

MINERAL RESOURCE INVENTORY OF THE SPRING MOUNTAINS
IN THE VICINITY OF THE PROPOSED SPRING MOUNTAINS NRA
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INTRODUCTION

The Las Vegas Ranger District, of the U.S. Forest Service manages approximately 316,000 acres of land in the Spring Mountains in Clark and Nye Counties, Nevada. Much of the land was acquired through the "Enhancement Act" which was an exchange of USFS and BLM lands. The entire USFS holdings in the Spring Mountains have been "nominated" for National Recreation Area status by a citizen group working in conjunction with the Forest Service. Proposed wording would specifically eliminate mineral entry under the mining laws and make mineral development of valid and existing claims difficult, if not impossible. This paper is a summary of known and possible mineral resources within the USFS managed portions of the Spring Mountains which would be impacted under the proposed NRA legislation.

GOODSPRINGS DISTRICT

The Goodsprings Mining District was established in 1856 with the discovery of lead at Mt. Potosi, which is in the proposed NRA boundaries. The Potosi Mine is one of the earliest recorded mines in Nevada and is in part responsible for the early settlement of Las Vegas. Overall, the district covers an area of approximately 100 square miles and has over 75 mines and several hundred prospects.

During the first 50 years of mining at Goodsprings, the primary metals extracted were lead, gold, silver, and copper. In 1905 zinc ores were discovered, and within several years Goodsprings was one of the largest zinc producers in the U.S.. Peak activity was between 1892-1918, 1924-1928, and 1942-1946, although limited activity has persisted to the present. Demand for copper, lead, and zinc during World Wars I and II was responsible for much of the more recent production in the district.

Between 1856 and 1962 over \$188.6 million (in 1991 dollars) worth of metals were produced from the mines at Goodsprings. (Table 1.) The most important metals were zinc, lead, and gold. Copper and silver were also produced in significant quantities.

Several "unusual" metals were produced including platinum, palladium, cobalt, vanadium, and molybdenum. The platinum group metals and cobalt are considered strategic and critical metals, and have helped make the Goodsprings area an attractive exploration target up to the present time. Large and small exploration companies have been active in the district in recent years, and there is 1 small gold producer active in 1991.

Within the proposed NRA boundaries South of Mountain Springs (in the vicinity of Mt. Potosi) there are 5 mines with production histories.¹ They are listed in Table 2. The Potosi Mine is responsible for most of the mineral production in the Mt. Potosi area, and accounts for almost 12% of the mineral value of the entire Goodsprings mining district.

MT. STIRLING

Although there is no record of mineral production from within the U.S.F.S. boundaries near Mt. Stirling, a number of mines and prospects are found there. Immediately west of the U.S.F.S. boundaries is the Johnnie Mining District, which is the second largest gold producing district in Southern Nye County.

The Johnnie District has a recorded production of 91,266 ounces of gold (Ivosevic, pg. 76), with a 1991 value of approximately \$32.4 million. Much of this production came from three mines: Johnnie; Congress; and Overfield (Ivosevic, pg. 76).

The ore bodies in the Johnnie District occur in quartz veins along faults in sandstone, shale, and limestone of the Wood Canyon and Carrera formations (Cornwall, pg. 38). These same features are found in the Mt. Stirling area. The most significant fault system in the area is the Grapevine Fault which runs from west of the Johnnie Mine to the Nye-Clark County border within the U.S.F.S. lands. Hydrothermal alteration, trace elements indicative of precious metals mineralization, and geology of the Mt. Stirling area are virtually identical to that of the Johnnie District and indicate a high mineral resource potential.

¹ U.S. Geological Survey Mineral Resource Data System (MRDS)

MINERAL RESOURCE POTENTIAL OF THE SPRING MOUNTAINS U.S. FOREST SERVICE LANDS

Recent studies on the mineral potential of the Spring Mountains shows a significant potential for base and precious metals. Crandell and Hamilton, in their U.S. Bureau of Mines study, evaluate both the Mt. Potosi and Mt. Stirling areas as having a high mineral resource potential. Areas adjacent to Mt. Stirling and much of the eastern portions of the Spring Mountains are given a moderate resource potential (Figure 2).

While no recent published mineral surveys have been done in the Goodsprings District, or the Mt. Potosi area specifically, mineral resource potential is high. The Goodsprings District has produced over \$188 million (1991 value) worth of zinc, lead, gold, and other metals. The strategic and critical platinum group metals and cobalt have been mined there. Interest remains high in this area, as is indicated by the large number of claims currently held with the USFS boundaries (Figure 4,5).

The U.S. Geological Survey (Madrid, et. al.) evaluated the Mt. Stirling area and found a high mineral resource potential for precious metals along the Grapevine Fault System (Figure 3). "...along this fault system the geologic setting and the assemblage of anomalous elements are similar to those of known sediment-hosted disseminated gold deposits elsewhere in Nevada". (pg. B-1)

The Western end of the fault system coincides with the Johnnie Mining District. Most of the fault system however, lies within the USFS boundaries. The USGS study gave this area a high degree of certainty of its resource potential (pg. B-11).

The area of Gold Springs was also given a high mineral resource potential for gold, and other areas were designated as having a low potential for precious and base metals (Figure 3).

Interest in the mineral resource potential of the Mt. Stirling area is high as indicated by the large number of claims in that area (Figure 6,7).

ABANDONED MINES

The Nevada Department of Minerals is responsible for managing the state's Abandoned Mine Lands (AML) program. One great concern of the inclusion of mined lands within the proposed National Recreation Area is the public safety issue.

Numerous abandoned mines (including shafts, tunnels, and pits) are found within the Mt. Potosi and Mt. Stirling areas (Figure 8). These old mines are attractive nuisances. NRA designation would call these areas to the attention of a much greater number of people than are presently aware of their location. One mine within U.S.F.S. jurisdiction on Mt. Potosi is the site of a documented abandoned mine fatality.

Even when secure these areas pose a great risk to visitors. The major problem with the securing of abandoned mines is vandalism of gates, covers, and fences. This vandalism would tend to increase with increasing number of visitors.

One U.S.F.S. proposal which would be feasible with an NRA designation calls for the development of a visitors center and recreation area within a short walking distance of many hazardous mine sites on the southern side of Mt. Potosi.

The less attention given to abandoned mines the better to insure safety of the general public. Giving National Recreation Area designation to these areas would hinder the Department's efforts to protect the public from these hazards.

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TABLE 1. GOODSPRINGS DISTRICT METAL PRODUCTION 1856-1962

METAL	PRODUCTION ^a	APPROX. 1991 VALUE ^b	% OF DISTRICT PRODUCTION VALUE
ZINC	217,846,867 lbs	\$108,923,434	57.8%
LEAD	94,125,809 lbs	32,944,033	17.5%
GOLD	90,508 oz	32,130,304	17.0%
SILVER	2,102,325 oz	8,619,532	4.6%
COPPER	4,926,377 lbs	5,419,015	2.9%
PLATINUM	506 oz	186,160	}
COBALT	11,055 lbs	185,171	}
MOLYBDENUM	40,000 lbs	80,000	}
PALLADIUM	792 oz	64,944	}
VANADIUM	8,248 lbs	20,620	}
		\$188,569,249	100%

a Longwell, et. al., pg. 104a

b Based on average metal prices in October, 1991.

TABLE 2. KNOWN PRODUCTION OF GOODSPRINGS MINES IN VICINITY OF MT. POTOSI
(WITHIN PROPOSED NRA BOUNDARIES)

MINE	PRINCIPAL METALS ^c	APPROX. 1991 VALUE	% OF DISTRICT PRODUCTION VALUE
POTOSI	Pb, Zn, Cu	\$22,459,408	11.9%
NINETY NINE	Cu	636,917	}
CONTACT	Zn	180,165	}
DOUBLE UP	Cu	115,200	}
DAWN	Zn, Pb	59,165	}
		\$23,450,855	12.4%

c Data from U S Geological Survey Mineral Resources Data System (MRDS).

FIGURE 1

PROPOSED SPRING MOUNTAIN NATIONAL RECREATION AREA

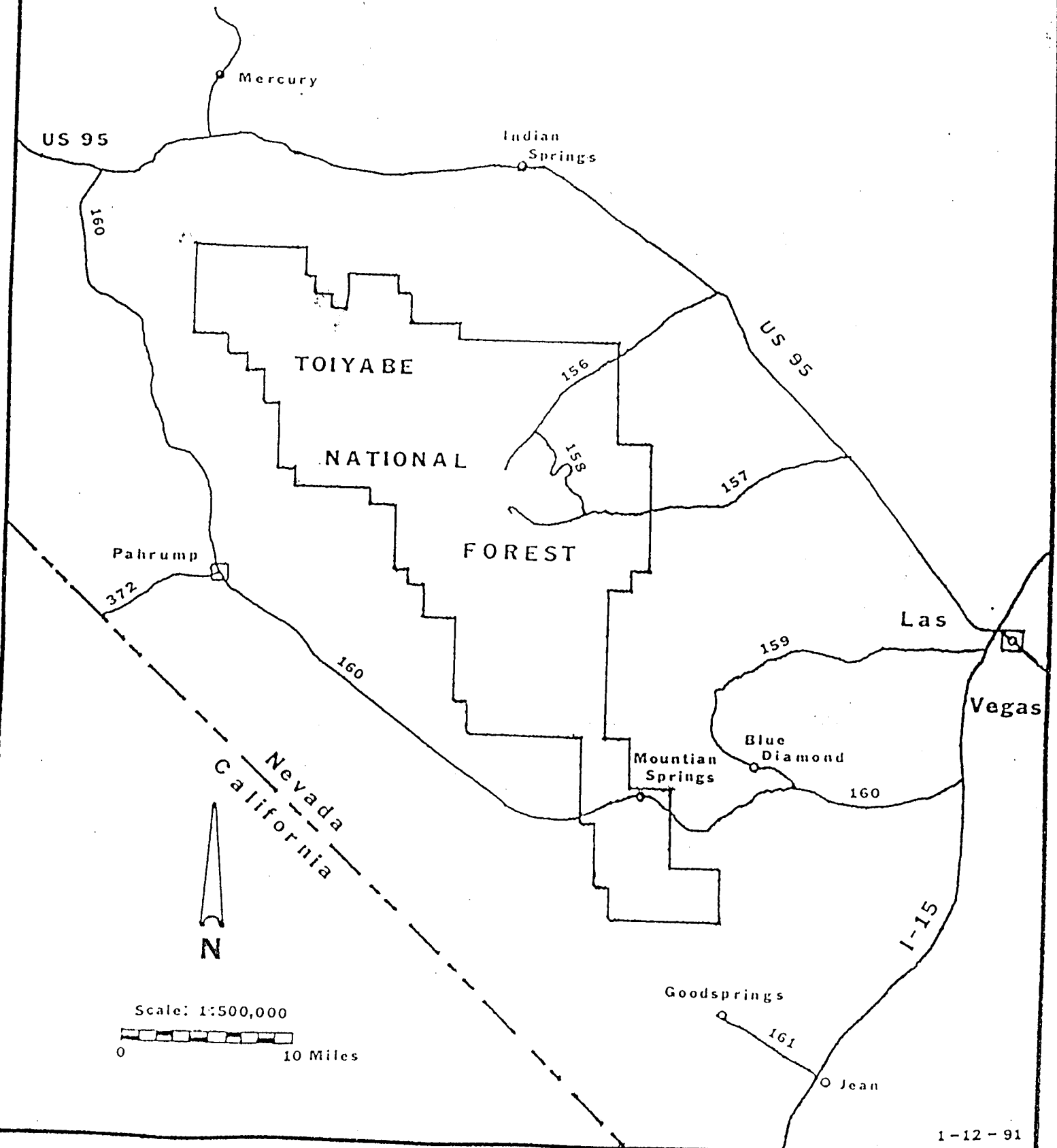
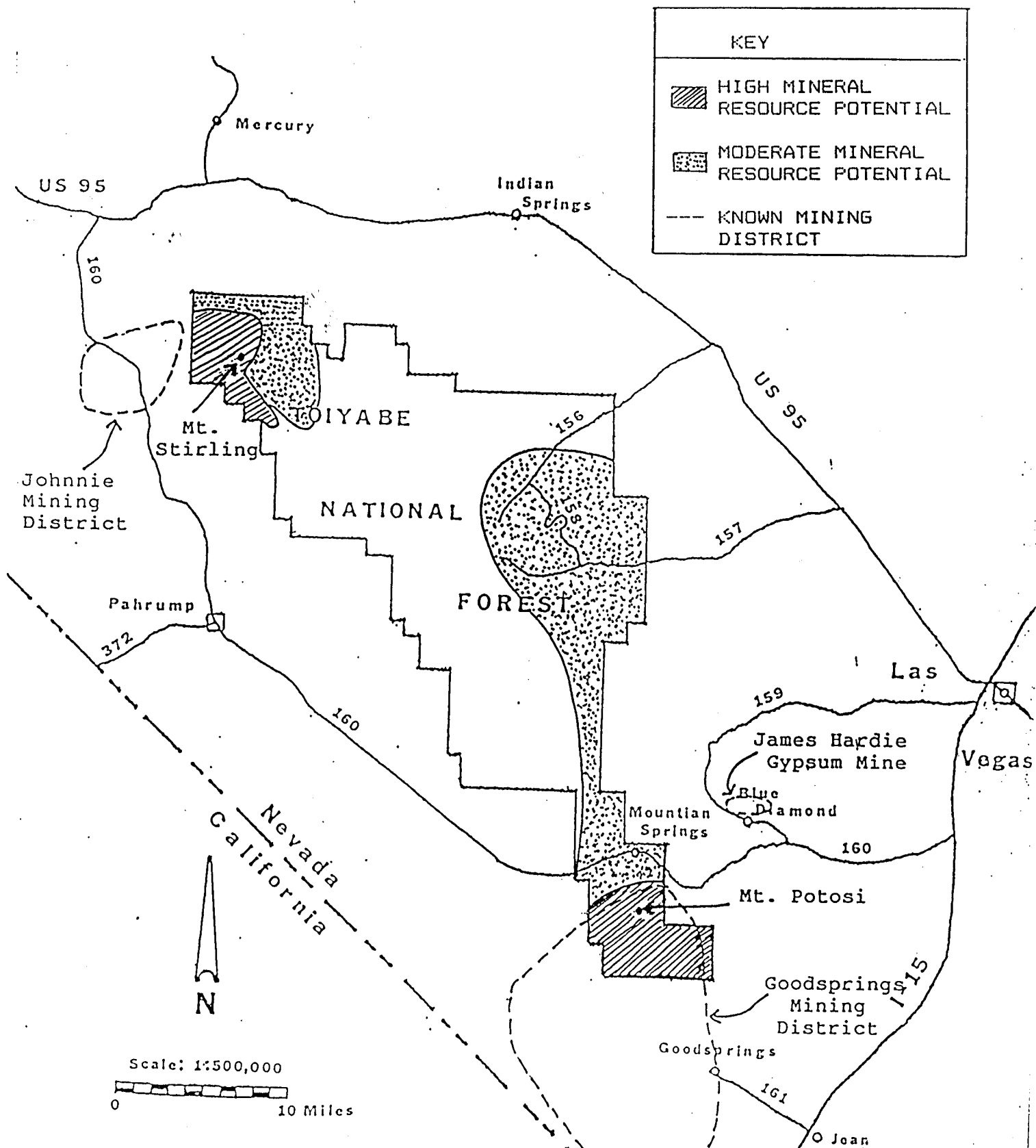


FIGURE 2

MINERAL RESOURCE POTENTIAL OF U.S.F.S. LANDS
IN PROPOSED SPRING MOUNTAIN NATIONAL RECREATION AREA
(COMPILED FROM DATA BY CRANDELL AND HAMILTON, 1991
(AND MADRID, ET.AL., 1987))



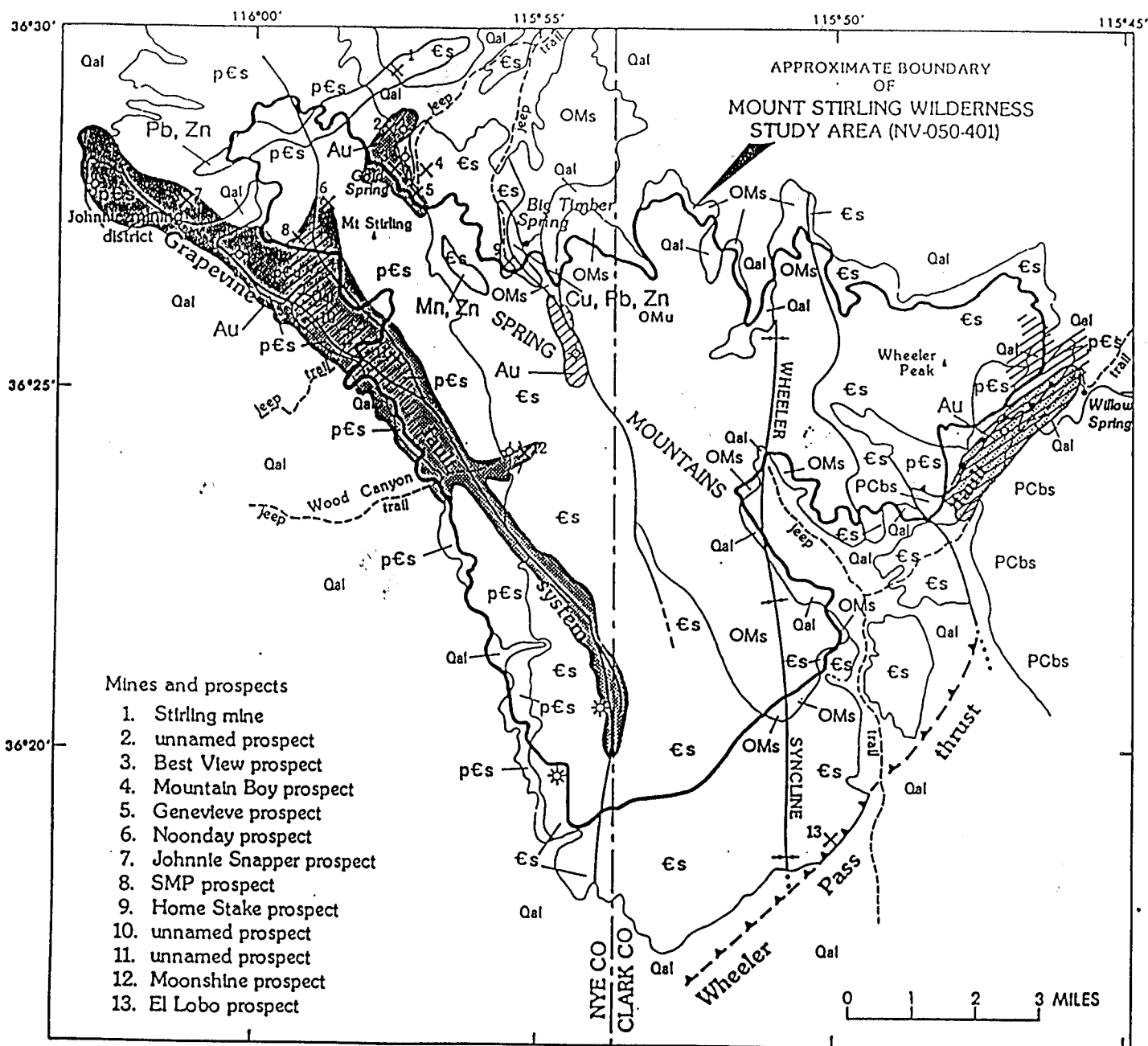
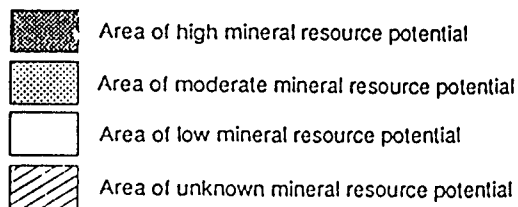


Figure 2. Map showing mineral resource potential and generalized geology of the Mt. Stirling Wilderness Study Area, Clark and Nye Counties, Nevada.

EXPLANATION



Areas of mineral resource potential defined by maximum extent of alteration mapped in the field

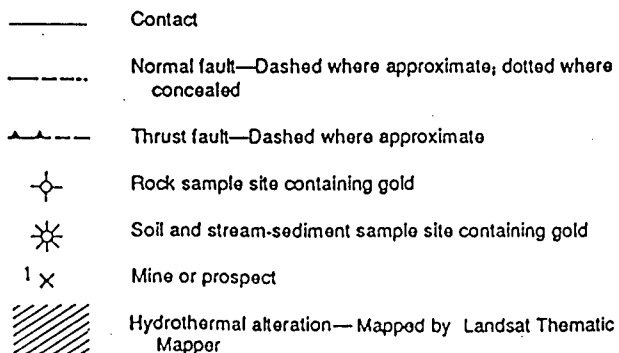


FIGURE 3

MINERAL RESOURCE POTENTIAL OF MT. STIRLING
(FROM MADRID, ET. AL., PG. B4-5)

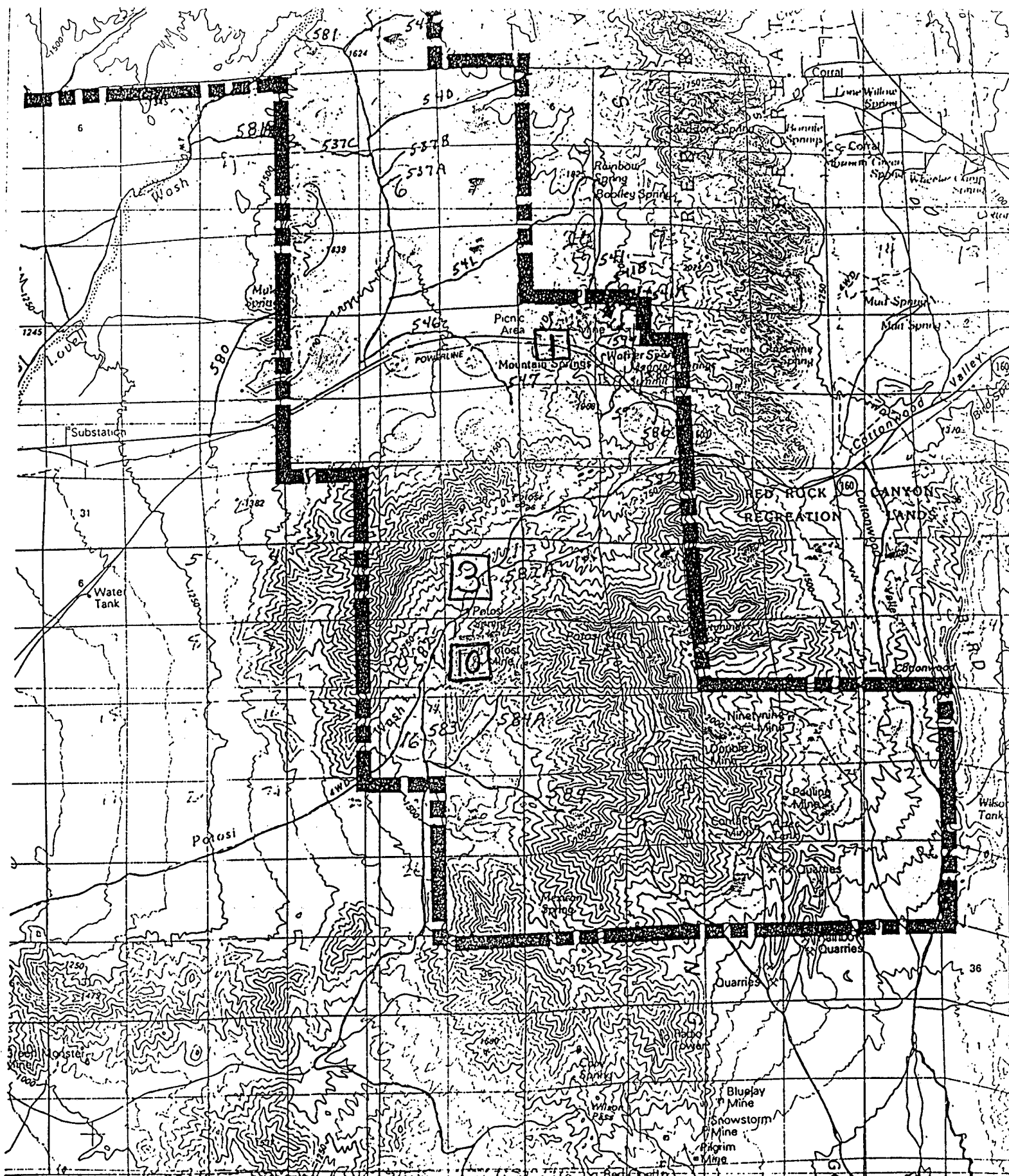


FIGURE 5

PATENTED MINING CLAIMS IN SOUTHERN MOST
PORTION OF USFS NRA PROPOSAL

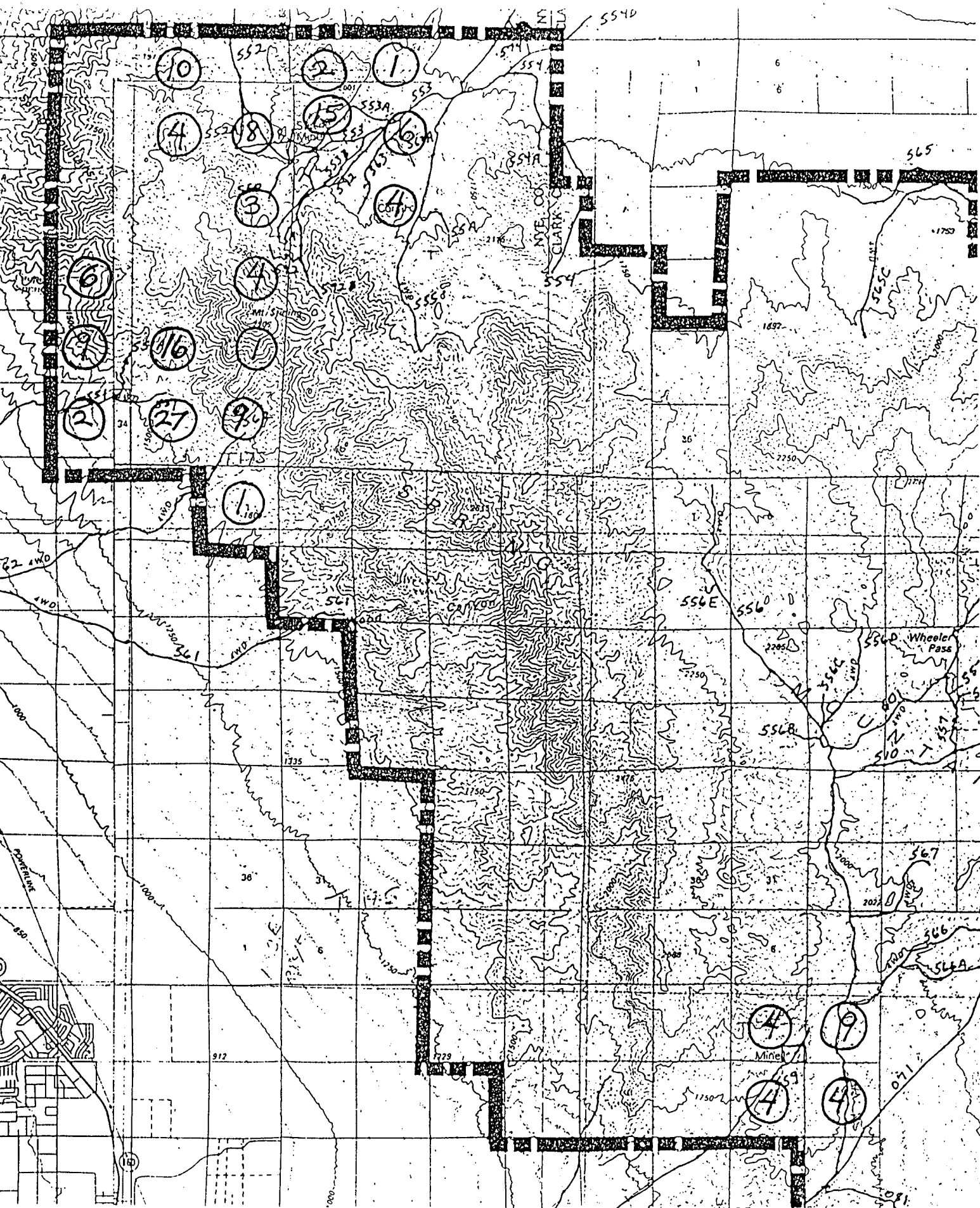


FIGURE 6

UNPATENTED MINING CLAIMS IN NORTHERN MOST
PORTION OF USFS NRA PROPOSAL, FROM USFS DATA

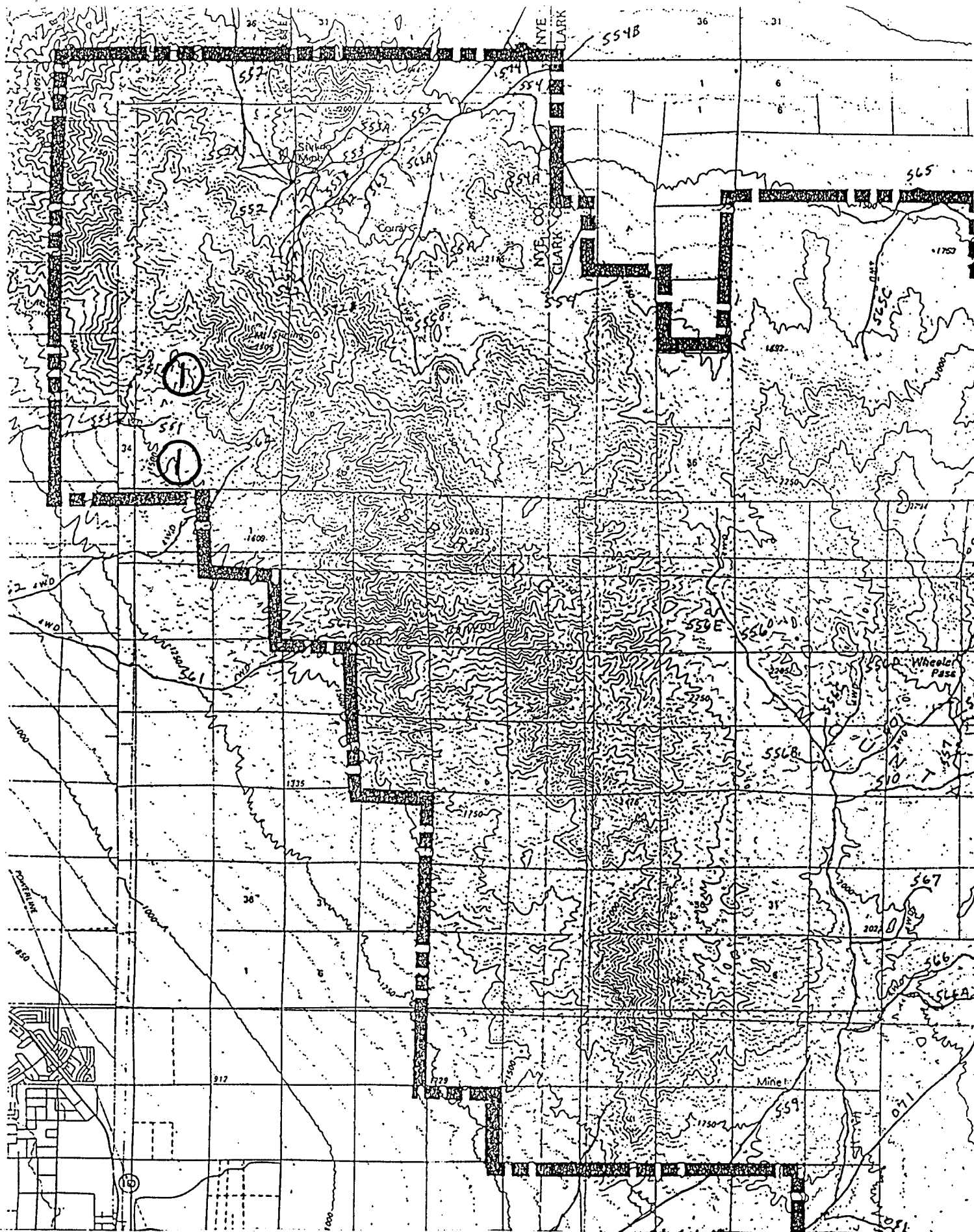


FIGURE 7

PATENTED MINING CLAIMS IN NORTHERN MOST
PORTION OF USFS NRA PROPOSAL

PROPOSED SPRING MOUNTAIN NATIONAL RECREATION AREA

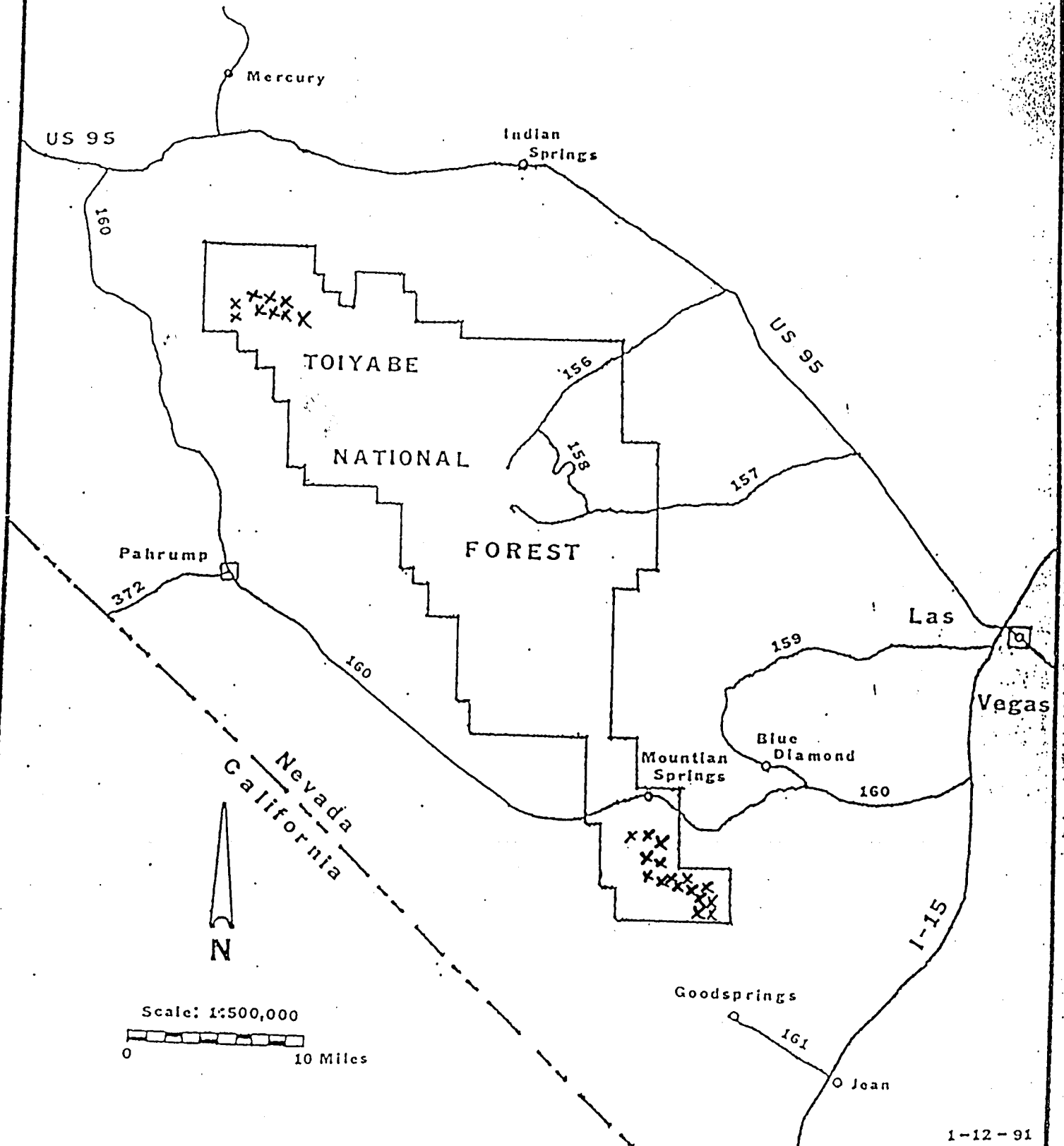


FIGURE 8

USFS LANDS WITH SIGNIFICANT
ABANDONED MINE LAND HAZARDS

X ABANDONED MINE LANDS AREA

PROPOSED SPRING MOUNTAIN NATIONAL RECREATION AREA

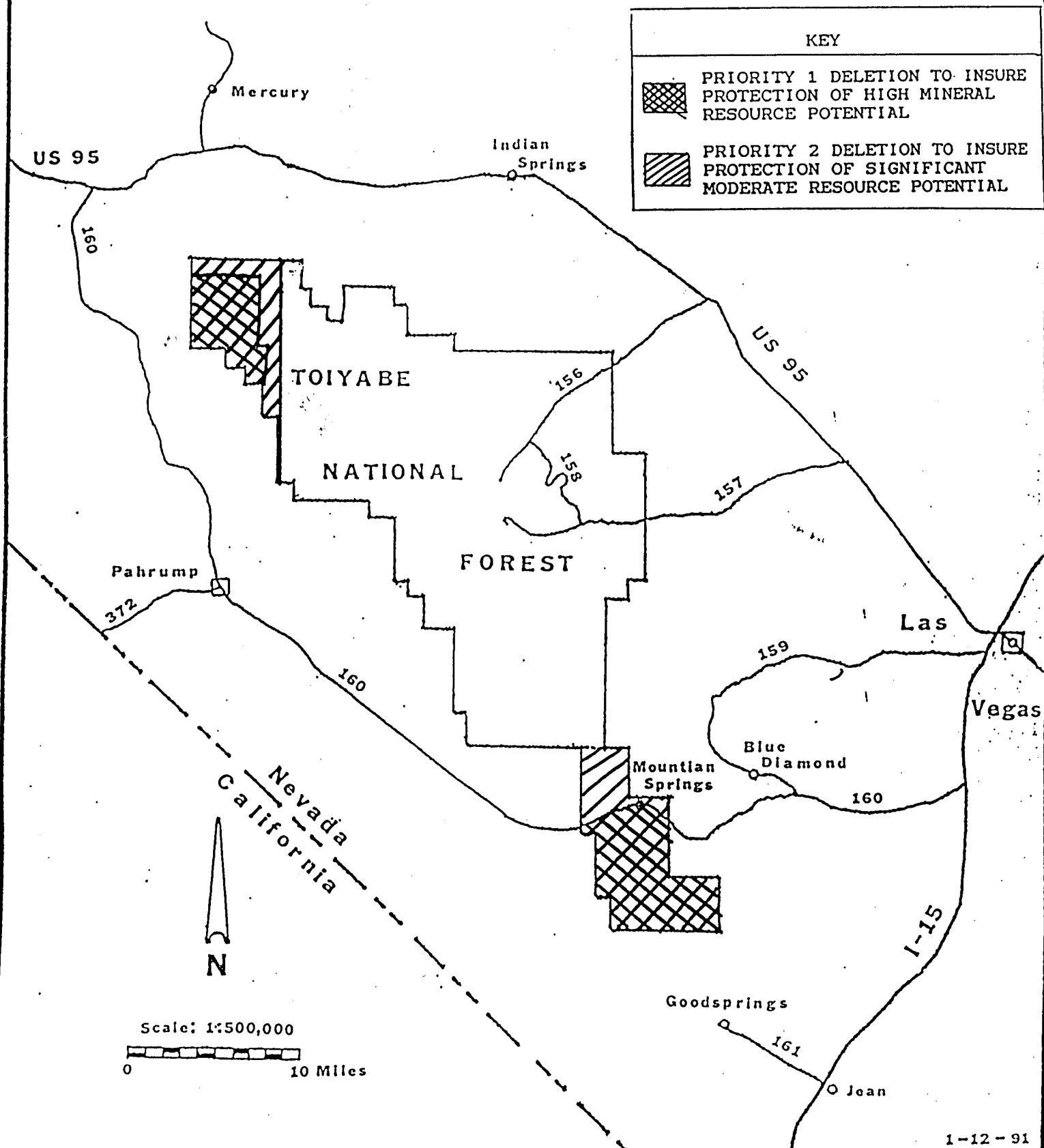


FIGURE 9

RECOMMENDED DELETIONS FROM SPRING MOUNTAIN
NRA PROPOSAL, OR AREAS WHERE MINERAL
LOCATION BE ALLOWED TO CONTINUE