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**Analytical results and sample locality map
of heavy-mineral-concentrate and rock samples
from the Providence Mountains Wilderness Study Area
(CDCA-263), San Bernardino County, California**

By

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This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature. Any use of trade names is for descriptive purposes only and does not imply endorsement by the USGS.

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STUDIES RELATED TO WILDERNESS

Bureau of Land Management Wilderness Study Areas

The Federal Land Policy and Management Act (Public Law 94-579, October 21, 1976) requires the U.S. Geological Survey and the U.S. Bureau of Mines to conduct mineral surveys on certain areas to determine their mineral values, if any. Results must be made available to the public and be submitted to the President and the Congress. This report presents the results of a geochemical survey of the Providence Mountains Wilderness Study Area (CDCA 263), San Bernardino County, California.

INTRODUCTION

In 1984 and 1985, the U.S. Geological Survey conducted a reconnaissance geochemical survey of the Providence Mountains Wilderness Study Area, San Bernardino County, California.

The Providence Mountains Wilderness Study Area comprises 63,297 acres (about 100 mi²), in the northwest corner of the Needles 2° sheet and the southwest corner of the Kingman 2° sheet. It lies just east of the Devils Playground at the southern end of the Death Valley depression within the Basin and Range geologic province. Access to the vicinity of the study area is provided on the west by the local access road between Baker, Kelso, and Amboy. Access to the Providence Mountains is provided by dirt roads and jeep trails.

The study area is underlain by diverse rocks that represent a long and complex geologic history. Proterozoic gneiss and granite crop out widely in the northern part of the area. A thick sequence of Paleozoic sandstone, limestone, and dolomite crop out in the higher elevations of the Providence Mountains. Jurassic and Cretaceous granitoid rocks of varying composition are widespread in the Colton Hills, in the northern and western part of the study area, and in the Foshay Pass area. Tertiary volcanic rocks underlie prominent mesas near Hole in the Wall. High-angle faults cut all of these units and have, in many places, controlled mineralization processes. The geology of the study area has been described in detail by Goldfarb and others (1986).

The Providence Mountains Wilderness Study Area comprises most of the Providence Mountains north of Foshay Pass, east of Kelso and the Union Pacific Railroad, south of roads traversing Macedonia and Wild Horse Canyons, and includes the Colton Hills west of Black Canyon Road (fig. 1). Bordering part of the study area is the Providence Mountains State Recreation Area. The area includes rugged, sparsely forested mountains exceeding 7,000 ft in elevation, 500 to 1,000 ft high mesas north of the Colton Hills, and lowland hills and plains at about 3,400 ft elevation in the Colton Hills and 2,200 ft elevation near Kelso.

METHODS OF STUDY

Sample Media

Heavy-mineral-concentrate samples provide information about the chemistry of certain minerals in rock material eroded from the drainage basin upstream from each sample site. The selective concentration of minerals, many of which may be ore-related, permits determination of some elements that are not easily detected in stream-sediment samples.

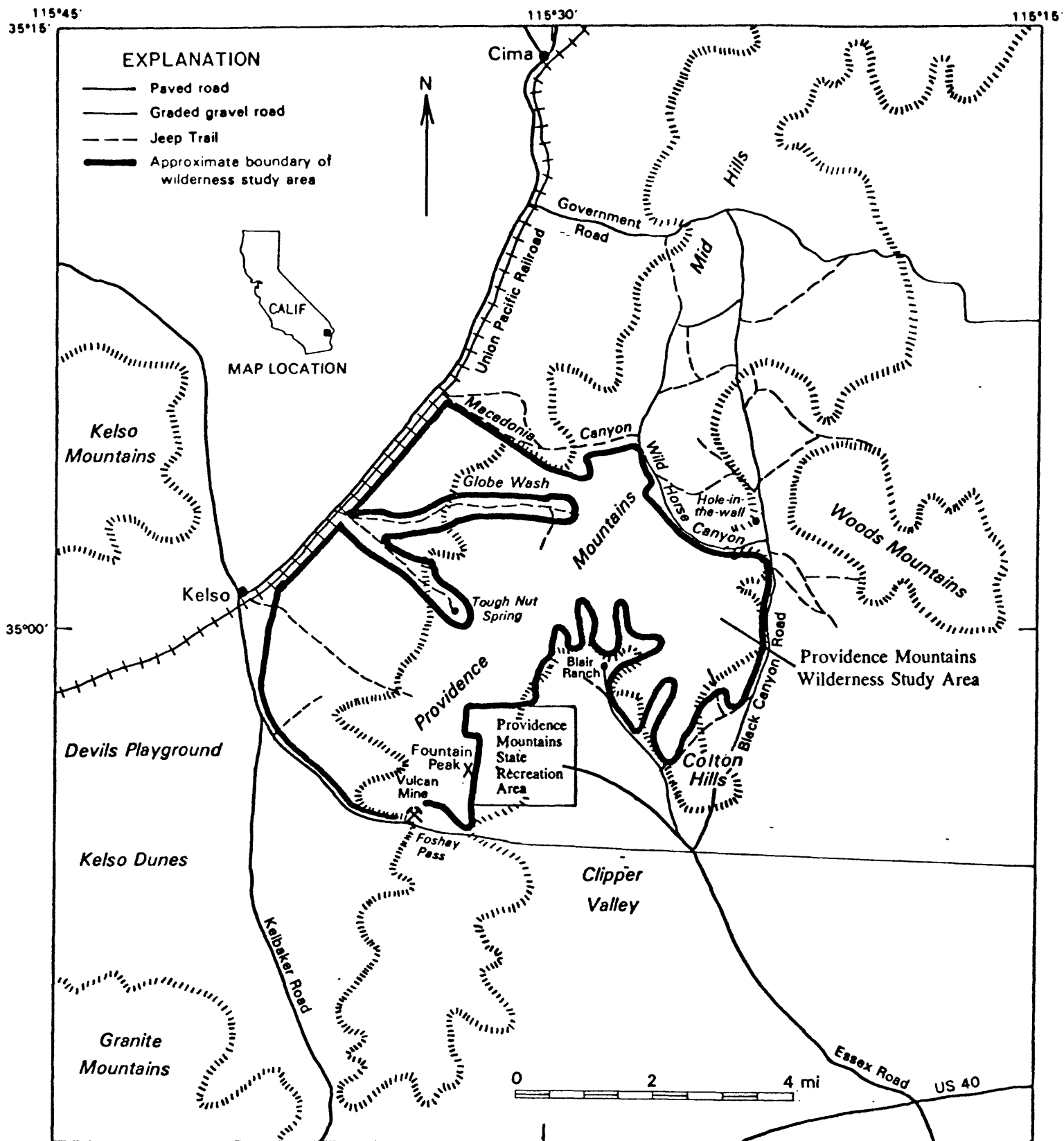


Figure 1. Location map of the Providence Mountains Wilderness Study Area, San Bernardino County, California.

Analyses of unaltered or unmineralized rock samples provide background geochemical data for individual rock units. On the other hand, analyses of altered or mineralized rocks, where present, may provide useful geochemical information about the major- and trace-element assemblages associated with a mineralizing system.

Sample Collection

Concentrate samples were collected at 188 sites (plate 1). Where suitable outcrop was available, rock samples were collected. Sampling density was about 1 sample site per 0.5 mi² for the heavy-mineral concentrates, and about 1 sample site per 0.3 mi² for the rocks. The area of the drainage basins sampled ranged from 0.1 mi² to 1 mi².

Heavy-mineral-concentrate samples

Heavy-mineral-concentrate samples were collected from active alluvium primarily within first- and second-order catchments as shown on USGS 15' topographic maps. Each bulk sample was screened with a 2.0-mm (10-mesh) screen to remove the coarse material. The less than 2.0-mm fraction was panned until most of the quartz, feldspar, organic material, and clay-sized material were removed.

Rock samples

Rock samples were collected from outcrops or exposures in the vicinity of the plotted site location. Samples were collected from unaltered and/or altered and/or mineralized rocks.

Sample Preparation

Bromoform (specific gravity 2.8) was used to remove the remaining quartz and feldspar from the heavy-mineral-concentrate samples that had been panned in the field. The resultant heavy mineral sample was separated into three fractions using a large electromagnet (in this case a modified Frantz Isodynamic Separator). The most magnetic material, primarily magnetite, was not analyzed. The second fraction, largely ferromagnesian silicates and iron oxides, was saved for analysis/archival storage. The third fraction (the least magnetic material which may include the nonmagnetic ore minerals, zircon, sphene, etc.) was split using a Jones splitter. One split was hand-ground for spectrographic analysis; the other split was saved for mineralogical analysis. These magnetic separates are the same separates that would be produced by using a Frantz Isodynamic Separator set at a slope of 15 and a tilt of 10° with a current of 0.1 ampere to remove the magnetite and ilmenite, and a current of 1.0 ampere to split the remainder of the sample into paramagnetic and nonmagnetic fractions.

Rock samples were crushed and then pulverized to minus 0.15 mm with ceramic plates.

Sample Analysis

Spectrographic method

The heavy-mineral-concentrate and rock samples were analyzed for 31 elements using a semiquantitative, direct-current arc emission spectrographic method (Grimes and Marranzino, 1968). The analyses of heavy-mineral-concentrate samples were performed by analysts in the Branch of Exploration Geochemistry using the method of Grimes and Marranzino (1968); analyses of rock samples were performed by analysts in the Branch of Analytical Chemistry using the method of Myers and others (1961). The elements analyzed and their lower limits of determination are listed in Table 1. Spectrographic results were obtained by visual comparison of spectra derived from the sample against spectra obtained from standards made from pure oxides and carbonates. Standard concentrations are geometrically spaced over any given order of magnitude of concentration as follows: 100, 50, 20, 10, and so forth. Samples whose concentrations are estimated to fall between those values are assigned values of 70, 30, 15, and so forth. The precision of the analytical method is approximately plus or minus one reporting interval at the 83 percent confidence level and plus or minus two reporting intervals at the 96 percent confidence level (Motooka and Grimes, 1976). Values determined for the major elements (iron, magnesium, calcium, and titanium) are given in weight percent; all others are given in parts per million (micrograms/gram).

Chemical Methods

Other methods of analysis used on samples from the Providence Mountains Wilderness Study Area are summarized in Table 2.

The analytical method used for determining As, Bi, Cd, Sb, and Zn is a modification and adaptation for the inductively coupled plasma method (ICP) based on the method of O'Leary and Viets (1986).

Analytical results for heavy-mineral-concentrate and rock samples are listed in Tables 3 and 4, respectively.

ROCK ANALYSIS STORAGE SYSTEM

Upon completion of all analytical work, the analytical results were entered into a computer-based file called Rock Analysis Storage System (RASS). This data base contains both descriptive geological information and analytical data. Any or all of this information may be retrieved and converted to a binary form (STATPAC) for computerized statistical analysis or publication (VanTrump and Miesch, 1976).

DESCRIPTION OF DATA TABLES

Tables 3 and 4 list the analyses for the samples of heavy-mineral concentrate and rock, respectively. For the two tables, the data are arranged so that column 1 contains the USGS-assigned sample numbers. These numbers correspond to the numbers shown on the site location maps (plate 1). Columns in which the element headings show the letter "s" below the element symbol are emission spectrographic analyses; "aa" indicates atomic absorption analyses; "icp" means inductively coupled plasma analyses; and "si" indicates specific ion analyses. A letter "N" in the tables indicates that a given element was looked for but not detected at the lower limit of determination shown for that

element in Table 1. If an element was observed but was below the lowest reporting value, a "less than" symbol (<) was entered in the tables in front of the lower limit of determination. If an element was observed but was above the highest reporting value, a "greater than" symbol (>) was entered in the tables in front of the upper limit of determination. If an element was not looked for in a sample, two dashes (--) are entered in Tables 3 and 4 in place of an analytical value. Because of the formatting used in the computer program that produced Tables 3 and 4, some of the elements listed in these tables (Fe, Mg, Ca, Ti, Ag, and Be) carry one or more nonsignificant digits to the right of the significant digits. The analysts did not determine these elements to the accuracy suggested by the extra zeros.

The spectrographic determinations for Cd, Sc, and Zn in heavy-mineral-concentrate samples were all below the lower limits of determinations shown in Table 1; consequently, the columns for these elements have been deleted from Table 3.

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Table 1.--Limits of determination for the spectrographic analysis of rocks and stream sediments, based on a 10-mg sample

[The spectrographic limits of determination for heavy-mineral-concentrate samples are based on a 5-mg sample, and are therefore two reporting intervals higher than the limits given for rocks and stream sediments]

Elements	Lower determination limit		Upper determination limit
Percent			
Iron (Fe)	0.05		20
Magnesium (Mg)	.02		10
Calcium (Ca)	.05		20
Titanium (Ti)	.002		1
Parts per million			
Manganese (Mn)	10		5,000
Silver (Ag)	0.5		5,000
Arsenic (As)	200	700	10,000
Gold (Au)	10	15	500
Boron (B)	10		2,000
Barium (Ba)	20		5,000
Beryllium (Be)	1		1,000
Bismuth (Bi)	10		1,000
Cadmium (Cd)	20	30	500
Cobalt (Co)	5		2,000
Chromium (Cr)	10		5,000
Copper (Cu)	5		20,000
Lanthanum (La)	20	30	1,000
Molybdenum (Mo)	5		2,000
Niobium (Nb)	20		2,000
Nickel (Ni)	5		5,000
Lead (Pb)	10		20,000
Antimony (Sb)	100		10,000
Scandium (Sc)	5		100
Tin (Sn)	10		1,000
Strontium (Sr)	100		5,000
Vanadium (V)	10		10,000
Tungsten (W)	50		10,000
Yttrium (Y)	10		2,000
Zinc (Zn)	200		10,000
Zirconium (Zr)	10		1,000
Thorium (Th)	100	200	2,000

Table 2.--Commonly used chemical methods

[AA = atomic absorption; ICP = inductively coupled plasma spectroscopy;
SI = specific ion]

Element or constituent determined	Sample Type	Method	Determination limit (micrograms/ gram or ppm)	Reference
Gold (Au)	rock	AA	.1	<u>Modification of Thompson and others, 1968.</u>
Mercury (Hg)	rock	AA	0.02	Koirtyohann and Khalil, 1976.
Arsenic (As)	rock	ICP	5 or 10	Crock and others, 1983, and
Antimony (Sb)	rock	ICP	2	<u>modification of</u>
Zinc (Zn)	rock	ICP	2	<u>O'Leary and</u>
Bismuth (Bi)	rock	ICP	2	<u>Viets, 1986.</u>
Cadmium (Cd)	rock	ICP	0.1	
Fluorine (F)	rock	SI	100	Hopkins, 1977.

TABLE 3--SPECTROGRAPHIC RESULTS FROM THE ANALYSIS OF NONMAGNETIC HEAVY-MINERAL CONCENTRATE SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.

[N, not detected; (, detected but below the limit of determination shown; >, determined to be greater than the value shown.]

Sample	Latitude	Longitude	Fe-ppt. S	Mg-ppt. S	Ca-ppt. S	Ti-ppt. S	Mn-ppt. S	Ag-ppt. S	As-ppt. S	Au-ppt. S	B-ppt. S	Ba-ppt. S	Be-ppt. S
001CN	34 55 35	115 33 42	1.00	20.00	50	2.0	1,000	N	N	N	20	700	(2
002CN	34 55 37	115 33 53	.50	5.00	20	>2.0	700	N	N	N	50	>10,000	(2
003CN	34 55 28	115 34 19	.70	3.00	20	>2.0	700	N	N	N	20	1,500	(2
004CN	34 55 28	115 34 19	.70	10.00	20	>2.0	700	N	N	N	50	5,000	(2
005CN	34 55 28	115 34 52	.70	.20	10	>2.0	1,000	N	N	N	20	2,000	2
006CN	34 55 32	115 35 40	.30	.15	30	>2.0	1,500	N	N	N	20	1,000	(2
007CN	34 55 33	115 35 53	.30	.50	7	>2.0	700	N	N	N	20	1,500	3
009CN	34 56 58	115 35 1	30.00	3.00	10	>2.0	10,000	N	N	N	100	2,000	5
010CN	34 57 9	115 35 1	1.00	20.00	30	>2.0	1,000	N	N	N	20	5,000	(2
011CN	34 57 34	115 35 47	.50	15.00	20	>2.0	700	10.0	N	20	30	1,500	3
012CN	34 59 15	115 34 49	.50	20.00	20	>2.0	700	N	N	N	50	>10,000	(2
013CN	34 59 25	115 34 34	.50	1.00	7	1.0	300	N	N	N	30	1,500	(2
014CN	34 59 57	115 34 20	.70	.70	10	>2.0	500	N	N	N	150	>10,000	(2
015CN	35 0 35	115 33 25	.30	15.00	20	2.0	500	N	N	N	20	7,000	(2
016CN	35 0 58	115 32 49	1.00	.50	15	>2.0	1,000	N	N	N	30	10,000	(2
017CN	35 0 51	115 32 45	.70	15.00	20	>2.0	1,000	N	N	N	20	5,000	2
018CN	35 0 29	115 32 7	1.50	1.00	30	>2.0	3,000	N	N	N	20	>10,000	(2
020CN	35 0 45	115 31 9	.30	20.00	30	1.5	500	N	N	N	20	>10,000	2
021CN	35 0 23	115 31 5	.30	20.00	50	2.0	500	N	N	N	30	5,000	2
022CN	35 0 21	115 31 11	.50	20.00	30	>2.0	700	N	N	N	30	>10,000	(2
023CN	35 1 18	115 31 9	1.00	15.00	30	.7	1,500	N	N	N	500	3,000	2
025CN	35 2 14	115 33 31	.50	1.00	15	>2.0	700	N	N	N	20	10,000	2
026CN	35 2 33	115 33 14	.30	.50	10	2.0	700	N	N	N	30	1,500	2
027CN	35 1 55	115 29 47	1.50	3.00	10	>2.0	500	3.0	N	(20	<20	>10,000	(2
029CN	35 2 0	115 30 4	.20	.50	7	>2.0	500	500.0	N	N	70	>10,000	3
030CN	35 3 3	115 29 42	.70	.30	20	>2.0	1,000	10.0	N	N	20	5,000	5
031CN	35 2 59	115 29 35	.50	.70	20	>2.0	1,000	N	N	N	20	>10,000	(2
032CN	35 3 6	115 29 54	.30	.15	10	>2.0	500	N	N	N	(20	1,500	2
033CN	35 3 9	115 32 2	.70	.50	20	2.0	700	N	N	N	30	2,000	2
034CN	35 3 11	115 32 34	1.00	.30	10	>2.0	1,500	N	N	N	20	>10,000	(2
035CN	35 2 49	115 33 0	.50	.70	15	>2.0	1,000	2.0	N	N	100	2,000	2
036CN	35 3 14	115 31 26	.50	.15	5	1.0	200	N	N	N	20	1,000	5
037CN	35 3 16	115 31 36	2.00	.50	5	1.0	700	N	N	N	30	1,500	3
038CN	35 3 29	115 32 40	.50	.50	10	>2.0	700	N	N	N	20	2,000	2
039CN	35 3 39	115 32 43	.70	.30	7	>2.0	700	N	N	N	20	7,000	2
040CN	35 3 54	115 32 31	.50	.50	15	>2.0	500	2.0	N	N	30	1,000	3
041CN	35 4 1	115 32 22	1.00	1.00	10	>2.0	700	N	N	N	30	2,000	(2
042CN	35 4 4	115 21 13	.50	.30	15	>2.0	20	N	N	N	20	2,000	2
043CN	35 4 24	115 31 27	.70	.30	20	2.0	500	N	N	N	20	5,000	2
044CN	35 4 26	115 31 2	.50	.20	10	.5	300	N	N	N	20	2,000	N
045CN	35 3 55	115 29 45	1.00	.50	10	>2.0	1,000	N	N	N	50	1,000	200
046CN	35 5 10	115 29 38	1.00	.20	20	>2.0	1,500	N	N	N	(20	700	(2
047CN	35 4 56	115 30 6	.50	.20	50	>2.0	1,500	N	N	N	20	1,000	2
048CN	35 4 29	115 28 12	.70	.20	20	2.0	1,000	N	N	N	20	1,000	2
049CN	35 5 0	115 27 43	.70	.30	50	>2.0	1,500	N	N	N	20	5,000	(2

TABLE 3--SPECTROGRAPHIC RESULTS FROM THE ANALYSIS OF NONMAGNETIC HEAVY-MINERAL CONCENTRATE SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Bi-ppm s	Co-ppm s	Cr-ppm s	Cu-ppm s	La-ppm s	Mo-ppm s	Nb-ppm s	Ni-ppm s	Pb-ppm s	Sb-ppm s	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s
001CN	N	10	50	N	100	50	70	N	500	N	20	N	N	N
002CN	N	N	70	150	200	5,000	100	10	>50,000	N	N	500	700	N
003CN	N	N	70	N	200	N	100	N	200	N	20	500	300	N
004CN	N	N	50	N	300	N	150	N	10,000	N	20	N	500	N
005CN	N	N	50	N	500	N	100	N	200	N	30	500	200	N
006CN	N	N	20	N	700	N	150	N	20	N	N	200	150	N
007CN	N	N	30	N	150	N	<50	N	200	N	N	500	150	N
009CN	N	70	200	200	500	30	100	70	500	N	N	200	1,000	N
010CN	N	N	30	N	100	N	50	N	100	N	N	200	200	N
011CN	N	N	70	10	50	N	<50	N	500	2,000	N	200	100	N
012CN	N	N	30	N	50	N	<50	15	200	N	N	500	150	N
013CN	N	N	20	N	100	70	N	10	2,000	N	N	500	150	1,500
014CN	N	N	70	N	150	N	<50	10	1,000	N	N	1,500	200	500
015CN	200	N	50	30	N	N	N	N	150	N	N	N	50	N
016CN	N	N	30	N	500	N	100	10	50	N	70	500	200	N
017CN	N	N	30	N	200	N	150	N	20	N	N	200	200	N
018CN	N	10	100	N	700	N	100	N	200	N	70	500	150	N
020CN	N	N	50	N	100	N	<50	N	200	N	N	200	70	N
021CN	N	N	20	N	N	N	<50	N	50	N	N	N	50	N
022CN	N	N	50	N	N	N	<50	N	150	N	N	1,000	100	N
023CN	N	10	100	N	500	1,000	<50	N	15,000	N	N	500	100	N
025CN	N	N	20	N	200	N	50	N	300	N	N	500	100	N
026CN	N	10	20	30	200	500	50	N	20,000	N	N	500	150	N
027CN	N	15	50	N	200	N	200	15	700	N	100	500	150	150
029CN	N	10	150	N	N	N	50	N	5,000	N	N	1,000	200	200
030CN	N	10	50	N	200	30	50	10	300	N	N	200	150	500
031CN	N	N	30	N	200	N	N	N	500	N	N	500	100	500
032CN	N	N	50	N	200	N	<50	N	70	N	N	200	100	N
033CN	N	N	30	N	200	200	50	10	30,000	N	30	500	2,000	5,000
034CN	N	10	30	N	500	N	300	N	100	N	150	200	200	500
035CN	N	N	50	N	200	N	100	N	300	N	N	500	150	N
036CN	(20	N	(20	N	50	N	N	N	50	N	N	200	70	N
037CN	N	10	30	N	1,000	70	70	N	100	N	N	200	70	10,000
038CN	N	10	(20	N	500	N	100	N	150	N	(20	700	200	N
039CN	N	N	20	N	700	N	100	N	100	N	50	700	200	N
040CN	N	10	30	N	300	N	50	N	100	N	N	1,000	150	N
041CN	N	N	30	N	300	N	100	N	300	N	20	500	200	150
042CN	N	N	50	N	300	N	50	10	50	N	(20	700	100	N
043CN	N	N	20	N	300	20	N	30	500	N	N	500	150	150
044CN	N	N	20	N	50	100	N	10	500	N	N	200	150	10,000
045CN	N	10	50	10	>2,000	N	50	N	300	N	N	200	100	2,000
046CN	N	20	30	10	1,000	N	300	N	50	N	50	500	500	1,000
047CN	N	10	(20	N	1,000	N	50	N	50	N	N	500	200	N
048CN	50	N	20	N	700	30	100	N	300	N	N	700	200	1,500
049CN	50	10	30	N	1,500	N	200	N	100	N	50	500	200	100

TABLE 3--SPECTROGRAPHIC RESULTS FROM THE ANALYSIS OF NONMAGNETIC HEAVY-MINERAL CONCENTRATE SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Y-ppm s	Zn-ppm s	Th-ppm s
001CN	200	N	N
002CN	500	N	(200
003CN	500	N	200
004CN	300	N	N
005CN	700	N	200
006CN	500	N	200
007CN	500	N	(200
009CN	200	N	N
010CN	200	N	(200
011CN	500	N	N
012CN	200	N	200
013CN	300	N	1,000
014CN	500	N	N
015CN	300	N	N
016CN	700	N	(200
017CN	300	N	(200
018CN	1,000	N	200
020CN	300	N	(200
021CN	100	N	N
022CN	200	N	N
023CN	300	N	(200
025CN	700	N	200
026CN	500	N	1,000
027CN	700	N	(200
029CN	700	N	N
030CN	700	N	N
031CN	1,000	N	(200
032CN	1,000	N	N
033CN	700	N	(200
034CN	1,000	N	1,000
035CN	700	N	200
036CN	200	N	N
037CN	200	N	1,000
038CN	500	N	300
039CN	500	N	300
040CN	500	N	(200
041CN	700	N	300
042CN	700	N	N
043CN	1,000	N	N
044CN	300	N	500
045CN	500	N	1,000
046CN	700	N	2,000
047CN	500	N	1,000
048CN	500	N	(200
049CN	500	N	300

TABLE 3--SPECTROGRAPHIC RESULTS FROM THE ANALYSIS OF NONMAGNETIC HEAVY-MINERAL CONCENTRATE SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA,---Continued

Sample	Latitude	Longitude	Fe-ppt. s	Mg-ppt. s	Ca-ppt. s	Ti-ppt. s	Mn-ppt. s	Ag-ppt. s	As-ppt. s	Au-ppt. s	B-ppt. s	Ba-ppt. s	Be-ppt. s
050CN	35 4 58	115 27 50	.30	.20	>50	2.0	1,500	N	N	N	20	500	(2
051CN	34 55 56	115 36 3	.50	.50	10	2.0	500	N	N	N	30	3,000	(2
052CN	34 58 23	115 34 40	.70	10.00	20	2.0	500	N	N	N	30	5,000	3
053CN	34 58 16	115 34 42	.50	10.00	20	2.0	700	N	N	N	20	500	(2
054CN	34 58 41	115 35 15	1.50	10.00	20	>2.0	700	N	N	N	100	>10,000	(2
055CN	34 58 26	115 33 52	.50	1.00	15	>2.0	700	N	N	N	20	>10,000	(2
056CN	34 58 39	115 33 59	.50	15.00	50	>2.0	700	N	N	N	20	>10,000	(2
057CN	34 58 22	115 34 24	.30	20.00	30	1.0	700	7.0	N	N	20	2,000	2
058CN	34 58 49	115 35 12	.50	>20.00	>50	.2	1,000	N	N	N	20	500	(2
059CN	34 58 22	115 35 29	1.00	10.00	20	2.0	700	N	N	N	20	5,000	(2
060CN	34 58 21	115 35 33	.50	15.00	30	>2.0	1,000	N	N	N	50	5,000	N
061CN	34 59 40	115 36 52	.30	20.00	30	1.5	700	N	N	N	50	1,500	(2
062CN	34 59 54	115 32 21	.70	5.00	20	>2.0	300	5.0	N	N	20	>10,000	2
064CN	35 0 22	115 31 44	.70	5.00	10	>2.0	1,000	N	N	N	200	>10,000	2
065CN	35 0 21	115 31 22	.15	20.00	20	>2.0	500	10.0	N	N	50	>10,000	3
066CN	35 1 19	115 31 1	.50	2.00	15	2.0	700	N	N	N	20	>10,000	5
067CN	35 0 50	115 31 29	1.00	2.00	20	>2.0	1,000	N	N	N	100	>10,000	20
068CN	35 1 12	115 34 0	.70	.30	5	>2.0	500	N	N	N	(20	3,000	2
069CN	35 1 38	115 33 45	2.00	1.00	10	>2.0	1,000	10.0	N	N	20	>10,000	2
070CN	35 1 28	115 33 46	1.00	1.00	20	>2.0	1,000	N	N	N	50	>10,000	N
071CN	35 1 38	115 29 53	.50	.50	5	>2.0	200	300.0	N	N	20	>10,000	(2
072CN	35 2 9	115 30 31	1.00	.30	10	>2.0	1,000	70.0	N	50	30	>10,000	3
073CN	35 2 5	115 30 11	.30	.50	5	>2.0	500	1.0	N	N	20	1,500	3
074CN	35 2 38	115 29 37	1.50	.50	30	>2.0	1,000	500.0	N	N	20	10,000	(2
075CN	35 2 38	115 29 25	1.50	.50	10	2.0	1,000	N	N	N	30	5,000	(2
076CN	35 2 41	115 29 5	.70	.30	20	2.0	1,000	15.0	N	N	20	7,000	(2
077CN	35 3 4	115 30 29	1.00	.50	10	2.0	500	N	N	N	20	1,000	3
078CN	35 2 46	115 31 23	2.00	3.00	50	2.0	1,000	N	N	N	150	1,500	3
079CN	35 2 38	115 31 0	.70	.50	10	>2.0	500	N	N	N	30	5,000	(2
080CN	35 2 40	115 30 58	.50	7.00	20	>2.0	1,500	5.0	N	N	30	>10,000	2
082CN	35 2 42	115 31 50	1.00	.50	10	>2.0	1,000	N	N	N	30	5,000	(2
083CN	35 2 44	115 32 25	.50	.50	10	>2.0	700	N	N	N	30	>10,000	2
084CN	35 2 45	115 32 18	1.00	.50	10	>2.0	1,000	N	N	N	30	>10,000	N
085CN	35 2 46	115 32 52	.50	.50	10	>2.0	700	1.5	N	N	30	1,000	2
086CN	35 5 30	115 31 2	.50	.30	15	2.0	500	N	N	N	50	2,000	3
087CN	35 5 43	115 31 8	.70	.50	15	1.0	700	N	N	N	20	2,000	2
088CN	35 5 35	115 30 40	1.00	.20	20	>2.0	1,500	N	N	N	(20	700	N
089CN	35 5 18	115 29 55	.15	.10	>50	2.0	1,500	N	N	N	(20	1,500	(2
090CN	35 5 22	115 29 56	.30	.10	20	>2.0	1,000	N	N	N	(20	500	(2
091CN	35 4 13	115 30 37	.70	.20	10	2.0	300	N	N	N	20	2,000	3
092CN	35 4 5	115 30 12	.20	.20	30	2.0	1,000	N	N	N	(20	>10,000	30
093CN	35 3 45	115 29 44	1.00	.30	20	>2.0	1,000	N	N	N	30	7,000	100
094CN	35 3 44	115 29 47	1.50	.20	7	>2.0	700	N	N	N	20	5,000	100
095CN	35 3 48	115 29 53	.50	.15	10	>2.0	1,000	N	N	N	20	>10,000	20
096CN	35 1 58	115 29 22	.70	10.00	20	>2.0	500	N	N	N	70	>10,000	2

TABLE 3--SPECTROGRAPHIC RESULTS FROM THE ANALYSIS OF NONMAGNETIC HEAVY-MINERAL CONCENTRATE SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Bi-ppm s	Co-ppm s	Cr-ppm s	Cu-ppm s	La-ppm s	Mo-ppm s	Nb-ppm s	Ni-ppm s	Pb-ppm s	Sb-ppm s	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s
050CN	N	N	50	N	1,500	20	50	N	50	N	N	700	100	1,000
051CN	N	10	50	N	300	N	150	10	50	N	20	700	200	N
052CN	N	20	50	N	N	N	N	10	500	N	N	200	100	N
053CN	N	10	50	N	100	N	50	N	70	N	70	200	150	N
054CN	N	70	200	100	200	N	100	N	2,000	N	30	200	300	<100
055CN	N	N	20	10	200	N	50	N	20	N	20	1,000	150	N
056CN	N	N	150	N	100	N	50	10	50	N	N	500	100	N
057CN	N	N	20	N	N	N	50	N	1,000	N	N	200	70	N
058CN	N	N	50	N	N	N	N	N	N	N	N	N	50	N
059CN	N	10	30	N	50	N	50	N	100	N	N	300	100	N
060CN	N	N	70	N	100	N	50	N	200	N	N	500	200	N
061CN	N	N	30	N	100	N	50	N	300	N	N	N	70	N
062CN	N	N	100	20	500	N	50	20	50	N	20	1,000	150	N
064CN	300	N	70	N	100	N	70	N	5,000	N	10	1,500	150	200
065CN	N	N	20	N	100	100	N	20	2,000	N	500	700	150	N
066CN	N	N	20	N	100	50	50	N	700	N	N	500	50	5,000
067CN	N	10	50	N	200	N	100	N	50	N	N	700	150	100
068CN	N	10	20	N	200	N	100	N	N	N	N	200	100	N
069CN	N	20	50	<10	500	1,000	300	10	10,000	N	150	500	1,000	100
070CN	N	30	50	50	1,000	5,000	700	N	30,000	N	100	300	2,000	100
071CN	N	N	100	30	200	150	100	10	1,000	N	50	2,000	100	N
072CN	N	10	50	<10	500	15	70	N	15,000	N	700	700	150	1,000
073CN	N	N	20	N	200	N	N	N	1,000	N	N	200	100	N
074CN	N	10	70	N	500	N	100	10	10,000	N	N	N	150	<100
075CN	2,000	N	50	15	300	50	50	15	1,000	N	<20	500	70	2,000
076CN	N	10	20	N	200	N	N	15	300	N	N	500	70	1,500
077CN	N	N	20	N	200	N	50	N	50	N	N	200	100	1,000
078CN	N	N	50	10	200	N	50	N	1,000	N	N	N	200	150
079CN	N	N	30	N	200	2,000	70	N	3,000	N	100	500	150	N
080CN	N	N	70	N	100	N	50	N	15,000	N	N	500	150	N
082CN	N	10	30	N	700	N	200	N	1,000	N	70	300	200	N
083CN	N	N	50	N	100	200	70	N	1,000	N	N	500	200	<100
084CN	N	N	50	70	300	N	150	N	7,000	N	50	500	200	700
085CN	N	10	20	N	700	N	200	N	70	N	N	500	200	N
086CN	N	N	20	N	100	100	50	N	1,500	N	N	500	100	200
087CN	N	N	30	N	200	N	50	20	300	N	N	500	100	1,000
088CN	N	10	20	<10	1,000	N	200	N	50	N	100	700	500	N
089CN	N	10	20	10	1,000	N	N	N	150	N	N	500	150	500
090CN	N	15	N	15	700	N	100	N	150	N	N	500	200	100
091CN	N	N	20	N	300	N	50	N	70	N	N	500	100	N
092CN	N	N	30	N	300	N	50	N	200	N	N	500	70	2,000
093CN	N	N	30	<10	200	N	50	10	100	N	N	700	100	150
094CN	N	10	30	10	300	N	50	15	100	N	<20	700	100	150
095CN	N	N	30	<10	300	50	70	10	500	N	500	500	100	2,000
096CN	N	N	50	N	100	N	50	N	700	N	200	700	100	N

TABLE 3--SPECTROGRAPHIC RESULTS FROM THE ANALYSIS OF NONMAGNETIC HEAVY-MINERAL CONCENTRATE SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Y-ppm s	Zn-ppm s	Th-ppm s
050CN	300	N	700
051CN	300	N	<200
052CN	200	N	N
053CN	300	N	300
054CN	300	N	<200
055CN	200	N	N
056CN	500	1,000	300
057CN	100	N	N
058CN	50	N	N
059CN	200	N	<200
060CN	500	N	200
061CN	100	700	N
062CN	300	N	500
064CN	300	N	N
065CN	1,000	N	300
066CN	500	N	N
067CN	700	N	<200
068CN	200	N	N
069CN	1,000	N	2,000
070CN	1,000	N	2,000
071CN	300	N	<200
072CN	1,000	N	200
073CN	500	N	<200
074CN	1,000	N	N
075CN	1,000	N	N
076CN	1,500	N	N
077CN	300	N	<200
078CN	300	N	N
079CN	200	N	N
080CN	700	<500	<200
082CN	500	N	1,000
083CN	500	N	1,000
084CN	500	N	500
085CN	500	N	500
086CN	500	N	300
087CN	1,000	N	1,000
088CN	1,000	N	1,000
089CN	500	N	5,000
090CN	500	N	5,000
091CN	500	N	N
092CN	700	N	N
093CN	700	N	<200
094CN	700	N	<200
095CN	500	N	200
096CN	200	N	N

TABLE 3--SPECTROGRAPHIC RESULTS FROM THE ANALYSIS OF NONMAGNETIC HEAVY-MINERAL CONCENTRATE SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Latitude	Longitude	Fe-ppt. s	Mg-ppt. s	Ca-ppt. s	Ti-ppt. s	Mn-ppt. s	Ag-ppt. s	As-ppt. s	Au-ppt. s	B-ppt. s	Ba-ppt. s	Be-ppt. s
097CN	35 4 50	115 29 11	.30	.10	30	>2.0	1,000	N	N	N	<20	500	N
098CN	35 4 36	115 28 56	.50	.30	20	>2.0	1,000	N	N	N	30	>10,000	2
099CN	35 4 33	115 28 43	.70	.10	30	>2.0	1,500	N	N	N	<20	10,000	N
100CN	35 5 5	115 27 17	.30	.20	50	2.0	1,500	N	N	N	20	10,000	<2
101CN	35 3 33	115 28 50	.70	.20	15	.7	500	N	N	N	20	10,000	2
102CN	35 3 47	115 28 41	2.00	.30	10	1.0	700	100.0	N	N	20	7,000	<2
103CN	35 3 35	115 29 10	.70	.20	15	1.5	500	N	N	N	20	1,500	2
104CN	35 4 3	115 28 32	.70	.10	10	1.5	500	7.0	N	N	30	10,000	2
105CN	35 4 3	115 28 49	.50	.30	20	.5	700	70.0	N	N	30	>10,000	2
106CN	35 4 2	115 28 59	1.00	.20	20	2.0	1,000	N	N	N	20	500	10
107CN	35 4 9	115 27 58	.70	.50	7	>2.0	300	N	N	N	50	1,500	2
108CN	35 3 44	115 27 53	.50	10.00	20	>2.0	1,000	N	N	N	30	10,000	<2
109CN	35 3 28	115 27 59	.70	.30	15	1.0	700	N	N	N	30	2,000	N
110CN	35 3 18	115 27 55	.70	.20	10	1.0	500	N	N	N	30	5,000	<2
111CN	35 3 4	115 27 30	.30	.10	10	2.0	300	N	N	N	20	5,000	<2
112CN	35 1 14	115 26 21	.70	1.00	20	2.0	1,000	N	N	N	30	>10,000	3
113CN	35 1 10	115 25 55	1.00	.70	10	>2.0	1,000	N	N	N	20	1,000	<2
114CN	35 1 32	115 25 31	2.00	.30	10	>2.0	2,000	N	N	N	30	1,000	2
115CN	35 2 17	115 25 19	.50	.15	10	>2.0	1,000	N	N	N	<20	700	N
116CN	35 2 14	115 33 31	.50	.50	30	>2.0	1,500	N	N	N	20	1,000	<2
117CN	35 2 35	115 23 57	.30	.50	30	>2.0	1,000	N	N	N	30	700	N
118CN	35 2 31	115 24 16	1.00	.50	10	>2.0	1,000	N	N	N	50	1,000	2
119CN	35 1 48	115 24 20	.20	.30	2	.3	200	N	N	N	30	700	3
120CN	35 3 45	115 23 59	.50	.20	30	2.0	1,500	N	N	N	20	700	<2
121CN	35 5 4	115 25 31	.50	.30	20	>2.0	2,000	N	N	N	20	1,000	<2
122CN	35 4 39	115 25 31	.30	.50	10	>2.0	500	N	N	N	50	10,000	2
123CN	35 4 22	115 24 57	.20	.10	30	2.0	1,500	N	N	N	20	700	<2
124CN	35 3 38	115 24 14	1.50	.50	20	>2.0	2,000	N	N	N	50	1,000	<2
125CN	34 57 18	115 25 57	.50	.20	30	2.0	1,500	N	N	N	20	1,500	N
126CN	34 59 58	115 28 42	.20	3.00	10	2.0	500	N	N	N	<20	500	<2
127CN	35 0 42	115 28 57	.20	.05	3	1.0	200	N	N	N	20	500	3
128CN	35 0 39	115 29 4	.10	2.00	15	>2.0	500	N	N	N	30	>10,000	3
129CN	35 0 23	115 28 1	.30	1.00	20	2.0	1,000	N	N	N	20	10,000	N
130CN	35 1 21	115 28 4	1.00	.70	20	2.0	700	N	N	N	20	10,000	N
131CN	34 59 47	115 29 44	.70	15.00	15	1.0	700	N	N	N	30	10,000	N
132CN	34 59 50	115 29 59	N	.30	1	.1	N	N	N	N	N	N	2
133CN	34 59 33	115 29 56	.50	20.00	50	1.0	2,000	N	N	N	20	>10,000	<2
134CN	34 59 17	115 30 11	.70	10.00	30	2.0	700	N	N	N	30	>10,000	<2
135CN	34 58 54	115 30 29	.50	.70	15	1.5	700	N	N	N	20	1,500	<2
136CN	34 58 45	115 30 38	.70	20.00	30	>2.0	1,000	2.0	N	N	20	>10,000	<2
137CN	34 58 23	115 30 19	.50	7.00	20	2.0	500	N	N	N	<20	700	<2
138CN	34 58 18	115 30 43	1.00	5.00	30	>2.0	1,000	N	N	N	30	>10,000	<2
139CN	34 58 20	115 31 20	.50	.50	20	>2.0	500	N	N	N	20	>10,000	<2
140CN	34 58 21	115 31 16	.70	.50	20	.7	1,000	N	N	N	20	2,000	<2
141CN	34 58 13	115 31 20	.30	.50	15	2.0	300	N	N	N	20	>10,000	<2

TABLE 3--SPECTROGRAPHIC RESULTS FROM THE ANALYSIS OF NONMAGNETIC HEAVY-MINERAL CONCENTRATE SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Bi-ppm s	Co-ppm s	Cr-ppm s	Cu-ppm s	La-ppm s	Mo-ppm s	Nb-ppm s	Ni-ppm s	Pb-ppm s	Sb-ppm s	Sn-ppm s	Str-ppm s	V-ppm s	W-ppm s
097CN	N	10	N	<10	1,000	N	100	N	100	N	30	500	200	N
098CN	1,000	15	20	15	300	N	70	N	200	N	N	700	100	5,000
099CN	N	10	<20	N	700	70	100	10	300	N	70	500	200	200
100CN	150	N	20	N	700	N	<50	N	200	N	N	500	70	300
101CN	N	N	20	N	150	N	N	10	200	N	N	200	50	1,500
102CN	>2,000	10	20	<10	500	300	<50	10	10,000	N	N	200	50	2,000
103CN	200	10	20	N	200	N	N	N	150	N	N	500	70	<100
104CN	70	10	<20	N	200	20	N	10	7,000	N	N	200	50	700
105CN	N	10	20	N	100	30	N	10	15,000	N	N	500	50	2,000
106CN	N	N	30	N	500	N	<50	15	300	N	N	N	100	<100
107CN	N	N	30	100	50	70	N	20	1,500	N	N	500	70	N
108CN	N	N	50	10	500	10	50	N	3,000	N	N	500	200	N
109CN	N	N	20	N	200	N	N	20	150	N	N	500	50	100
110CN	N	N	<20	N	200	N	N	20	150	N	N	300	50	500
111CN	N	10	<20	N	100	N	N	10	7,000	N	N	200	70	N
112CN	N	N	50	20	100	50	50	N	1,000	N	N	500	100	5,000
113CN	N	10	50	<10	500	N	150	N	100	N	50	500	300	N
114CN	N	N	70	N	700	N	50	N	50	N	100	200	500	N
115CN	N	N	20	N	500	N	100	N	1,500	N	N	150	150	N
116CN	N	N	30	N	700	N	<50	N	200	N	N	200	200	N
117CN	N	N	50	150	300	N	<50	10	5,000	N	N	500	200	N
118CN	N	N	50	70	1,000	N	150	10	70	N	20	300	200	N
119CN	N	N	20	N	N	70	N	15	70	N	N	500	20	N
120CN	N	N	100	N	700	N	50	N	200	N	N	500	100	N
121CN	N	N	20	N	500	N	70	N	150	N	N	200	100	N
122CN	N	N	30	30	200	N	100	N	300	N	N	700	300	N
123CN	N	N	20	N	700	N	50	N	20	N	N	500	100	N
124CN	N	N	50	N	1,000	<10	500	N	70	N	70	500	300	N
125CN	N	10	20	N	1,500	N	N	10	100	N	N	700	100	N
126CN	N	N	20	N	100	N	50	N	200	N	N	N	100	N
127CN	N	N	<20	N	50	N	<50	N	50	N	N	200	70	N
128CN	N	N	N	N	50	100	N	20	1,500	N	300	500	100	100
129CN	N	N	300	N	200	N	N	20	300	N	N	500	100	N
130CN	N	10	30	N	300	N	<50	10	500	N	N	200	150	N
131CN	N	N	50	N	100	N	N	10	150	N	N	N	50	N
132CN	N	N	50	20	N	N	N	10	N	N	N	N	N	N
133CN	N	N	50	15	100	N	<50	N	300	N	N	200	50	N
134CN	N	N	30	N	100	N	<50	10	200	N	N	500	100	N
135CN	N	N	<20	N	500	N	N	15	50	N	N	500	70	N
136CN	N	N	50	30	N	50	50	30	7,000	N	N	500	200	100
137CN	N	10	20	N	200	N	<50	N	100	N	N	N	100	<100
138CN	N	N	150	<10	500	N	70	10	1,000	N	50	500	300	N
139CN	N	N	100	N	300	N	50	10	100	N	30	>10,000	150	N
140CN	N	N	N	N	150	N	<50	20	300	N	N	>10,000	70	500
141CN	N	N	20	N	100	100	<50	20	5,000	N	N	>10,000	100	N

TABLE 3--SPECTROGRAPHIC RESULTS FROM THE ANALYSIS OF NONMAGNETIC HEAVY-MINERAL CONCENTRATE SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Y-ppm S	Zn-ppm S	Th-ppm S
097CN	700	N	2,000
098CN	300	N	>5,000
099CN	700	N	700
100CN	500	N	N
101CN	1,500	N	<200
102CN	1,000	N	200
103CN	1,000	N	N
104CN	1,500	N	N
105CN	1,000	N	N
106CN	1,500	500	200
107CN	500	N	200
108CN	300	N	<200
109CN	1,500	N	N
110CN	1,000	<500	<200
111CN	1,000	N	N
112CN	700	N	N
113CN	700	N	200
114CN	1,500	N	<200
115CN	1,000	N	300
116CN	1,500	N	500
117CN	1,000	N	300
118CN	1,000	N	300
119CN	50	N	N
120CN	500	N	N
121CN	1,500	N	300
122CN	200	N	200
123CN	700	N	1,000
124CN	1,000	N	200
125CN	1,000	N	700
126CN	700	N	<200
127CN	300	N	300
128CN	700	N	200
129CN	700	N	N
130CN	1,500	N	<200
131CN	700	N	N
132CN	20	N	N
133CN	70	N	N
134CN	200	N	<200
135CN	500	N	700
136CN	200	500	200
137CN	700	N	500
138CN	500	N	200
139CN	300	N	N
140CN	1,500	N	N
141CN	300	N	<200

TABLE 3--SPECTROGRAPHIC RESULTS FROM THE ANALYSIS OF NONMAGNETIC HEAVY-MINERAL CONCENTRATE SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Latitude	Longitude	Fe-pct. s	Mg-pct. s	Ca-pct. s	Ti-pct. s	Mn-ppt. s	Ag-ppt. s	As-ppt. s	Au-ppt. s	B-ppt. s	Ba-ppt. s	Be-ppt. s
142CN	34 57 21	115 30 31	1.00	1.00	10	>2.0	700	2.0	N	N	50	>10,000	2
143CN	34 57 6	115 30 14	1.00	.50	10	>2.0	200	N	N	N	30	2,000	N
145CN	34 57 0	115 31 9	.70	1.00	10	>2.0	700	N	N	N	50	>10,000	2
146CN	34 56 40	115 30 55	1.50	.30	7	>2.0	1,000	N	N	N	50	>10,000	(2
147CN	34 55 22	115 31 59	.70	15.00	30	>2.0	1,500	300.0	N	N	20	>10,000	(2
148CN	34 55 15	115 32 22	.70	>20.00	>50	1.0	1,000	N	N	N	20	700	(2
149CN	34 55 11	115 32 25	.50	.50	10	>2.0	500	N	N	N	30	1,500	3
150CN	35 4 10	115 27 10	.30	.15	20	>2.0	500	N	N	N	(20	2,000	N
152CN	35 3 59	115 27 1	.50	.30	15	2.0	500	N	N	N	30	5,000	(2
153CN	35 2 57	115 26 0	.50	.30	7	>2.0	1,000	N	N	N	(20	1,000	2
154CN	34 59 17	115 30 11	.30	.20	7	.5	700	N	N	N	30	3,000	3
155CN	35 2 46	115 26 24	.70	.50	7	>2.0	500	N	N	N	70	5,000	3
157CN	35 2 35	115 25 52	.50	>20.00	50	.5	700	N	N	N	20	500	2
158CN	35 1 18	115 26 21	.70	.30	7	>2.0	500	N	N	N	30	1,500	(2
159CN	35 1 5	115 23 30	.30	5.00	10	>2.0	700	N	N	N	30	2,000	2
160CN	35 0 52	115 24 25	.50	>20.00	50	>2.0	700	N	N	N	(20	>10,000	(2
162CN	35 1 19	115 31 1	.50	10.00	20	.5	1,000	N	N	N	70	>10,000	2
163CN	34 53 23	115 23 25	1.00	.50	10	>2.0	1,000	N	N	N	20	1,000	2
164CN	34 59 15	115 23 54	.70	.20	10	>2.0	700	N	N	N	30	700	(2
165CN	34 58 51	115 25 10	1.00	.50	15	>2.0	1,000	N	N	N	30	7,000	(2
166CN	34 57 57	115 25 50	.70	.20	20	>2.0	1,000	N	N	N	(20	3,000	N
167CN	34 58 7	115 25 42	.70	.50	15	>2.0	700	N	N	N	20	1,500	2
168CN	34 57 23	115 25 48	.70	.20	20	2.0	1,500	N	N	N	20	1,000	2
169CN	34 55 42	115 25 39	.50	.10	20	1.0	1,500	N	N	N	(20	1,000	N
170CN	34 55 55	115 25 6	.50	.20	20	>2.0	1,000	N	N	N	(20	500	(2
171CN	34 56 40	115 25 37	.20	.20	20	>2.0	1,000	N	N	N	20	1,500	N
172CN	34 57 2	115 26 33	1.00	.20	15	>2.0	1,000	N	N	N	20	500	N
173CN	34 57 1	115 26 20	.50	.15	20	1.0	700	N	N	N	70	700	(2
174CN	34 57 27	115 26 38	.30	.50	30	>2.0	1,500	N	N	N	20	3,000	(2
175CN	34 58 48	115 26 38	1.00	.50	15	>2.0	1,000	N	N	N	20	700	(2
176CN	34 58 58	115 26 19	1.00	.20	20	>2.0	1,000	N	N	N	(20	500	N
177CN	34 58 45	115 26 17	.70	.30	20	>2.0	1,000	N	N	N	20	700	(2
178CN	34 58 24	115 27 42	1.00	.50	15	>2.0	700	N	N	N	30	500	N
179CN	34 59 41	115 26 58	.50	.30	10	>2.0	500	N	N	N	50	2,000	2
180CN	34 59 22	115 27 14	.30	.20	20	2.0	500	N	N	N	20	1,000	(2
181CN	34 56 21	115 24 28	(.10	.07	20	.5	1,000	N	N	N	20	1,500	N
182CN	35 1 20	115 27 54	.50	.50	10	>2.0	500	N	N	N	30	1,500	2
183CN	35 0 46	115 29 12	.30	.20	20	>2.0	1,000	N	N	N	20	>10,000	2
184CN	34 58 29	115 30 29	.70	20.00	30	>2.0	700	N	N	N	20	>10,000	N
185CN	34 57 59	115 31 1	1.50	2.00	30	>2.0	1,000	N	N	N	50	>10,000	(2
186CN	34 58 2	115 31 13	.15	.30	20	.5	200	N	N	N	(20	>10,000	(2
187CN	34 57 49	115 30 54	.70	2.00	20	>2.0	700	N	N	N	30	1,000	3
188CN	34 56 53	115 30 21	1.50	.50	10	2.0	500	N	N	N	70	>10,000	N
189CN	34 56 24	115 30 44	1.50	10.00	20	>2.0	500	N	N	N	200	>10,000	2
190CN	34 55 52	115 30 37	.30	.30	>50	>2.0	1,500	N	N	N	N	700	2

TABLE 3--SPECTROGRAPHIC RESULTS FROM THE ANALYSIS OF NONMAGNETIC HEAVY-MINERAL CONCENTRATE SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Bi-ppm s	Co-ppm s	Cr-ppm s	Cu-ppm s	La-ppm s	Mo-ppm s	Nb-ppm s	Ni-ppm s	Pb-ppm s	Sb-ppm s	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s
142CN	N	20	20	<10	300	10	200	10	300	N	70	200	1,500	N
143CN	N	N	50	N	200	N	(50	10	70	N	N	N	200	N
145CN	N	N	50	50	500	N	200	N	5,000	N	20	2,000	1,000	N
146CN	N	10	50	N	500	5,000	200	10	15,000	N	1,000	1,000	200	N
147CN	N	N	100	N	100	N	70	N	10,000	N	100	500	100	N
148CN	N	N	50	N	50	N	N	10	100	N	N	N	50	N
149CN	N	N	20	N	100	N	(50	10	7,000	N	N	700	70	N
150CN	N	N	N	N	200	N	N	10	200	N	N	200	50	100
152CN	N	N	20	N	100	N	N	N	300	N	N	500	100	N
153CN	N	N	30	N	500	N	100	20	N	N	(20	500	200	N
154CN	N	10	150	N	N	N	N	N	100	N	N	500	50	N
155CN	100	N	30	N	100	500	50	N	7,000	N	50	700	100	N
157CN	N	N	30	N	N	N	(50	N	100	N	N	N	30	N
158CN	N	N	50	N	100	N	(50	20	50	N	N	500	100	(100
159CN	N	N	20	N	100	N	50	N	150	N	N	500	100	N
160CN	N	N	100	N	100	50	70	20	700	N	50	200	200	N
162CN	N	N	70	30	N	5,000	N	N	>50,000	N	N	2,000	100	N
163CN	N	N	50	N	200	N	50	10	150	N	20	500	200	N
164CN	N	N	20	N	500	N	70	10	20	N	N	300	200	N
165CN	N	20	20	20	1,000	N	150	N	10,000	N	50	500	1,000	(100
166CN	N	N	30	N	1,000	N	50	10	300	N	N	500	300	N
167CN	N	N	20	N	700	N	100	N	300	N	20	1,000	200	N
168CN	N	N	30	N	500	N	(50	N	70	N	N	500	100	N
169CN	N	10	20	N	1,000	N	N	15	50	N	N	500	70	N
170CN	N	N	20	N	700	N	70	N	70	N	N	200	150	N
171CN	N	N	20	N	200	N	N	20	100	N	N	500	150	N
172CN	N	15	20	N	700	N	(50	20	100	N	N	500	200	N
173CN	N	N	(20	N	100	N	20	20	500	N	N	N	30	2,000
174CN	N	10	300	N	1,000	N	N	20	2,000	N	N	500	500	N
175CN	N	N	30	200	700	N	150	N	10,000	N	20	200	2,000	N
176CN	N	10	30	N	700	(10	200	N	30	N	50	N	300	N
177CN	N	10	20	N	500	N	50	N	5,000	N	(20	700	1,000	N
178CN	N	10	100	N	500	N	50	15	500	N	20	300	500	N
179CN	N	N	200	N	100	50	50	30	50	N	N	700	150	N
180CN	N	N	(20	10	700	N	(50	N	500	N	N	1,000	200	N
181CN	N	10	200	N	1,000	N	N	30	50	N	N	N	70	(100
182CN	N	N	200	N	100	N	50	N	20	N	N	500	200	N
183CN	N	N	300	N	200	N	N	20	200	N	N	500	100	N
184CN	N	N	100	N	150	N	50	20	300	N	N	200	150	N
185CN	N	10	70	N	500	N	200	N	500	N	20	2,000	300	N
186CN	N	N	20	N	100	150	(50	N	1,000	N	150	>10,000	50	N
187CN	N	N	30	N	100	N	50	N	300	N	N	500	150	N
188CN	N	10	30	50	300	N	(50	15	1,000	N	N	500	300	N
189CN	N	N	100	30	100	N	(50	20	500	N	N	700	200	N
190CN	N	N	30	N	500	N	50	N	150	N	30	500	200	(100

TABLE 3--SPECTROGRAPHIC RESULTS FROM THE ANALYSIS OF NONMAGNETIC HEAVY-MINERAL CONCENTRATE SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Y-ppm s	Zn-ppm s	Th-ppm s
142CN	300	N	300
143CN	500	N	N
145CN	500	1,000	200
146CN	700	N	200
147CN	500	500	N
148CN	70	N	N
149CN	500	N	200
150CN	1,500	N	N
152CN	1,000	N	N
153CN	700	N	700
154CN	300	N	1,500
155CN	300	N	<200
157CN	30	N	N
158CN	700	N	500
159CN	300	N	200
160CN	300	N	N
162CN	50	N	N
163CN	700	N	300
164CN	700	N	700
165CN	700	N	2,000
166CN	700	N	500
167CN	300	N	200
168CN	1,000	N	700
169CN	700	N	N
170CN	700	N	200
171CN	700	N	2,000
172CN	700	N	500
173CN	1,000	N	N
174CN	700	N	5,000
175CN	700	N	1,000
176CN	700	N	300
177CN	300	N	300
178CN	1,000	N	500
179CN	500	N	N
180CN	500	N	N
181CN	700	N	N
182CN	500	N	N
183CN	700	N	N
184CN	500	N	N
185CN	1,000	N	200
186CN	150	N	N
187CN	500	N	300
188CN	500	N	N
189CN	150	N	N
190CN	500	N	1,500

TABLE 3--SPECTROGRAPHIC RESULTS FROM THE ANALYSIS OF NONMAGNETIC HEAVY-MINERAL CONCENTRATE SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Latitude	Longitude	Fe-ppt. %	Mg-ppt. %	Ca-ppt. %	Ti-pct. %	Mn-ppt. %	Ag-ppt. %	As-ppt. %	Au-ppt. %	B-ppt. %	Ba-ppt. %	Be-ppt. %
191CN	34 55 47	115 30 42	1.00	15.00	50	1.5	1,500	N	3,000	N	200	7,000	(2
192CN	34 55 31	115 31 35	.50	.50	10	>2.0	500	N	N	N	50	10,000	2
193CN	34 55 31	115 31 40	1.00	20.00	>50	1.0	1,500	N	N	N	20	200	(2
194CN	34 54 54	115 32 2	.50	1.50	10	>2.0	700	N	N	N	50	5,000	2
195CN	34 54 55	115 32 55	1.00	.70	20	2.0	700	N	N	N	30	2,000	2
196CN	34 55 5	115 33 7	.70	1.00	10	>2.0	300	N	N	N	70	2,000	2
197CN	34 55 15	115 33 18	.50	15.00	50	1.0	700	30.0	N	N	30	3,000	2
198CN	34 55 11	115 33 40	.50	1.00	15	2.0	700	N	N	N	20	3,000	2

TABLE 3--SPECTROGRAPHIC RESULTS FROM THE ANALYSIS OF NONMAGNETIC HEAVY-MINERAL CONCENTRATE SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Bi-ppm s	Co-ppm s	Cr-ppm s	Cu-ppm s	La-ppm s	Mo-ppm s	Nb-ppm s	Ni-ppm s	Pb-ppm s	Sb-ppm s	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s
191CN	N	30	200	30	50	1,000	<50	30	20,000	N	N	500	300	N
192CN	N	N	30	N	200	200	70	N	20,000	N	2,000	700	200	N
193CN	N	N	70	20	100	15	<50	N	1,000	N	N	500	150	N
194CN	N	N	50	N	50	N	<50	N	2,000	N	N	500	150	N
195CN	N	10	30	N	200	N	<50	N	1,000	N	N	500	100	1,000
196CN	N	15	30	N	100	N	50	N	100	N	1,000	500	150	N
197CN	N	N	100	70	100	20	<50	30	5,000	N	N	200	100	N
198CN	N	N	20	N	500	2,000	<50	N	>50,000	3,000	N	200	70	N

TABLE 3--SPECTROGRAPHIC RESULTS FROM THE ANALYSIS OF NONMAGNETIC HEAVY-MINERAL CONCENTRATE SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Y--ppm s	Zn--ppm s	Th--ppm s
191CN	70	N	<200
192CN	500	N	<200
193CN	50	N	N
194CN	300	N	N
195CN	700	N	<200
196CN	300	N	200
197CN	150	500	N
198CN	500	N	<200

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.
[N, not detected; <, detected but below the limit of determination shown; >, determined to be greater than the value shown.]

Sample	Latitude	Longitude	Fe-pct. S	Mg-pct. S	Ca-pct. S	Ti-pct. S	Mn-pptm S	Ag-pptm S	As-pptm S	Au-nmm S	B-pptm S	Ba-pptm S	Be-pptm S
002A	34 55 34	115 34 5	.20	2.00	>23.00	.010	150	<.5	<700	<15	<10	20	<1.0
002B	34 55 34	115 34 5	.20	7.00	15.00	.015	70	1.0	<700	<15	<10	50	<1.0
002U	34 55 38	115 33 30	.30	.15	<.05	.050	15	<.5	<700	<15	<10	1,000	<1.0
002V	34 55 38	115 33 30	.50	.07	<.05	.070	50	<.5	<700	<15	10	300	1.0
002W	34 55 38	115 33 30	1.00	.15	.10	.150	70	<.5	<700	<15	<10	300	1.5
002X	34 55 38	115 33 30	15.00	.70	20.00	.030	3,000	<.5	<700	<15	<10	500	<1.0
002Y	34 55 38	115 33 30	.70	.15	.10	.150	50	<.5	<700	<15	<10	300	1.5
002Z	34 55 38	115 33 30	1.50	7.00	1.50	.070	100	<.5	<700	<15	<10	<20	1.0
003A	34 55 28	115 34 19	3.00	3.00	2.00	.500	700	<.5	<700	<15	<10	1,000	1.5
008A	34 56 45	115 35 35	15.00	1.00	15.00	.200	1,000	<.5	<700	<15	<10	70	1.0
008A	34 56 45	115 35 36	7.00	1.50	7.00	.150	1,500	<.5	<700	<15	15	70	1.5
008A	34 56 45	115 35 36	7.00	1.00	7.00	.150	1,500	<.5	<700	<15	10	70	1.5
010A	34 57 9	115 35 1	.30	.50	>20.00	.007	2,000	<.5	<700	<15	<10	150	<1.0
011A	34 58 15	115 36 48	3.00	1.50	2.00	.700	300	<.5	<700	<15	<10	700	1.5
011B	34 58 27	115 36 46	7.00	.30	.30	.300	150	<.5	<700	<15	<10	150	<1.0
011C	34 58 15	115 36 48	.50	<.02	.30	.002	15	2.0	<700	15	<10	150	<1.0
011D	34 58 15	115 36 48	2.00	<.02	1.50	.007	100	7.0	<700	15	<10	500	<1.0
011E	34 58 15	115 36 48	2.00	.70	1.00	.300	200	<.5	<700	<15	10	700	3.0
011F	34 58 15	115 36 48	2.00	<.02	.30	.030	150	<.5	<700	<15	10	700	<1.0
012A	34 59 18	115 34 40	1.00	1.00	.15	.150	200	<.5	<700	<15	<10	50	<1.0
014A	35 0 7	115 34 6	>20.00	.03	<.05	.030	30	<.5	<700	<15	<10	150	<1.0
014B	35 0 7	115 34 6	7.00	3.00	3.00	.700	300	<.5	<700	<15	<10	2,000	1.5
014C	35 0 7	115 34 6	5.00	1.00	.50	.300	200	<.5	<700	<15	<10	1,000	1.0
014D	35 0 7	115 34 6	3.00	1.00	.70	.300	300	<.5	<700	<15	<10	1,000	1.5
017A	35 0 57	115 33 6	.07	.15	>20.00	.007	150	<.5	<700	<15	<10	30	<1.0
018A	35 0 29	115 32 7	2.00	.50	.20	.200	200	<.5	<700	<15	<10	1,500	<1.0
019A	35 0 52	115 31 42	.30	.10	.10	.100	70	1.5	<700	<15	<10	300	<1.0
019C	35 0 46	115 31 36	.70	.15	.15	.150	200	<.5	<700	<15	10	700	1.5
023A	35 1 30	115 31 30	.70	.20	.15	.030	70	2.0	<700	<15	30	150	<1.0
023A	35 1 18	115 31 9	.50	.10	.05	.100	30	.5	<700	<15	15	300	<1.0
023B	35 1 18	115 31 9	5.00	5.00	2.00	.700	1,000	<.5	<700	<15	<10	5,000	5.0
023C	35 1 30	115 31 30	.70	.07	.07	.020	30	7.0	<700	<15	15	30	1.5
023D	35 1 30	115 31 30	2.00	.70	1.00	.200	300	1.5	<700	<15	20	500	1.5
024A	35 2 0	115 33 30	2.00	.10	1.50	.200	500	<.5	<700	<15	<10	1,500	7.0
026A	35 2 42	115 33 16	.70	.20	.30	.100	200	.7	<700	<15	10	500	1.5
026B	35 2 42	115 33 16	1.00	.05	<.05	.050	20	5.0	<700	<15	<10	150	<1.0
026C	35 2 42	115 33 16	1.50	.15	.05	.020	100	7.0	<700	<15	<10	150	<1.0
026D	35 2 42	115 22 16	7.00	5.00	3.00	.700	1,500	<.5	<700	<15	<10	1,500	1.5
027A	35 1 55	115 29 47	3.00	.10	.05	.300	300	.7	<700	<15	<10	700	1.5
027B	35 1 55	115 29 47	1.00	.07	<.05	.050	100	30.0	<700	<15	15	70	3.0
027C	35 1 55	115 29 47	2.00	.03	<.05	.030	100	100.0	<700	<15	<10	70	<1.0
027D	35 1 55	115 29 47	3.00	.20	.20	.150	200	<.5	<700	<15	<10	3,000	1.5
028A	35 1 47	115 29 59	5.00	.70	.30	.700	3,000	<.5	<700	<15	70	1,500	3.0
028R	35 1 47	115 29 59	.30	.05	<.05	.030	70	70.0	<700	<15	15	200	<1.0
028C	35 1 47	115 29 59	2.00	.05	.05	.050	1,500	<.5	<700	<15	<10	200	<1.0

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Bi-ppm S	Cd-ppm S	Co-ppm S	Cr-ppm S	Cu-ppm S	La-ppm S	Mo-ppm S	Nb-ppm S	Ni-ppm S	Pb-ppm S	Sb-ppm S	Sc-ppm S	Sn-ppm S	Sr-ppm S
002A	<10	<30	<5	<10	<5	<30	<5	<20	<5	<10	<100	<5	<10	300
002B	<10	<30	<5	5	7	<30	<5	<20	<5	15	<100	<5	<10	<100
002U	<10	<30	<5	<10	<5	<30	<5	<20	<5	<10	<100	<5	<10	100
002V	<10	<30	<5	<10	<5	30	<5	<20	<5	30	<100	<5	<10	<100
002W	<10	<30	<5	<10	5	50	5	<20	<5	20	<100	<5	<10	150
002X	<10	<30	<5	15	15	<30	<5	<20	5	<10	<100	<5	<10	150
002Y	<10	<30	<5	<10	15	70	<5	<20	<5	20	<100	<5	<10	<100
002Z	<10	<30	7	<10	10	<30	<5	<20	<5	<10	<100	<5	<10	<100
003A	<10	<30	15	15	30	70	<5	<20	15	15	<100	15	<10	700
008A	<10	<30	7	30	10	50	<5	<20	15	<10	<100	10	<10	700
008A	<10	<30	15	15	7	50	<5	<20	15	<10	<100	7	<10	300
008A	<10	<30	10	20	7	30	<5	<20	10	300	<100	7	<10	300
010A	<10	<30	<5	<10	7	50	<5	<20	<5	<10	<100	<5	<10	200
011A	<10	<30	15	<10	50	70	<5	<20	10	<10	<100	20	<10	500
011B	<10	<30	30	10	<5	<30	<5	<20	5	<10	<100	10	<10	70
011C	<10	<30	<5	<10	7	<30	<5	<20	<5	10	<100	<5	<10	<100
011D	20	<30	5	<10	15	<30	10	<20	<5	150	<100	<5	<10	<100
011E	<10	<30	15	<10	50	70	<5	<20	<5	15	<100	7	<10	300
011F	<10	<30	<5	<10	7	<30	<5	<20	<5	15	<100	<5	<10	<100
012A	<10	<30	15	5	5	<30	<5	<20	10	<10	<100	<5	<10	<100
014A	<10	<30	20	<10	<5	30	<5	<20	<5	<10	<100	7	<20	<100
014B	<10	<30	5	300	<5	150	<5	30	70	15	<100	30	15	300
014C	<10	<30	15	15	<5	<30	<5	20	20	15	<100	10	<10	100
014D	<10	<30	7	<10	<5	20	<5	<20	7	20	<100	15	<10	200
017A	<10	<30	<5	<10	7	<30	<5	<20	<5	<10	<100	<5	<10	150
018A	<10	<30	15	<10	5	1,000	<5	<20	5	30	<100	7	<10	150
019A	<10	<30	<5	<10	<5	70	<5	<20	<5	150	<100	<5	<10	<100
019C	<10	<30	<5	<10	<5	70	<5	<20	<5	10	<100	<5	<10	150
023A	<10	<30	<5	<10	<5	30	<5	<20	<5	150	<100	<5	<10	150
023A	<10	<30	<5	<10	<5	70	<5	<20	<5	30	<100	<5	<10	<100
023B	<10	<30	20	500	70	500	<5	50	150	30	<100	30	<10	700
023C	<10	<30	<5	<10	150	<30	<5	<20	5	100	<100	<5	<10	<100
023D	<10	<30	7	15	10	<30	<5	<20	15	15	<100	5	<10	70
024A	<10	<30	7	<10	<5	50	<5	<20	7	20	<100	7	<10	700
026A	<10	<30	<5	<10	30	70	<5	<20	<5	700	<100	<5	<10	100
026B	<10	<30	<5	<10	20	<30	20	<20	<5	500	<100	<5	<10	<100
026C	<10	<30	<5	<10	50	<30	50	<20	<5	700	<100	<5	<10	<100
026D	<10	<30	30	150	30	150	<5	<20	70	30	<100	30	<20	700
027A	<10	<30	<5	<10	50	70	<5	<20	<5	150	<100	10	<10	<100
027B	<10	<30	<5	<10	30	<30	10	<20	<5	150	<100	<5	<10	<100
027C	<10	<30	<5	<10	50	<30	15	<20	<5	2,000	<100	<5	<10	<100
027D	<10	<30	5	<10	15	70	<5	<20	<5	50	<100	15	<10	150
028A	<10	<30	50	70	70	150	<5	30	30	15	<100	20	<10	150
028B	<10	<30	<5	<10	50	<30	<5	<20	<5	150	<100	<5	<10	<100
028C	<10	<30	15	<10	<5	<30	<5	<20	7	<10	<100	<5	<10	<100

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	V-ppm S	W-ppm S	Y-ppm S	Zn-ppm S	Zr-ppm S	Th-ppm S	As-ppm icp	Zn-ppm icp	Cd-ppm icp	Pb-ppm icp	Sb-ppm icp	Au-ppm icp	Hg-ppm aa	F-pct. si
002A	10	<50	<10	<200	<10	<200	<5	<2	.2	<2.0	<2	--	<.02	.04
002B	<10	<50	<10	<200	10	<200	<5	9	.2	<2.0	10	--	<.02	.05
002U	<10	<50	<10	<200	100	<200	8	26	<.1	<2.0	<2	<.10	<.02	.01
002V	<10	<50	15	<200	70	<200	<5	6	<.1	<2.0	<2	<.10	<.02	.03
002W	10	<50	10	<200	150	<200	<5	10	.2	<2.0	<2	<.10	.02	.03
002X	15	<50	15	1,000	30	<200	41	800	3.7	<2.0	<2	.10	<.02	.14
002Y	<10	<50	20	<200	100	<200	<5	4	<.1	<2.0	<2	<.10	.03	.03
002Z	15	<50	<10	<200	150	<200	<5	19	.5	<2.0	8	<.10	<.02	.44
003A	150	<50	30	<200	200	<200	<5	33	.3	<2.0	<2	<.10	<.02	.08
008A	30	<50	50	<200	300	<200	5	2	1.1	<2.0	<2	<.10	.05	.03
008B	20	<50	50	<200	300	<200	<5	4	.2	6.0	<2	--	<.02	.03
008C	20	<50	50	<200	300	<200	<5	3	<2.0	.6	<2	N	.02	.03
010A	<10	<50	30	<200	10	<200	<5	4	<.1	<2.0	<2	--	<.02	.01
011A	150	<50	20	<200	150	<200	<5	9	.3	<2.0	<2	--	.06	.12
011B	200	<50	10	<200	300	<200	<5	2	.4	<2.0	<2	--	.10	.04
011C	10	<50	<10	<200	15	<200	13	2	.1	7.0	<2	--	<.02	<.01
011D	20	<50	<10	<200	<10	<200	38	3	.5	27.0	<2	--	<.02	.01
011E	70	<50	30	<200	200	<200	<5	11	.5	<2.0	<2	12.00	.02	.06
011F	15	<50	<10	<200	30	<200	42	<2	.3	8.0	<2	32.00	.08	<.01
012A	<10	<50	<10	<200	200	<200	<5	20	<.1	<2.0	<2	<.10	.02	.02
014A	70	200	15	<200	100	<200	<5	<2	1.2	<2.0	<2	1.60	.05	.04
014B	150	<50	70	<200	500	<200	<5	29	1.5	<2.0	3	--	.04	.33
014C	100	<50	15	<200	200	<200	<5	6	.3	<2.0	<2	--	<.02	.06
014D	50	<50	30	<200	300	<200	<5	16	.2	<2.0	<2	--	<.02	.08
017A	<10	<50	<10	<200	20	<200	<5	14	.4	<2.0	<2	--	<.02	<.01
018A	10	<50	50	<200	70	300	<5	16	.2	<2.0	<2	--	<.02	.03
019A	<10	<50	20	<200	150	<200	<5	3	<.1	3.0	<2	--	<.02	.02
019C	15	<50	30	<200	150	<200	<5	16	<.1	<2.0	<2	--	<.02	.05
023A	<10	<50	<10	<200	150	<200	<5	5	<.1	4.0	<2	--	<.02	.03
023A	<10	<50	15	<200	100	<200	<5	48	<2.0	.3	<2	N	.02	.07
023B	150	<50	70	<200	300	<200	<5	96	.9	<2.0	<2	<.10	<.02	.65
023C	<10	<50	<10	<200	30	<200	5	28	.2	<2.0	10	--	.03	.03
023D	30	<50	<10	500	200	<200	<5	292	3.5	<2.0	<2	1.10	.03	.16
024A	70	<50	15	<200	150	<200	<5	43	.1	<2.0	5	<.10	.03	.04
026A	<10	<50	15	<200	100	<200	<5	12	<2.0	.5	<2	N	<.02	.04
026B	<10	<50	<10	<200	20	<200	<5	2	.2	<2.0	7	--	.13	<.01
026C	<10	<50	<10	<200	30	<200	<5	3	.2	<2.0	<2	<.10	.03	.02
026D	150	<50	50	<200	200	<200	<5	91	.5	<2.0	<2	<.10	.02	.12
027A	15	<50	50	700	300	<200	<5	596	3.1	<2.0	3	--	.02	.05
027B	<10	<50	15	500	150	<200	15	263	.5	<2.0	2	--	.20	.03
027C	10	<50	<10	700	50	<200	<5	4	.1	16.0	<2	.50	.72	.01
027D	15	<50	30	<200	300	<200	<5	89	.2	<2.0	<2	2.00	.71	.04
028A	150	<50	70	<200	700	<200	7	39	.2	<2.0	<2	--	.03	.08
028B	<10	<50	<10	300	50	<200	6	147	.1	<2.0	<2	--	.02	.03
028C	15	<50	<10	<200	150	<200	10	57	<.1	<2.0	<2	.30	.36	.01

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Latitude	Longitude	Fe-ppt. S	Mg-pct. S	Ca-pct. S	Ti-pct. S	Mn-ppt. S	Ag-ppt. S	As-ppt. S	Au-ppt. S	B-ppt. S	Ba-ppt. S	Be-ppt. S
028D	35 1 47	115 29 59	.15	.07	<.05	.030	10	.7	<700	<15	70	>5,000	<1.0
028E	35 1 47	115 29 59	.70	.15	.15	.030	10	3.0	<700	<15	50	>5,000	<1.0
029A	35 1 59	115 30 4	3.00	.70	1.00	.300	700	<.5	<700	<15	<10	1,000	<1.0
029B	35 1 59	115 30 4	1.50	.15	.15	.150	200	1.5	<700	<15	10	2,000	<1.0
029C	35 1 59	115 30 4	1.50	.15	.15	.150	150	<.5	<700	<15	15	1,500	<1.0
030A	35 3 3	115 29 42	1.00	.15	<.05	.030	50	15.0	<700	<15	10	70	<1.0
030B	35 3 3	115 29 42	.70	.15	<.05	.030	30	50.0	<700	<15	10	70	<1.0
030C	35 3 3	115 29 42	1.50	.30	<.05	.100	100	20.0	<700	<15	10	100	1.0
030D	35 3 3	115 29 42	1.00	.07	<.05	.030	50	100.0	<700	<15	<10	50	<1.0
032A	35 3 6	115 29 54	7.00	.03	<.05	.015	200	1.0	<700	<15	<10	70	<1.0
032B	35 3 6	115 29 54	1.50	.30	.07	.300	70	<.5	<700	<15	<10	1,000	<1.0
032C	35 3 6	115 29 54	5.00	.50	.30	.300	200	<.5	<700	<15	<10	700	1.0
033A	35 3 10	115 31 59	.10	.02	<.05	<.002	30	1.5	<700	<15	<10	70	<1.0
033B	35 3 10	115 31 59	1.50	.15	3.00	.300	150	<.5	<700	<15	<10	70	2.0
035A	35 2 45	115 33 1	5.00	1.50	1.50	.700	150	<.5	<700	<15	<10	300	1.5
035B	35 2 44	115 33 1	1.50	.30	.10	.200	150	5.0	<700	<15	<10	1,000	2.0
035C	35 2 4	115 33 0	3.00	.15	.30	.030	30	15.0	<700	<15	<10	150	1.5
035D	35 2 40	115 33 5	1.00	.03	.02	.070	10	70.0	<700	<15	<10	150	<1.0
035E	35 2 40	115 33 5	.70	.10	.15	.150	150	.7	<700	<15	10	500	1.5
037X	35 3 16	115 31 36	.50	.03	.20	.070	100	<.5	<700	<15	<10	70	1.5
037Y	35 3 16	115 31 36	1.50	.30	.30	.150	200	<.5	<700	<15	<10	700	1.5
038A	35 3 20	115 32 45	.20	.03	.30	.030	150	<.5	<700	<15	15	150	7.0
038B	35 3 29	115 32 40	1.50	.50	1.50	.150	150	<.5	<700	<15	10	1,000	1.5
038C	35 3 29	115 32 40	3.00	1.00	1.50	.200	300	<.5	<700	<15	<10	1,500	1.5
039A	35 3 39	115 32 43	.50	.07	.30	.030	100	1.0	<700	<15	<10	2,000	1.5
041A	35 4 1	115 32 22	3.00	.30	7.00	.300	200	<.5	<700	<15	<10	<20	<1.0
041B	35 4 1	115 32 22	5.00	1.00	2.00	.500	300	<.5	<700	<15	<10	1,000	1.5
041C	35 4 1	115 32 22	7.00	5.00	5.00	1.000	1,000	<.5	<700	<15	<10	150	1.5
042A	35 4 4	115 21 13	.50	.10	1.00	.050	200	<.5	<700	<15	<10	1,500	1.0
044A	35 4 17	115 30 42	.70	.07	.20	.100	50	2.0	<700	<15	<10	70	1.5
044B	35 4 17	115 30 42	1.50	.50	.30	.300	100	<.5	<700	<15	10	150	3.0
044C	35 4 17	115 30 42	3.00	.70	1.50	.300	300	<.5	<700	<15	<10	1,000	1.5
044D	35 4 21	115 30 37	7.00	3.00	3.00	.500	300	<.5	<700	<15	<10	300	7.0
044E	35 4 20	115 30 37	7.00	5.00	5.00	.300	1,500	<.5	<700	<15	<10	150	1.5
044F	35 4 20	115 30 37	1.00	.07	.30	.050	150	<.5	<700	<15	<10	150	3.0
044G	35 4 20	115 30 37	3.00	.30	.30	.300	300	<.5	<700	<15	15	700	1.5
044X	35 4 21	115 30 37	<.05	<.02	<.05	.007	20	<.5	<700	<15	<10	70	<1.0
044Y	35 4 21	115 30 37	1.50	<.02	.07	.015	30	<.5	<700	<15	<10	300	<1.0
045A	35 3 55	115 29 45	.70	.07	.30	.015	500	300.0	<700	<15	<10	500	2.0
045B	35 3 55	115 29 45	2.00	1.50	1.50	.300	1,000	.7	<700	<15	<10	700	15.0
045C	35 3 50	115 29 50	.50	.05	.30	.010	300	.7	<700	<15	15	70	30.0
045D	35 3 50	115 29 50	1.50	1.00	1.50	.150	700	7.0	<700	<15	15	1,000	15.0
045E	35 4 0	115 29 55	2.00	1.00	1.50	.300	500	1.0	<700	<15	<10	1,000	15.0
045F	35 4 0	115 29 55	.30	.07	.30	.030	150	.7	<700	<15	<10	200	7.0
045G	35 4 0	115 29 55	2.00	1.50	1.50	.300	1,000	.5	<700	<15	<10	1,000	7.0

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN
BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Bi-ppm S	Cd-ppm S	Co-ppm S	Cr-ppm S	Cu-ppm S	La-ppm S	Mo-ppm S	Nb-ppm S	Ni-ppm S	Pb-ppm S	Sb-ppm S	Sc-ppm S	Sn-ppm S	Si-ppm S
028D	<10	<30	<5	<10	7	<30	<5	<20	<5	<10	<100	<5	<10	300
028E	<10	<30	<5	<10	15	<30	<5	<20	<5	30	<100	<5	<10	150
029A	<10	<30	7	15	15	50	<5	20	15	50	<100	15	<10	150
029B	<10	<30	15	<10	300	300	<5	<20	15	100	<100	7	<10	150
029C	<10	<30	<5	7	30	<30	<5	<20	5	70	<100	<5	<10	150
030A	<10	<30	<5	<10	70	<30	<5	<20	<5	150	<100	<5	<10	<100
030B	100	<30	<5	<10	70	<30	7	<20	7	700	<100	<5	<10	<100
030C	20	<30	<5	<10	70	<30	5	<20	<5	1,000	<100	<5	<10	<100
030D	70	<30	<5	<10	300	<30	5	<20	<5	700	<100	<5	<10	<100
032A	<10	<30	<5	<10	70	<30	15	<20	<5	70	<100	<5	<10	<100
032B	<10	<30	<5	15	7	70	<5	20	<5	15	<100	30	10	<100
032C	<10	<30	5	30	70	50	15	20	5	15	<100	15	<10	<100
033A	<10	<30	<5	<10	7	<30	<5	<20	<5	50	<100	<5	<10	<100
033B	<10	<30	7	5	7	70	<5	20	<5	10	<100	10	<10	700
035A	<10	<30	7	<10	<5	70	<5	20	<5	<10	<100	15	<10	200
035B	<10	<30	<5	<10	100	100	<5	<20	<5	700	<100	5	<10	150
035C	10	<30	<5	<10	70	<30	30	<20	<5	700	<100	<5	<10	<100
035D	20	<30	<5	<10	700	<30	500	<20	<5	15,000	<100	<5	<10	<100
035E	<10	<30	<5	<10	10	30	<5	<20	<5	150	<100	7	<10	150
037X	<10	<30	<5	<10	7	<30	<5	<20	<5	<10	<100	<5	<10	<100
037Y	<10	<30	15	<10	7	30	<5	<20	<5	30	<100	7	<10	150
038A	<10	<30	<5	<10	5	<30	<5	30	<5	30	<100	5	<10	<100
038B	<10	<30	5	<10	5	70	<5	<20	7	20	<100	7	<10	500
038C	<10	<30	7	<10	50	70	<5	<20	5	30	<100	7	<10	700
039A	<10	<30	<5	<10	10	<30	<5	<20	<5	100	<100	<5	<10	300
041A	<10	<30	<5	15	<5	70	<5	<20	<5	15	<100	15	<10	300
041B	<10	<30	7	30	20	100	<5	20	7	20	<100	20	<10	200
041C	<10	<30	30	70	70	30	<5	<20	70	10	<100	30	<10	300
042A	<10	<30	<5	<10	15	<30	<5	<20	<5	50	<100	<5	<10	300
044A	<10	<30	<5	<10	<5	70	<5	20	<5	<10	<100	7	<10	<100
044B	<10	<30	<5	<10	7	100	<5	<20	<5	<10	<100	<10	<10	150
044C	<10	<30	10	10	<5	100	<5	<20	7	20	<100	15	<10	200
044D	<10	<30	20	70	50	70	<5	<20	50	<10	<100	20	<10	300
044E	<10	<30	30	100	30	50	<5	<20	100	10	<100	30	<10	200
044F	<10	<30	<5	<10	<5	<30	<5	<20	<5	30	<100	<5	<10	<100
044G	<10	<30	7	15	20	150	5	<20	7	15	<100	15	<10	200
044X	<10	<30	<5	<10	7	<30	<5	<20	<5	<10	<100	<5	<10	<100
044Y	<10	<30	<5	<10	<5	<30	<5	<20	<5	10	<100	<5	<10	<100
045A	300	100	<5	<10	10,000	<30	10	<20	<5	1,500	7,000	<5	<10	<100
045B	<10	<30	<5	<10	20	50	<5	<20	5	30	<100	7	<10	150
045C	<10	<30	<5	<10	20	<30	10	<20	<5	20	<100	<5	<10	<100
045D	<10	<30	<5	<10	3,000	30	<5	<20	<5	70	<100	7	<10	<100
045E	<10	<30	5	10	100	30	<5	<20	<5	50	<100	7	<10	500
045F	<10	<30	<5	<10	20	<30	<5	<20	<5	70	<100	<5	<10	150
045G	<10	<30	7	<10	70	70	<5	<20	7	70	<100	7	<10	700

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s	Th-ppm s	As-ppm icp	Zn-ppm icp	Cd-ppm icp	Bi-ppm icp	Sb-ppm icp	Au-ppm icp	Hg-ppm aa	F-pct. si
028D	<10	<50	<10	<200	70	<200	<5	11	<.1	<2.0	<2	<.10	.11	.03
028E	<10	<50	<10	<200	70	<200	14	46	.1	<2.0	<2	--	.05	.02
029A	30	<50	70	<200	200	<200	<5	78	.4	<2.0	<2	<.10	.13	.10
029B	15	<50	70	<200	300	<200	<5	32	.2	<2.0	<2	--	.02	.03
029C	15	<50	70	<200	300	<200	<5	48	.2	<2.0	<2	--	.02	.03
030A	10	<50	<10	<200	50	<200	<5	89	.8	6.0	<2	--	.02	.04
030B	10	<50	<10	<200	70	<200	<5	69	.1	127.0	<2	<.10	.08	.04
030C	15	<50	<10	<200	50	<200	<5	50	.2	14.0	<2	2.10	.28	.06
030D	<10	<50	10	<200	20	<200	5	135	1.0	57.0	68	.10	.05	.02
032A	<10	<50	<10	<200	15	<200	65	45	.7	4.0	<2	.80	.26	.02
032B	70	<50	70	<200	200	<200	<5	<2	<.1	<2.0	<2	.10	<.02	.05
032C	100	<50	20	<200	200	<200	<5	23	.3	<2.0	<2	--	<.02	.04
033A	<10	<50	<10	<200	<10	<200	<5	4	<.1	<2.0	9	--	.03	<.01
033B	10	<50	70	<200	500	<200	<5	13	.1	<2.0	<2	<.10	<.02	.04
035A	150	<50	50	<200	300	<200	<5	11	.2	<2.0	<2	--	.03	.14
035B	15	<50	10	<200	150	<200	<5	14	1.0	<2.0	<2	--	<.02	.08
035C	<10	<50	<10	<200	30	<200	<5	3	7.0	.7	<2	.20	.04	.03
035D	<10	<50	15	<200	70	<200	<5	3	.3	15.0	2	<.10	<.02	.02
035E	15	<50	15	<200	150	<200	<5	9	<.1	<2.0	<2	.50	.28	.03
037X	<10	<50	15	<200	100	<200	<5	13	<.1	<2.0	<2	--	.06	<.01
037Y	15	<50	15	<200	70	<200	<5	28	.6	<2.0	<2	<.10	<.02	.02
038A	<10	<50	70	<200	50	<200	<5	11	<.1	3.0	<2	<.10	.03	<.01
038B	30	<50	15	<200	200	<200	<5	30	<2.0	<.1	<2	N	.02	.04
038C	70	<50	<10	<200	150	<200	<5	73	.5	<2.0	8	--	.14	.05
039A	<10	<50	<10	<200	70	<200	<5	3	<.1	<2.0	<2	--	<.02	<.01
041A	50	<50	30	<200	300	<200	<5	<2	<.1	<2.0	<2	<.10	<.02	.04
041B	70	<50	50	<200	200	<200	<5	24	.2	<2.0	<2	--	.05	.02
041C	300	<50	30	<200	70	<200	<5	52	.3	<2.0	<2	--	.20	.02
042A	<10	<50	<10	<200	50	<200	<5	2	.2	<2.0	<2	--	<.02	.02
044A	15	<50	15	<200	150	<200	<5	7	<.1	<2.0	<2	--	<.02	.02
044B	30	<50	50	<200	300	<200	<5	20	<2.0	<.1	<2	N	<.02	.02
044C	30	<50	30	<200	100	<200	<5	19	.4	<2.0	<2	<.10	<.02	.05
044D	150	<50	30	<200	200	<200	<5	55	.2	<2.0	5	--	<.02	.19
044E	150	<50	50	<200	100	<200	<5	36	.2	<2.0	<2	--	.03	.39
044F	30	<50	<10	<200	70	<200	<5	7	<.1	<2.0	<2	--	<.02	<.01
044G	70	<50	70	<200	300	<200	<5	28	<.1	<2.0	<2	--	<.02	.08
044X	<10	<50	<10	<200	10	<200	<5	16	.1	<2.0	<2	--	<.02	<.01
044Y	<10	<50	<10	<200	15	<200	<5	3	<.1	<2.0	<2	<.10	<.02	<.01
045A	15	2,000	<10	1,000	30	<200	330	616	62.8	162.0	2,390	<.10	<.02	.15
045B	100	<50	10	500	100	<200	<5	265	3.0	3.0	<2	1.00	4.40	3.10
045C	<10	700	<10	<200	15	<200	<5	24	.2	<2.0	<2	--	.07	.28
045D	70	<50	15	1,500	70	<200	15	1,050	5.4	5.0	38	--	.02	.46
045E	100	<50	15	<200	150	<200	<5	101	.6	<2.0	<2	<.10	.21	1.40
045F	15	<50	<10	<200	50	<200	<5	31	.2	<2.0	<2	<.10	<.02	.07
045G	70	<50	15	300	70	<200	<5	234	.7	<2.0	<2	--	<.02	.33

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Latitude	Longitude	Fe-pct. S	Mg-pct. S	Ca-pct. S	Ti-pct. S	Mn-ppm S	Ag-ppm S	As-ppm S	Au-ppm S	P-ppm S	Ra-ppm S	Re-ppm S
046A	35 5 10	115 29 38	3.00	.05	<.05	.030	30	10.0	<700	<15	<10	300	<1.0
046B	35 5 10	115 29 38	2.00	.70	.10	.200	150	1.5	<700	<15	<10	200	1.5
046C	35 5 10	115 29 38	3.00	1.00	1.50	.300	700	<.5	<700	<15	<10	1,000	1.0
048A	35 4 29	115 28 20	1.50	.30	.07	.150	70	7.0	<700	<15	15	150	1.5
048B	35 4 9	115 28 12	1.00	.10	.15	.070	70	5.0	<700	<15	15	150	<1.0
048C	35 4 29	115 28 20	2.00	.20	.15	.100	150	30.0	<700	<15	10	700	1.5
048Y	35 4 29	115 28 20	3.00	.20	.70	.200	300	<.5	<700	<15	<10	1,000	<1.0
048Z	35 5 29	115 28 12	.70	1.00	.15	.150	3,000	<.5	<700	<15	<10	300	<1.0
049A	35 5 0	115 27 43	.70	.15	1.00	.030	300	1.5	<700	<15	15	150	<1.0
050A	35 4 58	115 27 50	<.05	<.02	<.05	<.002	30	<.5	<700	<15	<10	30	1.5
050B	35 4 58	115 27 50	.15	.03	.20	.007	150	<.5	<700	<15	<10	100	<1.0
050C	35 4 58	115 27 50	.30	.07	.15	.010	150	<.5	<700	<15	10	200	1.5
050D	35 4 58	115 27 50	.30	<.02	<.05	<.002	10	7.0	<700	<15	<10	200	<1.0
051A	34 55 55	115 36 3	5.00	1.50	3.00	.500	500	1.0	<700	<15	<10	2,000	1.5
051B	34 55 55	115 36 3	1.50	.70	.30	.300	70	<.5	<700	<15	<10	1,000	1.5
052A	34 58 23	115 34 40	3.00	1.00	.15	.200	150	<.5	<700	<15	<10	700	1.0
053A	34 58 16	115 34 42	.30	7.00	7.00	.003	700	<.5	<700	<15	<10	50	<1.0
054A	34 58 39	115 35 0	.30	2.00	>20.00	.010	200	<.5	<700	<15	<10	70	<1.0
054B	34 58 39	115 35 0	.15	7.00	7.00	.003	150	<.5	<700	<15	<10	<20	<1.0
055A	34 58 26	115 33 57	<.05	5.00	15.00	.002	20	<.5	<700	<15	<10	15	<1.0
055B	34 58 26	115 33 57	.30	1.50	>20.00	.030	300	.7	<700	<15	<10	150	<1.0
056A	34 58 39	115 33 59	.15	.07	7.00	.005	150	<.5	<700	<15	<10	20	<1.0
056B	34 58 39	115 33 59	.10	.50	>20.00	<.002	300	<.5	<700	<15	<10	<20	<1.0
056C	34 58 39	115 33 59	.07	.10	10.00	<.002	150	<.5	<700	<15	<10	20	<1.0
057A	34 58 22	115 34 24	.50	1.50	>20.00	.050	150	<.5	<700	<15	<10	150	<1.0
063A	34 59 0	115 32 30	3.00	.20	.15	.150	1,500	<.5	<700	<15	20	2,000	1.5
063B	34 59 0	115 32 30	.30	<.02	.15	.015	150	<.5	<700	<15	<10	1,000	<1.0
064A	35 0 22	115 31 44	3.00	.07	.15	.030	70	7.0	<700	<15	<10	100	<1.0
064C	35 0 22	115 31 44	.15	<.02	<.05	.003	30	<.5	<700	<15	<10	70	<1.0
064D	35 0 22	115 31 44	7.00	7.00	3.00	.700	1,500	<.5	<700	<15	10	300	1.5
064E	35 0 22	115 31 44	.70	.10	.15	.100	300	<.5	<700	<15	10	150	<1.0
064F	35 0 22	115 31 44	.70	.50	.15	.015	200	<.5	<700	<15	10	300	1.0
066A	35 1 19	115 31 1	1.00	.07	<.05	.030	150	1.5	<700	<15	15	70	<1.0
069A	35 3 39	115 32 43	.30	.03	.30	.070	30	<.5	<700	<15	<10	50	<1.0
069B	35 1 37	115 33 45	.50	1.00	3.00	.030	500	<.5	<700	<15	<10	300	<1.0
070A	35 1 28	115 33 46	.20	.02	<.05	.002	15	30.0	<700	<15	<10	100	<1.0
070B	35 1 28	115 33 46	1.50	.15	.15	.150	50	30.0	<700	<15	<10	300	1.5
070Y	35 1 28	115 33 46	.70	<.02	.07	.003	30	70.0	<700	<15	10	70	<1.0
071A	35 1 38	115 29 53	1.00	5.00	10.00	.010	1,500	<.5	<700	<15	<10	15	<1.0
071B	35 1 38	115 29 53	1.50	3.00	7.00	.030	1,500	3.0	<700	<15	<10	30	<1.0
071C	35 1 38	115 29 53	1.50	2.00	15.00	.030	2,000	30.0	<700	<15	<10	200	1.5
071D	35 1 38	115 29 53	1.50	7.00	20.00	.030	3,000	20.0	<700	<15	<10	100	<1.0
071E	35 1 38	115 29 53	.70	1.50	20.00	.030	1,500	3.0	<700	<15	<10	100	<1.0
072A	35 2 9	115 30 13	2.00	.70	1.00	.200	1,000	<.5	<700	<15	<10	1,000	1.0
072B	35 2 9	115 30 13	1.50	.03	.15	.020	200	30.0	<700	15	<10	100	<1.0

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN
BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Pi-ppm S	Cd-ppm S	Co-ppm S	Cr-ppm S	Cu-ppm S	La-ppm S	Mo-ppm S	Nb-ppm S	Ni-ppm S	Pb-ppm S	Sb-ppm S	Sc-ppm S	Sp-ppm S	Sr-ppm S
046A	15	<30	<5	<10	700	<30	7	<20	<5	15	<100	<5	<10	<100
046B	<10	<30	<5	<10	300	<30	7	<20	<5	15	<100	5	<10	<100
046C	<10	<30	7	<10	15	<30	<5	<20	5	15	<100	7	<10	1,000
048A	20	<30	7	<10	300	70	<5	15	7	1,000	<100	15	<10	<100
048B	<10	50	<5	<10	300	<30	7	<20	<5	150	<100	<5	<10	<100
048C	10	<30	<5	<10	70	<30	300	<20	<5	150	<100	<5	<10	<100
048Y	<10	<30	5	<10	50	70	<5	<20	<5	30	<100	7	<10	150
048Z	<10	<30	5	15	10	70	<5	<20	7	15	<100	7	<10	300
049A	<10	<30	<5	<10	20	<30	7	<20	7	10	<100	<5	<10	<100
050A	<10	<30	<5	<10	<5	<30	<5	<20	<5	30	<100	<5	<10	<100
050B	<10	<30	<5	<10	<5	<30	<5	<20	<5	<10	<100	<5	<10	<100
050C	<10	<30	<5	<10	15	<30	<5	<20	<5	15	<100	<5	<10	150
050D	100	<30	<5	<10	100	<30	<5	<20	<5	150	<100	<5	<10	<100
051A	<10	<30	15	15	15	100	<5	<20	7	30	<100	15	<10	700
051B	<10	<30	5	<10	<5	150	<5	30	<5	<10	<100	7	<10	200
052A	<10	<30	150	<10	5	200	<5	<20	7	15	<100	15	<10	100
053A	<10	<30	<5	<10	7	<30	<5	<20	<5	<10	<100	<5	<10	<100
054A	<10	<30	<5	15	10	<30	<5	<20	5	<10	<100	<5	<10	200
054B	<10	<30	<5	<10	<5	<30	<5	<20	<5	<10	<100	<5	<10	<100
055A	<10	<30	<5	10	<5	<30	<5	<20	<5	<10	<100	<5	<10	100
055B	<10	<30	<5	20	15	<30	<5	<20	7	15	<100	<5	<10	500
056A	<10	<30	<5	<10	<5	<30	<5	<20	5	<10	<100	<5	<10	<100
056B	<10	<30	<5	<10	<5	<30	<5	<20	<5	<10	<100	<5	<10	150
056C	<10	<30	<5	<10	10	<30	<5	<20	<5	<10	<100	<5	<10	150
057A	<10	<30	<5	15	7	30	<5	<20	7	10	<100	7	<10	100
063A	<10	<30	5	<10	<5	70	5	<20	<5	70	<100	5	<10	<100
063B	<10	<30	<5	<10	20	100	<5	<20	<5	10	<100	<5	<10	<100
064A	<10	<30	<5	<10	10	<30	7	<20	<5	10	<100	<5	<10	<100
064C	<10	<30	<5	<10	7	<30	<5	<20	<5	<10	<100	<5	<10	<100
064D	<10	<30	30	200	15	30	<5	<20	70	15	<100	70	<10	300
064E	<10	<30	15	15	700	50	<5	<20	7	<10	<100	<5	<10	<100
064F	<10	<30	<5	<10	70	30	<5	<20	<5	20	<100	<5	<10	100
065A	<10	<30	<5	<10	30	<30	<5	<20	5	20	<100	<5	<10	<100
069A	<10	<30	<5	<10	<5	<30	<5	<20	<5	<10	<100	<5	<10	<100
069B	<10	<30	<5	<10	15	<30	<5	<20	<5	700	<100	<5	<10	100
070A	<10	<30	<5	<10	700	<30	15	<20	<5	150	<100	<5	<10	<100
070B	<10	<30	<5	<10	200	70	10	<20	<5	500	<100	7	<10	150
070Y	<10	<30	<5	<10	15,000	<30	7	<20	<5	7	<100	<5	<10	<100
071A	<10	<30	<5	<10	5	<30	<5	<20	7	15	<100	<5	<10	70
071B	<10	<30	<5	<10	5	<30	<5	<20	7	100	<100	<5	<10	<100
071C	<10	<30	<5	15	15	<30	<5	<20	10	200	<100	<5	<10	100
071D	<10	<30	<5	<10	15	<30	<5	<20	7	300	<100	<5	<10	150
071E	<10	<30	<5	<10	7	30	<5	<20	7	300	<100	<5	<10	150
072A	<10	<30	5	<10	70	70	<5	<20	5	50	<100	<5	<10	200
072B	<10	<30	<5	<10	30	<30	5	<20	<5	150	<100	<5	<10	<100

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s	Th-ppm s	As-ppm icp	Zn-ppm icp	Cd-ppm icp	Bi-ppm icp	Sb-ppm icp	Au-ppm icp	Hg-ppm aa	F-pct. si
046A	15	<50	<10	<200	<10	<200	8	53	.7	13.0	2	--	.02	.01
046B	100	<50	<10	<200	100	<200	<5	66	.4	<2.0	3	<.10	.25	.07
046C	70	<50	10	<200	100	<200	<5	45	.2	<2.0	<2	<.10	.06	.03
048A	<10	<50	30	700	300	<200	6	259	1.0	14.0	<2	--	<.02	.11
048B	10	<50	<10	3,000	30	<200	5	2,530	6.0	20.3	<2	<.10	1.30	.06
048C	15	<50	<10	<200	150	<200	<5	62	.4	8.0	<2	.10	.31	.03
048Y	20	<50	70	<200	150	<200	11	32	.2	<2.0	<2	<.10	1.20	.08
048Z	30	50	15	<200	70	<200	<5	33	<2.0	.5	<2	N	.37	.03
049A	15	<50	<10	<200	30	<200	<5	108	.9	<2.0	3	<.10	.02	.05
050A	<10	<50	<10	<200	<10	<200	<5	<2	<.1	<2.0	<2	<.10	.08	.02
050B	<10	<50	<10	<200	15	<200	<5	2	<.1	<2.0	<2	--	<.02	<.01
050C	<10	<50	<10	<200	15	<200	<5	4	<.1	<2.0	<2	--	<.02	.01
050D	<10	<50	<10	<200	<10	<200	<5	7	.2	107.0	<2	--	<.02	.02
051A	150	<50	30	<200	300	<200	<5	16	.3	<2.0	<2	<.10	<.02	<.01
051B	70	<50	30	<200	300	<200	<5	4	.1	<2.0	<2	<.10	.05	.07
052A	20	<50	70	<200	500	<200	<5	12	.3	<2.0	<2	--	<.02	.06
053A	<10	<50	<10	<200	10	<200	<5	<2	.2	<2.0	7	--	.06	.10
054A	15	<50	<10	<200	30	<200	6	9	.3	<2.0	<2	--	.03	.03
054B	<10	<50	<10	<200	<10	<200	<5	<2	<.1	<2.0	12	--	<.02	.02
055A	<10	<50	<10	<200	<10	<200	<5	4	.2	<2.0	8	<.10	.16	<.01
055B	20	<50	10	<200	20	<200	8	12	.2	<2.0	<2	--	<.02	.03
056A	<10	<50	<10	<200	<10	<200	<5	3	<.1	<2.0	<2	--	.02	.03
056B	<10	<50	<10	<200	<10	<200	<5	<2	<2.0	<.1	<2	N	<.02	.02
056C	<10	<50	<10	<200	<10	<200	<5	6	.1	<2.0	<2	--	<.02	<.01
057A	15	<50	10	<200	30	<200	<5	25	.3	2.0	<2	--	.02	<.01
063A	20	<50	30	<200	100	<200	<5	47	.3	<2.0	<2	--	.04	<.01
063B	<10	<50	<10	<200	30	<200	<5	5	<.1	<2.0	<2	--	<.02	.04
064A	<10	<50	<10	<200	30	<200	6	14	.3	<2.0	<2	--	<.02	.05
064C	<10	<50	15	<200	<10	<200	<5	<2	<.1	<2.0	<2	2.30	.05	<.01
064D	300	<50	15	<200	50	<200	<5	19	.1	<2.0	<2	--	.02	.02
064E	10	<50	15	<200	70	<200	<5	4	<.1	<2.0	<2	--	.21	.02
064F	<10	<50	70	<200	150	<200	<5	4	<.1	<2.0	<2	--	.02	.23
066A	<10	<50	<10	<200	30	<200	<5	37	.3	<2.0	<2	--	<.02	.02
069A	<10	<50	<10	<200	70	<200	<5	4	<.1	<2.0	<2	--	.02	.03
069B	30	<50	<10	<200	30	<200	7	38	.3	<2.0	<2	.60	.02	.03
070A	15	<50	<10	<200	<10	<200	7	<2	.1	23.0	<2	--	.02	.01
070B	30	<50	30	<200	150	<200	6	18	.1	<2.0	<2	1.70	.11	.06
070Y	<10	<50	<10	<200	30	<200	<5	16	2.9	<2.0	<2	.50	.07	<.01
071A	<10	<50	<10	<200	<10	<200	6	253	1.2	<2.0	8	1.60	.08	.03
071B	10	<50	<10	<200	30	<200	13	1,290	13.2	<2.0	9	--	.05	<.01
071C	15	<50	<10	<200	50	<200	25	2,620	10.4	<2.0	6	<.10	.16	.03
071D	15	<50	<10	<200	<10	<200	5	2,100	13.0	<2.0	10	<.10	.24	.06
071E	<10	<50	10	<200	20	<200	5	392	6.7	14.0	3	<.10	.21	.06
072A	10	<50	50	<200	70	<200	<5	45	.1	<2.0	<2	<.10	.08	.03
072B	<10	<50	20	<200	30	<200	22	28	.3	<2.0	<2	--	<.02	.03

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Latitude	Longitude	Fe-ppt. S	Mg-ppt. S	Ca-pct. S	Ti-pct. S	Mn-ppt. S	Ag-ppt. S	As-ppt. S	Au-ppt. S	B-ppt. S	Ra-ppt. S	Be-ppt. S
073A	35 2 4	115 30 11	1.50	.15	.10	.150	150	10.0	<700	<15	10	300	2.0
073B	35 2 4	115 30 11	.07	7.00	10.00	<.002	70	<.5	<700	<15	<10	<20	<1.0
073C	35 2 4	115 30 11	10.00	7.00	1.00	.700	1,500	<.5	<700	<15	<10	500	<1.0
073D	35 2 4	115 30 11	1.00	.30	.70	.150	1,500	<.5	<700	<15	<10	2,000	<1.0
074A	35 2 40	115 29 40	3.00	.70	.50	.300	1,500	<.5	<700	<15	10	500	1.5
074B	35 2 40	115 29 40	.15	<.02	<.05	.015	<10	<.5	<700	<15	<10	70	<1.0
074C	35 2 40	115 29 40	2.00	.50	.05	.500	100	<.5	<700	<15	<10	1,000	1.0
074D	35 2 40	115 29 40	7.00	7.00	7.00	.700	1,500	<.5	<700	<15	<10	150	1.0
074E	35 2 40	115 29 40	1.00	.70	1.50	.150	700	.5	<700	<15	10	300	3.0
076A	35 2 41	115 29 5	1.00	.50	3.00	.150	700	<.5	<700	<15	<10	300	1.5
076B	35 2 41	115 29 5	3.00	.07	.20	.100	150	<.5	<700	<15	<10	150	1.0
076C	35 2 40	115 29 5	1.50	.10	.15	.300	70	<.5	<700	<15	<10	70	1.5
076D	35 2 41	115 29 5	1.00	.15	.70	.015	300	<.5	<700	<15	10	70	<1.0
076E	35 2 40	115 29 5	2.00	.20	.70	.150	300	<.5	<700	<15	<10	700	1.5
076F	35 2 40	115 29 5	1.50	2.00	10.00	.030	2,000	5.0	<700	<15	<10	20	<1.0
077A	35 3 3	115 30 29	10.00	7.00	10.00	1.000	1,500	<.5	<700	<15	<10	70	2.0
077B	35 3 3	115 30 29	.05	<.02	<.05	.015	10	<.5	<700	<15	<10	50	<1.0
078A	35 2 46	115 31 23	3.00	.15	.15	.300	70	<.5	<700	<15	<10	1,000	2.0
078B	35 2 46	115 31 23	3.00	.30	.50	.500	500	<.5	<700	<15	<10	2,000	1.5
078C	35 2 35	115 31 7	.50	.02	.07	.100	30	<.5	<700	<15	15	30	<1.0
078D	35 2 35	115 31 7	7.00	1.50	3.00	>1.000	1,000	<.5	<700	<15	<10	500	1.5
078E	35 2 35	115 31 7	.30	.07	<.05	.030	1,000	2.0	<700	<15	<10	100	<1.0
078F	35 2 36	115 31 4	.30	.05	.15	.030	30	<.5	<700	<15	<10	50	<1.0
078G	35 2 36	115 31 2	.15	<.02	<.05	<.002	300	.7	<700	<15	<10	70	<1.0
080A	35 2 40	115 30 58	1.00	.50	.20	.150	300	<.5	<700	<15	<10	200	<1.0
080B	35 2 40	115 30 58	3.00	1.00	.20	.300	3,000	1.5	<700	<15	<10	1,000	1.5
080C	35 2 40	115 30 58	5.00	3.00	3.00	.300	1,500	<.5	<700	<15	<10	200	1.5
080D	35 2 40	115 30 58	3.00	.70	.15	.300	500	7.0	<700	<15	<10	300	2.0
083A	35 2 44	115 32 25	.05	.02	.07	.005	20	<.5	<700	<15	<10	70	<1.0
084A	35 2 45	115 32 18	2.00	.70	>20.00	.150	3,000	<.5	<700	<15	<10	2,000	<1.0
086A	35 5 29	115 31 2	7.00	3.00	3.00	.500	700	<.5	<700	<15	<10	3,000	1.5
086B	35 5 29	115 31 2	.50	.07	.50	.030	150	<.5	<700	<15	10	300	<1.0
086C	35 5 30	115 31 2	10.00	5.00	5.00	.500	1,500	<.5	<700	<15	<10	300	1.5
086D	35 5 29	115 31 2	5.00	.70	1.50	.300	700	<.5	<700	<15	<10	500	1.5
087A	35 5 43	115 31 8	1.50	.15	1.00	.030	300	.7	<700	<15	<10	70	<1.0
087B	35 5 43	115 31 8	.70	.15	.50	.070	150	<.5	<700	<15	<10	300	<1.0
088A	35 5 37	115 30 47	1.50	.10	.05	.030	200	<.5	<700	<15	10	100	<1.0
088B	35 5 37	115 30 47	.70	.07	.07	.007	15	70.0	<700	<15	<10	500	<1.0
096A	35 4 58	115 29 21	1.50	.70	1.50	.150	300	<.5	<700	<15	10	1,000	1.5
097A	35 4 50	115 29 11	.30	.07	.70	.070	70	<.5	<700	<15	<10	150	1.5
102A	35 3 52	115 28 34	7.00	.07	.15	.070	300	700.0	<700	<15	<10	100	<1.0
102B	35 3 52	115 28 34	3.00	.70	.30	.300	7,000	10.0	<700	<15	15	300	1.5
102C	35 3 52	115 28 34	3.00	.70	1.50	.300	500	1.0	<700	<15	<10	70	<1.0
102D	35 3 52	115 28 34	3.00	.30	1.50	.150	3,000	500.0	<700	<15	<10	50	<1.0
102E	35 3 52	115 28 34	3.00	.02	<.05	.100	20	30.0	<700	<15	<10	300	<1.0

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Bi-ppm S	Cd-ppm S	Co-ppm S	Cr-ppm S	Cu-ppm S	La-ppm S	Mo-ppm S	Nb-ppm S	Ni-ppm S	Pb-ppm S	Sb-ppm S	Sc-ppm S	Sn-ppm S	Sr-ppm S
073A	<10	<30	<5	20	15	50	<5	<20	<5	3,000	<100	5	<10	<100
073B	<10	<30	<5	<10	7	<30	<5	<20	<5	<5	<100	<5	<10	<100
073C	<10	<30	70	30	30	<30	<5	30	100	15	<100	30	<20	<100
073D	<10	<30	<5	<10	70	70	<5	<20	<5	150	<100	<5	<10	150
074A	<10	<30	30	15	50	70	7	30	20	30	<100	15	<10	150
074B	<10	<30	<5	<10	<5	<30	15	<20	<5	<10	<100	<5	<10	<100
074C	<10	<30	<5	20	7	<30	30	<20	<5	<10	<100	15	<10	<100
074D	10	<30	50	150	200	<30	<5	<20	100	500	<100	70	<20	150
074E	<10	<30	<5	<10	20	<30	30	<20	5	70	<100	7	<10	200
076A	<10	<30	<5	<10	7	50	<5	<20	<5	15	<100	7	<10	<100
076B	<10	<30	<5	<10	5	<30	<5	<20	<5	20	<100	10	<10	70
076C	<10	<30	<5	<10	<5	50	<5	<20	<5	15	<100	7	<10	<100
076D	<10	<30	<5	15	20	<30	<5	<20	15	<10	<100	<5	<10	<100
076E	<10	<30	<5	<10	15	70	7	<20	<5	30	<100	7	<10	100
076F	<10	<30	<5	<10	10	<30	<5	<20	5	50	<100	5	<10	70
077A	<10	<30	50	200	20	<30	<5	<20	100	10	<100	50	<10	300
077B	<10	<30	<5	<10	<5	<30	<5	<20	<5	<10	<100	<5	<10	<100
078A	<10	<30	<5	<10	10	100	<5	20	<5	30	<100	30	<10	150
078B	<10	<30	<5	<10	<5	150	<5	20	<5	30	<100	30	<10	200
078C	<10	<30	<5	<10	<5	70	<5	20	<5	<10	<100	<5	<10	<100
078D	<10	<30	20	<10	10	70	<5	<20	<5	15	<100	30	10	700
078E	<10	<30	<5	<10	70	200	<5	<20	<5	300	<100	<5	<10	<100
078F	<10	<30	<5	<10	<5	<30	<5	<20	<5	20	<100	<5	<10	<100
078G	<10	<30	<5	<10	30	<30	<5	<20	<5	70	<100	<5	<10	<100
080A	<10	<30	<5	<10	<5	100	<5	<20	5	10	<100	7	<10	<100
080B	<10	<30	15	10	70	100	<5	<20	7	70	<100	15	<10	150
080C	<10	<30	20	70	70	<30	<5	<20	50	15	<100	30	<10	<100
080D	<10	<30	<5	15	300	<30	<5	<20	<5	1,500	<100	10	<10	<100
083A	<10	<30	<5	<10	<5	<30	<5	<20	<5	<10	<100	<5	<10	<100
084A	<10	<30	<5	<10	<5	100	<5	<20	<5	10	<100	5	<10	200
086A	<10	<30	15	<10	50	70	<5	<20	<5	20	<100	15	<10	1,500
086B	<10	<30	<5	<10	<5	30	<5	<20	<5	50	<100	<5	<10	200
086C	<10	<30	50	100	<5	<30	<5	<20	50	10	<100	50	<10	100
086D	<10	<30	7	20	10	50	<5	<20	7	15	<100	15	<10	150
087A	<10	<30	<5	<10	100	<30	7	<20	5	<10	<100	10	<10	<100
087B	<10	<30	<5	<10	30	<30	<5	<20	<5	30	<100	7	<10	150
088A	<10	<30	7	<10	1,000	<30	<5	<20	5	10,000	<100	<5	<10	<100
088B	<10	<30	<5	<10	7,000	<30	15	<20	<5	>20,000	<100	<5	<10	700
096A	<10	<30	7	<10	<5	70	<5	<20	5	30	<100	7	<10	700
097A	<10	<30	<5	<10	<5	<30	<5	30	<5	30	<100	<5	<10	150
102A	<10	<30	<5	<10	300	<30	30	<20	<5	7,000	<100	5	<10	<100
102B	<10	150	7	15	70	50	<5	<20	7	700	<100	10	<10	<100
102C	<10	<30	7	15	150	100	<5	<20	10	15	<100	15	<10	150
102D	<10	<30	7	7	100	<30	<5	<20	10	3,000	<100	7	<10	<100
102E	20	<30	15	<10	70	<30	5	<20	<5	100	<100	<5	<10	30

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	V-ppm S	W-ppm S	Y-ppm S	Zn-ppm S	Zr-ppm S	Th-ppm S	As-ppm lcp	Zn-ppm lcp	Cd-ppm lcp	Bi-ppm lcp	Sb-ppm lcp	Au-ppm lcp	Hg-ppm aa	F-pct. sl
073A	15	<50	20	<200	150	<200	<5	39	.3	<2.0	<2	5.00	.28	.05
073B	<10	<50	<10	<200	<10	<200	<5	2	<.1	<2.0	9	<.10	<.02	.01
073C	200	<50	30	300	<10	<200	<5	246	2.4	<2.0	3	--	.03	.06
073D	10	<50	30	<200	30	<200	<5	16	.5	<2.0	<2	--	.04	.02
074A	30	<50	70	<200	300	<200	<5	138	.2	<2.0	<2	--	.14	.28
0748	<10	<50	<10	<200	15	<200	<5	<2	<.1	<2.0	<2	--	.02	.04
074C	70	<50	<10	<200	200	<200	<5	4	<.1	<2.0	<2	--	<.02	.10
074D	300	<50	30	300	70	<200	<5	160	.5	<2.0	4	--	<.02	<.01
074E	50	<50	15	<200	50	<200	<5	60	.8	<2.0	2	--	.02	<.01
076A	15	<50	30	<200	300	<200	<5	44	.3	<2.0	<2	--	<.02	.42
076B	10	<50	70	<200	300	<200	<5	8	.1	<2.0	17	--	<.02	.08
076C	15	<50	30	<200	300	<200	<5	9	<.1	<2.0	<2	<.10	<.02	.07
076D	10	<50	<10	<200	15	<200	<5	25	<2.0	<.1	<2	N	<.02	.01
076E	10	<50	30	<200	300	<200	<5	58	.1	<2.0	<2	--	<.02	.03
076F	10	<50	20	<200	50	<200	7	132	2.2	<2.0	4	--	<.02	.01
077A	700	<50	20	<200	50	<200	<5	8	.3	<2.0	<2	.10	.12	.03
077B	<10	<50	<10	<200	<10	<200	<5	<2	<.1	<2.0	<2	--	.02	.04
078A	10	<50	70	<200	300	<200	<5	89	1.3	<2.0	<2	--	<.02	.25
0788	30	<50	70	<200	50	<200	<5	43	.2	<2.0	<2	--	<.02	.01
078C	<10	<50	30	<200	150	<200	<5	<2	<2.0	<.1	<2	N	<.02	.04
078D	150	<50	70	<200	200	<200	<5	30	.5	<2.0	<2	--	.02	.05
078E	<10	<50	10	500	70	<200	<5	237	5.6	<2.0	<2	--	.03	<.01
078F	<10	<50	20	<200	70	<200	<5	7	<.1	<2.0	<2	<.10	.03	.11
078G	<10	<50	<10	<200	<10	<200	<5	40	.2	<2.0	<2	--	<.02	.02
080A	15	<50	10	<200	70	<200	<5	19	<.1	<2.0	<2	--	<.02	.01
080R	70	<50	70	500	300	<200	6	364	2.8	<2.0	<2	--	<.02	<.01
080C	150	<50	30	<200	30	<200	<5	229	.8	<2.0	<2	<.10	.02	.03
080D	30	<50	30	<200	300	<200	<5	31	.2	<2.0	<2	--	<.02	.07
083A	<10	<50	<10	<200	<10	<200	<5	3	<.1	<2.0	<2	.10	.34	.29
084A	50	<50	150	<200	70	<200	<5	22	.5	<2.0	3	--	<.02	.08
086A	70	<50	30	<200	300	<200	6	87	.2	<2.0	<2	--	<.02	<.01
086B	10	<50	<10	<200	70	<200	<5	5	<.1	<2.0	<2	--	<.02	.04
086C	300	<50	30	<200	30	<200	<5	50	<2.0	.1	<2	N	.03	.09
086D	70	<50	30	<200	150	<200	<5	55	.3	<2.0	<2	--	<.02	<.01
087A	15	<50	15	<200	10	<200	<5	20	.4	<2.0	2	--	.04	.74
087B	<10	<50	30	<200	150	<200	<5	8	<.1	<2.0	<2	--	.02	.10
088A	10	<50	<10	<200	70	<200	<5	20	.7	2.0	<2	--	.07	<.01
088B	<10	<50	<10	<200	<10	<200	<5	7	5.8	<2.0	216	.10	.34	.03
096A	70	<50	10	<200	150	<200	<5	45	.1	<2.0	<2	--	<.02	.02
097A	<10	<50	<10	<200	50	<200	<5	6	<.1	<2.0	<2	--	<.02	.02
102A	15	<50	<10	700	70	<200	419	455	.7	<2.0	3	6.30	.43	.04
102B	30	<50	30	>10,000	300	<200	10	12,900	75.9	<2.0	10	.10	.16	<.01
102C	30	<50	30	<200	300	<200	<5	62	.2	<2.0	<2	<.10	.05	.03
102D	15	<50	15	5,000	200	<200	53	4,920	22.9	<2.0	<2	1.40	1.00	.11
102E	<10	<50	<10	<200	70	<200	<5	45	.1	<2.0	<2	<.10	.05	.05

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Latitude	Longitude	Fe-pct. S	Mg-pct. S	Ca-pct. S	Ti-pct. S	Mn-ppm S	Ag-ppm S	As-ppm S	Au-ppm S	B-ppm S	Ba-ppm S	Be-ppm S
103A	35 3 55	115 28 33	3.70	.70	1.50	.300	300	<.5	<700	<15	<10	1,000	1.5
103B	35 3 55	115 28 33	1.50	.70	7.00	.150	300	7.0	<700	<15	<10	500	1.5
103C	35 3 55	115 28 33	1.50	.15	1.50	.150	2,000	15.0	<700	<15	<10	100	<1.0
103D	35 3 55	115 28 33	10.00	.02	.30	.030	1,500	100.0	<700	15	<10	50	<1.0
103E	35 3 55	115 28 33	3.00	.30	.15	.300	>5,000	15.0	<700	<15	10	300	7.0
103F	35 3 55	115 28 33	3.00	.15	.50	.050	1,500	30.0	<700	<15	10	150	<1.0
107A	35 4 9	115 27 58	3.00	1.00	1.50	.700	500	<.5	<700	<15	<10	3,000	2.0
107B	35 4 9	115 27 58	3.00	.70	1.50	.500	1,000	.7	<700	<15	<10	3,000	1.5
107C	35 4 9	115 27 58	.20	<.02	.15	<.002	100	300.0	<700	<15	<10	100	<1.0
107C	35 4 9	115 27 58	.07	<.02	<.05	<.002	<10	150.0	<700	<15	<10	30	<1.0
107D	35 4 9	115 27 58	3.00	.30	.20	.500	300	2.0	<700	<15	30	300	2.0
107E	35 4 9	115 27 58	.50	<.02	<.05	<.002	<10	300.0	<700	<15	<10	30	<1.0
108A	35 3 44	115 27 53	.30	.10	.20	.020	100	<.5	<700	<15	30	3,000	3.0
108B	35 3 44	115 27 53	1.50	.20	1.00	.150	500	<.5	<700	<15	30	1,500	1.5
108C	35 3 44	115 27 53	.30	.07	.20	.100	70	5.0	<700	<15	30	70	<1.0
110A	35 3 18	115 27 54	.30	<.02	.03	.015	50	<.5	<700	<15	<10	50	<1.0
110B	35 3 18	115 27 54	2.00	.50	.15	.150	300	<.5	<700	<15	<10	100	1.5
110C	35 3 10	115 27 54	2.00	.15	.15	.150	300	<.5	<700	<15	10	150	<1.0
110D	35 3 10	115 27 54	3.00	1.00	.50	.300	500	<.5	<700	<15	<10	700	3.0
110E	35 3 10	115 27 54	3.00	.70	.15	.300	500	<.5	<700	<15	15	300	1.0
110F	35 3 10	115 27 54	3.00	2.00	7.00	.030	3,000	30.0	<700	<15	<10	>5,000	<1.0
110G	35 3 10	115 27 54	5.00	.15	.30	.300	1,000	<.5	<700	<15	<10	1,000	1.0
121A	35 5 4	115 25 31	<.05	<.02	<.05	.002	10	<.5	<700	<15	<10	<20	<1.0
123A	35 4 10	115 24 50	.70	.05	.20	.015	1,500	.5	<700	<15	<10	70	<1.0
123B	35 4 10	115 24 50	3.00	.70	.30	.300	3,000	<.5	<700	<15	<10	700	1.5
123C	35 4 10	115 24 50	.70	.10	.20	.010	300	<.5	<700	<15	10	150	<1.0
123D	35 4 10	115 24 50	3.00	1.50	3.00	.300	3,000	<.5	<700	<15	<10	700	1.5
124A	35 3 38	115 24 14	1.00	.30	.50	.100	700	<.5	<700	<15	<10	150	3.0
128A	35 0 39	115 29 3	.50	1.50	1.00	.150	70	<.5	<700	<15	<10	500	2.0
128B	35 0 39	115 29 3	.70	.30	1.00	.050	70	<.5	<700	<15	10	500	2.0
130A	35 1 21	115 28 4	.07	3.00	15.00	.007	150	<.5	<700	<15	<10	30	<1.0
130B	35 1 21	115 28 4	.50	.15	1.50	.030	100	<.5	<700	<15	<10	300	1.5
130C	35 1 21	115 28 4	3.00	.05	.07	.020	70	30.0	<700	<15	<10	200	1.5
132A	34 59 40	115 29 59	3.00	.50	.30	.300	150	<.5	<700	<15	<10	200	1.5
132B	34 59 50	115 29 59	.50	.30	1.50	.030	150	<.5	<700	<15	10	200	<1.0
132C	34 59 40	115 29 59	.70	5.00	7.00	.030	500	1.0	<700	<15	<10	300	<1.0
132D	34 59 40	115 29 59	.10	3.00	7.00	.002	50	<.5	<700	<15	<10	<20	<1.0
133A	34 59 33	115 29 56	.30	.03	.15	.015	10	70.0	<700	<15	<10	50	<1.0
133B	34 59 33	115 29 56	.30	.07	.50	.030	<10	50.0	<700	<15	<10	300	1.5
133C	34 59 33	115 29 56	5.00	.50	.30	.300	300	.7	<700	<15	<10	300	1.5
133D	34 59 33	115 29 56	3.00	3.00	3.00	.500	700	<.5	<700	<15	<10	150	1.5
134A	34 59 17	115 30 11	7.00	7.00	15.00	.100	300	<.5	<700	<15	<10	30	1.0
134B	34 59 17	115 30 11	2.00	.70	1.00	.300	100	<.5	<700	<15	<10	150	1.0
134C	34 59 17	115 30 11	5.00	1.50	.20	.500	100	<.5	<700	<15	<10	100	3.0
134D	34 59 17	115 30 11	7.00	5.00	3.00	1.000	1,500	<.5	<700	<15	<10	300	1.5

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Pi-ppm S	Cd-ppm S	Co-ppm S	Cr-ppm S	Cu-ppm S	La-ppm S	Mo-ppm S	Nb-ppm S	Ni-ppm S	Pb-ppm S	Sb-ppm S	Sc-ppm S	Sn-ppm S	Sr-ppm S
103A	<10	<30	7	15	7	70	<5	<20	7	15	<100	10	<10	200
103B	<10	<30	5	15	20	30	<5	<20	7	70	<100	7	<10	700
103C	<10	<30	7	<10	150	30	<5	<20	7	100	<100	5	<10	<100
103D	<10	700	15	<10	700	<30	<5	<20	7	>20,000	<100	<5	<10	<100
103E	<10	70	7	15	100	70	<5	<20	7	150	<100	15	<10	<100
103F	<10	<30	5	<10	30	<30	15	<20	7	300	<100	<5	<10	<100
107A	<10	<30	<5	<10	15	150	7	30	<5	30	<100	20	<10	700
107B	<10	<30	5	<10	10	150	<5	20	<5	150	<100	15	<10	500
107C	700	<30	<5	<10	300	<30	<5	<20	<5	15,000	<100	<5	<10	<100
107C	700	<30	<5	<10	150	<30	<5	<20	<5	7,000	<100	<5	<10	<100
107D	<10	<30	7	30	150	70	5	20	10	1,500	<100	20	<10	<100
107E	1,000	<30	<5	<10	150	<30	<5	<20	<5	>20,000	<100	<5	<10	<100
108A	<10	<30	<5	<10	5	30	<5	<20	<5	50	<100	<5	<10	300
108B	<10	<30	<5	<10	<5	70	<5	<20	<5	15	<100	<5	<10	300
108C	<10	<30	<5	<10	70	<30	<5	<20	<5	150	<100	<5	<10	<100
110A	<10	<30	<5	<10	5	<30	<5	<20	<5	<10	<100	<5	<10	<100
110B	<10	<30	7	15	7	50	<5	<20	7	15	<100	7	<10	<100
110C	<10	<30	7	15	15	<30	<5	<20	7	15	<100	7	<10	<100
110D	<10	<30	7	15	30	30	<5	<20	15	30	<100	7	<10	150
110E	<10	<30	10	30	15	150	<5	30	10	15	<100	30	<10	<100
110F	<10	<30	7	<10	50	<30	30	<20	7	70	<100	5	<10	<100
110G	<10	<30	10	30	100	<30	<5	20	7	20	<100	15	<10	100
121A	<10	<30	<5	<10	5	<30	5	<20	<5	50	<100	<5	<10	<100
123A	<10	<30	<5	<10	20	<30	<5	<20	<5	10	<100	<5	<10	<100
123B	<10	<30	7	15	15	70	<5	<20	5	30	<100	15	<10	100
123C	<10	<30	<5	<10	<5	<30	<5	<20	5	70	<100	<5	<10	<100
123D	<10	<30	15	70	15	<30	<5	<20	10	300	<100	30	<10	<100
124A	<10	<30	<5	<10	<5	100	<5	20	<5	30	<100	<5	<10	100
128A	<10	<30	<5	<10	<5	70	<5	<20	<5	10	<100	<5	<10	300
128B	<10	<30	<5	<10	<5	50	5	20	<5	20	<100	<5	<10	500
130A	<10	<30	<5	<10	<5	<30	5	<20	<5	<10	<100	<5	<10	300
130B	<10	<30	<5	<10	<5	<30	<5	<20	<5	50	<100	<5	<10	150
130C	<10	<30	<5	<10	70	<30	15	<20	7	1,000	<100	<5	<10	<100
132A	<10	<30	<5	<10	7	70	<5	20	5	15	<100	7	<10	150
132B	<10	<30	<5	<10	5	<30	<5	<20	5	<10	<100	<5	<10	<100
132C	<10	<30	<5	15	7	<30	<5	<20	5	20	<100	<5	<10	70
132D	<10	<30	<5	<10	7	<30	<5	<20	<5	<10	<100	<5	<10	<100
133A	<10	<30	<5	<10	30	<30	<5	<20	<5	500	<100	<5	<10	<100
133B	<10	<30	<5	<10	50	<30	5	<20	<5	150	<100	<5	<10	<100
133C	<10	<30	7	15	10	70	<5	<20	10	30	<100	15	<10	<100
133D	<10	<30	15	150	5	30	<5	<20	50	20	<100	30	<10	300
134A	<10	<30	<5	<10	<5	30	<5	<20	7	30	<100	7	<10	150
134B	<10	<30	<5	10	<5	100	<5	<20	7	10	<100	10	<10	300
134C	<10	<30	7	70	<5	70	<5	<20	30	15	<100	15	<10	200
134D	<10	<30	30	15	70	70	<5	<20	30	<10	<100	50	<10	300

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	V-ppm S	W-ppm S	Y-ppm S	Zn-ppm S	Zr-ppm S	Th-ppm S	As-ppm icp	Zn-ppm icp	Cd-ppm icp	Bi-ppm icp	Sb-ppm icp	Au-ppm icp	Hg-ppm aa	F-pct. si
103A	30	<50	30	<200	150	<200	<5	27	.1	<2.0	<2	--	<.02	.07
103B	30	<50	15	<200	150	<200	<5	103	.3	<2.0	<2	<.10	.06	.01
103C	10	<50	10	500	70	<200	8	374	1.8	3.0	<2	.70	.06	.05
1030	<10	<50	<10	>10,000	20	<200	137	25,900	325.0	<2.0	13	44.00	.82	.03
103E	30	<50	30	7,000	300	<200	39	4,870	43.2	<2.0	4	<.10	<.08	.05
103F	15	<50	<10	300	50	<200	47	280	1.0	<2.0	<2	.60	.18	<.01
107A	30	<50	70	<200	500	<200	10	105	.5	4.0	<2	<.10	<.02	.12
107B	30	<50	50	<200	500	<200	<5	139	.8	<2.0	11	.10	.02	.03
107C	<10	<50	<10	300	<10	<200	<5	151	3.9	574.0	20	<.10	.16	.12
107C	<10	<50	<10	<200	15	<200	<5	24	1.9	520.0	<2	<.10	.15	.05
107D	70	<50	30	700	300	<200	<5	655	2.4	<2.0	6	<.10	.10	<.01
107E	<10	<50	<10	1,000	10	<200	<5	598	7.7	1,150.0	<2	<.10	.15	<.01
108A	<10	<50	15	<200	30	<200	<5	19	<.1	<2.0	<2	--	<.02	.13
108B	20	<50	<10	<200	150	<200	<5	27	.1	<2.0	<2	--	<.02	.05
108C	10	<50	<10	300	30	<200	<5	183	<2.0	.8	<2	<.10	.04	<.01
110A	<10	<50	<10	<200	<10	<200	<5	25	.4	<2.0	<2	--	<.02	.04
110B	30	<50	20	<200	300	<200	<5	36	<.1	<2.0	3	--	.02	.02
110C	30	<50	20	<200	150	<200	<5	97	.2	<2.0	<2	--	<.02	<.01
110D	50	<50	30	<200	200	<200	<5	61	<.1	<2.0	2	--	<.02	.08
110E	70	<50	30	<200	300	<200	<5	84	.2	<2.0	<2	--	.04	.06
110F	20	<50	15	200	30	<200	30	269	3.0	4.0	4	.90	<.08	.05
110G	50	<50	50	<200	150	<200	<5	89	.3	<2.0	<2	--	.11	.09
121A	<10	<50	<10	<200	<10	<200	<5	<2	<.1	<2.0	<2	--	<.02	.03
123A	<10	<50	<10	<200	15	<200	<5	42	1.7	<2.0	4	--	.02	.06
123B	100	<50	30	<200	300	<200	<5	27	.2	<2.0	<2	--	.03	.01
123C	<10	<50	<10	<200	30	<200	<5	21	.2	2.0	<2	--	.02	<.01
123D	70	<50	20	<200	70	<200	<5	25	.4	3.0	<2	--	.03	.05
124A	<10	<50	30	<200	200	<200	<5	12	.1	<2.0	<2	--	.05	.01
128A	<10	<50	15	<200	100	<200	6	37	.1	<2.0	<2	--	<.02	.05
128B	10	<50	10	<200	100	<200	29	21	<.1	<2.0	<2	<.10	.07	.06
130A	<10	<50	<10	<200	15	<200	<5	3	.1	<2.0	7	--	.17	.09
130B	<10	<50	<10	<200	200	<200	<5	17	.1	<2.0	3	--	<.02	.02
130C	<10	<50	<10	<200	30	<200	147	44	.1	<2.0	7	.60	.29	.05
132A	20	<50	50	<200	300	<200	<5	30	.5	<2.0	3	--	.02	.01
132B	15	<50	<10	<200	20	<200	6	7	<2.0	<.1	<2	N	<.02	.01
132C	20	<50	<10	<200	15	<200	10	36	.8	<2.0	10	<.10	.10	.06
132D	<10	<50	<10	<200	<10	<200	<5	<2	.1	<2.0	11	<.10	<.02	.02
133A	<10	<50	<10	<200	10	<200	8	64	.3	<2.0	20	.70	1.30	.05
133B	15	<50	<10	700	30	<200	16	277	.6	<2.0	41	<.10	.63	.02
133C	30	<50	50	<200	200	<200	<5	64	<.1	3.0	<2	--	.04	.01
133D	200	<50	15	<200	50	<200	<5	40	.4	<2.0	2	--	.03	.02
134A	30	<50	15	<200	150	<200	<5	21	1.8	<2.0	7	--	<.02	.08
134B	30	<50	30	<200	100	<200	<5	10	.2	<2.0	<2	--	<.02	.14
134C	70	<50	30	<200	200	<200	<5	28	<.1	<2.0	4	--	.02	.04
134D	300	<50	30	<200	70	<200	<5	39	1.1	<2.0	2	--	.02	.07

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Latitude	Longitude	Fe-ppt. S	Mg-ppt. S	Ca-ppt. S	Ti-pct. S	Mn-ppt. S	Ag-ppt. S	As-ppt. S	Au-ppt. S	B-ppt. S	Ba-ppt. S	Re-ppt. S
134E	34 59 17	115 30 11	3.00	2.00	3.00	.300	300	<.5	<700	<15	<10	700	1.5
134F	34 59 17	115 30 11	.30	5.00	3.00	<.002	300	150.0	<700	<15	<10	<20	<1.0
134G	34 59 17	115 30 11	.50	7.00	10.00	.003	1,000	300.0	<700	<15	<10	>5,000	<1.0
136A	34 58 45	115 30 38	7.00	3.00	3.00	.700	700	<.5	<700	<15	<10	70	1.5
136B	34 58 45	115 30 38	2.00	1.00	5.00	.200	300	<.5	<700	<15	10	30	1.5
138A	34 58 45	115 30 38	.15	.15	15.00	<.002	300	<.5	<700	<15	<10	<20	<1.0
138B	34 58 45	115 30 38	.50	.70	>20.00	.015	700	.5	<700	<15	<10	70	<1.0
138C	34 58 45	115 30 38	5.00	2.00	1.50	.500	700	5.0	<700	<15	<10	200	1.5
138D	34 58 18	115 30 43	.70	.70	>20.00	.150	200	<.5	<700	<15	<10	100	<1.0
140A	34 58 21	115 31 16	1.00	1.00	.15	.200	150	<.5	<700	<15	15	500	2.0
140B	34 58 21	115 31 16	.07	7.00	.15	.003	50	<.5	<700	<15	<10	50	<1.0
140C	34 58 21	115 31 16	.70	.70	.15	.150	200	<.5	<700	<15	10	300	3.0
143A	34 57 6	115 30 14	3.00	.70	1.50	.300	300	<.5	<700	<15	15	700	1.5
143B	34 57 6	115 30 14	.15	.05	.07	.050	20	<.5	<700	<15	10	70	<1.0
144A	34 56 56	115 31 11	.30	.07	<.05	.030	15	5.0	<700	<15	50	700	<1.0
144B	34 56 56	115 31 11	.70	.50	.07	.150	70	7.0	<700	<15	100	500	2.0
147A	34 55 22	115 31 59	.70	.70	.15	.100	150	<.5	<700	<15	10	500	1.5
147B	34 55 22	115 31 59	.70	.20	.15	.070	30	<.5	<700	<15	10	300	1.5
147C	34 55 22	115 31 59	.70	.30	.15	.150	150	<.5	<700	<15	10	500	2.0
147D	34 55 15	115 32 5	2.00	.30	.15	.200	70	<.5	<700	<15	10	1,500	1.5
147E	34 55 15	115 32 5	1.00	1.00	.15	.150	150	<.5	<700	<15	10	500	1.0
148A	34 55 15	115 32 22	3.00	3.00	.50	.300	200	<.5	<700	<15	<10	1,000	1.5
148B	34 55 15	115 32 22	1.50	7.00	20.00	.150	1,000	.7	<700	<15	150	200	<1.0
153A	35 2 57	115 26 0	.70	.20	.50	.150	300	<.5	<700	<15	10	200	3.0
154A	35 3 7	115 26 0	.07	<.02	.15	.002	50	<.5	<700	<15	<10	70	<1.0
160A	35 0 48	115 24 25	.70	.30	.30	.070	500	<.5	<700	<15	20	70	7.0
161A	35 0 39	115 23 49	1.00	.30	.50	.100	100	<.5	<700	<15	20	100	3.0
165A	34 58 47	115 25 8	3.00	7.00	10.00	.200	1,500	<.5	<700	<15	<10	70	1.0
165B	34 58 47	115 25 8	3.00	3.00	3.00	.700	700	<.5	<700	<15	<10	1,500	1.5
165X	34 59 20	115 25 5	.05	<.02	.07	<.002	30	7.0	<700	<15	<10	30	<1.0
165X2	34 59 20	115 25 5	.50	.10	.70	.030	50	<.5	<700	<15	<10	700	1.5
165X3	34 59 20	115 25 5	.70	.03	.07	.030	1,000	<.5	<700	<15	<10	300	<1.0
165Y1	34 59 20	115 25 5	>20.00	.30	.10	.070	70	5.0	<700	<15	10	100	1.0
165Y2	34 59 15	115 25 10	1.00	.30	.15	.100	300	<.5	<700	<15	<10	300	1.5
165Y3	34 59 15	115 25 10	10.00	.15	.07	.020	200	15.0	<700	<15	<10	500	<1.0
165Y4	35 59 20	115 25 5	3.00	.05	.15	.003	1,500	1.5	<700	<15	10	300	<1.0
166A	34 57 57	115 25 50	7.00	.70	7.00	.500	1,500	1.0	<700	<15	15	1,000	1.5
166B	34 57 57	115 25 50	7.00	.50	10.00	.150	3,000	1.5	<700	<15	<10	700	<1.0
166C	34 57 57	115 25 50	7.00	7.00	5.00	.500	700	<.5	<700	<15	<10	2,000	<1.0
168A	34 57 23	115 25 48	.30	.07	.70	.030	70	<.5	<700	<15	<10	500	2.0
168Z	34 57 15	115 25 50	.30	3.00	15.00	.020	100	<.5	<700	<15	<10	500	<1.0
169A	34 55 41	115 25 39	5.00	1.50	3.00	.700	700	<.5	<700	<15	<10	2,000	1.5
169B	34 55 41	115 25 39	.70	.15	.50	.070	300	<.5	<700	<15	10	500	2.0
169C	34 55 41	115 25 39	1.50	.30	.70	.300	150	<.5	<700	<15	10	3,000	7.0
175A	34 58 48	115 26 38	.10	.15	5.00	.300	70	.5	<700	<15	10	30	3.0

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Bi-ppm S	Cd-ppm S	Co-ppm S	Cr-ppm S	Cu-ppm S	La-ppm S	Mo-ppm S	Nb-ppm S	Ni-ppm S	Pb-ppm S	Sb-ppm S	Sc-ppm S	Sn-ppm S	Sr-ppm S
134E	<10	<30	7	<5	30	5	70	<5	<20	10	<100	10	<10	300
134F	<10	700	<5	<10	200	200	<30	<5	<20	<5	<100	<5	<10	<100
134G	<10	150	<5	<10	150	150	<30	7	<20	<5	<100	<5	<10	700
136A	<10	<30	30	70	7	30	<30	<5	<20	30	<100	30	<10	300
136B	<10	<30	7	50	<5	<30	<30	<5	<20	20	<100	7	<10	300
138A	<10	<30	<5	<10	<5	<30	<30	<5	<20	<5	<100	<5	<10	150
138B	<10	<30	<5	<10	7	<30	<30	<5	<20	5	<100	<5	<10	300
138C	<10	<30	15	20	30	50	<30	<5	<20	20	<100	20	<10	150
138D	<10	<30	<5	15	15	<30	<30	<5	<20	7	<100	7	<10	150
140A	<10	<30	<5	<10	<5	70	<30	<5	<20	7	<100	7	<10	100
140B	<10	<30	<5	<10	<5	<30	<30	<5	<20	<5	<100	<5	<10	150
140C	<10	<30	<5	<10	<5	70	<30	<5	<20	<5	<100	5	<10	<100
143A	<10	<30	7	30	15	70	<30	<5	<20	15	<100	7	<10	700
143B	<10	<30	<5	<10	20	<30	<30	<5	<20	<5	<100	<5	<10	<100
144A	<10	<30	<5	<10	50	50	50	<5	<20	200	<100	<5	<10	<100
144B	<10	<30	<5	<10	200	200	70	<5	<20	300	<100	5	<10	<100
147A	<10	<30	<5	<10	<5	<30	50	<5	<20	10	<100	<5	<10	150
147B	<10	<30	<5	<10	<5	70	<30	<5	<20	15	<100	<5	<10	150
147C	<10	<30	<5	<10	<5	70	<30	<5	<20	10	<100	<5	<10	150
147D	<10	<30	<5	<10	5	70	70	<5	<20	10	<100	5	<10	300
147E	<10	<30	<5	<10	5	100	<30	<5	<20	<10	<100	5	<10	150
148A	<10	<30	7	15	10	70	<30	<5	<20	15	<100	15	<10	300
148B	<10	<30	<5	150	10	<30	<30	<5	<20	30	<100	<5	<10	300
153A	<10	<30	<5	<10	<5	100	<30	<5	<20	50	<100	5	<10	100
154A	<10	<30	<5	<10	<5	<30	<30	<5	<20	<5	<100	<5	<10	<100
160A	<10	<30	<5	<10	<5	70	<30	<5	<20	30	<100	<5	<10	<100
161A	<10	<30	<5	<10	<5	100	<30	<5	<20	30	<100	<5	<10	30
165A	<10	<30	15	20	<5	<30	<30	<5	<20	7	<100	<5	<10	150
165B	<10	<30	15	<10	20	100	<30	<5	<20	15	<100	15	<10	1,000
165X	<10	<30	<5	<10	5	<30	<30	<5	<20	7,000	<100	<5	<10	<100
165X2	<10	<30	<5	<10	50	<30	<30	<5	<20	30	<100	<5	<10	300
165X3	<10	<30	<5	<10	5	<30	<30	<5	<20	70	<100	<5	<10	<100
165Y1	20	<30	50	30	150	<30	<30	<5	<20	200	<100	<5	<10	<100
165Y2	<10	<30	<5	10	<5	30	<30	<5	<20	7	<100	<5	<10	200
165Y3	20	<30	70	<10	70	<30	<30	<5	<20	300	<100	<5	<10	<100
165Y4	<10	<30	15	<10	30	<30	<30	<5	<20	7	<100	<5	<10	<100
166A	<10	<30	50	150	70	30	30	7	<20	700	<100	50	<10	150
166B	<10	<30	30	70	150	<30	<30	5	<20	7,000	<100	30	<10	150
166C	<10	<30	50	<10	300	30	30	<5	<20	30	<100	20	<20	1,500
168A	<10	<30	<5	<10	7	<30	<30	<5	<20	70	<100	<5	<10	500
168Z	<10	<30	<5	<10	5	<30	<30	<5	<20	10	<100	<5	<10	1,000
169A	<10	<30	10	10	10	300	<30	<5	<20	30	<100	30	<10	700
169B	<10	<30	<5	<10	<5	70	<30	<5	<20	50	<100	<5	<10	150
169C	<10	<30	<5	<10	10	150	<30	<5	<20	15	<100	10	<10	300
175A	<10	<30	<5	15	10	<30	<30	<5	<20	150	<100	<5	<10	300

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s	Th-ppm s	As-ppm icp	Zn-ppm icp	Cd-ppm icp	Ri-ppm icp	Sb-ppm icp	Au-ppm icp	Hg-ppm aa	F-pct. si
134E	70	<50	15	<200	150	<200	<5	42	.4	<2.0	2	--	.02	.08
134F	<10	<50	<10	10,000	10	<200	<5	12,800	813.0	<2.0	38	<.10	1.20	.22
134G	<10	<50	<10	5,000	<10	<200	43	7,060	145.0	<2.0	71	.10	3.40	.09
136A	150	<50	15	<200	70	<200	<5	28	.3	<2.0	<2	--	<.02	.02
136R	100	<50	<10	<200	15	<200	<5	<2	<2.0	<.1	<2	N	<.02	<.01
138A	<10	<50	<10	<200	<10	<200	<5	9	.3	<2.0	<2	--	.02	.12
138B	<10	<50	<10	<200	15	<200	8	20	.6	<2.0	<2	--	.02	.03
138C	100	<50	30	<200	200	<200	<5	58	.9	<2.0	22	<.10	.03	.01
138D	20	<50	15	<200	50	<200	<5	10	<2.0	.3	<2	N	.02	.02
140A	30	<50	20	<200	200	<200	<5	30	<2.0	<.1	<2	N	<.02	.09
140B	<10	<50	<10	<200	15	<200	<5	10	.2	<2.0	7	--	<.02	.05
140C	15	<50	15	<200	200	<200	<5	23	<.1	<2.0	<2	--	<.02	.05
143A	70	<50	15	<200	150	<200	<5	20	.2	<2.0	<2	--	.06	.01
143B	10	<50	<10	<200	30	<200	<5	<2	<.1	<2.0	<2	--	<.02	.05
144A	<10	<50	<10	<200	50	<200	<5	20	.3	<2.0	3	<.10	.05	.04
144B	10	<50	30	<200	150	<200	7	111	.9	<2.0	11	<.10	.08	.01
147A	<10	<50	30	<200	150	<200	<5	18	<.1	<2.0	<2	--	.02	.01
147B	10	<50	20	<200	150	<200	<5	24	<.1	<2.0	<2	--	<.02	.14
147C	15	<50	30	<200	200	<200	7	15	<.1	<2.0	<2	--	<.02	.04
147D	20	<50	20	<200	150	<200	18	23	.3	<2.0	<2	<.10	<.02	.04
147E	15	<50	20	<200	200	<200	6	9	<.1	<2.0	<2	--	<.02	.05
148A	150	<50	30	<200	300	<200	7	22	<2.0	<.1	<2	N	<.02	.07
148B	15	<50	<10	700	30	<200	23	580	4.2	3.0	5	<.10	.02	.10
153A	10	<50	30	<200	150	<200	<5	15	<.1	<2.0	<2	--	<.02	.12
154A	<10	<50	<10	<200	15	<200	<5	<2	.1	<2.0	<2	--	<.02	.10
160A	<10	<50	50	<200	300	<200	<5	57	.2	<2.0	<2	--	.05	.04
161A	<10	<50	50	<200	300	<200	<5	27	.2	<2.0	<2	--	.02	.01
165A	30	<50	20	<200	70	<200	<5	29	<.1	<2.0	<2	--	<.02	.02
165B	150	<50	15	<200	70	<200	<5	49	.3	<2.0	<2	--	.03	.06
165X	15	<50	<10	<200	<10	<200	<5	15	2.1	3.0	6	.20	.07	.05
165X2	<10	<50	<10	<200	70	<200	<5	6	<.1	<2.0	<2	<.10	<.02	.07
165X3	15	<50	<10	<200	30	<200	7	32	.6	<2.0	<2	<.10	.03	<.01
165Y1	300	<50	10	500	15	<200	91	220	9.2	9.0	<2	.50	.02	.01
165Y2	50	<50	10	<200	70	<200	<5	26	.4	<2.0	<2	<.10	<.02	.01
165Y3	70	<50	<10	<200	<10	<200	47	93	4.4	16.0	<2	1.90	.03	.03
165Y4	50	<50	<10	1,500	<10	<200	31	870	13.0	2.0	<2	<.10	.40	.03
166A	150	<50	70	<200	70	<200	<5	125	1.2	<2.0	<2	.30	.15	.02
166B	70	<50	15	<200	30	<200	25	157	2.2	<2.0	<2	.10	.02	<.01
166C	300	<50	15	<200	30	<200	<5	39	.4	<2.0	2	--	<.02	.08
168A	<10	<50	<10	<200	10	<200	<5	6	<.1	<2.0	<2	--	.02	.04
168Z	15	<50	<10	<200	20	<200	<5	6	.1	<2.0	3	--	.23	.03
169A	150	<50	70	<200	300	<200	<5	74	.3	<2.0	<2	--	<.02	.01
169B	<10	<50	15	<200	70	<200	<5	11	<2.0	<.1	<2	N	<.02	.30
169C	15	<50	70	<200	500	<200	<5	9	<.1	<2.0	<2	--	<.02	.40
175A	70	<50	20	<200	300	<200	<5	3	<.1	<2.0	<2	--	.08	.02

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Latitude	Longitude	Fe-ppt. S	Mg-ppt. S	Ca-ppt. S	Ti-pct. S	Mn-ppt. S	Ag-ppt. S	As-ppt. S	Au-ppt. S	B-ppt. S	Pb-ppt. S	Re-ppt. S
175B	34 58 48	115 26 38	3.00	2.00	2.00	.500	700	<.5	<700	<15	<10	2,000	1.5
175C	34 58 48	115 26 38	7.00	7.00	3.00	.700	1,000	<.5	<700	<15	<10	1,000	<1.0
175D	34 58 48	115 26 38	1.50	<.02	.10	.003	150	50.0	<700	<15	<10	50	1.5
175E	34 58 48	115 26 38	3.00	1.50	2.00	.300	700	<.5	<700	<15	<10	2,000	2.0
175V	34 58 48	115 26 38	5.00	1.50	.70	.500	1,500	1.5	<700	<15	10	1,000	2.0
175X	34 58 48	115 26 38	3.00	.03	.07	.020	3,000	2.0	<700	<15	10	300	<1.0
175Y	34 58 48	115 26 38	2.00	.03	.07	.015	300	20.0	<700	<15	<10	150	<1.0
175Z	34 58 48	115 26 38	1.50	<.02	.15	<.002	700	7.0	<700	<15	<10	70	<1.0
176A	34 58 57	115 26 12	3.00	1.50	3.00	.300	700	<.5	<700	<15	<10	1,000	1.5
176B	34 58 57	115 26 15	.50	.10	.15	.050	70	<.5	<700	<15	15	200	<1.0
176C	34 58 57	115 26 15	3.00	1.50	5.00	.300	700	<.5	<700	<15	<10	300	2.0
177A	34 58 45	115 26 12	.70	.15	.30	.030	150	<.5	<700	<15	<10	150	<1.0
177B	34 58 45	115 26 12	3.00	1.50	2.00	.300	700	<.5	<700	<15	<10	2,000	3.0
177C	34 58 45	115 26 12	3.00	.70	.70	.500	700	3.0	<700	<15	20	300	1.5
177D	34 58 45	115 26 12	5.00	2.00	3.00	.300	1,000	<.5	<700	<15	<10	3,000	1.5
177X	34 58 45	115 26 17	.70	.15	.15	.050	150	1.0	<700	<15	<10	2,000	1.5
177Y	34 58 45	115 26 17	.70	.03	<.05	.010	30	2.0	<700	<15	<10	200	<1.0
177Z	34 58 45	115 26 17	.20	.07	.07	.015	150	5.0	<700	<15	15	150	<1.0
183A	35 0 46	115 29 11	3.00	.70	.20	.300	150	<.5	<700	<15	<10	150	1.0
183B	35 0 46	115 29 11	3.00	1.50	1.50	.300	300	<.5	<700	<15	<10	300	1.5
183C	35 0 46	115 29 11	5.00	.20	.15	.300	150	<.5	<700	<15	<10	150	1.0
183D	35 0 46	115 29 11	.70	.07	.05	.070	30	<.5	<700	<15	10	70	<1.0
183E	35 0 42	115 29 11	7.00	5.00	3.00	.500	1,000	<.5	<700	<15	<10	300	3.0
184A	34 58 29	115 30 28	3.00	2.00	3.00	.300	300	<.5	<700	<15	<10	150	3.0
185A	34 57 59	115 31 1	.70	.15	.15	.070	150	<.5	<700	<15	15	300	1.5
186A	34 58 2	115 31 13	.70	.70	.15	.150	100	<.5	<700	<15	15	2,000	1.0
187A	34 57 45	115 30 54	.30	.15	3.00	.007	150	70.0	<700	<15	<10	100	<1.0
187B	34 57 45	115 30 54	3.00	.05	.20	.030	30	1,000.0	<700	<15	<10	3,000	1.0
188A	34 56 52	115 30 21	3.00	1.50	3.00	.500	700	1.5	<700	<15	15	1,000	1.5
188B	34 56 52	115 30 21	3.00	1.50	1.50	.500	700	<.5	<700	<15	<10	300	1.5
189A	34 56 23	115 30 44	.70	.50	.07	.050	200	.5	<700	<15	20	2,000	1.0
189B	34 56 16	115 30 42	2.00	7.00	10.00	1.000	500	<.5	<700	<15	<10	500	1.0
191A	34 55 47	115 30 45	1.00	.50	.20	.200	100	1.0	<700	<15	10	1,500	1.0
191B	34 55 43	115 30 48	.70	.20	.15	.200	200	<.5	<700	<15	<10	1,500	2.0
191C	34 55 42	115 30 52	.70	.50	.15	.150	200	<.5	<700	<15	15	3,000	3.0
191X	34 55 47	115 30 42	.70	.15	.15	.150	70	<.5	<700	<15	<10	1,500	1.0
192X	34 55 31	115 31 35	5.00	.15	.15	.150	50	<.5	<700	<15	<10	3,000	1.5
195A	34 54 56	115 32 55	3.00	1.50	1.50	.300	300	<.5	<700	<15	<10	1,500	1.5
196A	34 56 5	115 33 7	7.00	3.00	3.00	.500	700	<.5	<700	<15	<10	700	<1.0
196A	34 56 5	115 33 7	2.00	7.00	.30	.300	200	<.5	<700	<15	<10	200	1.5
197A	34 55 15	115 33 18	.30	7.00	20.00	.030	100	<.5	<700	<15	<10	30	<1.0
197B	34 55 15	115 33 18	1.50	3.00	3.00	.150	300	<.5	<700	<15	15	700	<1.0
198X	34 55 12	115 33 42	.70	.15	.15	.150	10	<.5	<700	<15	<10	700	1.0
200A	35 0 5	115 29 58	.30	.15	.30	.020	150	<.5	<700	<15	10	70	<1.0
200R	35 0 5	115 29 58	.50	3.00	15.00	.020	70	<.5	<700	<15	<10	50	<1.0

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Bi-ppm S	Cd-ppm S	Co-ppm S	Cr-ppm S	Cu-ppm S	La-ppm S	Mo-ppm S	Nb-ppm S	Ni-ppm S	Pb-ppm S	Sb-ppm S	Sc-ppm S	Sn-ppm S	Sr-ppm S
175B	<10	<30	15	<10	30	150	<5	<20	15	30	<100	15	<10	700
175C	<10	<30	30	70	70	30	<5	<20	70	<10	<100	30	<10	300
175D	20	<30	<5	<10	300	<30	70	<20	7	7,000	<100	<5	<10	<100
175E	<10	<30	15	<10	15	100	<5	<20	10	30	<100	15	<10	700
175V	<10	<30	15	15	150	70	<5	<20	20	700	<100	20	<10	100
175X	30	<30	15	<10	70	30	<5	<20	10	200	<100	<5	<10	<100
175Y	<10	<30	15	<10	700	<30	<5	<20	5	1,000	<100	<5	<10	<100
175Z	<10	<30	15	<10	700	<30	<5	<20	5	2,000	<100	<5	<10	<100
176A	<10	<30	15	30	7	70	<5	<20	20	<10	<100	20	<10	1,000
176B	<10	<30	5	<10	70	<30	<5	<20	<5	<10	<100	<5	<10	<100
176C	<10	<30	10	15	7	50	<5	<20	20	20	<100	15	<10	2,000
177A	<10	<30	<5	<10	300	<30	<5	<20	<5	30	<100	<5	<10	<100
177B	<10	<30	10	<10	15	70	<5	<20	7	30	<100	15	<10	1,000
177C	<10	<30	7	10	200	70	<5	<20	15	200	<100	15	<10	<100
177D	<10	<30	15	10	30	70	<5	<20	7	20	<100	20	<10	2,000
177X	<10	<30	<5	<10	<5	<30	<5	<20	<5	15	<100	<5	<10	200
177Y	<10	<30	<5	<10	50	<30	<5	<20	<5	70	<100	<5	<10	<100
177Z	<10	<30	<5	<10	700	<30	<5	<20	<5	500	<100	<5	<10	<100
183A	<10	<30	<5	10	<5	50	<5	<20	5	<10	<100	15	<10	150
183B	<10	<30	7	20	7	50	<5	20	7	15	<100	15	<10	150
183C	<10	<30	<5	15	7	70	<5	<20	5	<10	<100	15	<10	<100
183D	<10	<30	<5	<10	<5	30	<5	<20	<5	<10	<100	<5	<10	<100
183E	<10	<30	30	50	30	30	<5	<20	70	30	<100	30	<10	300
184A	<10	<30	7	30	70	30	<5	20	15	<10	<100	15	<10	700
185A	<10	<30	<5	<10	7	30	70	20	<5	50	<100	<5	<10	<100
186A	<10	<30	<5	<10	<5	150	<5	30	<5	<10	<100	7	<10	150
187A	<10	<30	<5	30	300	<30	<5	<20	7	7,000	300	<5	<10	200
187B	<10	<30	5	20	10,000	<30	30	<20	15	>20,000	700	<5	<10	70
188A	<10	<30	20	30	70	100	<5	<20	30	30	<100	20	<10	500
188B	<10	<30	10	15	7	70	<5	<20	15	<10	<100	7	<10	300
189A	<10	<30	<5	<10	5	<30	<5	<20	<5	<10	<100	5	<10	<100
189B	<10	<30	7	200	<5	<30	<5	<20	30	30	<100	50	<10	1,000
191A	<10	<30	<5	<10	5	100	7	20	<5	20	<100	5	<10	200
191B	<10	<30	<5	<10	5	50	<5	30	<5	<10	<100	7	<10	<100
191C	<10	<30	<5	<10	7	70	<5	<20	<5	15	<100	5	<10	200
191X	<10	<30	<5	<10	5	50	<5	<20	<5	<10	<100	<5	<10	300
192X	<10	<30	<5	<10	30	<30	15	<20	<5	30	<100	<5	<10	200
195A	<10	<30	15	15	30	150	<5	20	15	30	<100	15	<10	700
196A	<10	<30	20	<10	30	30	<5	<20	30	30	<100	15	<10	700
196A	<10	<30	7	15	50	50	<5	<20	15	10	<100	15	<10	150
197A	<10	<30	<5	20	5	<30	<5	<20	5	20	<100	<5	<10	500
197B	<10	<30	<5	70	15	30	<5	<20	15	30	<100	7	<10	300
198X	<10	<30	<5	<10	<5	100	<5	<20	<5	<10	<100	5	<10	150
200A	<10	<30	<5	<10	<5	<30	<5	<20	<5	<10	<100	<5	<10	<100
200B	<10	<30	<5	<10	5	30	<5	<20	<5	<10	<100	<5	<10	150

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	V-ppm S	W-ppm S	Y-ppm S	Zn-ppm S	Zr-ppm S	Th-ppm S	As-ppm icp	Zn-ppm icp	Cd-ppm icp	Bi-ppm icp	Sb-ppm icp	Au-ppm icp	Hg-ppm aa	F-pct. sl
175B	150	<50	50	<200	200	<200	<5	73	.3	<2.0	3	--	.03	.14
175C	150	<50	30	<200	150	<200	<5	22	.1	5.0	<2	--	<.02	.06
175D	70	<50	<10	700	<200	<200	<5	254	2.1	22.0	15	1.60	.10	.08
175E	150	<50	30	<200	150	<200	<5	53	<.1	<2.0	3	--	<.02	.04
175V	200	<50	20	<200	300	<200	<5	57	1.8	<2.0	3	<.10	<.02	<.01
175X	50	<50	<10	<200	15	<200	<5	51	2.3	41.0	<2	.10	.02	.07
175Y	70	<50	<10	<200	30	<200	<5	20	.4	<2.0	3	3.00	.03	.16
175Z	70	<50	10	<200	<10	<200	<5	44	1.0	<2.0	6	10.00	.08	.01
176A	150	<50	30	<200	300	<200	<5	68	.2	<2.0	<2	--	<.02	.01
176B	10	<50	<10	<200	30	<200	<5	7	<2.0	<.1	<2	N	<.02	.02
176C	200	<50	15	<200	150	<200	<5	43	<.1	<2.0	3	--	<.02	.08
177A	15	<50	<10	<200	30	<200	<5	10	<.1	<2.0	<2	--	<.02	.01
177B	100	<50	20	<200	300	<200	<5	40	.3	<2.0	2	--	<.02	.08
177C	150	<50	20	<200	150	<200	<5	354	1.1	<2.0	<2	--	.03	.01
177D	150	<50	50	<200	200	<200	<5	41	.3	<2.0	<2	--	<.02	.07
177X	<10	<50	<10	<200	50	<200	<5	9	<.1	<2.0	<2	<.10	<.02	.10
177Y	15	<50	<10	<200	10	<200	<5	4	<.1	<2.0	<2	.30	<.02	.07
177Z	150	<50	<10	<200	20	<200	<5	15	.3	3.0	<2	.10	.03	.02
183A	70	<50	30	<200	300	<200	<5	36	.2	<2.0	<2	--	<.02	.01
183B	70	<50	30	<200	300	<200	<5	36	.3	<2.0	<2	--	<.02	.02
183C	20	<50	50	<200	200	<200	<5	22	.3	<2.0	<2	--	.04	.05
183D	<10	<50	15	<200	70	<200	<5	5	<.1	<2.0	<2	--	<.02	.06
183E	150	<50	15	<200	150	<200	<5	63	.1	<2.0	8	--	<.02	.06
184A	70	<50	30	<200	700	<200	<5	6	<.1	<2.0	<2	--	.02	.03
185A	<10	<50	30	<200	150	<200	23	13	.1	<2.0	<2	<.10	<.02	.24
186A	<10	<50	30	<200	300	<200	<5	6	<.1	<2.0	<2	--	.03	.07
187A	15	<50	<10	<200	<10	<200	108	124	3.8	<2.0	193	<.10	.65	.02
187B	15	<50	<10	1,000	30	<200	386	526	11.0	<2.0	600	<.10	4.90	.04
188A	150	<50	30	<200	300	<200	<5	83	<2.0	.9	<2	<.10	<.02	.01
188B	100	<50	20	<200	300	<200	<5	48	.1	<2.0	<2	--	<.02	.02
189A	<10	<50	15	<200	70	<200	10	13	.2	<2.0	<2	<.10	<.02	.08
189B	300	<50	30	<200	200	<200	<5	28	<.1	<2.0	<2	--	<.02	.05
191A	20	<50	20	<200	150	<200	<5	8	<.1	<2.0	<2	<.10	<.02	.13
191B	15	<50	30	<200	300	<200	<5	9	<.1	<2.0	<2	--	<.02	.04
191C	15	<50	15	<200	200	<200	8	12	<.1	<2.0	<2	--	.03	.06
191X	15	<50	10	<200	150	<200	13	8	<.1	<2.0	<2	<.10	<.02	.04
192X	15	<50	<10	<200	150	<200	350	13	.6	<2.0	3	<.10	.02	.06
195A	150	<50	30	<200	300	<200	<5	35	.3	<2.0	<2	--	.03	.06
196A	200	<50	15	<200	70	<200	<5	73	.3	<2.0	<2	--	<.02	.05
196A	150	<50	15	<200	200	<200	<5	13	<.1	<2.0	6	--	.04	.09
197A	15	<50	<10	<200	30	<200	<5	21	.3	<2.0	<2	--	<.02	.06
197B	70	<50	15	<200	200	<200	43	100	.2	<2.0	3	<.10	.02	.17
198X	<10	<50	30	<200	200	<200	17	<2	<.1	<2.0	<2	<.10	<.02	.07
200A	10	<50	<10	<200	20	<200	<5	8	.2	<2.0	<2	<.10	<.02	.09
200B	15	<50	15	<200	30	<200	11	5	.5	<2.0	5	<.10	.03	.02

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Latitude	Longitude	Fe-ppt. S	Mg-pct. S	Ca-pct. S	Ti-pct. S	Mn-ppt. S	Ag-ppt. S	As-ppt. S	Au-ppt. S	B-ppt. S	Ba-ppt. S	Be-ppt. S
201	35 0 20	115 30 0	.70	3.00	15.00	.003	300	<.5	<700	<15	<10	<20	<1.0
202	35 0 20	115 29 58	.70	.30	.70	.070	150	<.5	<700	<15	<10	70	1.5
203	35 0 30	115 29 58	1.50	1.50	1.50	.200	150	<.5	<700	<15	<10	70	1.0
204	35 0 41	115 29 59	.50	.05	.15	.050	150	<.5	<700	<15	<10	70	1.0
205	35 0 40	115 29 58	2.00	.07	.15	.300	500	<.5	<700	<15	<10	1,000	<1.0
206	35 0 50	115 29 58	.50	7.00	7.00	<.002	700	<.5	<700	<15	<10	30	<1.0
207	35 0 45	115 29 57	.15	<.02	.05	.007	70	<.5	<700	<15	<10	70	<1.0
210A	34 59 30	115 24 0	.50	.05	.70	.150	100	<.5	<700	<15	<10	70	2.0
210B	34 59 30	115 24 0	>20.00	.27	.15	.200	15	<.5	<700	<15	<10	100	<1.0
210C	34 59 30	115 24 0	3.00	.70	1.50	.300	150	<.5	<700	<15	<10	70	1.5
211A	35 2 47	115 30 12	1.00	.20	.30	.150	100	<.5	<700	<15	<10	1,500	1.5
211B	35 2 47	115 30 12	.70	<.02	<.05	<.002	50	2.0	<700	<15	<10	30	<1.0
211C	35 2 47	115 30 12	3.00	.30	<.05	.200	150	<.5	<700	<15	<10	500	<1.0
211D	35 2 47	115 30 12	.30	.10	.15	.100	30	<.5	<700	<15	<10	700	<1.0
199A	34 55 30	115 34 30	>20.00	1.00	1.00	.020	700	<.5	N	N	N	N	N
199B	34 55 30	115 34 30	>20.00	1.50	.50	.010	500	N	N	N	10	N	N
199C	34 55 30	115 34 30	>20.00	3.00	1.00	.700	200	N	N	N	50	30	N
199D	34 55 30	115 34 30	>20.00	2.00	15.00	.020	2,000	N	N	N	N	N	N
199E	34 55 30	115 34 30	>20.00	3.00	1.00	.020	500	N	N	N	20	<20	N
199F	34 55 30	115 34 30	>20.00	7.00	10.00	.070	1,500	N	N	N	N	20	N
400A	35 0 20	115 31 30	.20	.03	<.05	.020	150	<.5	<700	<15	<10	150	<1.0
400B	35 0 20	115 31 30	1.00	.20	.15	.200	200	<.5	<700	<15	<10	1,000	1.0
400C	35 0 20	115 31 30	3.00	.30	.15	.300	700	<.5	<700	<15	15	700	1.5
400D	35 0 20	115 31 30	.70	.20	.15	.150	300	<.5	<700	<15	10	1,000	<1.0
400E	35 0 10	115 31 30	3.00	1.50	1.00	.500	500	<.5	<700	<15	<10	700	<1.0
400F	35 0 10	115 31 30	1.50	1.00	5.00	.200	300	700.0	<700	30	30	200	2.0
400G	35 0 20	115 31 30	.70	.70	20.00	.100	300	7.0	<700	<15	<10	100	<1.0
400H	35 0 10	115 31 30	.50	.05	.10	.150	100	.7	<700	<15	10	150	<1.0
400J	35 0 10	115 31 30	7.00	1.50	.30	.500	300	<.5	<700	<15	100	500	2.0
400L	35 0 10	115 31 30	.70	.15	.30	.100	150	.5	<700	<15	<10	700	<1.0
400Q	35 0 10	115 31 30	3.00	.15	.07	.300	30	<.5	<700	<15	<10	300	<1.0
500K	34 58 58	115 30 29	.20	7.00	7.00	.002	300	10.0	<700	<15	<10	<20	<1.0
70X	35 1 28	115 33 46	.30	<.02	<.05	<.002	<10	100.0	<700	15	<10	30	<1.0
B4CH123B	34 59 23	115 26 58	1.00	.50	10.00	.150	200	<.5	<700	<15	<10	2,000	<1.0
B4CH123C	34 59 23	115 26 58	2.00	.20	3.00	.030	300	<.5	<700	<15	<10	100	<1.0
B4CH125B	34 59 26	115 27 3	5.00	5.00	15.00	>1.000	500	<.5	<700	<15	<10	500	1.0
B84CH01	34 56 1	115 25 32	1.00	.03	.15	.070	20	.5	<700	<15	<10	50	1.0
B84CH03	34 58 24	115 27 5	5.00	.07	.15	.030	1,500	100.0	<700	<15	<10	500	<1.0
B84CH08A	34 58 59	115 26 39	3.00	.15	.15	.100	3,000	2.0	<700	<15	<10	300	<1.0
B84CH12	34 59 18	115 26 35	7.00	.50	.20	.200	200	20.0	<700	<15	10	700	3.0
B84CH121	34 57 47	115 24 51	3.00	5.00	7.00	.300	500	<.5	<700	<15	<10	200	1.5
B84CH124	34 59 25	115 26 54	2.00	1.00	15.00	.200	1,500	<.5	<700	<15	<10	1,500	<1.0
B84CH13A	34 59 18	115 26 35	3.00	.02	5.00	.150	300	<.5	<700	<15	<10	70	<1.0
B84CH13B	34 59 18	115 26 35	2.00	.15	.50	.700	150	<.5	<700	<15	<10	1,500	<1.0
B84CH20	34 58 57	115 27 9	.20	.05	.10	.007	30	<.5	<700	<15	<10	1,000	<1.0

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Bi-ppm S	Cd-ppm S	Co-ppm S	Cr-ppm S	Cu-ppm S	La-ppm S	Mo-ppm S	Nb-ppm S	Ni-ppm S	Pb-ppm S	Sb-ppm S	Sc-ppm S	Sn-ppm S	Sr-ppm S
201	<10	<30	<5	<10	<5	<30	<5	<20	<5	15	<100	<5	<10	150
202	<10	<30	5	<10	7	<30	<5	<20	7	10	<100	<5	<10	<100
203	<10	<30	<5	15	<5	30	<5	<20	15	<10	<100	7	<10	150
204	<10	<30	<5	<10	7	<30	<5	<20	<5	<10	<100	<5	<10	<100
205	<10	<30	5	<10	10	70	<5	<20	<5	15	<100	15	<10	<100
206	<10	<30	<5	<10	<5	<30	<5	<20	<5	<10	<100	<5	<10	<100
207	<10	<30	<5	<10	30	<30	<5	<20	<5	<10	<100	<5	<10	<100
210A	<10	<30	<5	<10	<5	<30	<5	<20	<5	30	<100	<5	<10	<100
210B	<10	<30	300	15	30	30	<5	<20	30	<10	<100	<5	<10	150
210C	<10	<30	30	15	<5	70	<5	<20	15	<10	<100	15	<10	300
211A	<10	<30	<5	<10	20	30	<5	<20	<5	50	<100	5	<10	150
211B	<10	<30	<5	<10	30	<30	<5	<20	<5	150	<100	<5	<10	<100
211C	<10	<30	<5	<10	7	<30	7	<20	<5	<10	<100	7	10	<100
211D	<10	<30	<5	<10	<5	30	<5	<20	<5	20	<100	5	<10	<100
199A	N	N	500	N	1,500	N	N	N	2,000	10	N	N	N	N
199B	N	N	200	N	500	N	N	N	1,000	N	N	N	N	N
199C	N	N	1,000	70	700	N	N	N	50	N	N	N	N	N
199D	N	N	100	20	20	N	N	N	50	N	N	N	N	100
199E	N	N	300	10	1,000	N	N	N	100	N	N	N	N	N
199F	N	N	150	N	15	N	N	N	150	N	N	N	N	N
400A	<10	<30	<5	<10	<5	<30	<5	<20	<5	<10	<100	<5	<10	<100
400B	<10	<30	<5	<10	<5	100	<5	20	<5	15	<100	5	<10	150
400C	<10	<30	5	<10	<5	70	<5	<20	7	10	<100	7	<10	<100
400D	<10	<30	<5	<10	<5	70	<20	<20	<5	<10	<100	<5	<10	<100
400E	<10	<30	10	30	7	70	<5	<20	15	10	<100	15	<10	150
400G	<10	700	15	50	300	30	7	<20	15	5,000	<100	15	<10	<100
400H	<10	50	<5	20	7	<30	<5	<20	7	500	<100	7	<10	300
400J	<10	<30	<5	<10	10	<30	<5	<20	<5	20	<100	<5	<10	<100
400K	<10	<30	20	100	300	150	<5	20	100	20	<100	30	<10	300
400L	<10	<30	5	<10	5	<30	<5	<20	5	50	<100	<5	<10	30
400Q	<10	<30	<5	30	<5	150	15	20	<5	50	<100	7	<10	300
500K	<10	300	<5	<10	10	<30	<5	<20	<5	500	<100	<5	<10	<100
70X	<10	<30	<5	<10	200	<30	<5	<20	<5	15	<100	<5	<10	<100
B4CH123B	<10	<30	<5	<10	<5	<30	<5	<20	<5	10	<100	5	<10	1,500
B4CH123C	<10	<30	<5	<10	7	<30	<5	<20	5	10	<100	5	<10	1,000
B4CH125B	<10	<30	7	30	7	<30	<5	<20	20	<10	<100	70	<10	500
B4CH01	<10	<30	15	<10	<5	<30	<5	<20	<5	10	<100	<5	<10	<100
B4CH03	<10	30	15	<10	3,000	<30	7	<20	10	10,000	<100	<5	<10	<100
B4CH08A	<10	<30	5	<10	100	100	5	<20	7	150	<100	5	<10	<100
B4CH12	500	<30	15	<10	2,000	70	5	<20	10	5,000	<100	7	<10	<100
B4CH121	<10	<30	5	<10	<5	<30	<5	20	15	<10	<100	30	<10	700
B4CH124	<10	<30	10	10	70	50	<5	<20	5	<10	<100	30	<10	300
B4CH13A	<10	<30	<5	<10	20	<30	<5	<20	<5	10	<100	7	<10	700
B4CH13B	<10	<30	5	30	100	70	<5	20	5	30	<100	7	<10	500
B4CH20	<10	<30	<5	<10	<5	<30	<5	<20	<5	15	<100	<5	<10	150

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	V-ppm S	W-ppm S	Y-ppm S	Zn-ppm S	Zr-ppm S	Th-ppm S	As-ppm icp	Zn-ppm icp	Cd-ppm icp	Bi-ppm icp	Sb-ppm icp	Au-ppm icp	Hg-ppm aa	F-pct. Si
201	10	<50	<10	<200	10	<200	49	42	1.2	<2.0	6	<.10	.10	.02
202	15	<50	<10	<200	70	<200	<5	18	.2	<2.0	<2	<.10	.02	.05
203	30	<50	10	<200	200	<200	<5	34	.3	<2.0	2	<.10	.02	.02
204	<10	<50	<10	<200	70	<200	<5	27	.8	<2.0	<2	<.10	.54	.02
205	20	<50	50	<200	300	<200	<5	39	.3	<2.0	<2	<.10	.07	.10
206	<10	<50	<10	<200	<10	<200	12	10	.5	<2.0	15	<.10	.06	.02
207	<10	<50	<10	<200	<10	<200	<5	96	.5	<2.0	<2	<.10	.03	.06
210A	<10	<50	10	<200	100	<200	<5	3	<.1	<2.0	<2	<.10	.08	.02
210P	200	<50	<10	<200	100	<200	14	<2	2.0	5.0	<2	<.10	<.02	.01
210C	150	<50	20	<200	150	<200	<5	8	.4	<2.0	<2	<.10	.02	<.01
211A	10	<50	20	<200	150	<200	<5	14	<.1	<2.0	<2	<.10	.03	.01
211B	<10	<50	50	<200	10	<200	<5	5	<.1	3.0	<2	<.10	.02	.04
211C	70	<50	20	<200	300	<200	<5	4	.3	5.0	<2	<.10	<.02	.02
211D	<10	<50	10	<200	150	<200	<5	21	<.1	<2.0	<2	<.10	.03	<.01
199A	200	N	N	N	N	N	65	25	N	N	N	N	.02	--
199B	200	N	N	N	N	N	100	20	N	N	N	N	<.02	--
199C	50	N	N	N	N	N	55	20	N	N	N	N	.02	--
199D	500	N	N	N	N	N	N	15	N	N	N	N	<.02	--
199E	50	N	10	N	N	N	30	20	N	N	N	N	.02	--
199F	500	N	N	N	N	N	15	15	N	N	N	N	<.02	--
400A	<10	<50	<10	<200	<10	<200	<5	7	<.1	<2.0	<2	--	<.02	.01
400B	20	<50	20	<200	150	<200	<5	19	.1	<2.0	<2	--	<.02	.03
400C	30	<50	15	<200	150	<200	<5	37	.2	<2.0	<2	--	<.02	.05
400D	15	<50	15	<200	150	<200	<5	14	<.1	<2.0	<2	--	<.02	.04
400E	70	<50	30	<200	150	<200	<5	56	.4	<2.0	<2	--	<.02	.10
400G	30	<50	10	>10,000	70	<200	<5	>40,000	1,400.0	<2.0	<2	--	3.40	.22
400H	15	<50	15	700	30	<200	<5	930	<2.0	28.8	<4	.40	.17	.06
400J	<10	<50	<10	<200	300	<200	16	10	<.1	<2.0	<2	<.10	.02	.02
400K	150	<50	50	200	150	<200	74	178	.5	<2.0	3	<.10	.65	.08
400L	<10	<50	10	<200	70	<200	<5	8	<.1	<2.0	<2	--	<.02	.03
400Q	30	<50	20	<200	300	<200	<5	<2	<.1	<2.0	<2	--	.03	.04
500K	10	<50	<10	3,000	<10	<200	<5	4,200	300.0	<2.0	14	.20	.13	.02
70X	<10	<50	<10	<200	<10	<200	<5	<2	<.1	9.0	<2	18.00	.15	.02
B4CH123B	30	<50	<10	<200	30	<200	<5	12	.2	<2.0	<2	--	<.02	.01
B4CH123C	50	<50	15	<200	<10	<200	<5	3	<.1	<2.0	<2	--	<.02	.02
B4CH125B	300	<50	50	<200	150	<200	<5	2	<.1	<2.0	<2	--	<.02	.01
B84CH01	10	<50	10	<200	50	<200	<5	11	.3	<2.0	<2	--	.02	.07
B84CH03	100	<50	10	7,000	20	<200	8	3,510	23.9	6.0	3	1.20	.60	<.01
B84CH08A	70	<50	20	1,000	100	<200	7	802	14.6	<2.0	<2	<.10	.09	<.01
B84CH12	500	<50	20	300	200	<200	33	176	3.1	453.0	44	4.60	.27	.02
B84CH121	150	<50	50	<200	70	<200	<5	5	<.1	<2.0	<2	--	<.02	.09
B84CH124	70	<50	30	<200	150	<200	<5	26	.4	<2.0	<2	--	<.02	.06
B84CH13A	150	<50	15	<200	30	<200	<5	3	<.1	<2.0	<2	--	.09	.03
B84CH13B	150	<50	30	<200	300	<200	<5	8	<.1	<2.0	<2	--	.10	.01
B84CH20	<10	<50	<10	<200	<10	<200	<5	<2	<.1	<2.0	<2	--	<.02	.02

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Latitude	Longitude	Fe-pct. S	Mg-pct. S	Ca-pct. S	Ti-pct. S	Mn-ppm S	Ag-ppm S	As-ppm S	Au-ppm S	B-ppm S	Ba-ppm S	Re-ppm S
B84CH24	34 58 49	115 27 47	10.00	3.00	15.00	.300	700	<.5	<700	<15	<10	50	<1.0
R84CH28A	34 58 37	115 27 26	5.00	3.00	3.00	.500	300	<.5	<700	<15	<10	150	1.5
B84CH31	34 58 35	115 27 16	.30	.05	.30	.030	200	<.5	<700	<15	<10	200	<1.0
B84HH38	35 3 28	115 29 59	1.50	.20	.10	.150	30	<.5	<700	<15	<10	700	<1.0
B84HH42	35 3 36	115 30 21	2.00	.50	1.50	.200	700	<.5	<700	<15	<10	3,000	1.5
B84HH62	35 3 55	115 31 12	1.50	.10	.05	.030	50	7.0	<700	<15	<10	200	<1.0
F84CH1A	34 56 30	115 24 30	.07	<.02	.07	.003	70	<.5	<700	<15	<10	30	<1.0
F84CH30	34 58 39	115 25 59	.05	<.02	<.05	.003	20	<.5	<700	<15	<10	70	<1.0
F84CH35	34 57 37	115 25 22	7.00	.15	.20	.010	>5,000	.7	<700	<15	<10	1,000	<1.0
G84HH04	35 4 47	115 26 23	.10	<.02	.05	.002	70	<.5	<700	<15	<10	70	<1.0
G84HH11	35 4 2	115 27 26	2.00	.20	.20	.150	500	70.0	<700	<15	20	300	1.0
G84HH19	35 3 17	115 29 0	2.00	.03	.07	.030	30	100.0	<700	<15	<10	300	<1.0
G84HH21	35 3 26	115 29 28	1.00	.20	.15	.150	70	1.0	<700	<15	10	500	1.0
M84HH32	35 4 33	115 27 13	.50	.03	.15	.007	150	150.0	<700	<15	10	500	<1.0
M84HH37	35 4 28	115 27 40	.30	<.02	<.05	.002	50	<.5	<700	<15	<10	100	<1.0
M84HH59	35 4 29	115 27 9	1.50	.30	.20	.200	500	<.5	<700	<15	10	1,000	1.0
M84NP64	35 0 17	115 33 59	.15	.03	.15	.030	30	<.5	<700	<15	<10	150	<1.0
M84NP66	35 0 27	115 34 12	7.00	1.50	.05	.070	150	7.0	<700	<15	<10	50	10.0

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN
BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	Bi-ppm S	Cd-ppm S	Co-ppm S	Cr-ppm S	Cu-ppm S	La-ppm S	Mo-ppm S	Nb-ppm S	Ni-ppm S	Ph-ppm S	Sb-ppm S	Sc-ppm S	Sn-ppm S	Sr-ppm S
B84CH24	<10	<30	5	15	7	100	<5	<20	20	<10	<100	15	<10	700
B84CH28A	<10	<30	10	15	<5	100	<5	<20	50	<10	<100	20	<10	700
B84CH31	<10	<30	<5	<10	10	<30	<5	<20	<5	70	<100	<5	<10	<100
B84MH38	<10	<30	<5	<10	20	<30	<5	<20	<5	70	<100	5	<10	300
B84MH42	<10	<30	<5	<10	15	50	<5	<20	<5	20	<100	<5	<10	700
B84MH62	<10	<30	7	<10	20	<30	<5	<20	5	15	<100	<5	<10	<100
F84CH1A	<10	<30	<5	<10	<5	<30	<5	<20	<5	<10	<100	<5	<10	<100
F84CH30	<10	<30	<5	<10	<5	<30	<5	<20	<5	<10	<100	<5	<10	<100
F84CH35	<10	<30	15	<10	3A	<30	10	<20	15	150	<100	<5	<10	<100
G84MH04	<10	<30	<5	<10	<5	<30	<5	<20	<5	<10	<100	<5	<10	<100
G84MH11	30	200	7	<10	200	<30	<5	<20	10	2,000	<100	5	<10	<100
G84MH19	3,000	<30	<5	20	30	<30	20	<20	5	1,000	<100	<5	<10	<100
G84MH21	<10	<30	<5	<10	10	30	<5	<20	<5	15	<100	7	<10	<100
M84MH32	<10	<30	<5	<10	50	<30	<5	<20	<5	100	<100	<5	<10	<100
M84MH37	<10	<30	<5	<10	5	<30	5	<20	<5	10	<100	<5	<10	<100
M84MH59	<10	<30	<5	<10	5	50	<5	<20	<5	20	<100	<5	<10	500
M84NP64	<10	<30	<5	<10	<5	<30	<5	<20	<5	<10	<100	<5	<10	<100
M84NP66	10	<30	7	<10	7	<30	<5	<20	15	50	<100	20	<10	<100

TABLE 4--RESULTS FROM THE ANALYSIS OF ROCK SAMPLES FROM THE PROVIDENCE MOUNTAINS WILDERNESS STUDY AREA, SAN BERNARDINO COUNTY, CALIFORNIA.--Continued

Sample	V-ppm S	W-ppm S	Y-ppm S	Zn-ppm S	Zr-ppm S	Th-ppm S	As-ppm icp	Zn-ppm icp	Cd-ppm icp	Bi-ppm icp	Sb-ppm icp	Au-ppm icp	Hg-ppm aa	F-pct. si
B84CH24	200	<50	50	<200	200	<200	<5	3	<.1	<2.0	<2	--	.02	<.01
B84CH28A	200	<50	50	<200	300	<200	<5	<2	.1	<2.0	<2	--	<.02	.04
B84CH31	<10	<50	<10	<200	30	<200	<5	6	.2	<2.0	<2	--	.03	.06
B84MH38	30	<50	10	<200	100	<200	<5	6	<.1	<2.0	<2	--	<.02	.04
B84MH42	30	<50	10	<200	200	<200	<5	14	.2	<2.0	<2	--	.02	.04
B84MH62	20	<50	<10	<200	30	<200	<5	30	.2	<2.0	<2	.60	.03	.01
F84CH1A	<10	<50	<10	<200	10	<200	<5	6	.1	<2.0	<2	--	<.02	.02
F84CH30	<10	<50	<10	<200	10	<200	<5	4	.3	<2.0	<2	--	<.02	<.01
F84CH35	200	<50	30	700	20	<200	114	442	4.3	<2.0	4	<.10	.03	<.01
G84MH04	<10	<50	<10	<200	15	<200	<5	2	.2	<2.0	<2	--	<.02	<.01
G84MH11	15	<50	<10	>10,000	100	<200	19	13,000	232.0	5.0	55	.10	4.30	<.01
G84MH19	<10	<50	<10	<200	30	<200	<5	10	.3	3,780.0	<2	.20	.18	.04
G84MH21	15	<50	15	<200	200	<200	<5	2	<.1	<2.0	<2	<.10	<.02	<.01
M84MH32	<10	<50	<10	500	10	<200	9	215	.9	<2.0	4	<.10	.24	.04
M84MH37	<10	<50	<10	<200	10	<200	<5	5	<.1	<2.0	<2	--	<.02	.02
M84MH59	30	<50	10	<200	200	<200	<5	17	<.1	<2.0	<2	--	<.02	.04
M84MP64	<10	<50	<10	<200	10	<200	<5	<2	<.1	<2.0	<2	--	<.02	.01
M84MP66	70	<50	70	2,000	<10	<200	<5	941	6.1	6.0	5	<.10	.21	.03

Table 5.--Description of rock samples

Sample No.	Rock Description
002A	Recrystallized limestone
002B	Recrystallized limestone
002U	Rhyolite with pyrite
002V	Bleached looking altered rhyolite
002W	Banded rhyolite from tailings pile
002X	Iron-rich skarn near contact with rhyolite
002Y	Silicified iron-rich rhyolite
002Z	Chlorite-rich alteration product from contact between felsic intrusive and limestone
003A	Limestone
008A	Silicified skarn float
010A	Recrystallized limestone with chert nodules
011A	Limestone at Rex mine
011B	Limestone at Rex mine
011C	Quartz veins from tailings pile at Rex mine
011D	Quartz veins from tailings pile at Rex mine
011E	Coarse-grained intrusive rock at Rex mine
011F	Iron and manganese stained quartz-rich breccia from tailings pile at Rex mine
012A	Limestone
014A	Altered felsic intrusive with specular hematite
014B	Altered felsic volcanic with specular hematite
014C	Sericitized felsic intrusive
014D	Calcite veined coarse-grained felsic intrusive
017A	Quartz
018A	Altered fine-grained felsic intrusive
019A	Iron-stained altered rhyolite
019C	Pink rhyolite
023A	Altered intrusive at Fan 1-5 prospects
023B	Fault gouge at Fan 1-5 prospects
023C	Altered intrusive from tailings pile at Fan 1-5 prospects
023D	Fault gouge at Fan 1-5 prospects
024A	Quartzite
026A	Iron-stained mineralized quartz from tailings pile at Okaw mine
026B	Quartz with pyrite at Okaw mine
026C	Mineralized and altered granite at Okaw mine
026D	Mafic dike at Okaw mine
027A	Altered felsic intrusive near Providence mine
027B	Quartz vein near Providence mine
027C	Quartz from tailings pile near Providence mine
027D	Iron-stained and altered felsic intrusive near Providence mine
028A	Iron-stained and silicified felsic intrusive at Providence mine
028B	Altered intrusive at Providence mine
028C	Coarse-grained mafic intrusive from tailings pile at Providence mine
028D	Fine-grained felsic intrusive at Providence mine
028E	Iron-stained fault gouge at Providence mine

Table 5.--Description of rock samples (continued)

Sample No.	Rock Description
029A	Altered felsic intrusive from tailings pile at Summit Springs prospect
029B	Coarse-grained felsic intrusive at Summit Springs prospect
029C	Coarse-grained pyrite-bearing felsic intrusive from tailings pile at Summit Springs prospect
030A	Sericitically altered felsic intrusive at Star mine
030B	Silicified intrusive(?) at Star mine
030C	Altered intrusive at Star mine
030D	Quartz vein at Star mine
032A	Quartz vein at Star mine
032B	Quartz vein at Star mine
032C	Quartz vein at Star mine
033A	Quartz vein with pyrite and specular hematite
033B	Altered and silicified felsic intrusive
035A	Fine to medium-grained hypabyssal felsic intrusive at Okaw mine
035B	Iron-stained and silicified mineralized hypabyssal felsic intrusive at Okaw mine
035C	Iron-stained and mineralized quartz vein at Okaw mine
035D	Iron-stained and mineralized quartz vein at Okaw mine
035E	Iron-stained and mineralized altered felsic intrusive at Okaw mine
037X	Chert with pyrite, chalcopyrite, and chlorite in veinlets
037Y	Altered quartz-veined intrusive rock
038A	Silicified fine-grained dike
038B	Coarse-grained felsic intrusive
038C	Epidote-rich altered rhyolite
039A	Rhyolite with pyrite
041A	Epidote-rich felsic intrusive
041B	Coarse-grained biotite and quartz-rich felsic intrusive
041C	Very biotite-rich lens
042A	Silicified and pyritiferous altered felsic intrusive
044A	Silicified felsic dike with pyrite stockwork
044B	Altered gneiss
044C	Gneiss
044D	Altered biotite-rich dike
044E	Biotite and hornblende-rich dike
044F	Felsic dike
044G	Iron-stained and altered felsic intrusive
044X	Quartz vein
044Y	Altered intrusive rock
045A	Iron-stained and mineralized quartz from tailings pile at Confidence Copper mine
045B	Iron-stained and altered felsic intrusive at Confidence Copper mine
045C	Iron-stained quartz from tailings pile at Confidence Copper mine
045D	Malachite-bearing alteration product from tailings pile at Confidence Copper mine
045E	Iron-stained and altered felsic intrusive at Confidence Copper mine
045F	Silicified felsic dike at Confidence Copper mine
045G	Coarse-grained felsic intrusive at Confidence Copper mine
046A	Iron-stained and mineralized quartz from tailings pile

Table 5.--Description of rock samples (continued)

Sample No.	Rock Description
046B	Silicified and altered mineralized felsic intrusive
046C	Coarse-grained felsic intrusive
048A	Silicified and mineralized altered country rock from tailings pile
048B	Silicified and mineralized altered country rock from tailings pile
048C	Silicified and mineralized altered country rock from tailings pile
048Y	Altered gneiss
048Z	Brecciated gneiss
049A	Bleached looking coarse-grained felsic intrusive
050A	Quartz vein
050B	Quartz vein
050C	Fault gouge from shear zone in gneiss
050D	Mineralized chalcedony float
051A	Altered felsic intrusive
051B	Intermediate volcanic
052A	Iron-stained and altered felsic intrusive
053A	Limestone breccia
054A	Pebble conglomerate
054B	Breccia
055A	Bleached limestone
055B	Limestone breccia
056A	Iron-stained limestone float
056B	Calcite float
056C	Leached limestone float
057A	Gossan
063A	Altered and sheared felsic intrusive
063B	Quartzite
064A	Iron-stained leached quartzite
064C	Mineralized quartz
064D	Mafic intrusive
064E	Vuggy quartz
064F	Felsic intrusive with hematite
066A	Altered and silicified felsic intrusive at Fan 1-5 prospects
069A	Bleached looking and silicified felsic intrusive at Jojo mine
069B	Bleached looking felsic intrusive at Jojo mine
070A	Quartz vein at Jojo mine
070B	Quartz vein at Jojo mine
070Y	Quartz vein from tailings pile at Jojo mine
071A	Bleached looking limestone
071B	Sericitic breccia
071C	Fault gouge
071D	Limey gossan
071E	Gossan
072A	Felsic dike at Summit Springs prospects
072B	Quartz float at Summit Springs prospects
073A	Altered felsic intrusive at Summit Springs prospects
073B	Limestone from tailings pile at Summit Springs prospects
073C	Altered gneiss at Summit Springs prospects
073D	Quartz from tailings pile at Summit Springs prospects

Table 5.--Description of rock samples (continued)

Sample No.	Rock Description
074A	Bleached looking felsic intrusive
074B	Quartz from tailings pile
074C	Altered felsic intrusive from tailings pile
074D	Mafic intrusive with pyrite
074E	Silicified and altered felsic intrusive with pyrite
076A	Altered felsic intrusive from tailings pile at Globe mine
076B	Altered felsic intrusive from tailings pile at Globe mine
076C	Altered felsic intrusive from tailings pile at Globe mine
076D	Quartz from tailings pile at Globe mine
076E	Gneiss at Globe mine
076F	Mineralized calcite vein float at Globe mine
077A	Mafic intrusive
077B	Quartz vein in mafic intrusive
078A	Iron-stained felsic intrusive
078B	Felsic dike
078C	Limestone float
078D	Fine-grained mafic intrusive with epidote
078E	Mineralized quartz float
078F	Mineralized felsic intrusive
078G	Quartz float
080A	Altered felsic intrusive
080B	Iron-stained sheared felsic intrusive
080C	Mafic dike
080D	Bleached looking felsic intrusive
083A	Quartz float
084A	Altered and sheared iron-stained felsic intrusive
086A	Altered mafic intrusive
086B	Felsic dike
086C	Altered mafic intrusive
086D	Altered and sheared mafic intrusive
087A	Manganese-stained quartz vein
087B	Altered gneiss
088A	Altered coarse-grained felsic intrusive
088B	Silicified, brecciated, and mineralized felsic intrusive
096A	Felsic hypabyssal intrusive with pyrite
097A	Potassium feldspar-rich pegmatite dike
102A	Bleached looking altered and mineralized felsic intrusive at Columbia mine
102B	Medium-grained mineralized mafic intrusive at Columbia mine
102C	Altered and mineralized felsic intrusive at Columbia mine
102D	Altered and mineralized felsic intrusive at Columbia mine
102E	Gossan at Columbia mine
103A	Mineralized quartz at Columbia mine
103B	Bleached looking breccia with pyrite at Columbia mine
103C	Quartz at Columbia mine
103D	Mineralized quartz at Columbia mine
103E	Silicified and mineralized felsic intrusive at Columbia mine
103F	Mineralized quartz at Columbia mine

Table 5.--Description of rock samples (continued)

Sample No.	Rock Description
107A	Hypabyssal felsic intrusive at Silver Buddy mine
107B	Hypabyssal felsic intrusive at Silver Buddy mine
107C	Milky quartz with galena at Silver Buddy mine
107D	Altered hypabyssal felsic intrusive at Silver Buddy mine
107E	Quartz vein with galena and chalcopryrite at Silver Buddy mine
108A	Felsic dike
108B	Bleached looking hypabyssal felsic intrusive
108C	Silicified breccia float
110A	Iron-stained chalcedony float at Blue Jay #1 prospect
110B	Iron-stained bleached gneiss at Blue Jay #1 prospect
110C	Altered felsic intrusive at Blue Jay #1 prospect
110D	Gneiss at Blue Jay #1 prospect
110E	Gneiss at Blue Jay #1 prospect
110F	Mineralized and silicified breccia from tailings pile at Blue Jay #1 prospect
110G	Altered gneiss from tailings pile at Blue Jay #1 prospect
121A	Quartz
123A	Silicified felsic coarse-grained intrusive
123B	Bleached looking altered felsic coarse-grained intrusive
123C	Quartz from tailings pile
123D	Silicified felsic intrusive from tailings pile
124A	Bleached looking altered intermediate volcanic
128A	Bleached looking volcanic
128B	Chalcedonic dike
130A	Felsic volcanic
130B	Felsic intrusive
130C	Vuggy quartz
132A	Felsic dike cutting altered limestone at the Silver King mine
132B	Quartz at the Silver King mine
132C	Bleached looking limestone at the Silver King mine
132D	Recrystallized dark limestone at the Silver King mine
133A	Brecciated quartz vein at the Silver King mine
133B	Altered limestone with chert nodules at the Silver King mine
133C	Altered felsic intrusive at the Silver King mine
133D	Green propylitically altered felsic intrusive at the Silver King mine
134A	Sheared limestone at the Silver King mine
134B	Altered felsic intrusive at the Silver King mine
134C	Green silicified limestone at the Silver King mine
134D	Iron-stained propylitically altered mafic intrusive at the Silver King mine
134E	Iron-stained propylitically altered mafic intrusive at the Silver King mine
134F	Silicified limestone at the Silver King mine
134G	Limestone breccia at the Silver King mine
136A	Propylitically altered felsic intrusive
136B	Quartz vein
138A	Altered limestone
138B	Altered limestone

Table 5.--Description of rock samples (continued)

Sample No.	Rock Description
138C	Propylitically altered felsic intrusive
138D	Fault gouge
140A	Iron-stained felsic dike in limestone
140B	Brecciated limestone
140C	Altered felsic intrusive
143A	Altered iron-stained volcanic tuff
143B	Quartz float
144A	Mineralized limestone from tailings pile at Mexican mine
144B	Mineralized limestone from tailings pile at Mexican mine
147A	Rhyolite
147B	Rhyolite
147C	Iron-stained fault gouge
147D	Iron-stained and sheared limestone
147E	Iron-stained felsic intrusive
148A	Propylitically altered felsic intrusive
148B	Limestone
153A	Rhyolitic extrusive
154A	Iron-stained chalcedony
160A	Iron-stained vuggy volcanic flow
161A	Lahar with pumice, lithic fragments, and volcanic glass
165A	Chlorite and epidote-rich altered float
165B	Felsic dike
165X	Quartz vein with galena
165X2	Felsic dike with disseminated sulfides
165X3	Iron-stained chalcedony
165Y1	Iron-stained quartz vein at Globe Star North prospect
165Y2	Fault gouge from shear zone in granite at Globe Star North prospect
165Y3	Quartz vein from tailings pile at Globe Star North prospect
165Y4	Quartz vein from tailings pile at Globe Star North prospect
166A	Iron-stained altered silicified felsic intrusive at Pink Falcon prospect
166B	Silicified mineralized chalcedony from shear zone at Pink Falcon prospect
166C	Propylitically altered country rock from tailings pile at Pink Falcon prospect
168A	Felsic intrusive
168Z	Bleached looking altered felsic intrusive
169A	Magnetite-bearing mafic intrusive
169B	Iron-stained coarse-grained felsic intrusive
169C	Hypabyssal felsic intrusive
175A	Quartz vein at Grande 1-7 mine
175B	Quartz vein with biotite, chlorite, and epidote at Grande 1-7 mine
175C	Quartz vein with chlorite and epidote at Grande 1-7 mine
175D	Mineralized quartz vein at Grande 1-7 mine
175E	Altered coarse-grained felsic intrusive at Grande 1-7 mine
175V	Extremely altered country rock from shear zone at Grande 1-7 mine
175X	Quartz vein at Grande 1-7 mine
175Y	Quartz vein at Grande 1-7 mine

Table 5.--Description of rock samples (continued)

Sample No.	Rock Description
175Z	Quartz vein at Grande 1-7 mine
176A	Altered iron-stained gougy rock
176B	Iron-stained quartz
176C	Altered coarse-grained intrusive
177A	Mineralized quartz vein at Max Dor mine
177B	Altered coarse-grained felsic intrusive at Max Dor mine
177C	Mineralized friable quartz from shear zone at Max Dor mine
177D	Coarse-grained felsic intrusive at Max Dor mine
177X	Quartz vein with disseminated sulfides at Max Dor mine
177Y	Quartz vein with galena and pyrite from tailings pile at Max Dor mine
177Z	Quartz vein with galena, pyrite, and chalcopyrite from tailings pile at Max Dor mine
183A	Altered and sheared gneiss
183B	Gneiss
183C	Silicified, altered, and sheared gneiss
183D	Quartz vein cutting gneiss
183E	Mafic dike cutting gneiss
184A	Altered iron-stained gneiss
185A	Bleached looking altered rhyolite in contact with limestone
186A	Iron-stained silicified dike cutting limestone
187A	Mineralized carbonate at C & K mine
187B	Mineralized carbonate at C & K mine
188A	Propylitically altered intermediate intrusive
188B	Propylitically altered felsic intrusive
189A	Altered granite
189B	Dolomite
191A	Propylitically altered intrusive
191B	Iron-stained rhyolite
191C	Tailings from pit
191X	Altered hypabyssal intrusive
192X	Altered hypabyssal intrusive at Burro prospect
195A	Propylitically altered felsic intrusive
196A	Propylitically altered felsic intrusive
197A	Bleached looking limestone
197B	Iron-stained limestone
198X	Silicified volcanics
199A	Vulcan mine Fe-skarn
199B	Vulcan mine Fe-skarn
199C	Vulcan mine Fe-skarn
199D	Vulcan mine Fe-skarn
199E	Vulcan mine Fe-skarn
199F	Vulcan mine Fe-skarn
200A	Altered limestone at the Bonanza King mine
200B	Altered limestone at the Bonanza King mine
201	Altered gneiss
202	Altered intrusive
203	Altered intrusive from shear zone
204	Iron-stained quartzite

Table 5.--Description of rock samples (continued)

Sample No.	Rock Description
205	Altered intrusive with specular hematite
206	Breccia from tailings pile
207	Quartz vein
210A	Felsic dike
210B	Gossan from tailings
210C	Altered granite
211A	Silicified medium-grained intrusive with pyrite
211B	Quartz vein with pyrite
211C	Leached felsic intrusive with cubic pits (possibly after pyrite)
211D	Iron-stained veinlets in altered intrusive
400A	Quartz from tailings pile at Tough Nut mine
400B	Felsic intrusive at Tough Nut mine
400C	Altered felsic intrusive from fault zone at Tough Nut mine
400D	Quartz from tailings pile at Tough Nut mine
400F	Leached felsic intrusive at Tough Nut mine
400G	Tailings at Tough Nut mine
400H	Limestone at Tough Nut mine
400J	Tailings at Tough Nut mine
400K	Tailings at Tough Nut mine
400L	Tailings at Tough Nut mine
400Q	Tailings at Tough Nut mine
500K	Altered limestone at Bonanza King mine
70X	Quartz from tailings pile
B4CH123B	Muscovite-rich felsic intrusive
B4CH123C	Epidote-rich quartz vein
B4CH125B	Manganese-coated felsic dike
B84CH01	Iron and manganese-stained granite
B84CH03	Copper mineralized rock from tailings pile at Grande 1-7 mine
B84CH08A	Limonite-stained quartz vein
B84CH12	Quartz vein
B84CH121	Country rock
B84CH124	Limonitic fault gouge
B84CH13A	Quartz vein with hematite and epidote
B84CH13B	Iron-stained quartz vein
B84CH20	Quartz vein
B84CH24	Epidote from vein
B84CH28A	Epidote-rich breccia
B84CH31	Quartz vein
B84MH38	Altered gneiss
B84MH42	Sericitized gneiss
B84MH62	Quartz vein
F84CH1A	Quartz vein from pegmatite
F84CH30	Quartz pod in hornblende-rich metamorphic rock
F84CH35	Limonite and hematite-bearing quartz from tailings pile at Globe Star North prospect
G84MH04	Quartz vein from pegmatite
G84MH11	Fault gouge at Silver Buddy prospect

Table 5.--Description of rock samples (continued)

Sample No.	Rock Description
G84MH19	Limonitic quartz vein
G84MH21	Silicified and altered gneiss
M84MH32	Quartz vein with hematite, limonite, boxwork after iron sulfides
M84MH59	Sericitized dacitic dike
M84NP64	Quartz vein with specular hematite
M84NP66	White quartz veins with specular hematite