APPENDIX B

BIOLOGICAL RESOURCES SURVEY 2014
(including Water Conservation Management Report 2010)

Biological Resources Survey
Proposed Joint Permanent Air Facility
United States Customs and Border Protection
Office of Air and Marine
Libby Army Airfield
Fort Huachuca, Sierra Vista, Cochise County, Arizona

United States Customs and Border Protection
Air and Marine Facilities Program Management Office
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July 2014

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1. PROJECT OBJECTIVE

LG^2 Environmental Solutions, Inc. (LG^2ES) conducted a Biological Resources Survey on land proposed for the construction of a Joint Permanent Air Facility at the U.S. Customs and Border Protection (CBP) Office of Air and Marine (OAM) at Libby Army Airfield (LAAF), Fort Huachuca, Sierra Vista, Cochise County, Arizona. The survey was conducted to determine a general occurrence of plant and wildlife species and communities with an emphasis on federally listed threatened and endangered species under Section 7 of the Endangered Species Act, as well as State of Arizona listed species, and species of concern within the project boundaries.

2. LOCATION

The proposed construction site is an undeveloped, but disturbed, parcel of land located on the south side and immediately adjacent to an apron off the existing LAAF, approximately 0.65 mile east of the western terminus (Figure 1). CBP currently operates from temporary hangars and office structures approximately 1.52 miles east of the proposed site on land leased from LAAF. The hangar facility is to be situated on approximately 7.00 acres of undeveloped, but disturbed, land partially located within the confines of a security fence. The area is characterized as disturbed grass-covered field and cleared land.

3. METHODOLOGY

Methodologies utilized to conduct the wildlife surveys included literature and data reviews and field surveys consisting of pedestrian transects. These methodologies are described below.

3.1 Literature and Data Review

This survey was conducted to evaluate potential effects of the Proposed Action on federally listed threatened and endangered species under Section 7 of the Endangered Species Act (ESA). LG^2ES reviewed existing natural resource data relevant to the proposed project, with an emphasis on possible threatened and endangered species and other wildlife species occurrence on project lands. The data review included U.S. Geological Survey (USGS) topographic maps; US Department of Agriculture and Natural Resource Conservation Service (NRCS) soils maps; USFWS lists; the Integrated Natural Resource Management Plan (INRMP) for Fort Huachuca; Draft, Draft Biological Assessment Proposed Customs and Border Protection Air and Marine Facility at Libby Army Airfield Fort Huachuca, Arizona (2010); Arizona Heritage Data Base information on protected species; aerial photographs; and other reports regarding natural resources within or in close proximity to the project. This information was used to support the field surveys.

A comprehensive list of threatened and endangered species for Cochise County, AZ, as of October 30, 2013, is found in Appendix A. Species of specific interest for this report included the Southwestern willow flycatcher *(Empidonax traillii extimus)*, yellow-billed cuckoo (*Coccyzus americanus*), lesser long-nosed bat (*Leptonycteris yerbabuenae*), desert pupfish (*Cyprinodon macularius*), Gila topminnow (*Poeciliopsis occidentalis*), Chiricahua leopard frog (*Lithobates chiricahuensis*), and the Huachuca water umbel (*Lilaeopsis schaffneriana*) pursuant to current U.S Fish and Wildlife Service (USFWS) threatened and endangered species lists. The proposed action site is not located in any critical habitat areas designated for federal or state listed species.

3.2 Field Surveys

A field survey was conducted on 2 August 2013 to characterize natural communities on the property and determine the presence or absence of State of Arizona or federally-listed species. Surveys took the form of meandering pedestrian transects of the proposed construction site and immediate surrounding land within and outside of the confines of the existing security fence. During the pedestrian surveys all wildlife species or evidence thereof, observed or heard, and all dominant plant species were noted.

4. HABITAT TYPES AND SITE DESCRIPTION

The site visit for the Biological Resources Survey was conducted on the morning of 2 August 2013. The weather was sunny and warm with temperatures in the mid to upper 80's °F. The site was being used as a staging area for heavy equipment, such as bulldozers, excavators, and dump trucks, for an adjacent construction site.

During the course of the Biological Resources Survey, two dominant community types were identified on, or in the immediate vicinity of, the site. Approximately one third of the site can be characterized as mechanically maintained scrubby grasslands. This community is characterized as an area of mechanically-maintained grasses and forbs dominated by Lehman's love grass (*Eragrstis lehmanniana*) with a few scattered immature mesquite (*Prosopis glandulosa*). The remaining two thirds of the site is predominantly cleared land with scattered pockets of vegetation also dominated by Lehman's love grass. For a full list of vegetative species inventoried, please see the attached *A Survey for Rare Plants at the Proposed Drone Hanger Site on Fort Huachuca, Arizona* (Appendix B).

5. SOILS

The soils are mapped as being underlain by the Terrarossa Soil Complex, are highly developed and derived from alluvial fan deposits of gravel, sand, and silt deposited during the Quaternary and Tertiary Periods. The fan deposits originated in the Huachuca

Mountains to the south, and are typically deeper than 60 inches to bedrock or hardpan (Cleland et. al., 2008).

6. RESULTS

During the site visit, very few animals were observed and very little evidence of wildlife use was noted. During the site visit, wildlife species observed were the mourning dove (*Zenia macroura*), northern cardinal (*Cardinalis cardinalis*), desert grassland whiptail (*Aspidoscelis uniparens*) and red-spotted toad (*Bufo punctatus*). Other species that may occur in the vicinity of the Region of Interest (ROI) include, but are not limited to, black-tailed jack rabbit (*Lepus californicus*), meadowlarks (*Sturnella* spp.), curve-billed thrasher (*Toxostoma curvirostre*), pocket gophers (*Thomomys* spp.), and various locally common snakes and lizards; however, no occurrences or evidence of these species was observed during the site visit.

During the site visit, no migratory bird nests, roosting areas, or other such use were observed on the site. No mammal dens were observed on the site. No occurrence or evidence of any listed endangered, threatened, or protected species was observed on the site.

The site is regularly maintained and no listed plant species were observed. Care was taken to field identify, or collect for laboratory identification, all observed plant species. For a full list of vegetative species inventoried, please see the attached *A Survey for Rare Plants at the Proposed Drone Hanger Site on Fort Huachuca, Arizona*.

7. WATER RESOURCES

The proposed action site is located within the Sierra Vista subwatershed of the San Pedro watershed. The watersheds are considered essential habitat for the continued existence and recovery of numerous Federally-listed, threatened and endangered aquatic-dependent plant and wildlife species. These include such species as the Southwestern willow flycatcher, yellow-billed cuckoo, desert pupfish, Gila topminnow, Chiricahua leopard frog, and the Huachuca water umbel.

In 2010, a Draft Biological Assessment (BA) was developed for the construction of an air facility at Fort Huachuca. The findings from the BA were that CBP actions may effect, but are not likely to adversely affect those threatened and endangered species noted above, as the withdrawal of groundwater from the aquifer could reduce the baseflow of the San Pedro River in the San Pedro River National Conservation Area; thereby, increasing the potential to degrade the riparian vegetation and instream habitat needed by aquatic-dependent species.

CBP is obligated under Section 7 of the Endangered Species Act to implement conservation and mitigation measures which would offset potential adverse effects associated with the proposed action on threatened and endangered species. In 2010, A

Water Conservation Management Report (CBP2010) was developed to address actions proposed by CBP components in the San Pedro Watershed. The following information pertaining to the construction and operation of the Proposed Action facility at Fort Huachuca was taken from that report:
(1) Total water use associated with 69 facility workers, their household domestic use, and induced water use generated by the presence of CBP operations is estimated to result in 43.91 acre feet per year (AF/YR) of groundwater withdrawal from the Sierra Vista Subwatershed.
(2) A portion of the water use would affect natural discharge, ultimately resulting in 0.006 cubic feet per second (CFS) decrease in the baseflow of the San Pedro River.
(3) Additionally, construction use would result in 6.74 AF of groundwater withdrawal, and potential for a 0.0009 CFS reduction in baseflow.

CBP has contracted with the U.S. Army Corps of Engineers to obtain suitable land in Arizona that can serve as conservation easements. Nearly 4 million dollars has been allocated for acquiring the easements. A significant portion of those dollars is reserved specifically for the mitigation of groundwater impacts associated with the permanent joint air facility at Fort Huachuca, Arizona.

8. DISCUSSION

The site is an undeveloped parcel of land, partially maintained through mechanical means and partially cleared and currently being utilized as a staging area for adjacent construction. The site is fragmented and isolated from natural communities in the area by developed land, an airfield and security fencing. Although actual occurrence during the site visit was limited, the site is expected to be used by common wildlife such as common birds, rabbits, burrowing mammals and reptiles, but is not expected to be used by protected species that require significant natural areas. Trees on-site are immature common species regularly maintained by mechanical manipulation, specifically to limit potential wildlife utilization. The development of this site will not remove any significant natural areas that would provide critical habitat for any protected species.

Observation and protection of migratory bird nesting will be conducted pursuant to the specific requirements of the project as required by the permitting agencies. To avoid impacts to migratory birds, CBP will avoid construction activities during migratory bird nesting season (March 15 – September 15) to the extent practicable. If construction is necessary during the migratory bird nesting season, surveys will be conducted prior to scheduled activity to determine if active nests are present within the area of impact. If active nests are identified within or in the vicinity of a project site, a buffer zone will be established around the nest and no activities will occur within that zone until nestlings have fledged and left the nest area or the nest fails.

9. SUMMARY

A biological resources survey was conducted on land proposed for the construction of a Joint Permanent Air Facility at the U.S. Customs and Border Protection Office of Air and Marine at Libby Army Airfield, Fort Huachuca, Sierra Vista, Arizona. This assessment was completed through a combination of the review of relevant published data and field surveys. During the course of the field surveys, all wildlife species, or evidence thereof, heard or seen were noted and a full floristic study conducted. Pedestrian transects were utilized in such a way as to obtain 100% visual coverage of the project site and to include all habitat types found within the site.

During the course of the field investigations, no State of Arizona or federally-listed threatened or endangered species, or species of concern, were observed on the site. No significant natural habitat for wildlife and migratory bird species was present. Vegetative communities include mechanically-maintained scrubby grassland and cleared areas dominated by common species.

Although the findings from the 2010 Draft BA indicated CBP actions may effect, but are not likely to adversely affect threatened and endangered species due to groundwater usage and the reduction of baseflow in the San Pedro River, those effects would be mitigated by CBP through the acquisition of conservation easements to be purchased as soon as reasonably possible. It is anticipated that the Proposed Action will have no effect on State of Arizona or federally listed plant or wildlife species, or designated critical habitat for such species.

10. REFERENCES

Cleland, D.T.; Laing, L; Watson R.L.; Malusa, J.; Jordan, J.K.; Diamond D.D.; Robertson, G. 2008 (unpublished). Landtype Associations of Southeastern Arizona. Prepared with support of the Southern Arizona Office of the National Park Service, the Southwestern Region of the US Forest Service, the US Geological Survey, and the US Forest Service Southern Research Station. 361 p. Available at: http://www.azfirescape.org/sites/azfirescape.org/files/az_lta_report_01_30_08_version.pdf

U.S. Geological Survey 7-1/2 Minute Quadrangles for Cochise County, Arizona, as follows: Huachuca City, 1991; Fairbank, 1991; Pyeatt Ranch, 1983; Fort Huachuca, 1996; Lewis Springs, 1983; Huachuca Peak, 1991; Miller Peak, 1991.

U.S. Fish and Wildlife Service Arizona Field Office, Listed Species Occurrence in Cochise County, Arizona.

Integrated Natural Resource Management Plan, Fort Huachuca, Arizona, March 2010

Draft, Draft Biological Assessment, Proposed Customs and Border Protection Air and Marine Facility at Libby Army Airfield, Fort Huachuca, Arizona, February 2010

Water Conservation Management Report for U.S. Customs and Border Protection Activities within the Sierra Vista Subwatershed of the San Pedro Watershed, February 2010.

FIGURES

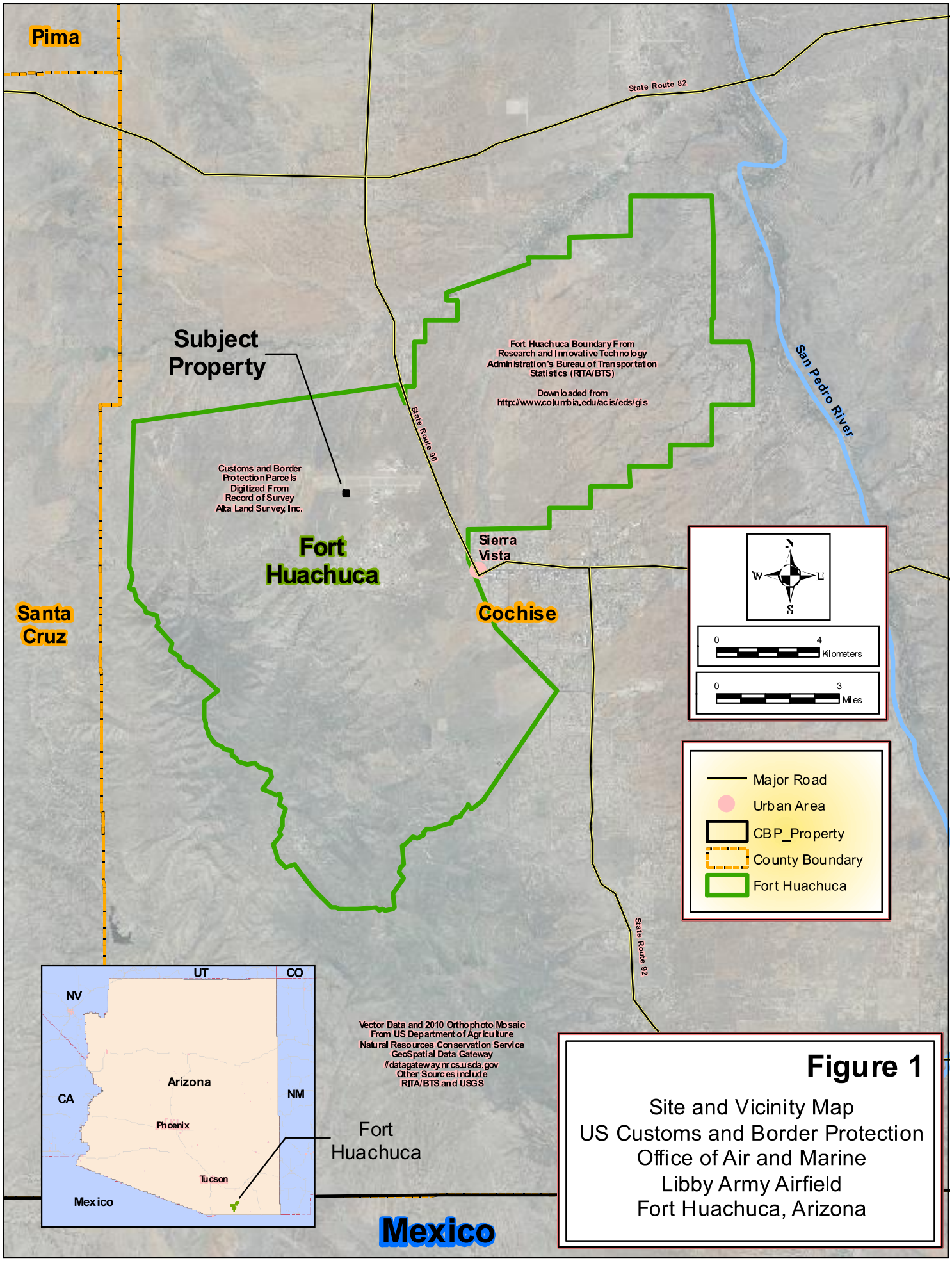

Figure 1

Site and Vicinity Map
US Customs and Border Protection
Office of Air and Marine
Libby Army Airfield
Fort Huachuca, Arizona

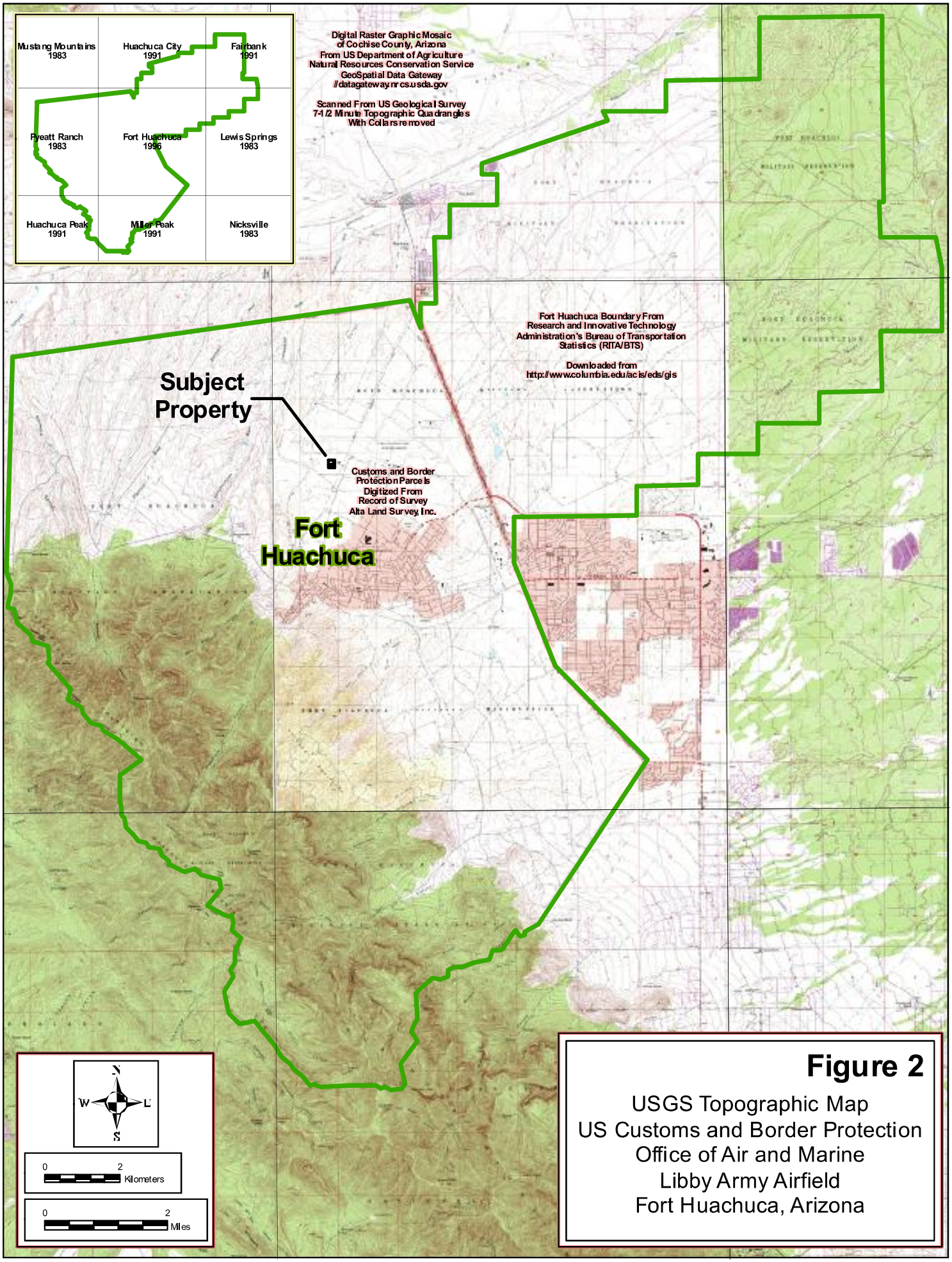

Figure 2

USGS Topographic Map
US Customs and Border Protection
Office of Air and Marine
Libby Army Airfield
Fort Huachuca, Arizona

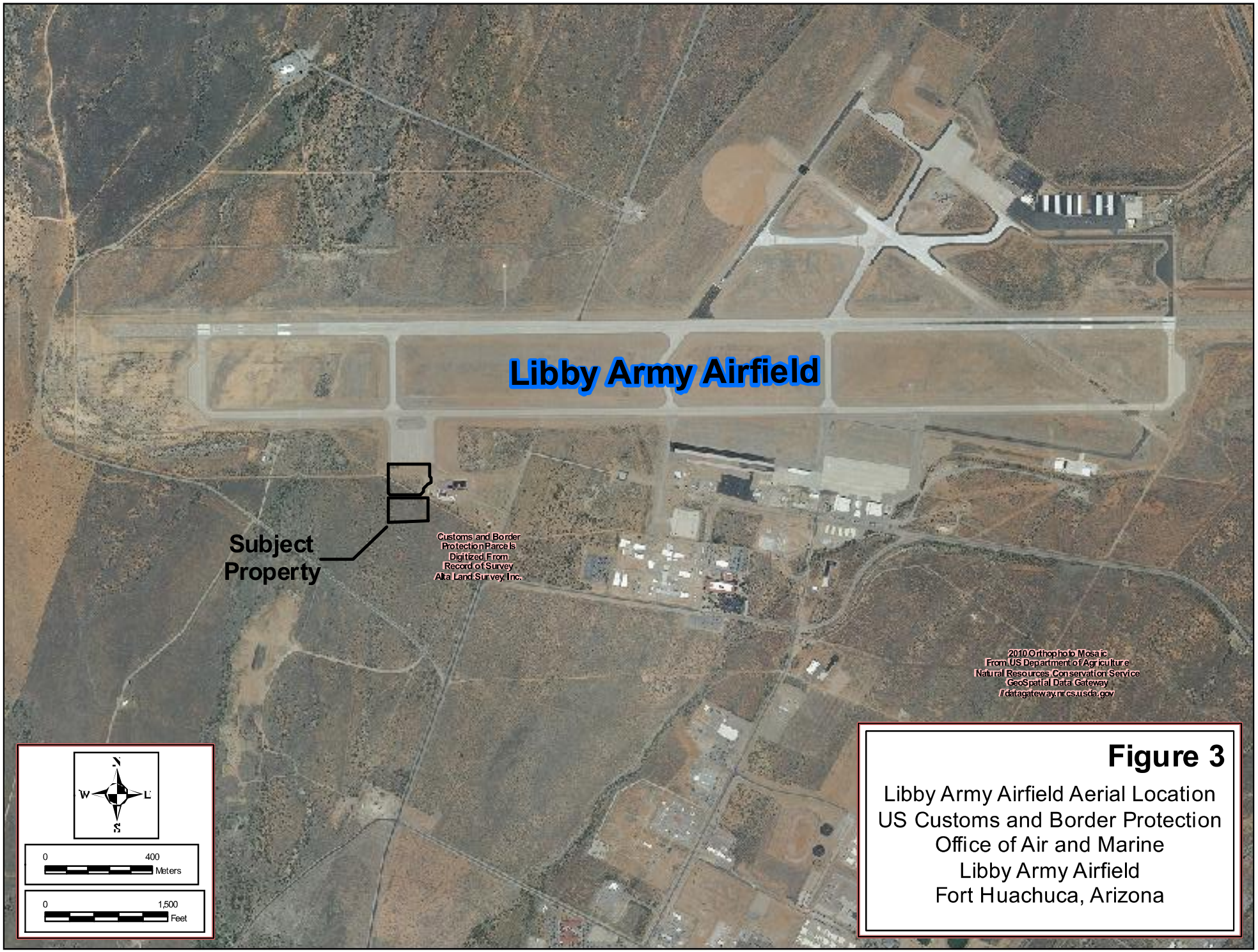

Figure 3

Libby Army Airfield Aerial Location
US Customs and Border Protection
Office of Air and Marine
Libby Army Airfield
Fort Huachuca, Arizona

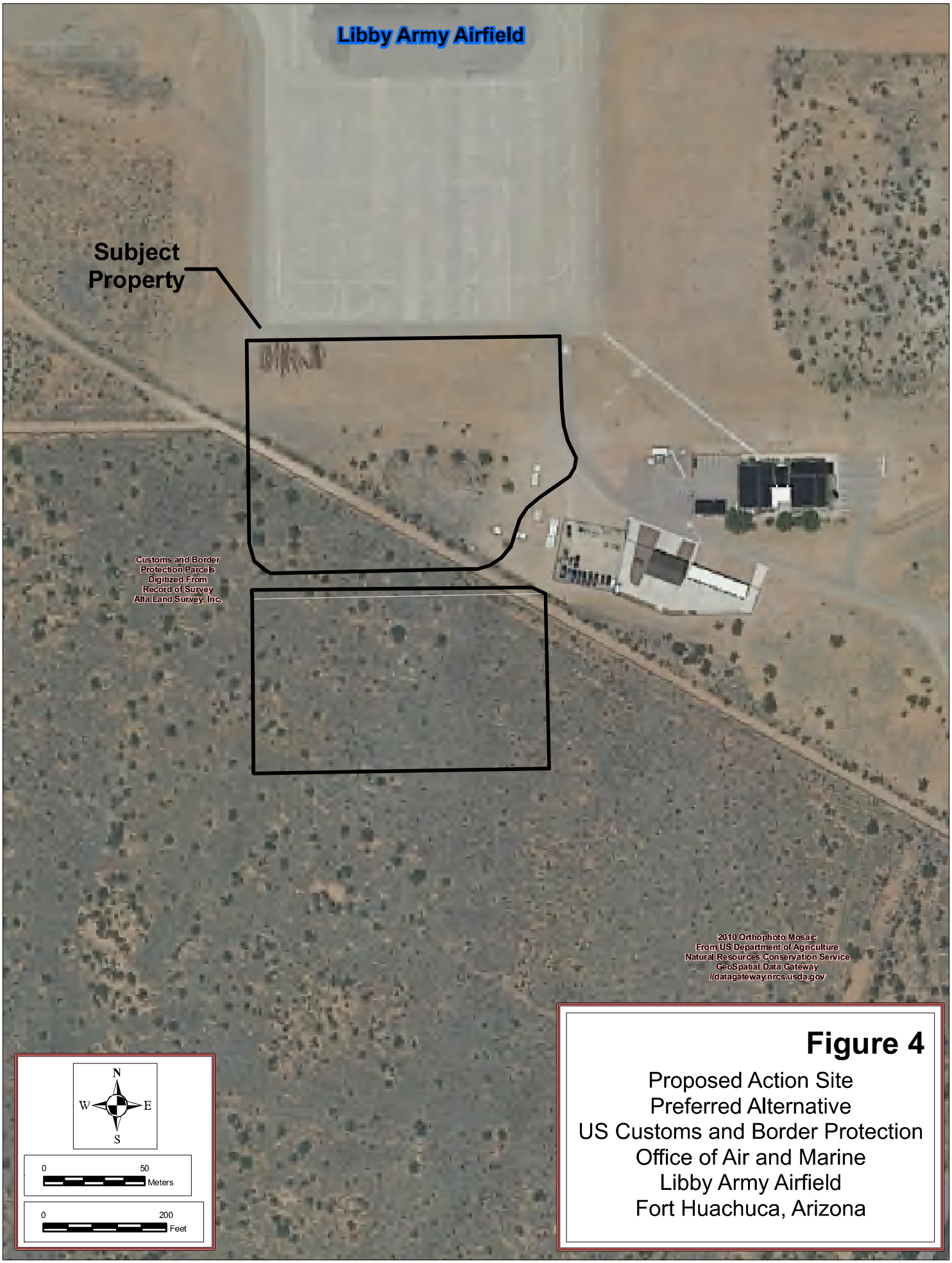

Figure 4

Proposed Action Site
Preferred Alternative
US Customs and Border Protection
Office of Air and Marine
Libby Army Airfield
Fort Huachuca, Arizona

APPENDIX A

Cochise County

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Beautiful shiner	*Cyprinella formosa*	Threatened	Small (2.5 inches) shiny minnow, very similar to red shiner. Males colorful during breeding (yellow-orange or orange on caudal and lower fins, bluish body).	Cochise	< 4,500 ft	Small to medium sized streams and ponds with sand, gravel, and rock bottoms.	Virtually extirpated in the United States, with the exception of a few populations on San Bernardino National Wildlife Refuge. Same critical habitat as Yaqui Chub and Catfish (see 49 FR 34490).
Canelo Hills ladies' tresses	*Spiranthes delitescens*	Endangered	Slender, erect member of the orchid family (Orchidaceae). Flower stalk 20 inches tall, may contain 40 white flowers spirally arranged on the flowering stalk.	Cochise, Santa Cruz	~ 5,000 ft	Finely grained, highly organic, saturated soils of cienegas.	Found in the San Pedro watershed. Potential habitat occurs in Sonora, Mexico, but no populations have been found.
Chiricahua leopard frog	*Lithobates chiricahuensis*	Threatened	Cream colored tubercles (spots) on a dark background on the rear of the thigh, dorsolateral folds that are interrupted and deflected medially, and a call given out of water distinguish this spotted frog from other leopard frogs.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, Navajo, Pima, Santa Cruz, Yavapai	3,281-8,890 ft	Restricted to springs, livestock tanks, and streams in upper portion of watersheds that are free from nonnative predators or where marginal habitat for nonnative predators exists.	Critical habitat is designated for 10,346 acres in Apache, Cochise, Gila, Graham, Greenlee, Pima, Santa Cruz, and Yavapai counties in Arizona; and Catron, Hidalgo, Grant, Sierra, and Socorro counties in New Mexico (77 FR 16324).
Cochise pincushion cactus	*Coryphantha robbinsorum*	Threatened	A small unbranched cactus with no central spines and 11-17 white radial spines. The bell-shaped flowers are borne on the ends of tubercles (protrusions). Flowers: bell shaped, pale yellow-green. Fruits: orange-red to red.	Cochise	> 4,200 ft	Semidesert grassland with small shrubs, agave, other cacti, and grama grass.	Grows on gray limestone hills. Species also occurs in Sonora, Mexico.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Desert pupfish	*Cyprinodon macularius*	Endangered	Small (2 inches) smoothly rounded body shape with narrow vertical bars on the sides. Breeding males blue on head and sides with yellow on tail. Females and juveniles tan to olive colored back and silvery sides.	Cochise, Graham, Maricopa, Pima, Pinal, Santa Cruz, Yavapai	< 4,000 ft	Shallow springs, small streams, and marshes. Tolerates saline and warm water.	Two subspecies are recognized: Desert Pupfish (C.m. macularis) and Quitobaquito Pupfish (C.m. eremus). Critical habitat includes Quitobaquito Springs, Pima County, portions of San Felipe Creek, Carrizo Wash, and Fish Creek Wash, Imperial County, California.
Gila chub	*Gila intermedia*	Endangered	Deep compressed body, flat head. Dark olive-gray color above, silver sides. Endemic to Gila River Basin.	Cochise, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, Yavapai	2,000-5,500 ft	Pools, springs, cienegas, and streams.	Occurs on Federal, State, and private lands, including the Nature Conservancy and the Audubon Society. Also occurs in Sonora, Mexico. Critical habitat includes Cochise, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, and Yavapai counties (70 FR 66664).
Gila topminnow	*Poeciliopsis occidentalis occidentalis*	Endangered	Small (2 inches), guppy-like, live bearing, lacks dark spots on its fins. Breeding males are jet black with yellow fins.	Cochise, Gila, Graham, La Paz, Maricopa, Pima, Pinal, Santa Cruz, Yavapai	< 4,500 ft	Small streams, springs, and cienegas vegetated shallows.	Species historically also occurred in backwaters of large rivers but is currently isolated to small streams and springs.
Huachuca water umbel	*Lilaeopsis schaffneriana ssp. recurva*	Endangered	Herbaceous, semi-aquatic perennial in the parsley family (Umbelliferae) with slender erect, hollow, leaves that grow from the nodes of creeping rhizomes. Flower: 3 to 10 flowered umbels arise from root nodes.	Cochise, Pima, Santa Cruz	3,500-6,500 ft	Cienegas, perennial low gradient streams, wetlands.	Species also occurs in adjacent Sonora, Mexico, west of the continental divide. Critical habitat includes Cochise and Santa Cruz counties (64 FR 37441).
Jaguar	*Panthera onca*	Endangered	Largest species of cat native to Southwest. Muscular, with relatively short, massive limbs, and a deep-chested body. Usually cinnamon-buff in color with many black spots. Weights ranges from 90-300 lbs.	Cochise, Pima, Santa Cruz	1,600-9,000 ft	Found in Sonoran desertscrub up through subalpine conifer forest.	Critical habitat is being proposed for a total of 838,232 ac. in Cochise, Pima, and Santa Cruz counties, Arizona; and Hidalgo County, New Mexico (77 FR 50214). A recovery team for the jaguar was formed in 2010, who completed a recovery outline for the species in April, 2012. The recovery team is currently developing a full recovery plan for the species based on the recovery outline.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Lesser long-nosed bat	*Leptonycteris curasoae yerbabuenae*	Endangered	Elongated muzzle, small leaf nose, and long tongue. Yellowish brown or gray above and cinnamon brown below. Tail minute and appears to be lacking. Easily disturbed.	Cochise, Gila, Graham, Greenlee, Maricopa, Pima, Pinal, Santa Cruz, Yuma	1,600-7,500 ft	Desert scrub habitat with agave and columnar cacti present as food plants.	Day roosts in caves and abandoned tunnels. Forages at night on nectar, pollen, and fruit of paniculate agaves and columnar cacti. This species is migratory and is present in Arizona usually from April to September and south of the border the remainder of the year.
Loach minnow	*Tiaroga cobitis*	Endangered	Small (<3 inches) slender, elongated fish, olive colored with dirty white spots at the base of the dorsal and caudal fins. Breeding males vivid red on mouth and base of fins.	Apache, Cochise, Gila, Graham, Greenlee, Navajo, Pinal, Yavapai	< 8,000 ft	Benthic species of small to large perennial streams with swift shallow water over cobble and gravel. Recurrent flooding and natural hydrograph important.	Presently found in Aravaipa Creek, Deer Creek, Turkey Creek, Blue River, Campbell Blue Creek, Little Blue Creek, San Francisco River, Eagle Creek, North Fork of the East Fork Black River, Boneyard Creek, and White River and East Fork White River in Arizona, and Dry Blue Creek, Pace Creek, Frieborn Creek, the San Francisco River, Tularosa River, Negrito Creek, Whitewater Creek, the East, Middle, and West Forks of the Gila River, mainstem upper Gila River. Bear Creek and Mangas Creek in New Mexico. Populations have been recently reintroduced in Hot Springs and Redfield canyons in Cochise and Graham counties; Fossil Creek in Gila County; and Bonita Creek in Graham County Arizona. Critical habitat has been designated in Apache, Cochise, Gila, Graham, Greenlee, Pinal, and Yavapai counties, Arizona, as well as in Catron, Grant, and Hidalgo counties in New Mexico (77 FR 10810).
Mexican spotted owl	*Strix occidentalis lucida*	Threatened	Medium sized with dark eyes and no ear tufts. Brownish and heavily spotted with white or beige.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai	4,100-9,000 ft	Nests in canyons and dense forests with multi-layered foliage structure.	Generally nest in older forests of mixed conifer or ponderosa pine/gambel oak type, in canyons, and use variety of habitats for foraging. Sites with cool microclimates appear to be of importance or are preferred. Critical habitat was finalized on August 31, 2004 (69 FR 53182) in Arizona in Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Navajo, Pima, Pinal, Santa Cruz, and Yavapai counties.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
New Mexico ridge-nosed rattlesnake	*Crotalus willardi obscurus*	Threatened	Small 12-24 inches, secretive grayish-brown with a distinct ridge on the end of the snout. The dorsal surface has obscure, irregularly spaced white crossbars edged with brown (not a bold pattern).	Cochise	5,000-6,600 ft	Primarily canyon bottoms in pine-oak communities.	The subspecies has been documented in the Peloncillo Mountains in Arizona. There are only three known records from Arizona. Also occurs in Animas Mountains of New Mexico and Sierra San Luis in Sonora/Chihuahua.
Northern aplomado falcon	*Falco femoralis septentrionalis*	Endangered	Rufus underparts, gray back, long banded tail, and a distinct black and white facial pattern. Smaller than peregrine falcon but larger than a kestrel. Breeds between March and June.	Currently extirpated from AZ with unconfirmed sightings occasionally reported in Cochise County.	3,500-9,000 ft	Grassland and savannah	Non-essential experimental population designated in Arizona and New Mexico in 2006 (71 FR 42298). Species formerly nested in southwestern U.S., now rarely occurs. Good habitat has low ground cover and mesquite or yucca for nesting platforms. Pesticide use in Mexico had endangered this species but DDT use is now banned there. Reintroductions are occurring in New Mexico and Texas. One confirmed sighting in AZ occurred in recent years.
Northern Mexican Gartersnake	*Thamnophis eques megalops*	Proposed Threatened	Background color ranges from olive, olive-brown, to olive-gray. Body has three yellow or light colored stripes running down the length of the body, darker towards tail. Species distinguished from other native gartersnakes by the lateral stripes reaching the 3rd and 4th scale rows. Paired black spots extend along dorsolateral fields.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai	130-8,497 ft	Cienegas, stock tanks, large-river riparian woodlands and forests, streamside gallery forests.	Core population areas in Arizona include mid/upper Verde River drainage, mid/lower Tonto Creek, and the San Rafael Valley and surrounding area. Status on tribal lands unknown. Occurs in Grant and Catron Counties in New Mexico. Distributed south into Mexico along the Sierra Madre Occidental and Mexican Plateau. Strongly associated with the presence of a native prey base including leopard frogs and native fish.
Ocelot	*Leopardus pardalis*	Endangered	Medium-sized spotted cat that is yellowish with black streaks and stripes running from front to back. Tail is spotted and about 1/2 the length of head and body. Face is less heavily streaked than the back and sides.	Cochise,Gila, Graham, Pima, Pinal, Santa Cruz	< 8,000 ft	Desert scrub in Arizona. Humid tropical and sub-tropical forests, and savannahs in areas south of the U.S.	Little is known about ocelot habitat use in Arizona; however, ocelots are typically associated with areas of dense cover. Four confirmed reports of ocelots have been received from Gila (one) and Cochise (three) counties since 2009. Based on photographic evidence, two of the reports from Cochise County were most likely of the same ocelot.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
San Bernardino springsnail	*Pyrgulopsis bernardina*	Threatened	Aquatic snail of family Hydrobiidae. Narrow-conic shell; height 1.3-1.7 mm; 3.25-4.0 whorls.	Cochise	3,806 ft	Springs with firm substrate composed of cobble, gravel, woody debris, and aquatic vegetation.	Distribution limited to Goat Tank Spring and Horse Spring. Critical habitat is designated on 2.013 acres (77 FR 23060).
Sonoran tiger salamander	*Ambystoma mavortium stebbinsi*	Endangered	Large, light-colored blotches or reticulations on a dark background. Metamorphosed individuals are 1.8 to 5.9 inches in snout-vent length. Aquatic larvae are uniform dark colored with plume-like gills and developed tail fins.	Cochise, Santa Cruz	4,000-6,300 ft	Stock tanks and impounded cienegas; rodent burrows, rotted logs, and other moist cover sites.	Populations occur within the headwaters of the Santa Cruz and San Pedro Rivers. These include San Rafael Valley and in the foothills of the east slope of the Patagonia and Huachuca Mountains and Fort Huachuca.
Southwestern willow flycatcher	*Empidonax traillii extimus*	Endangered	Small passerine (about 6 inches) grayish-green back and wings, whitish throat, light olive-gray breast and pale yellowish belly. Two wingbars visible. Eye-ring faint or absent.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	< 8,500 ft	Cottonwood/willow and tamarisk vegetation communities along rivers and streams.	Riparian-obligate bird that migrates and nests from late April-Sept along river and streams. A revised critical habitat designation was finalized on January 3, 2013, for areas in Apache, Cochise, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Pima, Pinal, Santa Cruz, and Yavapai counties (78 FR 344). Training seminar/permits (state and federal) necessary for those conducting call playback surveys.
Spikedace	*Meda fulgida*	Endangered	Small (<3 inches) slim fish with silvery sides and "spine" on dorsal fin. Breeding males are a brassy golden color.	Cochise, Gila, Graham, Greenlee, Pinal, Yavapai	< 6,000 ft	Medium to large perennial streams with moderate to swift velocity waters over cobble and gravel substrate. Recurrent flooding and natural hydrograph important to withstand invading exotic species.	Presently found in Aravaipa Creek, Eagle Creek, and the Verde River in Arizona, and the Gila River, the East, Middle, and West Forks of the Gial River, and Mangas Creek in New Mexico. Populations have been recently reintroduced in Hot Springs and Redfield canyons in Cochise and Graham counties; Fossil Creek in Gila County; and Bonita Creek in Graham County Arizona, and in the San Francisco River in Catron County, New Mexico. Critical habitat (77 FR 10810) has been designated in Cochise, Gila, Graham, Greenlee, Pinal, and Yavapai counties in Arizona, and in Catron, Grant, and Hidalgo counties in New Mexico.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Yaqui catfish	*Ictalurus pricei*	Threatened	Similar to channel catfish (Ictalurus punctatus) except anal fin base is shorter and the distal margin of the anal fin is broadly rounded with 23-25 soft rays. Body usually profusely speckled.	Cochise	4,000-5,000 ft	Moderate to large streams with slow current over sand and rock bottoms.	Critical habitat includes all aquatic habitats on San Bernadino National Wildlife Refuge (49 FR 34490).
Yaqui chub	*Gila purpurea*	Endangered	Medium sized minnow (<6 inches) dark colored, lighter below. Dark triangular caudal spot.	Cochise	4,000-6,000 ft	Deep pools of small streams near undercut banks and debris; pools associated with springheads, and artificial ponds.	Introduced populations exist in Leslie Canyon, in San Bernardino National Wildlife Refuge, and ponds and mainstem of West Turkey Creek in the Chiricahua Mountains. Critical habitat includes all aquatic habitats on San Bernardino National Wildlife Refuge (49 FR 34490).
Yaqui topminnow	*Poeciliopsis occidentalis sonoriensis*	Endangered	Small (2 inches) guppy-like, live bearing fish (lacking dark spots on fins). Breeding males are jet black with yellow fins.	Cochise	< 4,500 ft	Small to moderate sized streams, springs, and cienegas. Generally found in shallow areas with aquatic vegetations or debris. Tolerates relatively high water temperature and low dissolved oxygen.	Natural and introduced populations occur on San Bernardino National Wildlife Refuge and an introduced population is found in Leslie Canyon. Populations also exist in Mexico.
Yellow-billed cuckoo	*Coccyzus americanus*	Proposed threatened	Medium-sized bird with a slender, long-tailed profile, slightly down-curved bill that is blue-black with yellow on the lower half. Plumage is grayish-brown above and white below, with rufous primary flight feathers.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	< 6,500 ft	Large blocks of riparian woodlands (cottonwood, willow, or tamarisk galleries).	Neotropical migrant that winters primarily in South America and breeds primarily in the U.S. (but also in southern Canada and northern Mexico). As a migrant it is rarely detected; can occur outside of riparian areas. Cuckoos are found nesting statewide, mostly below 5,000 feet in central, western, and southeastern Arizona. Concern for cuckoos are primarily focused upon alterations to its nesting and foraging habitat. Nesting cuckoos are associated with relatively dense, wooded, streamside riparian habitat, with varying combinations of Fremont cottonwood, willow, velvet ash, Arizona walnut, mesquite, and tamarisk. Some cuckoos have also been detected nesting in velvet mesquite, netleaf hackberry, Arizona sycamore, Arizona alder, and some exotic neighborhood shade trees.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Arizona treefrog (Huachuca/Canelo DPS)	*Hyla wrightorum*	Candidate	Small (1.8 inches in length) green frog; dark eye stripe extends past shoulder onto the sides of the body, may break into spots or dashes past shoulder, throat on males dusky green or tan; larger tadpoles golden brown above and below with mottled black tails.	Cochise, Santa Cruz	5,000-8,500 ft	Madrean oak woodlands, savannah, pine-oak woodlands, and mixed conifer forests.	Known from less than 20 localities in the Huachuca Mountains and adjacent Canelo Hills. Believed this population is geographically disjunct from the other known locality in the wetlands at Rancho Los Fresnos, Sonora, Mexico.
Huachuca springsnail	*Pyrgulopsis thompsoni*	Candidate	Very small (.06-.12 inches) conical shell. Identification must be verified by characteristics of reproductive organs.	Cochise, Santa Cruz	4,500-7,200 ft	Aquatic areas, small springs with vegetation and slow to moderate flow.	Individuals found on firm substances (roots, wood, and rocks). Other populations found on Fort Huachuca.
Sonoran desert tortoise	*Gopherus morafkai*	Candidate	Large herbivorous reptile with domed shell and round stumpy hind legs. The carapace is a dull brown or grey color and the plastron is unhinged, often pale yellow in coloration. Sonoran desert tortoises generally have a flatter carapace than tortoises in the Mohave population. Active in spring and during the monsoon; dormant in winter and mid-summer months.	Cochise, Gila, Graham, La Paz, Maricopa, Mohave, Pima, Pinal, Santa Cruz, Yavapai, Yuma	< 7,800 ft	Primarily rocky (often steep) hillsides and bajadas of Mohave and Sonoran desertscub but may encroach into desert grassland, juniper woodland, interior chaparral habitats, and even pine communities. Washes and valley bottoms may be used in dispersal.	Desert tortoises that occur east and south of the Colorado River in Arizona are known as the Sonoran desert tortoise. Individuals are found throughout their historic range; but populations are becoming increasingly fragmented due to threats to their habitat in valley bottoms, which are used for dispersal and exchange of genetic material.
Sprague's pipit	*Anthus spragueii*	Candidate	Small, sparrow-sized bird (10-15 cm in length), with buff and blackish streaking on the crown, nape, and underparts. Has a short bill with a blackish upper mandible, a buffy face with a large eye ring, white outer tail feathers and pale to yellowish legs.	Cochise, Maricopa, La Paz, Santa Cruz, Yuma	<5,000 ft	Strong preference to native grasslands with vegetation of intermediate height and lacking woody shrubs.	Rare in Arizona. Few individuals of this elusive species have been sighted during October through March. Native grass fields are rare in Arizona but cultivated, dry Bermuda grass, alfalfa fields mixed with patches of dry grass, or fallow fields appear to support the species during wintering. They will not use mowed or burned areas until the vegetation has had a chance to grow. There are no breeding records in Arizona.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
American peregrine falcon	*Falco pereginus anatum*	Delisted	A crow-sized falcon with slate blue-gray on the back and wings, and white on the underside; a black head with vertical “bandit’s mask” pattern over the eyes; long pointed wings; and a long wailing call made during breeding. Very adept flyers and hunters, reaching diving speeds of 200 mph.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	3,500-9,000 ft	Areas with rocky, steep cliffs, primarily near water, where prey (primarily shorebirds, songbirds, and waterfowl) concentrations are high. Nests are found on ledges of cliffs, and sometimes on man-made structures such as office towers and bridge abutments.	Species recovered with over 1,650 breeding birds in the US and Canada.

APPENDIX B

A Survey for Rare Plants at the Proposed Drone Hanger Site on Ft. Huachuca, Arizona

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Summary: Approximately 7 acres of mesquite grassland and disturbed lands were surveyed on August 2, 2013, to check for the presence of rare plant species. No rare plants were documented during this survey. Fifty-seven (57) plant species were documented.

Introduction

Physiography and native vegetation –

The study site is located within the Fort Huachuca Military Reservation, on a disturbed site adjacent to an active runway (Figure 1). At least half of the site was being used as either a roadway or parking lot serving an active construction site. The soils are highly developed and derived from alluvial fan deposits of gravel, sand, and silt deposited during the Quaternary and Tertiary Periods. The fan deposits originated in the Huachuca Mountains to the south, and are typically deeper than 60 inches to bedrock or hardpan (Cleland et. al., 2008).

Native vegetation typical of these soils, at this elevation, and with this climate, is semi-desert grassland and mesquite upland scrub (Cleland et. al., 2008).

Figure 1 – *Proposed hanger site on Fort Huachuca. The town of Sierra Vista is southeast. Image is about 17 miles across.*

Focus species

Prior to the survey, the Arizona Heritage Data Base provided a confidential list of all plant species considered worthy of additional attention. This includes not only federally listed endangered or threatened species, but also those with no federal protection yet recognized as 'species of concern' (rare, and hence susceptible to rapid decline). The list also includes US Forest Service 'sensitive species', which also do not enjoy any special protection, yet are deemed worthy of a closer look. Finally, there are species that are protected by the state of Arizona, for much the same reasons.

Within seven miles of the survey area (an arbitrary cutoff), there were seven plant species that met these criteria, and could have plausibly been found. ("Plausible" would not, for example, include a species that has only been found on limestone cliffs.) A photograph and description of each of these species was brought to the survey site.

The focus species:

Scientific Name: ***Heterotheca rutteri***
Common Name: Huachuca Golden Aster

Scientific Name: ***Lobelia fenestralis***
Common Name: Leafy Lobelia

Scientific Name: ***Ipomoea tenuiloba***
Common Name: Trumpet Morning-glory

Scientific Name: ***Hedeoma dentatum***
Common Name: Mock-pennyroyal

Scientific Name: ***Samolus vagans***
Common Name: Chiricahua Mountain Brookweed

Scientific Name: ***Penstemon stenophyllus***
Common Name: Narrowleaf Beardtongue

Scientific Name: ***Zigadenus virescens***
Common Name: Green Death Camas

Of these seven species, only *Penstemon stenophyllus, Heterotheca rutteri,* and *Lobelia fenestralis* had been collected from grasslands (e.g., collections in herbaria ARIZ 373482 for *Lobelia fenestralis,* ASU 210290 for *Penstemon stenophyllus,* ARIZ 304714 for *Heterotheca rutteri).* Of these three species, only one, *Heterotheca rutteri* (Figure 2), was typical of desert grassland/mesquite scrub. Also, the chief surveyor, Jim Malusa, had once found a patch of *Heterotheca rutteri* only seven miles south of the survey site, so he knew it was the most likely to be found.

Figure 2 - *Heterotheca rutteri*

The Survey

On August 2, 2013, there was already considerable construction activity at the survey site, including excavation. All lands which held plant life were surveyed by Jim Malusa and Matt Dinkins with a GPS in hand (route in Figure 3.) All lands surveyed were clearly subject to frequent disturbance, possibly from mowing.

The dominant species were a perennial bunch grass (Lehman's love grass, *Eragrostis lehmanniana,* typically 0.7 m tall) and a legume known as fairy duster (*Calliandra eriophylla,* typically 0.3 tall). In all, we encountered 57 species, of which 12 were grasses (Table 1). None of the focus species were encountered.

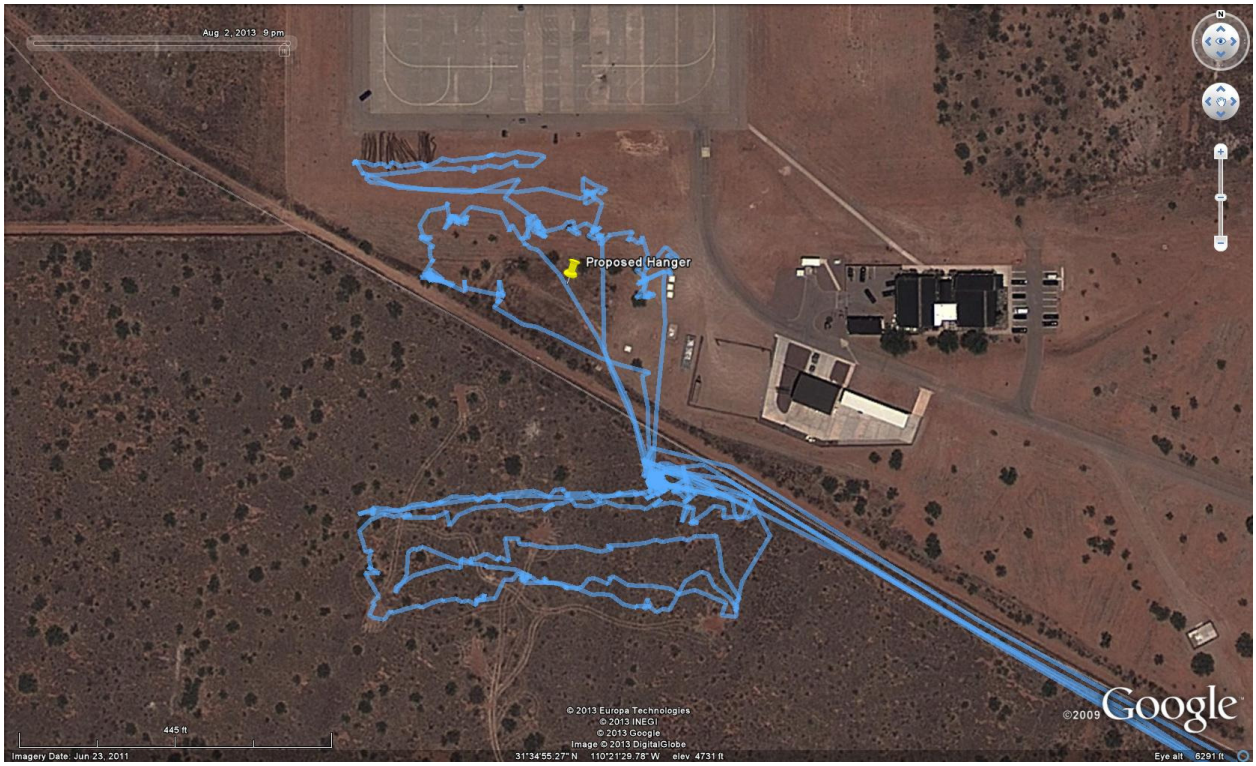


Figure 3 - *The survey route. Note scale in bottom right. The imagery is from 2011, and does not reflect the current conditions. Those areas which are apparently un-surveyed were, in fact, part of the construction site on August 2, 2013.*

Figure 4: *The survey site, with the north end shown on the left, and the south shown on the right.*

Table 1. Plant species encountered during Fort Huachuca survey of August 2, 2013

Grasses

Aristida ternipes – spidergrass
Bouteloua sp. – grama grass
Echinochloa crus-galli – barnyard grass
Eragrostis lehmanniana - Lehman's love grass
Heteropogon contortus – tanglehead
Hopia (=Panicum) obtusa – vine mesquite
Schizachyrium cirratum – Texas bluestem
Setaria macrorhiza – plains bristlegrass
Sorghum halepense – Johnson grass
Sporobolus sp. – sacaton
Urochloa platyphylla – signalgrass
Urochloa arizonica - Arizona signalgrass

Herbs, Shrubs, and Trees

Acacia angustissima – fern acacia
Allonia incarnata – trailing windmills
Amaranthus palmeri - amaranth
Ambrosia psilostachya – cuman ragweed
Apodanthera undulata – melon loco
Baccharis pteronioides – yerba de pasmo
Boerhavia coccinea – scarlet spiderling
Brickellia eupatorioides – false boneset
Calliandra eriophylla – fairy duster
Chaemaesyce sp. – sandmat
Chaemaesyce serpyllifolia – thymeleaf sandmat
Convolvulus equitans – Texas bindweed
Croton pottsii – leatherweed
Cucurbita digitata – fingerleaf melon
Curcurbita foetidissima – Missouri gourd
Cylindropuntia spinisior – cane cholla
Echeandia flavescens – Torrey's craglily
Erigeron divergens – spreading fleabane
Evovulus arizonicus – Arizona blue eyes
Galium sp. – bedstraw
Hymenothrix wislizenii – trans-Pecos thimblehead
Ipomoea hederacea – ivy-leaf morning glory
Jatropha macrorhyza – ragged nettlespurge
Kallstroemia grandiflora – Arizona summer poppy
Lepidium thurberi – peppergrass
Macroptilium gibbosifolium - variableleaf bushbean
Proboscidea althaeifolia – unicorn plant, or devil's claw

Mimosa aculeaticarpa – wait-a-minute
Mimosa dysocarpa – velvetpod mimosa
Mirabalis coccinea – scarlet four o'clock
Opuntia chlorotica – dollar-joint prickly pear
Phemeranthus (=Talinum) aurantiacus – flame flower
Prosopis glandulosa – mesquite
Salsola tragus – tumbleweed
Sarcostemma cynanchoides – fringed twinevine
Salvia subincisa – sawtooth sage
Sida abutifolia – spreading fantails
Solanum elaeagnifolium – nightshade
Stephanomaria pauciflora – wire lettuce
Talinum paniculatum – rama de sapo
Thymophylla pentachaeta – dogweed
Verbena bracteata – big bract verbena
Xanthisma gracilis – slender goldenweed
Xanthisma spinulosum – spiny goldenweed
Zinnia grandiflora – Rocky Mt. zinnia

References

Cleland, D.T.; Laing, L; Watson R.L.; Malusa, J.; Jordan, J.K.; Diamond D.D.; Robertson, G. 2008 (unpublished). Landtype Associations of Southeastern Arizona. Prepared with support of the Southern Arizona Office of the National Park Service, the Southwestern Region of the US Forest Service, the US Geological Survey, and the US Forest Service Southern Research Station. 361 p. Available at http://www.azfirescape.org/sites/azfirescape.org/files/az_lta_report_01_30_08_version.pdf

APPENDIX C

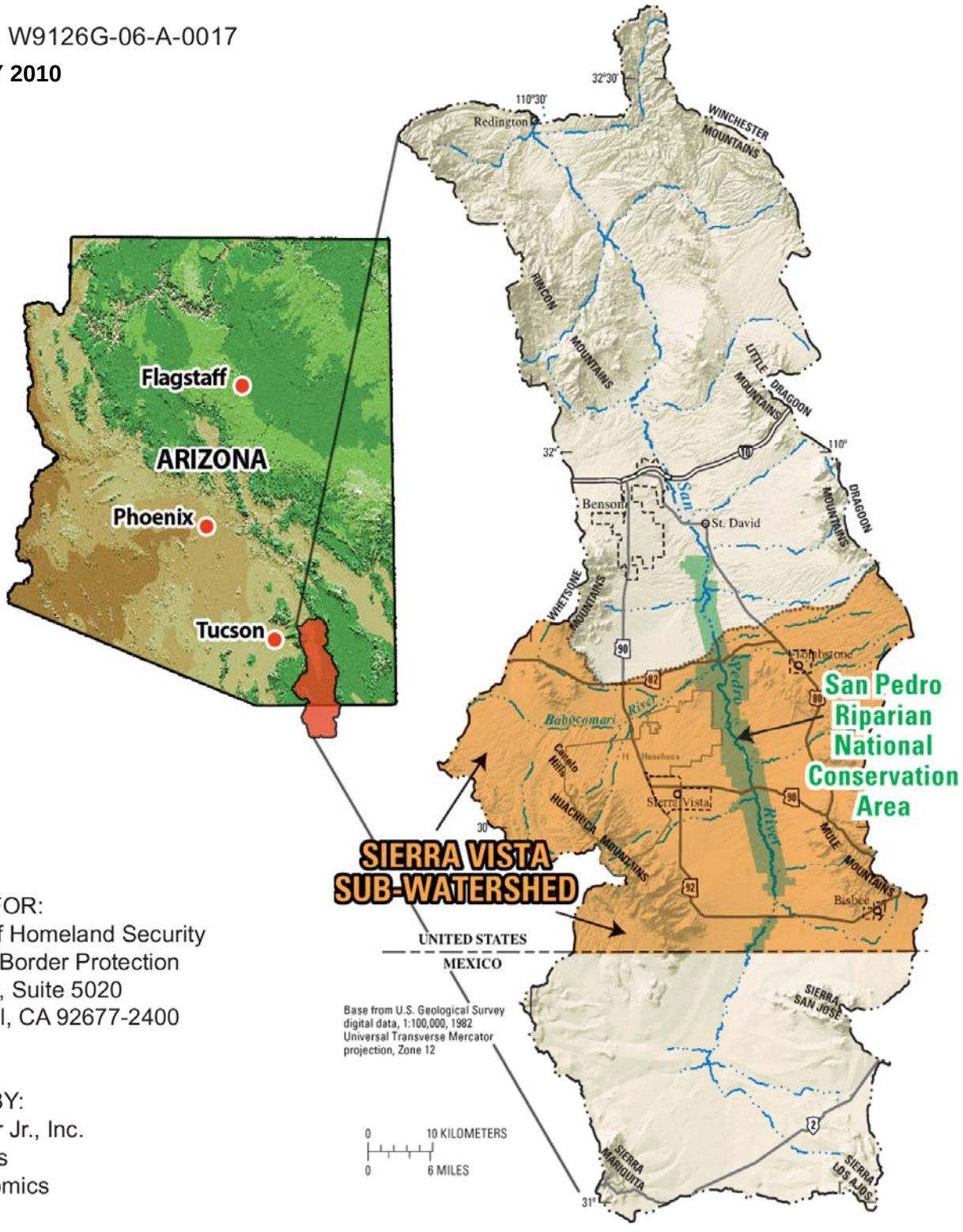
WATER CONSERVATION MANAGEMENT REPORT

FOR U.S. CUSTOMS AND BORDER PROTECTION ACTIVITIES WITHIN THE

Sierra Vista Subwatershed of the San Pedro Watershed

Contract No. W9126G-06-A-0017

FEBRURARY 2010



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GLOSSARY

A&M	See CBP A&M.
ADEQ	Arizona Department of Environmental Quality.
ADOT	Arizona Department of Transportation.
ADWR	Arizona Department of Water Resources. The state agency that "works to secure long-term dependable water supplies for Arizona's communities."
AF	An acre-foot is the volume of water it would take to cover an acre with water one foot deep. An acre-foot is equivalent to 325,851 gallons.
AF/YR	Acre-foot per year. The volume of water measured over the course of a single year. The most commonly used water supply measure in the arid southwest.
AMA	Active Management Area. These are regions of increased groundwater regulation by ADWR.
AMO	See CBP A&M.
AOR	Area of Responsibility.
AZDOC	Arizona Department of Commerce.
BA	Biological Assessment. As a part of the ESA's Section 7 consultation process, this document is required of a Federal agency proposing a major construction project that may affect a Federally listed threatened or endangered species. It concludes with a determination of effect to the species by the proposed project.
BLM	U.S. Bureau of Land Management.
BO	Biological Opinion. As part of the ESA's Section 7 consultation process, this document is produced by the USFWS, is based on information provided in a BA on a particular Federally listed threatened or endangered species, states whether or not the proposed action is likely to jeopardize the continued existence of the species or adversely modify designated critical habitat, and provides reasonable and prudent alternatives that could allow the project to move forward if it determines jeopardy or adverse effect to critical habitat would occur from the project as proposed.
BPS	Border Patrol Station.
BRAC	Base Realignment and Closure.
Capital Cost	A measurement of the lump sum costs necessary to implement an alternative.
CBP	U.S. Customs and Border Protection. Part of the U.S. Department of Homeland Security, this agency has the mission of controlling and protecting the Nation's borders at and between the POEs.

CBP A&M	U.S. Customs and Border Protection Air and Marine. This component of the CBP uses integrated air and marine forces to detect, interdict, and prevent acts of terrorism and the unlawful movement of people, illegal drugs, and other contraband toward or across the borders of the U.S.
CERL	Construction Engineering Research Laboratory, U.S. Army. This research group developed the EIFS model.
CFR	Code of Federal Regulations.
Direct Water Use	The actual water used by CBP at a CBP facility within the Subwatershed.
DOI	Department of Interior.
EA	Environmental Assessment.
Economic Impact Analysis	An analytical structure used to assess the total economic impact of a given action. In this type of analysis, both direct and secondary (employee domestic and induced) economic impacts are assessed.
EIFS	Economic Impact Forecast System. A model developed for USACE in the mid-1970s to assess economic impacts of proposed projects.
EIFS II	Updated and recalibrated version of EIFS.
Employee Domestic Water Use	The water used by CBP personnel and their families, excluding that used by CBP employees while at work at a CBP facility.
EOP	Environmental Operations Park. Part of the City of Sierra Vista's water conservation and mitigation strategy. Primary features include a wastewater treatment plant and groundwater recharge facility
ESA	Endangered Species Act (P.L. 93-205, 16 U.S.C. §§ 1531-1544, 87 Stat. 884, December 28, 1973, as amended).
FMCSA	Federal Motor Carrier Safety Administration
Fort Huachuca	US Army Garrison, located near Sierra Vista, Arizona.
GPCD	Gallons per capita per day. A measurement of daily water use per person in a delineated region (i.e., service area, town, subwatershed, etc.).
GPED	Gallons per employee per day. The average quantity of water (in gallons) used per employee in the workplace.
Greenbush Draw	A tributary to the San Pedro River into which the City of Bisbee currently discharges treated wastewater.
Groundwater Basin	Defined by the Arizona Revised Statutes, Title 45, as "an area which…may be designated so as to enclose a relatively hydrologically distinct body or related bodies of groundwater, which shall be described horizontally by surface description" (see A.R.S. § 45-402).
GSA	U.S. General Services Administration.

Induced Water Use	The water used by domestic, commercial, and municipal activities generated by the presence of CBP's operations in the Subwatershed, excluding direct water use and employee domestic water use.
LAAF	Libby Army Airfield, located on Fort Huachuca.
LEED	Leadership in Energy and Environmental Design
mgd	Million gallons per day
NEPA	National Environmental Policy Act (P.L. 91-190, 42 U.S.C. §§ 4321-4347, January 1, 1970, as amended).
Non-Potable Water	Water of a quality that is not suitable for human consumption and does not meet the requirements of the Safe Drinking Water Act; in some cases non-potable water is suitable for non-agricultural irrigation and/or recharge activities.
NSD	Naco Sanitary District
OFO	Office of Field Operations. This component of the CBP serves to prevent entry of people and goods that are prohibited or threaten our citizens, infrastructure, resources, and food supply, while efficiently facilitating legitimate trade and travel at the POEs.
Overdraft	The overdraft of groundwater occurs when more groundwater is pumped from the aquifer than is naturally or artificially recharged into the aquifer.
PPHU	Persons per housing unit. A demographic measure of the number of persons living in a single place of residence.
POE	Port of Entry. Is any designated place at which a CBP officer is authorized to accept entries of merchandise to collect duties, and to enforce the various provisions of the customs and navigation laws (19 CFR 101.1).
Potable Water	Water of a quality that is suitable for human consumption and meets the requirements of the Safe Drinking Water Act.
Project Team	Comprised of U.S. agency representatives and their hired consultants, the group of researchers and authors involved in the creation of this Water Conservation Management Report.
Recharge	The movement of water from surface water to groundwater, either naturally from rain, snowmelt, and surface waters or artificially from constructed recharge projects and incidental human activity.
SPR	San Pedro River.
SPRNCA	San Pedro Riparian National Conservation Area.
Subwatershed	A portion of a watershed. ADWR has divided the San Pedro Watershed into five subwatersheds. The Sierra Vista Subwatershed is defined as all portions of the San Pedro Watershed in Arizona upstream of the former location of the Fairbanks stream gage.

TDY	Temporary Duty.
TVGC	Turquoise Valley Golf Course. Treated wastewater from the City of Bisbee is currently being reused by this facility.
UAS	Unmanned Aircraft System. Part of CBP A&M planned operations.
U.S.	United States of America
USACE	U.S. Army Corps of Engineers.
USBP	U.S. Border Patrol. This component of the CBP has the mission of preventing the entry of terrorists and their weapons of terrorism and enforcing the laws that protect America's homeland by the detection, interdiction, and apprehension of those who attempt to illegally enter or smuggle any person or contraband across our Nation's sovereign borders.
USFWS	U.S. Fish and Wildlife Service.
USPP	Upper San Pedro Partnership
Watershed	The area defined by a drainage divide where all precipitation that falls on the area will flow to a specified point on a stream. This report focuses on activities within the San Pedro Watershed, also called the San Pedro Basin, located in southeastern Arizona within the Basin and Range Physiographic Province.

1.0 INTRODUCTION

The United States (U.S.) Customs and Border Protection (CBP) is one of the Department of Homeland Security's largest and most complex agencies. Through the coordinated efforts of its component agencies, CBP works to fulfill its mission of controlling and protecting the Nation's borders at and between ports of entry[1] (POEs). CBP's current and future operations in Cochise County, Arizona require water use which can impact the Sierra Vista Subwatershed ("Subwatershed") of the San Pedro Watershed ("Watershed"). This Water Conservation Management Report assesses these impacts and details mitigation measures that can be incorporated into CBP operations.

CBP operations in the Subwatershed are conducted by three component agencies: the CBP Air and Marine (A&M; also referred to as AMO in some reports), the U.S. Border Patrol (USBP), and the CBP Office of Field Operations (OFO). CBP A&M's mission is to protect the American people and the Nation's critical infrastructure through the coordinated use of integrated air and marine forces to detect, interdict, and prevent acts of terrorism and the unlawful movement of people, illegal drugs, and other contraband toward or across the borders of the U.S. As the primary federal law enforcement agency between the POEs, the USBP's primary mission is to prevent the entry of terrorists and their weapons of terrorism and to enforce the laws that protect America's homeland by the detection, interdiction, and apprehension of those who attempt to illegally enter or smuggle any person or contraband across our Nation's sovereign borders. Finally, OFO serves to prevent entry of people and goods that are prohibited or threaten our citizens, infrastructure, resources, and food supply, while efficiently facilitating legitimate trade and travel at the POEs.

CBP proposes to expand their existing operations within the Subwatershed during the next several years. Specifically, CBP proposes to expand CBP A&M facilities and operations at Fort Huachuca, Libby Army Airfield (LAAF), and Sierra Vista Municipal Airport; the USBP facilities and operations at the Naco Border Patrol Station (BPS); and the OFO at the Naco POE.

The Subwatershed is considered essential habitat for the continued existence and recovery of several Federally listed, threatened and endangered aquatic species. Section 7 of the Endangered Species Act (ESA) (P.L. 93-205, December 28, 1973) states that any project authorized, funded, or conducted by any Federal agency should not "jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of

[1] A Port of Entry is any designated place at which a CBP officer is authorized to accept entries of merchandise to collect duties, and to enforce the various provisions of the customs and navigation laws (19 CFR 101.1).

habitat of such species which is determined … to be critical." Additionally, the Act Section 2(c) states: (1) "It is further declared to be the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purpose of this Act. (2) It is further declared to be the policy of Congress that Federal agencies shall cooperate with State and local authorities to resolve water resource issues in concert with conservation of endangered species."

CBP is required to evaluate the effects of its proposed activities and planned operational expansions on threatened and endangered species residing within the Sierra Vista Subwatershed. Part of this evaluation includes consideration of management strategies, conservation measures and mitigation that, when implemented, avoids, minimizes and/or offsets adverse effects on Federally-listed species resulting from CBP's activities. Specifically, this report focuses on CBP's use of water withdrawn from the Subwatershed. The purpose of this report is to:

1. Quantify the current total water use by CBP components who use water from the Subwatershed;

2. Estimate future Subwatershed water use by CBP components;

3. Identify immediate and long-term water management strategies and conservation measures (i.e., avoidance and minimization) capable of reducing the amount of Subwatershed water used by CBP; and

4. Identify potential opportunities for mitigation (i.e., compensation) that would offset adverse effects resulting from CBP's use of water from the Subwatershed, if any, to Federally-listed species.

CBP intends to use this report as a supplement to its on-going environmental assessments (EAs) and biological assessments (BAs) for proposed CBP expansion activities in the Subwatershed. U.S. Fish and Wildlife Service (USFWS) concurred with this approach at a meeting with CBP held on November 1, 2007 (see **Appendix A**).

2.0 BACKGROUND

Located in Cochise County in southeastern Arizona, the Subwatershed includes most of the San Pedro Riparian National Conservation Area (SPRNCA) and the cities of Sierra Vista, Naco, Bisbee[2], Tombstone, Palominas, and Huachuca City. Additionally, Fort Huachuca, a U.S. Army installation, has been located within the Subwatershed since the 1870s. CBP operates three component facilities within the Subwatershed: 1) CBP A&M at LAAF, located on Fort Huachuca; 2) USBP at the USBP Naco Station, located southwest of Bisbee, Arizona; and 3) OFO at the Naco POE, located at the International Border in Naco, Arizona. Sections 4.0, 5.0, and 6.0 of this report, provide additional details relevant to each of these facilities and CBP's operations within the Subwatershed. **Figure 1** contains a detailed map of the Subwatershed and shows approximate locations of LAAF, the USBP Naco Station, and the Naco POE.

The San Pedro River (SPR) is the central feature of the Subwatershed. Unlike most rivers in Arizona, the San Pedro is not dammed and maintains perennial (continual) flows in much of the subject area. The SPR starts in the Republic of Mexico near Cananea and flows north into the United States. The riverbed intersects the groundwater table and as a result groundwater supplies contribute to river flow. Given the relationship between SPR and groundwater supplies, increased groundwater consumption in the basin can reduce the quantity of water flowing in SPR. Groundwater serves as the primary water source for residential, commercial, agricultural, and industrial water users in the Subwatershed. As unmitigated groundwater use in the Subwatershed increases, the quantity of water flowing in SPR is likely to decrease. Lowering of groundwater levels can negatively affect SPR's unique riparian and aquatic ecosystems and imperil the continued existence and recovery of several threatened and endangered species. As a water user within the Subwatershed, CBP and its components must account for, must minimize (i.e., conserve), and ultimately may need to offset (i.e., mitigate) their water usage within the Subwatershed in order to comply with ESA.

[2] The City of Bisbee is largely located outside of the Sierra Vista Subwatershed; however, the water supply for Bisbee is pumped from wells located within the Subwatershed; therefore this report treats Bisbee as if it were located within the Subwatershed.

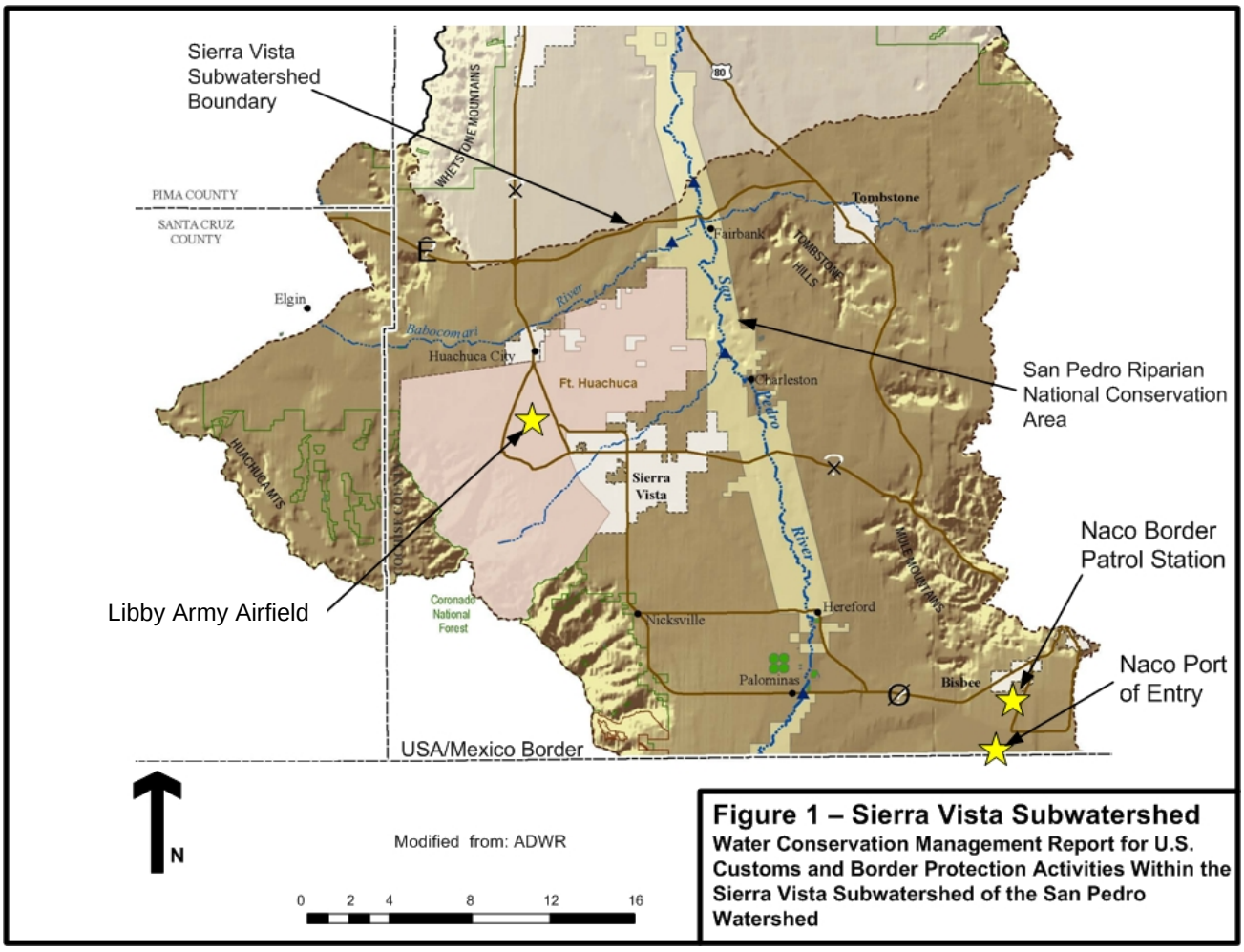


Figure 1 – Sierra Vista Subwatershed
Water Conservation Management Report for U.S. Customs and Border Protection Activities Within the Sierra Vista Subwatershed of the San Pedro Watershed

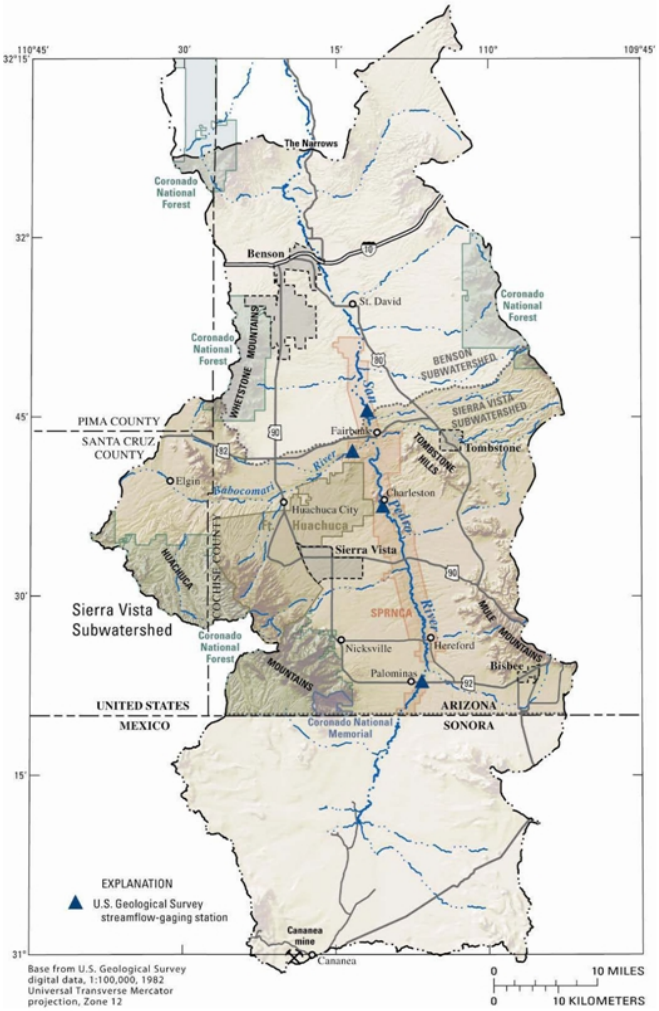
As indicated in Section 1.0, this report estimates current and future water use, both direct and induced, of each CBP component operating within the Subwatershed. Current water use calculations are based on 2007 personnel levels. Future water use calculations are based on operational and facility expansions planned to occur over the next several years. The methods used to calculate CBP's and its components' current and future, direct and induced water use follow those employed by the Fort Huachuca Environmental and Natural Resources Division's *(2006) Programmatic Biological Assessment for Ongoing and Future Military Operations and Activities at Fort Huachuca*.

This report also identifies ways in which CBP's water use can be minimized through conservation measures. These measures can be used by existing facilities and/or be incorporated into the design of expanded facilities. Finally, this report identifies mitigation that, when implemented, would offset CBP's groundwater use within the Subwatershed. This report serves as a supplement, dealing solely with water use, conservation, and mitigation, and is intended to support on-going efforts by CBP to

finalize EAs and BAs on expanded facilities and operations at Libby Army Airfield and the USBP Naco Station.

2.1 Physical and Hydrologic Setting

The Watershed (**Figure 2**) is similar to many areas in southern Arizona located within the Basin and Range Physiographic Province. This province is characterized by broad alluvial valleys bordered by uplifted mountains. Rivers and streams that drain these watersheds commonly are located near valley centers. Prior to the arrival of Anglo settlers in the late 1880s, many of the rivers that drain these alluvial valleys flowed year-round. Since that time, many of the rivers in southern and central Arizona have ceased to flow perennially because of increased water demands from agriculture and human settlement. As a result, riparian vegetation along these watercourses has diminished over time. However, SPR is a notable exception to this trend. Near Sierra Vista, SPR flows perennially. Groundwater supports SPR's base flow in this area and, through continuous discharge, ensures that SPR flows year round.



Modified from: Water Management of the Regional Aquifer in the Sierra Vista Subwatershed, Arizona, 2007 Report to Congress, Upper San Pedro partnership, Page 14.

Figure 2 - San Pedro River Watershed
Water Conservation Management Report for U.S. Customs and Border Protection Activities Within the Sierra Vista Subwatershed of the San Pedro Watershed

Precipitation over the Subwatershed varies by elevation and season. In general, higher elevations in the Subwatershed receive the greatest amount of precipitation. The upper elevations of the Huachuca

Mountains receive, on average, 30+ inches of precipitation annually, while the lower elevations along the San Pedro River receive, on average, less than 11 inches annually (ASL Hydrologic and Environmental Services, 1994). Precipitation generally occurs during two principal seasons: (1) December through March and (2) July through September. The average annual rainfall for Naco, Arizona is about 14 inches. At Fort Huachuca, the annual average rainfall for the period from 1900 to 1981 was 15.39 inches.

2.1.1 Sierra Vista Subwatershed Water Budget

A water budget is a method of accounting for all water within a set of defined boundaries. Budgets include factors that are both directly measured and estimated. They are generally expressed as long-term averages. Typical variables in water budgets include groundwater in storage, surface water inflows and outflows, surface water diversions, annual groundwater pumping, natural recharge from rainfall and runoff, and artificial recharge from constructed recharge projects and incidental human activity.

Water budgets provide an indication of an area's water resource conditions. They can be used to assess progress toward achieving management goals, and they allow for assessment of whether more water is used than replaced through natural or artificial recharge. When an area experiences a water deficit, demands are met by overdrafting (see glossary) its water supplies. In 1991, the estimated annual overdraft of the Subwatershed was 11,000 AF (DOI, 2008).

A 2007 report to Congress entitled, *Water Management of the Regional Aquifer in the Sierra Vista Subwatershed, Arizona* (Department of Interior (DOI), 2008), contains a current water budget for the Subwatershed. **Table 1** provides a breakdown of the water budget as described in that report. As indicated in **Table 1**, progress has been made toward balancing the water budget within the Subwatershed. Over the 15-year span between 1991 and 2006, the deficit decreased from 11,000 AF to 5,200 AF, a positive gain of 5,800 acre-feet per year (AF/YR). Nevertheless, in order to balance the water budget within the Subwatershed, this annual deficit of 5,200 AF/YR must be eliminated.

2.1.2 Upper San Pedro Partnership

With concerns mounting over the long-term health of SPR, the Upper San Pedro Partnership (USPP) was created in 1998. The USPP has been instrumental in successfully reducing the water budget deficit within the Subwatershed. USPP's purpose is to coordinate and cooperate in the identification, prioritization, and implementation of comprehensive policies and projects to assist in meeting water needs within the Sierra Vista Subwatershed of the Upper San Pedro River Basin. It is

a consortium of 21 local, State, and Federal agencies and private organizations with a common goal of achieving a sustainable water yield (i.e., balanced water budget) in the Subwatershed by 2011. Sustainability goals, at least initially, are to (1) eliminate the current annual storage deficit in the regional aquifer and (2) begin accumulating storage with the intent to replenish some of the historical storage depletion.

2.1.3 Impacts on Sierra Vista Subwatershed from Regional Water Use

According to the U.S. Bureau of Land Management (BLM), "more than 80 species of mammals, 40 species of reptiles and amphibians, 100 species of butterflies, 20 species of bats, and 350 species of birds live or migrate along its riverbanks." According to the USPP (2007), 60 to 75 percent of wildlife species in Arizona depend on riparian habitats to survive.

Because of the complex interaction between groundwater and surface water systems, SPR's continued health is dependent upon careful management of both supply systems. Without water conservation measures, the current water deficit would negatively affect long-term flows of SPR. Reduced river flows would diminish or completely eliminate ecologically diverse riparian areas and aquatic ecosystems. Threatened and endangered species dependent on these ecosystems could suffer adverse effects. Increases in groundwater consumption within the Subwatershed would increase the deficit and exacerbate these types of effects if mitigation to offset groundwater use is not implemented.

2.1.4 Current Conservation and Mitigation Efforts

As referenced in Section 2.1.1 and summarized in **Table 1**, current conservation practices (that minimize water use to the greatest extent practicable) combined with mitigation (to offset water use) have substantially reduced the water deficit from 1991 to 2005. Conservation and mitigation efforts currently utilized in the Subwatershed include the following:

- A large portion of land in the valley center of the Subwatershed has been acquired by the BLM and incorporated into the SPRNCA. SPRNCA is the nation's first national riparian conservation area. Congress created SPRNCA in 1988, directing the Secretary of the Interior to "conserve, protect and enhance the natural resources" of this riparian system.

Table 1. 2006 Water Budget for the Sierra Vista Subwatershed (DOI, 2008)

Component	Estimated Volume (Acre-Feet (AF))	Description
Natural Aspects of System		
Natural Recharge[1]	15,000	Inflow largely from percolating waters on and around mountains and through ephemeral channels
Groundwater Inflow[1]	3,000	Subsurface inflow from Mexico
Groundwater Outflow[1]	-440	Subsurface outflow at U.S. Geological Survey San Pedro River near Tombstone streamflow-gauging station (09471550)
Stream Base Flow[1]	-3,250	Groundwater discharge to the river that flows out of the Subwatershed
Evaporation and Plant Transpiration[1]	-10,800	Groundwater consumed in the riparian system exclusive of evapotranspiration supplied by near-riparian recharge from precipitation or flood runoff
Pumping		
Public Water Supply (gross)	-10,610	Groundwater withdrawals by water companies and municipalities
Rural Wells (gross)	-4,390	Groundwater withdrawals by private wells
Industrial (gross)	-1,490	Groundwater withdrawals for industrial, golf courses, sand and gravel operations
Irrigation (net)	-430	Groundwater withdrawals for agricultural use; consumptive use only
Active Management Measures		
Reduction of Riparian Evapotranspiration	475	Management of invasive mesquite
Municipal Effluent Recharge	3,030	Recharge by the City of Sierra Vista and Fort Huachuca
Detention Basin Recharge	310	Construction of new detention basins designed to aid in groundwater recharge
Passive Recharge Resulting from Human Activities		
Incidental Recharge	2,090	Mainly from exterior irrigation and septic tanks
Urban-Enhanced Recharge	2,300	Urbanization concentrates runoff in ephemeral-stream channels which increases natural recharge
Aquifer Storage Change[2]	-5,200	

[1] Flow volume estimated by the Arizona Department of Water Resources.

[2] Value rounded to the nearest 100 AF/YR.

- Fort Huachuca, Cochise County, Huachuca City and the Cities of Sierra Vista, Bisbee, and Tombstone implemented various conservation measures to minimize their water use. These conservation measures include public education on how to conserve water supplies and rebate programs for retrofitting residential plumbing. The Fort also installed approximately 460 waterless urinals.

- Both the Fort and Sierra Vista directly recharge effluent produced from each entity's wastewater treatment plant. Recharging effluent to the regional aquifer offsets groundwater withdrawals from the aquifer.

- Fort Huachuca, Cochise County, and Sierra Vista constructed stormwater detention basins. These basins are specially designed to retard storm runoff and increase its infiltration into the regional aquifer.

- Bisbee uses its effluent to replace groundwater-derived golf course irrigation, thereby reducing the amount of groundwater withdrawn.

- BLM removed invasive trees from along the banks of SPR to reduce water consumption from non-native vegetation.

- The Nature Conservancy and the Fort have worked together to purchase conservation easements on agricultural lands to reduce or eliminate the agricultural demand for groundwater from those lands.

Each of these projects has helped to make progress towards USPP's goal of a balanced water budget for the Subwatershed. The on-going effluent recharge efforts by Fort Huachuca and the City of Sierra Vista are of particular importance in this analysis. All effluent produced by the Fort is directly reused or recharged within the Subwatershed. Wastewater treatment plays a major role in the Army's multi-tiered water resource management program that guides effective management and conservation of Fort Huachuca's water resources. To facilitate effluent recharge, Fort Huachuca completed construction of Phase I of an Effluent Recharge and Reuse Project in 2002. This $6 million project included upgrading the wastewater treatment plant to improve effluent quality and construction of seven effluent recharge basins and one stormwater recharge basin. Since both water and wastewater service is provided to CBP A&M by the Fort, there is a direct offset to CBP A&M's water use and, consequently, the amount CBP A&M is required to offset through mitigation.

Furthermore, some CBP component employees and the induced population resulting from CBP's activities within the Subwatershed reside in the City of Sierra Vista, which has a sophisticated water conservation and mitigation strategy. A key feature of this strategy is the Environmental Operations Park (EOP), located east of Sierra Vista. The EOP is the location of the city's compost facility, its wastewater treatment facility, 30 acres of recharge basins, 50 acres of constructed wetlands, and a 1,800 square-foot wildlife viewing facility. The City of Sierra Vista estimates that it has offset 40 percent of its groundwater use through its own mitigation activities. This means that 40 percent of the water use attributable to CBP component employees and induced population living in Sierra Vista is offset by the City of Sierra Vista's existing mitigation (Sierra Vista).

2.2 Compliance with Federal, State and Local Laws Relating to Water Use

As indicated in Section 1.0, ESA requires Federal agencies to conserve endangered and threatened species and to cooperate with State and local authorities to resolve water resource issues in concert with conservation of endangered species. As previously discussed, several threatened and endangered species rely on the riparian and aquatic ecosystems created by the year round flow of SPR within the Subwatershed. For example, the southwestern willow flycatcher (*Empidonax traillii extimus*)—an endangered bird species—relies heavily on SPR's riparian areas for foraging and nesting purposes. The Huachuca water umbel (*Lilaeopsis schaffneriana* var. *recurva*)—an endangered plant species— relies on the unique aquatic environment created by the perennial flow of SPR. In order to comply with ESA, CBP and its components must ensure their water use within the Subwatershed does not adversely affect threatened or endangered species. This report documents CBP's current and future total water use within the Subwatershed, discusses various conservation measures that can be utilized to minimize CBP's water use, and provides mitigation measures that if implemented would offset CBP's water use resulting in a balanced CBP water budget.

The Defense Authorization Act of 2004, Public Law 108-136, Section 321, stipulates the way in which Section 7 of the ESA applies to the Fort Huachuca, Arizona military reservation. Section 321 of this Act further directs the Secretary of the Interior to prepare reports to Congress regarding techniques that can be implemented to reduce overdraft and restore the sustainable yield of groundwater in the Sierra Vista Subwatershed. USPP prepares Section 321 reports as a means to update Congress on progress towards achieving sustainability goals and a balanced water budget within the Subwatershed. These reports serve as a valuable tool for understanding the current condition of the Subwatershed and have been utilized in preparation of this study.

State water laws are bifurcated between regulation of surface water use and groundwater use. Arizona surface water law is based on the doctrine of prior appropriation, where “first in time is first in right.” Although surface water diversions are subject to regulation by the Arizona Department of Water Resources (ADWR), there are no active regulatory programs for existing surface water users beyond those of record-keeping. New surface water diversions cannot be initiated without filing the proper application with ADWR. Groundwater regulations are intensive in five areas of the State known as Active Management Areas (AMAs). Located around major population centers, the five AMAs each have a specific goal that groundwater regulations are designed to achieve. The Sierra Vista Subwatershed is not located within one of Arizona’s five AMAs. Petitions to create a new AMA in the Subwatershed have been filed with ADWR. However, ADWR concluded that the statutorily prescribed precedents did not exist for creation of an AMA, and the petition was rejected. The Subwatershed is still subject to new well permitting and drilling standards. CBP is a water user only and does not own or operate any groundwater wells or surface water diversions. As a result, CBP will have no foreseeable interaction with State water law.

3.0 DATA COLLECTION AND ANALYSIS METHODS

Sections 3.1 and 3.2 discuss data collection efforts and analytical methods used to prepare this report. CBP components operating within the Subwatershed served as the primary data sources for this report. The analytical methods follow those:

- Used by Fort Huachuca's Environmental and Natural Resources Division (2006) in the Programmatic Biological Assessment for Ongoing and Future Military Operations and Activities at Fort Huachuca, Arizona.
- Accepted by USFWS in its Biological Opinion (BO) (USFWS, 2007).

3.1 Data Collection

Detailed questionnaires were sent to points of contact at each CBP station of operation. **Appendix B** contains the questionnaire used to gather data from each of the components. In some cases, specific data sets were not available (e.g., specific financial data sets needed for the economic analysis). In other cases, the requested data simply did not exist (e.g., water delivery records do not exist for CBP A&M because they use water provided by the Fort from on-site wells that are not metered separately for deliveries to CBP A&M.

In cases when requested data was not provided or did not exist, other sources were used to complete data collection. Other sources included CBP's website (www.cbp.gov), Fort Huachuca's BA and the USFWS's BO, the USPP's website (www.usppartnership.com), and ADWR's website (www.azwater.gov). When other sources did not meet the data requirements, the Project Team used assumptions derived from its extensive experience with water use projects.

In order to fulfill data requirements, a series of Fact Sheets were created that provide information such as the source of data and basis for assumptions. **Appendix C** contains the Fact Sheets.

3.2 Analytical Methods

Water use calculations and economic modeling comprise the two primary methods used to derive CBP's current and future total water use within the Subwatershed. This section describes the water use calculations and the rationale for using the selected method, conversion factors, and equations. It also presents some of the base population figures and water use values that will be referenced in

Sections 4, 5, and 6. A detailed description of the economic model used to determine induced population is found in Section 3.2.2.1.

3.2.1 Determining Subwatershed Population

The first step in calculating CBP's current and future total water use within the Subwatershed was to determine how much of the Subwatershed's population was attributable to CBP's activities within the Subwatershed. The number of CBP households located within the Subwatershed and ultimately total water demand was determined by using anonymous zip code data provided by each CBP component. Because of privacy and security concerns, the actual list of zip codes is not included in this report. **Figure 3** represents zip code boundaries within the Subwatershed.

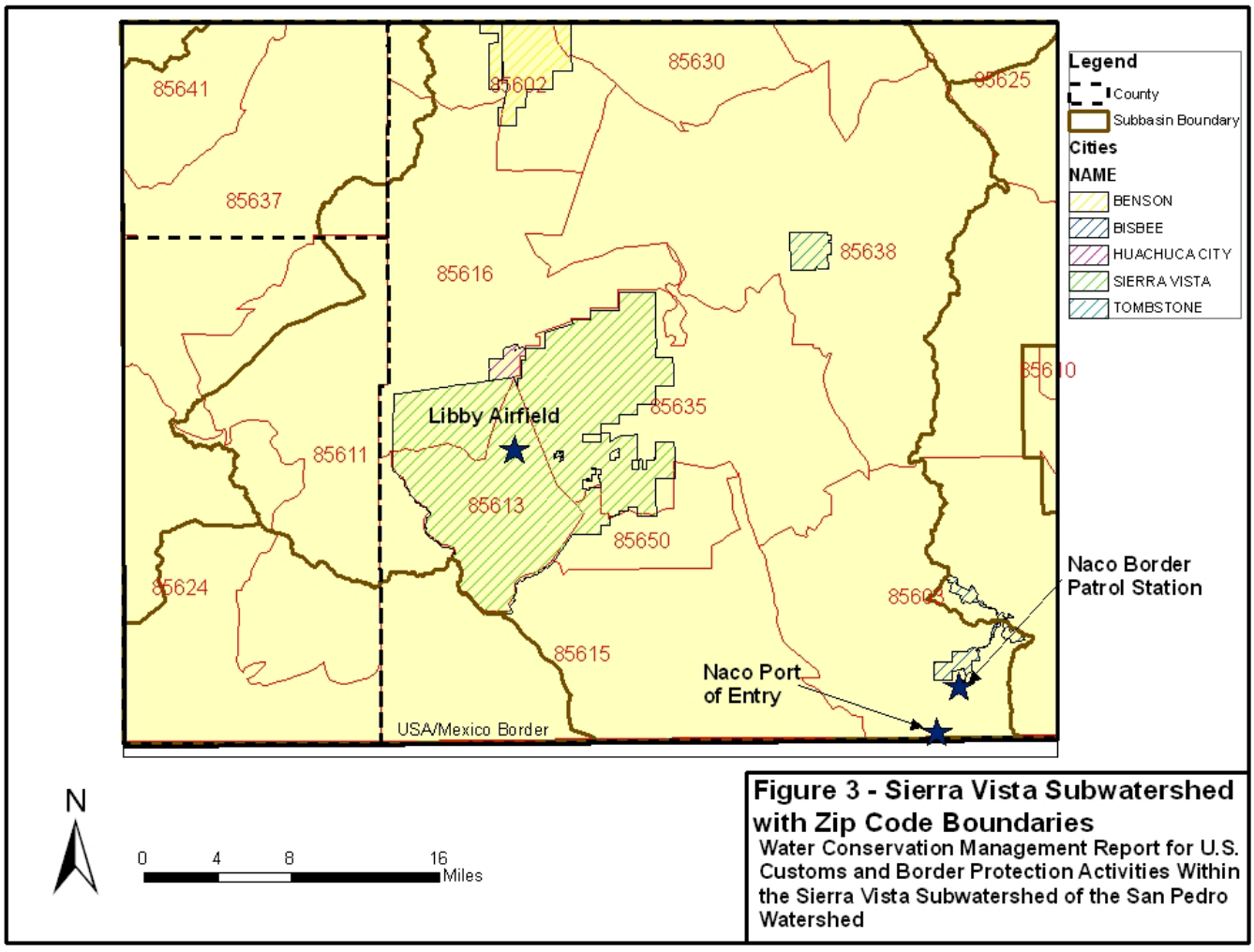


Figure 3 - Sierra Vista Subwatershed with Zip Code Boundaries
Water Conservation Management Report for U.S. Customs and Border Protection Activities Within the Sierra Vista Subwatershed of the San Pedro Watershed

Using zip code data and the Subwatershed map, the number of employees with home locations inside the Subwatershed was determined. **Table 2** shows the number and percentage of employees living in the Subwatershed.

Table 2. Number and Percentage of Employees Living in the Subwatershed

	CBP A&M	USBP Naco Station	OFO
Total Employees	47	417	38
Total Inside Subwatershed (from zip code data)	28	341	31
% Inside Subwatershed	59.57%	81.77%	81.58%

The next step in determining the total water demand involved identifying the average number of people residing in a housing unit or the persons per housing unit (PPHU) rate. U.S. Census demographic data were used to determine this figure. According to the 2000 U.S. Census, the average PPHU for Cochise County was 2.5. In order to determine the total number of CBP employees and their families using water at their homes within the Subwatershed, the number of CBP employees residing in the Subwatershed (from the zip code data) was multiplied by the PPHU for Cochise County (2.5). **Table 3** shows the CBP employee and family population within the Subwatershed.

Table 3. CBP Employee and Family Population within the Subwatershed

CBP A&M	USBP Naco Station	OFO
62.5*	852.5	77.5
*Note: Five of the contractors are assigned to CBP A&M on temporary duty (TDY). Since they are not permanent residents and have not relocated to the Subwatershed with their families, they were counted as single individuals when employee family population was calculated.		

These calculations were repeated for future personnel levels.

3.2.2 Determining Induced Population

Induced population includes those individuals who live and work in the Subwatershed as a result of the expenditures at each CBP facility for employees, other services, materials, and supplies. Economic impacts that result from this induced population begin with employee income and facility expenditures for goods and services, which are considered direct effects in economic parlance. These direct expenditures will then be re-spent within the local area, producing induced and indirect effects. For purposes of this study, indirect (immediate suppliers) and induced (compounding) employment do not need to be, and were not, differentiated. The induced effects of job creation generate a multiplier effect within the economy. An induced population also occurs, which includes

families of induced workers. To complete the water use analysis, indirect and induced populations were estimated in the Subwatershed as a result of the CBP components. **Table 4** shows the results of the economic modeling described in greater detail in the following sections.

Table 4. CBP Induced Population within the Subwatershed

	CBP A&M	USBP Naco Station	OFO
Current	110	595	53
Future	161	668	53*
*No growth/expansion is anticipated.			

3.2.2.1 The Economic Impact Forecast Model

The multiplier effect can be estimated using an economic impact technique or model to estimate the indirect and induced effects. In this case, facility employment and salaries in the Subwatershed, facility expenditures, and construction costs at CBP's facilities were applied as direct effects to estimate the indirect and induced effect estimates.

After careful consideration, the Project Team selected an impact model originally developed for the U.S. Army Corps of Engineers (USACE) as the most appropriate tool for this effort. The U.S. Army Environmental and Natural Resources Division (2006) utilized the Economic Impact Forecast System (EIFS) for the *Programmatic BA for Ongoing and Future Military Operations and Activities at Fort Huachuca, Arizona*. Evaluation of the EIFS Model was a logical first step in selecting an economic impact model for this project.

The EIFS Model was developed by the Army Construction Engineering Research Laboratory (CERL) in response to requirements of the National Environmental Policy Act (NEPA) in the mid-1970s. The model includes national economic data for counties, parishes, and cities. These data are compiled from the Economic Census, Census of Agriculture, the Bureau of Economic Analysis, and the County Business Patterns. Although CERL no longer maintains the model, USACE economists currently use the model in Base Realignment and Closure (BRAC) analyses and Border Patrol Crossing construction project analyses. The original model developers have continued to update and recalibrate the model and have made the latest version, EIFS II, available on-line at www.nepaworkbench.com.

The Project Team interviewed Ron Webster, one of the original EIFS developers, who currently maintains the EIFS II Model. Discussions with Mr. Webster, USACE economists, and trial runs with

the on-line EIFS model, led the Project Team to determine that the model would provide reasonable and defensible employment projections.

The Project Team considered other economic models such as IMPLAN, but determined EIFS would be the most appropriate model for the following reasons:

- This EIFS Model is specific to federal projects rather than to private sector employment analyses.
- EIFS has been accepted and continually used within the military community.
- EIFS has been reviewed by stakeholders and the Government Accounting Office. The resulting analyses have been upheld.

To forecast employment the Project Team decided to use the EIFS II version with the updated database. Nevertheless, the resulting population forecasts were inconsistent, and developers agreed that this is a weakness within the model. As a result, the Project Team developed a method to derive population from the EIFS II employment forecasts. This method is described in Section 3.2.2.2.

The EIFS Model uses the economic base model approach, which compares the ratio of total economic activity within a region to basic economic activity. Generally, basic economic activities are those which bring monies into an area from external sources. In the case of EIFS, basic economic activity is that caused by federal activities, such as those specific to this study. The ratio of basic income to total income provides the multiplier used to develop the forecast output in the EIFS Model. Data used in the model reflect 2006 values and are specific to Cochise County.

3.2.2.2 EIFS Model Inputs

Section 3.1 describes the data sources for the model inputs and the direct effects of employment, income, and other facilities expenditures in the Subwatershed. In isolated cases, data were lacking and the Project Team performed additional research to obtain reasonable estimates based on past experience and expertise. Sources used included the Department of Homeland Security Fiscal Year 2009 Budget and a recently awarded contract for a Border Patrol Station facility.

The first step in utilizing the EIFS II Model is to select the region of impact, which in this case was Cochise County. Data were input for each CBP facility, and the model was run in six sessions accounting for current and projected direct effects in the Subwatershed. For each of the six model runs, the following data were input:

1) Change in local expenditures – The local operating budget for each facility.
2) Change in civilian employment – For current inputs, the number of existing assigned staff was used. For future inputs, projected assigned staff figures were used.
3) Average income of affected civilian – Actual or estimated income per assigned staff member.
4) Percent expected to relocate – 100 percent.

In each case, the percent expected to relocate was input as 100 percent (as a conservative estimate). Nevertheless, it is likely that at least some of the new employees will already be residents of the area. Also, many of the positions require specialized skills that are unlikely to be available in a relatively small population set. Finally, CBP's previous recruitment efforts in the area may have already attracted those in the population who are interested in these positions. The same method was used to establish current and future employment impacts.

The Forecast Output for each model run produced direct, induced, and total employment figures. In each case, the direct employment figure in the Forecast Output was greater than the Change in Civilian Employment input because it included indirect employment, which is not a separate output line in the EIFS II Model. As described above, neither indirect nor induced employment is differentiated in deriving population estimates. Therefore, the total employment number produced by the model, less the Change in Civilian Employment input, provided the indirect and induced employment resulting from CBP activities at each facility.

The resulting population projections induced by the economic impact of CBP activities are discussed in detail within the appropriate section of this report for each entity (Section 4 for CBP A&M activities, Section 5 for USBP activities, and Section 6 for OFO activities). The outputs from the EIFS II Model are presented in **Appendix D**.

3.2.3 Determining Total CBP Subwatershed Population

Once the induced population was determined, it was added to the CBP employee and family populations living within the Subwatershed (identified in **Table 3**) to determine the total CBP Subwatershed population. **Table 5** summarizes these total values.

Table 5. Total CBP Subwatershed Population

CBP A&M	USBP Naco Station	OFO
172.5	1,447.5	130.5

3.2.4 Determining Direct Water Use

Direct water use includes actual water used by CBP at a CBP facility within the Subwatershed. Direct, current, and future water use was determined in a number of different ways as described in Sections 4, 5, and 6 respectively. In some cases, direct reporting of actual water use was available via water delivery records obtained from the facility's water provider. Water delivery records quantify all of the water used (i.e. drinking, irrigation, washing, etc.) by CBP at a facility

The annual quantity of water used by each CBP employee at a facility was calculated by dividing the annual gallons of water used (obtained from water records) by the number of CBP employees at the station (as served through a water provider). Dividing the quantity of CBP employee water use annually (in gallons) at a station by 365 (i.e., number of days in a typical year) yields the quantity of water used by a CBP employee at the facility during a single day. This result represents the daily per employee water use rate referred to herein as Gallons per Employee per Day (GPED). The equation below summarizes the GPED calculation.

GPED = Annual Water Use ÷ employees served ÷ 365 days

An AF is a commonly used unit of measure for water and represents the volume of water required to fill a one acre area to a depth of one foot. In order to convert gallons per day per employee to AF per day per employee, the number of gallons is divided by 325,851 as illustrated below.

Acre-feet = number of gallons ÷ 325,851

When monthly water use records were not available, water use was estimated based on a detailed description of the facility and its water-using activities. In addition to determining total direct water use (i.e., water actually used by CBP employees while at work), subsequent steps in this analysis also accounted for activities that offset at least some portion of the direct water use at a given facility. For each CBP facility, these activities were accounted for and the extent to which they offset direct water use was quantified.

3.2.5 Determining CBP Employee, Family, and Induced Water Use

In order to calculate the quantity of water used by CBP employees, their families, and the induced population, the population was divided between those located in incorporated areas and those located in unincorporated areas. This determination was made based upon U.S. Census demographic data, which indicates that within Cochise County 69% of the population is located in

incorporated areas and 31% of the population is located in unincorporated areas. **Table 6** summarizes the CBP employee, family, and induced population split between incorporated and unincorporated areas.

Table 6. CBP Subwatershed Population Split Between Incorporated and Unincorporated Areas

	CBP A&M	USBP Naco Station	OFO
Incorporated Areas (69%)	119.03	998.78	90.05
Unincorporated Areas (31%)	53.48	448.73	40.46
Total CBP Subwatershed Population	172.5	1,447.5	130.5

Two water use rates were required to complete the water use calculations: one rate to calculate water used by those living in incorporated areas and another rate for those living in unincorporated areas. For both areas, calculations included water use data used by Fort Huachuca in its 2006 BA and by the USFWS in its 2007 BO. 160 gallons per capita per day (GPCD) was used to represent water use by populations in incorporated areas. The Fort determined this figure by calculating 2005 water use by the Fort and the City of Sierra Vista divided by the 2005 population of these areas. The following calculation was used to determine water use of the CBP employees, families, and induced populations within incorporated areas:

Incorporated CBP Population Water Use (AF/YR)) =
Number of CBP Employees, Families and Induced Population in Incorporated Areas * 160 GPCD * 365 Days ÷ 325,851 gallons

According to the Fort's BA and the USFWS's BO, the Groundwater Users Advisory Council of the Prescott Active Management Area (2006) identified a water use rate of 118 GPCD for domestic wells, which are the most likely source of supply in unincorporated areas. Incorporating this GPCD rate, the following calculation was used to determine the water use of the CBP employee, family, and induced population within unincorporated areas:

Unincorporated CBP Population Water Use (AF/YR) =
Number of CBP Employee, Families and Induced Population in Unincorporated Areas * 118 GPCD * 365 Days ÷ 325,851 gallons

Incorporated and unincorporated area water use by CBP employees, families, and induced populations were added to obtain total water use by these employees. These calculations were repeated for future personnel levels.

3.2.6 Industrial Pumping within Subwatershed

Fort Huachuca's BA and the USFWS's BO included a portion of industrial pumping within the Subwatershed in the Fort's total water usage. This figure was derived by first calculating the portion of total Subwatershed population attributable to the Fort. Using the Fort's 2006 Subwatershed estimate of total population (76,503) and the current total population for each CBP component, the percentage of Subwatershed population attributable to each CBP component was calculated. This calculation was repeated based on anticipated future personnel levels and a future Subwatershed population of 110,711 in 2025 (Arizona Department of Commerce[3] (AZDOC), 2006). **Table 7** lists the calculated percentage of Subwatershed population attributable to each CBP component.

Table 7. Subwatershed Population Attributable to Each CBP Component

	CBP A&M	USBP Naco Station	OFO
Current Total CBP Subwatershed Population	172.5	1,447.5	130.5
Current Percentage of Total Subwatershed Population	0.225%	1.892%	0.171%
Future Total CBP Subwatershed Population[4]	245.2	1,588.0	130.5
Future Percentage of Total Subwatershed Population	0.221%	1.434%	0.118%

The percentage of Subwatershed population was then multiplied by the amount of industrial pumping in the Subwatershed in 2006 (1,250 AF) using the following equation:

Portion of Industrial Pumping Attributable to Each CBP Component=
Total Subwatershed Industrial Pumping in 2006 * % of Subwatershed Population Attributable to Each CBP Component

These calculations were repeated for future personnel levels.

3.2.7 Existing or Planned Mitigation

Once total water use was determined, the effect of current or planned future efforts that serve to offset water use within the Subwatershed was considered. Each effort was accounted for based on specific factors. Some of these efforts only apply to a single CBP component, such as:

[3] Use of these population values is consistent with the Fort's BA. Formerly the Arizona Department of Economic Security maintained population figures. At present, the Arizona Department of Commerce maintains this information.
[4] Population is derived from the sum of each CBP Components' employees, their families, and the induced population as identified in Sections 4, 5, and 6 respectively.

- Direct recharge or wastewater by Fort Huachuca, which applies only to A&M water use.
- Effluent from the USBP Naco Station reused for golf course irrigation.
- Planned rainwater harvesting and retention basins at USBP Naco Station expansion.

Two existing mitigation efforts apply to all three components. They are effluent recharge by the City of Sierra Vista and passive recharge from septic tanks within the Subwatershed.

3.2.7.1 Sierra Vista Effluent Recharge

Ongoing effluent recharge by the City of Sierra Vista is the primary means currently used to offset water use within the Subwatershed. Since Sierra Vista is a primary population center in the Subwatershed, many CBP employees, and much of the induced population, live in Sierra Vista where wastewater is treated and recharged. The addition of recharged effluent back into the aquifer is a direct offset to groundwater use by CBP employees, their families, and the induced population.

The CBP population in Sierra Vista (based on zip code data) was used in conjunction with the City's reported rates of effluent recharge to determine how much of the total water use was offset. These values were calculated using the percentage of Sierra Vista's total population represented by the CBP population. In 2005, Sierra Vista's population was 34,694 (AZDOC, 2006). According to the Fort's BA and the USFWS's BO, an estimated 5% of Sierra Vista's population is not connected to the sewer system and instead has individual septic tanks. Thus, the population attributable to CBP living in Sierra Vista and the population of the City of Sierra Vista was reduced by 5% for the following calculations. These calculations were repeated based on future personnel levels and a future Sierra Vista population of 59,972 (AZDOC, 2006). **Table 8** shows the estimate of the number of persons attributable to CBP living in the City of Sierra Vista.

Table 8. Number of Persons Attributable to CBP Living in the City of Sierra Vista

	CBP A&M	USBP Naco Station	OFO
Current Total CBP Subwatershed Population (from zip code data)	172.5	1,447.5	130.5
Current Total Inside Sierra Vista (from zip code data)	146.79	1,120.65	58.94
Current Total Inside Sierra Vista as a Percentage of Sierra Vista's Total Population	0.423%	3.230%	0.170%
Current Total Inside Sierra Vista Served by Sewer (95% of current total inside Sierra Vista)	139.45	1,064.61	55.99
Future Total CBP Subwatershed Population	245.2	1,588	130.5
Future Total Inside Sierra Vista (Based on projections using zip code data)	207.55	1,229.42	58.94
Future Total Inside Sierra Vista as a Percentage of Sierra Vista's Population	0.346%	2.050%	0.098%
Future Total Inside Sierra Vista Served by Sewer (95% of future total inside Sierra Vista)	197.18	1,167.95	55.99

The total amount of effluent recharge was calculated by multiplying the percentage of Sierra Vista's total population attributable to CBP (limited by those served by sewer) by the total recharge reported by Sierra Vista in 2005 (2,897 AF):

Portion of Sierra Vista's Recharge Attributable to Each CBP Component= Total Sierra Vista Recharge in 2005 * % of Sierra Vista Population Attributable to Each CBP Component

3.2.7.2 Septic Tank Passive Recharge

The Fort's BA and USFWS's BO identified septic systems as a commonly credited groundwater recharge source. The report notes that the USPP has adopted a septic recharge rate of 70% of indoor water use, which is estimated to be 69 GPCD (ADWR, 2008). The Fort's BA and USFWS's BO then applied this level of septic recharge to the 5% of Sierra Vista's population that is not served by the sewer system and to all of the unincorporated areas of the Subwatershed. This approach was applied to each CBP component by using the unincorporated population numbers previously calculated for each CBP component (see **Table 6**). Then 5% of the population attributable to CBP within Sierra Vista was added. These calculations were repeated based on future personnel levels. The population attributable to CBP that uses septic tanks is shown in **Table 9**.

Table 9. CBP Population on Septic Tanks

	CBP A&M	USBP Naco Station	OFO
Current Unincorporated Area Population	53.48	448.73	40.46
Current Portion of CBP Sierra Vista Population on Septic (5%)*	7.34	56.03	2.95
Current Total CBP Population on Septic	60.82	504.76	43.41
Future Unincorporated Area Population	76.01	492.28	40.46
Future Portion of CBP Sierra Vista Population on Septic (5%)*	10.38	61.47	2.95
Future Total CBP Population on Septic	86.39	553.75	43.41
*Calculated using the total inside Sierra Vista values in Table 8.			

The amount of septic tank recharge was then calculated using the following equation:

Portion of Septic Tank Recharge Attributable to Each CBP Component= Total Population Attributable to Each CBP Component on Septic * 69 GPCD * 70% * 365 Days ÷ 325,851 gal

3.2.8 Net Water Use

Net water use accounts for total water use and total mitigation attributable to each CBP component. It is calculated by subtracting total mitigation from total water use. Net water use will be the target of future mitigation and conservation efforts. These calculations were repeated based on future personnel levels.

3.2.9 Construction Water Use

Expansion of CBP's A&M facility and the USBP Naco Station will also have population impacts in the Subwatershed. Those population impacts will have a temporary water use impact, which must be quantified. The Project Team considered impacts of the facility expansion projects and determined induced population as a result. CBP's A&M facility expansion is assumed to take one year, and the BPS expansion is assumed to take 18 months.

EIFS II Model inputs were similar to those described above (Section 3.2.2.2). For each construction project, the following data were input:

1) Change in local expenditures – annual construction costs.
2) Change in civilian employment – estimated number of construction workers based on the total construction costs.

3) Average income of affected civilian – average 2006 construction worker wages for Cochise County, inflated by 6 percent.
4) Percent expected to relocate – 100 percent.

These inputs provided indirect and induced employment figures. The percent of working and unemployed individuals relative to the total population of Cochise County was applied to those figures to arrive at the temporary construction induced population. As with the induced population, zip code data were used to determine the proportion of the total number of CBP employees that live in Sierra Vista, and that proportion was applied to the temporary construction induced population. **Table 10** shows the temporary construction population reduced to just that within the Subwatershed and split into incorporated and unincorporated areas.

Table 10. CBP Temporary Construction Population Living in the Subwatershed

	CBP A&M	USBP Naco Station
CBP Construction Population (from EIFS II)	53	263
% Inside Subwatershed (based on zip code data)	59.57%	81.77%
CBP Construction Population in Subwatershed	31.57	215.07
CBP Construction Population in Incorporated Areas (69%)	21.79	148.4
CBP Construction Population in Unincorporated Areas (31%)	9.79	66.67

Using the temporary construction induced population, the method for determining net water use (as described in Section 3.2.8) was then applied to the temporary construction induced population. As noted, this population impact is temporary and will occur only during the timeframe of project construction.

4.0 CBP AIR AND MARINE

CBP A&M is currently deploying the MQ-9 Predator Unmanned Aircraft System (UAS) in support of CBP's strategic mission to secure U.S. borders against terrorists, means of terrorism, illegal drugs, and other illegal activities. CBP A&M also provides operational end users with the technology and capabilities to detect and prevent terrorist attacks and other illegal activities. The strategic plan for UAS Operations describes the intent of CBP A&M to provide intelligence, surveillance, and reconnaissance in the southwest, along the Northern Border, and in the Gulf Region. In order to implement this plan and operate within the National Airspace System, CBP A&M has been working closely with the Federal Aviation Administration for appropriate Certificates of Approval for operations in both restricted and controlled airspace.

CBP A&M currently operates out of temporary facilities located on LAAF at Fort Huachuca. **Figure 4** shows an aerial photograph of a portion of LAAF with indications of the current and proposed locations of CBP A&M facilities.

Figure 4 – AMO Facilities at Libby Army Air Field
Water Conservation Management Report for U.S. Customs and Border Protection Activities Within the Sierra Vista Subwatershed of the San Pedro Watershed

CBP's A&M facilities currently have a total of 47 personnel: 22 CBP personnel, and 25 contractors. Five of the contractors are assigned to CBP A&M on temporary duty (TDY).

CBP A&M plans to expand both the number of personnel and facilities. Future personnel level is projected to be 69 employees. A UAS Squadron, consisting of six Predator B aircraft, is planned for permanent assignment to Fort Huachuca. The Predator B will have 38 full-time employees assigned, consisting of air interdiction agents, observers, and maintenance and administrative staff members. The Air Unit assigned to Fort Huachuca will consist of up to five AS-350 size aircraft. Permanently assigned personnel will include as many as 17 individuals comprised of air interdiction agents and maintenance personnel. As operations and mission requirements dictate, provisions to host temporarily a variety of other aircraft are also under consideration and are included in planning for facility space needs. In addition to air operations, plans also include a group of approximately 14 individuals providing procurement services from this location. The total of 69 personnel includes the 47 personnel currently on-site.

Proposed new facilities include 21,000 square feet of UAS hangar space, 11,340 square feet of Air Unit hangar space, 33,510 square feet of combined administrative office, a 90,000 square foot aircraft parking ramp, 17,980 square feet of vehicle parking, and 2,660 square feet of ground support equipment and hazardous material storage. All square footage is approximate and will be finalized as design plans are completed. As with existing facilities, the new facilities will be located within the Subwatershed.

4.1 CBP A&M Subwatershed Population

Water use by the CBP A&M population living outside the Subwatershed has no impact on the water budget of the Sierra Vista Subwatershed and therefore is not considered in calculating total water use. To calculate total water use, the current and future total populations within the Subwatershed attributable to CBP A&M were determined as depicted in Sections 3.2.1 through 3.2.3.

TDY personnel were handled differently from permanent personnel in this calculation. Since they are not permanent residents and have not relocated to the Subwatershed with their families, they were counted as single individuals when employee family population was calculated. At the time of this report, five personnel were assigned as TDY. The assumption was made that all TDY personnel reside in Sierra Vista and that the proportion of TDY personnel at current staffing levels would remain when projecting the number of TDY personnel at future staffing levels.

Table 11 shows the total current and future CBP A&M population within the Subwatershed, divided between incorporated and unincorporated areas.

Table 11. Current and Future CBP A&M Population within Subwatershed

	Current Number of Persons	Future Number of Persons
CBP A&M Employees (from zip code data)	28	41
CBP A&M Employee and Family	62.52	84.20
CBP A&M Induced Population	110	161
Total CBP A&M Population	172.5	245.20
Total CBP A&M Incorporated (69%)	119.03	169.19
Total CBP A&M Unincorporated (31%)	53.48	76.01

4.2 CBP A&M Direct Water Use

Fort Huachuca provides all water to users on the base from groundwater wells operated by the Fort. Water deliveries to CBP A&M are not separately metered, so no records of actual water use exist for CBP A&M activities on the base. According to CBP A&M staff, there is no landscaping or vehicle washing on the premises. The Predator aircraft are electric and, according to program staff, are not washed with water. Program activities are not seasonal but rather consistent throughout the year. CBP and some contractors use a portable toilet located by the program trailer. Some contractors use the communal bathroom located in Hangar 1. CBP A&M staff estimate that water use is less than 10 GPED. Because of the limited water use associated with program activities, 10 GPED has been selected as a conservative estimate of the actual water use.

Table 12 shows current and future water use and assigned personnel. Given the location of LAAF, this water use occurs in the Subwatershed. Estimates of water use by CBP A&M are conservative.

Table 12. Current Annual CBP A&M Direct Water Use

	Number of Assigned Staff	Workplace GPED	Annual Direct Water Use (AF/YR)*
Current CBP A&M	47	10	0.53
Future CBP A&M	69	10	0.77

*Determined by multiplying GPED by the number of days in a year by the number of staff. That value is then divided by 325,851.

4.3 CBP A&M Employee, Family, and Induced Water Use

Section 3.2.5 describes the methods used to determine CBP A&M's induced water use. **Table 13** summarizes the results of these calculations.

Table 13. Current and Future CBP A&M Population Water Use within Subwatershed

Population Type	Number of Persons	GPCD	Annual Water Use (AF/YR)
Total Current CBP A&M Incorporated (69%)	119.03	160	21.33
Total Current CBP A&M Unincorporated (31%)	53.48	118	7.07
Total Current CBP A&M Population Water Use			28.4
Total Future CBP A&M Incorporated (69%)	169.19	160	30.32
Total Future CBP A&M Unincorporated (31%)	76.01	118	10.05
Total Future CBP A&M Population Water Use			40.37

In these calculations, assumptions were made that TDY personnel do not have families living within the Subwatershed and that the TDY personnel themselves reside within the incorporated area of Sierra Vista. The current proportion of TDY personnel to total personnel was used in projecting the future level of TDY personnel.

4.4 Industrial Pumping within Subwatershed

To be consistent with the Fort's BA and the USFWS's BO, Section 3.2.6 describes the methods used to determine CBP A&M's water use associated with industrial pumping in the subwatershed. **Table 14** lists the calculated percentage of Subwatershed population attributable to CBP A&M and the resultant portion of industrial pumping attributable to CBP A&M.

Table 14. Current and Future Subwatershed Population and Industrial Pumping Attributable to CBP A&M

	Current	Future
Total CBP A&M Subwatershed Population	172.5	245.2
Percentage of Total Subwatershed Population	0.225%	.221%
Industrial Pumping Attributable to CBP A&M (AF/YR)	2.82	2.77

4.5 Existing or Planned Mitigation

In order to determine net water use attributable to CBP A&M within the Subwatershed, the effect of current or planned future mitigation efforts that serve to offset water use within the Subwatershed had to be characterized. For CBP A&M the existing mitigation efforts are direct recharge of wastewater by Fort Huachuca, effluent recharge by the City of Sierra Vista, and passive recharge from septic tanks within the Subwatershed.

4.5.1 Direct Recharge of Wastewater by Fort Huachuca

Wastewater at Fort Huachuca is collected and treated at Wastewater Treatment Plant #2, which is a tertiary treatment facility. Fort Huachuca operates and maintains the treatment plant, which has a capacity to handle up to 3.1 million gallons per day (mgd). All effluent is directly reused or recharged within the Subwatershed. Wastewater treatment plays a major role in the Army's multi-tiered water resource management program that aims to guide effective management and conservation of Fort Huachuca's water resources. To facilitate effluent recharge, Fort Huachuca completed the construction on Phase I of an Effluent Recharge and Reuse Project in 2002. This $6 million project included upgrading the wastewater treatment plant to improve effluent quality and construction of seven effluent recharge basins and one stormwater recharge basin. The basins are located on the East Range of Fort Huachuca, where effluent holding/evaporation ponds were previously located. All basins have received treated effluent for recharge and are reported to function well. Rapid infiltration rates have been reported with limited evaporative loss. The basins are designed to recharge up to 1,000 AF of water annually. The stormwater basin has sufficient capacity to recharge annually at least 250 AF of urban runoff from the built-up areas of Fort Huachuca, depending on precipitation.

In 2005, Fort Huachuca reported withdrawals of 1,403 AF of groundwater and 426 AF of recharge, which resulted in a 30 percent recharge rate. Since CBP A&M's water use is part of the Fort's total water use, this 30 percent recharge rate also applies to its estimated water use. **Table 15** shows how existing recharge by the Fort impacts CBP A&M's direct water use.

Table 15. Current and Future Effluent Recharge of CBP A&M Direct Water Use

	Direct Water Use (AF/YR)	Amount Recharged (AF/YR)
Current	0.53	0.16
Future	0.77	0.23

4.5.2 Sierra Vista Effluent Recharge

Section 3.2.7.1 identifies the City of Sierra Vista's ongoing effluent recharge efforts. Since Sierra Vista is a primary population center in the Subwatershed, many CBP A&M employees and much of the induced population live in Sierra Vista where wastewater is treated and recharged. The addition of recharged effluent into the aquifer is a direct offset to groundwater use by CBP A&M employees, their families, and the induced population. Using the method described in Section 3.2.7.1, **Table 16** summarizes the resulting portion of effluent recharge attributable to the CBP A&M population living in the City of Sierra Vista.

Table 16. Number of Persons and Amount of Sierra Vista Effluent Recharge Attributable to CBP A&M

	Current	Future
Total CBP A&M Inside Sierra Vista Served by Sewer (95% of Total)	139.45	197.18
Total CBP A&M Inside Sierra Vista as a Percentage of Sierra Vista's Population	0.423%	0.346%
CBP A&M's Portion of Sierra Vista's Effluent Recharge (AF/YR)	12.26	14.25

4.5.3 Septic Tank Passive Recharge

Consistent with the Fort's BA and the USFWS's BO, Section 3.2.7.2 describes the method and calculations for considering septic tank recharge as identified by the USPP. **Table 17** summarizes the population using septic tanks and septic tank recharge that is attributable to CBP A&M.

Table 17. CBP A&M Population on Septic Tanks and Septic Tank Recharge

	Current	Future
CBP A&M Unincorporated Area Population	53.48	76.01
Portion of CBP A&M Sierra Vista Population on Septic (5%)	7.34	10.38
Total CBP A&M Population on Septic	60.82	86.39
CBP A&M Septic Recharge (AF/YR)	3.27	4.65

4.5.4 Net Water Use

As identified in Section 3.2.8, net water use accounts for total water use and total mitigation attributable to CBP A&M. **Table 18** presents a summary of water use, recharge, and net water use for current and future CBP A&M personnel levels.

Table 18. Summary Table for CBP A&M Water Use, Recharge and Net Water Use

	Current (AF/YR)	Future (AF/YR)
Incorporated Area Water Use	21.33	30.32
Unincorporated Area Water Use	7.07	10.05
Direct Water Use	0.53	0.77
CBP A&M Portion of Industrial Water Use	2.82	2.77
Total Water Use	31.75	43.91
Direct Effluent Recharge by Fort Huachuca	0.16	0.23
CBP A&M Portion of Sierra Vista Effluent Recharge	12.26	14.25
CBP A&M Population's Septic Tank Recharge	3.27	4.65
Total Mitigation	15.69	19.13
Net Water Use	16.06	24.78

4.5.5 Construction Induced Net Water Use

As discussed in Section 3.2.9, the planned expansion for CBP A&M will have an economic impact on the Subwatershed population. This population impact is temporary and will occur only during construction of the permanent facility, which is expected to occur over a period of one year.

4.5.5.1 Construction Induced Water Use

Using the EIFS model, the subsequent population values in **Table 10**, and the calculation method described in Section 3.2.5, the Project Team projected the temporary induced construction population. Water use by CBP A&M's construction induced population is 3.9 AF in incorporated areas and 1.3 AF in unincorporated areas.

Direct pumping for construction purposes was estimated to be 0.7 AF based on factors from the ADWR's Demand Calculator (www.azwater.gov). CBP A&M's construction induced population within the Subwatershed of 31.57 represents 0.069% of the Subwatershed's population based on a total population of 76,503 (AZDOC, 2006). Using that same percentage and the equation in Section 3.2.6, 0.9 AF of industrial pumping within the Subwatershed can be attributed to CBP A&M's construction induced population. **Table 19** summarizes these values.

Table 19. CBP A&M Temporary Construction Population and Resultant Water Use

	Population	Water Use (AF)
Construction Population	53	
% Inside Subwatershed	59.57%	
Construction Population in Subwatershed	31.57	
Construction Population in Incorporated Areas	21.79	3.91
Construction Population in Unincorporated Areas	9.79	1.29
Direct Construction Water Use		0.67
Portion of Industrial Water Use		0.87
Total Water Use		6.74

4.5.5.2 Construction Induced Existing Mitigation

In order to determine net water use attributable to CBP A&M's construction induced population within the Subwatershed, the effect of current or planned future mitigation efforts that serve to offset water use within the Subwatershed had to be characterized. For CBP A&M's construction induced population, existing mitigation efforts include effluent recharge by the City of Sierra Vista and passive recharge from septic tanks within the Subwatershed. The percentage of population in Sierra Vista that could be attributed to CBP A&M's construction induced population was determined (through the model) to be 0.077%.

Using that percentage and the calculations in Section 3.2.7.1, the amount of existing effluent recharge by the City of Sierra Vista which could be attributed to CBP A&M's construction induced population is 2.24 AF. Assuming that 31% of the induced population lives in an unincorporated area and that 5 percent of the incorporated, induced population uses a septic system, the calculation in Section 3.2.7.2 was applied to determine that 0.60 AF is recharged by septic tanks. **Table 20** summarizes the calculations for determining total existing mitigation that offsets water use by CBP A&M's construction induced population.

Table 20. CBP A&M Temporary Construction Population and Resultant Mitigation

	Population	Mitigation (AF)
Construction Population in Sierra Vista	26.87	
% of Sierra Vista Population	0.077%	
Construction Portion of Sierra Vista Recharge		2.24
Septic Tank Recharge Attributable to Construction Population		0.60
Total Existing Recharge		2.84

4.5.5.3 Construction Induced Net Water Use

In order to determine net water use from CBP A&M's construction induced population and direct water use from construction activities, total existing recharge is subtracted from total water use. **Table 21** shows this calculation.

Table 21. CBP A&M Temporary Construction Population Net Water Use

	Water Use (AF)
Total Water Use	6.74
Total Existing Recharge	2.84
Net Water Use	3.90

4.6 Summary of CBP A&M Water Use

Table 22 contains a summary of all water use categories calculated for CBP A&M.

Table 22. Summary of Current, Future and Construction Water Use by CBP A&M

	Current (AF/YR)	Future (AF/YR)
Total Water Use	31.75	43.9
Total Existing Recharge	15.69	19.13
Net Water Use	16.06	24.78
Construction Water Use	3.90 AF	
* Water associated with construction is not an annual amount and was not included in the total.		

4.6.1 Net Water Mitigation Obligation

The potential current net water mitigation obligation that may be required for CBP A&M is 16.06 AF/YR. While construction is underway, it may be necessary to mitigate for construction induced net water use for 3.90 AF, as a one-time water use event. When the facility expansion at LAAF is complete and fully staffed to expected levels, the potential net water mitigation obligation that may be required for CBP A&M will be 24.78 AF/YR.

Since future water use levels are based on projected staffing levels, water use estimates will change based on the number of actual personnel. The net water mitigation obligation may be calculated by dividing the total net water mitigation obligation by the number of assigned personnel. The calculation follows:

Potential Mitigation Requirement per CPB A&M Personnel =
Annual Estimated Mitigation Requirement ÷ Assigned personnel

This calculation yields a per employee mitigation obligation which encompasses all water use within the Subwatershed that can be attributed to CBP A&M. Each personnel assigned to CBP A&M would use 0.36 AF/YR of water that may need to be returned to the regional aquifer or otherwise offset. This figure includes direct use by CBP A&M, water use by families of CBP A&M personnel residing within the Subwatershed, and water use by the induced population residing in the Subwatershed.

5.0 U.S. BORDER PATROL NACO STATION

The priority mission of the USBP is preventing terrorists and terrorists' weapons, including weapons of mass destruction, from entering the U.S. The USBP Naco Station in Naco, Arizona is one of eight stations within the USBP's Tucson Sector. The USBP Naco Station's area of responsibility (AOR) is located within Cochise County in southeast Arizona. It covers approximately 1,175 square miles, including 32.5 miles of International Boundary with the areas of Agua Prieta, Naco, and Cananea, Mexico. The station's AOR begins west of Douglas, Arizona and continues west through the San Pedro River Valley to the crest of the Huachuca Mountains in the Coronado National Forest.

Sections of the Dragoon, Mule, Huachuca, and Whetstone mountain ranges are included in the Station's AOR, along with a large part of the Coronado National Forest and its canyons. The San Pedro River starts in Mexico near Cananea and flows north into the U.S. through the USBP Naco Station's AOR near Palominas, Arizona.

The AOR includes the cities and towns of Sierra Vista, Hereford, Palominas, Huachuca City, Whetstone, Tombstone, Bisbee, and Naco. The USBP Naco Station AOR also includes sections of Arizona State Highways 92, 80, 90, and 82. The BPS has a temporary highway checkpoint near milepost 304 on Highway 90, north of Sierra Vista, outside the Subwatershed.

Figure 5 contains an aerial photograph of the current USBP Naco Station and the area of the proposed new station. According to Station staff, 417 agents are assigned to the existing facility. Design is underway for an expansion of the facilities at the USBP Naco Station. The expansion will consist of 50,000 square feet of administration and detention space and 30,000 square feet intended for a vehicle maintenance facility and ancillary site development. The USBP Naco Station expansion is a site adaptation of the Casa Grande BPS design and will have a design capacity of 450 personnel.

As previously discussed, there are currently 417 agents assigned to the USBP Naco Station. The current facility consists of the following:

- Main administration building.
- Training building.
- Butler-style garage with car wash sprayer.
- Modular building for supervisory offices and locker rooms.
- Modular building for illegal alien detention and processing.

- Modular building that facilitates musters and training exercises and provides space for a computer server room.
- Modular building for storage.
- Modular building for offices.
- Modular building for dispatch.
- Modular building for additional offices, issue room, training and muster.
- Horse corral.

No landscaping is present at the existing BPS, as can be seen from the aerial photograph (**Figure 5**).

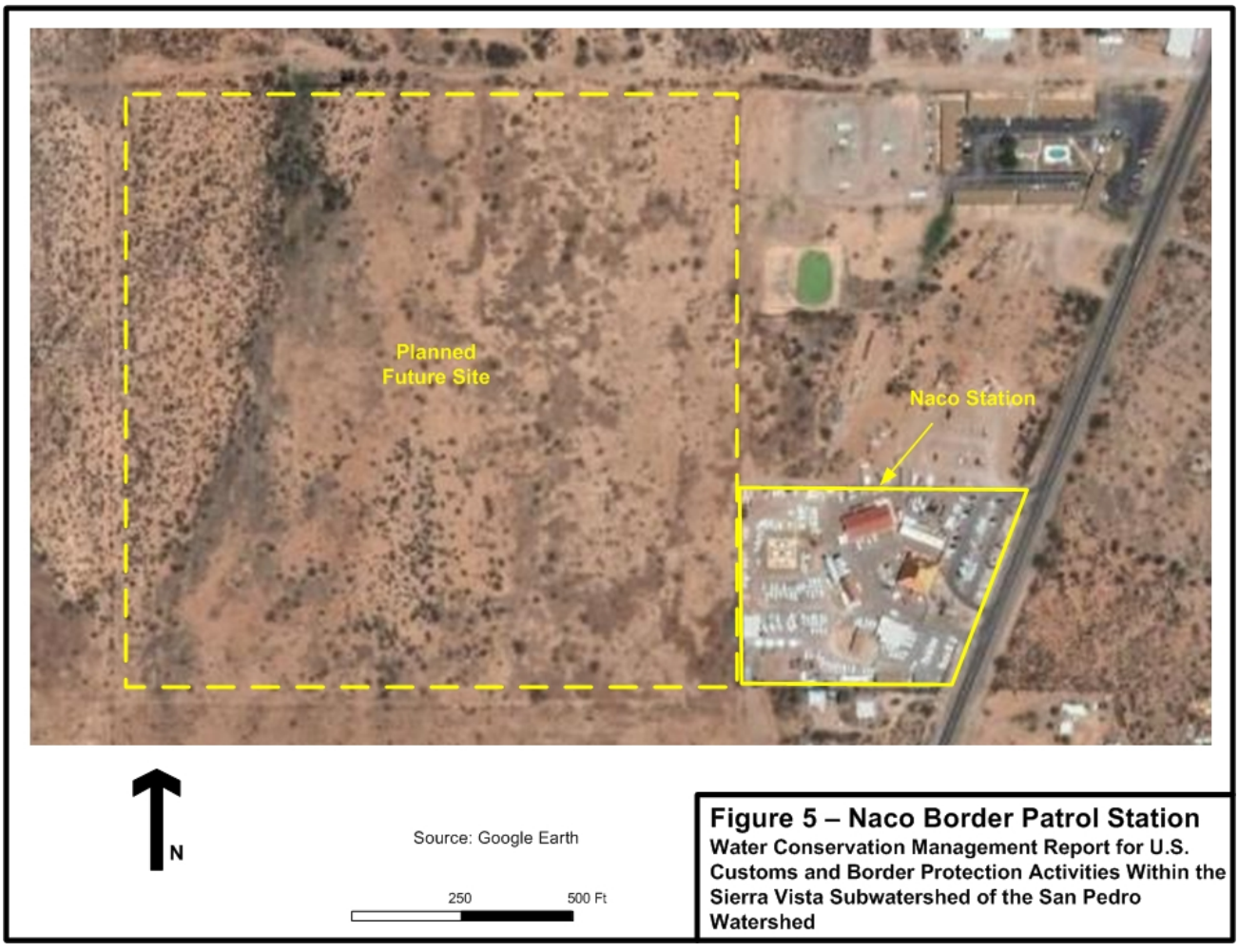


Figure 5 – Naco Border Patrol Station
Water Conservation Management Report for U.S. Customs and Border Protection Activities Within the Sierra Vista Subwatershed of the San Pedro Watershed

The USBP Naco Station contains a processing area, which includes a temporary holding facility for detainees. The facility does not include showers or a kitchen. The temporary holding facility is used to process detainees until they are either returned to Mexico or transferred to a detention facility located outside the area. Larger detention facilities are better equipped to hold detainees for long

periods of time. USBP Naco Station typically holds detainees between three and ten hours until transferred.

5.1 USBP Naco Station Subwatershed Population

Water use by the USBP Naco Station population living outside the Subwatershed has no impact on the water budget of the Sierra Vista Subwatershed and therefore is not considered in calculating total water use. To calculate total water use, the current and future total populations within the Subwatershed attributable to USBP Naco Station were determined as depicted in Sections 3.2.1 through 3.2.3. **Table 23** shows the total current and future USBP Naco Station population within the Subwatershed, divided between incorporated and unincorporated areas.

Table 23. Current and Future USBP Naco Station Population within Subwatershed

	Current Number of Persons	Future Number of Persons
USBP Naco Station Employees (from zip code data)	341	368
USBP Naco Station Employee and Family	852.5	920
USBP Naco Station Induced Population	595	668
Total USBP Naco Station Population	1,447.5	1,588
Total USBP Naco Station Incorporated (69%)	998.78	1,095.72
Total USBP Naco Station Unincorporated (31%)	448.73	492.28

5.2 USBP Naco Station Direct Water Use

The USBP Naco Station receives water service from the Arizona Water Company, a private water company that operates with authority from the Arizona Corporation Commission. Monthly water billing was provided and reviewed from calendar year 2007 to determine the current annual water use of the facility. **Table 24** shows the monthly water usage as reported by the Arizona Water Company billing records.

Monthly Water Usage at USBP Naco Station
Table 24. According to Arizona Water Company

Date	Gallons	AF
1/18/2007	50,700	0.155593
2/20/2007	66,800	0.205002
3/19/2007	52,800	0.162037
4/18/2007	54,400	0.166947
5/17/2007	46,900	0.143931
6/19/2007	55,800	0.171244
7/19/2007	52,300	0.160503
8/17/2007	46,900	0.143931
9/20/2007	63,400	0.194567
10/19/2007	46,800	0.143624
11/19/2007	41,000	0.125824
12/19/2007	36,300	0.111401
Annual Total	614,100	1.884604

Factoring in the staff level of at the time of the repot (345) personnel (as of 2007), this annual direct water use computes to a 4.88 GPED, calculated as follows:

GPED = Annual Water Use (AF) x 325,851 gals/AF ÷ number of personnel ÷ 365 days/yr.

The actual water bills from the Arizona Water Company have been included in **Appendix E**. **Table 25** shows the current and future water use and personnel level. Given the location of USBP Naco Station, this water use occurs in the Subwatershed.

Table 25. Current and Future Annual USBP Naco Station Direct Water Use

	Number of Assigned Staff	Workplace GPED	Annual Direct Water Use (AF/YR)
Current USBP Naco Station	417	4.88	2.28
Future USBP Naco Station	450	4.88	2.46

5.3 USBP Naco Station Employee, Family, and Induced Water Use

Section 3.2.5 describes the methods used to determine USBP Naco Station's induced water use. **Table 26** summarizes the results of these calculations.

Table 26. Current and Future USBP Naco Station Population Water Use within Subwatershed

Population Type	Number of Persons	GPCD	Annual Water Use (AF/YR)
Total Current USBP Naco Station Incorporated (69%)	998.78	160	179
Total Current USBP Naco Station Unincorporated (31%)	448.73	118	59.31
Total Current USBP Naco Station Population Water Use			238.31
Total Future USBP Naco Station Incorporated (69%)	1,095.72	160	196.38
Total Future USBP Naco Station Unincorporated (31%)	492.28	118	65.07
Total Future USBP Naco Station Population Water Use			261.45

5.4 Industrial Pumping within Subwatershed

To be consistent with the Fort's BA and the USFWS's BO, Section 3.2.6 describes the methods used to determine USBP Naco Station's water use associated with industrial pumping in the subwatershed. **Table 27** lists the calculated percentage of Subwatershed population attributable to USBP Naco Station and the resultant portion of industrial pumping attributable to USBP Naco Station.

Table 27. Current and Future Subwatershed Population and Industrial Pumping Attributable to USBP Naco Station

	Current	Future
Total USBP Naco Station Subwatershed Population	1,447.5	1,588
Percentage of Total Subwatershed Population	1.892%	1.434%
Industrial Pumping Attributable to USBP Naco Station (AF/YR)	23.65	17.93

5.5 Existing or Planned Mitigation

In order to determine net water use attributable to USBP Naco Station within the Subwatershed, the effect of current or planned future mitigation efforts that serve to offset water use within the Subwatershed had to be characterized. For USBP Naco Station the existing mitigation efforts are

reuse of effluent produced from wastewater at USBP Naco Station, planned rainwater harvesting and retention basins at USBP Naco Station, effluent recharge by the City of Sierra Vista and passive recharge from septic tanks within the Subwatershed.

5.5.1 Reuse of Effluent Produced from Wastewater at USBP Naco Station

At the USBP Naco Station, all structures currently connect to an on-site septic system. DHS' Laguna Niguel Facilities Center is removing the USBP Naco Station from the septic system and connecting it to sewer services provided by the City of Bisbee. Bisbee treats its wastewater to a quality suitable for discharge or reuse. Bisbee currently discharges treated wastewater to Greenbush Draw, a tributary to the San Pedro River, and delivers up to 530 AF/YR to the Turquoise Valley Golf Course (TVGC) offsetting the golf course's historical groundwater use. TVGC is located immediately north of Naco, Arizona.

Wastewater generation can be between 60 and 90 percent of total water delivered. Where landscape water use is limited, such as the USBP Naco Station, which has little exterior water use, 90 percent or more of the water use at the facility is expected to return as wastewater (Metcalf and Eddy, 2003). There is no publicly available data on the rate at which wastewater entering the Bisbee treatment system exits as effluent, but system and treatment losses should result in a 90 percent return. Subsequently, **1.85 AF/YR** of effluent produced from the USBP Naco Station wastewater will be delivered to the TVGC or Greenbush Draw. Based on a future personnel level of 450, **1.99 AF/YR** of effluent produced from USBP Naco Station wastewater will be delivered to the TVGC or Greenbush Draw.

5.5.2 Planned Rain Harvesting and Retention Basins at USBP Naco Station

The proposed BPS facility will be designed using Leadership in Energy and Environmental Design (LEED) standards. Current plans include capturing rainfall in constructed retention basins as part of conservation measures incorporated at the site. Based on calculations provided by the BPS project manager, annual rainfall on the 40 acre site will result in 35 AF/YR of water recharged in retention basins. **Appendix F** includes detailed calculations from the BPS project manager. As noted on the calculations, this estimate is a gross approximation of the total runoff captured by the on-site retention basins.

5.5.3 Sierra Vista Effluent Recharge

Section 3.2.7.1 identifies the City of Sierra Vista's ongoing effluent recharge efforts. Since Sierra Vista is a primary population center in the Subwatershed, many USBP Naco Station employees and

much of the induced population live in Sierra Vista where wastewater is treated and recharged. The addition of recharged effluent into the aquifer is a direct offset to groundwater use by USBP Naco Station employees, their families, and the induced population. Using the method described in Section 3.2.7.1, **Table 28** summarizes the resulting portion of effluent recharge attributable to the USBP Naco Station population living in the City of Sierra Vista.

Table 28. Number of Persons and Amount of Sierra Vista Effluent Recharge Attributable to USBP Naco Station

	Current	Future
Total USBP Naco Station Inside Sierra Vista Served by Sewer (95% of Total)	1,064.61	1,167.95
Total USBP Naco Station Inside Sierra Vista as a Percentage of Sierra Vista's Population	3.230%	2.050%
USBP Naco Station's Portion of Sierra Vista's Effluent Recharge (AF/YR)	93.58	84.42

5.5.4 Septic Tank Passive Recharge

Consistent with the Fort's BA and the USFWS's BO, Section 3.2.7.2 describes the method and calculations for considering septic tank recharge as identified by the USPP. **Table 29** summarizes the population using septic tanks and septic tank recharge that is attributable to USBP Naco Station.

Table 29. USBP Naco Station Population on Septic Tanks and Septic Tank Recharge

	Current	Future
USBP Naco Station Unincorporated Area Population	448.73	492.28
Portion of USBP Naco Station Sierra Vista Population on Septic (5%)	56.03	61.47
Total USBP Naco Station Population on Septic	504.76	553.75
USBP Naco Station Septic Recharge (AF/YR)	27.16	29.79

5.5.5 Net Water Use

As identified in Section 3.2.8, net water use accounts for total water use and total mitigation attributable to USBP Naco Station. **Table 30** is a summary of water use, recharge, and net water use for current and future USBP Naco Station personnel levels.

Table 30. Summary of USBP Naco Station Water Use, Recharge and Net Water Use

	Current (AF/YR)	Future (AF/YR)
Incorporated Area Water Use	179	196.38
Unincorporated Area Water Use	59.31	65.07
Direct Water Use	2.28	2.46
USBP Naco Station Portion of Industrial Water Use	23.65	17.93
Total Water Use	264.24	281.84
Reuse of Effluent Produced from Wastewater at USBP Naco Station	1.85	1.99
Planned Rain Harvesting and Retention Basins at USBP Naco Station	0	35
USBP Naco Station Portion of Sierra Vista Effluent Recharge	93.58	84.42
USBP Naco Station Population's Septic Tank Recharge	27.16	29.79
Total Mitigation	122.59	151.2
Net Water Use	141.65	130.64

5.5.6 Construction Induced Net Water Use

As discussed in Section 3.2.9, the planned expansion for USBP Naco Station will have an economic impact on the Subwatershed population. This population impact is temporary and associated with the timeframe of the construction project. For the USBP Naco Station expansion, the project is assumed to have a construction period of 18-months.

5.5.6.1 Construction Induced Water Use

Using the EIFS model, the subsequent population values in **Table 10**, and the calculation method described in Section 3.2.5, the Project Team projected the temporary induced construction population. Water use by the USBP Naco Station construction induced population is 26.6 AF/YR in incorporated areas and 8.8 AF/YR in unincorporated areas.

Direct pumping for construction purposes was estimated to be 5.35 AF based on factors from the ADWR's Demand Calculator (www.azwater.gov). USBP Naco Station's construction induced population within the Subwatershed of 215.07 represents 0.344% of the Subwatershed's population based on a total population of 76,503 (AZDOC, 2006). Using that same percentage and the equation in Section 3.2.6, 4.3 AF/YR of industrial pumping within the Subwatershed can be attributed to USBP Naco Station's construction induced population. **Table 31** summarizes these values.

Table 31. USBP Naco Station Temporary Construction Population and Resultant Water Use

	Population	Water Use (AF/YR)
Construction Population	263	
% Inside Subwatershed	81.77%	
Construction Population in Subwatershed	215.07	
Construction Population in Incorporated Areas	148.40	26.60
Construction Population in Unincorporated Areas	66.67	8.81
Direct Construction Water Use		5.35
Portion of Industrial Water Use		4.30
Total Water Use in One Year		45.06
Total Water Use Over 18-Month Period		67.59

5.5.6.2 Construction Induced Existing Mitigation

In order to determine net water use attributable to USBP Naco Station's construction induced population within the Subwatershed, the effect of current or planned future mitigation efforts that serve to offset water use within the Subwatershed had to be characterized. For USBP Naco Station's construction induced population, existing mitigation efforts include effluent recharge by the City of Sierra Vista and passive recharge from septic tanks within the Subwatershed. The percentage of population in Sierra Vista that could be attributed to USBP Naco Station's construction induced population was determined (through the model) to be 0.480%.

Using that percentage and the calculations in Section 3.2.7.1, the amount of existing effluent recharge by the City of Sierra Vista which could be attributed to CBP A&M's construction induced population is 13.90 AF/YR. Assuming that 31% of the induced population lives in an unincorporated area and that 5 percent of the incorporated, induced population uses a septic system, the calculation in Section 3.2.7.2 was applied to determine that 4.06 AF/YR is recharged by septic tanks. **Table 32** summarizes the calculations for determining total existing mitigation that offsets water use by the Naco Station construction induced population.

Table 32. USBP Naco Station Temporary Construction Population and Resultant Mitigation

	Population	Mitigation (AF/YR)
Construction Population in Sierra Vista	166.5	

% of Sierra Vista Population	0.480%	
Construction Portion of Sierra Vista Recharge		13.90
Septic Tank Recharge Attributable to Construction Population		4.06
Total Existing Recharge in One Year		17.96
Total Existing Recharge Over 18-Month Period		26.94

5.5.6.3 Construction Induced Net Water Use

In order to determine net water use from the USBP Naco Station's construction induced population and direct water use from construction activities, total existing recharge is subtracted from total water use. **Table 33** shows this calculation.

Table 33. USBP Naco Station Temporary Construction Population Net Water Use

	Water Use (AF)
Total Water Use	67.59
Total Existing Recharge	26.94
Net Water Use	40.65

5.6 Summary of USBP Naco Station Water Use

Table 34 contains a summary of all water use categories calculated for USBP Naco Station.

Table 34. Summary of Current, Future and Construction Water Use by USBP Naco Station

	Current (AF/YR)	Future (AF/YR)
Total Water Use	264.24	281.84
Total Existing Recharge	122.59	151.2
Net Water Use	141.65	130.64
Construction Water Use	40.65 AF	
* Water associated with construction is not an annual amount and was not included in the total.		

5.6.1 Net Water Mitigation Obligation

The potential current net water mitigation obligation that may be required for USBP Naco Station is 141.65 AF/YR. While construction is underway, it may be necessary to mitigate for construction induced net water use for 40.65 AF, as a one-time water use event. When the facility expansion at the Naco Station is complete and fully staffed to expected levels, the potential net water mitigation obligation that may be required for USBP Naco Station will be 130.64 AF/YR.

Since future water use levels are based on projected staffing levels, water use estimates will change based on the number of actual personnel. The net water mitigation obligation may be calculated by dividing the total net water mitigation obligation by the number of assigned personnel. The calculation follows:

Potential Mitigation Requirement per CPB A&M Personnel =
Annual Estimated Mitigation Requirement ÷ assigned personnel

This calculation yields a per employee mitigation obligation which encompasses all water use within the Subwatershed that can be attributed to USBP's Naco Station. Each personnel assigned to Naco Station would use 0.29 AF/YR of water that may need to be returned to the regional aquifer or otherwise offset. This figure includes direct use by USBP Naco Station, water use by families of USBP Naco Station personnel residing within the Subwatershed, and water use by the induced population residing in the Subwatershed.

6.0 OFFICE OF FIELD OPERATIONS AT THE NACO PORT OF ENTRY

OFO Officers perform the full range of inspection, intelligence analysis, examination, and law enforcement activities relating to arrival and departure of persons, conveyances, and merchandise at the POE. The Officer's primary responsibility is to identify potential terrorists and instruments of terror and to perform layered enforcement activities relative to counter-terrorism. These enforcement activities are to prevent the entry of terrorists and instruments of terror, harmful pests and diseases, illegal drugs and contraband, and illegal aliens and importations/exportations contrary to law and trade agreements, etc., from entering/exiting the U.S. The Naco POE is open 24 hours per day and is most easily reached by turning south onto Naco Highway from Arizona Highway 92.

The OFO operates in the U.S. General Services Administration (GSA) complex in Naco, Arizona within the Subwatershed. The POE is also occupied by the Arizona Department of Transportation (ADOT) and the Federal Motor Carrier Safety Administration (FMCSA). GSA, ADOT and FMCSA staffing levels have not been incorporated as part of CBP's mitigation obligations.

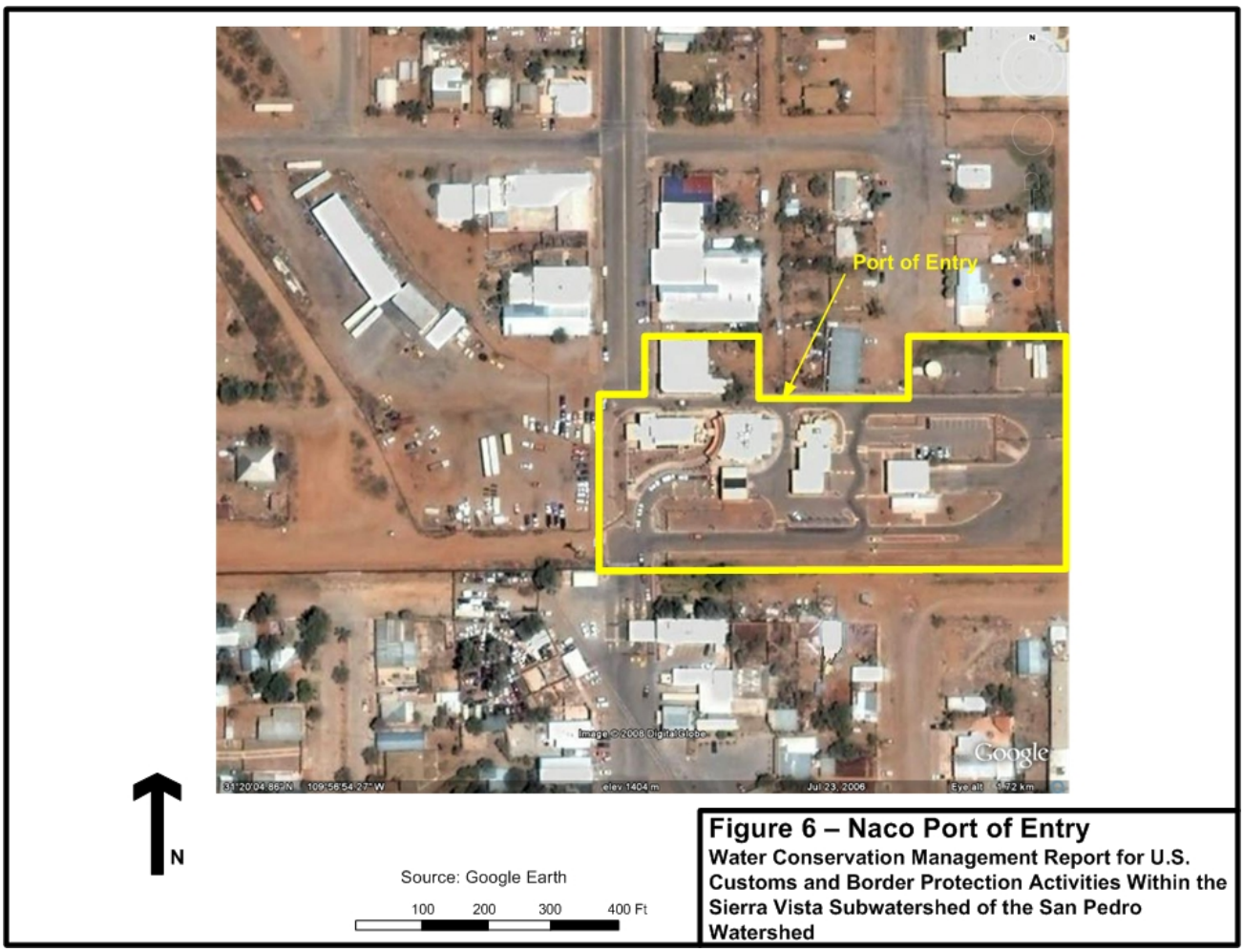
Unlike the other two CBP components serving as the subject of this report, the OFO has no current plans to expand or otherwise change the level of deployment at the Naco POE. Throughout this section, only the current personnel levels and concern with water conservation and water mitigation will be addressed. Unless otherwise stated in this section, OFO officers are assigned to the Naco POE.

The Naco POE, under ownership of the GSA, consists of the following structures:

- Three-story, 8,928 square feet main building
- 3,938 square feet primary building
- 3,748 square feet secondary building
- 2,560 square feet commercial truck dock, and
- 3,748 square feet ADOT building.

Figure 6 presents an aerial photograph of the Naco POE facilities. Desert landscaping is present around the facilities, and the facilities include 10 toilets, 12 sinks, and 4 showers. These facilities accommodate 38 full-time OFO employees at the Naco POE. The facility is manned 24-hours per day.

Naco Water Company provides water service to the Naco POE. The Naco Sanitary District (NSD) provides sewer service to the Naco POE. NSD has a small system to treat wastewater to secondary levels, suitable for disposal using evaporation ponds. The facility is not permitted for effluent discharge, effluent recharge, or effluent reuse. Groundwater monitoring wells are used to ensure groundwater supplies are not negatively impacted by wastewater disposal.



6.1 OFO Subwatershed Population

Water use by the OFO population living outside the Subwatershed has no impact on the water budget of the Sierra Vista Subwatershed and therefore is not considered in calculating total water use. To calculate total water use, the current and future total populations within the Subwatershed attributable to OFO were determined as depicted in Sections 3.2.1 through 3.2.3. **Table 35** shows the total current OFO population within the Subwatershed, divided between incorporated and unincorporated areas.

Table 35. Current OFO Population within Subwatershed

	Current Number of Persons
OFO Employees	31
OFO Employee and Family	77.5
OFO Induced Population	53
Total OFO Population	130.5
Total OFO Incorporated (69%)	90.05
Total OFO Unincorporated (31%)	40.46

6.2 Current Direct Use

The Naco POE receives water service from the Naco Water Company, a private water company that operates with authority from the Arizona Corporation Commission. The water company provided 2007 monthly water use data that was reviewed to determine the current annual water use for the entire facility, which includes OFO and other tenants. **Table 36** shows the monthly water usage as reported by the Naco Water Company water use records.

Table 36. Monthly Water Usage at Naco POE According to Naco Water Company

Date	Gallons	AF
1/23/2007	12,500	0.038361
2/26/2007	12,200	0.03744
3/23/2007	11,900	0.03652
4/24/2007	15,300	0.046954
5/23/2007	12,900	0.039589
6/21/2007	14,800	0.04542
7/23/2007	16,100	0.049409
8/23/2007	13,200	0.040509
9/24/2007	12,800	0.039282
10/23/2007	12,200	0.03744
11/20/2007	14,200	0.043578
12/20/2007	13,300	0.040816
Annual Total	161,400	0.495318

The facility is not equipped with individuals meters for OFO and the other building tenants, so total OFO, ADOT, and FMCSA staff levels (45 personnel) were considered to arrive at the total annual water use of 9.83 GPED. **Appendix G** contains the actual water use spreadsheets from the Naco Water Company. This GPED applied to the number of OFO employees at the Naco POE (38 personnel) results in total direct water use of 0.42 AF/YR.

6.3 OFO Employee, Family and Induced Water Use

Section 3.2.5 describes the methods used to determine OFO's induced water use. **Table 37** summarizes the results of these calculations.

Table 37. Current and Future OFO Population Water Use within Subwatershed

Population Type	Number of Persons	GPCD	Annual Water Use (AF/YR)
Total Current OFO Incorporated (69%)	90.05	160	16.14
Total Current OFO Unincorporated (31%)	40.46	118	5.35
Total Current OFO Population Water Use			21.49

6.4 Industrial Pumping within Subwatershed

To be consistent with the Fort's BA and the USFWS's BO, Section 3.2.6 describes the methods used to determine OFO's water use associated with industrial pumping in the subwatershed. **Table 38** lists the calculated percentage of Subwatershed population attributable to OFO and the resultant portion of industrial pumping attributable to OFO.

Table 38. Current Subwatershed Population and Industrial Pumping Attributable to OFO

	Current
Total OFO Subwatershed Population	130.5
Percentage of Total Subwatershed Population	0.171%
Industrial Pumping Attributable to OFO (AF/YR)	2.13

6.5 Existing or Planned Mitigation

In order to determine net water use attributable to OFO within the Subwatershed, the effect of current or planned future mitigation efforts that serve to offset water use within the Subwatershed had to be characterized. The Naco POE does not currently participate in any active mitigation efforts. The POE's wastewater is not handled in a manner contributing any significant amount of water to the aquifer. As a tenant of the GSA, modifying these disposal methods is not within the direct command and control of the OFO. For OFO the existing mitigation efforts are effluent recharge by the City of Sierra Vista and passive recharge from septic tanks within the Subwatershed.

6.5.1 Sierra Vista Effluent Recharge

Section 3.2.7.1 identifies the City of Sierra Vista's ongoing effluent recharge efforts. Since Sierra Vista is a primary population center in the Subwatershed, many OFO employees and much of the induced population live in Sierra Vista where wastewater is treated and recharged. The addition of recharged effluent into the aquifer is a direct offset to groundwater use by OFO employees, their families, and the induced population. Using the method described in Section 3.2.7.1, **Table 39** summarizes the resulting portion of effluent recharge attributable to the OFO population living in the City of Sierra Vista.

Table 39. Number of Persons and Amount of Sierra Vista Effluent Recharge Attributable to OFO

	Current
Total OFO Inside Sierra Vista Served by Sewer (95% of Total)	55.99
Total OFO Inside Sierra Vista as a Percentage of Sierra Vista's Population	0.170%
OFO's Portion of Sierra Vista's Effluent Recharge (AF/YR)	4.92

6.5.2 Septic Tank Passive Recharge

Consistent with the Fort's BA and the USFWS's BO, Section 3.2.7.2 describes the method and calculations for considering septic tank recharge as identified by the USPP. **Table 40** summarizes the population using septic tanks and septic tank recharge that is attributable to the OFO.

Table 40. OFO Population on Septic Tanks and Septic Tank Recharge

	Current
OFO Unincorporated Area Population	40.46
Portion of OFO Sierra Vista Population on Septic (5%)	2.95
Total OFO Population on Septic	43.41
OFO Septic Recharge (AF/YR)	2.34

6.5.3 Net Water Use

As identified in Section 3.2.8, net water use accounts for total water use and total mitigation attributable to OFO. **Table 41** is a summary of water use, recharge, and net water use for current and future OFO personnel levels.

Table 41. Summary of OFO Water Use, Recharge and Net Water Use

	Current (AF/YR)
Incorporated Area Water Use	16.14
Unincorporated Area Water Use	5.35
Direct Water Use	0.42
OFO Portion of Industrial Water Use	2.13
Total Water Use	24.04
OFO Portion of Sierra Vista Effluent Recharge	4.92
OFO Population's Septic Tank Recharge	2.34
Total Mitigation	7.26
Net Water Use	16.78

6.6 Summary of OFO Water Use

Table 42 contains a summary of all water use categories calculated for OFO.

Table 42. Summary of Current Water Use by OFO

	Current (AF/YR)
Total Water Use	24.04
Total Existing Recharge	7.26
Net Water Use	16.78

6.7 Net Water Mitigation Obligation

The potential current net water mitigation obligation that may be required for OFO is 16.78 AF/YR. Since future water use levels are based on projected staffing levels, water use estimates will change based on the number of actual personnel. The net water mitigation obligation may be calculated by dividing the total net water mitigation obligation by the number of assigned personnel. The calculation follows:

Potential Mitigation Requirement per CPB A&M Personnel =
Annual Estimated Mitigation Requirement ÷ assigned personnel

This calculation yields a per employee mitigation obligation which encompasses all water use within the Subwatershed that can be attributed to the OFO. Each personnel assigned to the OFO would use 0.44 AF/YR of water that may need to be returned to the regional aquifer or otherwise offset. This figure includes direct use by OFO, water use by families of OFO personnel residing within the Subwatershed, and water use by the induced population residing in the Subwatershed.

7.0 SUMMARY OF ALL WATER USE BY CBP COMPONENTS WITHIN THE SUBWATERSHED

The previous sections of this report detail how net water use by each CBP component was calculated. First, each CBP component's portion of Subwatershed water use was calculated based on their percentage of total Subwatershed population. Then the amount of existing or planned mitigation which could be attributed to each CBP component was calculated. The difference between these two calculations yields net water use. Construction water use for the expansions at LAAF and the USBP Naco Station also were calculated. **Table 43** summarizes the figures for each CBP component.

Table 43. Summary Water Use for Each CBP Component

	Current (AF/YR)			Future (AF/YR)	
	CBP A&M	USBP Naco Station	OFO	CBP A&M	USBP Naco Station
Total Water Use	31.75	264.24	24.04	43.91	281.84
Total Existing Recharge	15.69	122.59	7.26	19.13	151.2
Net Water Use	16.06	141.65	16.78	24.78	130.64
Construction Water Use	3.90 AF	40.65 AF			

Notes: Total amounts have been rounded. Construction Water Use is a one-time activity, not an on-going annual obligation. The Naco POE has no current plans for expansion; expansion activities would be the responsibility of GSA.

8.0 WATER CONSERVATION MEASURES

Water conservation measures serve to reduce the amount of water use for which mitigation may be required. Any efforts undertaken to reduce water use will result in a net reduction in potential water mitigation. In order to evaluate water conservation measures, it is necessary to assess which measures are suitable for each facility.

USPP has outlined numerous conservation measures. Only a handful of these conservation measures are deemed suitable for implementation by CBP, as most measures are largely targeted at municipalities and involve incentives or ordinances which encourage or require certain water conserving activities by residents of the Subwatershed. There are a few measures suitable for implementation by CBP at one or more of the component facilities. These measures are discussed in detail in this section.

Each CBP entity has direct control over only a small percentage (direct water use) of the total water use attributed to their economic impact on the Subwatershed. This relationship presents unique challenges. It should be noted that while CBP may have to mitigate for employee domestic and induced water use, CBP has little opportunity to reduce those sources of water demand. As such, the proposed conservation measures are all targeted at the water used directly by the CBP component facilities.

8.1 Indoor Plumbing Retrofits and New Installation

In order to optimize indoor water use efficiency, the USPP recommends retrofitting with low-flow or in some cases no-flow versions of showerheads, toilets, faucets, evaporative cooler reuse pumps, and similar pumps for decorative fountains. Evaporative coolers can be replaced by air conditioners, two-stage evaporative coolers, or heat pumps. In the institutional setting, automatically closing faucets, dual flush toilets, and waterless urinals can be installed or included in the design of new facilities. Waterless urinals use a chemical trap in place of a water trap to avoid sewer gas venting. Waterless urinals are widely utilized throughout commercial, public, and institutional buildings in the Subwatershed despite concerns over potential odor problems and the possibility of sewer gasses or airborne bacteria or viruses venting from the sewer system. **Figure 7** contains photographs of a typical waterless urinal in a non-residential setting and a cross-sectional diagram of a waterless urinal.

Figure 7a – Typical Commercial Waterless Urinal Installation

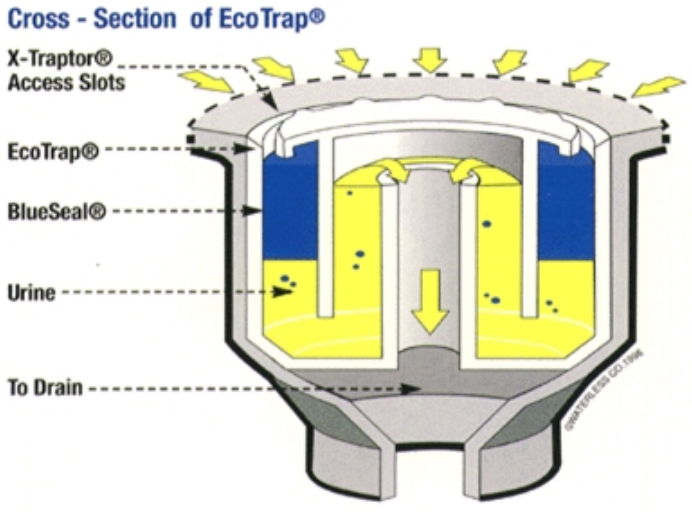


Figure 7b – Cross-Section of typical Waterless Urinal

Figure 7 – Waterless Urinal
Water Conservation Management Report for U.S. Customs and Border Protection Activities Within the Sierra Vista Subwatershed of the San Pedro Watershed

CBP would incur certain costs in the effort to retrofit existing plumbing fixtures. CBP could also incur higher maintenance costs with waterless urinals. While rebates are available for replacing high-flow toilets with low-flow versions, those rebates are available only to residential customers. CBP would not only reduce total water use through retrofitting existing plumbing fixtures, it also would experience a commensurate water bill decrease. Although conservation alternatives reduce the volume of water that could potentially be recharged, conservation upfront is more efficient than over-consuming water and then recharging generated wastewater.

8.1.1 CBP A&M

The Army and CBP signed a Land-Use Permit renewal in 2006 that gives CBP use of the space on which the existing facilitates are located through May 31, 2011. As a tenant organization, CBP A&M is not in a position to retrofit existing facilities. Nevertheless, as part of the Fort's existing conservation efforts, approximately 460 waterless urinals have been installed on post and are likely currently in use by CBP staff and contractors.

For new facilities, the Universal Plumbing Code has been adopted as an Arizona State Statute and requires that new construction use low-flow water use fixtures. While the Federal Government is not required to comply with State codes, they can be used as a guideline for water conserving appliances. Waterless urinals go a step farther than the plumbing code and are estimated to save between 10,000 and 15,000 gallons of water per year over a modern low-flow urinal. Low-flow and no-flow fixtures should be considered in the design phase of the new facilities at LAAF.

Installation of a water meter is recommended to determine actual water usage. Actual water use data could help reduce the amount of water attributed to CBP A&M use and, in turn, could provide more accurate information to address mitigation requirements.

8.1.2 USBP Naco Station

With a total of fourteen bathrooms at a facility built in 1987, an opportunity may be available at Naco Station to retrofit existing bathroom facilities with low-flow or no-flow fixtures. The proposed BPS will be designed using LEED standards, which promote water conservation and efficiency. Current plans include capturing incidental rainfall as part of conservation measures for the site. Other conservation measures are planned for the new station. Discussion of those elements will be incorporated in the on-going EA.

8.1.3 OFO at Naco POE

The Naco POE is owned and operated by the GSA. As such, the OFO is not in a position to directly retrofit existing facilities. The Naco POE has no plans for expansion.

8.2 Graywater Reuse

Graywater is lower quality than potable water, but of higher quality than black water. Graywater derives from water uses such as bathtubs, showers, washing machines, and bathroom sinks. Blackwater is water flushed from toilets and, unless treated, is not suitable for reuse. Water from kitchen sinks, garbage disposals, and dishwashers is also usually considered blackwater because of high concentrations of organic waste and other pathogens.

This alternative involves installing indoor graywater collection systems to reuse water from interior water fixtures. Graywater is not suitable for all water uses and is most commonly used for drip or flood irrigation of non-edible landscape plants. Utilizing graywater on exterior landscaping can save groundwater and reduce water costs.

Graywater use is regulated in Arizona and is permitted as long as it is kept on the subject property and is not used to irrigate edible plants. Non-residential installation of graywater collection systems requires a Type 3 Reclaimed Water General Permit for Graywater from the Arizona Department of Environmental Quality (AZDEQ).

CBP would incur costs to install graywater reuse systems in the existing facilities. Nevertheless, this technique can be included when designing new facilities. Water savings would derive from not pumping additional groundwater for outside irrigation. CBP not only would reduce total water usage through the reuse of graywater, it would also see a commensurate water bill decrease. Graywater reuse would capture flows that otherwise would become wastewater and thus would reduce the volume of water that could potentially be recharged. Assuming graywater usage would offset groundwater consumption (that otherwise would occur), direct reuse of graywater is more efficient than recharging generated wastewater.

8.2.1 CBP A&M

The Army and CBP signed a Land-Use Permit renewal in 2006 that gives CBP use of the space on which the existing facilitates are located through May 31, 2011. As a tenant, CBP A&M is not in a position to retrofit existing facilities. For the new facilities, graywater reuse could be included as a design feature. CBP A&M's use of greywater is restricted by two relevant limitations:

- The first is that graywater is captured from showers, bathroom sinks, and washing machines. Except for bathroom sinks, the CBP A&M facilities do not have significant graywater producing fixtures.
- Secondly, graywater reuse is only an effective conservation method if it ultimately is used in place of a potable water supply. Furthermore, it can only be used for non-potable purposes, such as landscape irrigation. Therefore, landscape features must have existed already and must have been receiving potable water for the introduction of graywater to result in water conservation.

CBP A&M facilities have no landscaping and thus are not a candidate facility for graywater reuse. Since CBP A&M will be a tenant organization on Fort Huachuca, it will be required to comply with U.S. Army water conservation measures.

8.2.2 USBP Naco Station

The USBP Naco Station has fourteen bathrooms and two showers, which could produce graywater. Since the USBP Naco Station has no landscaping, the primary exterior use of water is the car wash sprayer. While some states would allow a graywater system that would collect and pressurize graywater for use in car washing, Arizona limits the use of graywater to flood or drip irrigation. It is unlikely that use of graywater in the spray car wash would be deemed an appropriate use of this water supply. Alternatively, car wash water recycling systems are available, which would capture used car wash water and filter it for reuse.

The proposed BPS facility will be designed using LEED standards, which promote water conservation and efficiency. Current plans include capturing incidental rainfall as part of conservation measures for the site. Other conservation measures are planned for the new station. Discussion of those elements will be incorporated into the on-going EA.

8.2.3 OFO at Naco POE

The Naco POE is by the GSA. As such, the OFO is not in a position to directly retrofit existing facilities. The Naco POE has no current plans for expansion. As demonstrated in **Figure 6**, little to no exterior landscaping exists at the POE. As such, greywater reuse opportunities are limited for the OFO.

8.3 Large Water User Audits by the University of Arizona Cooperative Extension

Recognizing that conservation measures recommended by the USPP are general in nature, the USPP also encourages large commercial water users in the Subwatershed to undergo an in-depth audit of indoor and outdoor water use. Audits are performed through the University of Arizona Cooperative Extension's Water Wise program. Water use experts are available to conduct audits and suggest applicable changes to increase water use efficiency. CBP could request an audit of all three facilities in an effort to identify specific measures, which could be implemented to increase water use efficiency. The audit may identify water use activities which could be altered to reduce water consumption. In turn, staff at each facility would become responsible for implementing the recommended changes.

CBP would be affected by the cost of implementing the conservation efforts. However, CBP would not only reduce total water usage through adopting recommended conservation techniques, but it also would experience a commensurate water bill decrease. Although conservation alternatives reduce the volume of water that could potentially be recharged, conservation upfront is more efficient than over-consuming water and then recharging generated wastewater.

9.0 WATER MITIGATION MEASURES

After conservation efforts are considered, the remaining water use attributable to CBP within the Subwatershed may need to be mitigated in order to balance impacts on the Subwatershed's water supplies. Unlike conservation, mitigation seeks to find alternative supplies to augment local groundwater. Mitigation also may include reducing groundwater elsewhere in the Subwatershed. The goals of mitigation are to return water to the regional aquifer and/or reduce long-term withdrawals that could adversely impact groundwater and surface water supplies. Reducing the overdraft of groundwater will have the effect of maintaining flows in the San Pedro River, which will in turn support the rich wildlife habitat found in riparian areas along the river's banks.

The following sub-sections discuss three potential water mitigation strategies. One or more of these strategies could be implemented to achieve an overall water mitigation plan.

9.1 Rainwater Harvesting

Each year an average of 15.39 inches of rain falls at Fort Huachuca. Precipitation near Naco averages 17.65 inches per year. Much of that water is collected in the Subwatershed, but more than 97 percent is lost to evaporation. Rainwater may be collected and reused or recharged. Rainwater harvesting can be done at ground level, where the land is sculpted to create depressions that capture rainwater and allow it to penetrate the ground and irrigate plants. In addition, rainwater may be harvested from building rooftops by connecting roof gutters to a rainwater collection system. **Figure 8** includes photographs of a non-residential rooftop rainwater harvesting system and a diagram of a rainwater harvesting system.

Figure 8a – Rainwater Harvesting in a Non-Residential Setting

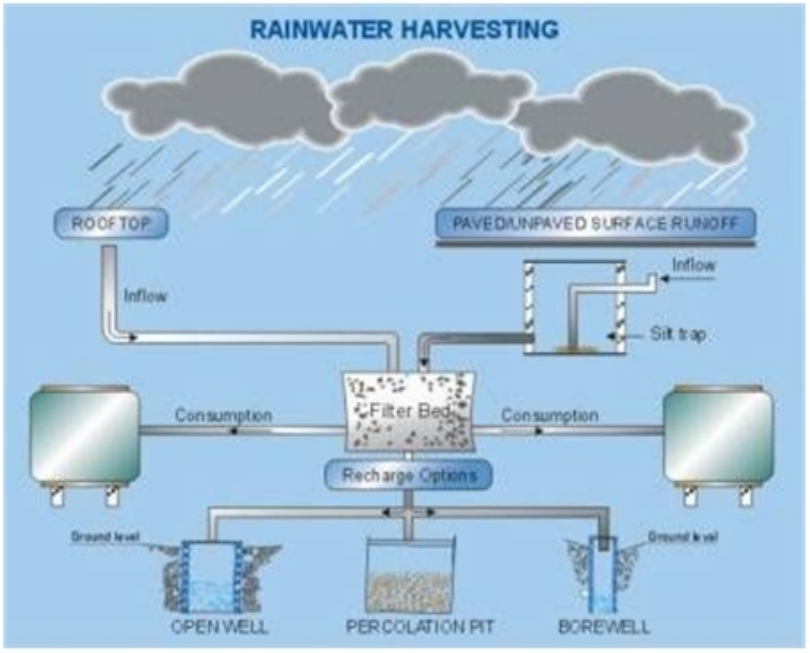


Figure 8b – Rainwater Harvesting Diagram

Note: The collection tanks shown in Figure 8a can be installed underground

Figure 8 – Rainwater Harvesting
Water Conservation Management Report for U.S. Customs and Border Protection Activities Within the Sierra Vista Subwatershed of the San Pedro Watershed

Although the photograph depicts above-ground storage tanks, rainwater storage tanks can be installed underground. Collected water is then stored for later use or delivered to a dry well or recharge basin for recharge into the aquifer. Use of a dry well is a relatively inexpensive way to augment groundwater recharge, but it may not have the same benefit as a constructed and managed recharge facility. The construction and operation of drywells are permitted through AZDEQ.

Rainwater harvesting may be installed on an existing building or incorporated into new construction. Construction and maintenance costs associated with the system may be offset somewhat by the resultant decrease in mitigation obligation.

9.1.1 CBP A&M

The Army and CBP signed a Land-Use Permit renewal in 2006 that gives CBP use of the space on which the existing facilitates are located through May 31, 2011. As a tenant organization, CBP A&M is not in a position to retrofit existing facilities. For new facilities, rainwater harvesting could be included as a design feature. The land required to install the collection system and dry wells would need to be included in CBP A&M's contract with the Army. Furthermore, given the nature of this type of recharge activity, approval from the Fort would likely be required.

Based on the total square footage of the proposed structures (46,950 square feet) and an annual rainfall rate of 15.39 inches per year, approximately 1.38 AF/YR could potentially be captured from the proposed buildings at LAAF. Considering existing mitigation by the Fort, this quantity is twice as large as projected direct water use by CBP A&M. By recharging that supply, CBP A&M could reduce water demand that would require mitigation.

9.1.2 USBP Naco Station

The proposed BPS will be designed using LEED standards, which promotes water conservation and efficiency. Current plans include capturing rainfall in constructed retention basins as part of on-site conservation measures. Based on calculations provided by the BPS project manager, annual rainfall on the 40 acre site could result in 35 AF/YR of recharge in retention basins. **Appendix F** includes the detailed calculations from the BPS project manager. As noted on the calculations, this estimate is a gross approximation of the total runoff captured by the on-site retention basins. Because the rainwater harvesting and retention basins are already included in design for the expansion at the USBP Naco Station, the resultant recharge has been accounted for in future net water use.

9.1.3 OFO at Naco POE

The Naco POE is owned and operated by the GSA. As such, the OFO is not in a position to directly retrofit existing facilities. The Naco POE has no current plans for expansion.

9.1.4 Rainwater Harvesting – All Facilities

Approximately 4.45 AF of average annual groundwater augmentation can be achieved though implementation of rainwater harvesting at CBP's current and planned facilities in the Subwatershed. The actual augmentation will rely on actual rainfall and the effectiveness of these systems.

9.2 Shift from Septic to Sewer

Septic tanks are designed to temporarily hold wastewater in order to allow natural processes to partially breakdown waste material before allowing wastewater to flow to the leach field and seep back into the ground. Even with aquifer replenishment from septic systems, little control is available in terms of potential waste and groundwater contamination. Septic tanks can be replaced with a connection to a private or municipal sewer provider. Once a connection is made, the wastewater is then delivered to the wastewater treatment plant through underground pipes. The wastewater is treated and then disposed, discharged, reused, or recharged in an appropriate and controlled manner.

Formally treated wastewater is called effluent or reclaimed water. Disposal may consist of discharge to evaporation ponds, which do not contribute back to the aquifer if they are properly constructed. Discharging effluent into a natural waterway can augment available surface water and contribute back to the aquifer. Nevertheless, groundwater recharge is difficult to quantify and rarely is recognized as a contribution by the discharging party. Reuse of effluent can reduce groundwater demands but only when the effluent is used to meet a demand previously met by groundwater. Recharge of effluent involves the active process of putting water back into the aquifer either through infiltration ponds, which are managed to minimize evaporation, or through vadose zones or injection wells. When done properly, reuse and recharge methods result in the greatest benefit to the aquifer.

Of the three CBP components, only the USBP Naco Station is currently on a septic system. The CBP A&M is serviced by the Fort's wastewater collection and treatment system and the Naco POE is serviced by the NSD. The CBP Laguna Niguel Facilities Center and USBP are planning to shift the USBP Naco Station from the septic system to sewer service from the City of Bisbee. The City of Bisbee treats wastewater to a quality level suitable for both reuse and discharge. Effluent from Bisbee is reused on the TVGC in Naco and replace historic use of groundwater on this 100-year-old

course. Bisbee discharges remaining water to the Greenbush Draw during times of the year when golf course irrigation demands are lower. Although Bisbee is largely located just outside the Subwatershed, its water supply is derived from an Arizona Water Company well field located along Greenbush Draw (a tributary of the San Pedro River within the Subwatershed). The delivery of Bisbee effluent to both the golf course and the discharge location help offset Arizona Water Company's water export.

To assess how the shift from a septic system to a municipal sewer service would benefit the aquifer, the amount of wastewater the USBP Naco Station produces and the percentage of wastewater that ultimately makes it to the TVGC or Greenbush Draw must be established. These calculations were presented in Section 5.5.1. Because the conversion from septic tank to sewer is in process for the USBP Naco Station, the resultant recharge has been accounted for in current net water use.

9.3 Detention Basin Recharge

The City of Sierra Vista constructs detention basins in an effort to augment the amount of natural recharge within the Subwatershed. According to the City's website, detention basins work by capturing large amounts of fast moving water (typically from a storm) and then releasing that quantity slowly into the ground. Incoming water is captured in the detention basin's storage space. This water then is released slowly through a designed outlet structure where it seeps into the ground rather than running off as floodwater. The engineer must balance basin cost and size with the anticipated flows to derive the most efficient facility possible.

The City of Sierra Vista maintains eleven constructed stormwater basins within its limits. The basins have been funded with a combination of City and developer funds. The least expensive of the basins is the Busby Detention Basin. The cost to construct the basin was $50,000. The basin has an 11.9 AF capacity and an estimated recharge rate of six AF/YR, which yields a capital cost of $8,333 per AF of recharge capacity. Because the city already owned the land, acquisition costs were not included in this estimate.

Given this information, CBP could initiate a similar program of detention basin construction by purchasing land and/or identifying land already owned by CBP that would be suitable for detention basin construction. Nevertheless, actual construction costs, and recurring annual maintenance costs have not been established. Water collected and recharged within the basin would reduce the amount of water that would need to be mitigated by other means.

9.4 Conservation Easements for Agricultural Lands

A conservation easement is a legal agreement between a landowner and a third party, such as a land trust or government agency. Such an agreement permanently limits uses of land for the purpose of protecting its conservation values. Although a landowner still owns the land, by agreeing to an easement, they give up some rights associated with the land. Easements do not prevent the land from being sold or passed on to heirs, and the easement will remain in force should the land change ownership.

For CBP's purposes, conservation easements are aimed at reducing or eliminating water consumption along the San Pedro River and its tributaries. This objective is accomplished by property owners' relinquishing water rights in exchange for accepting a conservation easement. The reduced water use then can offset water used by CBP within the Subwatershed.

The U.S. Geological Survey has identified the shallow aquifer underlying the Babocomari River as one of the most important contributors to the San Pedro aquifer in the upper San Pedro Valley. As such, considerable conservation easement activity has occurred along the Babocomari River, which is a key tributary to the San Pedro River. Babocomari Ranch is located along the Babocomari River and its owner, the Brophy family, has been a willing participant in negotiating conservation easements. The most recent easement was purchased by The Nature Conservancy for $1.9 million on behalf of Fort Huachuca in order to mitigate for the Fort's water use pursuant to its BO. The easement protects 487.3 acres of grasslands that contain valuable wetland habitat. As of September 2007, the total area protected along the Babocomari River stands at 1,410.2 acres and 4.61 miles of river reach. According to the Arizona Water Resource Newsletter from the University of Arizona's Water Resources Research Center , the Brophy family has identified about 16,000 acres of ranch they would like to see placed under conservation easements.

The Nature Conservancy also has worked with Fort Huachuca to acquire easements along the San Pedro River in the Palominas area. Unlike the Babocomari Ranch, The Nature Conservancy actually purchased the land and then established conservation easements, which restricted groundwater pumping and development. Once the easements were in place, The Nature Conservancy sold the property with the easements intact. As with the previous example, the Fort paid for the easements and received credit under its BO for the number of AF of water use the easements reduced.

The costs of conservation easements can vary widely. Cost is generally determined through a property appraisal by considering existing conditions and conditions under the potential easement. The appraised value depends on market conditions and the type and severity of restrictions under

the easement. The cost per AF of water mitigation is then calculated by dividing the easement acquisition price by the estimated reduction in net groundwater pumping.

10.0 BENEFITS, COSTS AND RISKS OF WATER CONSERVATION AND MITIGATION MEASURES

10.1 Water Conservation

Only three conservation programs have been identified as potentially applicable for CBP's facilities. Of these, only certain facilities are in a position to take advantage of all three programs. Considering these limited opportunities and the limited design information that is available regarding CBP's future facilities, only a generalized evaluation of benefits, costs, and risks can be provided at this time.

First, in terms of retrofitting indoor plumbing, only the USBP Naco Station controls its own facilities whereby it could pursue this measure. Indoor plumbing retrofits generally are worthwhile in the Western U.S. Water savings usually justify the costs of such programs, and risks are minimal in that low water using devices are well tested in the marketplace.

Second, in terms of graywater reuse, only the USBP Naco Station has a meaningful opportunity for implementation. This technique may be worth some consideration at both the existing facility and at any new facilities because of the availability of water outlets that can produce graywater and because of CBP's water need to wash cars at this site. Nevertheless, this technique may not lead to successful water mitigation as State restrictions limit use of graywater (car washing likely is not an acceptable use). In addition, these systems are uncommon and have rarely proven to justify their construction costs. A site-specific evaluation would help CBP make a decision about the viability of this option.

Finally, the large water user audits may be performed for the three facilities, but the benefits are uncertain given the water use characteristics of each site.

10.2 Water Mitigation

CBP also faces limitations regarding water mitigation options because only certain measures are applicable and because only certain facilities can take advantage of them. For instance, rainwater harvesting does not seem feasible for the Naco POE or for the temporary facilities at LAAF. Nevertheless, the USBP Naco Station and the new CBP A&M facility may be good candidates in the future. The permanent CBP A&M facility would be required to comply with U.S. Army requirements, which could warrant a more detailed study to determine risks, costs, and potential successes of such programs. Risks are evident given the limited track record of such programs and the fact that

rainwater might still have at least some benefit in natural recharge or recharge through a detention basins.

Detention basins appear to be a worthwhile program as demonstrated by their prominent use in the Subwatershed. More information would be needed to identify potential locations for the basins and associated costs, benefits, and risks. Conservation easements offer CBP high potential for water mitigation. At present, easement opportunities are available. Past experience has demonstrated low risk with this option.

From a broader perspective, CBP could incur important benefits by taking an active role in regional conservation efforts. CBP could start by prioritizing water conservation techniques in the design of its new facilities, by supporting wastewater recharge of the aquifer with local utilities, and by supporting municipal conservation programs that reduce water use.

11.0 CONCLUSIONS

This report has estimated current water use and mitigation and future water use of the three CBP components situated within the Subwatershed. Calculations are based upon staffing level and home location data provided by each CBP component. The total water use includes water used directly at each CBP component, water used at home by CBP employees and their families, water used by Subwatershed population induced by CBP's local economic activities, and a portion of industrial water use within the Subwatershed. The portion of industrial water use for each CBP component was based on the percentage of Subwatershed population which was attributable to each CBP component. CBP A&M, USBP Naco Station, and OFO at Naco POE have a total current water use of 320.03 AF/YR in the Subwatershed.

Current levels of existing mitigation caused by or associated with each CBP component have been calculated. Existing mitigation efforts include effluent recharge at Fort Huachuca, reuse of effluent, on-site rainwater harvesting, effluent recharge by the City of Sierra Vista and passive recharge by septic tanks. CBP A&M, USBP Naco Station, and OFO at Naco POE currently mitigate for 145.54 AF/YR in the Subwatershed. Based on total current water use and total current mitigation, net water use for all CBP components amounts to 174.49 AF/YR.

Two of the CBP entities plan to expand their facilities and increase assigned personnel. Defined as future conditions, the expansion of these facilities would increase water use. Under future conditions, total water use would be 349.79 AF/YR. Total future levels of mitigation would be 177.59 AF/YR. Future net water use would be 172.2 AF/YR. In addition, water use for construction is not a recurring debt to the Subwatershed and would only be mitigated once at the time of use. Total construction associated water use after factoring in existing mitigation is projected to be 44.55 AF.

Table 44 summarizes all water use, both current and future, including the estimated existing mitigation and potential obligation for each CBP component.

Table 44. Summary Water Use for Each CBP Component

	Current (AF/YR)			Future (AF/YR)	
	CBP A&M	USBP Naco Station	OFO	CBP A&M	USBP Naco Station
Total Water Use	31.75	264.24	24.04	43.91	281.84
Total Existing Recharge	15.69	122.59	7.26	19.13	151.2
Net Water Use	16.06	141.65	16.78	24.78	130.64
Construction Water Use	3.90 AF	40.65 AF			

Notes: Total amounts have been rounded. Construction Water Use is a one-time activity, not an on-going annual obligation. The Naco POE has no current plans for expansion; expansion activities would be the responsibility of GSA.

Opportunities for CBP to implement conservation measures are limited by the fact that direct water use at CBP entities represents a small fraction of total water use. CBP has no direct command and control over the activities of its employees or their families at their homes within the Subwatershed. CBP also does not have command and control over the induced population, some of whom may have no relationship to CBP. Furthermore, mitigation opportunities are limited by infrastructure considerations. The most appealing option available to CBP, should mitigation be required, is to purchase conservation easements that would offset CBP water use in the Subwatershed.

12.0 REFERENCES AND WORKS CITED

Arizona Department of Commerce, Arizona Subcounty Population Projections, July 1, 2006 to July 1, 2055 by County, Census County Division, Place, and Reservation.

Arizona Department of Water Resources, Statewide Water Advisory Group Draft Plan for the Upper San Pedro, November 2008.

ASL Hydrologic and Environmental Services, 1994, Sierra Vista Subwatershed Hydrology Primer, for City of Sierra Vista, Bella Vista Water Company, and Pueblo Del Sol Water Company, 29 p.

City of Prescott, 2007, Annual Water Withdrawal and Use Report.

City of Sierra Vista Website (http://www.ci.sierra-vista.az.us). Information on the Environmental Operations Park.

Community Watershed Alliance of the Middle San Pedro Valley, March 2005, Calculation of Domestic Well GPCD Rates for the Upper San Pedro Basin Active Management Area Review Report.

Department of Interior, 2008, Water Management of the Regional Aquifer in the Sierra Vista Subwatershed, Arizona—2007 Report to Congress.

Environmental and Natural Resources Division, Directorate of Public Works, U.S. Army Garrison Fort Huachuca, Arizona. December 2006. Programmatic Biological Assessment for Ongoing and Future Military Operations and Activities at Fort Huachuca, Arizona.

Fluid Solutions and BBC Research and Consulting, 2002, Preliminary Cost/Benefit Analysis for Water Conservation, Reclamation and Augmentation Alternatives for the Sierra Vista Subwatershed, San Pedro Partnership.

Groundwater Users Advisory Council of the Prescott Active Management Area, Safe-Yield Subcommittee, 2006, Final Report on Safe-Yield Impediments, Opportunities, and Strategic Directive.

Metcalf and Eddy, Inc., 2003, Wastewater Engineering: Treatment and Reuse, 4th Edition, McGraw Hill, 1819 pp.

Missouri Department of Natural Resources, Thomas J. Dean, James H. Barks and James H. Williams, 1976, A Guide for the Geologic and Hydrologic Evaluation of Small Lake Sites in Missouri, Water Resources Report Number 31.

U.S. Fish and Wildlife Service (USFWS). 2007. Biological Opinion (BO) for the Department of the Army's proposed land use, military operations, and training range utilization at and near Fort Huachuca, Arizona, for 10 years. AESO/SE, 22410-2007-F-0132, 02-21-02-F-229, 02-21-98-F-266. USFWS, Phoenix, AZ. June 14, 2007.

Upper San Pedro Partnership, 2007, Riparian Areas and Change Fact Sheet.

13.0 REPORT PREPARERS

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Experience: Twenty four years of experience in providing hydrologic evaluations and water resource and wastewater services for public and private sector clients and for the Arizona Department of Water Resources and the USDA Forest Service, Rocky Mountain Forest and Range Experiment Station. Expertise in hydrology, groundwater recharge investigations and facility development, wastewater reuse, land and water resource investigations, fluvial geomorphology, climatology, water resource evaluations, and water rights assessments. Mr. Lacey is one of the founding members of Fluid Solutions, founded in 1998. Prior experience included other consulting firms, Arizona Department of Water Resources, and US Forest Service.

Education:
M.A., Physical Geography, Arizona State University, Tempe, Arizona, 1987
B.A., Physical Geography, University of Delaware, Newark, Delaware, 1982

Ed Harvey - Economist

Experience: Ed Harvey joined BBC Research & Consulting in 1973 and served as a Managing Director of the firm from 1989 until 2002, when he formed a new firm, Harvey Economics. He has devoted the bulk of his career to water, mineral, energy and environmental resource studies and community change in the U.S. During his 35-year career, Mr. Harvey has worked extensively for public and private clients conducting economic, social, financial and market studies. His work has focused upon regulatory compliance or change, new business opportunities, and impacts upon businesses, employees, government and affected populations. Examples include economic and social impact analyses, feasibility studies, fiscal impact analyses, market assessments, resource demand projections and benefit-cost analysis. He has played a prominent role in public processes that are usually a part of Mr. Harvey's assignments. Considerable expert witness testimony experience is evident.

Education:
M.S.B.A., Economics, University of Denver, 1973
B.A., Economics, University of Denver, 1971

Christa McJunkin - Water Resource Analyst

Experience: Over 13 years of experience in the water resource and environmental field including seven years as a Water Resource Specialist and Supervisor for the Arizona Department of Water Resources Assured Water Supply program. Her experience also includes the analysis and approval of municipal Designations of Assured Water Supply in the Phoenix AMA, generation of population and water demand estimates for subdivision and city-wide planning efforts, analysis of well sites with regard to service area regulations and the planning and permitting of recharge recovery wells and service area wells.

Education:
M.A., Public Administration, Arizona State University, 2000
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Jodie Snyder – Environmental Planner

Experience: Jodie has six years experience supporting Baker for environmental, planning, and water resources projects as an environmental and sustainability planner and Geographic Information Systems specialist. Jodie works closely with Baker's Environmental and Engineering Departments to coordinate and conduct spatial analysis and to develop reports, maps, and other deliverables that comply with NEPA, the ESA, the Clean Water Act, and other related legislation. In addition, Jodie has worked extensively in the public involvement realm and is a LEED® Accredited Professional with a passion for creating sustainable sites and communities.

Education:
M.A.S., Environmental Policy and Management, University of Denver, 2007
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APPENDIX A

U.S. FISH AND WILDLIFE SERVICE MEETING MINUTES FROM NOVEMBER 1, 2007

Meeting Minutes

Meeting Date and Time: November 1, 2007 at 1:00 PM, MST

Meeting Location: Tucson Sector HQ

POC: Lisa Folb / Azeez Saliba
(602) 279-1234

Meeting Objectives: **TCA San Pedro Water Conservation Plan Meeting**

Does the USFWS know if Fort Huachuca has mitigated for the CBP personnel through their mitigation plan and biological opinion?
USFWS thinks that they may have and recommend speaking to Sherry for confirmation
May have to pay a fee

Send a letter to USFWS asking for confirmation that CBP is covered under BO.

- be sure that the mitigation plan includes all of the people at Fort Huachuca including any new people and the UAV facilities.

Confirmed with USFWS that study can use the methodologies previously established by others. It is unknown what mitigation GSA has done at the Port of Entry

Reviewed information and facility information from the morning meeting.
USFWS confirmed that given the current military involvement, their numbers can be omitted until there is another ramp-up; then revisit the plan. Sherry recommends to use a cushion in the number estimates.

Confirmed that USFWS will consult on water mitigation plan so that it can be included in each of the CBP component EAs or BAs.

Buffer: calculate the net from the TDY in and the TDY out.
Fluid Solutions will discuss more with Mark about the numbers at Naco.

Fort Huachuca has a methodology to calculate the number of people living in the watershed. We need to ask them if they did a survey of their people to determine where they were living.
Fort Huachuca used zip code to determine who was in an urban service area, because they needed to calculate the different use of people on wells.
Used military projection/economics, typically used to determine impacts if the military leaves an area.

Naco port and station have people living everywhere. A survey will need to be done to determine the distribution of people; whether the zips are in the watershed or out; people on wells or not.

- Can you look at the service area of xyz water company; vs people on wells?

What to do about private contractors:

- How does the Fort Huachuca deal with construction?

Gretchen: they do not use the numbers for construction. If they have dust abatement then they have a water spike.

We would like to include the BP personnel at Fort Huachuca so they are not restricted by the Fort Huachuca cap.
Fort Huachuca is using a one-time fee for temporary people and plan to put a surcharge on the water bill to account for the costs.

USFWS is willing to work with us on the mitigation plan for approval prior to submittal with the BAs and EAs.

- Can we get to not likely adverse affect; will be affect?

Even though there is an offset, there is a lag time before it goes to the environment. The result will probably be a formal consultation.

Will not be a BA for OFO because working with GSA.

The Army has done a lot of analysis to determine the impacts to the watershed. For example, if someone turns on a tap, how does that impact the watershed? Even though, CBP methodology for counting people may be different.

We want to be aware of not double-counting.

Only have to mitigate for the incremental growth.

- What types of mitigations are needed?

Talked to the Nature Conservancy and CBP wants to avoid projects that require a lot of maintenance. TNC has large Mexican land tracts where they are doing water conservation and have put an easement on top. We need to:

- Determine the dollar value on the amount of feet that mitigates the impact and then consult on an annual basis for changes.

- Minimize before mitigate: put in the low flow, water capture.

Rain water is considered “new” water, especially if the water is from a roof or parking lot. Consequently, if the water is channeled or put into a dry well, it is considered new water and you get credit for it.

Talk to Partnership about water conservation measures.

We will work directly with TNC.
If CBP transfers money, it would go through the COE.
Will talk to BLM about holding the easements on behalf of CBP through the Sierra Vista office.
Bonnie Winslow = deputy district manager; shares space with the Partnership
Tom Debs = district manager

Mitigation can be in the sub watershed; does not need to be local.

Two sorts of easements:

- Farm, pumping out of aquifer. If the farming stops, everything they were pumping is now gone. These types of easements are running out.

- Easement that restricts development; water use does increase from development, but if it is restricted, then there is less water use. Restrict development use.

Army is buying up easements so we can possibly work with them.

The biological opinion is done.

Action Items:

- Draft letter to USFWS asking for confirmation that AMO is covered – Tamara Keefe
- Confirm that Fort Huachuca includes the CBP personnel in their plan – Mary Keith Floyd

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APPENDIX B

QUESTIONNAIRE

Questionnaire
1. Who provides water to the three existing facilities?
2. Are delivery records available for some period of time, perhaps the past five years?
3. Are billing records available?
4. Can we get descriptions of each facility? Size, amenities, landscaping, number of personnel, type of work performed.
5. Is there any seasonality to the use of each facility?
6. How is sewer dealt with at each facility?
7. Are billing records available for sewer service?
8. Please provide home zip codes for all current employees for each CBP component.
9. Future Personnel Questions
--Please identify number of new personnel and contractors and describe skill set for new hires.
--Will new hires come from local workforce or will they migrate into the area?
--What is the average annual compensation (including salary and benefits) for the operating personnel at each facility?
10. Financial/Budgetary
--Please provide total construction cost for each existing facility, including the proportion dedicated to on-site construction wages and salaries.
--Please provide current operating budget for each facility.
--Please provide projected operating budget for each facility post-expansion, separating labor costs from non-labor costs.
--Please provide estimated construction budget for new facilities, including the proportion dedicated to on-site construction wages and salaries.
11. Follow-up question for Naco Station--Please provide details about the detention center including a description of operations, projected average daily census of detainees, average length of stay for detainees, use of contractors, and facility details about the kitchen and showers, if applicable. We are interested in both the current state and expected changes.

APPENDIX C

FACT SHEETS

Fact Sheet for Air Marines Operations

1. **Who provides water?**

   Fort Huachuca groundwater supply wells. There are eight water supply wells servicing potable water for Fort Huachuca. These wells are considered municipal water supply wells with well depths between 710 and 1,230 feet. Two of the wells (800 gallons per minute [gpm] pump capacity) are located on the East Range and six wells (500-700 gpm pump capacity) are located on post between the main gate and the east gate.

2. **Are delivery records available for some period of time, perhaps the past five years?**

   No, water delivery records do not exist, as the Fort does not meter deliveries. In an effort to estimate water use, we requested additional information about the water using activities at Air and Marine Operations (AMO). For the Unmanned Aircraft System (UAS) program, they use a portable toilet located by the program trailer. It is believed that the General Atomics (GA) contractor uses the communal bathroom located in hangar 1. Program staff estimates that water use would be less than 10 gallons per day.

3. **Are billing records available?**

   No

4. **Can we get descriptions of the facility (size, amenities, landscaping, number of personnel, type of work performed)?**

   The Department of Homeland Security (DHS), Customs and Border Protection (CBP) AMO is currently in the process of acquiring and deploying the MQ-9 Predator UAS in support of CBP's strategic mission to secure our borders against terrorists, means of terrorism, illegal drugs, and other illegal activities and provide operational end users with the technology and capabilities to detect and prevent terrorist attacks and other illegal activities.

   The strategic plan for UAS Operations describes the intent of CBP AMO to provide intelligence, surveillance, and reconnaissance in the Southwest along the Northern Border and in the Gulf Region. In order to implement this plan and operate within the National Airspace System (NAS), CBP Air and Marine has been working closely with the Federal Aviation Administration (FAA) for appropriate Certificates of Approval for operations in both restricted and controlled airspace.

   Currently CBP AMO UAS is flying out of Libby Army Airfield at Fort Huachuca, AZ. This unmanned aircraft system augments crewed air and marine assets and ground interdiction agents deployed on the Southwest Border. In fiscal year 2007, CBP UASs will complement crewed air and marine assets and ground interdiction agents on the Southern Border, Northern Border, and the Gulf Coast. These unmanned aircraft systems have the potential to coordinate operations within other DHS organizations including the U.S. Coast Guard and the Federal Emergency Management Agency.

The UAS program currently has 47 total personnel, comprised of 22 CBP personnel and 25 contractors. Five of the contractors are assigned to CBP A&M on temporary duty (TDY). AMO occupies two hangars at the Libby Airfield and three single-wide office trailers. There is no landscaping or vehicle washing. Aircraft are electric and not washed with water.

5. Is there any seasonality to the operations?

No

6. How is sewer handled?

Wastewater at Fort Huachuca is collected and treated at Wastewater Treatment Plant #2, which is a tertiary treatment facility. This treatment plant is operated and maintained by Fort Huachuca and handles a capacity of 3.1 million gallons per day (mgd). All effluent is directly reused or recharged on post.

Wastewater treatment plays a major role in the Army's multi-tiered water resource management program that aims to guide effective management and conservation of Fort Huachuca's water resources. To facilitate effluent recharge, in 2002 Fort Huachuca completed construction of Phase I of an Effluent Recharge and Reuse Project. This $6 million project included upgrading the wastewater treatment plant to improve effluent quality and construction of seven effluent recharge basins and one storm water recharge basin. The basins are located on the East Range of Fort Huachuca, where effluent holding/evaporation ponds were previously located. All basins have received treated effluent for recharge and work well. There has been rapid infiltration with very little evaporative loss. The basins are designed to recharge up to 1,000 acre-feet of water annually. The storm water basin has sufficient capacity to annually recharge at least 250 acre-feet of urban runoff from the built-up areas of Fort Huachuca, depending on precipitation.

7. Are billing records available for sewer service?

No

8. Please provide home zip codes for all current employees.

Data was provided, but has not been included in this report for privacy and security reasons.

9. Future Personnel Questions

a. Please identify number of new personnel and contractors and describe skill set for new hires.

A CBP AMO's UAS Squadron, consisting of six Predator "B" aircraft is planned for permanent assignment to Fort Huachuca. The Predator "B" will have approximately 38 full-time employees assigned consisting of pilots, observers, maintenance and administrative staff members. Planning for the Air Unit assigned to Fort Huachuca will consist of up to five AS-350 size aircraft. Permanent assigned personnel will consist of up to 17 individuals consisting of pilots and maintenance personnel. Provisions to host a

variety of other aircraft on a temporary basis, as operations and mission requirements dictate, are also a consideration and included in the planning for the facility space needs.

In addition to air operations, plans also include a group of approximately 14 individuals who will be providing procurement services from this location.

b. Will new hires come from local workforce or will they migrate into the area?

Both

c. What is the average annual compensation (including salary and benefits) for the operating personnel?

Unknown

10. Financial/Budgetary

a. Please provide total construction cost for the existing facility, including the proportion dedicated to on-site construction wages and salaries.

Unknown

b. Please provide current operating budget.

Unknown

c. Please provide projected operating budget for the facility post-expansion, separating labor costs from non-labor costs.

Unknown

d. Please provide estimated construction budget for new facilities, including the proportion dedicated to on-site construction wages and salaries.

Detailed budget data not available. Construction estimate is $2,047,753.

New facilities are:

UAS hangar space requirement, approximately	21,000/sq. ft.
Air Unit (AU) hangar space requirement, approximately	11,340/sq. ft.
Combined administrative office, approximately	33,510/sq. ft.
Aircraft parking ramp, approximately	90,000/sq. ft.
Vehicle Parking, approximately	17,980/sq. ft.
GSE/Hazmat ext storage, approximately	2,660/sq. ft.

Fact Sheet for Naco Port of Entry

1. **Who provides water to the three existing facilities?**

   Naco Water Company

2. **Are delivery records available for some period of time, perhaps the past five years?**

   Records were obtained from Naco Water Company

3. **Are billing records available?**

   Records were obtained from Naco Water Company

4. **Can we get descriptions of each facility? Size, amenities, landscaping, number of personnel, type of work performed.**

   The Port tenants are U.S. Customs Border Protection (CBP), Arizona Department of Transportation (ADOT), and FMC.

   Facilities Description:

   a.) Main building (HISTORIC BLDG.); rent 8,928 sq. ft.; three story building.
   b.) Primary building; 3,938 sq. ft./useable area 3,916 sq. ft., including pedestrian processing area of 648 sq. ft.
   c.) Secondary building; 3,748 sq. ft. (New Addition)
   d.) Commercial truck dock; 2,560 sq. ft.
   e.) D.O.T. building; 3,748 sq. ft./occupiable area is 3,188 sq. ft.

   There are a total of 10 toilets, 12 sinks, and 4 showers. The landscaping is desert landscaping.

   37 Full-Time Employees (FTE)--facility is manned 24-hours/day.

   General Description of Operations:

   The primary mission of U.S. Customs and Border Protection (CBP) is to detect and prevent terrorists and instruments of terror from entering the United States, enforce applicable laws, and facilitate the orderly and efficient flow of legitimate trade and lawful travelers. The CBP Officer performs the full range of inspection, intelligence analysis, examination, and law enforcement activities relating to arrival and departure of persons, conveyances, and merchandise at Ports of Entry (POE). The Officer's primary responsibility is to identify potential terrorists and instruments of terror and to perform layered enforcement activities relative to counter-terrorism. These enforcement activities are to prevent the entry of terrorists and instruments of terror, harmful pests and diseases, illegal drugs and contraband, and illegal aliens and importations/exportations contrary to law and trade agreements, etc., from entering/exiting the United States. The Officer interprets the laws and regulations of a broad range of federal, state, and local agencies, relating to the admissibility of people,

cargo, and conveyances. This position is located in various POE, to include land border, airport, seaport, and pre-clearance stations, and mission needs may require rotation of assignments and duty locations.

MAJOR DUTIES: The enforcement and facilitation examination continuum is a process that typically includes preprimary/risk assessment, primary examination, secondary examination (including disposition for enforcement and compliance), outbound, registration, exit controls, and post disposition. Significant judgments are made at every step on the continuum. The work requires broad knowledge of laws and procedures, as well as changing initiatives and threats. The Officer applies behavioral and cultural analysis and decision-making skills in order to perform the risk assessment required to release travelers and shipments and to identify those requiring further scrutiny, especially those involving terrorist individuals and instruments of terror. The Officer applies this broad range of knowledge in completing the initial interactions and a more specific application in increasingly complex determinations as examinations progress.

5. Is there any seasonality to the use of the facility?

No. The port operates 24 hours per day. The port has 38 personnel assigned. There are three shifts with 11 on first shift, nine on second shift, and five on the third shift. The remainder is accounted for on regular days off, leave, training, etc.

6. How is sewer handled at the facility?

Naco Sanitary District. Evaporation ponds are used for disposal.

7. Are billing records available for sewer service?

Sewer service is $75/month for institutional facilities like the Port.

8. Please provide home zip codes for all current employees.

Data was provided, but has not been included in this report for privacy and security reasons.

9. Future Personnel Questions

No personnel expansion currently planned.

10. Financial/Budgetary

a. Please provide total construction cost for each the existing facility, including the proportion dedicated to on-site construction wages and salaries.

Unknown

b. Please provide current operating budget.

Local Operating Budget is $43,284. Salaries are $391,872.00.

c. Please provide projected operating budget post-expansion, separating labor costs from non-labor costs.

No expansion planned.

d. Please provide estimated construction budget for new facilities, including the proportion dedicated to on-site construction wages and salaries.

No expansion planned.

Fact Sheet for Naco Border Patrol Station

1. **Who provides water to the facility?**

   Arizona Water Company

2. **Are delivery records available for some period of time, perhaps the past five years?**

   Records were obtained from Tucson Sector HQ

3. **Are billing records available?**

   Records were obtained from Tucson Sector HQ

4. **Can we get descriptions of the facility (size, amenities, landscaping, number of personnel, type of work performed)?**

   The priority mission of the Border Patrol is preventing terrorists and terrorists' weapons, including weapons of mass destruction, from entering the United States. The Naco Border Patrol Station (BPS) is one of eight BPSs with the Tucson Border Patrol Sector located on the Tucson Sector's East Corridor (Douglas/Naco). The Naco BPS' area of responsibility (AOR) is located within the Cochise County in southeast Arizona covering approximately 1,175 square miles. This includes 32.5 miles of International Boundary with the areas of Agua Prieta, Sonora, Mexico, Naco, Sonora, Mexico, and Cananea, Sonora, Mexico. The station's AOR commences near Paul Spur west of Douglas, Arizona, continuing west through the San Pedro River Valley to the crest of the Huachuca Mountains in the Coronado National Forest.

   Sections of the Dragoon Mountain ranges, Mule Mountain ranges, Huachuca Mountain Ranges, and the Whetstone Mountain ranges are included in the Station's AOR and includes a large part of the Coronado National Forest and its canyons. The San Pedro River starts in Mexico, flowing north into the United States through the Naco BPS' AOR near Palominas, Arizona.

   The AOR includes the cities and towns of Sierra Vista, Arizona, Hereford, Arizona, Palominas, Arizona, Huachuca City, Arizona, Whetstone, Arizona, Tombstone, Arizona, Bisbee, Arizona, and Naco, Arizona. The Naco BPS is also responsible for sections of Arizona State Highways 92, 80, 90, and 82 with a temporary highway checkpoint near milepost 304 on Highway 90.

   There are 417 agents.

   <u>Facilities Description</u>:

   a.) Main building is used for administration; 2 restrooms.
   b.) Training building; no restrooms.
   c.) Garage is butler style with car wash sprayer; 1 restroom.
   d.) Modular building for supervisory offices and locker rooms; 2 restrooms and 2 showers.

e.) Modular building for alien detention and processing; 2 restrooms and 5 holding cells, each with a commode.
f.) Modular building that facilitates musters, training, and server room; 2 restrooms.
g.) Modular building for storage; no restrooms.
h.) Modular building for miscellaneous offices; 1 restroom.
i.) Modular building for dispatch; 2 restrooms.
j.) Horse corrals; water for horses. Naco is expecting an additional modular building to facilitate miscellaneous offices, issue room, training, and muster; 2 restrooms. Current deployment is March/April 2008. There is no landscaping.

5. Is there any seasonality to the use of the facility?

No

6. How is sewer handled?

All structures are currently on septic. Arrangements are being made to switch over to city sewer services. Arrangements are being made by the Facilities Center in Laguna Nigel. Timeline unknown.

7. Are billing records available for sewer service?

N/A

8. Please provide home zip codes for all current employees.

Data was provided, but has not been included in this report for privacy and security reasons.

9. Future Personnel Questions

a. Please identify number of new personnel and contractors and describe skill set for new hires.

New facilities will have a capacity of 450 agents.

BORDER PATROL AGENT (BPA)

QUALIFICATIONS REQUIRED:
You may qualify for the BPA position based on education, experience, or a combination of both.
Experience Requirements for a GL-5 level: Applicants must have a substantial background of work experience of which at least one year must have been comparable in level of difficulty and responsibility to grade GL-4 in the federal service. This type of experience must demonstrate the ability to do all three of the following:

- Take charge, make sound decisions, and maintain composure in stressful situations;
- Learn law enforcement regulations, methods and techniques through classroom training and/or on-the-job instruction; and

- Gather factual information through questioning, observation, and examination of documents and records.

Experience Requirements for a GL-7 level: Applicants must have one year of law enforcement experience comparable in level of difficulty and responsibility to grade GL-5 in the federal service. Applicants must demonstrate the ability to do all four of the following:

- Make arrests and exercise sound judgment in the use of firearms;
- Deal effectively with individuals or groups of persons in a courteous, tactful manner in connection with law enforcement matters;
- Analyze information rapidly and make prompt decisions or take prompt and appropriate law enforcement action in light of applicable laws, court decisions, and sound law enforcement matters; and
- Develop and maintain contact with a network of informants.

Experience Requirements for the GL-9 Level:
The grade level will be determined based on the information provided in your application. If you are offered and accept a position as a BPA at the GL-5 level, the grade level cannot be changed after you have entered on duty. Applicants must demonstrate the ability to do the following:

- Develop cases, conduct interviews or interrogations, apprehensions, and arrests in order to further the process or cease development;
- Prepare cases and appear as a professional witness in court;
- Exercise sound judgment in the use of firearms and conduct training, qualification exercises, or courses in the proper care and use of firearms;
- Deal effectively with individuals or groups of persons in a courteous and tactful manner in their detention, control or interrogation, and work to promote effective community outreach programs and public relations;
- Analyze and disseminate intelligence information and data rapidly and apply a practical knowledge of the laws, concepts, operational practices and law enforcement methods and techniques in order to independently perform duties typically encountered in law enforcement;
- Develop and maintain contact with a network of informants, social and political organizations, state and local enforcement agencies, and private citizens, to ensure continuity of enforcement work and to carry out enforcement responsibilities;
- Use a variety of law enforcement databases and information retrieval systems, such as TECS, NCIC, and NEXUS; and
- Prepare reports and write other documents that deal with the collection, protection, and recording of evidence, the presentation of testimony, and the retention of informational materials concerning illegal activities and practices encountered during daily activities.

Education: If applicants do not have the work experience described above, four academic years above high school leading to a bachelor's degree, or a bachelor's degree from an accredited college can be substituted and is fully qualifying for the GL-5 level. For the GL-7 level, one full year of graduate education in law or in a field related to law enforcement (e.g., criminal justice, police science, etc.) is qualifying, or meeting the provisions of Superior Academic Achievement (SAA). (See http://www.opm.gov/ qualifications/ SEC-II/s2-e5.asp for information on SAA.) Education obtained from a foreign university or college is not creditable for qualification requirements unless it has been evaluated by a private foreign educational credential evaluation service.

Combining qualifying experience and education:
If you do not qualify based on experience or education alone, you may be able to qualify based on a combination of your experience and education.

b. Will new hires come from local workforce or will they migrate into the area?

The Naco station does not make selections on new hires that are selected to enter into duty, nor does it select the dates that new hires will start. It can be expected that new hires could come from both the local area and/or outside areas. New hires are offered a position with the Border Patrol by the Office of Personnel Management.

Per Kevin Doughty (Supervisor Tucson Sector Recruiting), all recruiting for Border Patrol Agents is done both nationally and regionally. Agents positions are hired nationally and agents are placed according to mission needs. A report out of the Consolidated Personnel Reporting System (CPRO) indicates 282 of the 377 employees or 75% reside in the Cochise County area.

c. What is the average annual compensation (including salary and benefits) for the operating personnel?

The average salary of a Border Patrol Agent at the GS11 Step 3 level is $58,127. Actual pay will vary due to premium pay (night differential, Administratively Uncontrolled Overtime [AUO], etc.). Benefits (medical, Thrift Savings Plan [TSP], etc.) outside of their pay will vary based on personal selections.

10. Financial/Budgetary

a. Please provide total construction cost for the existing facility, including the proportion dedicated to on-site construction wages and salaries.

Unknown

b. Please provide current operating budget.

NACO STATION OPERATING COSTS		
STATION	FY07 - ACTUALS	FY08 - PROJECTED
Fleet Fuel	951,208.58	1,370,383.45
Fleet Repair	1,119,825.87	970,725.00
Utilities	226,561.22	231,822.35
Janitorial	291,419.36	349,763.74
Supplies	280,117.41	322,327.00
Equipment	166,928.80	131,485.00
Services	75,586.05	41,781.00
Salary/OT	23,120,563.32	24,294,225.79
Total	26,232,210.61	27,712,513.33

c. Please provide projected operating budget for facility post-expansion, separating labor costs from non-labor costs.

Unknown

d. Please provide estimated construction budget for new facilities, including the proportion dedicated to on-site construction wages and salaries.

Budget data are not available. The Naco 450 Agent BPS will consist of 50,000 sq. ft. of administration/detention space and 30,000 sq. ft. set for Vehicle Maintenance Facility and ancillary site development. The Naco is a site adopt of Casa Grande BPS.

11. Please provide details about the detention center including a description of operations, projected average daily census of detainees, average length of stay for detainees, use of contractors, and facility details about the kitchen and showers, if applicable. We are interested in both the current state and expected changes.

The Naco Station processing area is a temporary holding facility. The facility does not include showers or a kitchen. Since the facility is only a temporary holding facility, the intent is to process detainees and either return them to Mexico as soon as operationally feasible or if they are to be held for a longer period of time, transfer them to a detention facility outside of the area that is better equipped to hold subjects long-term.

APPENDIX D

EIFS MODEL OUTPUTS

Economic Impact Forecast System

EIFS REPORT

PROJECT NAME

CBP A&M Total Employment Current

STUDY AREA

04003 Cochise, AZ

FORECAST INPUT

Change In Local Expenditures	$741,219
Change In Civilian Employment	47
Average Income of Affected Civilian	$151,899
Percent Expected to Relocate	100
Change In Military Employment	0
Average Income of Affected Military	$0
Percent of Military Living On-post	0

FORECAST OUTPUT

Employment Multiplier	1.54	
Income Multiplier	1.54	
Sales Volume - Direct	$5,524,519	
Sales Volume - Induced	$2,983,240	
Sales Volume - Total	$8,507,759	0.38%
Income - Direct	$7,310,436	
Income - Induced)	$688,973	
Income - Total(place of work)	$7,999,409	0.41%
Employment - Direct	91	
Employment - Induced	24	
Employment - Total	114	0.24%
Local Population	117	
Local Off-base Population	117	0.1%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	7.29 %	8.01 %	4.66 %	3.92 %
Negative RTV	-4.66 %	-4.26 %	-4.53 %	-1.1 %

Economic Impact Forecast System

EIFS REPORT

PROJECT NAME

CBP A&M In-basin Employment Current

STUDY AREA

04003 Cochise, AZ

FORECAST INPUT

Change In Local Expenditures	$741,219	
Change In Civilian Employment	28	
Average Income of Affected Civilian	$151,899	
Percent Expected to Relocate	100	
Change In Military Employment	0	
Average Income of Affected Military	$0	
Percent of Military Living On-post	0	

FORECAST OUTPUT

Employment Multiplier	1.54	
Income Multiplier	1.54	
Sales Volume - Direct	$3,590,844	
Sales Volume - Induced	$1,939,056	
Sales Volume - Total	$5,529,900	0.25%
Income - Direct	$4,424,355	
Income - Induced)	$447,821	
Income - Total(place of work)	$4,872,176	0.25%
Employment - Direct	56	
Employment - Induced	15	
Employment - Total	72	0.15%
Local Population	70	
Local Off-base Population	70	0.06%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	7.29 %	8.01 %	4.66 %	3.92 %
Negative RTV	-4.66 %	-4.26 %	-4.53 %	-1.1 %

Economic Impact Forecast System

EIFS REPORT

PROJECT NAME

CBP A&M Total Employment Future

STUDY AREA

04003 Cochise, AZ

FORECAST INPUT

Change In Local Expenditures	$1,088,172
Change In Civilian Employment	69
Average Income of Affected Civilian	$151,899
Percent Expected to Relocate	100
Change In Military Employment	0
Average Income of Affected Military	$0
Percent of Military Living On-post	0

FORECAST OUTPUT

Employment Multiplier	1.54	
Income Multiplier	1.54	
Sales Volume - Direct	$8,110,463	
Sales Volume - Induced	$4,379,650	
Sales Volume - Total	$12,490,110	0.56%
Income - Direct	$10,732,340	
Income - Induced)	$1,011,470	
Income - Total(place of work)	$11,743,810	0.6%
Employment - Direct	133	
Employment - Induced	35	
Employment - Total	168	0.35%
Local Population	172	
Local Off-base Population	172	0.15%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	7.29 %	8.01 %	4.66 %	3.92 %
Negative RTV	-4.66 %	-4.26 %	-4.53 %	-1.1 %

Economic Impact Forecast System

EIFS REPORT

PROJECT NAME

CBP A&M In-basin Employment Future

STUDY AREA

04003 Cochise, AZ

FORECAST INPUT

Change In Local Expenditures	$1,088,172
Change In Civilian Employment	41
Average Income of Affected Civilian	$151,899
Percent Expected to Relocate	100
Change In Military Employment	0
Average Income of Affected Military	$0
Percent of Military Living On-post	0

FORECAST OUTPUT

Employment Multiplier	1.54	
Income Multiplier	1.54	
Sales Volume - Direct	$5,260,838	
Sales Volume - Induced	$2,840,852	
Sales Volume - Total	$8,101,690	0.37%
Income - Direct	$6,479,170	
Income - Induced)	$656,089	
Income - Total(place of work)	$7,135,258	0.36%
Employment - Direct	83	
Employment - Induced	23	
Employment - Total	105	0.22%
Local Population	102	
Local Off-base Population	102	0.09%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	7.29 %	8.01 %	4.66 %	3.92 %
Negative RTV	-4.66 %	-4.26 %	-4.53 %	-1.1 %

Economic Impact Forecast System

EIFS REPORT

PROJECT NAME

Naco BPS Total Employment Current

STUDY AREA

04003 Cochise, AZ

FORECAST INPUT

Change In Local Expenditures	$3,418,288
Change In Civilian Employment	417
Average Income of Affected Civilian	$70,418
Percent Expected to Relocate	100
Change In Military Employment	0
Average Income of Affected Military	$0
Percent of Military Living On-post	0

FORECAST OUTPUT

Employment Multiplier	1.54	
Income Multiplier	1.54	
Sales Volume - Direct	$23,092,370	
Sales Volume - Induced	$12,469,880	
Sales Volume - Total	$35,562,260	1.6%
Income - Direct	$30,153,750	
Income - Induced)	$2,879,892	
Income - Total(place of work)	$33,033,640	1.69%
Employment - Direct	600	
Employment - Induced	99	
Employment - Total	699	1.46%
Local Population	1038	
Local Off-base Population	1038	0.9%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	7.29 %	8.01 %	4.66 %	3.92 %
Negative RTV	-4.66 %	-4.26 %	-4.53 %	-1.1 %

Economic Impact Forecast System

EIFS REPORT

PROJECT NAME

Naco BPS In-basin Employment Current

STUDY AREA

04003 Cochise, AZ

FORECAST INPUT

Change In Local Expenditures	$3,418,288
Change In Civilian Employment	341
Average Income of Affected Civilian	$70,418
Percent Expected to Relocate	100
Change In Military Employment	0
Average Income of Affected Military	$0
Percent of Military Living On-post	0

FORECAST OUTPUT

Employment Multiplier	1.54	
Income Multiplier	1.54	
Sales Volume - Direct	$19,506,690	
Sales Volume - Induced	$10,533,610	
Sales Volume - Total	$30,040,300	1.36%
Income - Direct	$24,801,980	
Income - Induced)	$2,432,714	
Income - Total(place of work)	$27,234,700	1.39%
Employment - Direct	496	
Employment - Induced	84	
Employment - Total	579	1.21%
Local Population	849	
Local Off-base Population	849	0.74%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	7.29 %	8.01 %	4.66 %	3.92 %
Negative RTV	-4.66 %	-4.26 %	-4.53 %	-1.1 %

Economic Impact Forecast System

EIFS REPORT

PROJECT NAME

Naco BPS Total Employment Future

STUDY AREA

04003 Cochise, AZ

FORECAST INPUT

Change In Local Expenditures	$4,458,636
Change In Civilian Employment	450
Average Income of Affected Civilian	$70,418
Percent Expected to Relocate	100
Change In Military Employment	0
Average Income of Affected Military	$0
Percent of Military Living On-post	0

FORECAST OUTPUT

Employment Multiplier	1.54	
Income Multiplier	1.54	
Sales Volume - Direct	$25,689,660	
Sales Volume - Induced	$13,872,420	
Sales Volume - Total	$39,562,080	1.79%
Income - Direct	$32,717,810	
Income - Induced)	$3,203,804	
Income - Total(place of work)	$35,921,620	1.83%
Employment - Direct	654	
Employment - Induced	110	
Employment - Total	764	1.6%
Local Population	1120	
Local Off-base Population	1120	0.98%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	7.29 %	8.01 %	4.66 %	3.92 %
Negative RTV	-4.66 %	-4.26 %	-4.53 %	-1.1 %

Economic Impact Forecast System

EIFS REPORT

PROJECT NAME

Naco BPS In-basin Employment Future

STUDY AREA

04003 Cochise, AZ

FORECAST INPUT

Change In Local Expenditures	$4,458,636
Change In Civilian Employment	368
Average Income of Affected Civilian	$70,418
Percent Expected to Relocate	100
Change In Military Employment	0
Average Income of Affected Military	$0
Percent of Military Living On-post	0

FORECAST OUTPUT

Employment Multiplier	1.54	
Income Multiplier	1.54	
Sales Volume - Direct	$21,820,900	
Sales Volume - Induced	$11,783,290	
Sales Volume - Total	$33,604,180	1.52%
Income - Direct	$26,943,540	
Income - Induced)	$2,721,324	
Income - Total(place of work)	$29,664,860	1.52%
Employment - Direct	541	
Employment - Induced	93	
Employment - Total	635	1.33%
Local Population	916	
Local Off-base Population	916	0.8%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	7.29 %	8.01 %	4.66 %	3.92 %
Negative RTV	-4.66 %	-4.26 %	-4.53 %	-1.1 %

APPENDIX E

ARIZONA WATER COMPANY RECORDS

ARIZONA WATER COMPANY F407 P.O. Box 29098 Phoenix, AZ 85038-9098

SUBMIT THIS PORTION WITH PAYMENT

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04401---1	11/04/2006	258.76	

PLEASE NOTE CHANGE OF ADDRESS:

NAME ______ ☐ CS
ADD'L INFO ______ ☐ CK
ADDRESS ______ ☐ MO
CITY______ ST______ ZIP ______ ______

US BORDER PATROL
1970 W AJO WAY
TUCSON AZ 85713-5605

0312004401-13000025876

Statement of Account

Please Make Checks Payable To: **Arizona Water Company**

RETURN TOP LEFT PORTION WITH PAYMENT. PLEASE WRITE ACCOUNT NUMBER ON CHECK.

If a "Past Due" amount is shown on your statement, please refer to the **PAST DUE** section on the reverse ~~side of this bill.~~

KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS
031-20-04401---1	NACO HIGHWAY

CURRENT READ DATE	PREVIOUS READ DATE	DAYS IN BILLING PERIOD	DELINQUENT DATE
10/19/2006	9/20/2006	29	11/04/2006

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
				.18	MAP SURCHARGE
11	126778	126458	320	242.86	COMMERCIAL
				.21	WATER USAGE TAX
				15.51	TAXES
				258.76	TOTAL DUE

OCT 2 2006

LI 0020
E3 1000216358
1R0 981000500 7
A 500022615 0

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	1103				
GALLONS USED YEAR AGO DAILY	1189	2005/10	345	2006/04	239
PERCENT CHANGE FROM LAST YEAR	7.2-	2005/11	289	2006/05	288
		2005/12	235	2006/06	394
		2006/01	188	2006/07	387
		2006/02	216	2006/08	386
		2006/03	186	2006/09	578

PAST 12 MONTHS USAGE

FOR QUESTIONS OR SERVICE PLEASE CALL:
ARIZONA WATER COMPANY
BISBEE 520-432-5321
1345 S NACO HWY #A
BISBEE AZ 85603

WATER IS PRECIOUS, USE IT WISELY

VISIT OUR WEB SITE WWW.AZWATER.COM

ARIZONA WATER COMPANY

SUBMIT THIS PORTION W[illegible] PAYMENT

P.O. Box 29098
Phoenix, AZ 85038-9098

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENT AMOUNT
031-20-04401---1	12/06/2006	269.94	

PLEASE NOTE CHANGE OF ADDRESS:

NAME _____ ☐ CS

ADD'L INFO _____ ☐ CK

ADDRESS _____ ☐ MO

CITY _____ ST _____ ZIP _____ _____

US BORDER PATROL
1970 W AJO WAY
TUCSON AZ 85713-5605

Statement of Account

Please Make Checks Payable To: **Arizona Water Company**

RETURN TOP LEFT PORTION WITH PAYMENT. PLEASE WRITE ACCOUNT NUMBER ON CHECK.

If a "Past Due" amount is shown on your statement, please refer to the **PAST DUE** section on the reverse ~~side of this bill~~.

0312004401-13000026994

KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS
031-20-04401---1	NACO HIGHWAY

CURRENT READ DATE	PREVIOUS READ DATE	DAYS IN BILLING PERIOD	DELINQUENT DATE
~~11/20/2006~~	10/19/2006	32	12/06/2006

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
PAST DUE IS NOW DELINQUENT:				4.13	PAST DUE
				.18	MAP SURCHARGE
11	127115	126778	337	249.47	COMMERCIAL
				.22	WATER USAGE TAX
				~~15.94~~	TAXES
				269.94	TOTAL DUE

LI ES 1000225789
0020
IRO 9810005007
A 5000236406
DEC 72006

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	1053
GALLONS USED YEAR AGO DAILY	903
PERCENT CHANGE FROM LAST YEAR	16.6

PAST 12 MONTHS USAGE

2005/11	289	2006/05	288
2005/12	235	2006/06	394
2006/01	188	2006/07	387
2006/02	216	2006/08	386
2006/03	186	2006/09	578
2006/04	239	2006/10	320

FOR QUESTIONS OR SERVICE PLEASE CALL:
ARIZONA WATER COMPANY
BISBEE 520-432-5321
1345 S NACO HWY #A
BISBEE AZ 85603

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ARIZONA WATER COMPANY

P.O. Box 29098
Phoenix, AZ 85038-9098

SUBMIT THIS PORTION WITH PAYMENT

Statement of Account

Please Make Checks Payable To: **Arizona Water Company**

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04401---1	1/04/2007	281.32	

PLEASE NOTE CHANGE OF ADDRESS:

NAME _____ ☐ CS

ADD'L INFO _____ ☐ CK

ADDRESS _____ ☐ MO

CITY _____ ST _____ ZIP _____

RETURN TOP LEFT PORTION WITH PAYMENT. PLEASE WRITE ACCOUNT NUMBER ON CHECK.

US BORDER PATROL
2430 S SWAN RD
TUCSON AZ 85711-6565

If a "Past Due" amount is shown on your statement, please refer to the **PAST DUE** section on the reverse side of this bill.

03120044O1-13000028132

KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS
031-20-04401---1	NACO HIGHWAY

CURRENT READ DATE	PREVIOUS READ DATE	DAYS IN BILLING PERIOD	DELINQUENT DATE
12/19/2006	11/20/2006	29	1/04/2007

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
PAST DUE IS NOW DELINQUENT:				4.31	PAST DUE
				.18	MAP SURCHARGE
11	127479	127115	364	259.98	COMMERCIAL
				.24	WATER USAGE TAX
				16.61	TAXES
				281.32	TOTAL DUE

LF 0020 ES 1000 229337
IRO 9810005007
A 5000 240117

RECEIVED
DEC 22 2006
ARIZONA WATER COMPANY
BISBEE OFFICE

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	1255
GALLONS USED YEAR AGO DAILY	810
PERCENT CHANGE FROM LAST YEAR	54.9

PAST 12 MONTHS USAGE

2005/12	235	2006/06	394		
2006/01	188	2006/07	387		
2006/02	216	2006/08	386		
2006/03	186	2006/09	578		
2006/04	239	2006/10	320		
2006/05	288	2006/11	337		

FOR QUESTIONS OR SERVICE PLEASE CALL:

ARIZONA WATER COMPANY

BISBEE 520-432-5321
1345 S NACO HWY #A
BISBEE AZ 85603

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12/28/06

ARIZONA WATER COMPANY
SUBMIT THIS PORTION WITH PAYMENT

P.O. Box 29098
Phoenix, AZ 85038-9098

Statement of Account

Please Make Checks Payable
To: **Arizona Water Company**

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04401---1	2/03/2007	340.79	

PLEASE NOTE CHANGE OF ADDRESS:

NAME ______________________ ☐ CS
ADD'L INFO ______________________ ☐ CK
ADDRESS ______________________ ☐ MO
CITY ______________ ST ______ ZIP ________ ________

RETURN TOP LEFT PORTION WITH PAYMENT. PLEASE WRITE ACCOUNT NUMBER ON CHECK.

US BORDER PATROL
2430 S SWAN RD
TUCSON AZ 85711-6565

If a "Past Due" amount is shown on your statement, please refer to the **PAST DUE** section on the reverse side of this bill.

0312004401-13000034079

KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS
031-20-04401---1	NACO HIGHWAY

CURRENT READ DATE	PREVIOUS READ DATE	DAYS IN BILLING PERIOD	DELINQUENT DATE
1/18/2007	12/19/2006	30	2/03/2007

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
PAST DUE IS NOW DELINQUENT:				4.49	PAST DUE
				.22	MAP SURCHARGE
11	127986	127479	507	315.60	COMMERCIAL
				.33	WATER USAGE TAX
				20.15	TAXES
				340.79	TOTAL DUE

RECEIVED JAN 22 2007

ES 1000236111
1RO 9810005007
A 5006247038

AS A RESULT OF REQUIRED WATER TESTING AND THE ANNUAL REVIEW OF THOSE COSTS, THE MONITORING ASSISTANCE PROGRAM SURCHARGE HAS BEEN REVISED FROM $0.18 TO $0.22 PER METER. THIS MONTHLY SURCHARGE WILL BE EFFECTIVE JANUARY 1, 2007.

CI 0020

A COPY OF THE SURCHARGE CALCULATION HAS BEEN REVIEWED BY THE ARIZONA CORPORATION COMMISSION AND IS AVAILABLE FOR REVIEW AT THE COMPANY'S LOCAL OFFICE.

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	1690
GALLONS USED YEAR AGO DAILY	626
PERCENT CHANGE FROM LAST YEAR	169.9

PAST 12 MONTHS USAGE

2006/01	188	2006/07	387
2006/02	216	2006/08	386
2006/03	186	2006/09	578
2006/04	239	2006/10	320
2006/05	288	2006/11	337
2006/06	394	2006/12	364

FOR QUESTIONS OR SERVICE PLEASE CALL:
ARIZONA WATER COMPANY
BISBEE 520-432-5321
1345 S NACO HWY #A
BISBEE AZ 85603

1848.21

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ARIZONA WATER COMPANY

P.O. Box 29098
Phoenix, AZ 85038-9098

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Statement of Account

Please Make Checks Payable To: **Arizona Water Company**

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04401---1	3/08/2007	403.03	

RETURN TOP LEFT PORTION WITH PAYMENT. PLEASE WRITE ACCOUNT NUMBER ON CHECK.

PLEASE NOTE CHANGE OF ADDRESS:

NAME _____ ☐ CS

ADD'L INFO _____ ☐ CK

ADDRESS _____ ☐ MO

CITY_____ ST_____ ZIP _____

US BORDER PATROL
2430 S SWAN RD
TUCSON AZ 85711-6565

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US 2007

If a "Past Due" amount is shown on your statement, please refer to the **PAST DUE** section on the reverse side of this bill.

0312004401-13000040303

KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS
031-20-04401---1	NACO HIGHWAY

CURRENT READ DATE	PREVIOUS READ DATE	DAYS IN BILLING PERIOD	DELINQUENT DATE
2/20/2007	1/18/2007	33	3/08/2007

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
				.22	MAP SURCHARGE
11	128654	127986	668	378.23	COMMERCIAL
				.43	WATER USAGE TAX
				24.15	TAXES
				403.03	TOTAL DUE

LF
0020

ES 1000244997
IRO 9810005087
A 5000256634

THIS BILL IS NOW DUE AND PAYABLE

	2024
GALLONS USED DAILY	654
GALLONS USED YEAR AGO DAILY	209.4
PERCENT CHANGE FROM LAST YEAR	

PAST 12 MONTHS USAGE

2006/02	216	2006/08	386		
2006/03	186	2006/09	578		
2006/04	239	2006/10	320		
2006/05	288	2006/11	337		
2006/06	394	2006/12	364		
2006/07	387	2007/01	507		

FOR QUESTIONS OR SERVICE PLEASE CALL:

ARIZONA WATER COMPANY
BISBEE 520-432-5321
1345 S NACO HWY #A
BISBEE AZ 85603

2491.37

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ARIZONA WATER COMPANY

P.O. Box 29098
Phoenix, AZ 85038-9098

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ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04401---1	4/04/2007	345.01	

PLEASE NOTE CHANGE OF ADDRESS:

NAME _____ ☐ CS

ADD'L INFO _____ ☐ CK

ADDRESS _____ ☐ MO

CITY_____ ST_____ ZIP _____ _____

US BORDER PATROL
2430 S SWAN RD
TUCSON AZ 85711-6565

031200440I-130000345O1

Statement of Account

Please Make Checks Payable To: **Arizona Water Company**

RETURN TOP LEFT PORTION WITH PAYMENT. PLEASE WRITE ACCOUNT NUMBER ON CHECK.

If a "Past Due" amount is shown on your statement, please refer to the **PAST DUE** section on the reverse side of this bill.

KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS
031-20-04401---1	NACO HIGHWAY

CURRENT READ DATE	PREVIOUS READ DATE	DAYS IN BILLING PERIOD	DELINQUENT DATE
3/19/2007	2/20/2007	27	4/04/2007

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
				.22	MAP SURCHARGE
11	129182	128654	528	323.77	COMMERCIAL
				.34	WATER USAGE TAX
				20.68	TAXES
				345.01	TOTAL DUE

RECEIVED
MAR 2 2007

ES 100252796
IRO 9810005007
LI
0020 A 5000265080

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	1955
GALLONS USED YEAR AGO DAILY	688
PERCENT CHANGE FROM LAST YEAR	184.1

PAST 12 MONTHS USAGE

2006/03	186	2006/09	578
2006/04	239	2006/10	320
2006/05	288	2006/11	337
2006/06	394	2006/12	364
2006/07	387	2007/01	507
2006/08	386	2007/02	668

FOR QUESTIONS OR SERVICE PLEASE CALL:
ARIZONA WATER COMPANY
BISBEE 520-432-5321
1345 S NACO HWY #A
BISBEE AZ 85603

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3867.02

ARIZONA WATER COMPANY

P.O. Box 29098
Phoenix, AZ 85038-9098

SUBMIT THIS PORTION WITH PAYMENT

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04401---1	5/04/2007	351.64	

PLEASE NOTE CHANGE OF ADDRESS:

NAME _____ ☐ CS

ADD'L INFO _____ ☐ CK

ADDRESS _____ ☐ MO

CITY_____ ST_____ ZIP _____ _____

US BORDER PATROL
2430 S SWAN RD
TUCSON AZ 85711-6565

0312004401-13000035164

Statement of Account

Please Make Checks Payable To: **Arizona Water Company**

RETURN TOP LEFT PORTION WITH PAYMENT. PLEASE WRITE ACCOUNT NUMBER ON CHECK.

If a "Past Due" amount is shown on your statement, please refer to the **PAST DUE** section on the reverse ~~side of this bill.~~

KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS		
031-20-04401---1	NACO HIGHWAY		
CURRENT READ DATE	**PREVIOUS READ DATE**	**DAYS IN BILLING PERIOD**	**DELINQUENT DATE**
4/18/2007	3/19/2007	30	5/04/2007

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
				.22	MAP SURCHARGE
11	129726	129182	544	330.00	COMMERCIAL
				.35	WATER USAGE TAX
				21.07	TAXES
				351.64	TOTAL DUE

ES 1000260997

LI 0020 IRO 981000S007

A 5000273754

APR 23 2007

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	1813
GALLONS USED YEAR AGO DAILY	796
PERCENT CHANGE FROM LAST YEAR	127.7

PAST 12 MONTHS USAGE

2006/04	239	2006/10	320		
2006/05	288	2006/11	337		
2006/06	394	2006/12	364		
2006/07	387	2007/01	507		
2006/08	386	2007/02	668		
2006/09	578	2007/03	528		

FOR QUESTIONS OR SERVICE PLEASE CALL:

ARIZONA WATER COMPANY

BISBEE 520-432-5321
1345 S NACO HWY #A
BISBEE AZ 85603

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367262

ARIZONA WATER COMPANY

P.O. Box 29098
Phoenix, AZ 85038-9098

SUBMIT THIS PORTION WITH PAYMENT

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04401---1	6/02/2007	320.55	

PLEASE NOTE CHANGE OF ADDRESS:

NAME _____ ☐ CS

ADD'L INFO _____ ☐ CK

ADDRESS _____ ☐ MO

CITY_____ ST_____ ZIP _____ _____

US BORDER PATROL
2430 S SWAN RD
TUCSON AZ 85711-6565

0312004401-13000032055

Statement of Account

Please Make Checks Payable To: **Arizona Water Company**

RETURN TOP LEFT PORTION WITH PAYMENT. PLEASE WRITE ACCOUNT NUMBER ON CHECK.

If a "Past Due" amount is shown on your statement, please refer to the **PAST DUE** section on the reverse side of this bill.

KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS
031-20-04401---1	NACO HIGHWAY

CURRENT READ DATE	PREVIOUS READ DATE	DAYS IN BILLING PERIOD	DELINQUENT DATE
5/17/2007	4/18/2007	29	6/02/2007

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
				.22	MAP SURCHARGE
11	130195	129726	469	300.82	COMMERCIAL
				.30	WATER USAGE TAX
				19.21	TAXES
				320.55	TOTAL DUE

LI ES 1000270045
0820 IRO 9810005007
A 5000283076

MAY 23 2007

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	1617
GALLONS USED YEAR AGO DAILY	993
PERCENT CHANGE FROM LAST YEAR	62.8

PAST 12 MONTHS USAGE

2006/05	288	2006/11	337		
2006/06	394	2006/12	364		
2006/07	387	2007/01	507		
2006/08	386	2007/02	668		
2006/09	578	2007/03	528		
2006/10	320	2007/04	544		

FOR QUESTIONS OR SERVICE PLEASE CALL:
ARIZONA WATER COMPANY

BISBEE 520-432-5321
1345 S NACO HWY #A
BISBEE AZ 85603

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12592S

ARIZONA WATER COMPANY

SUBMIT THIS PORTION W PAYMENT

P.O. Box 29098
Phoenix, AZ 85038-9098

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04401---1	7/05/2007	357.44	

PLEASE NOTE CHANGE OF ADDRESS:

NAME _____ ☐ CS

ADD'L INFO _____ ☐ CK

ADDRESS _____ ☐ MO

CITY _____ ST _____ ZIP _____ _____

US BORDER PATROL
2430 S SWAN RD
TUCSON AZ 85711-6565

JN 25 2007

0312004401-13000035744

Statement of Account

Please Make Checks Payable To: **Arizona Water Company**

RETURN TOP LEFT PORTION WITH PAYMENT. PLEASE WRITE ACCOUNT NUMBER ON CHECK.

If a "Past Due" amount is shown on your statement, please refer to the **PAST DUE** section on the reverse side of this bill.

KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS
031-20-04401---1	NACO HIGHWAY

CURRENT READ DATE	PREVIOUS READ DATE	DAYS IN BILLING PERIOD	DELINQUENT DATE
6/19/2007	5/17/2007	33	7/05/2007

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
11	130753	130195	558	.22	MAP SURCHARGE
				335.44	COMMERCIAL
				.36	WATER USAGE TAX
				21.42	TAXES
				357.44	TOTAL DUE

ES 1000279254
IRO 981000500 7
A 5000292998

NOTICE

COPIES OF THE ARIZONA WATER COMPANY'S 2006 WATER QUALITY REPORT ARE NOW AVAILABLE AT: THE LOCAL OFFICE SHOWN BELOW OR BY ACCESSING IT VIA OUR WEBSITE AT WWW.AZWATER.COM. ARIZONA WATER COMPANY RECOMMENDS THOSE CUSTOMERS SERVING MORE THAN ONE HOUSING UNIT POST A COPY OF THE 2006 WATER QUALITY REPORT IN A CONSPICUOUS PLACE.

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	1690
GALLONS USED YEAR AGO DAILY	1193
PERCENT CHANGE FROM LAST YEAR	41.6

PAST 12 MONTHS USAGE

2006/06	394	2006/12	364
2006/07	387	2007/01	507
2006/08	386	2007/02	668
2006/09	578	2007/03	528
2006/10	320	2007/04	544
2006/11	337	2007/05	469

FOR QUESTIONS OR SERVICE PLEASE CALL:

ARIZONA WATER COMPANY

BISBEE 520-432-5321
1345 S NACO HWY #A
BISBEE AZ 85603

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487093

ARIZONA WATER COMPANY
SUBMIT THIS PORTION WITH PAYMENT

P.O. Box 29098
Phoenix, AZ 85038-9098

Statement of Account

Please Make Checks Payable To: **Arizona Water Company**

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04401----1	8/04/2007	342.94	

PLEASE NOTE CHANGE OF ADDRESS:

NAME ____________________ ☐ CS
ADD'L INFO ____________________ ☐ CK
ADDRESS ____________________ ☐ MO
CITY ____________ ST ______ ZIP ________

RETURN TOP LEFT PORTION WITH PAYMENT. PLEASE WRITE ACCOUNT NUMBER ON CHECK.

US BORDER PATROL
2430 S SWAN RD
TUCSON AZ 85711-6565

If a "Past Due" amount is shown on your statement, please refer to the **PAST DUE** section on the reverse side of this bill.

0312004401-13000034294

KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS
031-20-04401----1	NACO HIGHWAY

CURRENT READ DATE	PREVIOUS READ DATE	DAYS IN BILLING PERIOD	DELINQUENT DATE
7/19/2007	6/19/2007	30	8/04/2007

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
				.22	MAP SURCHARGE
11	131276	130753	523	321.83	COMMERCIAL
				.34	WATER USAGE TAX
				20.55	TAXES
				342.94	TOTAL DUE

CF
0020
ES 1000288231
IRO 9810005007
A 5100302439
JUL 24 2007

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	1743
GALLONS USED YEAR AGO DAILY	1290
PERCENT CHANGE FROM LAST YEAR	35.1

PAST 12 MONTHS USAGE

2006/07	387	2007/01	507
2006/08	386	2007/02	668
2006/09	578	2007/03	528
2006/10	320	2007/04	544
2006/11	337	2007/05	469
2006/12	364	2007/06	558

5 560.03

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ARIZONA WATER COMPANY
BISBEE 520-432-5321
1345 S NACO HWY #A
BISBEE AZ 85603

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ARIZONA WATER COMPANY
SUBMIT THIS PORTION W... PAYMENT

P.O. Box 29098
Phoenix, AZ 85038-[illegible]8

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04401---1	9/04/2007	320.55	

PLEASE NOTE CHANGE OF ADDRESS:

NAME ______________ ☐ CS
ADD'L INFO ______________ ☐ CK
ADDRESS ______________ ☐ MO
CITY ______ ST ____ ZIP ______

US BORDER PATROL
2430 S SWAN RD
TUCSON AZ 85711-6565

0312004401-13000032055

Statement of Account

Please Make Checks Payable To: **Arizona Water Company**

RETURN TOP LEFT PORTION WITH PAYMENT. PLEASE WRITE ACCOUNT NUMBER ON CHECK.

If a "Past Due" amount is shown on your statement, please refer to the **PAST DUE** section on the reverse side of this bill.

KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS
031-20-04401---1	NACO HIGHWAY

CURRENT READ DATE	PREVIOUS READ DATE	DAYS IN BILLING PERIOD	DELINQUENT DATE
8/17/2007	7/19/2007	29	9/04/2007

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
				.22	MAP SURCHARGE
11	131745	131276	469	300.82	COMMERCIAL
				.30	WATER USAGE TAX
				19.21	TAXES
				320.55	TOTAL DUE

ES 1000999053
LI20 IRO 9810005007
A5006 313757

6381.47

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	1617
GALLONS USED YEAR AGO DAILY	1331
PERCENT CHANGE FROM LAST YEAR	21.4

PAST 12 MONTHS USAGE

2006/08	386	2007/02	668
2006/09	578	2007/03	528
2006/10	320	2007/04	544
2006/11	337	2007/05	469
2006/12	364	2007/06	558
2007/01	507	2007/07	523

FOR QUESTIONS OR SERVICE PLEASE CALL:
ARIZONA WATER COMPANY
BISBEE 520-432-5321
1345 S NACO HWY #A
BISBEE AZ 85603

WATER IS PRECIOUS, USE IT WISELY
VISIT OUR WEB SITE WWW.AZWATER.COM

ARIZONA WATER COMPANY
SUBMIT THIS PORTIC /ITH PAYMENT

P.O. Box 29098
Phoenix, AZ 85[illegible]-9098

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04401---1	10/06/2007	394.06	

PLEASE NOTE CHANGE OF ADDRESS:

NAME ______________________ ☐ CS
ADD'L INFO ______________________ ☐ CK
ADDRESS ______________________ ☐ MO
CITY ______________ ST ______ ZIP ________

US BORDER PATROL
2430 S SWAN RD
TUCSON AZ 85711-6565

SEP 26 2007

0312004401-13000039406

Statement of Account

Please Make Checks Payable
To: **Arizona Water Company**

RETURN TOP LEFT PORTION WITH PAYMENT. PLEASE WRITE ACCOUNT NUMBER ON CHECK.

If a "Past Due" amount is shown on your statement, please refer to the **PAST DUE** section on the reverse side of this bill.

KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS		
031-20-04401---1	NACO HIGHWAY		
CURRENT READ DATE	**PREVIOUS READ DATE**	**DAYS IN BILLING PERIOD**	**DELINQUENT DATE**
9/20/2007	8/17/2007	34	10/06/2007

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
PAST DUE IS NOW DELINQUENT:				5.11	PAST DUE
				.22	MAP SURCHARGE
11	132379	131745	634	365.01	COMMERCIAL
				.41	WATER USAGE TAX
				23.31	TAXES
				394.06	TOTAL DUE

E3 1000310544

CF 1R0981000 5007
0020 A 500032641/

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY 1864
GALLONS USED YEAR AGO DAILY 1700
PERCENT CHANGE FROM LAST YEAR 9.6

PAST 12 MONTHS USAGE

2006/09	578	2007/03	528
2006/10	320	2007/04	544
2006/11	337	2007/05	469
2006/12	364	2007/06	558
2007/01	507	2007/07	523
2007/02	668	2007/08	469

6812.37

FOR QUESTIONS OR SERVICE PLEASE CALL:
ARIZONA WATER COMPANY
BISBEE 520-432-5321
1345 S NACO HWY #A
BISBEE AZ 85603

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$406

ARIZONA WATER COMPANY

CLIP AND RETURN THIS PORTION WITH PAYMENT

P.O. Box 29098
Phoenix, AZ 85038-9098

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04401---1	11/06/2007	326.43	

PLEASE NOTE CHANGE OF ADDRESS

NAME _____ ☐ CS

ADD'L INFO _____ ☐ CK

ADDRESS _____ ☐ MO

CITY _____ ST _____ ZIP _____ _____

US BORDER PATROL
2136 S NACO HWY
BISBEE AZ 85603-6236

Statement of Account

Please Make Checks Payable To: **Arizona Water Company**

RETURN TOP LEFT PORTION WITH PAYMENT. PLEASE WRITE ACCOUNT NUMBER ON CHECK.

If a "Past Due" amount is shown on your statement, please refer to the **PAST DUE** section on the reverse side of this bill.

0312004401-1300003264 3

KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS		
031-20-04401---1	NACO HIGHWAY		
CURRENT READ DATE	**PREVIOUS READ DATE**	**DAYS IN BILLING PERIOD**	**DELINQUENT DATE**
10/19/2007	9/20/2007	29	11/06/2007

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
PAST DUE IS NOW DELINQUENT:				6.29	PAST DUE
				.22	MAP SURCHARGE
11	132847	132379	468	300.43	COMMERCIAL
				.30	WATER USAGE TAX
				19.19	TAXES
				326.43	TOTAL DUE

PAM $ 331.64

ES 1000325546
LI IRO 9810006610
0020 A 5000342676

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	1613
GALLONS USED YEAR AGO DAILY	1103
PERCENT CHANGE FROM LAST YEAR	46.2

PAST 12 MONTHS USAGE

2006/10	320	2007/04	544
2006/11	337	2007/05	469
2006/12	364	2007/06	558
2007/01	507	2007/07	523
2007/02	668	2007/08	469
2007/03	528	2007/09	634

FOR QUESTIONS OR SERVICE PLEASE CALL:
ARIZONA WATER COMPANY
BISBEE 520-432-5321
1345 S NACO HWY #A
BISBEE AZ 85603

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FOR PAYMENT OPTIONS VISIT OUR WEB SITE WWW.AZWATER.COM

Account Number 031-20-04401---1 Parcel# Backflow Required Y

Name US BORDER PATROL Add'l Inf

Mail Addr 2136 S NACO HWY

Service Addr NACO HIGHWAY BISBEE AZ 85603

Service Date 5/03/88 Inactive Date 0/00/00 SurePay Account Status

Transactions Not Yet Billed

Date	Description	Usage	Amount		
				627.75	Previous Balance
11/26/07	PMTP		331.64-		
12/10/07	LATE CHG		4.72		
				300.83	Total Due

ES 1000 335464
IRD 981000610
A 500035193

Account Number 031-20-04401---1 Parcel# Backflow Required Y

Name US BORDER PATROL Add"l Inf

Mail Addr 2136 S NACO HWY

Service Addr NACO HIGHWAY BISBEE AZ 85603

Service Date 5/03/88 Inactive Date 0/00/00 SurePay Account Status

TRANSACTION HISTORY

Dollar Amount	Usage	Type	Bill Mo/Yr	Addl Info
320.32		MR	8/07	
	469	MR	8/07	
	469	PD	8/07	METER MR
320.55-		PMTP	9/07	9/10/07
.23		MAP	9/07	MR
388.72		MR	9/07	
	634	MR	9/07	
	634	PD	9/07	METER MR
5.11		LC	9/07	LATE CHG
394.06-		PMTP	10/07	10/22/07
.23		MAP	10/07	MR
319.91		MR	10/07	
	468	MR	10/07	
	468	PD	10/07	METER MR
6.29		LC	10/07	LATE CHG
.23		MAP	11/07	MR
295.88		MR	11/07	
	410	MR	11/07	
	410	PD	11/07	METER MR
5.21		LC	11/07	LATE CHG

Account Number 031-20-04401---1 Parcel# Backflow Required Y

Name US BORDER PATROL Add'l Inf

Mail Addr 2136 S NACO HWY

Service Addr NACO HIGHWAY BISBEE AZ 85603

Service Date 5/03/88 Inactive Date 0/00/00 SurePay Account Status

TRANSACTION HISTORY

Dollar Amount	Usage	Type	Bill Mo/Yr	Addl Info
	364	MR	12/06	
	364	PD	12/06	METER MR
4.31		LC	12/06	LATE CHG
281.32-		PMTP	1/07	1/15/07
.23		MAP	1/07	MR
336.07		MR	1/07	
	507	MR	1/07	
	507	PD	1/07	METER MR
4.49		LC	1/07	LATE CHG
340.79-		PMTP	2/07	2/02/07
.23		MAP	2/07	MR
402.80		MR	2/07	
	668	MR	2/07	
	667	PD	2/07	METER MR
403.03-		PMTP	3/07	3/05/07
.23		MAP	3/07	MR
344.78		MR	3/07	
	528	MR	3/07	
	529	PD	3/07	METER MR
345.01-		PMTP	4/07	4/06/07
.23		MAP	4/07	MR
351.41		MR	4/07	
	544	MR	4/07	
	543	PD	4/07	METER MR
351.64-		PMTP	5/07	5/02/07
.23		MAP	5/07	MR
320.32		MR	5/07	
	469	MR	5/07	
	469	PD	5/07	METER MR
320.55-		PMTP	6/07	6/01/07
.23		MAP	6/07	MR
357.21		MR	6/07	
	558	MR	6/07	
	558	PD	6/07	METER MR
357.44-		PMTP	7/07	7/03/07
.23		MAP	7/07	MR
342.71		MR	7/07	
	523	MR	7/07	
	523	PD	7/07	METER MR
342.94-		PMTP	8/07	8/06/07
.23		MAP	8/07	MR

ARIZONA WATER COMPANY
SUBMIT THIS PORTION WITH PAYMENT

P.O. Box 29098
Phoenix, AZ 85038-9098

Statement of Account

Please Make Checks Payable To: **Arizona Water Company**

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04401---1	1/04/2008	577.45	

PLEASE NOTE CHANGE OF ADDRESS

NAME _____ ☐ CS
ADD'L INFO _____ ☐ CK
ADDRESS _____ ☐ MO
CITY _____ ST _____ ZIP _____ _____

US BORDER PATROL
2136 S NACO HWY
BISBEE AZ 85603-6239

NCC

RETURN TOP LEFT PORTION WITH PAYMENT. PLEASE WRITE ACCOUNT NUMBER ON CHECK.

If a 'Past Due' amount is shown on your statement, please refer to the **PAST DUE** section on the reverse side of this bill.

0312004401-13000057745

KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS
031-20-04401---1	NACO HIGHWAY

CURRENT READ DATE	PREVIOUS READ DATE	DAYS IN BILLING PERIOD	DELINQUENT DATE
12/14/2007	11/30/2007	29	1/04/2008

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
PAST DUE IS NOW DELINQUENT				300.83	PAST DUE
				.22	MAP SURCHARGE
11	133620	133257	363	259.59	COMMERCIAL
				.24	WATER USAGE TAX
				16.57	TAXES
				577.45	TOTAL DUE

CIOUSD ES 1000 338624
IRO 9810006610
A 5000356362

300.83
$276.62 please pay

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	1251				
GALLONS USED YEAR AGO DAILY	1255	2006/12	364	2007/06	558
PERCENT CHANGE FROM LAST YEAR	-.2-	2007/01	507	2007/07	523
		2007/02	668	2007/08	469
FOR QUESTIONS OR SERVICE PLEASE CALL:		2007/03	528	2007/09	634
ARIZONA WATER COMPANY		2007/04	544	2007/10	468
BISBEE 520-432-5301		2007/05	469	2007/11	410
1345 S NACO HWY #A					
BISBEE AZ 85603					

PAST 12 MONTHS USAGE

WATER IS PRECIOUS, USE IT WISELY
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ARIZONA WATER COMPANY
SUBMIT THIS PORTION WITH PAYMENT

P.O. Box 29098
Phoenix, AZ 85038-9098

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04401---1	2/05/2008	254.26	

PLEASE NOTE CHANGE OF ADDRESS:

NAME _____ ☐ CS
ADD'L INFO _____ ☐ CK
ADDRESS _____ ☐ MO
CITY _____ ST _____ ZIP _____ _____

US BORDER PATROL
2136 S NACO HWY
BISBEE AZ. 85603-6236

03120044O1-13000025426

Statement of Account

Please Make Checks Payable To: **Arizona Water Company**

RETURN TOP LEFT PORTION WITH PAYMENT. PLEASE WRITE ACCOUNT NUMBER ON CHECK.

If a "Past Due" amount is shown on your statement, please refer to the **PAST DUE** section on the reverse ~~side of this bill~~.

KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS
031-20-04401---1	NACO HIGHWAY

CURRENT READ DATE	PREVIOUS READ DATE	DAYS IN BILLING PERIOD	DELINQUENT DATE
1/18/2008	12/19/2007	30	2/05/2008

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
PAST DUE IS NOW DELINQUENT:				4.41	PAST DUE
				.01CR	MAP SURCHARGE
11	133919	133620	299	234.69	COMMERCIAL
				.19	WATER USAGE TAX
				14.98	TAXES
				254.26	TOTAL DUE

I CERTIFY FOR PAYMENT
11/28/08
SIGNATURE DATE

CF ES 1000
0020 IRO 981000 6610
A 5000

AS A RESULT OF REQUIRED WATER TESTING AND THE ANNUAL REVIEW OF THOSE COSTS, THE MONITORING ASSISTANCE PROGRAM SURCHARGE HAS BEEN REVISED FROM $0.22 TO ($0.01) PER METER. THIS ONE-ONLY SURCHARGE WILL BE EFFECTIVE JANUARY 1, 2008.

A COPY OF THE SURCHARGE CALCULATION HAS BEEN REVIEWED BY THE ARIZONA CORPORATION COMMISSION AND IS AVAILABLE FOR REVIEW AT THE COMPANY'S LOCAL OFFICE.

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	996
GALLONS USED YEAR AGO DAILY	1690
PERCENT CHANGE FROM LAST YEAR	41.0-

PAST 12 MONTHS USAGE

2006/01	507	2007/07	523
2006/02	668	2007/08	469
2006/03	528	2007/09	634
2006/04	544	2007/10	468
2006/05	469	2007/11	410
2006/06	558	2007/12	363

FOR QUESTIONS OR SERVICE PLEASE CALL:
ARIZONA WATER COMPANY
BISBEE 520-432-5321
1345 S NACO HWY #A
BISBEE AZ 85603

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FOR PAYMENT OPTIONS VISIT OUR WEB SITE WWW.AZWATER.COM

ARIZONA WATER COMPANY FY07

P.O. Box 29098
Phoenix, AZ 85038-9098

SUBMIT THIS PORTION WIT[illegible]AYMENT

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04410---1	11/04/2006	201.76	

PLEASE NOTE CHANGE OF ADDRESS:

NAME ______________________ ☐ CS

ADD'L INFO ______________________ ☐ CK

ADDRESS ______________________ ☐ MO

CITY ____________ ST ______ ZIP ________ ________

US BORDER PATROL
1970 W AJO WAY
TUCSON AZ 85713-5605

0312004410-14000020176

Statement of Account

Please Make Checks Payable
To: **Arizona Water Company**

RETURN TOP LEFT PORTION WITH PAYMENT. PLEASE WRITE ACCOUNT NUMBER ON CHECK.

If a "Past Due" amount is shown on your statement, please refer to the **PAST DUE** section on the reverse ~~side of this bill.~~

KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS
031-20-04410---1	2136 S NACO HWY

CURRENT READ DATE	PREVIOUS READ DATE	DAYS IN BILLING PERIOD	DELINQUENT DATE
10/19/2006	9/20/2006	29	11/04/2006

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
				.18	MAP SURCHARGE
2261	61212	61043	169	189.37	COMMERCIAL
				.11	WATER USAGE TAX
				12.10	TAXES
				201.76	TOTAL DUE

RECEIVED

OCT 2 2006

LI 0020
ES 1000216359
IRO 9810005007
A 5000 226151

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	582				
GALLONS USED YEAR AGO DAILY	862	2005/10	250	2006/04	535
PERCENT CHANGE FROM LAST YEAR	32.4-	2005/11	286	2006/05	426
		2005/12	257	2006/06	347
FOR QUESTIONS OR SERVICE PLEASE CALL:		2006/01	205	2006/07	185
ARIZONA WATER COMPANY		2006/02	140	2006/08	189
BISBEE	520-432-5321	2006/03	297	2006/09	208

PAST 12 MONTHS USAGE (columns 3–6)

1345 S NACO HWY #A
BISBEE AZ 85603

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ARIZONA WATER COMPANY

P.O. Box 29098
Phoenix, AZ 85038-[illegible]8

SUBMIT THIS PORTION W[illegible] PAYMENT

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04410---1	12/06/2006	204.28	

PLEASE NOTE CHANGE OF ADDRESS:

NAME _____ ☐ CS

ADD'L INFO _____ ☐ CK

ADDRESS _____ ☐ MO

CITY_____ ST_____ ZIP _____ _____

US BORDER PATROL
1970 W AJO WAY
TUCSON AZ 85713-5605

031200441O-14000020428

Statement of Account

Please Make Checks Payable To: **Arizona Water Company**

RETURN TOP LEFT PORTION WITH PAYMENT. PLEASE WRITE ACCOUNT NUMBER ON CHECK.

If a "Past Due" amount is shown on your statement, please refer to the **PAST DUE** section on the reverse ~~side of this bill.~~

KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS
031-20-04410---1	2136 S NACO HWY

CURRENT READ DATE	PREVIOUS READ DATE	DAYS IN BILLING PERIOD	DELINQUENT DATE
11/20/2006	10/19/2006	32	12/06/2006

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
PAST DUE IS NOW DELINQUENT:				3.22	PAST DUE
				.18	MAP SURCHARGE
2261	61379	61212	167	188.72	COMMERCIAL
				.11	WATER USAGE TAX
				12.05	TAXES
				204.28	TOTAL DUE

LI 0020

NOV 29 2006

ES 1000 222796

IRO 9810003007

A 5000 23340

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	521
GALLONS USED YEAR AGO DAILY	893
PERCENT CHANGE FROM LAST YEAR	41.6-

PAST 12 MONTHS USAGE

2005/11	286	2006/05	426		
2005/12	257	2006/06	347		
2006/01	205	2006/07	185		
2006/02	140	2006/08	189		
2006/03	297	2006/09	208		
2006/04	535	2006/10	169		

FOR QUESTIONS OR SERVICE PLEASE CALL:
ARIZONA WATER COMPANY
BISBEE 520-432-5321
1345 S NACO HWY #A
BISBEE AZ 85603

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638.69

ARIZONA WATER COMPANY

P.O. Box 29098
Phoenix, AZ 85038-9098

SUBMIT THIS PORTION WITH PAYMENT

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	AMOUNT PAID
031-20-04410---1	1/04/2007	200.72	

PLEASE NOTE CHANGE OF ADDRESS:

NAME _____ ☐ CS

ADD'L INFO _____ ☐ CK

ADDRESS _____ ☐ MO

CITY_____ ST_____ ZIP _____ _____

US BORDER PATROL
1970 W AJO WAY
TUCSON AZ 85713-5605

031200441O-140000020072

Statement of Account

Please Make Checks Payable To: **Arizona Water Company**

RETURN TOP LEFT PORTION WITH PAYMENT. PLEASE WRITE ACCOUNT NUMBER ON CHECK.

If a "Past Due" amount is shown on your statement, please refer to the **PAST DUE** section on the reverse ~~side of this bill~~.

KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS
031-20-04410---1	2136 S NACO HWY

CURRENT READ DATE	PREVIOUS READ DATE	DAYS IN BILLING PERIOD	DELINQUENT DATE
12/19/2006	11/20/2006	29	1/04/2007

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
				.18	MAP SURCHARGE
2261	61545	61379	166	188.40	COMMERCIAL
				.11	WATER USAGE TAX
				~~12.03~~	TAXES
				200.72	TOTAL DUE

ES 1000 229837
IRO 9810005007
A 5000 240610

LI 0020

DEC 2006

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	572
GALLONS USED YEAR AGO DAILY	986
PERCENT CHANGE FROM LAST YEAR	35.4-

PAST 12 MONTHS USAGE

2005/12	257	2006/06	347		
2006/01	205	2006/07	185		
2006/02	140	2006/08	189		
2006/03	297	2006/09	208		
2006/04	535	2006/10	169		
2006/05	426	2006/11	167		

FOR QUESTIONS OR SERVICE PLEASE CALL:
ARIZONA WATER COMPANY
BISBEE 520-432-5321
1345 S NACO HWY #A
BISBEE AZ 85603

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ARIZONA WATER COMPANY

P.O. Box 29098
Phoenix, AZ 85038-9098

SUBMIT THIS PORTION WITH P[illegible]MENT

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04410---1	2/03/2007	212.95	

PLEASE NOTE CHANGE OF ADDRESS:

NAME _____ ☐ CS

ADD'L INFO _____ ☐ CK

ADDRESS _____ ☐ MO

CITY_____ ST_____ ZIP _____ _____

US BORDER PATROL
1970 W AJO WAY
TUCSON AZ 85713-5605

2007

031200441O-14000021295

Statement of Account

Please Make Checks Payable To: **Arizona Water Company**

RETURN TOP LEFT PORTION WITH PAYMENT. PLEASE WRITE ACCOUNT NUMBER ON CHECK.

If a "Past Due" amount is shown on your statement, please refer to the **PAST DUE** section on the reverse side of this bill.

KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS
031-20-04410-/--1	2136 S NACO HWY

CURRENT READ DATE	PREVIOUS READ DATE	DAYS IN BILLING PERIOD	DELINQUENT DATE
1/18/2007	12/19/2006	30	2/03/2007

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
PAST DUE IS NOW DELINQUENT:				3.20	PAST DUE
				.22	MAP SURCHARGE
2261	61737	61545	192	196.83	COMMERCIAL
				.12	WATER USAGE TAX
				12.58	TAXES
				212.95	TOTAL DUE

LI E3 1000237075
0020 IRO 9810005007
A S00 0 248121

AS A RESULT OF REQUIRED WATER TESTING AND THE ANNUAL REVIEW OF THOSE COSTS, THE MONITORING ASSISTANCE PROGRAM SURCHARGE HAS BEEN REVISED FROM $0.18 TO $0.22 PER METER. THIS MONTHLY SURCHARGE WILL BE EFFECTIVE JANUARY 1, 2007.

A COPY OF THE SURCHARGE CALCULATION HAS BEEN REVIEWED BY THE ARIZONA CORPORATION COMMISSION AND IS AVAILABLE FOR REVIEW AT THE COMPANY'S LOCAL OFFICE.

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	640
GALLONS USED YEAR AGO DAILY	683
PERCENT CHANGE FROM LAST YEAR	6.2-

PAST 12 MONTHS USAGE

2006/01	205	2006/07	185
2006/02	140	2006/08	189
2006/03	297	2006/09	208
2006/04	535	2006/10	169
2006/05	426	2006/11	167
2006/06	347	2006/12	166

FOR QUESTIONS OR SERVICE PLEASE CALL:
ARIZONA WATER COMPANY

BISBEE 520-432-5321
1345 S NACO HWY #A
BISBEE AZ 85603

WATER IS PRECIOUS, USE IT WISELY

VISIT OUR WEB SITE WWW.AZWATER.COM

ARIZONA WATER COMPANY

P.O. Box 29098
Phoenix, AZ 85038-[illegible]

SUBMIT THIS PORTION W[illegible] PAYMENT

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04410---1	3/08/2007	201.10	

PLEASE NOTE CHANGE OF ADDRESS:

NAME _____ ☐ CS

ADD'L INFO _____ ☐ CK

ADDRESS _____ ☐ MO

CITY_____ ST_____ ZIP _____ _____

US BORDER PATROL
1970 W AJO WAY
TUCSON AZ 85713-5605

031200441O-14000020110

Statement of Account

Please Make Checks Payable To: **Arizona Water Company**

RETURN TOP LEFT PORTION WITH PAYMENT. PLEASE WRITE ACCOUNT NUMBER ON CHECK.

If a "Past Due" amount is shown on your statement, please refer to the **PAST DUE** section on the reverse side of this bill.

KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS
031-20-04410---1	2136 S NACO HWY

CURRENT READ DATE	PREVIOUS READ DATE	DAYS IN BILLING PERIOD	DELINQUENT DATE
2/20/2007	1/18/2007	33	3/08/2007

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
				.22	MAP SURCHARGE
2261	61904	61737	167	188.72	COMMERCIAL
				.11	WATER USAGE TAX
				12.05	TAXES
				201.10	TOTAL DUE

ES 10002454O3

LF
0020

IRO 9810005007
A 5000257053

RECEIVED
MAR 2007
[illegible]

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	506
GALLONS USED YEAR AGO DAILY	424
PERCENT CHANGE FROM LAST YEAR	19.3

PAST 12 MONTHS USAGE

2006/02	140	2006/08	189		
2006/03	297	2006/09	208		
2006/04	535	2006/10	169		
2006/05	426	2006/11	167		
2006/06	347	2006/12	166		
2006/07	185	2007/01	192		

FOR QUESTIONS OR SERVICE PLEASE CALL:
ARIZONA WATER COMPANY
BISBEE 520-432-5321
1345 S NACO HWY #A
BISBEE AZ 85603

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ARIZONA WATER COMPANY

P.O. Box 29098
Phoenix, AZ 85038-9[illegible]

SUBMIT THIS PORTION WI[illegible] PAYMENT

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04410---1	4/04/2007	223.91	

PLEASE NOTE CHANGE OF ADDRESS:

NAME _____ ☐ CS

ADD'L INFO _____ ☐ CK

ADDRESS _____ ☐ MO

CITY_____ ST_____ ZIP _____ _____

US BORDER PATROL
1970 W AJO WAY
TUCSON AZ 85713-5605

031200441O-14000022391

Statement of Account

Please Make Checks Payable To: **Arizona Water Company**

RETURN TOP LEFT PORTION WITH PAYMENT. PLEASE WRITE ACCOUNT NUMBER ON CHECK.

If a "Past Due" amount is shown on your statement, please refer to the **PAST DUE** section on the reverse side of this bill.

KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS		
031-20-04410---1	2136 S NACO HWY		
CURRENT READ DATE	**PREVIOUS READ DATE**	**DAYS IN BILLING PERIOD**	**DELINQUENT DATE**
3/19/2007	2/20/2007	27	4/04/2007

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
				.22	MAP SURCHARGE
2261	62137	61904	233	210.12	COMMERCIAL
				.15	WATER USAGE TAX
				13.42	TAXES
				223.91	TOTAL DUE

MAR 262007

ES 1000253421

1209810005007

A 5000265816

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	862
GALLONS USED YEAR AGO DAILY	1100
PERCENT CHANGE FROM LAST YEAR	21.6-

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BISBEE 520-432-5321
1345 S NACO HWY #A
BISBEE AZ 85603

PAST 12 MONTHS USAGE

2006/03	297	2006/09	208		
2006/04	535	2006/10	169		
2006/05	426	2006/11	167		
2006/06	347	2006/12	166		
2006/07	185	2007/01	192		
2006/08	189	2007/02	167		

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3290.93

ARIZONA WATER COMPANY

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P.O. Box 29098
Phoenix, AZ 85038-9098

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04410---1	5/04/2007	234.59	

PLEASE NOTE CHANGE OF ADDRESS:

NAME ______ ☐ CS
ADD'L INFO ______ ☐ CK
ADDRESS ______ ☐ MO
CITY ______ ST ______ ZIP ______

US BORDER PATROL
1970 W AJO WAY
TUCSON AZ 85713-5605

APR 24 2007

0312004410-14000023459

Statement of Account

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KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS
031-20-04410---1	2136 S NACO HWY

CURRENT READ DATE	PREVIOUS READ DATE	DAYS IN BILLING PERIOD	DELINQUENT DATE
4/18/2007	3/19/2007	30	5/04/2007

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
PAST DUE IS NOW DELINQUENT:				3.57	PAST DUE
				.22	MAP SURCHARGE
2261	62390	62137	253	216.80	COMMERCIAL
				.16	WATER USAGE TAX
				13.84	TAXES
				234.59	TOTAL DUE

E3 1000261369

UI
0020

IRO 9810005007

A 5000 274134

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	843				
GALLONS USED YEAR AGO DAILY	1783	2006/04	535	2006/10	169
PERCENT CHANGE FROM LAST YEAR	52.7-	2006/05	426	2006/11	167
		2006/06	347	2006/12	166
FOR QUESTIONS OR SERVICE PLEASE CALL:		2006/07	185	2007/01	192
ARIZONA WATER COMPANY		2006/08	189	2007/02	167
BISBEE	520-432-5321	2006/09	208	2007/03	233

PAST 12 MONTHS USAGE

1345 S NACO HWY #A
BISBEE AZ 85603

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2907.21

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P.O. Box 29098
Phoenix, AZ 85038-9

Statement of Account

Please Make Checks Payable To: **Arizona Water Company**

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04410---1	6/02/2007	254.24	

PLEASE NOTE CHANGE OF ADDRESS:

NAME _____ ☐ CS
ADD'L INFO _____ ☐ CK
ADDRESS _____ ☐ MO
CITY _____ ST _____ ZIP _____ _____

RETURN TOP LEFT PORTION WITH PAYMENT. PLEASE WRITE ACCOUNT NUMBER ON CHECK.

US BORDER PATROL
1970 W AJO WAY
TUCSON AZ 85713-5605

MAY 25 2007

If a "Past Due" amount is shown on your statement, please refer to the **PAST DUE** section on the reverse side of this bill.

03120044l0-14000025424

KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS
031-20-04410---1	2136 S NACO HWY

CURRENT READ DATE	PREVIOUS READ DATE	DAYS IN BILLING PERIOD	DELINQUENT DATE
5/17/2007	4/18/2007	29	6/02/2007

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
				.22	MAP SURCHARGE
2261	62699	62390	309	238.58	COMMERCIAL
				.20	WATER USAGE TAX
				15.24	TAXES
				254.24	TOTAL DUE

ES 1000270677
LF 0020 IRO 9810005007
A 50002B3823

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	1065
GALLONS USED YEAR AGO DAILY	1468
PERCENT CHANGE FROM LAST YEAR	27.4-

PAST 12 MONTHS USAGE

2006/05	426	2006/11	167		
2006/06	347	2006/12	166		
2006/07	185	2007/01	192		
2006/08	189	2007/02	167		
2006/09	208	2007/03	233		
2006/10	169	2007/04	253		

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BISBEE AZ 85603

4 513.49

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Phoenix, AZ 85038-9098

SUBMIT THIS PORTION WITH PAYMENT

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04410---1	7/05/2007	224.61	

PLEASE NOTE CHANGE OF ADDRESS:

NAME _____ ☐ CS

ADD'L INFO _____ ☐ CK

ADDRESS _____ ☐ MO

CITY_____ ST_____ ZIP _____ _____

US BORDER PATROL
1970 W AJO WAY
TUCSON AZ 85713-5605

03120044l0-14000022461

Statement of Account

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KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS		
031-20-04410---1	2136 S NACO HWY		
CURRENT READ DATE	**PREVIOUS READ DATE**	**DAYS IN BILLING PERIOD**	**DELINQUENT DATE**
6/19/2007	5/17/2007	33	7/05/2007

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
				.22	MAP SURCHARGE
2261	62934	62699	235	210.77	COMMERCIAL
				.15	WATER USAGE TAX
				13.47	TAXES
				224.61	TOTAL DUE

E3 100 0279730

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IR0 9810005007

A 500 0293507

NOTICE

COPIES OF THE ARIZONA WATER COMPANY'S 2006 WATER QUALITY REPORT ARE NOW AVAILABLE AT: THE LOCAL OFFICE SHOWN BELOW OR BY ACCESSING IT VIA OUR WEBSITE AT WWW.AZWATER.COM. ARIZONA WATER COMPANY RECOMMENDS THOSE CUSTOMERS SERVING MORE THAN ONE HOUSING UNIT POST A COPY OF THE 2006 WATER QUALITY REPORT IN A CONSPICUOUS PLACE.

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	712
GALLONS USED YEAR AGO DAILY	1051
PERCENT CHANGE FROM LAST YEAR	32.2-

PAST 12 MONTHS USAGE

2006/06	347	2006/12	166
2006/07	185	2007/01	192
2006/08	189	2007/02	167
2006/09	208	2007/03	233
2006/10	169	2007/04	253
2006/11	167	2007/05	309

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BISBEE AZ 85603

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$0 95.54

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ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04410---1	8/04/2007	202.14	

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ADD'L INFO _____ ☐ CK

ADDRESS _____ ☐ MO

CITY_____ ST_____ ZIP _____ _____

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031200441O-14000020214

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ACCOUNT NUMBER	SERVICE ADDRESS		
031-20-04410---1	2136 S NACO HWY		
CURRENT READ DATE	**PREVIOUS READ DATE**	**DAYS IN BILLING PERIOD**	**DELINQUENT DATE**
7/19/2007	6/19/2007	30	8/04/2007

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
				.22	MAP SURCHARGE
2261	63104	62934	170	189.69	COMMERCIAL
				.11	WATER USAGE TAX
				12.12	TAXES
				202.14	TOTAL DUE

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PAYMENT SERVICE OFFICE

ES 100 0 289798
IRO 9810005007
A S000304179

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY 566
GALLONS USED YEAR AGO DAILY 616
PERCENT CHANGE FROM LAST YEAR 8.1-

PAST 12 MONTHS USAGE

2006/07	185	2007/01	192		
2006/08	189	2007/02	167		
2006/09	208	2007/03	233		
2006/10	169	2007/04	253		
2006/11	167	2007/05	309		
2006/12	166	2007/06	235		

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BISBEE AZ 85603

$202.17

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ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04410---1	9/04/2007	202.94	

PLEASE NOTE CHANGE OF ADDRESS:

NAME ______________________ ☐ CS

ADD'L INFO ______________________ ☐ CK

ADDRESS ______________________ ☐ MO

CITY ______________ ST ______ ZIP ________ ________

US BORDER PATROL
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TUCSON AZ 85713-5605

0312004410-14000020294

Statement of Account

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ACCOUNT NUMBER	SERVICE ADDRESS
031-20-04410---1	2136 S NACO HWY

CURRENT READ DATE	PREVIOUS READ DATE	DAYS IN BILLING PERIOD	DELINQUENT DATE
8/17/2007	7/19/2007	29	9/04/2007

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
PAST DUE IS NOW DELINQUENT:				3.22	PAST DUE
				.22	MAP SURCHARGE
2261	63267	63104	163	187.42	COMMERCIAL
				.11	WATER USAGE TAX
				11.97	TAXES
				202.94	TOTAL DUE

LI20 1RO98000S007 ES1000299857 A5000313758

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	562
GALLONS USED YEAR AGO DAILY	651
PERCENT CHANGE FROM LAST YEAR	13.6-

PAST 12 MONTHS USAGE

2006/08	189	2007/02	167
2006/09	208	2007/03	233
2006/10	169	2007/04	253
2006/11	167	2007/05	309
2006/12	166	2007/06	235
2007/01	192	2007/07	170

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BISBEE AZ 85603

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Phoenix, AZ [illegible]38-9098

Statement of Account

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ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04410---1	10/06/2007	199.17	

PLEASE NOTE CHANGE OF ADDRESS:

NAME _____ ☐ CS
ADD'L INFO _____ ☐ CK
ADDRESS _____ ☐ MO
CITY _____ ST _____ ZIP _____ _____

US BORDER PATROL
1970 W AJO WAY
TUCSON AZ 85713-5605

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ACCOUNT NUMBER	SERVICE ADDRESS
031-20-04410---1	2136 S NACO HWY

CURRENT READ DATE	PREVIOUS READ DATE	DAYS IN BILLING PERIOD	DELINQUENT DATE
9/20/2007	8/17/2007	34	10/06/2007

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
PAST DUE IS NOW DELINQUENT:				3.24	PAST DUE
				.22	MAP SURCHARGE
2261	63419	63267	152	183.86	COMMERCIAL
				.10	WATER USAGE TAX
				11.75	TAXES
				199.17	TOTAL DUE

ES 1000311676
LI 0020 IRO 981000 5007
A 5000327649

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	447
GALLONS USED YEAR AGO DAILY	611
PERCENT CHANGE FROM LAST YEAR	26.8-

PAST 12 MONTHS USAGE

2006/09	208	2007/03	233		
2006/10	169	2007/04	253		
2006/11	167	2007/05	309		
2006/12	166	2007/06	235		
2007/01	192	2007/07	170		
2007/02	167	2007/08	163		

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BISBEE 520-432-5321
1345 S NACO HWY #A
BISBEE AZ 85603

701.50

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P.O. Box 29098
Phoenix, AZ 85038-9098

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04410---1	11/06/2007	225.02	

PLEASE NOTE CHANGE OF ADDRESS

NAME ______
ADD'L INFO ______
ADDRESS ______
CITY ______ ST ______ ZIP ______

☐ CS
☐ CK
☐ MO

US BORDER PATROL
2136 S NACO HWY
BISBEE AZ 85603-6236

0312004410-14000022502

Statement of Account

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ACCOUNT NUMBER	SERVICE ADDRESS
031-20-04410---1	2136 S NACO HWY

CURRENT READ DATE	PREVIOUS READ DATE	DAYS IN BILLING PERIOD	DELINQUENT DATE
10/19/2007	9/20/2007	29	11/06/2007

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
PAST DUE IS NOW DELINQUENT:				3.18	PAST DUE
2261	63646	63419	227	.22	MAP SURCHARGE
				208.17	COMMERCIAL
				.15	WATER USAGE TAX
				13.30	TAXES
				225.02	TOTAL DUE

PAY $228.62

ES 1000325544
IRO 9810006610
A 500034267S
LI 0020

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	782
GALLONS USED YEAR AGO DAILY	582
PERCENT CHANGE FROM LAST YEAR	34.3

PAST 12 MONTHS USAGE

2006/10	169	2007/04	253
2006/11	167	2007/05	309
2006/12	166	2007/06	235
2007/01	192	2007/07	170
2007/02	167	2007/08	163
2007/03	233	2007/09	152

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BISBEE 520-432-5321
1345 S NACO HWY #A
BISBEE AZ 85603

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Account Number 031-20-04410---1 Parcel# NA Backflow Required Y
Name US BORDER PATROL Add"l Inf
Mail Addr 2136 S NACO HWY
Service Addr 2136 S NACO HWY BISBEE AZ 85603

Service Date 9/18/02 Inactive Date 0/00/00 SurePay Account Status

Transactions Not Yet Billed

Date	Description	Usage	Amount		
				435.60	Previous Balance
11/26/07	PMTP		228.62-		
12/10/07	LATE CHG		3.30		
				210.28	Total Due

ES 100035462
IRO 981006610
A 500053192

Account Number 031-20-04410---1 Parcel# NA Backflow Required Y

Name US BORDER PATROL Add"l Inf

Mail Addr 2136 S NACO HWY

Service Addr 2136 S NACO HWY BISBEE AZ 85603

Service Date 9/18/02 Inactive Date 0/00/00 SurePay Account Status

TRANSACTION HISTORY

Dollar Amount	Usage	Type	Bill Mo/Yr	Addl Info
	166	MR	12/06	
	137	PD	12/06	METER MR
200.72-		PMTP	1/07	1/15/07
.23		MAP	1/07	MR
209.52		MR	1/07	
	192	MR	1/07	
	174	PD	1/07	METER MR
3.20		LC	1/07	LATE CHG
212.95-		PMTP	2/07	2/06/07
.23		MAP	2/07	MR
200.87		MR	2/07	
	167	MR	2/07	
	139	PD	2/07	METER MR
201.10-		PMTP	3/07	3/08/07
.23		MAP	3/07	MR
223.68		MR	3/07	
	233	MR	3/07	
	154	PD	3/07	METER MR
223.91-		PMTP	4/07	4/09/07
.23		MAP	4/07	MR
230.79		MR	4/07	
	253	MR	4/07	
	194	PD	4/07	METER MR
3.57		LC	4/07	LATE CHG
234.59-		PMTP	5/07	5/02/07
.23		MAP	5/07	MR
254.01		MR	5/07	
	309	MR	5/07	
	271	PD	5/07	METER MR
254.24-		PMTP	6/07	6/04/07
.23		MAP	6/07	MR
224.38		MR	6/07	
	235	MR	6/07	
	216	PD	6/07	METER MR
224.61-		PMTP	7/07	7/06/07
.23		MAP	7/07	MR
201.91		MR	7/07	
	170	MR	7/07	
	171	PD	7/07	METER MR
202.14-		PMTP	8/07	8/13/07
.23		MAP	8/07	MR

Account Number 031-20-04410---1 Parcel# NA Backflow Required Y

Name US BORDER PATROL Add"l Inf

Mail Addr 2136 S NACO HWY

Service Addr 2136 S NACO HWY BISBEE AZ 85603

Service Date 9/18/02 Inactive Date 0/00/00 SurePay Account Status

TRANSACTION HISTORY

Dollar Amount	Usage	Type	Bill Mo/Yr	Addl Info
199.49		MR	8/07	
	163	MR	8/07	
	163	PD	8/07	METER MR
3.22		LC	8/07	LATE CHG
202.94-		PMTP	9/07	9/10/07
.23		MAP	9/07	MR
195.70		MR	9/07	
	152	MR	9/07	
	152	PD	9/07	METER MR
3.24		LC	9/07	LATE CHG
199.17-		PMTP	10/07	10/22/07
.23		MAP	10/07	MR
221.61		MR	10/07	
	227	MR	10/07	
	227	PD	10/07	METER MR
3.18		LC	10/07	LATE CHG
.23		MAP	11/07	MR
206.75		MR	11/07	
	184	MR	11/07	
	184	PD	11/07	METER MR
3.60		LC	11/07	LATE CHG

ARIZONA WATER COMPANY
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P.O. Box 29098
Phoenix, AZ 85038-9098

Statement of Account

Please Make Checks Payable To: **Arizona Water Company**

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04410---1	1/04/2008	394.80	

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ADD'L INFO _____ ☐ CK
ADDRESS _____ ☐ MO
CITY _____ ST _____ ZIP _____

US BORDER PATROL
2136 S NACO HWY
BISBEE AZ 85603-6236

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ACCOUNT NUMBER	SERVICE ADDRESS
031-20-04410---1	2136 S NACO HWY

CURRENT READ DATE	PREVIOUS READ DATE	DAYS IN BILLING PERIOD	DELINQUENT DATE
12/19/2007	11/20/2007	29	1/04/2008

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
PAST DUE IS NOW DELINQUENT.				210.28	PAST DUE
				.22	MAP SURCHARGE
2261	63949	63830	119	173.16	COMMERCIAL
				.08	WATER USAGE TAX
				11.06	TAXES
				394.80	TOTAL DUE

I0080 ES1000 339205
IRO 9810006610
A 5000 356987

210.28

$184.52 please pay

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	410				
GALLONS USED YEAR AGO DAILY	572	2006/12	166	2007/06	235
PERCENT CHANGE FROM LAST YEAR	28.3-	2007/01	192	2007/07	170
		2007/02	167	2007/08	163
FOR QUESTIONS OR SERVICE PLEASE CALL:		2007/03	233	2007/09	152
ARIZONA WATER COMPANY		2007/04	253	2007/10	227
BISBLE	520-432-5321	2007/05	309	2007/11	184
1345 S NACO HWY #A					
BISBEE AZ 85603					

PAST 12 MONTHS USAGE

WATER IS PRECIOUS, USE IT WISELY

FOR PAYMENT OPTIONS VISIT OUR WEB SITE WWW.AZWATER.COM

NCO

ARIZONA WATER COMPANY
SUBMIT THIS PORTION WITH PAYMENT

P.O. Box 29098
Phoenix, AZ 85038-9098

Statement of Account

Please Make Checks Payable To: **Arizona Water Company**

ACCOUNT NUMBER	DELINQUENT DATE	PAY THIS AMOUNT	ENTER AMOUNT PAID
031-20-04410---1	2/05/2008	194.49	

PLEASE NOTE CHANGE OF ADDRESS:

NAME _____ ☐ CS
ADD'L INFO _____ ☐ CK
ADDRESS _____ ☐ MO
CITY _____ ST _____ ZIP _____ _____

US BORDER PATROL
2136 S NACO HWY
BISBEE AZ 85603-6236

RETURN TOP LEFT PORTION WITH PAYMENT. PLEASE WRITE ACCOUNT NUMBER ON CHECK.

If a "Past Due" amount is shown on your statement, please refer to the **PAST DUE** section on the reverse side of this bill.

031200441O-14000019449

KEEP THIS PORTION FOR YOUR RECORDS

ACCOUNT NUMBER	SERVICE ADDRESS
031-20-04410---1	2136 S NACO HWY

CURRENT READ DATE	PREVIOUS READ DATE	DAYS IN BILLING PERIOD	DELINQUENT DATE
1/18/2008	12/19/2007	30	2/05/2008

METER NUMBER	METER READING CURRENT	METER READING PREVIOUS	GALLONS USED IN HUNDREDS	AMOUNT BILLED	TRANSACTION TYPE
PAST DUE IS NOW DELINQUENT:				2.95	PAST DUE
				.01CR	MAP SURCHARGE
2261	64089	63949	140	179.97	COMMERCIAL
				.09	WATER USAGE TAX
				11.49	TAXES
				194.49	TOTAL DUE

I CERTIFY FOR PAYMENT
SIGNATURE DATE 1/28/08

ES (000
CF IRO 9810006610
0020 A 5800

AS A RESULT OF REQUIRED WATER TESTING AND THE ANNUAL REVIEW OF THOSE COSTS, THE MONITORING ASSISTANCE PROGRAM SURCHARGE HAS BEEN REVISED FROM $0.22 TO ($0.01) PER METER. THIS MONTHLY SURCHARGE WILL BE EFFECTIVE JANUARY 1, 2008.

A COPY OF THE SURCHARGE CALCULATION HAS BEEN REVIEWED BY THE ARIZONA CORPORATION COMMISSION AND IS AVAILABLE FOR REVIEW AT THE COMPANY'S LOCAL OFFICE.

THIS BILL IS NOW DUE AND PAYABLE

GALLONS USED DAILY	466
GALLONS USED YEAR AGO DAILY	640
PERCENT CHANGE FROM LAST YEAR	27.1-

PAST 12 MONTHS USAGE

		2007/01	192	2007/07	170
		2007/02	167	2007/08	163
		2007/03	233	2007/09	152
		2007/04	253	2007/10	227
		2007/05	309	2007/11	184
		2007/06	235	2007/12	119

FOR QUESTIONS OR SERVICE PLEASE CALL:
ARIZONA WATER COMPANY
BISBEE 520-432-5321
1345 S NACO HWY #A
BISBEE AZ 85603

WATER IS PRECIOUS, USE IT WISELY

FOR PAYMENT OPTIONS VISIT OUR WEB SITE WWW.AZWATER.COM

APPENDIX F

USBP NACO STATION RAINWATER CAPTURE CALCULATIONS

Estimate of Total Rainfall Runoff Captured by Proposed On Site Retention Ponds
Naco Border Patrol Station
August 20, 2009

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Totals
Rainfall	in	1.18	1.2	1.01	0.46	0.22	0.7	4.03	4.64	1.98	1.05	0.82	1.34	18.63
Runoff, Q	in	0.66	0.68	0.52	0.12	0.01	0.27	3.36	3.96	1.39	0.55	0.37	0.80	12.69
Runoff Volume	ft^3	96,033	98,538	75,167	16,906	1,801	39,897	488,505	575,583	201,251	80,001	53,008	116,316	1,843,006
Retention Pond(s) Volume	ft^3	378,972	378,972	378,972	378,972	378,972	378,972	378,972	378,972	378,972	378,972	378,972	378,972	
Captured Volume	ft^3	96,033	98,538	75,167	16,906	1,801	39,897	378,972	378,972	201,251	80,001	53,008	116,316	1,536,862
Captured Volume	ac-ft	2	2	2	0	0	1	9	9	5	2	1	3	35

CN = 94.1 composite score from TC calculation spreadsheet for 40 acre site
S = 1000/CN - 10 (from TR-55 "Urban Hydrology for Small Watersheds")
S = 0.6
Q = $(P-0.2S)^2/(P+0.8S)$ (from TR-55 "Urban Hydrology for Small Watersheds")
A = 40 acre (site limits)

This estimate is a gross approximation of the total runoff captured by the on site retention ponds. It assumes that all of the rainfall falls in one event, which may or may not occur. The calculations indicate that the retention ponds are sized large enough to capture the small rain events that typically occur from September through June, but the large rain events typically experienced in July and August are larger storm events than the ponds are sized for. This is reasonable because the ponds were sized for the 100 year, 1 hour event, which is based on a total precipitation of 2.6 inches, and not the 4+ inches that July and August average. This estimate is only good as a general discussion point and is not suitable as a detailed engineering analysis of the runoff volume retained.

APPENDIX G

NACO WATER COMPANY RECORDS

Naco Water Company - 2007

Account: 36505

Acct #	Name	Meter #	Read Date	Usage
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	5/19/2003	0
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	6/17/2003	0
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	7/16/2003	200
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	8/18/2003	100
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	9/17/2003	200
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	10/14/2003	100
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	11/17/2003	100
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	12/17/2003	100
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	1/19/2004	100
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	2/17/2004	200
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	3/17/2004	100
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	4/19/2004	300
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	5/17/2004	300
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	6/17/2004	400
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	7/19/2004	300
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	8/18/2004	300
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	9/20/2004	200
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	10/19/2004	300
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	11/18/2004	300
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	12/16/2004	12400
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	1/18/2005	400
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	2/17/2005	1700
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	3/17/2005	1200
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	4/18/2005	600
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	5/17/2005	400
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	6/20/2005	400
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	7/20/2005	600
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	8/22/2005	200
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	9/21/2005	200
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	10/21/2005	400
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	11/21/2005	300
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	12/21/2005	300
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	1/24/2006	500
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	2/23/2006	500
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	3/23/2006	300
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	4/20/2006	400
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	5/22/2006	300
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	6/22/2006	300
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	7/20/2006	300
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	8/22/2006	300
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	9/25/2006	300
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	10/25/2006	200
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	11/21/2006	100
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	12/21/2006	200
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	1/23/2007	300
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	2/26/2007	300
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	3/23/2007	400
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	4/24/2007	1500
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	5/23/2007	200
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	6/21/2007	400
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	7/23/2007	300

Acct #	Name	Meter #	Read Date	Usage
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	8/23/2007	1400
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	9/24/2007	200
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	10/23/2007	200
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	11/20/2007	200
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	12/20/2007	0
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	1/23/2008	0
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	2/25/2008	0
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	3/25/2008	200
36505	GSA FINANCE DIV UTILITIES UNIT	48926684	4/24/2008	300