in the watersheds containing loach minnow to enhance watershed function

Reasonable and Prudent Measures and Terms and Conditions, Pages 157-160, of BO #2-21-96-F-160

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of loach minnow:

- 1. Action shall be taken to eliminate direct effects of grazing on the loach minnow in the San Francisco River and Aravaipa Creek.*
- 2. The Bureau shall coordinate with the Service to ensure that project-level activities are designed to minimize take of loach minnows.*
- 3. Measures shall be included in project-level activities to reduce take of loach minnows to the extent possible.*
- 4. The Bureau shall monitor grazing activities and incidental take resulting from the proposed action and report to the Service the findings of that monitoring.*

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the Act, the Bureau must comply with the following terms and conditions in regard to the proposed action. These terms and conditions implement the reasonable and prudent measures described above.

With the exception of measure (a), the Bureau's mitigation measures for loach minnow are included here by reference. Terms and conditions are nondiscretionary.

The following term and condition implements reasonable and prudent measure number 1:

a. No grazing of cattle shall occur on Bureau-administered lands in the riparian corridors of Aravaipa Creek or on the San Francisco River in the San Francisco and Red Hickey Hills allotments through the life of the project (December 31, 2006). Actions shall be taken, including fencing, monitoring for and removal of trespass cattle, and other measures to ensure grazing does not occur on Bureau lands in Aravaipa Creek or the San Francisco River on the San Francisco (4002) and Red Hickey Hills (4005) allotments.

b. Trailing of cattle in loach minnow habitat shall be limited to 10 cattle through Aravaipa Creek on the Hell Hole allotment no more than three times per year, and trailing along the San Francisco River in the San Francisco allotment for no more than 0.25 mi and no more than twice a year. Photos of typical effects of trailing shall be taken in both the Hell Hole allotment and the San Francisco allotment. Trailing shall be conducted so that 1) cattle are present for the shortest period of time possible in riparian/aquatic areas, 2) the shortest route across the stream/river is taken, 3) trailing across streams/ivers is conducted as infrequently as possible, and 4) whenever possible, trailing is conducted when bankline soil moisture is relatively low.

The following term and condition implements reasonable and prudent measure number 2:

A mitigation plan shall be developed by the Bureau in coordination with the Service for each range improvement project that may adversely affect the loach minnow or its habitat, prescribed fire, and vegetation management project in the allotments in Table 11 and in the San Francisco River watershed in the San Francisco, Red Hickey Hills, and Metcalf allotments. Mitigation plans for prescribed fire shall limit to the extent practicable the possibility that fire would spread to Aravaipa Creek or the San Francisco River. Mitigation plans shall be approved by the Service.

2. The following terms and conditions implement reasonable and prudent measure number 3:

a. All reasonable efforts shall be made to minimize disturbance within the wetted areas of Aravaipa Creek and its tributary channels, and the San Francisco River.

b. The Bureau shall authorize no off-road use of heavy equipment during project activities within the wetted areas of Aravaipa Creek and the San Francisco River.

c. All reasonable efforts shall be made to ensure that no pollutants enter surface waters during action implementation.

d. Grazing in allotments in Table 11 and the San Francisco, Red Hickey Hills, and Metcalf allotments shall strictly adhere to the Bureau's Arizona Standards and Guidelines, the Upland Livestock Utilization Standard, Safford Drought Policy, Arizona Ephemeral Grazing Policy, and Riparian Area Policy.

3. The following terms and conditions implement reasonable and prudent measure number 4:

a. Inventory, monitoring, and evaluations as described in the Bureau's proposed action (Bureau 1996a) and applicable sections of the Bureau Manual shall be conducted in the allotments in Table 11 and in the watershed of the San Francisco River in the San Francisco, Red Hickey Hills, and Metcalf allotments.

b. The Bureau shall submit annual monitoring reports to the Arizona Ecological Services Field Office by March 15 of each year beginning in 1998. These reports shall summarize for the previous calendar year: 1) the effectiveness of these terms and conditions, and 2) documentation of take, if any. If such activities or monitoring occur, summaries shall also be included of 1) grazing actions initiated or completed including range improvement projects, prescribed fires, and vegetation management in the allotments in Table 11 and in the San Francisco River watershed in the San Francisco, Red Hickey Hills, and Metcalf allotments; 2) allotment monitoring results; 3) fish monitoring data, including numbers and locations of loach minnow observed, presence of nonnative fish, etc.; 4) riparian, stream channel photopoint, channel geomorphology transects, and other monitoring data collected; 5) photo documentation of effects of trailing, and 6) records of downed or damaged exclosure fencing or incidents of cattle within the Bureau-administered riparian corridors of Aravaipa Creek and the San Francisco River, and action taken to remove the cattle. The report shall also make recommendations for modifying or refining these terms and conditions to enhance loach minnow protection or reduce needless hardship on the Bureau and its permittees.

CONSERVATION RECOMMENDATIONS

Sections 2(c) and 7(a) (1) of the Act direct Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of listed species. Conservation recommendations are discretionary agency activities to minimize or avoid effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information on listed species. The recommendations provided here do not necessarily represent complete fulfillment of the agency's section 2(c) or 7(a) (1) responsibilities for loach minnow. In furtherance of the purposes of the Act, we recommend implementing the following actions:

1. The Bureau should develop and implement a prescribed fire plan to enhance watershed function in the semi-desert grasslands of the Aravaipa and San Francisco River watersheds.

2. *The Bureau should conduct surveys for the loach minnow in the San Francisco River through the San Francisco and Red Hickey Hills allotments and report to the Service the findings of such surveys.*

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitat, the Service requests notification of the implementation of any conservation recommendations.

To implement these mitigation measures and term and conditions the Bureau built gap fencing (fencing that connects bluffs and rock outcrops that effectively restrict cattle movement) along both sides and across the San Francisco River. This fencing isolated 1.25 miles of the San Francisco River in the northern end of the allotment from the state and private lands to the south. The permittee was issued grazing decision removing the public land portion of the riparian area of the San Francisco from his allotment. Maintenance of these fences is the responsibility of the permittee, but maintenance has proven to be difficult, particularly the maintenance of the water gap across the river.

The Bureau monitors fish on then public land portion of the San Francisco River on an annual basis.

Purpose for the Proposal

The four wells are intended to replace water currently consumed by livestock from the San Francisco River on state and private land. The wells are part of a larger project altering pastures and moving grazing use along the river on private and state land to the uplands that are predominately public lands. A Cooperative Resource Management Plan is currently being developed to integrate all livestock improvements in the development of a long term grazing plan. The permittee has stated his intent to remove livestock grazing from the riparian areas on private and state land when the projects are completed and the cooperative plan is implemented (see press release). In addition to the wells the Bureau is aware of proposed fence construction, a well on private land and possibly the incorporation of a private land pasture leased form Freeport MacMoRan. These are actions on private lands that are interrelated/interdependent actions to the wells on public lands and are necessary to implement a cooperative management plan.

The expected outcomes from the cooperative management plan are, better water quality, better upland livestock distribution, better control of livestock on the public land portion of the river, and removal of livestock grazing from the riparian area of the San Francisco River on approximately one mile of state lands and approximately one and a half miles of private lands. The Natural Resource Conservation Service (NRCS) in coordination with the livestock operator has developed the private land fencing plan that will provide the upland pastures and effectively exclude livestock from the San Francisco River through the entire length of the allotment. (See attached NRCS map showing fence Plan). These projects are supported and grant money provided by the NRCS, Arizona Department of Agriculture (See attached grant application) and the Arizona Department of

Environmental Quality (attached news release). The Gila Watershed Partnership is assisting in this project.

Proposed Action on Bureau Administered Public Land

Currently no permanent water exits in the upland area of the allotment. Livestock water directly from the San Francisco River or water is pumped from shallow wells next to the river and hauled to troughs in the uplands. Four wells are proposed to be drilled on public lands on the uplands above the San Francisco River (see attached well location map).

All water from the proposed wells will be used solely for livestock and wildlife. When livestock are not using a watering facility, troughs will remain full and control appurtenances such as float valves, wildlife escape ramps (Bureau acceptable design) and general maintenance will continue. Wells will be defined as wells and associated pipeline, storage tanks and troughs. Total surface disturbance would be approximately 3.25 acres or less. All proposed well locations are within 40 feet of an existing road, and are associated with previous ground disturbing activities (see map and photos). No road maintenance is anticipated.

There are four proposed wells, henceforth referred to as Wells #1, #2, #3 and #4. Well #2 would service two pastures (northern portion). Wells #1 and #4 would service the lower (southern) regions of the allotment. Distances (direct, "as the crow flies") are approximately .8 miles between Well #1 and Well #2. Cross-country distance would be slightly greater. Distance between Well #1 and Well #4 would be approximately .5 miles (direct), slightly more cross-country. Concurrent fence projects off public land are needed to implement rotation options and exclude cattle from riparian vegetation along the river. Coordination has occurred between the Permittee, BLM and NRCS (Natural Resource Conservation Service).

All construction will comply with USDA Natural Resources Conservation Service (Conservation Practice Standard, Arizona. Pipeline (Code 516), Water Facility (Code 614) Pumping Plant (Code 533E), Well (Code 642); Engineering Field Code, Arizona Standard Engineering Drawings for Pumps & Pipelines and Livestock Water Facilities, 2002).

The project would use 10,000 gallon round rock storage tanks (NRCS Field Office Technical Guide, Section IV, Code 614, and Watering Facility. NRCS-AZ, 2002), each feeding two steel troughs (NRCS Field Office Technical Guide, Section IV, Code 614, Code 561 (Heavy Use Area Protection) Watering Facility (NRCS-AZ, 2002; BLM internal wildlife specifications). Distance from storage tank to troughs will be less than 200 feet. Pipe (above ground) will be 2 inch Polyethylene 200 psi and will comply with NRCS specifications (NRCS Field Office Technical Guide, Section IV, Code 516, Pipeline. NRCS-AZ, 2002). Well drilling will be done by a vehicle mounted drill (estimated depth: 400 – 450 feet), (NRCS Field Office Technical Guide, Section IV, Code 642, Water Well. NRCS-AZ, 2002), and comply with BLM Environmental Considerations (Ron Peru, Civil Engineer, Safford Field Office).

The proposed wells (4), all located on BLM (see map) will not increase preference (number of permitted livestock), currently set at 51 AU (animal units). However, additional livestock maybe associated with the privately owned pasture that is outside of the Bureau's operation and control. The primary objectives are to better distribute livestock on the uplands, provide year round wildlife water and prevent/limit livestock access to adjacent riparian areas along the San Francisco River.

Description of the Affected Environment

A good description of the San Francisco River and its watershed is found in the Apache-Sitgreaves National Forest, Blue and San Francisco Rivers Consultation #2-21-01-F-307.

Project Area and Action area

The project area is limited the boundary of the San Francisco Allotment. The action Area includes the allotment plus the San Francisco River to the confluence with the Gila River (see attached map). The confluence of the San Francisco River and the Gila River was chosen as the end point for the action area since influences from the action below that point would not be discernable from those of the Gila River.

Description of Riparian and Aquatic Habitat

Along the San Francisco River a mesquite forest, or "bosque", grows on high terraces. Vegetation on the river edge develops into a cottonwood/willow community that persists several years between floods a few trees established in flood protected sites can survive for much longer periods of time.

Since the San Francisco River is subject to flash flood and is constrained, functional flood plains cannot develop. The river at low discharge is wide, shallow and sandy. The exception to this occurs where the channel meets canyon walls. In these spots large, deep pools have been scoured in periods of high flow. These deep pools provide a refuge for nonnative fish that feed on or compete with native species. A substantial self-sustaining population of introduced catfish exists within the San Francisco River.

Recreation

The proposed action is in a recreation area that provides for a variety of dispersed recreational activities. The river is just outside the communities of Clifton and Morenci and is less than an hour drive for the adjacent Gila Valley communities. The River is accessed by a well maintained road that traverses along and through the River. Recreational use occurs year round, The proposed action area supports camping, backpacking, hiking, picnicking, recreational driving, fishing, hunting, horseback riding, water play, tubing, kayaking, bird watching, photography, nature study and mountain biking.

Livestock Grazing

The BLM has been began taking action to limit cattle use in riparian areas for approximately 25 years, and officially excluded cattle from Public land portion of the San Francisco River as a result of the terms and conditions of the 1996 Grazing BO. A water gap and upland fencing was constructed to separate the public land portion of the river from the downstream portions of the River that are state and private lands. However, the water gap is very difficult to maintain, being damaged with every high flow event. Therefore livestock still make their way upstream on to the Public land portion of the river on a regular basis. Livestock damage seedling trees, which can alter vegetative density, growth and form. Livestock also trample vegetation and may form trails through otherwise dense tree stands, opening up the understory. The Bureau continues to work on ways to reduce incidental trespass. This proposed project as part of the larger effort is inclusive of the river on the allotment and likely would represent the best effort to date to limit livestock use of the San Francisco River.

Mining Activity

The area around and through the san Francisco Allotment has been and still is used for mineral extraction. The Freeport MacMoRan Morenci operation is approximately one and a half miles west of the allotment. Numerous old abandoned mine shafts, and current mining claims occur throughout the allotment. Metals, primarily copper are mined, but mining operations for limestone and agate also occur in the area.

Listed and Proposed Species included in this Evaluation

Greenlee County January 2010

<u>Common Name</u>	<u>Scientific Name</u>	<u>Listing Status</u>	<u>Summary</u>
Apache trout	<i>Oncorhynchus gilae apache</i>	T	No effect. Occurs in rivers and stream generally above 6000 feet in elevation. There is no known occurrence or suitable habitat within five miles of the action area
Chiricahua leopard frog	<i>Lithobates (Rana) chiricahuensis</i>	T	No effect. The species has been known to occur in the upper reaches of the San Francisco River, upstream of the San Francisco Allotment. The average elevation of the San Francisco River through the allotment is 3500 feet which would be lower than the species is thought to occur.
Gila chub	<i>Gila intermedia</i>	E	No effect. Occupied and designated critical habitat for Gila chub exist in tributaries to the San Francisco River (Dix Creek and Harden Cienega Creek) approximately six miles upstream of the allotment. There is currently no evidence of the species spreading downstream of these locations.
Gila trout	<i>Oncorhynchus gilae</i>	T	No effect. Historically Gila trout occurred in the San Francisco River and its tributaries above 5000 feet in elevation. There are currently no known occurrences of the species in the San Francisco River.
lesser long-nosed bat	<i>Leptonycteris curasoae yerbabuena</i>	E	No effect. Known roosts and foraging habitat for this species are greater than five miles away from the action area.
loach minnow	<i>Tiaroga cobitis</i>	T	May affect not likely to adversely affect. The San Francisco River is

			occupied habitat for the species, but it has not been documented below the Forest Service boundary in recent years. The San Francisco is still suitable habitat and designated critical habitat, a population in very low number may still exist in the river south of the forest boundary.
Mexican gray wolf	<i>Canis lupusbaileyi</i>	DR, E, EXPN, T	No effect. The allotments northern boundary with the Forest Service is also the southern boundary of the experimental non-essential population area of the wolf. This proposed action is outside of the experimental non-essential reintroduction area.
Mexican spotted owl	<i>Strix occidentalis lucida</i>	T	No effect. Known occurrences, designated critical habitat, PACs and suitable habitat is greater than 5 miles away.
razorback sucker	<i>Xyrauchen texanus</i>	E	May affect not Likely to adversely affect. The San Francisco River is suitable habitat. The species has not been documented in the San Francisco River in recent years. Although, a population in very low number may still exist in the river
southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	E	No effect. Known nesting and suitable habitat occurs greater than five miles away.
spikedace	<i>Meda fulgida</i>	T	May affect not likely to adversely affect. The San Francisco River is historical habitat for the species, but it has not been documented recently. The San Francisco is still suitable habitat and a population in very low number may still exist in the river.
yellow-billed Cuckoo	<i>Coccyzus americanus</i>	C	Yellow-billed Cuckoo likely occur along the San Francisco River, however consultation is not required on candidate species.

E – Endangered

T – Threatened

C – Candidate

EXPN – Experimental Population, Non-Essential

DR – Delisted Taxon, Taxonomic Revision

Reference <http://arizonaes.fws.gov/>

Description of Species Affected

Spikedace (*Meda fulgida*)

The spikedace listed threatened (51 FR 23769, July 1, 1986) with critical habitat (72 FR 13356, March 21, 2007). It is a small (3 in (7.6 cm) long), slim fish with silvery sides and a "spine" on the dorsal fin. Breeding males are a brassy golden color. It is found in moderate to large perennial streams, where it inhabits moderate to fast velocity waters over gravel and rubble substrates. Specific habitat consists of shear zones where rapid flow borders slower flow, areas of sheet flow at the upper ends of mid-channel sand/gravel bars, and eddies at downstream riffle edges. Recurrent flooding helps the spikedace maintain its competitive edge over invading exotic species. Typically occupied streams are found under 6,000 feet (1,829 m) in elevation.

Once common throughout much of the Gila River drainage above Phoenix, Arizona, including the Gila, Verde, Agua Fria, Salt, San Pedro, and San Francisco rivers. Currently in Arizona, populations are found in Aravaipa Creek, and are believed to be present in the Verde River, Eagle Creek, and the middle Gila River within Graham, Pinal,

Greenlee, and Yavapai counties. In New Mexico, the spinedace is found in the mainstem Gila River, as well as in the lower end of West, Middle, and East forks of the Gila River within Hidalgo, Grant, and Catron counties. Populations were reintroduced in Hot Springs and Redfield canyons in Cochise and Graham counties, and in Fossil Creek, Gila County, in 2007; Bonita Creek in Graham County, Arizona, and the San Francisco River in Catron County, New Mexico in 2008.

The reasons for the species decline include habitat destruction due to damming, channel alteration, riparian destruction, channel downcutting, water diversion and groundwater pumping; and the introduction and spread of exotic predatory and competitive fish species.

More information can be found in the Programmatic Biological Opinion for the Safford /Tucson Field Offices' Livestock Grazing Program, Southeastern Arizona #2-21-96-F-160, the Apache- Sitgreaves National Forest, Blue and San Francisco Rivers Consultation #2-21-01-F-307 and at <http://www.fws.gov/southwest/es/arizona/Spikedace.htm>.

Loach Minnow (*Tiaroga cobitis*)

The loach minnow was listed Threatened (51 FR 39468, October 28, 1986) with critical habitat (72 FR 13356, March 21, 2007). The loach minnow is a small (less than 3 inches (8 cm) long), slender, elongated fish. Olive colored, with darker, irregular spotting along sides and dull white spots at the base of the dorsal and caudal fins. Breeding males develop vivid red-orange markings. They are a bottom dweller of small to large perennial creeks and rivers, typically in shallow turbulent riffles with cobble substrate, swift currents, and filamentous algae. Found below 8,000 feet (2,438 m) elevation. Recurrent flooding is instrumental in maintenance of quality habitat.

The loach minnow was once common throughout much of the Gila River system north of Phoenix, Arizona, including the Gila, Blue, Tularosa, White, Verde, Salt, San Pedro, and San Francisco rivers in Arizona and New Mexico, as well as some of their tributaries. Present populations are geographically isolated and inhabit the upstream ends of their historical range. The species persists in Arizona in limited reaches in the East Fork of the White River (Navajo County), Aravaipa Creek, Deer Creek, and Turkey Creek (Graham and Pinal counties), San Francisco and Blue Rivers and Eagle, Campbell Blue and Little Blue creeks (Greenlee County). In New Mexico, the species is found in the Gila and San Francisco rivers and some of their tributaries, including the West, Middle, and East forks of the Gila River, the Tularosa River, and Dry Blue, Pace, Frieborn, and Negrito creeks in Catron, Grant, and Hidalgo counties. A population was recently found in Bear Creek, a tributary to the Gila River. Populations were reintroduced in Hot Springs and Redfield canyons in Cochise and Graham counties, and in Fossil Creek, Gila County in 2007.

Reasons for the decline in population are attributed to habitat destruction due to damming, channel alteration, riparian zone destruction, channel down-cutting, water

diversion and groundwater pumping; and the introduction and spread of exotic predatory and competitive fish species.

More information can be found in the Programmatic Biological Opinion for the Safford/Tucson Field Offices' Livestock Grazing Program, Southeastern Arizona #2-21-96-F-160, the Apache- Sitgreaves National Forest, Blue and San Francisco Rivers Consultation #2-21-01-F-307 and at <http://fws.gov/southwest/es/arizona/Loach.htm>.

Razorback sucker (*Xyrauchen texanus*)

The razorback sucker was listed endangered (56 FR 54957, October 23, 1991) with critical habitat (59 FR 13379, March 21, 1994). The species head is flattened on top and the body is stout with olive-brown above to yellowish on the belly. A long, high, sharp-edged keel-like hump is found behind the head. The head and tail are quite dark in breeding males. It can grow to 0.9 m (3 ft) in length and over 2.7 kg (6 lbs.) in weight. The razorback sucker is typically found in backwaters, flooded bottomlands, pools, side channels and other slower moving habitats under 1,829 m (6,000 ft) elevation. Historically found in areas near strong currents.

The razorback sucker is endemic to the Colorado River Basin, and formerly occurred in all major rivers and larger streams in the Basin and was once the most widespread and abundant of the Basin's big-river fishes. Currently in the Lower Basin, populations are isolated to Lakes Mohave, Mead, and the lower Colorado River below Havasu. In the Upper Basin, small remnant populations are found in the Green, Yampa, and mainstream Colorado rivers. Also found in the San Juan River near the New Mexico-Utah border. The species is found in parts of Greenlee, Mohave, Pinal, Yavapai, Yuma, La Paz, Maricopa, Gila, Coconino, and Graham counties, Arizona.

The species declined due to alteration of river conditions and loss of habitat caused by dam construction, irrigation dewatering and channelization; and introduction of exotic fish species, such as black bullhead, carp, and channel catfish.

More information can be found in the Programmatic Biological Opinion for the Safford/Tucson Field Offices' Livestock Grazing Program, Southeastern Arizona #2-21-96-F-160, and at <http://fws.gov/southwest/es/arizona/htm>.

Analysis of Effects

The general direct and indirect effects of livestock grazing on riparian areas and aquatic species are well documented in previous biological opinions. Grazing opinions specific to the San Francisco River include the Programmatic Biological Opinion for the Safford/Tucson Field Offices' Livestock Grazing Program, Southeastern Arizona #2-21-96-F-160, and the Apache- Sitgreaves National Forest, Blue and San Francisco Rivers Consultation #2-21-01-F-307. Critical habitat for loach minnow was designated after the

grazing BO was finalized, therefore consultation is required for may affect determinations. Since all three species considered in this evaluation are fish and occur or potentially occur in the San Francisco River within the allotment direct and indirect impacts will be consider the same for all species.

Direct Effects

Livestock grazing can directly affect water quality by altering stream banks, stream side vegetation and the depositing of waste into the surface water. Other direct effects include, direct consumption of surface water, disruption of egg masses and possibly trampling of individuals. The direct effects of livestock grazing on public lands have been previously addressed in (#2-21-96-F-160). However, there are interrelated and interdependent actions related to the proposed development of the upland wells. If completed foreseeable actions will result in approximately 200 acres of the 100 year floodplain on private and state land being fenced off making it possible to exclude cattle from the lower portion of the San Francisco River. If completed and livestock are excluded direct negative effects from livestock grazing on the private and state lands would be eliminated to the extent possible, while still allowing the allotment to be grazed. This would be a positive benefit to the three species. In addition if livestock are removed from the private and state land portions of the river, there may not be a need for the water gap at the public land boundary, since there would be less likely hood of cattle in the river working their way upstream. Trespass livestock on the Public land portion of the river would be less likely and provide for better compliance with the terms and conditions of the Grazing BO.

Indirect Effects

Indirect effects of grazing on the allotment have been previously addressed in (#2-21-96-F-160). However, the Bureau determined that the effects of the proposed wells on surface flow and the effects of shifting grazing use from private and state lands to public land warranted further analysis.

Effects on Surface Flow

Currently the 51 head of livestock permitted either consume directly out of the river or water is hauled from shallow wells next to the river to upland troughs. Due to the close connection of the shallow well(s) to the surface water all of the current consumption is considered surface water.

Vallentine (#####) in his text book "Range Development and Improvements" indicated that lactating cows on dry range in Oregon would consume 12-16 gallons per day. Buffering this to provide for a high end estimate on daily consumption we consider 20 gallons a day to be maximum consumption. Therefore, 51 head currently consume a maximum of 1020 gallons per day of the Rivers surface flow.

From 1914 till 2008 the stream flow gauge at Clifton has averaged a monthly flow of 223 cubic feet per second or 1673 gallons per second. The lowest monthly flow ever recorded was 11 cubic feet per second for June of 1956. The lowest monthly flow recorded would be 82.5 gallons per second or 7,128,000 gallons per day. At the maximum current livestock surface water usage (1020 gallons per day) would equate to 0.000143 of the daily water flow at the lowest water flow recorded. The change in flow from this amount of use is not likely measurable and is discountable.

The maximum water withdrawal from the four proposed wells would be the maximum consumed by livestock, that consumed by upland wildlife and water loss associated with leaks and evaporation. An estimate of twice what livestock alone would consume is considered in this analysis. This would be 2040 gallons per day or 510 gallons per day per well. The total increase in water use from the proposed action is 1020 gallon per day.

The influence of subsurface water from wells on surface water flow depends on the depth of the subsurface water, the distance from the surface flow and the geology (permeability, fractures, faults etc.) of the subsurface. Most, but likely not all of the subsurface flow in the San Francisco River Watershed will eventually make its way into the surface flow of either the San Francisco River or the Gila River. At this point before the wells are drilled, there is no way of knowing if subsurface water exists at the proposed sites or what geologic constraints exist in the subsurface that would dictate how the subsurface water makes its way to surface flow. If all of the potential subsurface water tapped by the proposed wells were to contribute to the surface flow of the San Francisco River upstream of the Clifton flow gauge, and the estimate maximum use (current plus increase) were to occur then 0.000286 of the lowest surface flow ever recorded would be used. This amount would still be discountable.

Effects on Upland Vegetation

Surface and vegetation disturbance associated with the act of drilling the wells will be minimal the wells are located along existing roads and located in previously disturbed areas (see attached map and photographs).

Effects on upland vegetation in relation to riparian areas and watershed conditions have been addressed in previous biological opinions for the San Francisco river area (Programmatic Biological Opinion for the Safford /Tucson Field Offices' Livestock Grazing Program, Southeastern Arizona #2-21-96-F-160, and the Apache- Sitgreaves National Forest, Blue and San Francisco Rivers Consultation #2-21-01-F-307). Conditions on upland areas in Southeastern Arizona are typically considered degraded primarily due to past livestock use. Alteration of current grazing use can help, but are not likely to result in any substantial change without programs of direct vegetation manipulation such as prescribed fire. This has been recognized by both the Bureau and the Service (see Grazing BO conservation recommendations above).

The San Francisco Allotment is characterized by steep rugged terrain making uniform livestock use impossible to achieve. Areas along roads and naturally flat area become

heavily used while steeper hillsides are lightly used. There are only a few livestock management remedies that can provide for more uniform use. Two management alternatives that can help are better distribution of water and salt and regular rest from grazing during the growing season. Implementation of these management tools are considered generally beneficial to upland vegetation communities that are grazed (proposed action Grazing BO above and Arizona Standards and Guides).

If the foreseen Cooperative Management Plan is implemented and 200 acres of riparian vegetation is removed from livestock use. It is assumed that the use will be absorbed on the uplands away from the river. The current grazing use is set at approximately six head per section or just over 100 acres per head. Even though riparian areas tend to produce more forage, the bureau establishes numbers based on upland forage. The use of two additional head of cattle on the uplands would increase total upland use by approximately four percent. This additional use is not likely to be statistically discernable in any measurements.

It is also assumed that under the cooperative management agreement that water will be better distributed and that a rest rotation grazing system will be implemented. These will be implemented to improve upland conditions; however as vegetation change in this environment is very slow, change would not likely be discernable in human time frames. As mentioned above direct vegetation manipulation though prescribed fire or other techniques, would result in quicker alterations of the vegetative community. It is likely that the benefits of better livestock distribution and rest rotation grazing would counter the negative impacts of the slightly higher grazing use. Again, there would likely be no discernable change from only grazing manipulation within human time frames. One potential positive from a rest rotation grazing system is that it may facilitate the ability to implement vegetation manipulation project such as prescribe fire and herbicide treatments.

Effects on Critical Habitat

Each primary constituent element of critical habitat for loach minnow are considered below with analysis:

1. Permanent, flowing water with no or minimal pollutant levels, including:
 - a. Living areas for adult loach minnow with moderate to swift flow velocities between 9.0 to 32.0 in/second (24 to 80 cm/second) in shallow water between approximately 1.0 to 30 inches (3 cm to 75 cm) in depth, with gravel, cobble, and rubble substrates;

With the removal of cattle on the state and private lands, and better control of trespass livestock use on public land portions of the river, vegetation along the river should increase and associated wood and vegetative debris would be incorporated in the active channel. These results will create more diverse flow patterns and velocities. Also livestock trampling resulting in the physical break down of the river bank and fine

sediment release into the flow should be reduced. This will decrease fine sediments and increase available cobble, gravel and rubble.

It is unlikely that proposed and assumed changes in upland livestock use will result in any discernable changes in the aquatic habitat.

b. Living areas for juvenile loach minnow with moderate to swift flow velocities between 1.0 and 34 in/second (3.0 and 85.0 cm/second) in shallow water between approximately 1.0 to 30 inches (3 cm to 75 cm) in depth with sand, gravel, cobble, and rubble substrates;

See a. above

c. Living areas for larval loach minnow with slow to moderate velocities between 3.0 and 20.0 in/second (9.0 to 50.0 cm/second) in shallow water with sand, gravel, and cobble substrates;

See a. above

d. Spawning areas with slow to swift flow velocities in shallow water where cobble and rubble and the spaces between them are not filled in by fine dirt or sand;

See a. above

e. Water with dissolved oxygen levels greater than 3.5 cc/l and no or minimal pollutant levels for pollutants such as copper, arsenic, mercury, and cadmium; human and animal waste products; pesticides; suspended sediments; and gasoline or diesel fuels.

Reduction in livestock waste as measured by e-coli is one of primary reasons for the actions being proposed (see attached ADEQ press release). Reduction in nitrogen from livestock waste should limit algae production and potentially increase dissolved oxygen. As stated in a. above an increase in the diversity of flows and velocities should increase incorporation of oxygen into the stream. Removal of livestock from the river should reduce suspended sediments, and by the same manner may to some small level also reduce suspended metals.

2. Sand, gravel, and cobble substrates with low or moderate amounts of fine sediment and substrate embeddedness. Suitable levels of embeddedness are generally maintained by a natural, unregulated hydrograph that allows for periodic flooding or, if flows are modified or regulated, a hydrograph that allows for adequate river functions, such as flows capable of transporting sediments.

Although the action proposed and those assumed will not alter the natural hydrograph of the San Francisco River, removal of livestock from the riparian area will allow for more stream side vegetation growth and increase sediment trapping.

3. Streams that have:

- a. Low gradients of less than approximately 2.5 percent;

The actions proposed and assumed will have no effect on stream gradients.

- b. Water temperatures in the approximate range of 35 to 82 °F (1.7 to 27.8 °C) (with additional natural daily and seasonal variation);

The proposed and assumed actions will increase vegetation along the banks of the river and reduce to some small extent the temperature of the water. This is likely to be a positive change during the summer months. Recorded summer water temperatures have been between 19 and 22 degrees C.

- c. Pool, riffle, run, and backwater components;

Livestock removal from the riparian area will increase vegetation production and the incorporation of this vegetation into the stream. This should increase the diversity of pools, riffles, runs and backwaters.

- d. An abundant aquatic insect food base consisting of mayflies, true flies black flies, caddisflies, stoneflies, and dragonflies.

As addressed above the proposed and assumed action will decrease sediment and other contaminants, increase stream diversity and organic incorporation, all of which should increase the variety and abundance of aquatic insects.

4. Habitat devoid of nonnative aquatic species or habitat in which nonnative aquatic species are at levels that allows persistence of loach minnow.

The proposed action and assumed actions are not likely to have any effect on nonnative aquatic species.

5. Areas within perennial, interrupted stream courses that are periodically dewatered but that serve as connective corridors between occupied or seasonally occupied habitat and through which the species may move when the habitat is wetted.

The San Francisco river though the allotment is connected. The proposed and assumed actions will not affect this connectivity.

Cumulative Effects

The most common assessment of the plight of native fish in Arizona is that the pervasive and relentless predation and competition from nonnative fish is greatest suppressor of populations. Nothing, in the proposed or assumed actions in this consultation addresses the nonnative fish impact. Recreational fishing for nonnatives remains a primary

recreational activity in the San Francisco River Watershed supported by the state and the general public.

The San Francisco River will continue to be used heavily by the recreating public. This impact is heaviest at the lower end on private and state land that is closer to the communities of Clifton and Morenci. A well maintained county road provides access to the river. Access to the public land portion of the river further upstream is somewhat more difficult and recreation use drops off. Public recreational activities are generally uncontrolled along the river irrespective of land status.

The human impacts to stream side vegetation and water quality on private and state lands can be similar to livestock use. Differentiating these impacts can be difficult. Current efforts, this proposal among them, may help differentiate these impacts.

In the last 20 years the Arizona Department of Water resources has issued 848 drilling permits for the two townships surrounding the action area. Of these none are indicated to be production wells. All of the approved drilling has been for mineral exploration and monitoring. Future production wells within the San Francisco watershed could be drilled on private or state lands. The Bureau knows of no current proposals, but there is little doubt that production wells will be drilled for commercial, municipal and private use. Given the general rule of thumb that humans consume approximately 100 gallons of water per day. The influx of as few as 10 people into the watershed of the San Francisco River, including communities as far away as Reserve NM, would approximate the increase in water use from this proposed action.

The proposed action in this biological evaluation adds to the cumulative water use in the San Francisco Watershed, but only minutely when compared to past, present and foreseeable actions.

Determination of Effects

From the analysis the Bureau concludes that proposed action could be beneficial to the species considered and that the negative effects considered are discountable. Therefore the Bureau concludes that the proposed action:

May affect, is not likely to adversely affect, Loach Minnow (*Tiaroga cobitis*) or its critical habitat.

May affect, is not likely to adversely affect, Razorback sucker (*Xyrauchen texanus*) or its critical habitat.

May affect, is not likely to adversely affect, Spikedace (*Meda fulgida*) or its critical habitat.

Attachments

WATER RIGHTS

ARIZONA DEPARTMENT OF WATER RESOURCES
Surface Water Rights
3550 North Central Avenue, Phoenix, Arizona 85012
Telephone (602) 771-8500
Fax (602) 771-8688



JANET NAPOLITANO
GOVERNOR

HERB GUENTHER
DIRECTOR

July 19, 2006

Richard M. and Lois J. Kaler
P.O. Box 1511
Clifton, Arizona 85533

RE: Assignment (Conveyance) of Statement of Claim Nos. 36-25449 and 36-25450.

From: Jerald P. Baldwin and Leslie A. Wooten
To: Richard M. and Lois J. Kaler

Applicant:

The referenced assignment actions have been completed as required by Arizona Revised Statutes §§ 45-163 and 45-164. The official records of the Arizona Department of Water Resources (Department) have been revised to indicate the name and address of the current holder of the referenced surface water filings.

The Department assumes your request for assignment on the Statement of Claim of Right is a request to change the name of the claimant only. The Department does not presume to either adjudicate the validity of the claim or determine who should hold the claim.

Check No. 7868 for \$20.00 has been deposited. Thank you for your payment. The cancelled check is your receipt.

If you have further questions regarding the assignment application process, please contact me at (602) 771-8500.

Sincerely,

A handwritten signature in cursive script that reads "Jeannie Aguilar".

Jeannie Aguilar
Surface Water Rights Specialist

Supplemental Information on disk:

The ADEQ E.coli Reduction on the San Francisco and Lower Blue Rivers Grant SAP/QAPP