

WETLANDS AND FLOODPLAINS REPORT

Prepared for:



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OCTOBER 2004
Job No. 807.07 B 335

TABLE OF CONTENTS

INTRODUCTION 1
PROJECT DESCRIPTION 1
DATA RECONNAISSANCE..... 1
FINDINGS: NON-FEDERAL PARCELS..... 2
FINDINGS: FEDERAL PARCEL 4
ANALYSIS AND DETERMINATION OF EFFECTS 5

LIST OF FIGURES

(all figures follow text)

- Figure 1. General Locations Map
- Figure 2. JX Ranch
- Figure 3a. Appleton Ranch
- Figure 3b. Appleton Ranch with FEMA Map
- Figure 4a. LX Bar Ranch
- Figure 4b. LX Bar Ranch with FEMA Map
- Figure 5. 6L Ranch
- Figure 6a. 7B Ranch
- Figure 6b. 7B Ranch with FEMA Map
- Figure 6c. 7B Ranch with NWI Map
- Figure 7. Resolution Parcel

LIST OF TABLES

Table 1. Summary of Aquatic Sites on the Non-Federal Parcels..... 4
Table 2. Summary of Aquatic Sites on the Federal Parcel..... 4

INTRODUCTION

Executive Order Nos. 11988 (“Floodplain Management”) and 11990 (“Protection of Wetlands”) require analysis of federal actions to determine if the proposed action will occur in a floodplain or wetland. The goal of the Floodplain Management order is to “avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative.” Similarly, the goal of the Protection of Wetlands order is to “avoid to the extent possible the long and short term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative.” This latter goal is commonly referred to as the “no net loss of wetlands” policy.

The proposed action referenced herein contemplates a land exchange of private for public lands (managed by a range of federal agencies) in order to meet the proponent’s need to obtain ownership of a public parcel. As a federal action, the proposed action is, therefore, subject to the requirements of these Executive Orders.

PROJECT DESCRIPTION

This report compares the floodplain and wetlands inventories for five offered lands (“Non-Federal Parcels”) to the “Federal Parcel”. The Non-Federal Parcels are:

- JX Ranch
- Appleton Ranch
- LX Bar Ranch
- 6L Ranch
- 7B Ranch

The Federal Parcel is also known as the Resolution Parcel, and will be so referenced in this report. All of the parcel locations are depicted in Figure 1.

DATA RECONNAISSANCE

Topographic quadrangle maps (US Geological Survey [USGS]), aerial photographs (USGS), National Wetland Inventory (NWI) maps (US Fish & Wildlife Service [USFWS]), and Flood Hazard Insurance maps (Federal Emergency Management Agency [FEMA]) were reviewed in order to identify the presence of potential floodplains and wetlands within each of the parcels involved in the land exchange. Site visits were conducted by WestLand Resources, Inc. (WestLand) biologists to evaluate aquatic sites for the following characteristics:

- Temporal presence of water in streams or ponds (perennial, intermittent, or ephemeral),
- Riparian habitat corridors (presence or absence of hydro-, meso-, and xero-riparian), and
- Wetlands (presence/absence of characteristics described below).

For wetlands in particular, observations were made regarding soil type (hydric), soil saturation (seasonal), and obligate or facultative wetland plant species, per the US Army Corps of Engineers (1987 *Wetlands Delineation Manual*). WestLand also observed and documented stream channel morphology and evidence of flood characteristics. We did not, however, confirm FEMA and NWI boundaries of their mapped floodplains and wetlands, respectively.

FINDINGS: NON-FEDERAL PARCELS

The JX Ranch parcel (Figure 2) is approximately 59 hectares (147 acres) located along Turkey Creek in the Sierra Ancha Mountains of Tonto National Forest in Gila County, Arizona (Township 7 North, Range 12 East, portions of Sections 3 and 4). The JX Ranch parcel has not been mapped by FEMA for the purposes of assessing flood hazard. Based on our observations, the floodplain on the site follows the Turkey Creek and tributary stream channels for a total length of 2.2 kilometer (km) (1.4 mile) within the property, and averaging approximately 0.1 km (0.06 mile) wide. Thus, the floodplain on this site is estimated to encompass 0.22 square km (0.08 square miles), equaling 0.002 hectares (0.005 acres). The NWI map for the JX Ranch identifies no wetlands within the parcel. Based on our observations and data review, Turkey Creek is a perennial stream for the 850-meter (2,800 foot) reach passing through the property. Mesoriparian habitat is present along the stream channel. Facultative wetlands species were present, but minimal obligate wetlands species (a few introduced willows) and no hydric soils were observed. Tributaries, approximately 1,350 meters (4,400 feet) in length, are intermittent to ephemeral, with meso and xero riparian habitat present. No wetlands were delineated on this parcel.

The Appleton Ranch parcel (Figure 3a) is approximately 357 hectares (881 acres) located along O'Donnell, Vaughn, and Post canyons in Santa Cruz County, Arizona (Township 21 South, Range 18 East, portions of Sections 14, 15, 17, and 28). Approximately 44 hectares (108 acres) of the Appleton Ranch are identified by FEMA (Figure 3b) as Zone A (areas of 100-year flood; base flood elevations and flood hazard factors are not determined). The NWI map for the Appleton Ranch identifies no wetlands within the parcel. Based on our observations and data review, the three on-site streams are ephemeral watercourses totaling approximately 8,200 meters (26,900 feet) in length. Mesoriparian and xeroriparian habitat is present along the stream channels. No facultative or obligate wetlands species, and no hydric soils, were observed along the stream channels. Several man-made impoundments (stock ponds) with perennial water are present. These surface water bodies are bordered by hydro-riparian habitat, with hydric soils and obligate wetland species. We estimate an area of 0.04 hectares (0.1 acres) of wetlands surrounding the impoundments at this site.

The LX Bar Ranch parcel (Figure 4a) is approximately 60 hectares (148 acres) located along Tangle Creek in Tonto National Forest in Yavapai County, Arizona (Township 9½ North, Range 5 East, portions of Sections 34 and 35, and Township 9 North, Range 5 East, portions of Section 2). Approximately 44 hectares (108 acres) of the LX Bar Ranch are identified by FEMA (Figure 4b) as Zone A (areas of 100-year flood; base flood elevations and flood hazard factors are not determined). The NWI map for the LX Bar parcel identifies no wetlands within the parcel. Based on our observations and data review, Tangle Creek (and its tributaries) is an ephemeral watercourse for the 3,200-meter (10,500-foot) reach passing through the property. Meso- and xero-riparian habitat is present along the stream channels. No obligate or facultative species, or hydric soils, were observed on this site. No wetlands were delineated at this site.

The 6L Ranch parcel (Figure 5) is approximately 60 hectares (149 acres) located along Cave Creek in Maricopa County, Arizona (Township 7 North, Range 4 East, portions of Section 21). None of the 6L Ranch has been mapped by FEMA for the purposes of assessing flood hazard. Based on our observations, the floodplain on the site follows the stream channel for the 2.3-km (1.4-mile) reach passing through the property, and averaging approximately 0.25 km (0.15 mile) wide. Thus, the floodplain on this site is estimated to encompass 0.58 square km (0.2 square miles) equaling 0.005 hectares (0.01 acres). The NWI map for the 6L Ranch identifies no wetlands within this parcel. Based on our observations and data review, Cave Creek is intermittent along the 2,300-meter (7,500-foot) reach passing through the property, with some perennial pools. Hydriparian and mesori-parian habitat is present along the stream channel. Facultative and obligate species, and (to a limited extent) hydric soils, were present surrounding the perennial pools and intermittently along the stream channel. We estimate an area of approximately 0.4 hectare (1 acre) of wetlands along Cave Creek at this site.

The 7B Ranch parcel (Figure 6a) is approximately 1,295 hectares (3,200 acres) located along the San Pedro River near Mammoth, Arizona (Township 8 South, Range 17 East, portions of Sections 7, 17, 18, 19, 20, 21, 28, 29, 32 and 33, and Township 9 South, Range 17 East, portions of Sections 3 and 4). Approximately 425 hectares (1,050 acres) are identified by FEMA (Figure 6b) as Zone A (areas of 100-year flood; base flood elevations and flood hazard factors are not determined). An additional 17 hectares (41 acres) are identified as Zone B (areas between the limits of the 100-year and 500-year flood; or certain areas subject to 100-year flooding with average depths less than 0.3 meters [1 foot] or where the contributing drainage area is less than 2.59 square kilometers [1 square mile]; or areas protected by levees from the base flood). The total area of FEMA-mapped floodplain on this site is 442 hectares (1,092 acres). The NWI map (Figure 6c) for the 7B Ranch parcel identifies 715 hectares (1,766 acres) of variably classified wetlands. Based on our observations and data review, the San Pedro River is an ephemeral watercourse along the 16,400-meter (53,800-foot) reach passing through the property. Mesori-parian and xerori-parian habitat is present along the stream channel. Facultative wetland species were present. No obligate wetland species or hydric soils were observed.

The following table summarizes the characteristics of the aquatic sites and tabulates the floodplain and wetlands areas present on the Non-Federal Parcels.

Table 1. Summary of Aquatic Sites on the Non-Federal Parcels

Parcel	Floodplain Area (hectares [acres])	Temporal Nature of Water and Length (linear meters [feet])		Wetlands Area (hectares [acres])
		Perennial	Intermittent or Ephemeral	
JX Ranch	0.002 (0.005)***	850 (2,800)	1,350 (4,400)	0
Appleton Ranch	44 (108)*	0	8,200 (26,900)	0.04 (0.1)***
LX Bar Ranch	44 (108)*	0	3,200 (10,500)	0
6L Ranch	5.4 (13.44)***	0	2,300 (7,500)	0.4 (1)***
7B Ranch	442 (1,092)*	0	16,400 (53,800)	715 (1,766)**
TOTALS	535.4 (1,321.445)	850 (2,800)	31,450 (103,100)	715.1 (1,767.1)

* FEMA-designated

** NWI-designated

*** WestLand observations

FINDINGS: FEDERAL PARCEL

The Resolution Parcel (Figure 7) is approximately 1,225 hectares (3,025 acres) located along the headwaters of Queen Creek and Devils Canyon, as well as numerous named and unnamed tributaries to these watercourses, east of Superior within the Tonto National Forest (portions of Township 1 South, Range 12 East, Section 36; Township 1 South, Range 13 East, Sections 28, 29, 30, 31, 32, 33, Township 2 South, Range 12 East, Sections 1 and 2, and Township 2 South, Range 13 East, Section 6). There are no FEMA-designated floodplains or NWI wetlands identified within this parcel. Based on our observations, there are no floodplains on this site. Based on our observations and data review, the headwaters areas of Queen Creek and Devils Canyon, as well as the named and unnamed tributaries to these watercourses, are ephemeral to intermittent streams. An estimated 20,000 meters (65,600 feet) of intermittent to ephemeral stream channels pass through the Resolution Parcel. Some ephemeral, intermittent, or perennial pools are present within the parcel. Hydro-, meso-, and xero-riparian habitat is present along stream channels and/or pools. Obligate and facultative species, and hydric soils, are present surrounding some of the pools. We estimate an area of 0.81 hectares (2 acres) of wetlands on this parcel. These data are summarized in Table 2.

Table 2. Summary of Aquatic Sites on the Federal Parcel

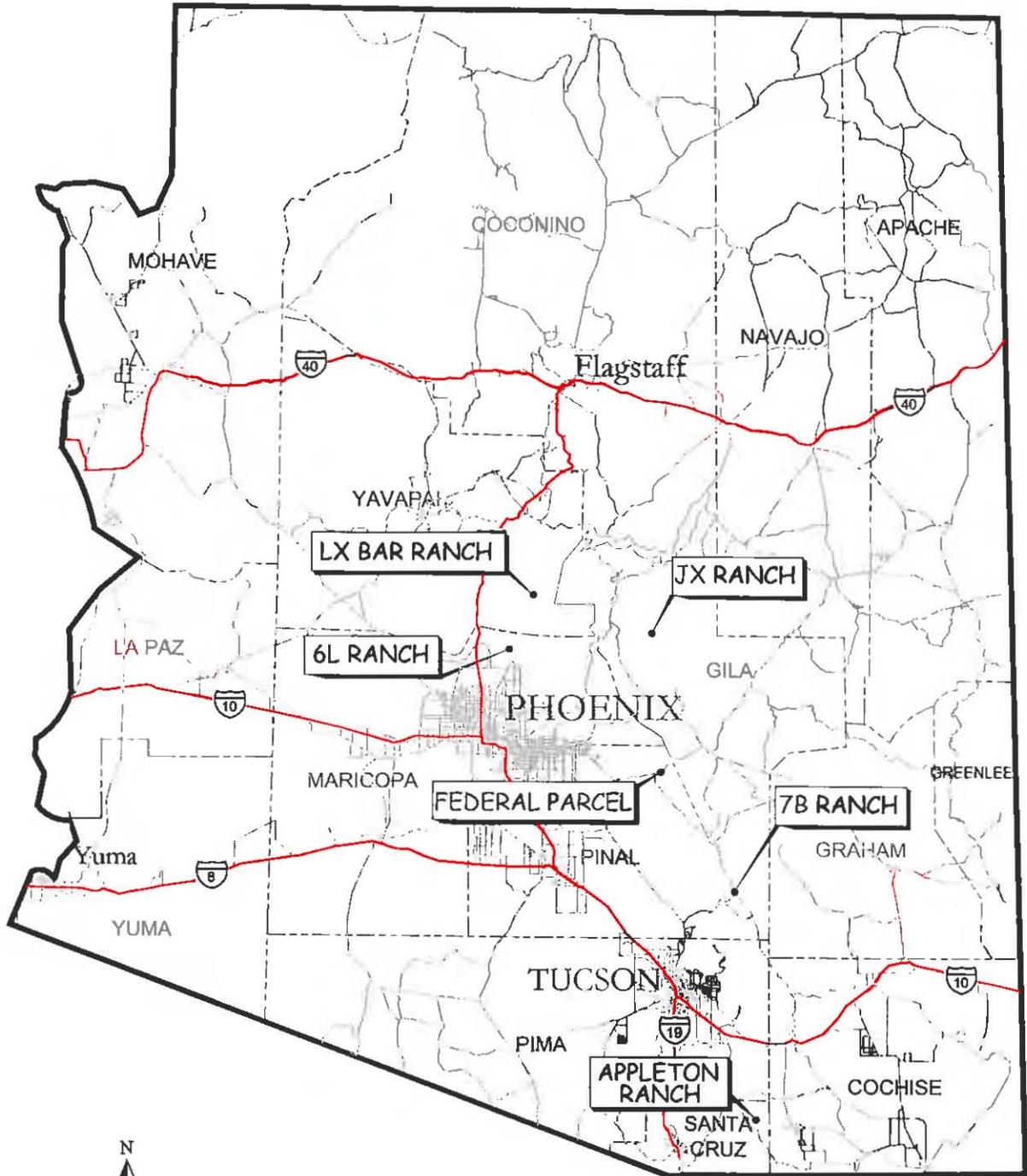
Parcel	Floodplain Area (hectares [acres])	Temporal Nature of Water and Length (linear meters [feet])		Wetlands Area (hectares [acres])
		Perennial	Intermittent or Ephemeral	
Resolution	0*	0	20,000 [65,600]*	0.81 (2)*

* WestLand observations

ANALYSIS AND DETERMINATION OF EFFECTS

In the event of the land exchange, the federal agencies would be acquiring approximately 530 hectares (1,310 acres) of FEMA-designated floodplains and 715 hectares (1,766 acres) of NWI-designated wetlands. An additional 5.4 hectares (13.3 acres) of non-FEMA-designated floodplains and 0.44 hectares (1.1 acres) of non-NWI-designated wetlands would also be acquired. In return, the federal agencies would be conveying approximately 0 hectares of floodplains and 0.81 hectares (2 acres) of wetlands.

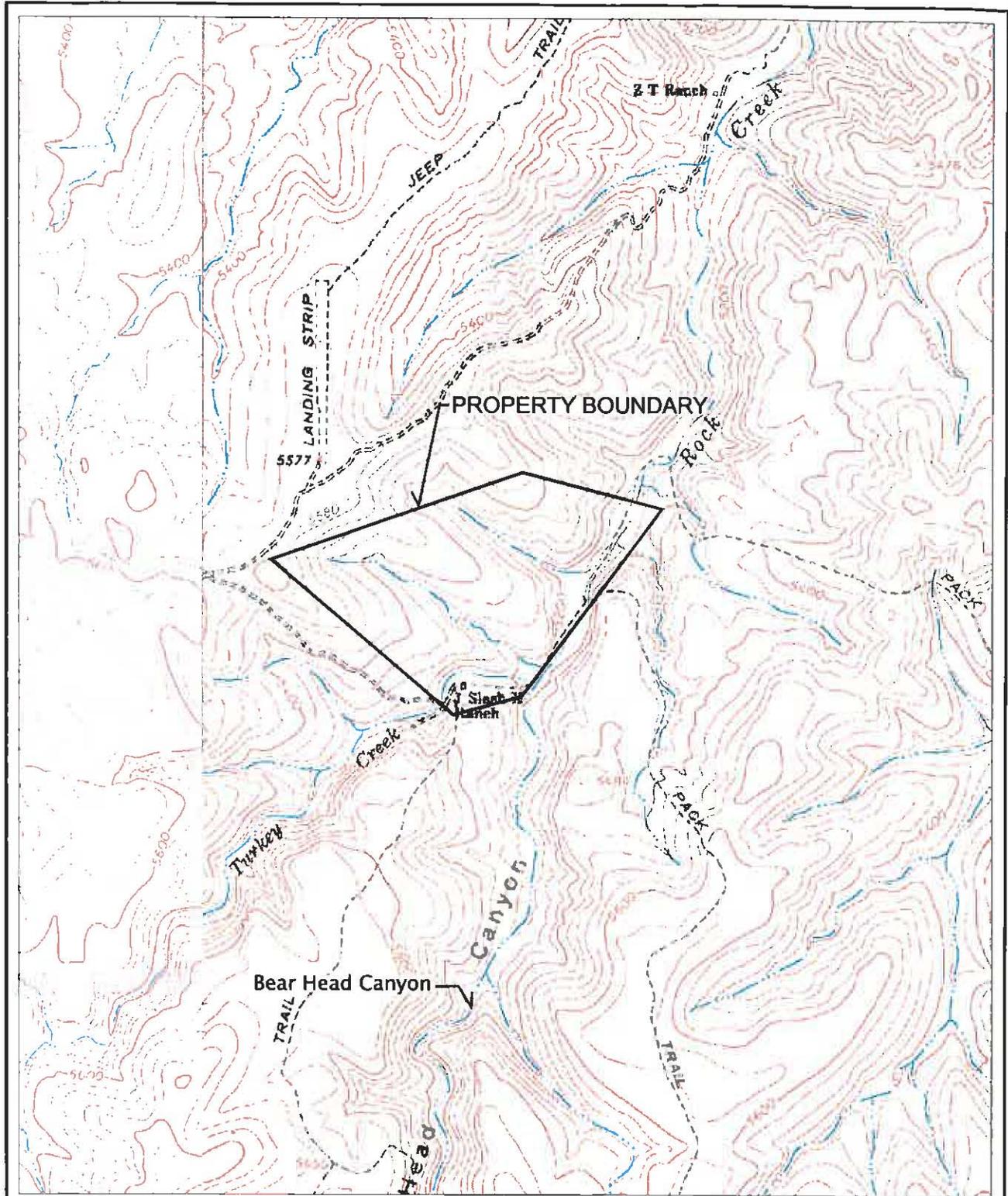
ARIZONA



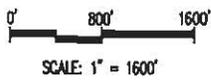
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GENERAL LOCATION MAP
Figure 1

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T.7N.,R.12E. Portion of Sections
3 & 4, Gila County, Arizona
Located on the Copper Mt.
USGS Quadrangle

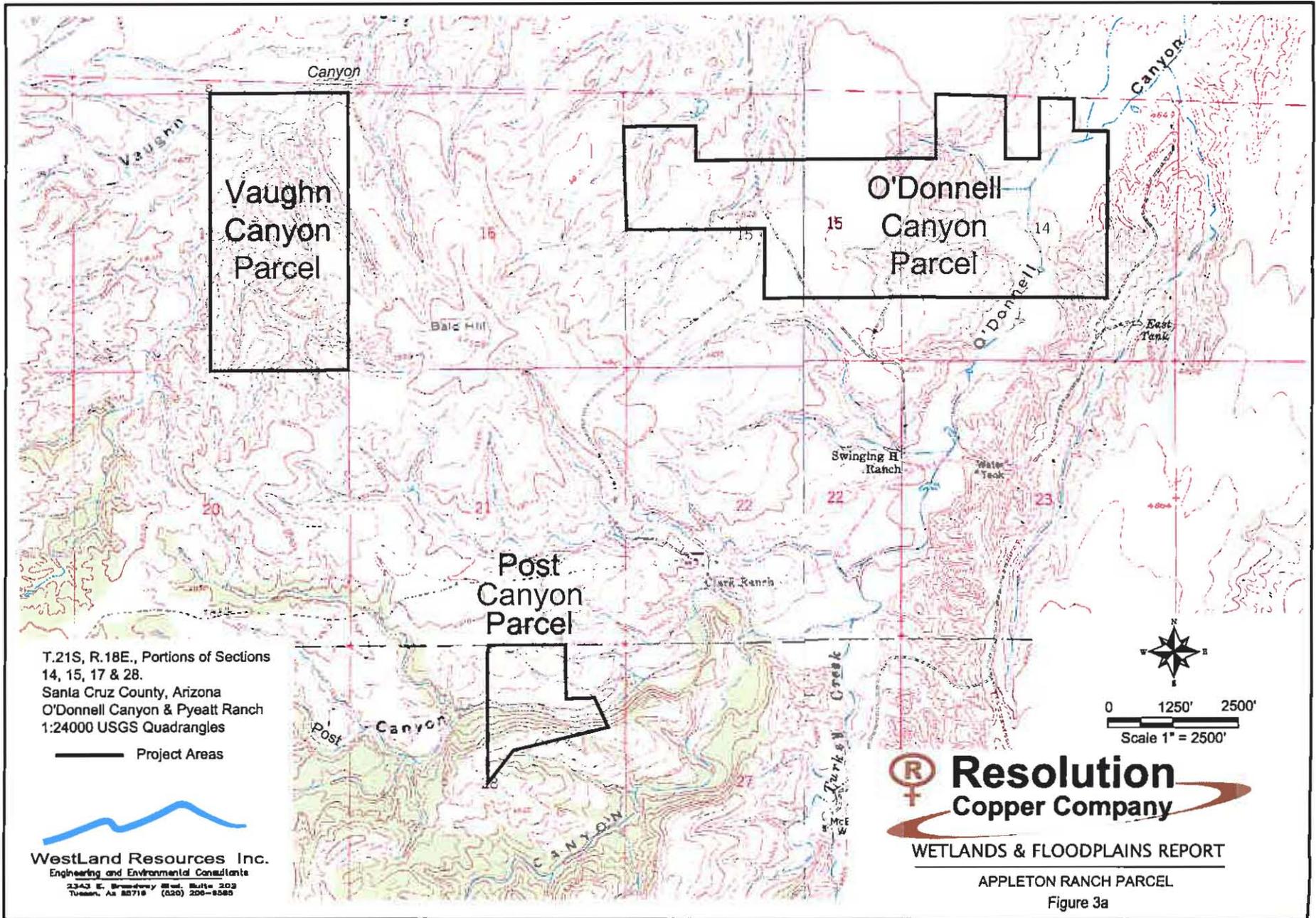


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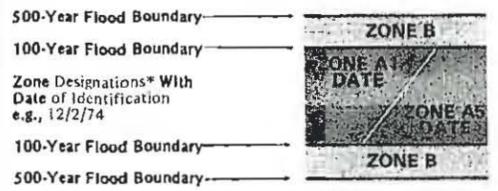
JX RANCH PARCEL

Figure 2

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KEY TO MAP



513

(EL 987)

RM7x

M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

***EXPLANATION OF ZONE DESIGNATIONS**

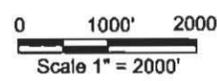
ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

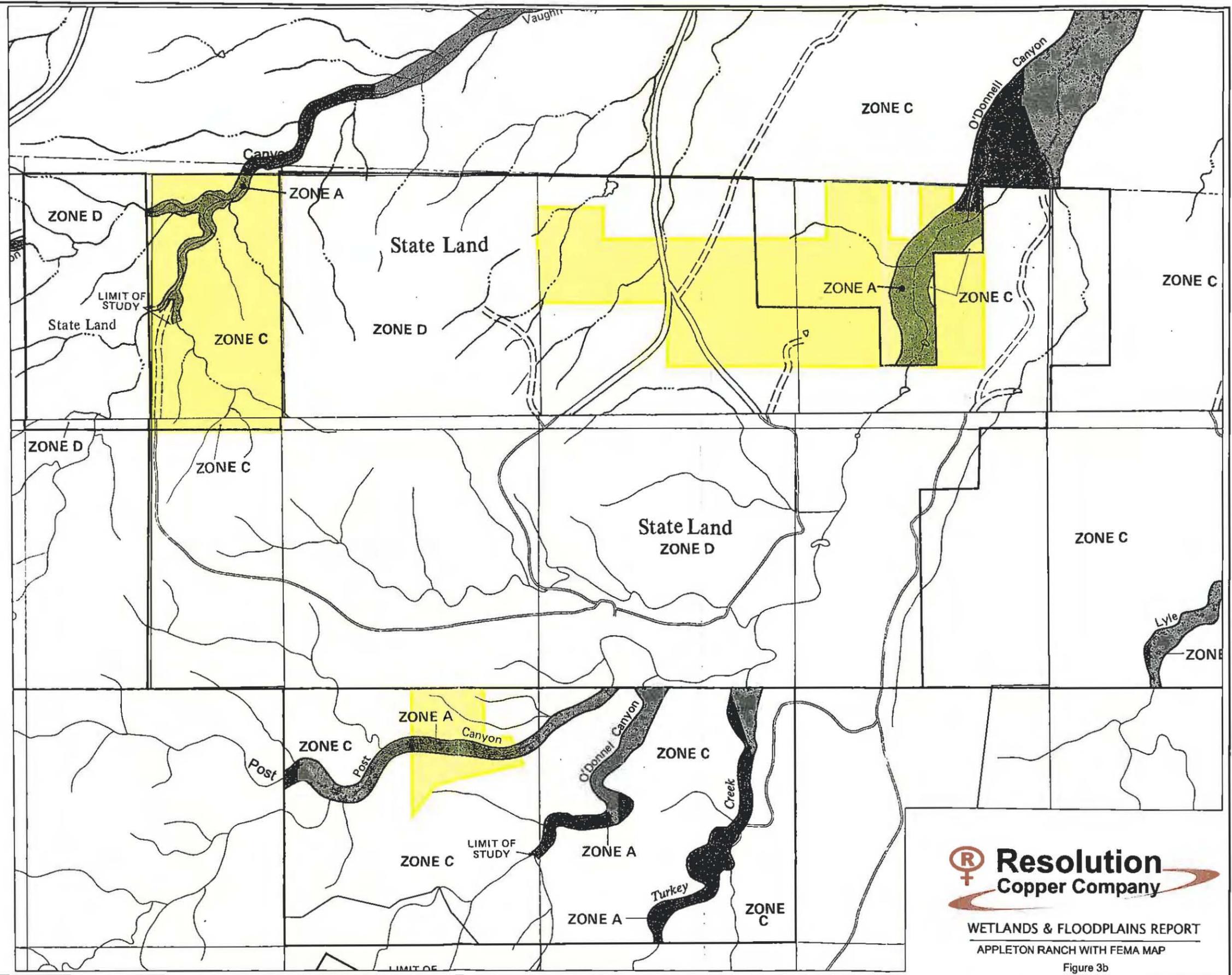
Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

For adjoining map panels, see separately printed Index To Map Panels.

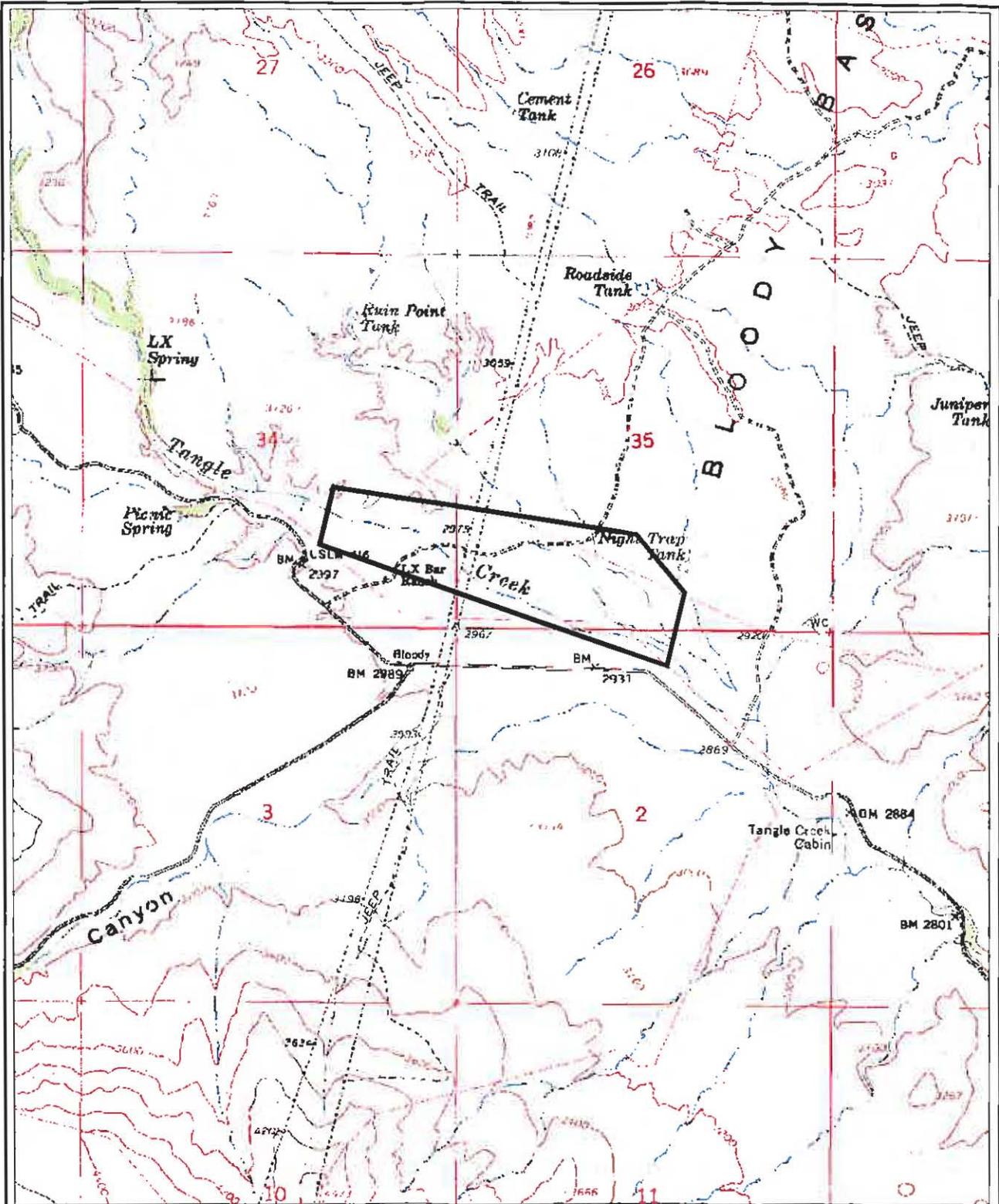


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 APPLETON RANCH WITH FEMA MAP

Figure 3b



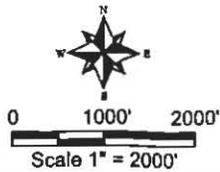
Yavapai County, Arizona
 Bloody Basin 1:24000 USGS Map

— SITE BOUNDARY



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LX BAR RANCH PARCEL

Figure 4a

KEY TO MAP

500-Year Flood Boundary
 100-Year Flood Boundary
 Zone Designations* With Date of Identification
 e.g., 12/2/74
 100-Year Flood Boundary
 500-Year Flood Boundary

Base Flood Elevation Line With Elevation in Feet**
 Base Flood Elevation in Feet Where Uniform Within Zone**
 Elevation Reference Mark
 River Mile
 **Referenced to the National Geodetic Vertical Datum of 1929

***EXPLANATION OF ZONE DESIGNATIONS**

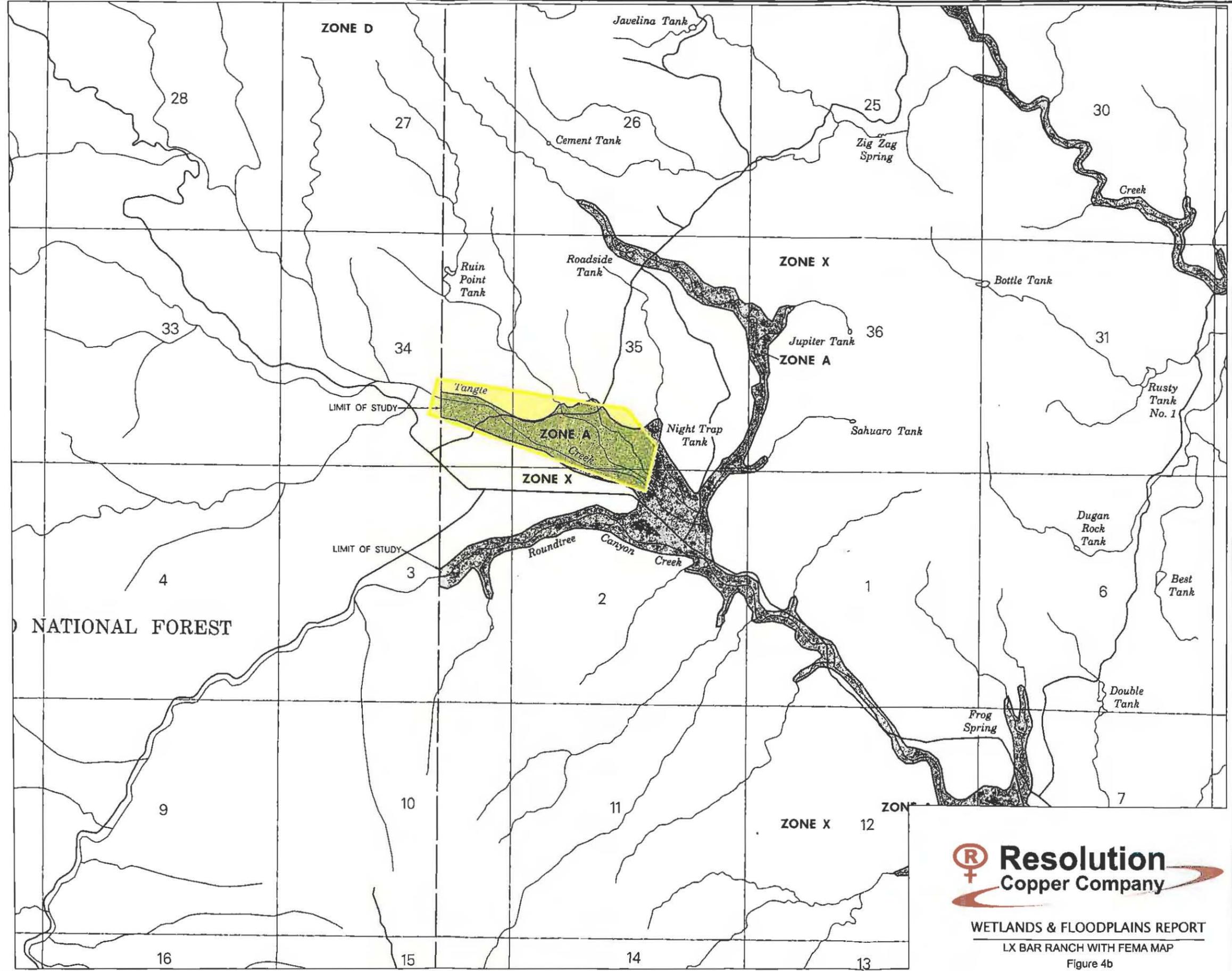
ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
AD	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

For adjoining map panels, see separately printed Index To Map Panels.



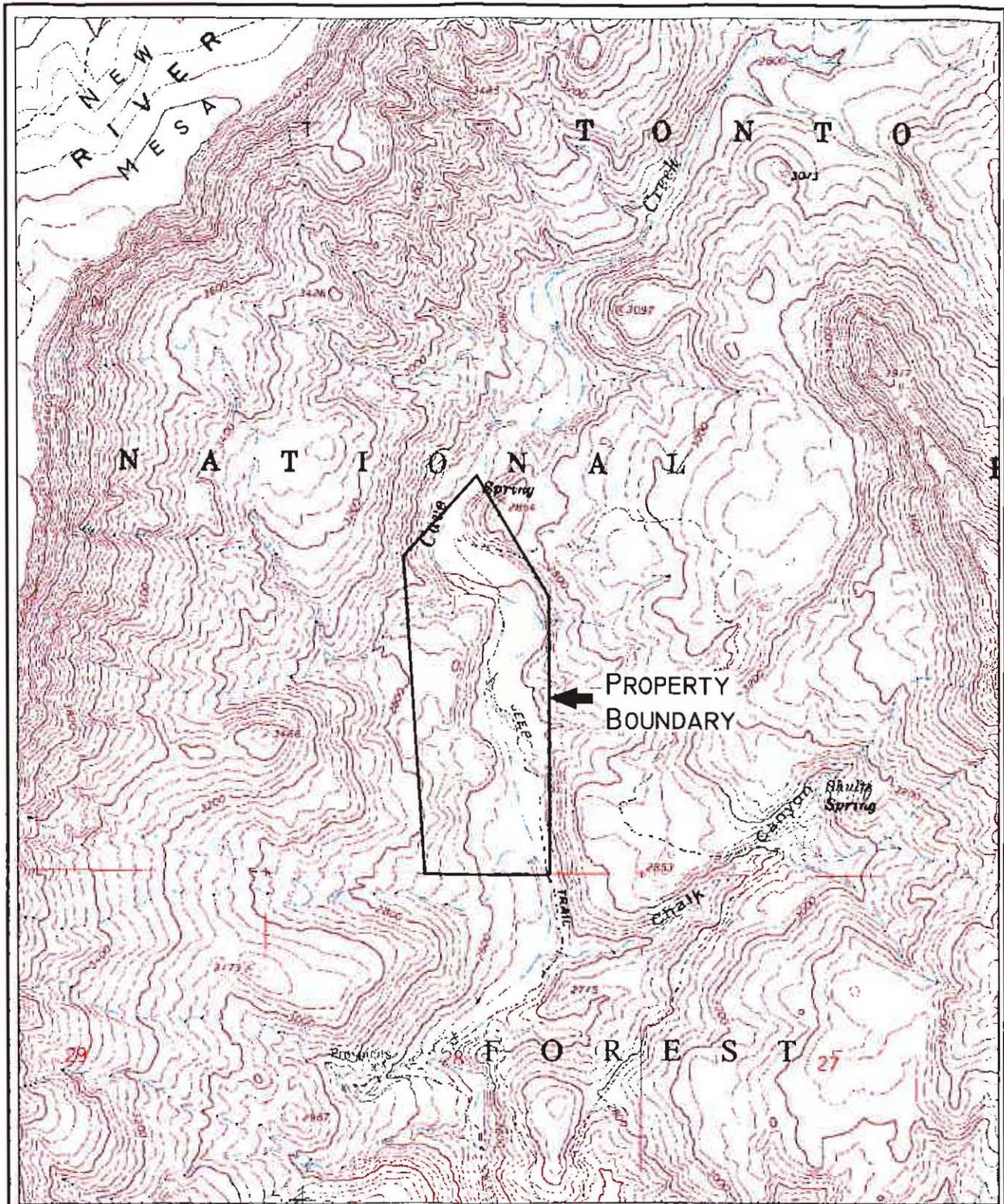
Yavapai County, Arizona
 Bloody Basin 1:24000 USGS Map

Scale 1" = 2200'

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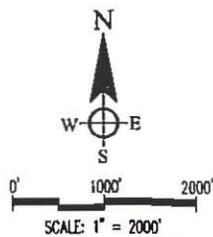
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WETLANDS & FLOODPLAINS REPORT
 LX BAR RANCH WITH FEMA MAP
 Figure 4b



T.7N.,R.4E., Portion of Section 21,
 Maricopa County, Arizona
 New River Mesa USGS Quadrangle


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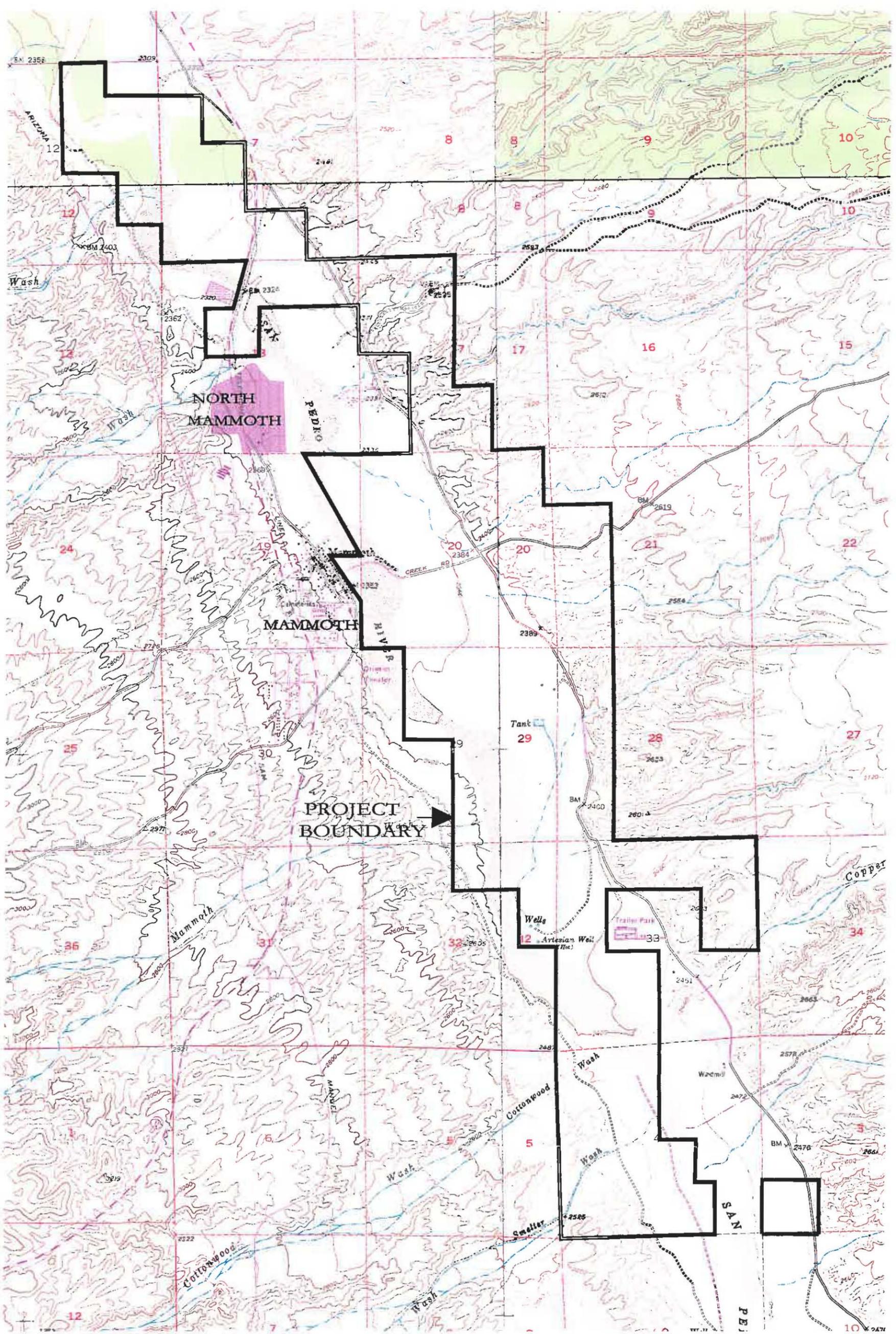



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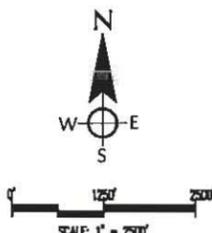
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6L RANCH PARCEL

Figure 5



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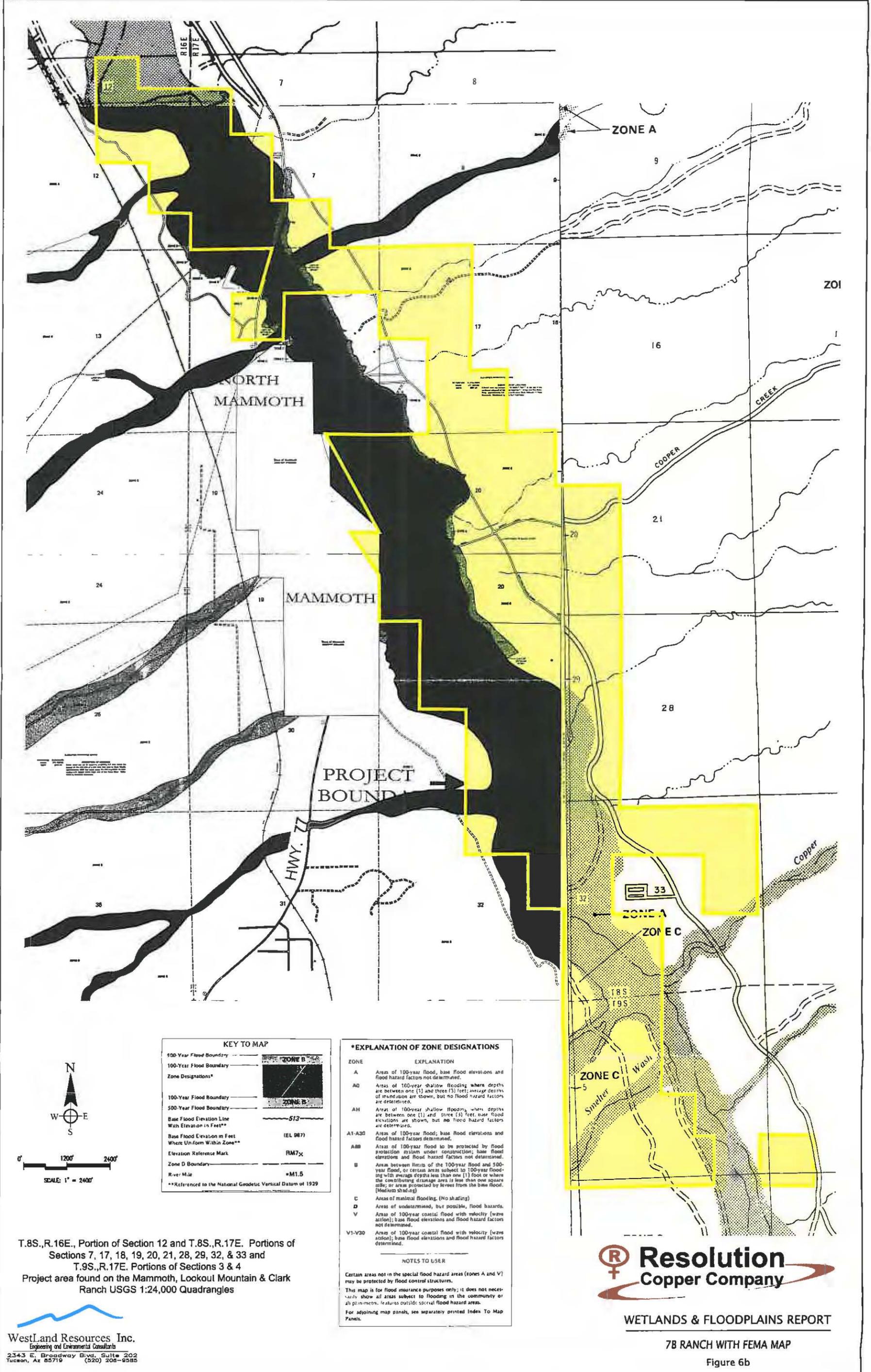


T.8S.,R.16E., Portion of Section 12 and T.8S.,R.17E. Portions of Sections 7, 17, 18, 19, 20, 21, 28, 29, 32, & 33 and T.9S.,R.17E. Portions of Sections 3 & 4
 Project area found on the Mammoth, Lookout Mountain & Clark Ranch USGS 1:24,000 Quadrangles



WETLANDS & FLOODPLAINS REPORT

7B RANCH PARCEL
 Figure 6a



KEY TO MAP

500-Year Flood Boundary	
100-Year Flood Boundary	
Zone Designations*	
100-Year Flood Boundary	
500-Year Flood Boundary	
Base Flood Elevation Line With Elevation in Feet**	573
Base Flood Elevation in Feet Where Uniform Within Zone**	(EL 087)
Elevation Reference Mark	RM7x
Zone D Boundary	
River Mile	M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

***EXPLANATION OF ZONE DESIGNATIONS**

ZONE	EXPLANATION
A	Areas of 100-year flood, base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding, where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
AB	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood, or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. [Medium Shading]
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or its plume. Features outside special flood hazard areas.

For adjoining map panels, see separately printed Index To Map Panels.

T.8S.,R.16E., Portion of Section 12 and T.8S.,R.17E. Portions of Sections 7, 17, 18, 19, 20, 21, 28, 29, 32, & 33 and T.9S.,R.17E. Portions of Sections 3 & 4
Project area found on the Mammoth, Lookout Mountain & Clark Ranch USGS 1:24,000 Quadrangles

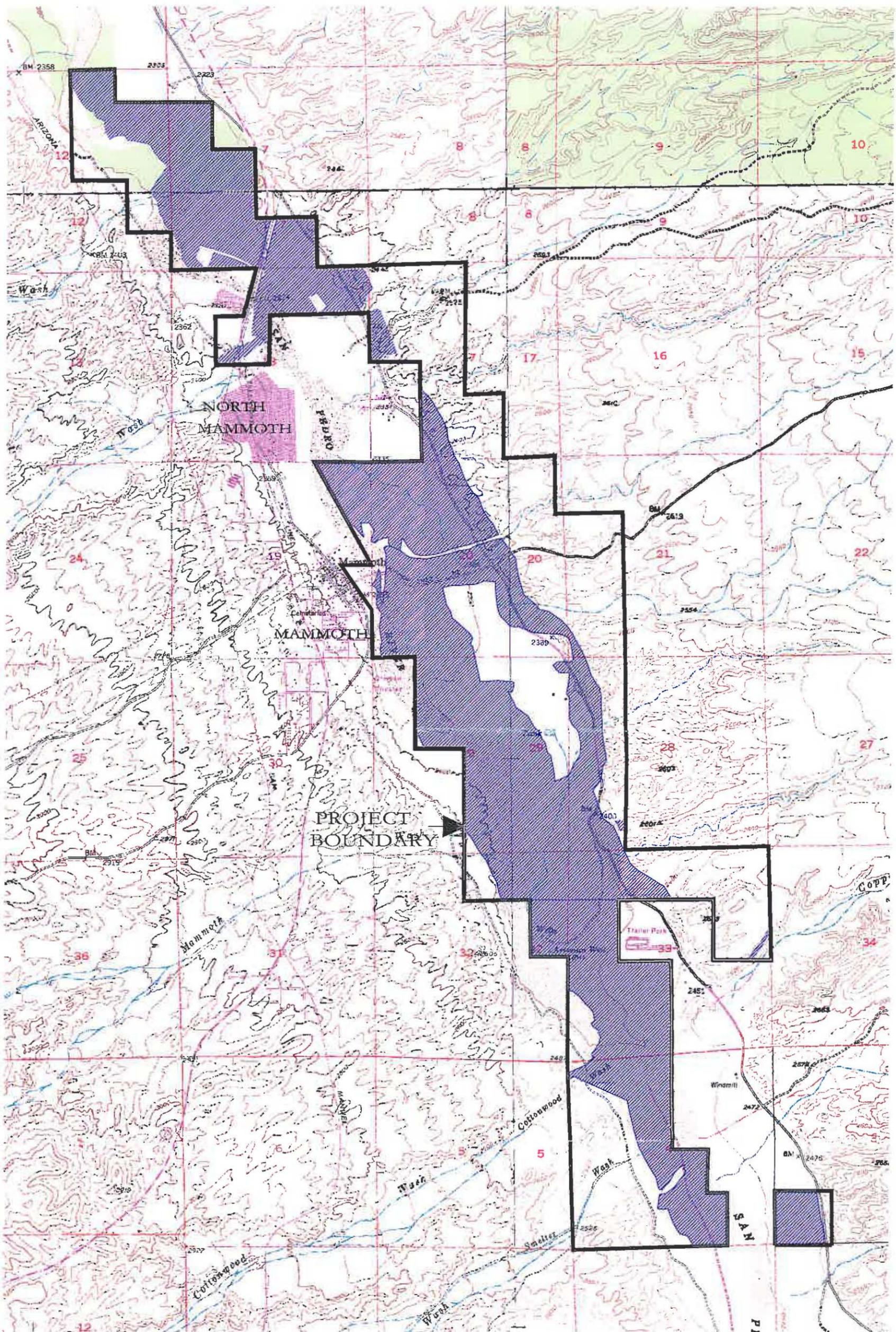
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7B RANCH WITH FEMA MAP

Figure 6b



 NWI DESIGNATED WETLAND AREA

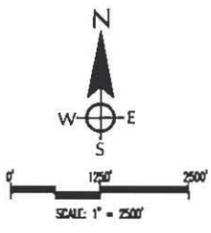
T.8S.,R.16E., Portion of Section 12 and T.8S.,R.17E. Portions of Sections 7, 17, 18, 19, 20, 21, 28, 29, 32, & 33 and T.9S.,R.17E. Portions of Sections 3 & 4
 Project area found on the Mammoth, Lookout Mountain & Clark Ranch USGS 1:24,000 Quadrangles



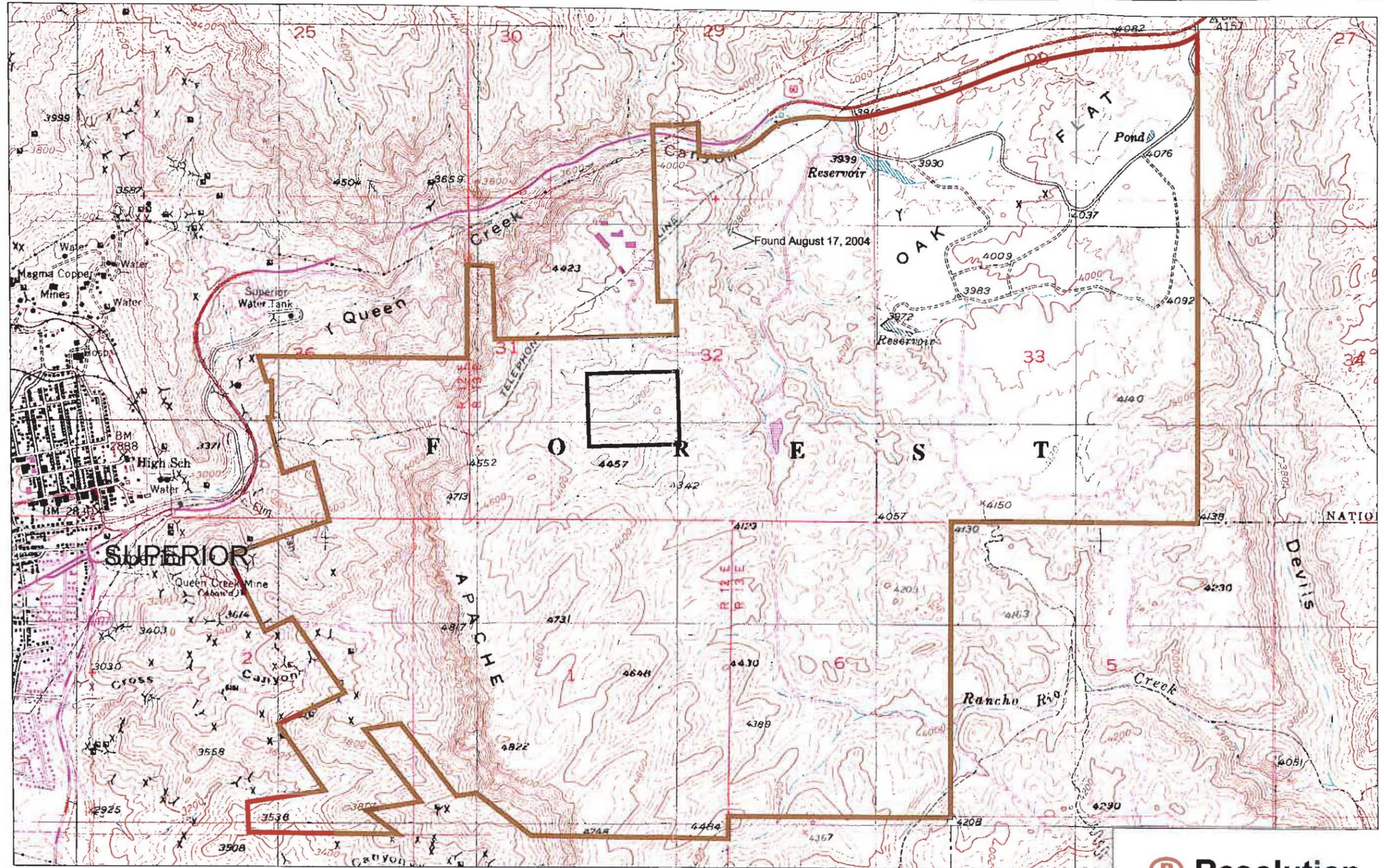
WETLANDS & FLOODPLAINS REPORT
 7B RANCH WITH NWI MAP

Figure 6c

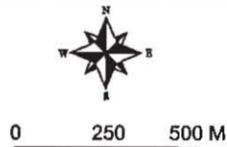
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Approx. Scale 1" = 500 Meters

Pinal County, Arizona
 Superior 7.5' USGS Map

LEGEND

 Project Boundary



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FEDERAL PARCEL

Figure 7