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Mining Records Curator
Arizona Geological Survey
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Arizona Department of Mines and Mineral Resources Mining Collection

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10/21/97

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: CLEMENTINE

ALTERNATE NAMES:

MARICOPA COUNTY MILS NUMBER: 711

LOCATION: TOWNSHIP 5 N RANGE 1 W SECTION 9 QUARTER E2
LATITUDE: N 33DEG 47MIN 22SEC LONGITUDE: W 112DEG 21MIN 50SEC
TOPO MAP NAME: BALDY MTN - 7.5 MIN

CURRENT STATUS: EXP PROSPECT

COMMODITY:
GOLD
SILVER

BIBLIOGRAPHY:
ADMMR CLEMENTINE FILE
ADMMR CHARLOTTE GROUP FILE
AGS 1990 FALL FIELD TRIP GUIDE

Processing: Processing plant: c/o United Dessicants, P.O. Box 105, Belen, NM 87002, 505/864-6691.

CHETO SECTION 16 MINE

**** Bentonite OP

Location: 5 mi SE of Sanders, AZ
Operator: GSA Resources Inc.
P.O. Box 509, Cortaro, AZ 85652
Telephone: 602/297-4330
Contact: Ted H. Eyde, President
Production: Produces desiccant grade clays.

CHICAGO PIT

**** Perlite OP

Location: 2 mi SW of Superior, AZ
Operator: Nord Perlite Company
Box 127, Superior, AZ 85273
Telephone: 602/689-5631
Contact: Louis R. Lucero, Plant Manager
Admin.: Nord Resources Corporation
8150 Washington Village Drive, Dayton, OH 45458
Telephone: 513/433-6307 **Fax:** 513/435-7285
Contact: Dr. Edgar F. Cruft, Chairman
Processing: Plant is at Superior, on Silver King Mine Road.
Employees: 5

CLARKDALE QUARRY

**** Limestone OP

Location: NW of Clarkdale, AZ
Operator: Phoenix Cement Company
P.O. Box 428, Clarkdale, AZ 86324
Telephone: 602/634-2261
Owners: Phoenix Cement Company, owned by the Salt River Indian Tribe
Admin.: Phoenix Cement Company
2505 W. Beryl, Phoenix, AZ 85069
Telephone: 602/264-0511
Contact: John N. Stoss, President
Employees: 107
Personnel: John Conway, VP Operations, Plant Mgr.
Frank Contreras, Purch. Agent
Cliff Ayres, Quarry/Crushing Mgr.
Joe D'Avignon, Asst. Plant Mgr., Maint.
Tom Gibbons, Asst. Plant Mgr., Eng.
Richard Huffman, Controller
Richard Gardner, Operations/Shipping

CLEMENTINE MINE

S, *** Au

Location: 32 mi NW of Phoenix, AZ
Owners: Jefferson Valley Gold Mines Inc. (100%)
Admin.: Jefferson Valley Gold Mines Inc.
906, 101 Richmond Street W., Toronto, Ontario Canada M5H 1T1
Telephone: 416/364-9126 **Fax:** 416/364-2527
Contact: Irwin Singer, President
Comments: East-West Resources, Inc., California, terminated its joint venture participation after processing a bulk sample of ore in early 1989.

COCHISE COPPER PROJECT

* Cu HL

Location: Near Bisbee, Cochise County, AZ
Operator: Phelps Dodge Corporation
Highway 92, Bisbee, AZ 85603
Telephone: 602/432-3621 **Fax:** 602/432-5252
Contact: J. H. Ladd, General Superintendent
Owners: Phelps Dodge Corporation (100%)
Admin.: Phelps Dodge Corporation
2600 N. Central Avenue, Phoenix, AZ 85004-3014
Telephone: 602/234-8100
Processing: Heap leach target and recovery by SX-EW. Engineering studies and cost estimates being prepared.

COD

*** Au UG

Location: 15 mi NW of Kingman, AZ
Admin.: Alanco Ltd.
7345 E. Acoma Drive, Scottsdale, AZ 85260
Telephone: 602/991-8540
Employees: 5
Personnel: Chuck Porter, Mgr.
Comments: Under development.

COLUMBIA GOLD MILL

Au Mill

Location: Yavapai County, AZ
Operator: Columbia Gold Production Company Inc.
P.O. Box 41773, Phoenix, AZ 85080
Employees: 2

CONGRESS GOLD MINE

*** Au UG

Location: 65 mi NW of Phoenix, 16 mi NW of Wickenburg, Yavapai County, AZ
Operator: Malartic Hygrade U.S. Inc.
P.O. Box 361, Congress, AZ 85332
Telephone: 602/427-3633
Contact: James Sullivan, Vice President Operations
Owners: Malartic Hygrade Gold Mines (Canada) Ltd. (100%)
Admin.: Malartic Hygrade Gold Mines (Canada) Ltd.
2402, 1 Dundas Street W., Toronto, Ontario Canada M5G 1Z3
Telephone: 416/977-4653 **Fax:** 416/977-8335
Contact: Marc C. Henderson, President
Geology: Quartz and carbonate veins filling two faults in granite rock. Congress vein is mineralized to a depth of at least 3,900 ft and is 3 to 7 ft thick, 1,300 ft long; Niagara vein is 1 to 10 ft thick along 4,000 ft strike length and is open at depth.
Reserves: Proven and probable reserves of 462,000 st @ 0.29 oz Au/st. Additional reserve potential to double current 5 year mine life.
Contained: 134,000 oz Au
Production: 1989: 1369 oz Au; 1988: 16,176 oz Au in first 8 months of production. Mine shut down early 1989. Malartic Hygrade, the new owner, anticipates production of 30,000 oz Au annually.
Start-up: 1988
Mine: 54,579 st ore @ 0.322 oz Au/st (243 stpd) mined in 1988. Mining is by end slicing stoping method. Sub-levels are developed at 28 ft vertical intervals in the vein. Ore is currently stockpiled on the surface awaiting commissioning of the new 350 stpd mill. Ore was previously trucked to a smelter 350 mi away and used as a siliceous flux. Trucking was discontinued early 1989 due to high trucking costs.

FVDS.19

Department of Mines and Mineral Resources

MINE AND PROSPECT FIELD VISIT DATA SUMMARY

Sheet 1 of 2

COMMODITIES: Au, Ag

MILS ID No.: Maricopa 711 **DATE:** 3-23-89

ENGINEER: Nyal Niemuth and Ken Phillips

INFORMATION FROM: Bob Hick's brother

I. MINE NAME: Clementine **OTHER POSSIBLE NAMES INCL. ANY CLAIM NAMES NOTED:**

II. LOCATION: T 5N R 1W **SEC(S):** 9 **MINE DISTRICT**

ELEV.: **COUNTY** Maricopa **TOPO QUAD.** Baldy Mtn.

DIRECTIONS: Cross the Central Arizona Project going north. Then go west south of Twin Buttes to the mine road.

MAP ATTACHED No

III. OWNERSHIP: NAME Bob Hicks **PHONE:** 948-7823

ADDRESS: 6440 E. McDonald, Scottsdale AZ (PARADISE VALLEY)

COMPANY NAME IF ANY:

PERTINENT PEOPLE: Information from Bob Hicks' brother, who reported recent activity by East West Minerals, Incorporated.

IV. PROPERTY AND HOLDINGS: Unpatented mineral claims

V. PAST PRODUCTION : Known

VI. CURRENT STATUS: In exploration

VII. WORKINGS: Old underground workings not visitied. Pit presently is 250' x 500', elongated to Southwest and about 25' deep at NW end of pit Bulk sample of - 200 tons mined this winter.

VIII GEOLOGY AND MINERALOGY: DEPOSIT TYPE: Low angle veins and fractures

LENGTH: ? **WIDTH** ? **VEIN STRIKE** ~ N45W **DIP** up to 55 SW
Also intersecting NE structure or vein.

HOST ROCK: Yavapai schist

ECONOMIC MINERALS: Au, Ag. Noted in newly mined area is abundant Mn Ox with Mn calcite. Greater than 5′ thick in oversize boulders

COMMENTS: Fractured schist strikes N30E dipping vertical. Low angle calcite vein is principal mineralized feature. Additional mineralization is hematite in plane of schist and low to high angle less than 2" calcite - quartz-hematite veinlets.

IX. EQUIPMENT ON SIGHT: Photo #6 to SW overview of pits head frame in background. Photo #7 overview to east of heap and merrill crowe leach plant.

X. SAMPLING: NOTE TYPE IF ANY, DRILLING? 2 recent holes, estimated to be to be less than than 50′ by the amounts of drill cuttings.

XI. REFERENCES AND REMARKS:

REGISTERED ASSAYER CERTIFICATE NO. 1435 ROBERT G. CROOK Date Signed 12-27-84 ARIZONA, U.S.A.

IRON KING ASSAY OFFICE

ASSAY CERTIFICATE

BOX 56 — PHONE 632-7410
HUMBOLDT, ARIZONA 86329

REGISTERED ASSAYER CERTIFICATE NO. 2978 WALTER G. STATLER Date Signed ..... ARIZONA, U.S.A.

ASSAY MADE FOR: Arizona Dept. of Mines & Mineral Resources
Mineral Bldg Fairgrounds
Phoenix, AZ 85007

REF. NO.	DESCRIPTION	oz/ton Au	oz/ton Ag		% Fe	% Pb	% Zn	% Cu
12-21-7	COD stockpile	.098	6.81			12.20	2.30	1.00
8	Richmond #2	Nil	.67					
9	Clementine 40	Tr	Nil					
10	Clementine #2	.024	Nil					
11	Richinbar Tails	Tr	Nil					
12	Moon Anchor Calcite Vein	Nil	Nil			1.98		
13	Joe Smith	Nil	Nil					Nil

CHARGES None

ASSAYER

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

VERBAL INFORMATION SUMMARY

1. Mine file: CLEMENTINE
2. Mine name if different from above:
3. County: Maricopa
4. Information from: Paul Rowbothan

   Company:

   Address: 1027 Harlan

   Lakewood, CO 80214

   Phone: (303) 238-2453

5. Summary of information received, comments, etc.:

Mr. Rowbothan is a consultant looking at some possible properties for a client.

He reported that Tom Robine, an engineer working for East-West Minerals claims the Clementine Mine has drilled out 10-20,000 tons of 0.3 oz Au ore.

Date: 3-9-89

Ken A. Phillips, Chief Engineer

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

VERBAL INFORMATION SUMMARY

1. Mine file: CLEMENTINE
2. Mine name if different from above:
3. County: Maricopa
4. Information from: Gerald Weathers

   Company: Gerex Inc.

   Address: P.O. Box 826

   Lake Montezuma, AZ 86342

   Phone: 567-4779

5. Summary of information received, comments, etc.:

Mr. Weathers reports the heap built by Copper Lakes in 1980 was sampled during construction with ten 100 lb. composite samples collected. These were sent to Mountain States in Tucson who reported results of .06 oz/ton Au by AA and .05 oz/ton by fire assay. If Mr. Hicks, the property owner, will give permission Mr. Weathers will let us copy his geologic reports on the property which include the drilling that he directed.

Date: October 20, 1988

Nyal J. Niemuth, Mining Engineer

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

VERBAL INFORMATION SUMMARY

1. Mine file: CLEMENTINE
2. Mine name if different from above:
3. County: Maricopa
4. Information from: Don Jenkins

   Company: Gold River Resources

   Address: P.O. Box 4106

   Prescott, AZ 86302

   Phone: 778-6160

5. Summary of information received, comments, etc.:

East West Minerals has acquired (leased?) the Clementine Mine and is mining a bulk sample. The sample is being processed at the Red Tail Mill (f) north of Wickenburg. Hurrah! It appears that this property may be free from the Copper Lake's litigation at last!

Date: December 20, 1988

Nyal J. Niemuth, Mining Engineer

a HMC

Abstract Clementina Mina file

White Peak Mine (f)
Clementine Mine (f)
Mystic Mine Mine (f)
Maricopa County

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Phoenix Field Office
2015 West Deer Valley Road
Phoenix, AZ 85027-2099

In reply refer to:

2200
AZA 29960 (020)

June 10, 1997

Dear Reader:

Enclosed are copies of a finding of no significant impact (FONSI) and environmental assessment (EA) for the proposed Saguaro National Park exchange.

Comments on the FONSI and EA will be accepted if postmarked no later than July 10, 1997. Comments received will be considered in finalizing the decision record, which will disclose the Bureau of Land Management's selection of one of the two alternatives including the rationale behind the decision.

Comments must be sent to:

Bureau of Land Management
Phoenix Field Office
2015 West Deer Valley Road
Phoenix, Arizona 85027
Attention: Bill Childress, Project Manager

Public meetings will be held on Tuesday, July 1, 1997, from 4 to 8 p.m. at the Red Hills Visitor Center, Tucson Mountain District, Saguaro National Park, 2700 North Kinney Road, Tucson; and on Wednesday, July 2, 1997, from 4 to 8 p.m. in the Bureau of Land Management's Phoenix Field Office conference room, 2015 West Deer Valley Road, Phoenix.

If you have any questions or need additional information, please contact Bill Childress at (602) 780-8090 ext. 633. Thank you for your interest and participation in the process.

Sincerely,

Michael A. Taylor
Field Manager

Enclosures

Finding of no significant impact (FONSI)

Name and number of environmental assessment: Saguaro National Park Exchange Environmental Assessment AZ-020-97-059.

Bureau of Land Management office: Phoenix Field Office

Finding of no significant impact: I have reviewed the environmental assessment and have determined that there are no significant impacts on the human environment. An environmental impact statement (EIS) is not required.

Rationale:

1) The selected lands were identified for disposal through the Phoenix Resource Management Plan (RMP) approved in 1988. An environmental impact statement was prepared analyzing impacts associated with the approved RMP.

2) There are no significant impacts associated with the following critical elements to the human environment: threatened and endangered species; surface and groundwater quality and quantity; floodplains; environmental justice and Native American religious concerns. The other critical elements were either not present or not impacted by the action.

3) Impacts to cultural resources on the selected lands would be mitigated through data recovery prior to the conveyance or as required through a deed restriction.

4) Impacts to the human environment associated with hazardous materials on the selected lands would be mitigated through remediation action prior to the conveyance or required through a deed restriction.

5) As required by Section 206 of the Federal Land Policy and Management Act of 1976, Public Law 94-579, analysis has shown that criteria for completing the exchange would be met through the proposed exchange.

Responsible officials:

Recommendation of finding: Hector B. Uruzo — Group Administrator — 6/6/97 — Date

Approval of finding: [signature] — Field Manager — 6/6/97 — Date

Saguaro National Park
Land Exchange
Environmental Assessment

U.S. Department of the Interior
Bureau of Land Management
Phoenix Field Office
Arizona

Maricopa County
and
Pima County,
Arizona

Environmental Assessment
AZ 020-97-059

June 1997

Index

1.0 INTRODUCTION

The lands involved in the proposed Saguaro National Park Exchange are in Maricopa and Pima counties in Arizona. The public (selected) lands that Tucson Mountain Associates, LLC wishes to acquire encompass approximately 4,322 acres in the incorporated city of Peoria in Maricopa County. In exchange, Tucson Mountain Associates, LLC is offering to the Bureau of Land Management (BLM), on behalf of the National Park Service (NPS), all or portions of approximately 711 acres (offered lands) in Pima County west of the incorporated city of Tucson.

The selected lands administered by the BLM, Phoenix Field Office, are managed in accordance with guidelines established through the Phoenix Resource Management Plan (RMP) (BLM 1988). The offered lands fall within congressionally designated Saguaro National Park and are authorized for acquisition by the U.S. Government through the Saguaro National Park Establishment Act of 1994 (SNPEA), Public Law (P.L.) 103-364, signed into law on October 14, 1994. This law added approximately 3,460 acres to then-Saguaro National Monument and changed its name to Saguaro National Park.

This environmental assessment (EA), which complies with procedures established under the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) and BLM guidelines, is being prepared to analyze impacts of the proposed exchange. Implementing the proposed exchange will be subject to the BLM's finding of no significant impact/decision record on the EA and completion of associated land appraisals and realty actions.

1.1 Purpose of and need for action

The purpose of the action is to implement P.L. 103-364 through an exchange and to implement the RMP decision which calls for the BLM to dispose of selected lands. Further, to act on a private proposal for an exchange of developable public lands. Tucson Mountain Associates, LLC has proposed the land exchange to help the NPS facilitate acquisition of private land inholdings within the designated Saguaro National Park.

The need for the action is to enhance resource management within Saguaro National Park by acquiring the private inholding.

Saguaro National Monument was created by Presidential Proclamation 2032 on March 1, 1933, to preserve and protect ". . . the exceptional growth thereon of various species of cacti, including the giant [saguaro] cactus." To enhance value as a place to preserve and protect the local Sonoran Desert, the Tucson Mountain District, west of Tucson, was added to Saguaro National Monument in 1961 to protect its "remarkable display of relatively undisturbed lower Sonoran Desert vegetation . . ." (Presidential Proclamation 3439). The Saguaro National Park Establishment Act of 1994 (P.L. 103-364, enacted on October 14, 1994) increased the Tucson Mountain District by 3,460 acres, recognizing continued ". . . threats to the integrity of its natural resources, scenic beauty and habitat protection." The proposed land exchange would implement portions of this latest legislative directive.

1.2 Conformance with land use plans

The proposed exchange is in conformance with the Phoenix RMP, in which land tenure adjustment was analyzed. The selected lands were identified and approved as suitable for disposal through analysis of the Land Tenure Adjustment Issue.

1.3 Relationship of statutes, regulations and other plans

Preparation of this EA complies with NEPA and the regulations issued by CEQ (40 CFR 1500). The proposed exchange conforms with FLPMA Section 206 and SNPEA Section 4(b).

Objectives and criteria for disposal and acquisition of federal lands in general are provided by Section 203 of the Federal Land Policy and Management Act (FLPMA) of 1976. The BLM is authorized to complete land exchanges under Section 206 of FLPMA, as amended by the Federal Land Exchange Facilitation Act of 1988 (FLEFA) only after a determination is made that the public interest will be served. When considering the public interest, the authorized BLM officer shall give full consideration to 1) the opportunity to better manage

federal lands, 2) meeting the needs of state and local residents and their economies and 3) securing important objectives including, but not limited to, protecting fish and wildlife habitat, cultural resources, watersheds and wilderness and aesthetic values; enhancing recreation opportunities and public access; consolidating lands and/or interest in lands, i.e., mineral and timber interests, for more logical and efficient management and development; consolidating split estates; expanding communities; accommodating land use authorization; promoting multiple-use values and fulfilling public needs in accordance with 43 Code of Federal Regulations 2200.0-6 (b).

Processing the exchange will be done in conformance with FLEFA and the regulations set forth in 43 CFR 2200. There are no other proposals to utilize the selected lands.

1.4 Issues analyzed in this EA

Tables 1-1 and 1-2 summarize the 40 issues and resources raised during the public scoping process and by the BLM/NPS Interdisciplinary Team that will be analyzed in this EA.

1.5 Issues beyond the scope of this EA or eliminated from further consideration

Eight of the issues and comments raised for the proposed exchange were determined by the BLM Interdisciplinary Team to be beyond the scope of this EA or did not require analysis for other reasons.

1. **Comment/issue:** Is the exchange to help the private land owner avoid losing the land to threatened/endangered species?

Response: The proposed exchange is a result of P.L. 103-364, which authorizes the Secretary of Interior to acquire lands and interest therein within the established park. The purpose and need for the exchange is to facilitate acquisition of this private inholding for management within Saguaro National Park.

2. **Comment/issue:** What are the potential impacts associated with the loss of this future valuable exchange base?

Response: The potential for increase in value will most likely occur for both the selected lands and any lands the BLM may attempt to acquire.

3. **Comment/issue:** The selected lands should be set aside for a buffer zone for Lake Pleasant from future housing development.

Response: The decision in the Phoenix RMP (BLM 1988) determined the selected lands suitable for disposal. In addition, the BLM made a decision through the same RMP to retain BLM-administrated lands within the Lake Pleasant Resource Conservation Area (RCA) north of State Highway 74. Retaining lands within the Lake Pleasant RCA provides a buffer from future housing development around Lake Pleasant.

4. **Comment/issue:** The land encumbered by the Central Arizona Project should be retained in federal ownership.

Response: The land encumbered by the Central Arizona Project is not part of the proposed exchange and will be retained in federal ownership for operation and maintenance of the facility.

5. **Comment/issue:** What is the reason for the disparity in acres between the selected and offered lands in the exchange?

Response: The difference in acreage is due to value. The offered lands have a higher per acre value than the selected lands, as determined by standard appraisal procedures.

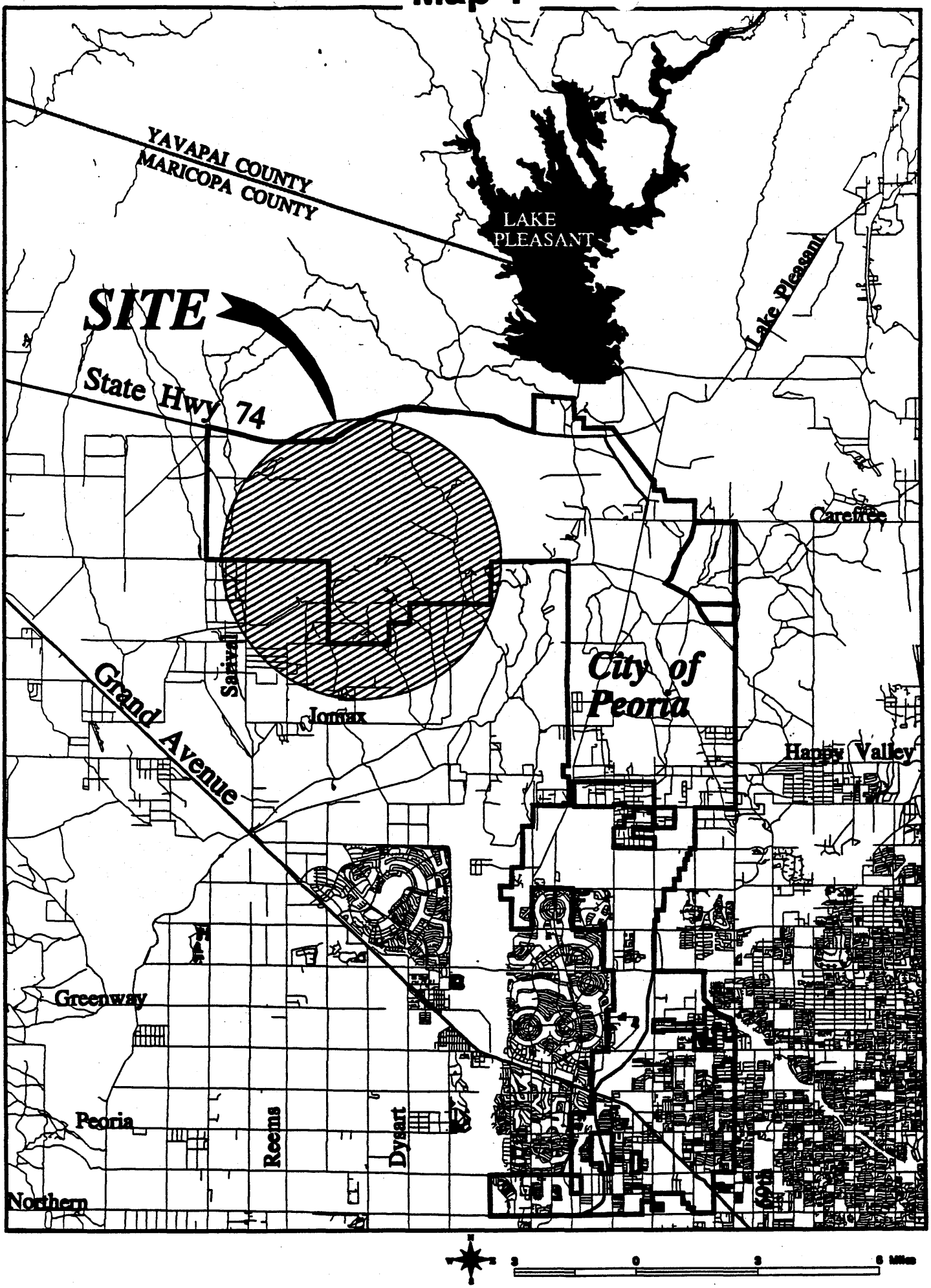
6. **Comment/issue:** Exchanges should be made on an acre-for-acre basis rather than value-for-value.

Response: The appraisal process is separate from the NEPA analysis of impacts of the proposed exchange. Appraisals undertaken by the BLM are regulated by federal laws, including the Federal Financial Institutions Reform, Recovery and Enforcement Act of 1988, the Uniform Relocation Assistance and Real Property Act of 1970 and the Uniform Appraisal Standards for Federal Land Acquisitions (Interagency Land Acquisition Conference 1992). These laws and regulations ensure that standardized procedures are used in determining the monetary values of the selected and offered lands.

Table 1-1: Selected lands issues carried forth for analysis in this environmental assessment	
Selected lands	**Issues raised**
Biological resources	-- What are the potential impacts to **vegetative communities?** -- What are the potential impacts to **wildlife/wildlife habitat?** -- What are the potential impacts to **threatened/endangered species?** -- What are the potential impacts to **sensitive species?**
Physical resources	-- What are the potential impacts to **surface water quality/quantity?** -- What are the potential impacts to **groundwater quality/quantity?** -- What are the potential impacts to **surface water rights and groundwater permits?** -- Are the selected lands within a **floodplain?** -- Are there **hazardous wastes** on the selected lands?
Land uses	-- Are the lands of medium to high **mineral potential?** -- What are the potential impacts to **land ownership?** -- How would **access** to the lands be impacted? -- How would the exchange impact **public land management?** Are there concerns with the **loss of multiple-use management lands, open space and urban sprawl?** -- What are the potential impacts to **grazing?** -- What are the potential impacts to **recreation use, e.g., hiking, off-highway-vehicle use and other dispersed recreational uses?**
Prehistoric and historic sites	-- What are the potential impacts to **prehistoric and historic sites?** -- Are there any **Native American concerns and/or places of traditional importance?**
Socioeconomic resources	-- What are the potential impacts to the **population and demography (including minorities)?** -- What are the potential impacts to the **local economy?** -- What are the potential impacts to the **regional economy?** -- Are there any **environmental justice issues?**
Determination of public interest	-- Does the exchange meet the requirements of being in the **public interest as required by Section 206(a) of FLPMA?**

Table 1-2: Offered lands issues carried forth for analysis in this environmental assessment	
Offered lands	**Issues raised**
Biological resources	-- What **vegetative communities** would be acquired? Are there saguaros on the eastern half of the offered lands? -- What **wildlife/wildlife habitat** would be acquired? -- What **threatened/endangered species and habitat** would be acquired? -- What **sensitive species and habitat** would be acquired in the exchange?
Physical resources	-- What **surface water quality/quantity** would be acquired? -- What **groundwater quality/quantity** would be acquired? -- What **surface water rights and groundwater permits** would be acquired? -- Are there **hazardous wastes** on the offered lands? -- Are the offered lands within a **floodplain?**
Land uses	-- What are the **subsurface mineral rights?** -- What are the potential impacts to **land ownership?** -- How will **access** to the lands be impacted? -- How will the **lands be managed** by the NPS **(i.e., restrictions and recreational opportunities)?** Will the uses be **narrow in focus or benefit all multiple uses?** What are the impacts to **open space?** What are the potential impacts of **urban sprawl?**
Prehistoric and historic sites	-- What are the potential impacts to **prehistoric and historic sites?** -- Are there any **Native American concerns and/or places of traditional importance?**
Socioeconomic resources	-- What are the potential impacts to **population and demography (including minorities)?** -- What are the potential impacts to the **local economy?** -- What are the potential impacts to the **regional economy?** -- Are there any **environmental justice issues?**

Map 1


YAVAPAI COUNTY
MARICOPA COUNTY
LAKE PLEASANT
Lake Pleasant
SITE
State Hwy 74
Carefree
City of Peoria
Grand Avenue
Sarival
Jomax
Happy Valley
Greenway
Peoria
Reems
Dysart
Northern
99th
0
3
6 Miles

All federal land exchanges are based on a dollar-for-dollar exchange; that is, the dollar values of the selected and offered lands must be within 25 percent of each other.

7. Comment/issue: Why aren't the selected lands closer in value to the offered lands as they are near a water source (the Central Arizona Project canal) and future planned development?

Response: The appraisals for selected and offered lands were conducted using laws and regulations described in the response to comment/issue 6 above. The appraisals consider the current and potential uses of the lands; the comparable market-based rates of similar land and, in cases in which the mineral estate is being disposed of (selected lands), the mineral potential of the lands.

8. Comment/issue: Why doesn't the U.S. Government purchase the offered lands?

Response: The Secretary of the Interior has strongly encouraged acquisition of lands for preservation through exchange rather than expenditure of very limited federal funds. While this method is not always feasible, the proposed exchange is the appropriate method of acquisition for the offered lands. The private land proponent is interested in an exchange, rather than a direct purchase. The selected lands have been identified for disposal through the Phoenix RMP and would eventually be removed from federal ownership through a land exchange or other means.

2.0 THE PROPOSED ACTION AND ALTERNATIVES CONSIDERED

This section describes both the proposed action and no action alternatives analyzed in this EA. In addition, it identifies and describes foreseeable uses and discusses alternatives that were considered but not studied in detail, stating the reasons for their elimination.

2.1 Alternatives, including no action

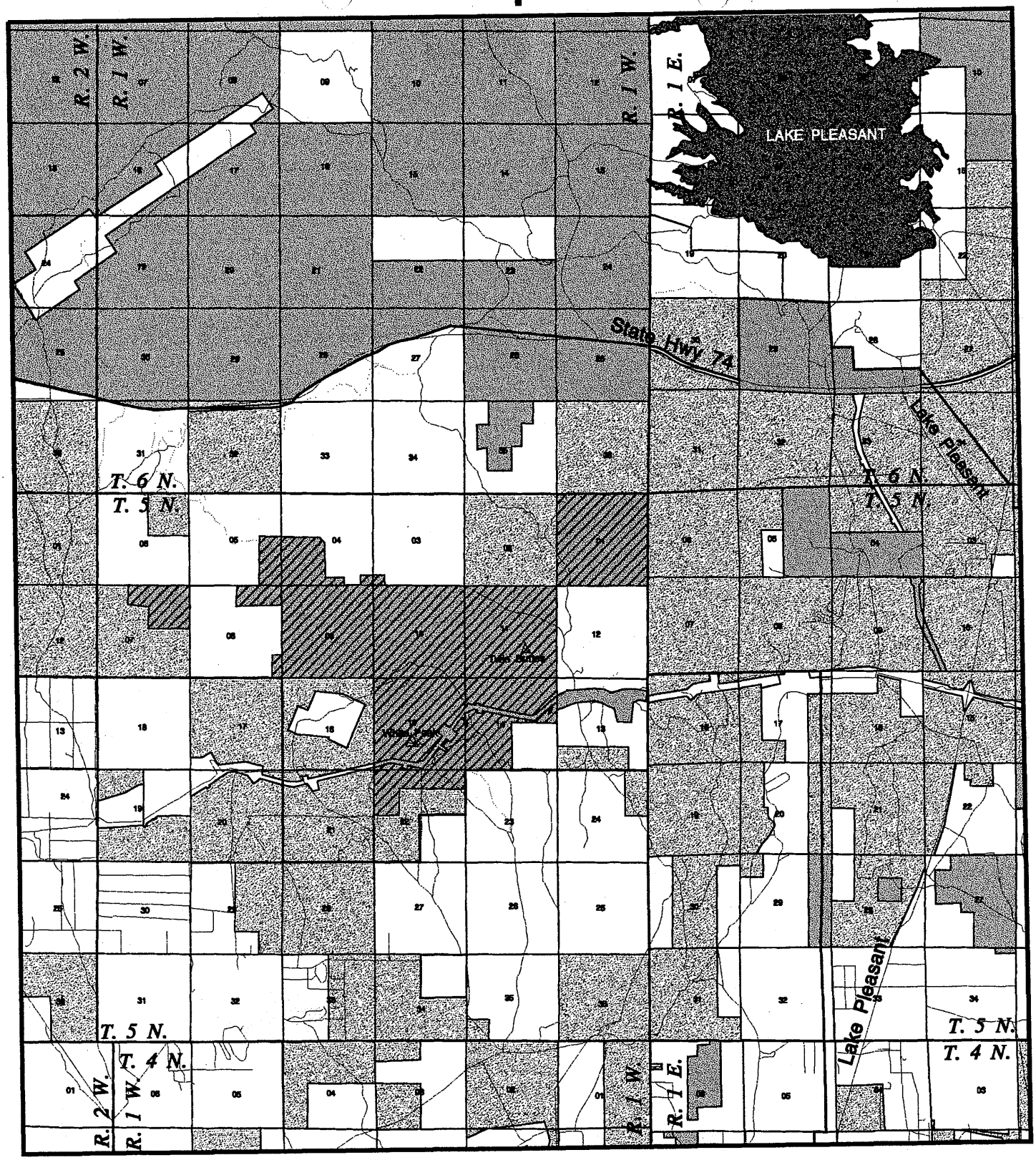
2.1.1 Proposed action

The proposed action is a land exchange between the BLM (for the NPS) and Tucson Mountain Associates, LLC. Tucson Mountain Associates, LLC would acquire approximately 4,322 surface and subsurface acres (selected lands) south of State Highway 74 (see maps 1 and 2). In exchange for the selected lands, the NPS would acquire between 532 and 711 surface acres (offered lands) within the congressionally designated Saguaro National Park (see maps 3 and 4), owned by Tucson Mountain Associates, LLC. The subsurface of the offered lands is owned by the federal government. Legal descriptions of the selected and offered lands are in Appendix A. The final offered land acres will be determined when the final value of the mineral estate of the selected lands is determined. The surface value of the selected lands would allow for acquisition of 532 acres of offered lands.

2.1.2 No action

Under this alternative, no lands would be exchanged. The selected lands would remain in public ownership, but would remain suitable for disposal as set forth in the Phoenix RMP. Future exchange proposals, sales or recreation and public purposes (R&PP) leases could be made selecting the subject lands. Until disposal, the selected lands would be managed as multiple-use lands. Tucson Mountain Associates, LLC would retain ownership of the offered lands (surface) and could use and manage the properties in accordance with the rights, privileges and obligations of private ownership; these lands could be developed for residential or other purposes.

Map 2



LEGEND

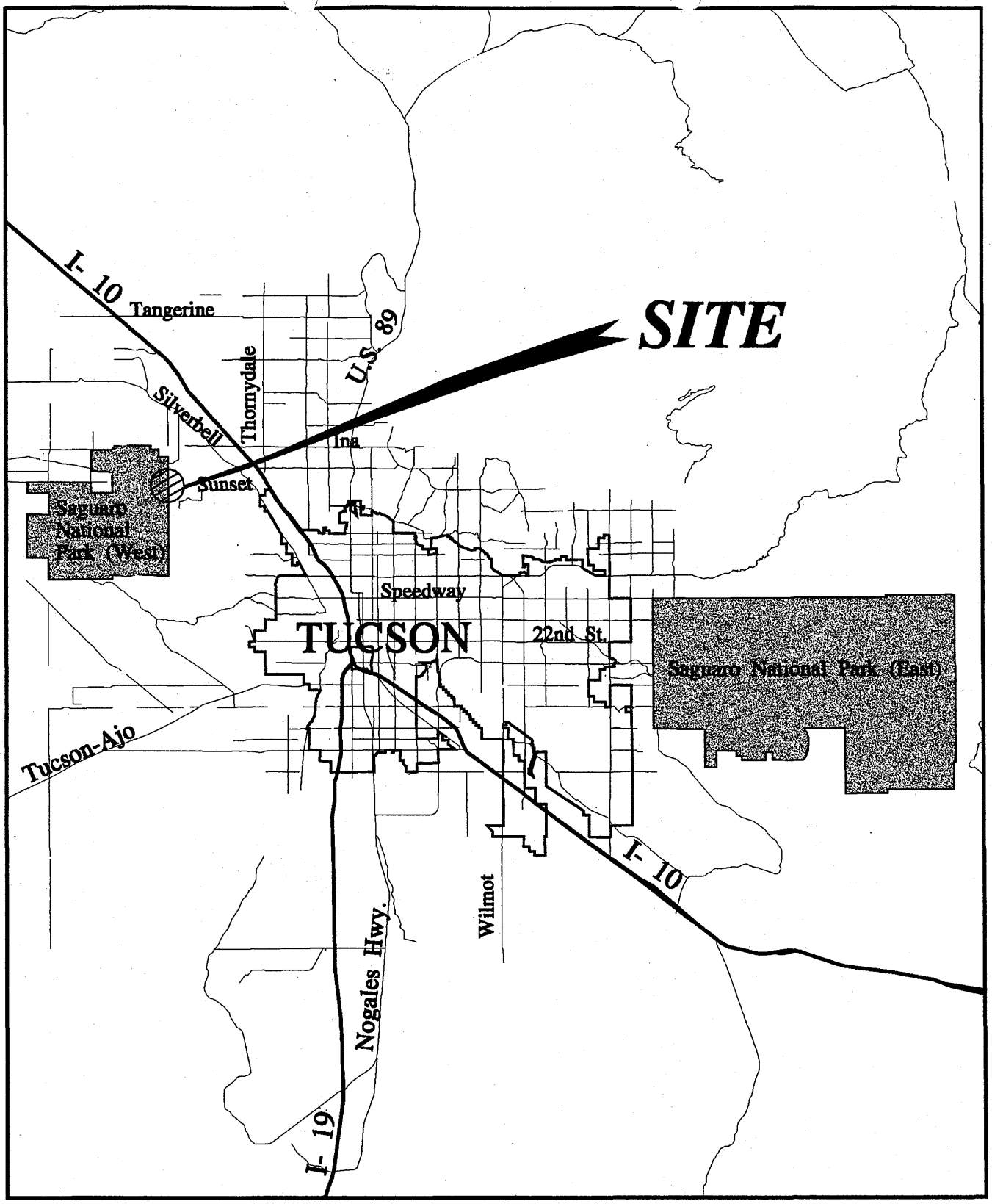
- Lake Pleasant
- Major Streets & Roads
- Local City Streets
- Township & Range
- Section Lines
- Select Land
- Private Land
- BLM Land
- State Land

N
W E
S

1 0 1 2 Miles

/map3/arcv/state/exchange/peoria

Map 3



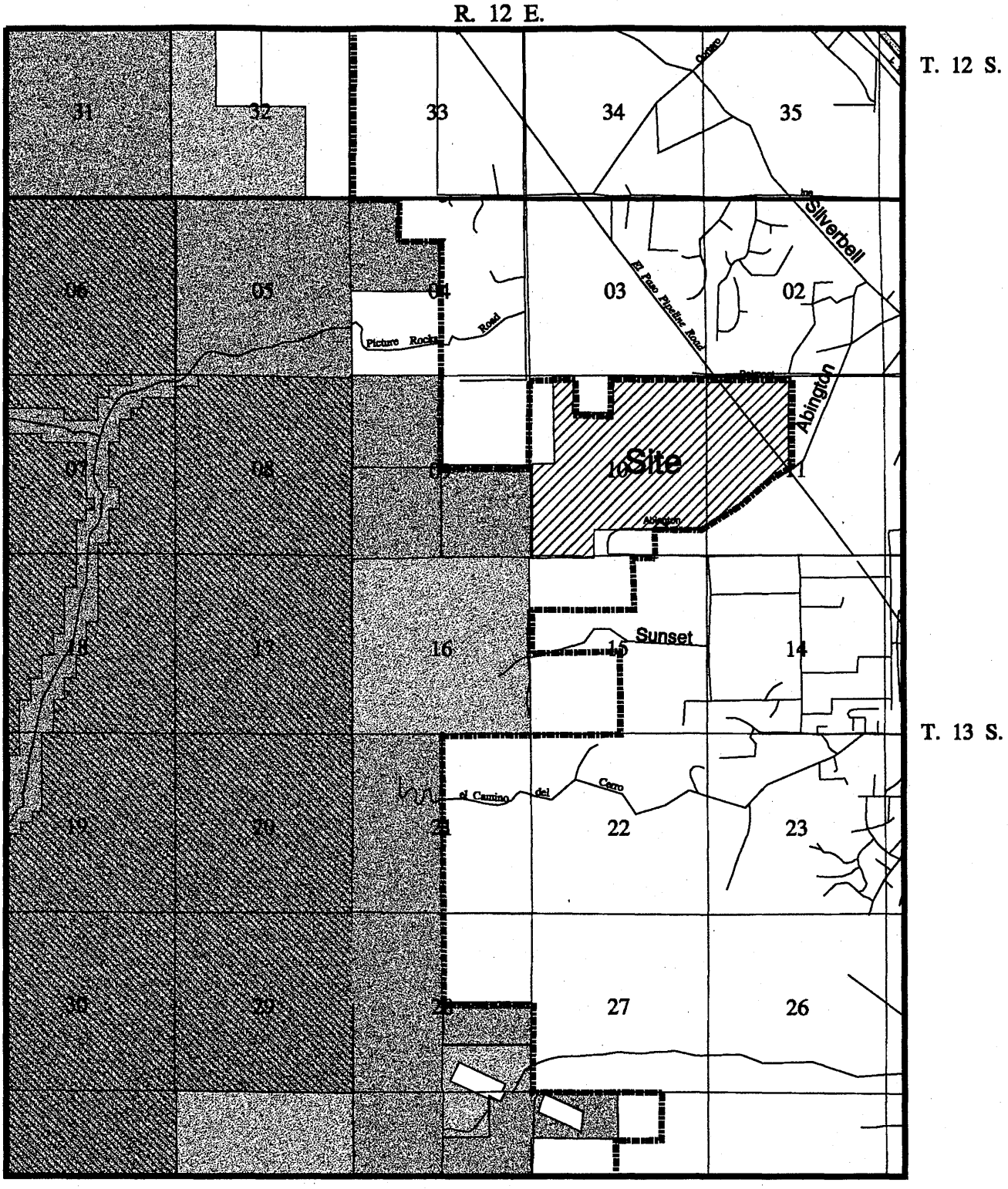
LEGEND

- Tucson City Limits
- Saguaro National Park
- Collector Streets
- Major Highways
- Interstate Freeways

N
W E
S

6 0 6 12 Miles

Map 4



LEGEND

- Proposed Site
- New Park Boundary
- Streets & Highways
- Section Lines
- National Park Service Wilderness
- Private Land
- National Park Service Land
- State Land

N
W E
S

1 0 1 2 Miles

DISCLAIMER: Land status for this project was provided by the National Parks Service.

US Department of Interior
Bureau of Land Management
Arizona State Office
Mapping Sciences Section
May 5,1997
/map3/arcv/state/exchange/saguaroex.apr

2.2 Foreseeable uses

2.2.1 Selected lands

The foreseeable use of the approximately 4,322 acres of selected lands is based on land use plans for the area and upon trend observations. The majority of the selected lands would be developed for residential use, with some intermingled commercial development, resort development and open space use. Based on the current city of Peoria Comprehensive Master Plan, 0 to 1.5 dwelling units per acre are allowed, or up to 6,483 residential dwellings. However, utilizing the trend for planned developments in the area, it is anticipated that the Comprehensive Master Plan could be amended to ask for an average of 1.5 to 4 dwelling units per acre on developable parcels for 6,483 residential dwellings. This would apply due to existing city of Peoria construction ordinances that restrict development on slopes of 10 to 15 percent or greater. When this ordinance is applied, the developer may request a higher density per acre on acres that can be developed.

2.2.2 Offered lands

The foreseeable uses of the offered lands depend on whether the proposed exchange occurs. If the 532 to 711 acres are acquired by the U.S. Government and managed by the NPS, the lands would be managed as part of Saguaro National Park. As part of the park, the lands would be managed to retain their natural values. No additional roads or developments would occur. The park would consult with the public and prepare an amendment to the general management plan to determine how the lands would be used. Existing old mining roads and trails (social trails created by human use) would be considered to become part of the enlarged Tucson Mountain District Trails system. Consistent with NPS regulations, horseback use would be permitted on designated routes. Hikers would be encouraged to stay on the trail system, but small groups would be permitted to travel cross-country. Some of the roads and trails might be made available for bicycle travel. Commercial tour groups might be issued business permits. A trailhead for parking and information bulletin boards would likely be constructed on the acquired lands. Research activities would be permitted consistent with NPS policies. Dogs (pets) and hunting would be prohibited.

If the 711.24 acres are not acquired by the U.S. Government and retained in private ownership by Tucson Mountain Associates, LLC or another development company, the lands would be developed for residential use. Based on current zoning for the offered land, one residential dwelling per 3.3 acres (approximately 215 dwellings) is anticipated.

2.3 Alternatives considered but not studied in detail

An alternative eliminated from further study was **to acquire the offered lands with Land and Water Conservation Funds (LWCF).** The BLM and NPS have rejected further consideration of this alternative for the following reasons.

- -- Purchase of the offered lands owned by Tucson Mountain Associates, LLC using LWCF would require the NPS to embark on a lengthy and uncertain process to acquire the necessary funds. The lands would require identification by NPS as lands to be purchased and passed on to the Washington Office for consideration and comparison to other like acquisitions. Assuming the Washington Office approved the proposal to acquire the lands through LWCF, it would require congressional authorization to fund the purchase, taking as long as two years.
- -- Tucson Mountain Associates, LLC desires a timely decision as to whether the U.S. Government will acquire their offered lands. If a timely decision cannot be reached, Tucson Mountain Associates, LLC would pursue development of the offered land for residential purposes. The processing and approval of LWCF requires a timeframe longer than Tucson Mountain Associates, LLC has to determine to trade or develop the offered lands.
- -- The BLM has identified the selected lands for disposal. In part, the purpose and need for this action are to dispose of the selected lands. Purchase of the offered lands with LWCF does not conform to the purpose and need for disposition of the selected lands. In addition, BLM policy (Instruction Memorandum 96-04) is to first try to acquire desirable land for the U.S. Government through land exchange rather than LWCF use.

3.0 AFFECTED ENVIRONMENT

3.1 Selected lands

3.1.1 Biological resources

3.1.1.1 Vegetative communities

Vegetation is generally characteristic of Arizona Upland Sonoran desertscrub (Brown, 1982). Associations include creosote-triangleleaf bursage and paloverde-saguaro-mixed cacti. Washes are lined with paloverde, ironwood, wolfberry and some small mesquite.

3.1.1.2 Wildlife/wildlife habitat

Wildlife species are typical for this type of habitat. Resident birds include great horned owl, red-tailed hawk, Gila woodpecker, phainopepla, Gambel's quail, mourning dove, house finch and cactus wren. Mammals include mule deer, javelina, coyote, blacktailed jackrabbit, Southwestern cave bat and Merriam kangaroo rat. Reptiles include Sonoran Desert tortoise, side-blotched lizard, Gila monster and Western diamondback rattlesnake. Four mine shafts on the lands may provide habitat for bats.

3.1.1.3 Threatened/endangered species

The selected lands provide habitat potentially suitable for four species -- bald eagle, peregrine falcon, cactus ferruginous pygmy owl and lesser long-nosed bat -- listed under the Endangered Species Act. Area surveys have revealed neither lesser long-nosed bat nor cactus ferruginous pygmy owl.

3.1.1.4 Sensitive species

Surveys of the selected lands identified 740 acres of Category 3 desert tortoise habitat, mostly west of the Twin Buttes area. The categorization is based on: 1) patchy and disjunct tortoise distribution, 2) much of the area having been disturbed by mining activities and recreation use and 3) the lands are surrounded by private lands targeted for development within the city of Peoria. Another sensitive species likely to be present is the Gila monster; its densities are unknown but likely to be low.

3.1.2 Physical resources

3.1.2.1 Surface water (quality/quantity)

The selected lands, part of the Agua Fria River watershed, are less than eight miles southwest of Lake Pleasant and 1.5 to 5.5 miles west of the Agua Fria River (see Map 5). Surface water in the selected lands is summarized as follows.

- There are no perennial streams or washes and the area is drained by a number of unnamed, ephemeral washes that flow only during and immediately after rains. Most of these washes flow south/southeast and toward the Agua Fria River, which flows south and into the Gila River.
- There are no perennial springs. The source area for the seasonal Big Spring in the northwest quarter of sec. 1 consists of a long, narrow tinaja (pothole) where runoff collects after storms.
- No surface water quality data have been published (Marsh 1997).

3.1.2.2 Groundwater (quality/quantity)

The selected lands are within the Lake Pleasant and West Salt River Valley groundwater sub-basins of the Phoenix Active Management Area (AMA), created by the Arizona Groundwater Management Act of 1980 to regulate groundwater use in that area. Groundwater in the selected lands is described as follows.

- Groundwater is found in two rock units -- valley-fill deposits of silt, sand, clay and gravel and fractured zones in crystalline rock (Reeter and Remick 1983).
- In general, the likely direction of groundwater flow is south/southeast toward the Agua Fria River.
- Of the three wells on the selected lands, two were drilled by the BLM for stockwater and wildlife and the other, a private well, was drilled for mining. Depth to water in these wells varies from 125 feet to 700 feet below ground surface.
- No groundwater quality data on the selected lands have been published (Marsh 1997).

3.1.2.3 Surface water rights/ groundwater permits

The Agua Fria River Watershed is one of the sub-basins of the ongoing Gila River General Stream

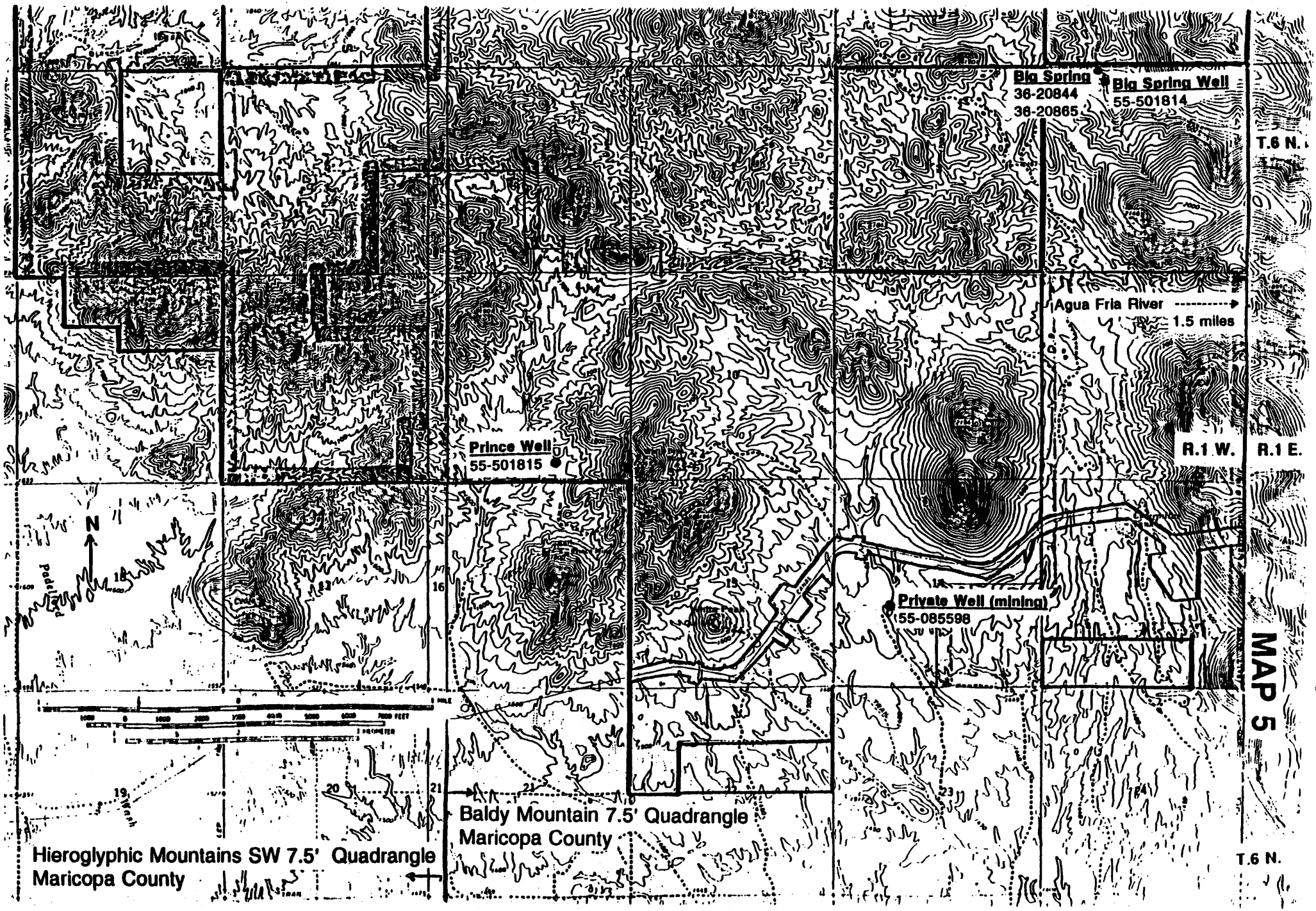

Big Spring
36-20844
36-20865
Big Spring Well
55-501814
T.6 N.
Agua Fria River
1.5 miles
Prince Well
55-501815
R.1 W.
R.1 E.
N
Private Well (mining)
55-085598
MAP 5
Baldy Mountain 7.5' Quadrangle
Maricopa County
Hieroglyphic Mountains SW 7.5' Quadrangle
Maricopa County
T.6 N.

Table 3-1: Surface water rights and groundwater permits of the selected lands				
Filing number	Holder	Water source	Location	Water use[1]
36-20844[2]	BLM	Big Spring	T. 5 N., R. 1 W., sec. 1, lot 3 (NW1/4NE1/4NW1/4)	S, W, R
36-20865[2]	BLM	Big Spring	T. 5 N., R. 1 W., sec. 1, lot 3 (NW1/4NE1/4NW1/4)	S, W, R
55-501814	BLM	Big Spring Well	T. 5 N., R. 1 W., sec. 1, lot 3 (NW1/4NE1/4NW1/4)	S, W
55-501815	BLM	Prince Well	T. 5 N., R. 1 W., sec. 9, SW1/4SW1/4SE1/4	S, W
55-085598	Hicks	Unnamed well	T. 5 N., R. 1 W., sec. 14, NW1/4NE1/4SW1/4	M

[1] Water use: S = stockwater; D = domestic; W = wildlife; M = mining

[2] These filings are the BLM's federal reserved rights for Public Water Reserve 107 and cannot be transferred. These claims will be withdrawn with ADWR.

Adjudication, a legal proceeding whereby the Arizona Department of Water Resources (ADWR) determines the validity and relative priorities of all water rights claimed. Surface water rights and well permits on the selected lands are described in Table 3-1. Surface rights include two BLM federal reserved right "36" claims for stockwater, wildlife and recreation on Big Spring. These claims are for Public Water Reserve 107 and cannot transfer out of federal ownership. ADWR records show three registered wells; however, only the two well permits held by the BLM would be assigned as part of the land exchange.

3.1.2.4 Floodplains

The FIRM flood insurance plot maps for Maricopa County identify, in secs. 14 and 15 of the selected lands, several drainages as special flood hazard areas inundated by 100-year floods. Lands in the 100-year floodplain are restricted to facilities of low value.

3.1.2.5 Waste, hazardous or solid

The selected lands were utilized for a number of mineral exploration efforts, as well as the Mystic and the Clementine mines, both of which were abandoned in the 1980s. A phase I hazardous materials survey of the selected lands was conducted on April 6, 7 and 8, 1997, revealing, in addition to these two mining operations, the existence of an underground storage tank and a well in T. 5 N., R. 1 W., sec. 14, NW1/4NE1/4SW1/4.

3.1.3 Land uses

3.1.3.1 Geology, mineral potential and rights

The selected lands are among bedrock exposures of the Hieroglyphic Mountains, a range within the Sonoran Desert portion of the Basin and Range Physiographic Province. The province is characterized by north-to-northwest-trending mountain ranges and intervening down-dropped, sediment-filled basins. Surface exposures are predominantly older rock (Precambrian) consisting of metamorphosed rhyolite and andesite, granitoid rocks and schists intruded by younger (Tertiary) basalt, rhyolite and andesite. Northwest-trending faults occur north of Twin Buttes. The Mystic Mine, east of the subject lands, is on this fault system. Recent exploratory drilling on the selected lands determined the potential for gold mineralization within such known fault zones. Elevations vary from 1,460 to 2,345 feet on the selected lands. Prominent natural features include Twin Buttes and White Peak in the southeast portion of the selected lands. Man-made mining facilities

include the inactive Mystic Millsite, Clementine Millsite, White Peak Mine and White Peak Quarry.

Low to high mineral potential exists depending on site-specific location within the selected lands. High mineral potential exists in the SE1/4NE1/4 of sec. 11 just west of the Mystic Mine and the S1/2SW1/4 of sec. 10 near the Old White Peak Mine. A total of 69 mining claims exist and may be explored and/or developed under the 43 CFR 3809 regulations. The land is not potentially valuable for leasable and saleable minerals.

3.1.3.2 Land ownership

The selected lands are five miles southwest of Lake Pleasant within the Peoria city limits in Maricopa County. Within this area, land ownership is fragmented south of Highway 74 with private and state lands surrounding the selected lands. Significant blocks of BLM land are north of Highway 74 in the Lake Pleasant RCA.

3.1.3.3 Access

There is physical access to the selected lands but no legal access. The Central Arizona Project canal has its physical access. To access these lands, the public uses existing single-lane dirt roads which require four-wheel-drive vehicles in places. Highway 74 runs east-west two to three miles north of the selected lands.

3.1.3.4 Public lands management

The selected lands are managed under the BLM's multiple-use mandate (FLPMA) and in accordance with the Phoenix RMP, other applicable laws and regulations. No portion of the selected lands has been set aside as a designated area. Present uses include grazing, mineral development and recreation. The Central Arizona Project has a prior existing right that crosses the southern portions of secs. 14 and 15. The land under the Central Arizona Project right of way/withdrawal application will be retained in federal ownership.

3.1.3.5 Grazing

The Bo Nine grazing allotment encompasses all 4,322 acres of the selected lands. This represents about 17.5 percent of the allotment's total acreage and supports 216 animal unit months (AUMs). The allotment has two range improvements registered with the BLM on the selected lands -- the Big Spring Well in sec. 1 and Prince Well in sec. 9 -- and both are inoperable (see Map 5).

3.1.3.6 Recreation

Recreational uses include hunting with related hunting camps, hiking and off-highway-vehicle (OHV) use of existing roads and trails. OHV use is limited to existing roads and trails. Use is dispersed and no visitor figures have been recorded.

3.1.4 Cultural resources

3.1.4.1 Prehistoric and historic sites

Intensive field surveys have been completed on 2,250 acres of the selected lands. Unsurveyed areas consist primarily of steep mountain slopes unlikely to contain archaeological sites. The BLM developed survey sampling designs in consultation with the State Historic Preservation Office.

The surveys located 13 archaeological sites. One prehistoric site was fully investigated in conjunction with construction of the Central Arizona Project aqueduct. Nine of the 12 existing sites date to the prehistoric period prior to A.D. 1450, two sites date to the early twentieth century and one site has both prehistoric and historic features.

The prehistoric sites include artifact scatters of varying densities -- two sites contain bedrock mortars (grinding areas) and two others have the remains of possible structures in addition to numerous artifact types. Except for one earlier Archaic period site, the prehistoric sites appear to have been used by people of the Hohokam tradition, who occupied the area between A.D. 500 and 1450. Several large Hohokam villages were along the Agua Fria River a few miles to the east.

The prehistoric sites are concentrated in two areas where natural tanks in washes likely provided a water source. The sites may represent seasonal habitation associated with wild plant collection and processing activities. The two sites containing structures, and possibly others, may be eligible for nomination to the National Register of Historic Places for their potential to yield significant information about prehistoric land use and subsistence in the uplands near the Agua Fria River. The BLM will make eligibility determinations in consultation with the State Historic Preservation Office.

The historic sites on the selected lands consist of small trash dumps deposited between 1900 and 1950, probably in association with prospecting or other mining activities. As evidenced by isolated mining features and the remains of modern mining operations, mining has been the predominant historic land use. The historic sites have been fully recorded

and do not appear to be eligible for nomination to the National Register of Historic Places.

3.1.4.2 Native American concerns

The Yavapai peoples historically occupied the area, and the O'Odham may have ancestral ties to the Hohokam. No places of traditional cultural importance to Native American groups are known to exist on the selected lands. However, the BLM will continue to conduct consultations with interested or potentially affiliated tribes to evaluate the presence of traditional cultural places and related concerns.

3.1.5 Socioeconomic resources

3.1.5.1 Population and demography

The selected lands are in Maricopa County, with a population of more than two million people, the most populated county in Arizona. Of the state's 15 counties, Maricopa County has the lowest rate of persons in poverty.

As a percentage of the county population, Hispanics comprise the single largest ethnic minority group at 16.31 percent. Racial minorities as a percentage of the county population are African-American (3.5 percent), Native American (1.8 percent) and Asian-American or Pacific Islander (1.7 percent).

3.1.5.2 Local economy

The metropolitan Phoenix area, the state's major center of political and economic activity, is dominated by several major industries such as manufacturing (high technology), agriculture and tourism/travel. Manufacturing is the leading employer of 140,000 people working for 3,100 firms. More than 45 percent of total employment is in the retail trade and service sectors.

3.1.5.3 State/regional economy

Employment. Arizona's main economic sectors include services, trade and manufacturing. Mining and agriculture are also significant. The single largest economic sector is services, employing more than 500,000 people. Wholesale and retail trades provide almost 450,000 jobs, of which 103,000 are directly related to tourism. Tourism supports an additional 100,000 jobs indirectly and injects almost $7.2 billion into the state's economy each year (Arizona Department of Commerce, March 1997).

The median income for Maricopa County as a whole is $35,623. The median income for the nearest city of the proposed action of Peoria is $27,296 (special census of Maricopa County, Arizona Department of Commerce, October 1995). The county-wide unemployment rate for January through March 1997 averaged 3.2 percent. Statewide unemployment rates for the same period averaged 4.7 percent (Department of Economic Security, March 1997).

Taxes. Property taxes are an important source of locally-based revenues. Maricopa County collected more than 210 million dollars on taxes on lands (Maricopa County Assessor's Office). Payments in lieu of taxes (PILTs) provide for payments to local units of government containing certain federally owned lands. These payments are designed to supplement other federal land receipt-sharing payments which local governments may be receiving. Entitlement land payments to each unit of general local government are subject to population payment limitation ceilings. Maricopa County received a total of $950,470 in PILT payments in Fiscal Year 1996. As a whole, Arizona received $9,637,603 in PILT payments in Fiscal Year 1996.

3.1.5.4 Environmental justice

This term refers to fair treatment of all races, cultures and income levels with respect to laws, policies and government actions. In February 1994, Executive Order 12898 -- *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* was released to federal agencies. It requires each federal agency to incorporate environmental justice as part of its mission. Federal agencies are specifically ordered to identify and address disproportionately high and adverse effects of its programs, policies and activities on minority and low-income populations.

To ensure compliance with Executive Order 12898, the Phoenix Field Office identified any minority or low-income populations that could be disproportionately affected by the proposed action. The BLM determined that the nearest urban area to the selected lands was six miles away and no significant number of minority or low income populations were identified in those areas.

3.2 Offered lands

3.2.1 Biological resources

3.2.1.1 Vegetation communities

The vegetation of the Tucson Mountains and surrounding foothills and bajadas falls into the Arizona Upland subdivision of Sonoran desertscrub (Turner and Brown 1982). Specific plant associations within this community depend on elevation, aspect and substrate. The paloverde-saguaro plant association is the most prevalent. This association is structurally and floristically diverse, species-rich and found on well-drained soils of rocky slopes and upper bajadas. The overstory is saguaro and foothills paloverde; the understory is composed of a wide diversity of shrubs (creosotebush, jojoba, limberbush, brittlebush, bursage), cacti (buckhorn, staghorn and chainfruit cholla, fishhook barrel, prickly pear) and ocotillo.

Other plant associations include the creosotebush association (mainly on sandy flats with few co-dominants), the creosotebush-bursage association (also on flat, sandy areas with other shrubs and few trees), the paloverde-saguaro-ironwood association (similar to the paloverde-saguaro association but lacking the shrub diversity) and the desert riparian scrub association (Brown and Lowe 1974). Of particular interest on the offered lands are occasional thick stands of cholla, saguaro and xeroriparian vegetation. Despite the network of jeep roads and horse trails that crosses the parcel, the vegetation is notably intact.

The Tucson Mountains, particularly along their eastern boundary, have a rugged and varied topography, and the canyons and washes from these mountains support the desert riparian (xeroriparian) scrub plant association. These xeroriparian areas are where much of the plant and animal biodiversity occurs. Common wash species include mesquite, whitethorn acacia, catclaw acacia, desert hackberry and wolfberry. The vegetation of the washes on the offered lands is particularly lush and exhibits a multi-storied structure very suitable for wildlife habitat; as such, these should be considered environmentally sensitive areas.

3.2.1.2 Wildlife/wildlife habitat

The only formal wildlife surveys conducted on the offered lands have been for desert tortoise and cactus ferruginous pygmy owl. However, because it is relatively intact, undisturbed and adjacent to the Tucson Mountain District of Saguaro National Park, wildlife in this parcel is likely to be similar to the fauna of the park and comprised of species such as collared peccary, mule deer, coyote, gray fox, bobcat, skunk, elf owl, Gambel's quail, red-tailed hawk, Western diamondback rattlesnake and many other species typical of the Arizona Upland Sonoran Desert. This area is also almost certainly used by such rare/reclusive animals as mountain lion, golden eagle, kit fox, tiger rattlesnake and prairie falcon.

The offered lands also contain portions of three washes, which provide important movement corridors between the Tucson Mountains and the Santa Cruz riverbed (Burns et al. 1986).

3.2.1.3 Threatened/endangered species

Two federally listed endangered species -- lesser long-nosed bat and cactus ferruginous pygmy owl -- may occur on the offered lands.

The offered lands have not been specifically surveyed for bats and are not known to contain any mines or caves that might be used as roost sites. However, historic accounts of lesser long-nosed bat roosts throughout southern Arizona (Hoffmeister 1986), and currently known roosts, suggest that during the summer this species could very well be foraging in the dense saguaro stands in this area.

Park staff and volunteers performed about 15 surveys for cactus ferruginous pygmy owls within the park between 1994 and 1997 and on the offered lands (nine surveys between February 26 and April 19, 1997), but to date have had no detections. Recently, however, a neighbor reported a very credible series of sightings that could confirm the presence of cactus ferruginous pygmy owls.

3.2.1.4 Sensitive species

Surveys for Sonoran Desert tortoise in this parcel have documented their use of this area, resulting in a designation of all 711 acres as BLM Category 2 tortoise habitat. In fact, this site is one of the last remnants of undeveloped bajada habitat on the east side of the Tucson Mountains.

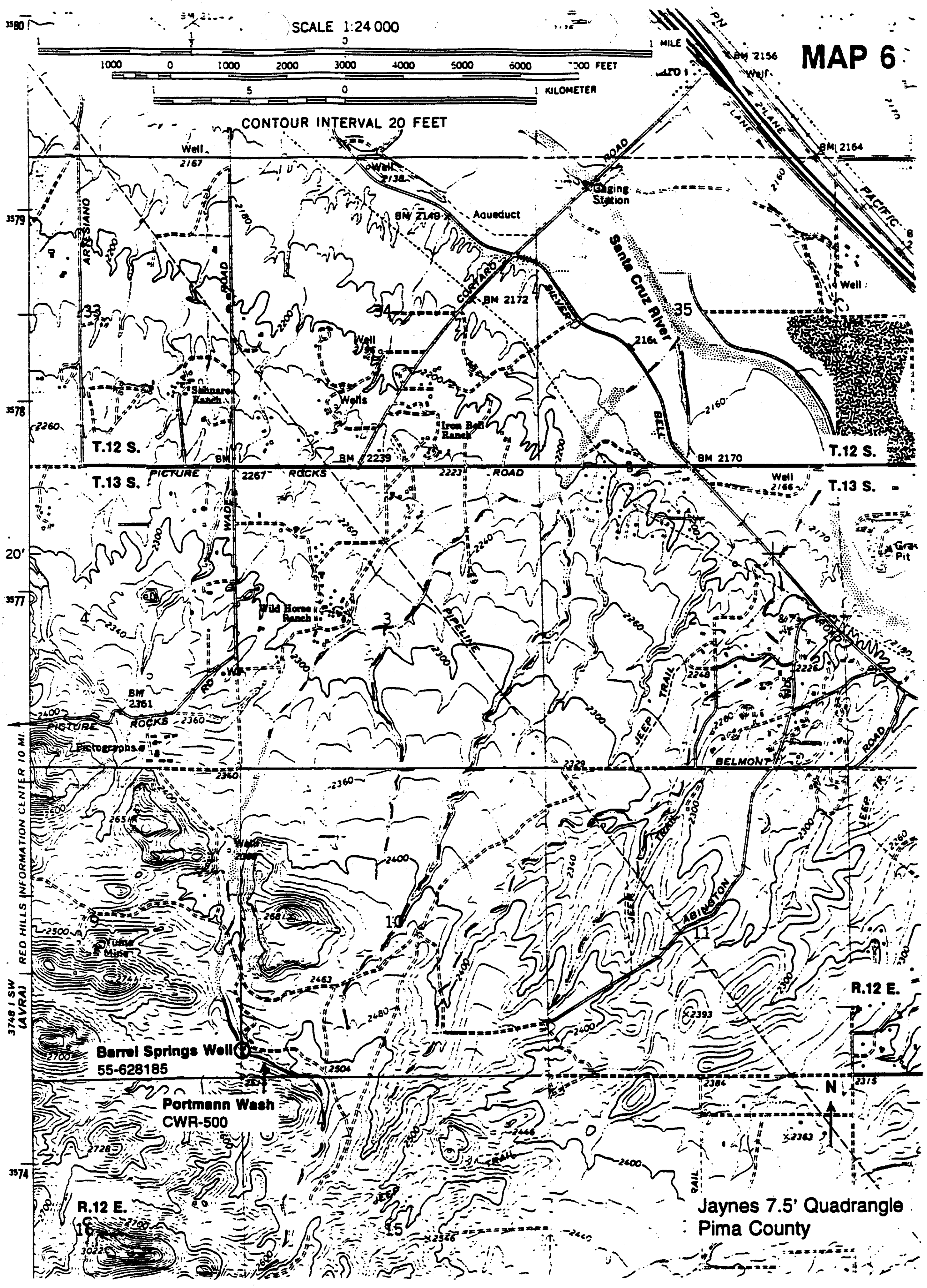
The Gila monster, a state-sensitive species, also occurs on the offered lands.

3.2.2 Physical resources

3.2.2.1 Surface water (quality/quantity)

The offered lands, part of the Upper Santa Cruz River watershed, are less than 2.5 miles west of the Santa Cruz River (see Map 6). Surface water in the offered lands is summarized as follows.

- There are no perennial streams or washes. The area is drained by several unnamed, ephemeral washes which flow 0.6 to 2.6 miles northeast and into the Santa Cruz River. An exception to this is in an unnamed wash in sec. 10 where seasonal


MAP 6
SCALE 1:24 000
1 MILE
1000 0 1000 2000 3000 4000 5000 6000 FEET
1 KILOMETER
CONTOUR INTERVAL 20 FEET
Well
Gaging Station
Aqueduct
Santa Cruz River
CORTARO ROAD
SILVERBELL
ARTESIANO
WADE ROAD
PACIFIC
2 LANE
BM 2156
BM 2164
BM 2149
BM 2172
BM 2239
BM 2170
Wells
Iron Bell Ranch
Wild Horse Ranch
T.12 S.
T.13 S.
PICTURE ROCKS ROAD
PIPELINE
JEEP TRAIL
BELMONT ROAD
ABINGTON
Pictographs
Grav Pit
R.12 E.
RED HILLS INFORMATION CENTER 10 MI.
3748 I SW (AVRA)
Barrel Springs Well
55-628185
Portmann Wash
CWR-500
N
Jaynes 7.5' Quadrangle
Pima County

surface flow has been observed near Barrel Springs Well.
- There are no perennial springs.
- No surface water quality data have been published (ADEQ 1997).

3.2.2.2 Groundwater (quality/quantity)

The offered lands are within the Santa Cruz groundwater sub-basin of the Tucson Active Management Area (AMA), created by the Arizona Groundwater Management Act of 1980 to regulate groundwater use. Groundwater in the offered lands is summarized as follows.

- All of sec. 11 and the E1/2 of sec. 10 are within the main water-bearing unit of the Santa Cruz sub-basin; this rock unit contains gravel, sand, silt, clay, conglomerate, sandstone, mudstone and shale. The depth to water in the main water-bearing unit of secs. 10 and 11 is inferred as 150 to 300 feet below ground surface. This is based on water levels in domestic wells on the north, south and east adjacent sides of the offered lands (Murphy and Hedley 1995).
- The W1/2 of sec. 10 is mapped as undifferentiated bedrock. Groundwater in this rock unit occurs in fractures and in the thin layer of alluvium overlying the bedrock. There are no wells in the W1/2 of sec. 10; however, the depth to water at Barrel Springs Well, in an unnamed wash in sec. 9 near sec. 10, is 18 feet below ground surface. In general, the likely direction of groundwater flow is to the east and toward the Santa Cruz River.
- No groundwater quality data have been published (Marsh 1997). The nearest well to the offered lands with published water quality is 2.0 miles to the south.

3.2.2.3 Surface water rights/groundwater permits

The Upper Santa Cruz River Watershed is part of the ongoing Gila River General Stream Adjudication. ADWR will determine the validity and relative priorities of all water rights claimed in the Upper Santa Cruz River basin. The single surface water right associated with the offered lands is a certificated right for domestic and stockwater purposes from seepage in Portmann Wash. Portmann Wash is shown as an unnamed wash in the SW1/4 of sec. 10 of the Jaynes quadrangle, a USGS 7.5-minute topographic map (see Map 6). This certificate (see Table 3-2) would be assigned to the NPS as part of the exchange. There are no well permits to be assigned.

3.2.2.4 Floodplains

The FIRM maps for Pima County identify, on the offered lands, a small floodplain area along the north section line of sec. 11.

3.2.2.5 Waste, hazardous or solid

The offered lands have had no known use that would be expected to result in the presence of hazardous materials. A phase I survey of the offered lands completed in May 1997 revealed no presence or indication of any hazardous material.

3.2.3 Land uses

3.2.3.1 Geology, mineral potential and rights

The offered lands are at the north end of the Tucson Mountains within the Basin and Range Physiographic Province. The Tucson Mountains are interpreted to be an ash-flow caldera, uplifted to their present physiographic form by mid-Tertiary extensional tectonics. The bedrock of the subject lands consists of Tertiary rhyolite lava flows unconformably overlying Cretaceous andesite lava flows. The lava flows were moderately rotated to the northeast by movement along the Catalina detachment fault. The bedrock is overlain by an alluvial piedmont of roughly two ages -- the older consists of highly elevated and deeply dissected alluvial fan remnants of Pleistocene and possible older age; the younger is Holocene to Pleistocene and only shallowly dissected by modern drainage. The offered lands occur near the Old Yuma Mine, which exploited a fracture zone mineralized with base metal sulfides. Such mineralized structures are not known to occur on the offered lands.

No known potential exists for locatable, leasable and salable minerals. The mineral estate is federal. Under P.L. 103-364 (Section 4c), subject to valid existing rights, all federal lands within the park were withdrawn from all forms of entry, appropriation or disposal under the public land laws, from location, entry or patent under the U.S. mining laws and from disposition under all laws relating to mineral and geothermal leasing, and minerals materials and all amendments thereto. There are no mining claims of record on the offered land subsurface estate.

Table 3-2: Surface water rights of the offered lands				
Filing number	Holder	Source name	Location	Water Use(1)
4A-921 (CWR 500)	Portmann	Portmann Wash	T. 13 S., R. 12 E., sec. 10, NW1/4SW1/4, SW1/4SW1/4	S, D

(1) Water use: S = stockwater; D = domestic

3.2.3.2 Land ownership

The offered lands are northwest of Tucson in an unincorporated portion of Pima County. These lands are within the boundary of the Saguaro National Park as defined by P.L. 103-364 but are in private ownership. The NPS is in the process of acquiring all of the non-federal acres within the expanded park boundaries through direct purchase, donation or exchange with the state and private owners. Private land and residential development surround the offered lands on three sides.

3.2.3.3 Access

The offered lands are accessible from two county road rights-of-way -- Belmont Road along the northern edge and Abington Road on the southeast boundary. A network of old mining roads and horse trails currently provides travel routes within the parcel, although none are open to the public.

3.2.3.4 Private land management

The private lands are currently zoned Suburban Ranchette, which allows single family homes with a minimum lot size of 3.3 acres. Many of the adjacent parcels have been developed in the last few years. Easements for a distribution electric line and a natural gas pipeline are the only existing rights on the parcel.

3.2.3.5 Recreation

The offered lands are used by local hikers and equestrians without the permission of the private land owner. Some recreationists use these lands to gain access to other parts of the Tucson Mountain District of Saguaro National Park.

3.2.4 Cultural resources

3.2.4.1 Prehistoric and historic sites

Intensive field surveys completed on approximately 30 acres of the offered lands identified one prehistoric site and three historic sites. The prehistoric Hohokam site consists of a large exposure of bedrock with multiple mortars and cupules (man-made depressions). The site also contains an artifact scatter and a pictograph of a handprint painted red. The historic sites consist of the remains of the Gila Monster Mine and associated features. The mining operation, which took place between 1920 and 1950, appears to have encompassed about 20 acres near West Sunset Road.

The parcel is near the Santa Cruz River, a major focus of both prehistoric and historic occupation. Surveys have recorded at least 20 sites within three miles of the offered lands. Prehistoric sites include large Hohokam villages and agricultural areas along the Santa Cruz, and artifact scatters and rock art sites away from the river. The nearest sites, northeast of the park boundary along Silverbell Road, are the Julian Rodriquez Homestead and three other historic sites. Prehistoric sites along Silverbell Road include an extensive Archaic and Hohokam artifact scatter, larger than a square mile, that may extend into the offered parcel. This indicates that the offered lands are very likely to contain prehistoric Hohokam sites as well as historic sites related to homesteading or mining.

3.2.4.2 Native American concerns

The Tohono O'Odham historically occupied the area, and the Tohono O'Odham may have ancestral ties to the Hohokam. No places of traditional cultural importance to Native American groups are known to exist on the offered lands. However, the BLM will conduct consultations with interested or potentially affiliated tribes to evaluate the presence of traditional cultural places and related concerns.

3.2.5 Socioeconomic resources

3.2.5.1 Population and demography

The selected lands are in an unincorporated part of Pima County, the second largest county in Arizona with a population of nearly 800,000. The median household income in the county is $25,401 and ranks eleventh of Arizona's 15 counties in the number of

persons in poverty (1990 Census, U.S. Department of Commerce).

As a percentage of the county population, Hispanics comprise the single largest ethnic minority at 24.49 percent. Racial minorities as a percentage of the county population are Native Americans (3.0 percent), African-Americans (3.1 percent) and Asian or Pacific Islanders (1.8 percent) (Arizona Department of Economic Security population compositions based on 1990 census).

3.2.5.2 Local economy

Employment: Pima County and its largest metropolitan city, Tucson, have major industries of copper mining, manufacturing, tourism and education. Manufacturing is by far the largest employer in the county, employing 265,000. Trades and services employ more than 140,000 people in the county. The University of Arizona is the largest single employer with approximately 10,000 employees. The county-wide unemployment rate for January thru March 1997 is 3.4 percent. The unemployment rate for the city of Tucson is 3.8 percent. Statewide unemployment rates for the same period averaged 4.7 percent (Department of Economic Security, March 1997).

3.2.5.3 State/Regional economy

Arizona's main economic sectors include services, trade and manufacturing. Mining and agriculture are also significant. The single largest economic sector is service, employing more than 500,000 people. Wholesale and retail trades provide almost 450,000 jobs, many of which are directly related to tourism. Tourism contributes more than $2.3 billion to the Pima County economy each year (Arizona Department of Commerce, March 1997).

Taxes: For 711 acres, current property tax rates for the offered lands totalled $52,093.50 for both parcels. For 532 acres, current property tax rates for the offered lands totalled $34,756.13 for both parcels. Property taxes are an important source of locally based revenues. Pima County's real property tax revenue base is greater than $95 million annually (Pima County 1994-1995 Adopted Budget, August 8, 1994).

PILT payments provide revenue to local units of government containing certain federally-owned lands. These payments are designed to supplement other federal land receipt sharing payments which local governments may be receiving. Entitlement land payments to each unit of general local government are subject to population payment limitations ceilings. Pima County received a total of $1,017,512 in PILT payments in Fiscal Year 1996. As a whole, Arizona received $9,637,603 in PILT payments in Fiscal Year 1996.

3.2.5.4 Environmental justice

In compliance with Executive Order 12898, the Phoenix Field Office identified any minority or low-income populations that could be disproportionately affected by the proposed action. The BLM determined that there are no minorities or low income populations identified living adjacent to the offered lands.

4.0 ENVIRONMENTAL CONSEQUENCES

The environmental consequences will be evaluated based on the foreseeable uses of both the selected and offered lands, described in 2.0. The foreseeable use of the selected lands is based on disposition of the land, whether through this exchange or another action. As a result, the impacts associated with the foreseeable uses on the selected lands will be similar in both the proposed action and the no action alternatives. The foreseeable uses of the offered lands vary from the proposed action to the no action alternative. The offered lands, if acquired as described in the proposed action, would be managed as part of Saguaro National Park. The offered lands, if retained in private ownership as described in the no action alternative, would be developed for residential purposes. As a result, the impacts associated with the foreseeable uses on the offered lands will be significantly different.

The impact associated with the exchange is the loss of 4,322 acres along with the regulations and public use rights that apply under public land ownership. More specific resource impacts that result from the exchange and foreseeable use are addressed under each specific resource.

Critical elements analyzed and determined not to be present on the offered and selected lands or not impacted by the proposed and no action alternatives include air quality, areas of critical environmental concern, wild and scenic rivers, farmland (prime, unique), wilderness and wetlands/riparian habitat.

4.1 Biological resources

4.1.1 Vegetation communities

4.1.1.1 Proposed action

Selected lands: Based on the foreseeable use, vegetative communities will be negatively affected by residential development. Construction sites will eliminate most plants. Steep hillsides and washes would remain in place with the slope ordinance in effect. Due to their value as landscaping plants, many saguaro, ocotillo and other cacti may be salvaged.

Offered lands: Based on the foreseeable use, vegetative communities on the 532 to 711 acres would be maintained and protected. The lands would be managed to maintain the natural condition of the vegetative community.

4.1.1.2 No action

Selected lands: Based on the foreseeable use, the impacts under this alternative are the same as under the proposed action. However, the impacts to the vegetative community would not occur until the land was disposed of and developed.

Offered lands: Based on the foreseeable use, management and protection of the 532 to 711 acres of vegetative community within the park would not be realized. Residential development would reduce the plant cover depending upon the actual development plan.

4.1.2 Wildlife/wildlife habitat

4.1.2.1 Proposed action

Selected lands: Based on the foreseeable use, wildlife populations would be impacted by eventual development and increased human occupancy. Development will displace wildlife as habitat is altered. Species of birds, lizards, etc., that tolerate human presence may recolonize areas containing suitable habitat. These species will have to endure the effects of pets, humans, hazardous chemicals, etc. Species such as coyote, javelina and others which tolerate or coexist with human presence but are deemed dangerous to human health will provide problems for animal control officials.

Offered Lands: Based on the foreseeable use, between 532 and 711 acres of existing, intact Sonoran desertscrub habitat and the wildlife thereon would be protected by inclusion within Saguaro National Park. Wildlife use of the area would be expected to be maintained at or near the current level, depending on the final acreage of the offered lands and the levels of surrounding development.

Portions of three washes which connect to a major drainage that provides an important wildlife movement corridor between the park and the Santa Cruz River would also be protected. Naturally, the more acreage included in the offered lands, the greater the benefit to local plants and animals and the fewer the impacts on the desert ecosystem.

The Tucson Mountain District of the park is an important refuge for wildlife species in the Tucson Basin. However, surrounded by ever-increasing urbanization and other forms of development (e.g., the Central Arizona Project canal, Twin Peaks Mining operation, Interstate 10), the Tucson Mountain District and adjacent Tucson Mountain County Park are fast becoming an island of habitat in danger of isolation from other protected areas. Therefore, any additional protected habitat in the park, such as the offered lands, is helpful to wildlife.

4.1.2.2 No action

Selected lands: Based on the foreseeable use, the impacts are essentially the same as under the proposed action. Impacts to wildlife would be delayed until the land is disposed of and developed.

Offered lands: Based on the foreseeable use, the 711 acres would be developed into 3.3-acre ranchettes. Such development would destroy much of the native vegetation, the integrity of the local desert ecosystem and, therefore, wildlife habitat for all wildlife species except small, generalist animals (e.g., dove, quail, cottontail, ground squirrel, etc.). Use of the lands by larger mammals such as deer, javelina and coyote would greatly decrease and most wildlife would be limited to using the washes as movement corridors. Populations of long-lived animals, such as Gila monsters and certain snakes that are dramatically impacted by local habitat loss and fragmentation and roadkill, would be expected to disappear (Kline and Swan in press).

4.1.3 Threatened/endangered species

4.1.3.1 Proposed action

Selected lands: A biological evaluation determined that the proposed land exchange may effect, but likely to adversely affect the lesser long-nosed bats, cactus ferruginous pygmy owls, bald eagles and peregrine falcon; the U.S. Fish and

Wildlife Service concurred (see Appendix B).

Offered lands: Based on the foreseeable use, both endangered species which may inhabit or otherwise use the lands would benefit from their inclusion to the park. The proposed action will preserve between 532 and 711 acres of Sonoran Desert habitat, much of it containing dense saguaro stands. Lesser long-nosed bats likely forage in this area in summer and would therefore benefit from the area's addition to the park. Whether or not cactus ferruginous pygmy owls inhabit this land, the species should benefit from protection of this area, which contains good potential cactus ferruginous pygmy owl habitat and is near areas known to support them (Abbate 1996). A biological evaluation determined that the proposed exchange may effect, but not likely to adversely affect, the lesser long-nosed bat and cactus ferruginous pygmy owl; the U.S. Fish and Wildlife Service concurred (see Appendix B).

4.1.3.2 No action

Selected lands: No impacts are anticipated from the no action alternative.

Offered lands: Based on the foreseeable use, development of the 711 acres would result in a significant saguaro reduction in this area, which would cause a net reduction and degradation of potential foraging habitat for lesser long-nosed bats. Developing the land into 3.3-acre suburban ranchettes may not necessarily degrade potential habitat for cactus ferruginous pygmy owls (Abbate 1996).

4.1.4 Sensitive species

4.1.4.1 Proposed action

Selected lands: Based on the foreseeable use, sensitive species in all likelihood will be displaced by development. The desert tortoise habitat is mostly on steep slopes, washes and ridges, which may be less developed. The 4,322 acres are surrounded by private land targeted for development soon. The habitat on the land is contiguous with habitat on adjacent private lands. Assuming that the private lands will be developed, the desert tortoise habitat on the federal lands would not sustain a viable population no matter what management actions were undertaken.

The BLM's Compensation for the Desert Tortoise (November, 1991) establishes a policy to compensate for habitat lost due to management actions. Compensation is used to offset residual impacts of land use decisions after all reasonable on-site mitigation measures are incorporated into the action that results in no net loss of habitat. The report also states that compensation can be used to determine the amount of needed replacement habitat in terms of land or to determine the funding amounts to compensate for other tortoise resource needs. Compensation may include habitat acquisition, habitat enhancement, population enhancement and educational activities, research, studies and monitoring. In this case, land compensation would probably be the most likely method. Loss of Category 3 habitat is compensated by acquiring the same number of acres of Category 3 or better lands. The habitat on the offered lands is Category 3 tortoise habitat. The lands to be acquired range from 532 to 711 acres of Category 2 habitat. The difference in the acres of habitat on the selected lands (740) versus the offered lands (532 to 711) should be mitigated or compensated for.

Offered lands: Based on the foreseeable use, between 532 and 711 offered acres of Category 2 Sonoran Desert tortoise habitat and the resident tortoises would be protected by the proposed action. The offered lands are important because they contain a fairly large area of good quality habitat with a stable tortoise population and they are one of the last such populations on the east side of the Tucson Mountains. Desert tortoises were once common on the eastern bajadas of the Tucson Mountains, but development in the last 30 years has caused a significant decline in this population. Currently, very little of this productive bajada habitat is protected within the park. Addition of this area to the park would ensure protection of this remnant of good tortoise habitat as well as the resident tortoises.

4.1.4.2 No action

Selected lands: Based on the foreseeable use, the impacts under this alternative would be the same as under the proposed action. Impacts would not occur until the land was disposed of and developed.

Offered lands: Based on the foreseeable use, one of the last remaining areas of Category 2 Sonoran Desert tortoise habitat on the eastern bajada of the Tucson Mountains and the tortoise population it supports would be lost to development. Developing the lands would also negatively impact park tortoise populations through further habitat loss, degradation and fragmentation, roadkill and direct poaching and/or harassment by humans and domestic animals.

4.2 Physical resources

4.2.1 Surface water (quality/quantity)

4.2.1.1 Proposed action

Selected lands: As a result of the exchange, Big Spring would be lost from federal ownership and the future use of that spring is uncertain. Under foreseeable uses, the following impacts are anticipated.

- Residential development could use the spring for domestic purposes; however, the spring could remain undeveloped if the surrounding land is retained as an "open space" within a planned community.
- Surface runoff may increase during storms, reaching and adding to the Agua Fria River 1.5 to 5.5 miles to the east. Increased surface runoff usually occurs after development has compacted and/or paved land and reduced the amount of rainfall that can infiltrate the ground.
- The impacts to surface water quality are unknown. There is no surface water quality data to establish the current surface water quality.

Offered lands: Based on the foreseeable use, surface water quantity and quality would be protected because the ephemeral drainages, essentially undeveloped, would continue to be managed in their natural state by the NPS. Seasonal water would be available for wildlife and recreation.

4.2.1.2 No action

Selected lands: The no action alternative would have the same impacts as under the proposed action. However, the impacts would not occur until the land was disposed of and developed.

Offered lands: Based on the foreseeable use, the following impacts would occur.

- Surface runoff may increase during storms, reaching and adding to the Santa Cruz River only 2.5 miles to the east. Increased surface runoff usually occurs after development has compacted and/or paved land and reduced the amount of rainfall that can infiltrate the ground.
- Seasonal surface waters could be developed for domestic or other purposes.
- The impacts to surface water quality are not known as the current quality is unknown.

4.2.2 Groundwater (quality/quantity)

4.2.2.1 Proposed action

Selected lands: As a result of the exchange, two wells drilled by the BLM would leave federal ownership. Based on the foreseeable use, the following impacts are anticipated.

- The amount of groundwater may be depleted in the area *if* wells are drilled for domestic water supply; as a result, the depth to groundwater below the land surface could increase.
- The impacts to groundwater quality are not known as the current quality is unknown.

Offered lands: Based on the foreseeable use, no impacts to the quantity and quality of groundwater are anticipated because the area, essentially undeveloped, would continue to be managed in its natural state by the NPS.

4.2.2.2 No action

Selected lands: The no action alternative would have the same impacts as under the proposed action. However, the impacts would not occur until the land was disposed of and developed.

Offered lands: Based on the foreseeable use, the following impacts are anticipated.

- The use of groundwater will increase if wells are drilled for domestic use, which could result in a drop in the local water table, i.e., the depth to water below the land surface would increase.
- It is unknown if there would be any impacts to groundwater quality as the current quality is unknown.

4.2.3 Surface water rights/ groundwater permits

4.2.3.1 Proposed action

Selected lands: Two surface water filings for federal reserved rights on Big Spring would be lost as these rights cannot be transferred from federal to private ownership. The U.S. Government would have to withdraw the reserved rights with ADWR. Two BLM well permits for Big Spring Well and Prince Well would be transferred into private ownership.

Offered lands: Based on the foreseeable use, one certificated surface water right for Portmann Wash would be acquired by the NPS.

4.2.3.2 No action

Selected lands: Two federal reserved rights for Big Spring, as well as the two well permits, would continue to be retained by the BLM until the land is disposed of. Use of the water would continue for stockwater, wildlife and recreation.

Offered lands: The surface water right for Portmann Wash would be retained in private ownership for domestic and stockwater purposes.

4.2.4 Floodplains

4.2.4.1 Proposed action

Selected lands: There are no impacts to the floodplains.

Offered lands: There are no impacts to the floodplains.

4.2.4.2 No action

Selected lands: Same as under the proposed action.

Offered lands: Same as under the proposed action.

4.2.5 Waste, hazardous or solid

4.2.5.1 Proposed action

Selected lands: There would be no adverse environmental impacts. Existing hazardous or solid wastes would be removed or remedied (treated in place to ensure that they were no longer hazardous) either prior to the exchange or shortly thereafter. Remediation of any hazardous substance would result in beneficial environmental impacts.

Offered lands: No hazardous materials exist on the offered lands. Based on the foreseeable use, the lands would be managed in their natural state and in a manner that would preclude any hazardous material use.

4.2.5.2 No action

Selected lands: No impacts are anticipated as the lands would be cleaned of any hazardous materials either before the exchange decision is made or shortly thereafter.

Offered lands: The lands would be developed, which could lead to the presence of hazardous materials.

4.3 Land uses

4.3.1 Geology, mineral potential and rights

4.3.1.1 Proposed action

Selected lands: Exchange would remove 4,322 acres from mineral entry under the 1872 Mining Law. Two ore bodies with moderate to high potentials would leave federal ownership; however, a private land owner would have the prerogative of initiating a mining operation to remove minerals on the 4,322 acres. Based on the foreseeable use, residential development is likely and mineral exploration and development is unlikely.

Offered lands: The federal mineral estate has been withdrawn from mineral entry by P.L. 103-364. Therefore, there are no impacts associated with the proposed action.

4.3.1.2 No action

Selected lands: The existing claimants could participate in mineral exploration or development under 43 CFR 3809. However, it is anticipated that future disposal would result in impacts similar to those under the proposed action.

Offered Lands: The federal mineral estate has been withdrawn from mineral entry by P.L. 103-364. Therefore, there are no impacts associated with the no action alternative.

4.3.2 Land ownership

4.3.2.1 Proposed action

Selected lands: BLM ownership in Maricopa County through exchange of the lands would be reduced by less than one percent. BLM ownership would remain concentrated north of Highway 74 around Lake Pleasant. Private land ownership would be concentrated south of State Highway 74, intermingled with state lands.

Offered lands: Between 532 and 711 acres would become public lands, constituting a change of less than one percent in ownership patterns in Pima County. The exchange would increase park land ownership by less than one percent in Pima County.

4.3.2.2 No action

Selected lands: BLM and private land ownership for this action would remain the same in Maricopa County. The lands would be disposed of and eventually placed into private ownership.

Offered lands: Although the lands are within the legislative boundary of Saguaro National Park, they would remain in private ownership. The NPS would have no authority over the land.

4.3.3 Access

4.3.3.1 Proposed action

Selected lands: Based on the foreseeable use, physical access to the land would potentially be closed to the public for such uses as recreation. New access corridors would be established as part of the future development.

Offered lands: Based on the foreseeable use, the lands will be accessible to the public, primarily for recreation. The predominant modes of travel will be by foot and/or horseback across existing trails.

4.3.3.2 No action

Selected lands: Based on the foreseeable use, physical access would remain available for the public until the lands were disposed of through another action.

Offered lands: Based on the foreseeable use, public access to the lands will be restricted or eliminated as development occurs.

4.3.4 Public and private land management

4.3.4.1 Proposed action

Selected lands: A total of 4,322 acres would no longer be managed by the BLM under the principles of multiple-use management, resulting in a loss of public land access and open space. The public would continue to have access to public lands north of the selected lands and north of State Highway 74 within the Lake Pleasant RCA. Under the foreseeable use, the land will be developed under an approved zoning plan by the city of Peoria for residential use, with commercial, resort development and open space use. Peoria would be required to support development with infrastructure such as sewage systems and services such as fire and police protection.

Offered lands: The NPS would become the land manager, subject to the laws, regulations and policies governing the NPS (see Foreseeable use). Saguaro National Park would preserve the natural and cultural resources of the parcel and allow visitors to enjoy the same. Potential development on the parcel may ultimately include access facilities (e.g., trails, parking and signs) which would be subject to further public review through an amendment to the park's General Management Plan. The lands will be maintained in a natural state and receive maximum protection as open space as part of the park.

4.3.4.2 No action

Selected lands: The lands would remain in multiple-use management and provide open space until disposal occurs under exchange, sale or recreation and public purpose action.

Offered lands: Based on the foreseeable use, the 711 acres are likely to be developed for suburban ranchettes of 3.3 acres per residential dwelling. A potential rezoning might result in commercial or resort development. Development will contribute to the loss of open space and increase urban sprawl in the Tucson Basin.

4.3.5 Grazing

4.3.5.1 Proposed action

Selected lands: The 4,322 acres would become private and the BLM would relinquish grazing management of those acres within the Bo Nine grazing allotment. There would be a loss of 216 AUMs of grazing use and $291.60 per year in income. The Bo Nine allottee would lose grazing use on the land once development occurs.

Offered lands: Based on the foreseeable use, grazing would not be authorized.

4.3.5.2 No action

Selected lands: Based on the foreseeable use, livestock grazing would eventually be eliminated on the subject lands. However, until another disposal action is processed on the lands, grazing would continue to be authorized by the BLM.

Offered lands: No grazing occurs on the lands, nor is it anticipated that the private land owner would authorize livestock grazing.

4.3.6 Recreation

4.3.6.1 Proposed action

Selected lands: The exchange would remove

4,322 acres upon which the BLM presently allows dispersed recreation and open space use. At the discretion of the new land owner, recreation may be allowed until such time as development occurs. With development and in conformance with the 10- to 15-percent slope ordinance, some recreation and open space use will continue. These uses may or may not be available to the general public. Portions of the selected lands have been identified as publicly owned conservation areas in the Maricopa Association of Governments open space plan. Under the exchange, the lands would become privately owned. The private owners would need to work with the city of Peoria to coordinate retention of the conservation areas and ensure that development is sensitive in nature to maintain the character of the landscape and the natural resources that define that character. Recreationists could relocate north of State Highway 74 in the Lake Pleasant RCA.

Offered lands: Based on the foreseeable use, acquisition of the 532 to 711 acres would ensure continued public recreation opportunities for the general public. The park proposes to create a trailhead with a parking area on the edge of the parcel, which may bring in more people for day use. The park will issue permits to commercial tour groups, which might increase the number of people using the area.

4.3.6.2 No action

Selected lands: Dispersed recreation such as hunting and OHV use would continue until the land was disposed of and developed.

Offered lands: Based on the foreseeable use, recreational use by the general public would eventually be eliminated. The land would be developed as single family homes and would no longer be accessible to the general public.

4.4 Cultural resources

4.4.1 Prehistoric and historic sites

4.4.1.1 Proposed action

Selected lands: Twelve known sites would be transferred out of federal ownership and no longer protected under the provisions of the Archaeological Resources Protection Act. In accordance with Section 106 of the National Historic Preservation Act, the BLM would make determinations of National Register of Historic Places eligibility and enter into consultation with the State Historic Preservation Office. The loss of the sites determined to be eligible would be mitigated through development and implementation of a data recovery plan prepared in consultation with the State Historic Preservation Office. Data recovery would include fieldwork (artifact collection, excavation and further recording), analysis, report preparation and curation of collections and records in accordance with federal standards. Based on the foreseeable use, preservation of the sites in place would not be feasible.

Offered Lands: Based on the foreseeable use, prehistoric and historic sites would be protected through acquisition and management as part of Saguaro National Park. The NPS would conduct surveys to identify and evaluate sites and to assess appropriate protective measures. The NPS would manage recreational or other uses to avoid adverse impacts to archaeological sites. Scientific research would be permitted if consistent with park management objectives.

4.4.1.2 No action

Selected lands: Archaeological sites would eventually be transferred out of federal ownership once disposal occurs. Until such time, the archaeological sites would continue to be protected under federal management and the Archaeological Resources Protection Act. Natural erosion or such uses as casual OHV recreation could disturb sites.

Offered lands: Based on the foreseeable use, prehistoric and historic sites would remain in private ownership. Residential development likely would disturb or destroy sites, causing a loss of associated scientific information and cultural values. Scientific research opportunities could be precluded by private ownership. The sites would not receive the protection accorded under management as part of Saguaro National Park.

4.4.2 Native American concerns

4.4.2.1 Proposed action

Selected lands: No places of traditional cultural importance are known to exist on the lands. It is unlikely that the prehistoric sites contain human burials, as they indicate temporary or seasonal use of the area for plant gathering. The BLM will consider any Native American concerns regarding potentially adverse impacts to cultural resources identified through tribal consultations. The BLM will work with the interested tribe or tribes to identify

appropriate mitigation measures. Tribes would be given the opportunity to participate in development of a data recovery plan or other mitigation measures.

Offered lands: No specific places of traditional cultural importance are known to exist on the lands. However, the Tohono O'Odham have expressed support for the preservation of prehistoric Hohokam sites. The Tohono O'Odham have also expressed an interest in preserving access to the area for the potential harvesting of saguaro fruit. Prehistoric sites would be protected under management as part of Saguaro National Park. Native American tribes could apply to the NPS for permits to harvest saguaro fruit, but no new gathering encampments would be authorized on the lands.

4.4.2.2 No action

Selected lands: The area eventually would be transferred out of federal ownership. The area would remain under federal jurisdiction and managed for multiple uses until a disposal action was processed. On future disposal actions that could affect cultural resources, the BLM would consult with interested Native American tribes to address their concerns in accordance with BLM Manual 8160 (Native American Consultation and Coordination).

Offered lands: Based on the foreseeable use, prehistoric and historic sites would remain in private ownership. Residential development could disturb or destroy sites, causing a loss of associated cultural values such as ancestral significance to the Tohono O'Odham. The Tohono O'Odham would not be able to access the area for saguaro fruit harvesting or other uses.

4.5 Socioeconomic resources

4.5.1 Population and demography

4.5.1.1 Proposed action

Selected lands: Projections for the year 2005 indicate that Maricopa County's population will increase by about 607,800 Based on the foreseeable use, part of the additional population would inhabit the residential development.

Offered lands: Projections for the year 2005 indicate that Pima County's population will increase by about 144,425. Based on the foreseeable use, residential development would not occur on the subject land. The increased population base would not occupy the land. However, implementing the proposed exchange will not affect the projected Pima County population.

4.5.1.2 No action

Selected lands: Based on the foreseeable use, impacts on Maricopa County's population would be identical to those under the proposed action alternative.

Offered lands: Based on the foreseeable use, portions of the population base would occupy the lands once developed. The population base for Pima County would remain the same under this alternative.

4.5.2 Local economy

4.5.2.1 Proposed action

Selected lands: The county will no longer receive PILT payments for these properties, resulting in a loss of $3,241.50. However, the proposed action will result in an increase in property tax revenue when the lands are assessed. Properties are assessed as improved or unimproved. Currently, the properties are considered vacant, but given the current assessed value, it is estimated that Maricopa County can expect to collect $67,775.23 in additional property taxes. These lands would provide direct and indirect employment opportunities for the local and regional area as well as increase the economic growth of Maricopa County and the city of Peoria.

Offered Lands: Transferring the lands from private to federal would result in a decrease of Pima County property taxes by $52,093.50 for 711 acres or $35,756.13 for 532 acres. The loss of property taxes would be compensated in part from PILT payments, from which it is estimated that Pima County will receive $399.

4.5.2.2 No action

Selected lands: Based on the foreseeable use, eventual disposal of the land would result in similar impacts as under the proposed action. Maricopa County would continue to receive PILT on the subject lands until disposal is completed.

Offered lands: Based on the foreseeable use, Pima County would receive the property taxes described under the proposed action. Once the land was developed, the property taxes would most likely increase.

4.5.3 State/Regional economy

4.5.3.1 Proposed action

Selected lands: The impacts to the state/regional economy would be identical to the impacts to the local economy.

Offered lands: The impacts to the state/regional economy would be identical to the impacts to the local economy.

4.5.3.2 No action

Selected lands: The impacts to the state/regional economy would be identical to the impacts to the local economy.

Offered lands: The impacts to the state/regional economy would be identical to the impacts to the local economy.

4.5.4 Environmental justice

4.5.4.1 Proposed action

Selected lands: No impacts are anticipated.
Offered lands: No impacts are anticipated.

4.5.4.2 No action

Selected lands: No impacts are anticipated.
Offered lands: No impacts are anticipated.

4.6 Cumulative impacts

This section presents a discussion of each alternative's potential to contribute to cumulative impacts. Cumulative impacts are impacts on the environment which result from incremental impacts of the action when added to other past, present and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place.

The cumulative impact analysis focuses on the impacts, both beneficial and adverse, of the proposed action and no action alternatives and their likelihood to contribute to cumulative impacts to resources identified during scoping.

The following is a list of major management actions taken or under consideration in which impacts of the proposed action or no action alternative may be determined to result in cumulative impacts for the selected lands around the city of Peoria and Lake Pleasant.

- The BLM's Phoenix RMP, approved in 1988, established the Lake Pleasant RCA, approximately 150,000 public land acres. The public lands within the RCA are to be retained in federal ownership to provide a variety of recreational uses and other multiple-use management purposes.
- The Arizona Desert Wilderness Act of 1990 established the Hell's Canyon Wilderness, 9,900 public land acres. A wilderness management plan was finalized by the BLM in 1995. Hell's Canyon Wilderness is within the Lake Pleasant RCA.
- A scenic corridor along State Highway 74, established by Maricopa County, was acknowledged and supported in the Phoenix RMP.
- Maricopa County, in cooperation with Yavapai County, the Bureau of Reclamation and the BLM, redesigned the Lake Pleasant Regional Park and park facilities to provide expanded recreation use around Lake Pleasant. Construction of the facilities are ongoing.
- The city of Peoria has drafted a master plan that addresses objectives for plan development. The plan establishes initial zoning and ordinances for undeveloped lands within the incorporated city.
- The Desert Spaces Plan, approved in 1995 by the members of the Maricopa Association of Governments, identifies private and public lands for conservation use.
- The city of Peoria approved the Lake Pleasant Heights development plan for lands adjacent to the selected lands. It is anticipated that Lake Pleasant Heights could be developed within 10 years.
- Current planned residential development is approximately 10 miles from the selected lands.
- Maricopa County and the city of Peoria have identified transportation corridors through and adjacent to the selected lands.

The following is a list of major actions taken or under consideration in which impacts of the proposed action or no action may be determined to result in cumulative impacts within a 10-mile radius for the offered lands.

- The Saguaro National Park Establishment Act of 1994 (P.L. 103-364) expanded by 3,640 acres the then-Saguaro National Monument and changed its name to Saguaro National Park. The act directs the government to acquire private land inholdings within the congressional designated boundary

from willing private land owners.
- Residential development has occurred on three sides of the offered lands.

4.6.1 Proposed action

Selected lands: The loss of 4,322 acres for public recreation use and open space use is minimal due to the availability of public lands within the Lake Pleasant RCA and lands within the Lake Pleasant Regional Park. In addition, some level of open space will be maintained when the 10- to 15-percent slope ordinance is applied in areas of development.

The exchange and development could contribute to urban sprawl within Maricopa County. The actual zoning and planning by the city of Peoria would determine the type and level of development. The Lake Pleasant RCA and regional park will prevent urban sprawl north of State Highway 74 in the vicinity of Lake Pleasant. As a result, minimal cumulative impacts are anticipated.

The exchange and development of the lands will contribute to the decrease in native vegetation, wildlife and wildlife habitat in north Maricopa County and the city of Peoria. This is not expected to result in cumulative adverse impacts. In addition, 150,000 acres are identified for retention within the Lake Pleasant RCA.

Maricopa County and city of Peoria property taxes will increase, adding revenues to the community, a positive cumulative impact as a result of the exchange.

Offered lands: Important Sonoran Desert habitat would be protected as part of Saguaro National Park. Much of the eastern slope of the Tucson Mountains has already been developed, and wildlife values have been largely lost. The offered lands constitute some of the last undeveloped land in this area and include some of the richest Sonoran Desert plant communities and important wildlife corridors through riparian habitat to the Santa Cruz River. Acquisition of the offered lands would add open space and contribute to the control of urban sprawl in the Tucson area. This would result in positive cumulative impacts.

Pima County property taxes would decrease and would be replaced with minimal PILT payments as a result of the exchange. The cumulative impacts are considered to be minimal.

4.6.2 No action

Selected lands: In the immediate future, no cumulative impacts are anticipated. However, cumulative impacts from future disposal actions could be similar to those under the proposed action.

Offered lands: The lands within the park would be developed, most likely according to existing zoning, e.g., single family dwellings on 3.3-acre lots. Development of the offered lands would also negatively impact the natural resources of the park through further habitat loss, degradation and fragmentation, roadkill, exotic species invasion and direct poaching and/or harassment by humans and domestic animals. An important wildlife corridor to the Santa Cruz River would be lost. The offered lands represent one of the few remaining undisturbed areas of the eastern bajada.

The Santa Cruz River valley and the adjacent eastern bajada of the Tucson Mountains contain one of the most significant concentrations of prehistoric and historic sites in Arizona. Urban development of the Tucson metropolitan area has led to the destruction of many sites and the loss of their informational and cultural values.

Park management and overall management of natural resources in the park would be negatively impacted.

4.7 Irretrievable and irreversible commitment of resources

4.7.1 Proposed action

Through exchange, the BLM would irretrievably commit the described resource values of the selected lands, except tortoise habitat, into private ownership and management. BLM policy is no net loss of tortoise habitat. Mitigation of the irretrievable loss would occur through acquisition of the offered lands. There would be an irretrievable loss of two federal reserved right claims for Big Spring. These rights cannot be transferred out of federal ownership and would be withdrawn with ADWR.

4.7.2 No action

Based on the foreseeable use, the irretrievable and irreversible commitment of resources would be the same as under the proposed action upon another

disposal action.

4.8 Relationship between short-term uses and long-term productivity

4.8.1 Proposed action

Selected lands: Based on the foreseeable use, eventual surface-disturbing activities (construction) would likely affect the long-term productivity of resources.

Offered lands: Through acquisition of the private lands and NPS assumption of resource management responsibilities, long-term productivity of resources will be realized.

4.8.2 No action

Selected lands: Based on the foreseeable use and at the time of another disposal action, eventual surface-disturbing activities (construction) would likely affect the long-term productivity of resources.

Offered lands: Based on the foreseeable use, it is anticipated that eventual residential development will affect long-term productivity of resources on the offered lands.

4.9 Unavoidable adverse impacts

4.9.1 Proposed action

No unavoidable adverse impacts are anticipated for either the selected or offered lands.

4.9.2 No action

No unavoidable adverse impacts are anticipated for the selected lands. However, development of the offered lands would result in impacts to resource values.

4.10 Mitigating measures and residual impacts

Deed restrictions will cover cultural resources, hazardous waste remediation and floodplain restrictions.

4.10.1 Proposed action

A mitigating measure relating to the selected lands would be to gate the old mine shafts to reduce their danger to humans and allow for bats to utilize them.

In accordance with Section 106 of the National Historic Preservation Act, the BLM would make determinations of National Register of Historic Places eligibility and enter into consultation with the State Historic Preservation Office. The loss of the sites determined to be eligible would be mitigated through development and implementation of a data recovery plan prepared in consultation with the State Historic Preservation Office. Data recovery would include fieldwork (artifact collection, excavation and further recording), analysis, report preparation and curation of collections and records in accordance with federal standards. Based on the foreseeable use, preservation of the sites in place would not be feasible.

4.10.2 No action

No mitigating measures or residual impacts would apply under the no action alternative.

5.0 CONSULTATION AND COORDINATION

During the processing of this EA, the BLM and NPS consulted with and received input from federal, state and local agencies, elected representatives, Native American tribes, non-governmental organizations and private individuals. This section summarizes the efforts made to notify and involve interested parties on the proposed exchange.

5.1 Public participation and scoping

The following is a description of the steps taken by the BLM and NPS to notify potential interested parties of the proposed exchange, inviting them to participate in the analysis process and developing a list of scoping issues to be addressed in the EA.

5.1.1 Notices

The notice of intent to complete an EA was published in the *Federal Register* on March 11, 1996. It notified the public of the proposed exchange, provided notification of two scoping meetings on March 26, 1997 in Tucson and March 27, 1997 in Phoenix and provided a 30-day comment period.

The notice of availability of the FONSI and EA and public meetings was published in the *Federal Register* on June 10 or 11, 1997. The notice provided a 30-day comment period on the FONSI and EA and notified interested parties of two public meetings on July 1 in Tucson and July 2, in Phoenix.

5.1.2 Publication of a notice of proposed exchange

The notice of proposed exchange of lands in Maricopa and Pima counties was published in the *Tucson Daily Star* beginning April 18, 1997 and the *Arizona Republic* beginning April 22, 1997 once a week for four consecutive weeks. In addition, the notice was sent to local, state and federal governments and elected officials, informing the public that the BLM is considering a proposed exchange and providing a 45-day comment period ending June 6, 1997.

5.1.3 Issuance of news releases

On March 11, 1997, a letter transmitting a request for scoping comments was sent to approximately 281 private individuals, special interest groups, potential interested and/or affected parties, tribal governments and officials, local, state and federal agencies and elected officials. The request included a summary of the proposal, the parties involved in the exchange, an explanation of how the public could participate and when the project would start and conclude. It also asked whether recipients wished to continue to receive information (i.e., the EA) on the proposed exchange. A news release was dispatched on March 18, 1997 to 11 newspapers across Arizona, describing the proposed exchange and the dates and times of the scoping meetings.

5.1.4 Coordination with local, state and federal agencies

In the mailing described in part 5.1.3, local, state and federal agencies were notified of the proposed exchange. In addition, through the scoping meetings, personal contacts by phone and arranged meetings and briefings, the interested parties were kept informed of the proposed exchange. The interdisciplinary team consulted with the U.S. Fish and Wildlife Service regarding the Endangered Species Act and the Arizona State Historic Preservation Office concerning the identification and treatment of cultural resources.

5.1.5 Consultation and Coordination with Native American tribes

On April 3, 1997, the BLM sent a letter initiating consultation with 13 Native American tribes, followed by telephone calls to representatives from some of the tribes to determine if any issues or concerns regarding the proposed exchange existed. Additionally, one briefing was made to the Tohono O'Odham regarding the proposed exchange. Through these consultation efforts, the BLM clarified questions about the proposed exchange. However, no issues or concerns were raised by the Native American tribes.

5.1.6 Public outreach activities and scoping meetings

Two public open house meetings were held on March 26, 1997 in Tucson, and March 27, 1997 in Phoenix to provide information to the public about the proposed exchange. The open house meetings were advertised through publication of the notice in the *Federal Register*, legal notices in local newspapers, an informational update mailer to the exchange mailing list, publication of the news release and radio announcements. Participants were provided with a fact sheet and comment form. A total of 55 individuals attended the two open house meetings and 42 comment letters/forms were received from the participants at the open house meetings, in response to the informational letter and other publications.

5.2 Environmental justice

The BLM has complied with Executive Order 12898 concerning environmental justice by providing all members of the public an opportunity to participate in the exchange and NEPA process. In reviewing the impacts of the proposed exchange on socioeconomic resources as well as other land use and biological resources in 4.0 Environmental consequences, the BLM has determined that potential adverse impacts of the exchange do not disproportionately affect Native American tribes or minority and/or low-income groups.

6.0 LIST OF PREPARERS AND COORDINATORS

Name	Title	Responsibilities
Bureau of Land Management, Phoenix Field Office, Environmental Assessment Interdisciplinary Team		
Michael A. Taylor	Field Manager	Management Oversight
Bill Childress	Resource Advisor	Project Manager
Shela McFarlin	Resource Advisor	NEPA Coordinator/Project Manager
David Redmond	Realty Specialist	Land Use
Connie Stone	Archaeologist	Cultural Resources
Russ Miller	Rangeland Management Specialist	Range
Ron Smith	Geologist	Minerals
Wendell Peacock	Public Affairs Specialist	Public Affairs, Editor
Julie Mohan	Staff Assistant	Mailings, editing
Kirby Boldan	Chief of Operations	Hazardous Materials
Lin Fehlmann	Water Rights Specialist	Water Rights
Bureau of Land Management, Arizona State Office, Environmental Assessment Interdisciplinary Team		
Bill Grossi	Wildlife Biologist	Wildlife
Gina Ramos	Natural Resource Specialist	Socioeconomics
Bill Ruddick	Realty Specialist	Statewide Exchange Team Leader
Mike Werner	Statewide Exchange Team Appraiser	Appraisals
Shawn Redfield	Chief Appraiser	Appraisals
Alicia Leone	Land Law Examiner	Adjudication
Steve Markman	Hydrologist	Hydrology
Bureau of Land Management, Tucson Field Office, Environmental Assessment Interdisciplinary Team		
Jesse Juen	Field Manager	Tucson Liaison
National Park Service, Saguaro National Park, Environmental Assessment Interdisciplinary Team		
Doug Morris	Park Superintendent	Management Oversight
Mark Holden	Vegetation Specialist	Resources and Land Use
Natasha Kline-Brown	Wildlife Biologist	Resources and Land Use
Meg Weesner	Chief of Science and Resource Management	Resources and Land Use

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Appendix A

Saguaro National Park Exchange

Selected lands

Gila and Salt River Meridian, Arizona

T. 5 N., R. 1 W.,
sec. 1, lots 1-7, SW¼NE¼, S½NW¼, SW¼, W½SE¼;
sec. 3, SW¼SW¼SW¼;
sec. 4, SW¼,SW¼SW¼SE¼, W½SE¼SW¼SE¼, E½SW¼SE¼SE¼, SE¼SE¼SE¼;
sec. 5, E½SE¼;
sec. 7, N½NE¼, N½S½NE¼, NE¼NW¼;
sec. 8, N½NE¼, E½W½E½SE¼SE¼, E½E½SE¼SE¼;
sec. 9, All;
sec. 10, All;
sec. 11, All;
sec. 14, lots 1-10, NW¼NE¼, N½NW¼, NE¼SW¼, S½SW¼;
sec. 15, lots 1-10, N½NE¼, SW¼NE¼, NW¼, N½SW¼;
sec. 22, N½N½, SW¼NW¼.

The area described contains 4,322.40 acres

Offered lands

Tract 02-108

Situated in the state of Arizona, county of Pima, in a portion of Section 10 and a portion of Section 11, of Township 13 South, Range 12 East of the Gila and Salt River Meridian, being more particularly described:

All of Section 10 and containing 640.00 acres of land, more or less.

Excepting therefrom the W½, W½, NW¼ and NE¼NW¼ of said Section 10 containing a total of 79.54 acres of land, more or less.

Excepting therefrom the North 30 feet of the E½ of said Section 10 for Belmont Road right-of-way and containing 1.02 acres of land, more or less.

Excepting therefrom the following described parcel lying in a portion of the SE¼ of said Section 10 being more particularly described as follows:

Beginning at the Southeast corner of said Section 10;
Thence, West, 2040.32 feet, along the South line of Section 10;
Thence, North, 712.60 feet, along the West line of a parcel of land conveyed by Ayres Boal Jr. to Glenn N. Carlton, et ux. as recorded on March 24, 1982 having docket no. 6744, page 143 of the deed records of Pima County;
Thence, East, 190.80 feet, along a portion of the North line of said lands of Glenn N. Carlton, et ux.;
Thence, North, 60.00 feet;
Thence, along the North right-of-way line of Abington Road the following four courses:

1) East, 593.58 feet, to a point of curve;
2) Northeasterly, along the arc of a curve, to the left, having a radius of 3556.58 feet, an arc length of 602.12 feet and a chord which bears N. 85°09' E., 601.38 feet, to a point of tangent;
3) N. 80°18'E., 365.55 feet, to a point of curve;
4) Northeasterly, along the arc of a curve, to the left, having a radius of 1603.27 feet, an arc length of 307.28 feet, and a chord which bears N. 74°48' 34" E., 306.81 feet, to a point on the East line of said Section 10;

Thence, S. 0°01'E., 965.43 feet along the East line of said Section 10, to the point of beginning and containing 37.83 acres of land, more or less.

The total of lands contained in said Section 10 contains 520.61 acres of land, more or less.

Also, that portion of said Section 11, being more particularly described as follows:

Commencing at the Northwest corner of said Section 11;
Thence, S.0°01'E., 30.00 feet along the West line of said Section 11, to the point of beginning;
Thence, N. 89°58'E., 2349.79 feet, along the South right-of-way line of Belmont Road;
Thence, S. 11°41'W., 838.55 feet, along a portion of a portion of the West line of a tract of land designated at Parcel "B" that was excepted from Parcel No. 2 as described in Warranty Deed to Continental Service Corporation recorded on January 5, 1978 in document 5686, page 500 of the deed records of Pima County;
Thence, Southeasterly 1880 feet, more or less, to a point of intersection of the centerline a gas line easement conveyed to Western Gas Co. as recorded in Book 50 of Miscellaneous Records, page 620, El Paso Natural Gas Co., as recorded in Book 190 of Deeds, page 544 and El Paso Natural Gas Co., as recorded in Book 74 of Miscellaneous Records, page 301, with the North right-of-way line of Abington Road;
Thence, along the North right-of-way line of Abington Road as conveyed in Deed to Pima County recorded on April 17, 1955 Book 973, page 505 of the deed records of Pima County, the following five courses:

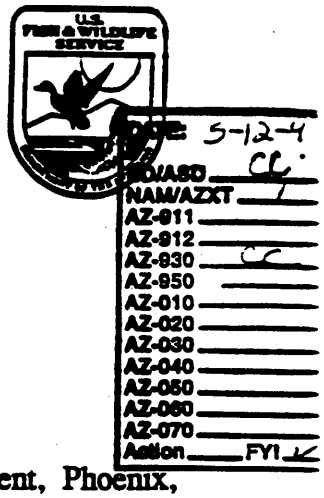
1) Southwesterly, along the arc of a curve, to the left, having a radius of 934.01 feet, an arc length of 253.94 feet, a delta angle of 15°34'39", and a chord which bears S. 48°32'20"W., 253.16 feet, to a point of tangent;
2) S. 40°45'W., 266.75 feet, to a point of curve;
3) Southwesterly, along the arc of a curve to the right, having a radius of 879.32 feet, an arc length of 287.50 feet, a delta angle of 18°44' and a chord which bears S. 50°07'W., 286.22 feet to a point of tangent;
4) S. 59°29'W., 1823.25 feet, to a point of curve;
5) Southwesterly, along the arc of a curve to the right, having a radius of 1603.27 feet, an arc length of 275.22 feet, a delta angle of 9°50'08" and a chord which bears S. 64°24'01" W., 274.88 feet, to a point on the West line of said Section 11;

Thence, North 0°01'W., 4284.57 feet, to the point of beginning and containing 190.43 acres of land, more or less.

The total of lands in that parcel known as Tract No. 02-108 of Saguaro National Park contains 711.24 acres of land, more or less.

Appendix B

United States Department of the Interior
Fish and Wildlife Service
Arizona Ecological Services Field Office
2321 W. Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
(602) 640-2720 Fax (602) 640-2730



In Reply Refer To:
AESO/SE
2-21-97-I-173

May 6, 1997

MEMORANDUM

TO: State Director, Arizona State Office, Bureau of Land Management, Phoenix, Arizona

FROM: Field Supervisor

SUBJECT: Proposed Saguaro National Park Land Exchange Request for Concurrence

This responds to your request of April 18, 1997, for our concurrence with your findings on the proposed exchange of selected lands in Maricopa County west of the Agua Fria River and south of Highway 74, for offered lands adjacent to Saguaro National Park in Pima County. We reviewed the biological evaluation attached to your April 18, 1997, memorandum and are pleased to see the special precautions being taken with respect to the lesser long-nosed bat and follow-up surveys to confirm non-use in the area. We also acknowledge the efforts to survey for the bat, quantify and characterize the value of foraging habitat, and survey for the cactus ferruginous pygmy-owl.

We concur that the land exchange described above may affect, but is not likely to adversely affect, the peregrine falcon, bald eagle, lesser long-nosed bat, or cactus ferruginous pygmy-owl; therefore, no biological assessment or further section 7 consultation pursuant to the Endangered Species Act of 1973 is required with the Fish and Wildlife Service for this particular activity. Very likely, BLM could have made no effect determinations for the bald eagle and peregrine falcon. Should additional information on listed or proposed species become available, this determination may be reconsidered. The above statements are provided in accordance with the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

We appreciate your efforts to conserve Arizona's natural heritage. If you have any questions regarding this memorandum, please contact Ted Cordery or Tom Gatz.

Sam F. Spiller

Sam F. Spiller

cc: Director, Arizona Game and Fish Department, Phoenix, AZ
Regional Director, Fish and Wildlife Service, Albuquerque, NM (GM:AZ)
Field Director, Bureau of Land Management, Tucson, AZ

MEMORANDUM

For: Files

From: John H. Jett, Director

Subject: Clementine Mine, Maricopa County

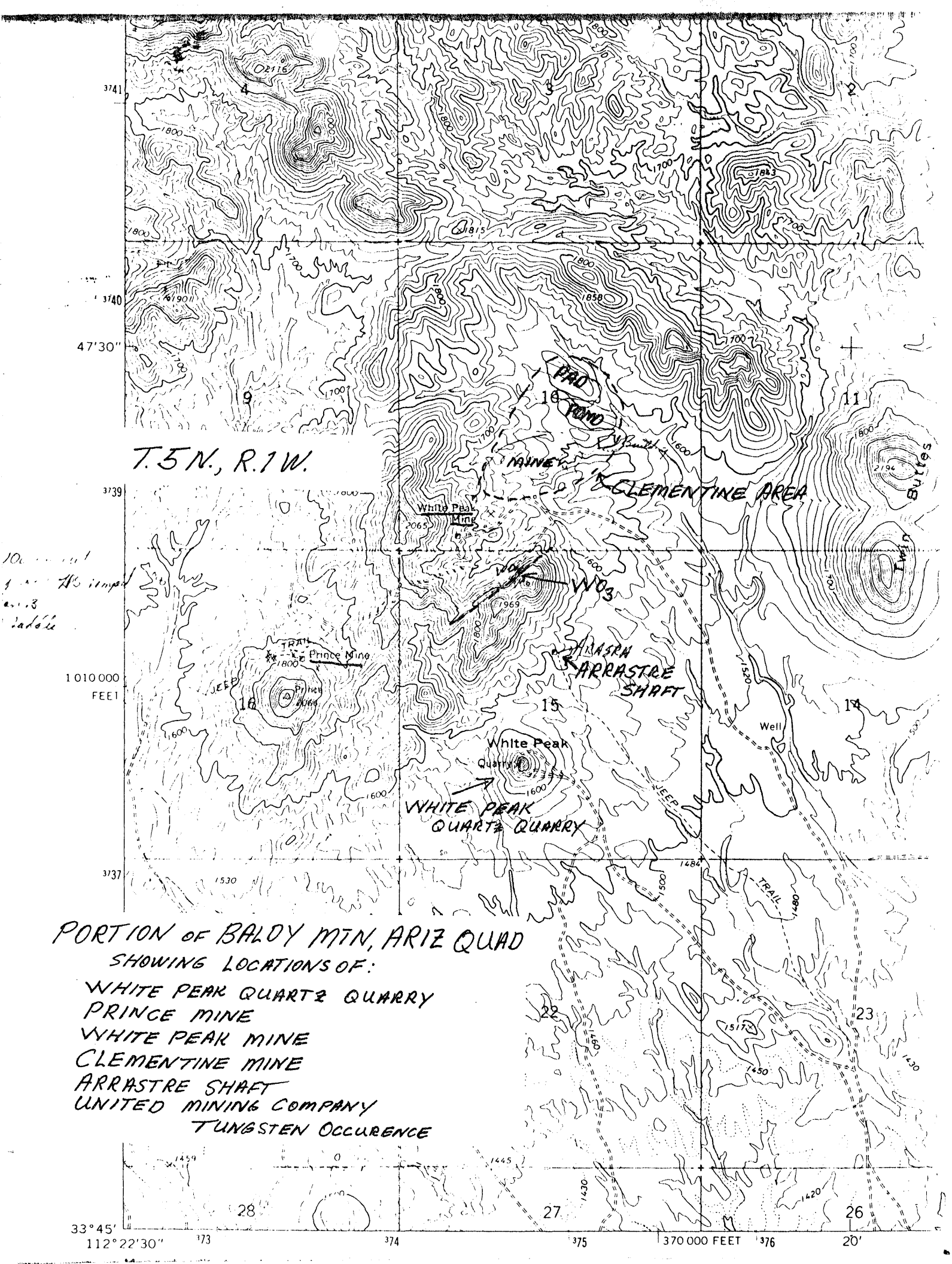
Date: August 28, 1980

The following information was received from Tom Boyden (Nuexco) over the telephone on Wednesday, August 27, 1980.

Copper Lake Exploration Ltd of Canada leased the Clementine Mine (north of Phoenix). Mr. Jerry Weathers wrote a report in 1973 and reported the following:

1. 75,000 T block of ore averaging .06 Au and .2 Ag. OZ./TON
2. 37,500 T averaging .07 Au and .2 Ag. OZ/TON
3. Indicated -- 600,000 T of same grade with possibility of 5,000,000 T available.

JHJ:mw



PORTION OF BALOY MTN, ARIZ QUAD
SHOWING LOCATIONS OF:

WHITE PEAK QUARTZ QUARRY
PRINCE MINE
WHITE PEAK MINE
CLEMENTINE MINE
ARRASTRE SHAFT
UNITED MINING COMPANY
TUNGSTEN OCCURENCE

CLEMENTINE (P)

A PROGRESS REPORT ON COPPER LAKE'S CLEMENTINE PROPERTY, MARICOPA CO., AZ. SUMMARIZING CALCULATED MINEABLE GOLD RESERVES

By

Gerald Weathers

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ILLUSTRATIONS

GEREX, INC.
MINERAL EXPLORATION

Post Office Box 826
Lake Montezuma, AZ. 86342

Telephone
(602) 567-4779

A PROGRESS REPORT ON COPPER LAKE'S CLEMENTINE PROPERTY, MARICOPA COUNTY, ARIZONA SUMMARIZING CALCULATED MINEABLE GOLD RESERVES

January 1982

By

Gerald Weathers

INTRODUCTION

The writer has been associated with the development of the Clementine Property since 1961. During this time the gold reserves have by means of intermittent drilling programs been consistently expanded from the gold mineralization occurring in a shallow shaft and numerous scattered prospect pits to the tonnages and grades outlined in this report, and also delineated on the enclosed maps.

GEOLOGIC CONCEPTS

Gold mineralization was observed to occur principally within a northeasterly trending-southeasterly dipping structure stained by red hematite and containing white subparallel to ramifying quartz veins; presenting a sharp contrast to the surrounding dark gray pre-Cambrian Yavapai schist host rock.

Exposures of this structure were sampled along its northeasterly trend for approximately a mile where it is covered by younger volcanic flows. (Refer to Map, Fig. III). Sample assays revealed the greatest surface concentration of gold to occur at the intersection of the quartz-hematite structure with a northwesterly trending, southwesterly dipping manganiferous-calcite structure, forming an ore shoot.

The majority of the gold within these intersecting structures was found found to be submicroscopic in size and thus invisible when searched for through the usual field lenses, placing heavy reliance on sample assays for exploration guidance.

Subsequently, this ore shoot has been mined by open pit methods and followed for 700 feet downdip by drilling, toward the south. The continuously mineralized zone is interpreted via these methods to be at least 700' wide and to dip to the south and rake to the east resulting in an apparent 30 degree dip to the southeast. Pending drill hole sample assays and future drilling programs should expand the volume of known gold reserves within this zone. (Refer to Property Map, Fig. III and Plan Map, Fig. I, plus sections).

Additional intersecting structures mineralized with gold have been observed along the principal structure, but remain unexplored at depth. (Refer to Map, Fig. III).

Recent brief studies by independent and company geologists have disclosed additional structures radiating from the open pit area and also other apparently unrelated (?) mineralized structures, particularly to the south of the present development. (Refer to Fig. III).

RESERVES DEVELOPED AS A RESULT OF FORMER DRILL PROGRAMS

1973

4,228 feet of shallow percussion holes were drilled along the strike of the main structure ending in July, 1973. As a result of this program, calculated measured reserves were 112,500 tons averaging .06 oz. gold/ton and 0.3 oz. silver/ton. Indicated gold reserves were estimated to be 594,700 tons and inferred reserves 5,000,000 tons.

1981

Seventy-nine $4\frac{1}{2}$" diameter percussion holes totalling 9,025 feet were drilled at 50' intervals along the strike and in the present pit area beginning Dec. 1980 and ending April 1981.

CLEMENTINE GROUP

MARICOPA
PIKES PEAK

Secs. 16, 15, 11, 10, 9, T5N R1W

DO NOT REPRODUCE

CJH WR 8/22/80 Visitor Carl Tripahn, United Mining Company, 748 East Broadway, Phoenix, Arizona 85040. He ahd others are starting up an Au-Ag cyanide heap leach operation at their Clementine Mine near White Peak in Section 15, T5N, R1W south of Lake Pleasant. The Clementine Mine will be open pitted. Drilling has indicated large tonnages of ore averaging 0.06 oz.Au/T and 0.25-0.50 oz.Ag/T. A recovery unit (zinc dust) is being brought in from Los Angeles. The pad will be constructed of sand, bentonite and a plastic membrane. The covering quadrangle is the Baldy Mountain. The operation is estimated to be on-stream in December 1980.

CJH WR 9/5/80 Visitors Mr. & Mrs. Roy Cavalcant, 8 Meadowbrook, Freeport, New York, wanted information on the Clemtine Mine, Maricopa County. Gave them information contained in a financial newsletter, "International Investor's Viewpoint"

KAP WR 1/16/81: Copper Lake Exploration Ltd (apparently a joint venture partner in the Clementine Mine, Pike's Peak District, Maricopa County) appears to also be the same as White Cap Energy Resources Ltd of Canada. The Canadian Mines Handbook indicates that a name change took place in October of 1978.

JHJ Memo for file, 4/1/81: Visited Copper Lake Expl Co. property. It is the Clementine Mine file. Company guard would not permit entry since no one with authority was around. They had just left. He stated there was one pile being leached, with two more under construction. Another source stated the pile contained 100,000 tons. An office has been established at 24018 N. 93rd Avenue, telephone 972-6237. Officers of the company included Bob Dingee, Darrell Buerge (Manager) and Mike Lowell (Personnel Manager).

Mr. Brian Bond, a Geological Engineer, was employed to on site supervise the last portion of this program. In his May 1981 report, Mr. Bond, calculated:

Proven Reserves - 329,352 tons grading .06 oz. gold/ton.

Probable Reserves - 538,627 tons grading .06 oz. gold/ton.

Possible Reserves - 2,338,008 tons.

These near surface reserves were calculated from data received from blast-hole, bulk, channel and drill hole sample assays.

Samples were assayed by a registered Assayer, who installed an Atomic Absorption Spectophotometer in a laboratory constructed on the property. Assays of check samples were obtained from independent assay laboratories, who used both atomic absorption and fire assay methods. Mr. Bond calculated the average deviation between the two methods to be .01 oz/ton.

During this drilling program, 84,319 tons of material were open pit mined, using scraper loaders, and dumped on a leach pad. Representative bulk samples from each load dumped were consolidated, prepared as composite samples and submitted to Mountain States Engineering for assaying and feasibility tests. The mined material averaged .05 oz. gold/ton.

CURRENT DRILL PROGRAM

25,825 feet of 5 inch diameter percussion holes were drilled starting with CR 80 in August 1981 and ending with CR 169 in the latter part of December 1981. The drill hole locations are shown on Fig. I - Gold Interval Intercepts; grade and hole depths are shown on the enclosed tables and sections.

CURRENT GOLD RESERVES

Mr. M. J. Bruder, a Mining Engineer, was employed to supervise the balance of the drill program, to calculate gold reserves, and to propose the plan for an open pit mining operation designed to mine the proven mineable reserves.

Based on the information developed to date, Mr. Bruder has calculated the mineable proven gold reserves to be 737,063 tons averaging .051 oz. gold per ton with a stripping ration of 1.4: 1 (Refer to Exhibit No. 1 and Fig. I).

In addition to the above reserves, 84,319 tons of material averaging .05 oz. gold per ton has been placed on the leach pad, and muck selectively removed from the open pit using an end loader has been stockpiled as follows:

	Est. Tons	Est. Grade (Assays Pending)
	50,000	.07 oz. Au/T
	10,000	.03 oz. Au/T
	20,000	.047 oz.Au/T
Total	80,000	.06 oz. Au/T

Thus, the proven mineable, plus stockpiled gold reserves are presently judged to be 901,382 tons averaging .052 oz. gold/ton.

It is expected that pending assays of sampled drill hole intervals multiplied by their calculated areas of influence will result in mineable proven gold reserves in excess of 1 million tons.

Assay comparisons of check samples sent to independent assayers are tabulated in Bruder's report, Exhibit 2).

Bruder has estimated probable gold reserves to be 5.52 million tons grading 0.055 oz. gold/ton and possible reserves to be 17.7 million tons grading .05 oz. Au/Ton, based on a study of the available data and the occurrence of favorable geologic structures.

COMMENTS

A large percentage of Bruder's mineable gold reserve polygon areas and calculations were closely checked and found to be reliable.

The proven reserves in the areas adjacent to the mineable reserves will have to be expanded or shown to continue into the mineable reserves by future development exploration before they can be seriously considered for mining.

Geologic investigations have been confined to a northeasterly trending structure and principally to the intersecting structure in the open pit area. It is expected that future geologic work will reveal the occurrence of a mineralized structural pattern along these and other structures.

There is no drill hole information below 300 feet on the down dip projection of the known ore shoot; however, it is reported (news release) that Ranchers' Exploration, who have recently drilled around the Gunbolt Prospect immediately to the east (Fig. III), have encountered high grade drill hole intercepts near the 800 foot depth.

There is no known subsurface geologic information available pertaining to the areas overlain by alluvium or by younger volcanic flows. (Fig. III)

Based upon the above enumerated observations as well as the fact that the explored portion of this property is confined to a 20 acre tract encompassed by about 2,100 acres within the property boundary, it is apparent that only a small fraction of the underlying gold bearing potential of this property has been explored.

RECOMMENDATIONS

It is recommended that the base map being prepared for this property be completed.

The geologic field investigations should continue and results obtained plotted on the base map.

Information derived from the drilling program should be evaluated and another drilling program planned designed to expand the proven gold reserves.

January 1, 1982

Gerald Weathers

Gerald Weathers
Gerex, Inc.

From COPPER LAKE 1982 ANNUAL REPORT

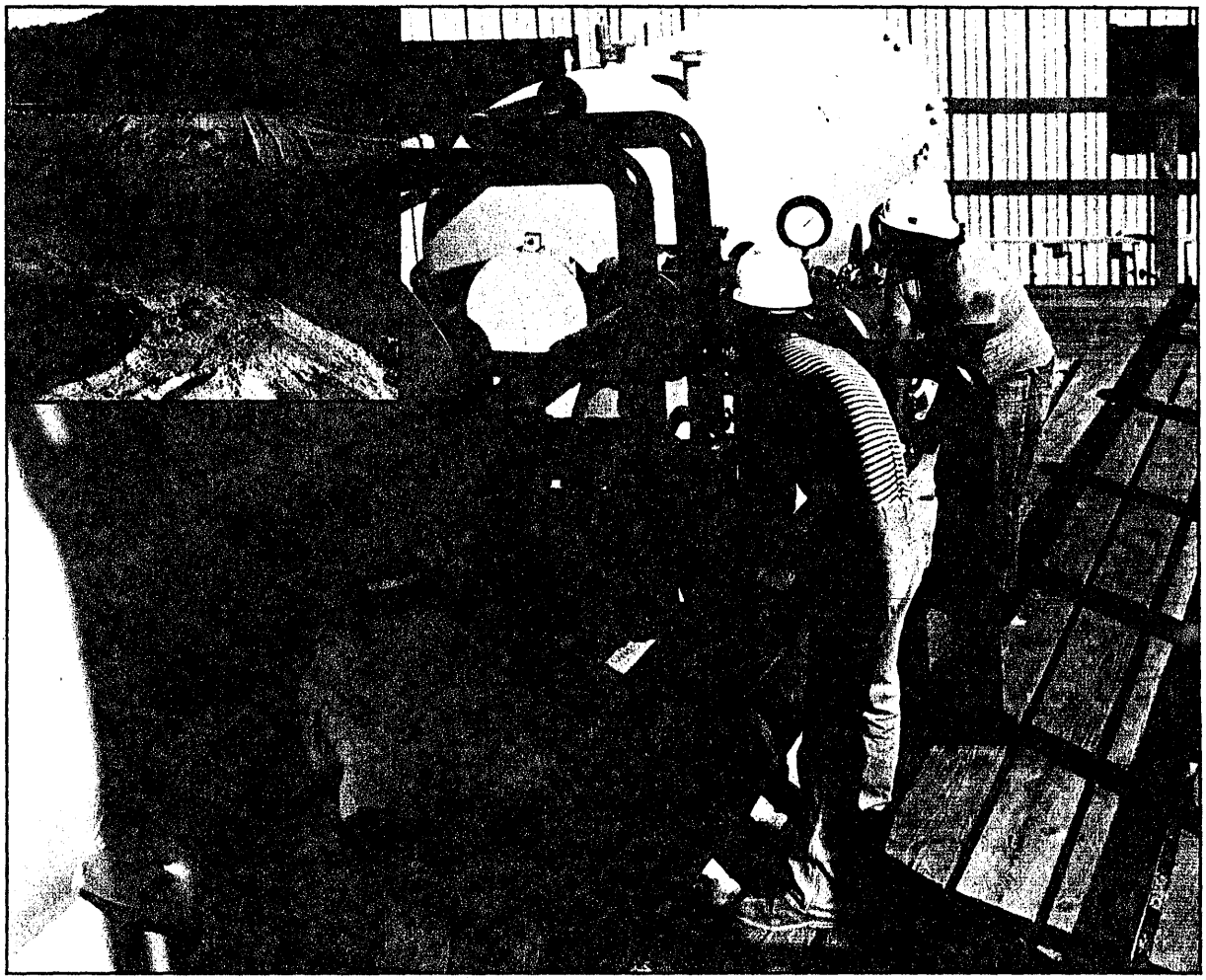
CLEMENTINE PROJECT

SUN CITY, ARIZONA

The Clementine Mine is located within the colourful Hieroglyphic Mountains near Sun City, Arizona. Your Company's efforts to place this promising gold deposit in production in 1980-81 were seriously hampered by falling gold prices coupled with disputes with claim owners, which made the gold deposit the subject of litigation.

The matter of litigation has now been successfully resolved and the Company has entered into an agreement with the claim owners to acquire the remaining 80% interest; this now gives Copper Lake 100% of the mineral claims that comprise the Clementine property. Management plans an aggressive development programme to place the deposit in production in 1984.

The 1980-81 heap-leach operation proved that gold recoveries from run of mine ore on the Clementine were inadequate to justify the operations, as the price of gold was falling to the $400 level. Subsequent tests by various independent laboratories indicate that 80-90% of the gold can be recovered by fine grinding (– 200 mesh) prior to cyanide leaching. Additional tests indicate that 80% gold recoveries can be achieved by crushing and agglomerating gold ore prior to heap leaching.



Fine tuning the gold recovery unit.

CLEMENTINE PROJECT
(CONTINUED)

Mineral reserves defined to date for the Clementine deposit are as follows —

CLASS	TONS	GRADE OZ. AU/TON	GOLD CONTENT TROY OZ.
Proven	1,110,272	0.052	57,734
Probable	5,520,000	0.055	303,600
Possible	17,700,000	0.050	885,000

Additional drill evaluation is planned to place the possible reserves in a drill proven class.

Currently there is a 40,000 ton stockpile of mined ore that averages 0.2 oz. Au/ton and approximately 100,000 tons of mined ore that averages 0.06 oz. Au/ton which will provide the initial feed for the planned crushing and leaching gold recovery circuits that will be implemented this year. By selectively mining the current open pit at the Clementine, management feels that an average grade of 0.1 oz. Au/ton will be maintained as the feed for the crushing and leaching circuit. Initial throughput of ore should be more than 1,700 tons per day, thereby making the Clementine one of the largest gold producers in Arizona. Expansion plans slated for the Clementine after approximately one year of production are to construct a much larger gold recovery circuit to either augment or replace the agglomeration leaching circuit. In depth engineering proposals will be reviewed by the Company's management during the upcoming year.

1984-1985
SUMMARY OF OPERATING COST & PRODUCTION ESTIMATES (U.S.$)
CLEMENTINE MINE — PHASE I

	SEPT.-OCT.	NOV.-DEC.	JAN.-FEB.	MAR.-APRIL	MAY-JUNE	JULY-AUG.	TOTAL
Tons	102,000	102,000	102,000	102,000	102,000	102,000	612,000
Mining, milling operating costs ($)	1,224,000	1,224,000	1,224,000	1,224,000	1,224,000	1,224,000	7,344,000
Gold recovery (oz.)	7,140	7,140	7,140	7,140	7,140	7,140	42,840
Gross revenue ($) at $350/oz.	2,499,000	2,499,000	2,499,000	2,499,000	2,499,000	2,499,000	14,994,000
Estimated net recovery ($) at $350/oz.	1,275,000	1,275,000	1,275,000	1,275,000	1,275,000	1,275,000	7,650,000‡
Estimated net revenue ($) at $450/oz.	1,989,000	1,989,000	1,989,000	1,989,000	1,989,000	1,989,000	11,934,000§

NOTES

- *Does not include depreciation of equipment in operating costs of $12.00/ton or $172/oz. Au.*
- *Based on feed grade average of 0.1 oz. Au/ton and 70% recovery of Au.*

‡ *equivalent to earnings of $0.76/share before taxes*
§ *equivalent to earnings of $1.19/share before taxes*

CLEMENTINE GROUP MARICOPA COUNTY

CJH WR 1/14/83: Visitor: Dave Rabb said he is retained by a Phoenix law firm whose clients are suing the Copper Lakes Exploration Co. for, amoung other things, damaging the ore body of their Clementine Mine, Agua Fria District, Maricopa County. The Copper Lake Exploration Co., represented by Messrs. Gus Weinstein, Ford Scott and Monty Simmons had leased the property from Mr. Carl Triphahn of the United Mining Co.

KAP WR 3/18/83: The telephone number, 973-6237 for Copper Lakes Exploration in Sun City has been disconnected.

NJN WR 4/27/84: A sign posted north of CAP at the road heading to the Clementine Group Mine, Maricopa County no longer metions Copper Lake Mining Inc. It now states U.N.C., 268-9657, 9487823.

KAP WR 6/8/84: Rick Renn, Geologist, Goldsil Resources Ltd, reported his firm is evaluating the Clementine Group (file) Maricopa County. He feels the property has potential to supply feed to a mill-cyanide plant being considered for the Mystic Mine.

Gerald Weathers reported to Mr. Jett on 9/6/84 that Carl Triphahn and his son are both deceased. Majority ownership of the mine rests with a Bob Hicks, Mr. Triphahn's son-in-law.

KAP WR 11/30/84: In the company of Nyal Niemuth, a visit was made to the Clementine Mine (f) Maricopa County to ascertain the current status of the operation. It is shut down and has been for some time. The facility is completely intact and could likely be restarted in 30 days time requiring only minor clean up and repairs. A total of 2 samples were taken from the west face of the mine pit. A separate report has been written.

CLEMTINE GROUP MARICOPA COUNTY

NJN WR 8/27/82: Lenn Pritchard with Seven Cities Mining Company visited. Seven Cities is looking at the Clementine and Silica Peak mines, both in Maricopa County. They believe the same gold mineralization may exist on these properties as that at the adjacent Mystic Mine and want to look for it.

CJH WR 10/8/82: Phone call from: Kirby Coryell, Tucson Geologist. Was interested in the status of the Clementine MIne, Maricopa County, Section 14, T5N R1W. I read to him the mine file including the two excerpts from Dick Beard's and Ken Phillips' weekly reports.

CLEMENTINE GROUP MARICOPA COUNTY

KAP WR 12/7/84: Maps of the projected location of the claims covering the Clementine Mine (f) have been obtained for inclusion in the file.

NJN WR 5/2/87: Mark Olm (card) of Terra Technologies (card) reported that he met Bill Hicks at the Clementine Group (file) Maricopa County. Apparently the legal dispute between the owner, Mr. Hicks and Copper Lake Exploration Ltd. (card) has not been fully resolved. Mr. Hicks is trying to remove them from the property.

NJN WR 5/29/87: Tom Sills with ORE Valle Consultants visited and reported that he has been meeting with Bob Hicks, owner of the Clementine (file) Maricopa Co. He has been reviewing both the exploration and metallurgical data relating to the property. This includes a copy of a Mountain States report that indicates grinding and milling of the ore is necessary to get a good gold recovery. It appears that Copper Lakes ignored this information in putting the heap leach now defunct and that Mr. Hicks and the Triphahn heirs now control the property and that he is interested in reviewing the data and, if warrented, doing further work.

NJN WR 2/26/88: Fred Brost (card) reported he recently visited the Clementine (file) Maricopa County and there appears to be no current activity but that the mill buildings and prortable Merrill-Crowe plant are still on site and intact.

NJN WR 5/27/88: John Lucus, US Bureau of Mines, noted that the October 19, 1987 issue of Northern Miner reports that Valley View Resources, formerly Cornucopia Mines, acquired the Clementine (file) Maricopa County consisting of 107 unpatented claims. They report a reserve of 500,000 tons of 0.1 oz/ton Au.

CLEMENTINE GROUP

Maricopa County
Pikes Peak District

NJN WR 5/15/81: To settle a rumor of declared bankruptcy by Copper Lakes, I called the U.S. Bankruptcy Court Clerk and Copper Lakes this week. (Clementine Mine, Maricopa County.) No documents had been filed in Bankruptcy Court and the Sun City office of Copper Lakes denied any knowledge of the rumor. They did report production of 50 oz. gold so far. Also, upon the arrival of new equipment next week, they will be able to strip 240 oz/day.

KAP WR 5/8/81 - Mr. Brooks Copeland reported that his son, Fred Lane Copeland, has been hired by Copper Lakes Exploration to set up and run an assay office at their Clementine Mine.

NJN WR 8/28/81: Randy Sheridan phone 832-8865 called and reported he was no longer working for Copper Lakes. He is looking for a job as a cyanide leach operator. He reported that there has been no production at Copper Lakes Clementine made since May. The mill is being rebuilt. The work is just about complete. Supposedly they are waiting for a part for a part for the deaeration unit.

KAP WR 4/16/82: In the company of Dick Beard, an attempt was made to visit the Clementine Mine. Both roads were blocked by makeshift gates. At one of the gates Carl Triphahn and Robert Hicks were repairing damage to a fence likely done on the previous weekend. They explained they owned United Mining Company which owns the claims and further they were in a fight with Copper Lakes Exploration and were barring them from the property because they were in default. They said that Copper Lakes was nothing but a promotion. Also, they said their lawyer had told them to prevent anyone from entering their many sections of mining claims on public land and they were following his instructions.

RRB WR 4/16/82: In the company of Ken Phillips visited the Clementine property. Talked to Carl Triphahn who reports that Copper Lakes has not kept up the payments and that he is in the process of getting rid of them. When we met Mr. Triphahn he was fencing the property in an effort to exclude Copper Lakes. Mr. Triphahn reports that his company is United Mining Company and gave two phone numbers: 268-9657 and 948-7823.

Abstracted 2-26-80 mjw

STATE OF ARIZONA
DEPARTMENT OF MINERAL RESOURCES
MINERAL BUILDING, FAIRGROUNDS
PHOENIX, ARIZONA 85007
602/255-3791

TO: John H. Jett, Director
FROM: Cliff J. Hicks, Field Engineer
DATE: February 12, 1980
SUBJECT: Confidential Report

February 6, 1980

Office Visitor: Carl Triphahn, 748 E. Broadway, Phoenix and Rudy Halagan, 1902 Northwest First Place, Phoenix. Wanted information on ~~head~~ dump leaching of Au and Ag. They hold 90 claims (unpatented) Baldy Mountain quadrangel, Heiroglyphic Mountains, United Mining Co., Clementine group Secs. 16, 15, 11, 10, 9 T5N, R1W. State leases are held in Sec. 16. These are Au, Ag claims. A vein strike lenght of 4000 feet was noted trending NE-SW in Sec. 10. Their geologist is a Jerry Weathers (Arizona registered) 3928 E. Meadowbrook Ave., Phoenix. The following mining companies have alledgedly approached these men for possible deals: Noranda Mines, Patine (Columbia S.A.) Ranchers Development and Copper Lakes. All have been rejected because they refuse a "50-50 split." Ranchers Development have alledgedly retained Coe and Van Loo (Mason Coggins) to surround this property with claims. Assays across structures were said to average .06% Au/t. These assays were thought to be very downgraded by the drilling method because of the fineness of the particle size. No Cu oxides in the area. They say the oxide zone extends to 600 feet deep and since the construction of Sun City, the water table has dropped further.

COPPER LAKE EXPLORATIONS LTD.

#1908 - 1450 West Georgia Street
Vancouver, B.C. V6G 2T8
(604) 669-4637

March 23, 1981

NEWS RELEASE

Copper Lake Explorations Ltd. has commenced operations at its **Clementine Gold Mine** near Phoenix, Arizona and early results indicate that the Clementine Gold Mine will be a major producer of gold in 1981.

The Clementine Gold Mine, is among the largest open pit heap leaching operations in North America capable of processing in excess of 10,000 tons of pregnant solution per day. Management plans entail processing a minimum of 5,000 tons of pregnant solution per day on a year round basis in 1981, after which production will rise to full capacity. Total costs for mining, processing, and administration should not exceed $6 per ton. The ore has an average grade of 0.06 ounces of gold per ton, and extensive tests demonstrate that the zinc precipitate leach plant should recover a minimum of 75 percent of the mineral content. Gold production in 1981 should therefore exceed 60,000 ounces. Monthly production should be in excess of 6,500 ounces of gold per month. The Clementine Gold Mine should therefore produce gross revenues and pre-tax earnings of U.S. $30,375,000. and $20,925,000. respectively (at a $500. per ounce of gold), Copper Lake has a 50 percent interest in the property and will recoup the intangible costs of its capital outlay (approximately $2 million) before making a distribution to **United Mining Company**, the owners of the claims.

Furthermore, Copper Lake's interest will rise to 65 percent once 55,000 ozs. of gold have been produced. Therefore, Copper Lake's net gold production in 1981 from the Clementine Gold Mine should be 30,838 ounces. This should yield the company operating net revenues and pre-tax earning of approximately $15,419,000. and $10,639,110. respectively.

Copper Lake Explorations Ltd. is traded on the NASDAQ system under the symbol "CLEXF" and on the Vancouver Stock Exchange under the symbol "CKX".

On Behalf of the Board of Directors