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GEOLOGICAL SURVEY

**Analytical results and sample locality map
of stream-sediment, heavy-mineral-concentrate, and rock samples
from the Trigo Mountain Wilderness Study Area (AZ-050-023B),
La Paz County, Arizona**

By

John H. Bullock, Jr.*, R.B. Vaughn*, D.B. Smith*,
E. Welsch*, and D.L. Fey*

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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.

* U.S. Geological Survey, DFC, Box 25046, MS 973, Denver, CO 80225

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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 resource potential. 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 Trigo Mountains Wilderness Study Area, La Paz County, Arizona.

INTRODUCTION

In 1986 and 1987, the U.S. Geological Survey conducted a reconnaissance geochemical survey of the Trigo Mountains Wilderness Study Area, La Paz County, Arizona.

The Trigo Mountains Wilderness Study Area comprises about 47 mi² (29,895 acres) in the southwest corner of La Paz County, Arizona, and lies approximately 25 mi. north of Yuma, Arizona (fig. 1). Primary access to the study area is from the south by an unimproved dirt road running north from Martinez Lake, which is accessible by paved road from U.S. highway 95. Much of the area is inaccessible except by foot or helicopter.

Much of the study area is underlain by Tertiary volcanic rocks, primarily consisting of andesite and dacite lava flows and intrusions, but also including smaller amounts of ash flow tuffs scattered throughout the region. Also present in the central and northern portions of the study area are outcrops of pre-Tertiary crystalline rocks and conglomerates of probable Miocene age.

The topography is characterized by sharp, sawtooth ridges and narrow, steep walled canyons; all of the washes in the area, including the major ones, are ephemeral. The topographic relief in the study area is about 1,700 ft (520m) with a maximum elevation of 1,920 ft (585m). Plant cover and soil development is sparse on the rocky ridges, but the major washes may support relatively thick riparian woodland. The climate is arid (Lower Sonoran Life Zone).

METHODS OF STUDY

Sample Media

Analyses of the stream-sediment samples represent the chemistry of the rock material eroded from the drainage basin upstream from each sample site. Such information is useful in identifying those basins which contain concentrations of elements that may be related to mineral deposits. 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.

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.

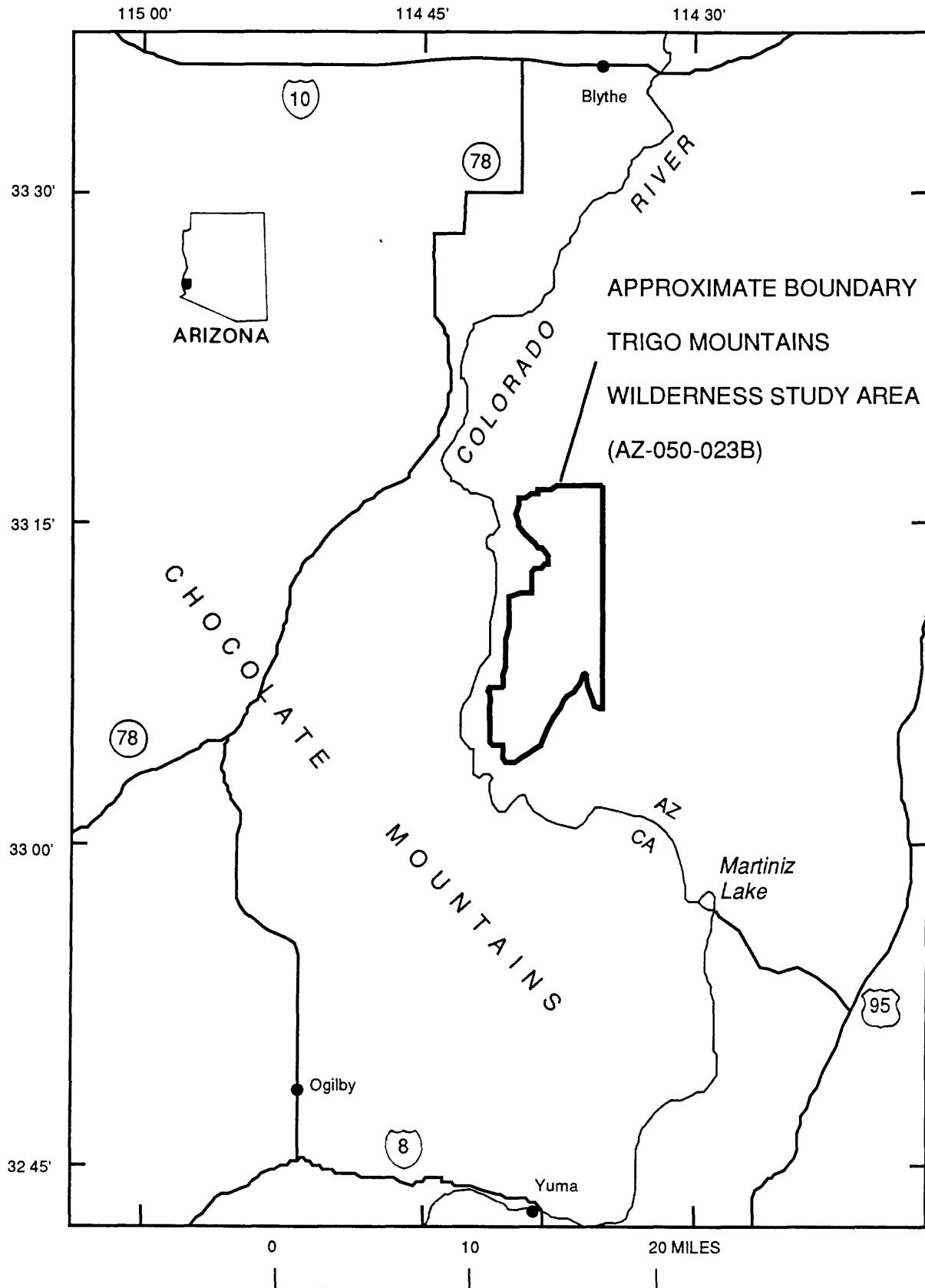


Figure 1. Index map of the location of the Trigo Mountains Wilderness Study Area, La Paz County, Arizona.

Sample Collection

Heavy-mineral-concentrate and stream-sediment samples were collected at 81 sites (plate 1). Rock samples were collected at 36 sites. Sampling density was about one sample site per 0.7 mi² for the stream sediments and heavy-mineral concentrates. The area of the drainage basins sampled ranged from 0.5 mi² to 4.0 mi².

Stream-sediment samples

The stream-sediment samples consisted of active alluvium collected primarily from first-order (unbranched) and second-order (below the junction of two first-order) streams as shown on USGS topographic maps (scale = 1:24,000). Each sample was composited from several localities within an area that may extend as much as 20 ft from the site plotted on the map.

Heavy-mineral-concentrate samples

Heavy-mineral-concentrate samples were collected from the same active alluvium as the stream-sediment samples. 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 various types of occurrences in the vicinity of the plotted site location. Descriptions of rock samples are in table 6.

Sample Preparation

The stream-sediment samples were air dried, then sieved using 80-mesh (0.17-mm) stainless-steel sieves. The portion of the sediment passing through the sieve was saved for analysis.

Samples that had been panned in the field were air dried and sieved to -35 mesh; bromoform (specific gravity 2.85) was used to remove the remaining quartz and feldspar. The resultant heavy-mineral-concentrate sample was separated into three fractions using a large electromagnet by placing the sample in contact with the face of the magnet (in this case a modified Frantz Isodynamic Separator). The most magnetic material, (removed at a setting of 0.25 ampere), primarily magnetite, was not analyzed. The second fraction, (removed at a setting of 1.75 ampere), largely ferromagnesian silicates and iron oxides, was saved for archival storage. The third fraction (the nonmagnetic 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 0.2 ampere to remove the magnetite and ilmenite, and a current of 0.6 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 stream-sediment, 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 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). Analytical data for samples from the Trigo Mountains Wilderness Study Area are listed in tables 3, 4, and 5.

Chemical methods

Rock and stream-sediment samples were also analyzed by atomic absorption emission spectroscopy (AA) and inductively coupled plasma emission spectroscopy (ICP). Samples were analyzed for arsenic (As), antimony (Sb), bismuth (Bi), cadmium (Cd), and zinc (Zn) using AA and ICP, and for gold (Au) using flame AA. In addition, the rock samples were analyzed for mercury (Hg) using cold vapor AA, for Fluorine (F) using an ion selective electrode method and for Tungsten (W) using an instrumental colorimetric method (cm). Limits of determination and references are listed in table 2.

Analytical results using these methods for stream-sediment and rock samples are listed in tables 3 and 5, 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, 1977).

DESCRIPTION OF DATA TABLES

Tables 3-5 list the results of analyses for the stream-sediment, heavy-mineral-concentrate, and rock samples, respectively. For the three 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 map (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" indicates inductively coupled

plasma analyses; "cm" indicates colormetric 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 tables 1 and 2. For emission spectrographic analyses, colormetric analyses of W, and AA analyses of Au, As, Sb, Bi, Cd, and Zn, a "less than" symbol (<) entered in the tables in front of the lower limit of determination indicates that an element was observed but was below the lowest reporting value. For all ICP analyses and Hg analyses by AA, an "N" entered in the tables indicates that an element was below the lowest reporting value. 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 (--) were entered in tables 3-5 in place of an analytical value. Because of the formatting used in the computer program that produced tables 3-5, 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.

ACKNOWLEDGMENTS

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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	10,000
Gold (Au)	10	500
Boron (B)	10	2,000
Barium (Ba)	20	5,000
Beryllium (Be)	1	1,000
Bismuth (Bi)	10	1,000
Cadmium (Cd)	20	500
Cobalt (Co)	5	2,000
Chromium (Cr)	10	5,000
Copper (Cu)	5	20,000
Lanthanum (La)	20	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	2,000

TABLE 2.--Commonly used chemical methods

Element or constituent determined	Sample type	Method	Determination limit (micrograms/gram or ppm)	Reference
Gold (Au)	rock/str-sed	AA	0.1	<u>Modification of Thompson and others, 1968.</u>
Mercury (Hg)	rock	AA	0.02	Koirttyohann and Khalil, 1976.
Arsenic (As)	rock/str-sed	AA	10	O'Leary and Viets, 1986.
Antimony (Sb)	rock/str-sed	AA	2	
Zinc (Zn)	rock/str-sed	AA	5	
Bismuth (Bi)	rock/str-sed	AA	1	
Cadmium (Cd)	rock	AA	0.1	
Arsenic (As)	rock/str-sed	ICP	5	Crock and others, 1987.
Antimony (Sb)	rock/str-sed	ICP	2	
Zinc (Zn)	rock/str-sed	ICP	2	
Bismuth (Bi)	rock/str-sed	ICP	2	
Cadmium (Cd)	rock	ICP	0.1	
Fluorine (F)	rock	ISE	0.01	Hopkins, 1977.
Tungsten (W)	rock	CM	0.5	Welsch, 1983.

TABLE 3--ANALYTICAL RESULTS OF STREAM-SEDIMENT SAMPLES FROM THE TRIGO MOUNTAINS WILDERNESS STUDY AREA, LAPAZ COUNTY, ARIZONA.

Sample	Latitude	Longitude	Fe-pct. s	Hg-pct. s	Ca-pct. s	Tl-pct. s	Ag-ppm s	As-ppm s	Au-ppm s	B-ppm s	Ba-ppm s	Pe-ppm s
TM01S	33 4 7	114 39 38	3	2.0	2.0	.3	700	N	N	50.	1,000	1.5
TM02S	33 4 58	114 40 12	5	5.0	2.0	1.0	1,500	N	N	20	1,000	2.0
TM03S	33 5 33	114 41 8	3	1.5	1.5	.3	700	N	N	50	700	1.0
TM04S	33 5 53	114 40 26	5	2.0	3.0	.5	1,000	N	N	30	1,000	2.0
TM05S	33 6 27	114 40 38	7	2.0	1.5	1.0	1,500	N	N	30	500	1.5
TM06S	33 6 51	114 40 40	3	1.0	1.5	.3	1,000	N	N	30	500	1.0
TM07S	33 7 24	114 40 42	7	1.5	1.0	>1.0	1,500	N	N	50	300	1.5
TM08S	33 7 44	114 40 6	7	2.0	1.5	>1.0	1,500	N	N	50	200	1.5
TM09S	33 8 10	114 39 42	10	3.0	2.0	1.0	1,500	N	N	70	200	1.0
TM10S	33 9 8	114 39 1	10	3.0	2.0	>1.0	1,500	N	N	100	700	1.5
TM11S	33 9 17	114 39 7	10	1.5	2.0	>1.0	2,000	N	N	20	700	1.5
TM12S	33 8 44	114 38 2	7	1.5	3.0	1.0	1,500	N	N	15	700	1.5
TM13S	33 8 47	114 37 58	7	1.5	1.5	1.0	1,500	N	N	30	500	1.5
TM14S	33 9 11	114 37 39	5	1.5	2.0	.7	1,000	N	N	50	500	1.5
TM15S	33 9 22	114 37 23	7	2.0	2.0	>1.0	1,500	N	N	10	1,500	1.0
TM16S	33 9 27	114 37 25	3	2.0	2.0	.5	700	N	N	20	500	1.0
TM17S	33 9 12	114 36 49	7	1.0	1.5	1.0	1,500	N	N	30	1,000	1.5
TM18S	33 9 15	114 36 49	5	1.5	1.5	.5	1,000	N	N	20	200	1.0
TM19S	33 8 46	114 36 16	3	1.0	1.5	.5	700	N	N	30	300	1.0
TM20S	33 8 51	114 36 16	7	1.5	1.0	.7	1,000	N	N	15	200	1.0
TM21S	33 9 57	114 39 48	7	2.0	2.0	.3	1,000	.5	N	30	1,000	1.0
TM22S	33 10 43	114 39 36	7	1.5	2.0	.5	700	<.5	N	20	300	1.0
TM23S	33 11 34	114 39 14	5	2.0	1.5	.3	1,500	N	N	20	300	<1.0
TM24S	33 5 43	114 38 42	7	1.5	1.5	.5	1,000	N	N	15	200	1.0
TM25S	33 6 18	114 38 37	7	2.0	1.5	.3	700	N	N	10	150	<1.0
TM26S	33 6 0	114 37 53	10	1.5	1.5	.5	1,000	N	N	30	150	1.0
TM27S	33 7 39	114 36 59	2	.5	1.0	.2	300	N	N	50	200	<1.0
TM28S	33 7 42	114 36 53	3	.7	1.0	.3	500	N	N	50	150	<1.0
TM29S	33 9 57	114 36 23	7	1.0	1.0	1.0	500	N	N	20	150	1.0
TM30S	33 9 57	114 36 36	5	1.5	1.0	.3	500	N	N	10	150	1.0
TM31S	33 9 49	114 37 56	2	1.0	1.0	.2	200	N	N	30	300	1.0
TM32S	33 9 54	114 37 52	3	1.5	1.0	.3	300	N	N	<10	200	<1.0
TM101	33 11 12	114 38 39	5	1.5	2.0	.5	500	N	N	30	500	1.0
TM102	33 10 53	114 38 30	5	2.0	2.0	.5	500	N	N	20	500	<1.0
TM103	33 11 11	114 37 35	7	3.0	2.0	1.0	500	N	N	15	200	<1.0
TM104	33 11 58	114 37 33	5	3.0	3.0	.5	700	N	N	<10	300	<1.0
TM105	33 12 25	114 38 41	5	1.5	3.0	1.0	700	N	N	30	700	1.0
TM106	33 13 40	114 38 20	5	1.0	2.0	.5	500	N	N	10	500	<1.0
TM107	33 14 55	114 37 34	5	3.0	2.0	.5	700	N	N	20	700	1.0
TM108	33 15 41	114 38 22	7	1.0	3.0	.7	500	N	N	20	500	<1.0
TM109	33 16 36	114 38 17	5	.7	2.0	.7	300	N	N	<10	300	<1.0
TM110	33 16 11	114 38 11	7	3.0	5.0	1.0	700	N	N	10	1,500	1.0
TM111	33 16 1	114 37 10	7	3.0	5.0	1.0	700	N	N	10	700	1.0
TM112	33 15 56	114 37 10	10	7.0	10.0	.7	1,000	N	N	30	1,000	1.0
TM113	33 16 38	114 36 41	7	5.0	7.0	1.0	1,000	N	N	30	700	1.0

TABLE 3--ANALYTICAL RESULTS OF STREAM-SEDIMENT SAMPLES FROM THE TRIGO MOUNTAINS WILDERNESS STUDY AREA, LAPAZ COUNTY, ARIZONA.--Continued

Sample	Al-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
TM01S	N	N	10	100	7	30	N	<20	30	50	N	10	N	700
TM02S	N	N	50	300	10	30	N	20	100	15	N	30	<10	500
TM03S	N	N	10	50	7	20	N	<20	15	20	N	7	N	300
TM04S	N	N	10	20	10	30	N	20	10	30	N	10	N	700
TM05S	N	N	20	50	15	<20	N	<20	20	20	N	10	N	500
TM06S	N	N	7	30	5	30	<5	<20	10	30	N	5	N	300
TM07S	N	N	50	70	10	20	N	20	30	50	N	7	N	700
TM08S	N	N	70	100	70	20	N	<20	50	10	N	15	N	300
TM09S	N	N	70	150	100	<20	N	N	70	<10	N	20	10	200
TM10S	N	N	50	100	70	70	N	<20	50	10	N	20	<10	300
TM11S	N	N	30	50	10	50	N	20	20	50	N	15	<10	300
TM12S	N	N	10	30	7	30	N	<20	15	30	N	10	N	500
TM13S	N	N	20	50	5	30	N	<20	10	15	N	7	N	300
TM14S	N	N	15	30	5	50	N	N	20	20	N	10	N	1,000
TM15S	N	N	20	20	10	20	N	<20	15	30	N	10	N	300
TM16S	N	N	7	30	7	<20	N	N	15	20	N	5	N	500
TM17S	N	N	30	70	10	20	N	30	20	20	N	10	N	300
TM18S	N	N	30	20	7	<20	N	20	20	20	N	7	N	300
TM19S	N	N	20	10	5	<20	N	<20	15	15	N	5	N	200
TM20S	N	N	30	20	20	20	N	20	20	30	N	7	N	150
TM21S	N	N	30	70	10	50	N	N	70	15	N	15	N	150
TM22S	N	N	20	30	10	<20	N	<20	20	20	N	10	N	500
TM23S	N	N	30	50	10	20	N	N	50	30	N	15	N	150
TM24S	N	N	30	50	15	50	N	<20	20	10	N	15	N	300
TM25S	N	N	50	20	15	<20	N	N	20	10	N	15	N	300
TM26S	N	N	30	20	15	70	N	<20	15	10	N	10	N	150
TM27S	N	N	5	<10	7	<20	N	N	7	10	N	<5	N	200
TM28S	N	N	10	10	7	<20	N	<20	15	10	N	5	N	200
TM29S	N	N	30	30	10	30	N	20	30	20	N	7	N	200
TM30S	N	N	30	50	7	20	N	<20	20	15	N	10	N	300
TM31S	N	N	7	10	7	20	N	N	10	15	N	5	N	700
TM32S	N	N	10	10	5	N	N	N	15	15	N	5	N	500
TM101	N	N	10	20	50	<20	N	<20	30	20	N	7	N	300
TM102	N	N	15	30	20	20	N	N	30	20	N	10	N	300
TM103	N	N	50	50	70	N	N	<20	50	15	N	15	N	150
TM104	N	N	20	50	30	<20	N	N	30	15	N	10	N	300
TM105	N	N	20	30	30	70	N	N	30	15	N	10	N	200
TM106	N	N	10	30	20	50	N	N	10	15	N	7	N	200
TM107	N	N	30	50	50	<20	N	N	50	20	N	10	N	150
TM108	N	N	30	20	50	N	N	N	20	20	N	7	N	300
TM109	N	N	7	20	20	20	N	N	10	<10	N	5	N	150
TM110	N	N	30	70	100	<20	N	N	50	20	N	15	N	200
TM111	N	N	30	70	70	20	N	N	20	20	N	15	N	200
TM112	N	N	30	50	70	50	N	<20	30	30	N	20	N	300
TM113	N	N	50	100	70	50	N	<20	50	20	N	15	N	200

TABLE 3--ANALYTICAL RESULTS OF STREAM-SEDIMENT SAMPLES FROM THE TRIGO MOUNTAINS WILDERNESS STUDY AREA, LAPAZ COUNTY, ARIZONA.--Continued

Sample	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s	Tb-ppm s	Au-ppm aa	As-ppm aa	Bi-ppm aa	SD-ppm aa	Zn-ppm aa	As-ppm icp	Bi-ppm icp	Sb-ppm icp	Zn-ppm icp
TM01S	70	N	30	N	300	N	N	N	N	N	15	--	--	--	--
TM02S	200	N	30	N	700	N	N	N	N	N	15	--	--	--	--
TM03S	70	N	20	N	300	N	N	N	N	<2	15	--	--	--	--
TM04S	70	N	30	N	700	N	N	N	N	N	15	--	--	--	--
TM05S	150	N	20	N	700	N	N	N	N	N	10	--	--	--	--
TM06S	70	N	20	N	300	N	N	N	N	N	15	--	--	--	--
TM07S	200	N	15	200	500	N	N	N	N	<2	45	--	--	--	--
TM08S	300	N	20	<200	200	N	N	N	N	N	10	--	--	--	--
TM09S	700	N	30	N	700	N	N	<10	N	N	10	--	--	--	--
TM10S	300	N	30	N	700	N	N	N	N	N	10	--	--	--	--
TM11S	200	N	100	N	700	N	N	N	<1	<2	10	--	--	--	--
TM12S	150	N	15	N	500	N	N	N	<1	N	10	--	--	--	--
TM13S	70	N	20	N	500	N	N	<10	3	N	15	--	--	--	--
TM14S	70	N	20	N	300	N	N	N	N	<2	10	--	--	--	--
TM15S	100	N	15	<200	200	N	N	N	N	N	10	--	--	--	--
TM16S	70	N	10	N	300	N	N	N	N	N	10	--	--	--	--
TM17S	150	N	30	N	150	N	N	N	N	<2	10	--	--	--	--
TM18S	70	N	15	N	200	N	N	N	N	N	10	--	--	--	--
TM19S	50	N	10	N	200	N	N	N	N	N	15	--	--	--	--
TM20S	150	N	<10	N	100	N	<.06	N	N	N	10	--	--	--	--
TM21S	150	N	30	N	150	N	N	N	N	N	15	--	--	--	--
TM22S	100	N	15	N	300	N	N	N	N	N	10	--	--	--	--
TM23S	100	N	30	N	300	N	N	N	N	<2	20	--	--	--	--
TM24S	150	N	20	N	500	N	<.05	N	N	N	10	--	--	--	--
TM25S	200	N	20	N	300	N	N	N	N	N	10	--	--	--	--
TM26S	300	N	30	N	300	N	N	N	N	<2	10	--	--	--	--
TM27S	50	N	<10	N	200	N	N	<10	1	<2	15	--	--	--	--
TM28S	70	N	10	N	300	N	N	N	7	N	5	--	--	--	--
TM29S	150	N	15	N	300	N	N	N	N	N	10	--	--	--	--
TM30S	100	N	15	N	70	N	N	N	N	N	10	--	--	--	--
TM31S	50	N	15	N	300	N	N	N	N	N	10	--	--	--	--
TM32S	70	N	10	N	300	N	N	N	N	N	10	--	--	--	--
TM101	100	N	10	N	700	N	N	N	N	N	N	N	N	N	41
TM102	70	N	15	N	200	N	N	N	N	N	N	N	N	N	36
TM103	100	N	10	<200	70	N	N	N	N	N	N	N	N	N	45
TM104	70	N	10	N	100	N	N	N	N	N	N	N	N	N	36
TM105	150	N	20	N	200	N	N	N	N	N	N	6	N	N	56
TM106	100	N	15	N	200	N	N	N	N	N	N	7	N	N	49
TM107	100	N	15	N	700	N	N	N	N	N	N	8	N	N	73
TM108	150	N	10	N	700	N	N	N	N	N	N	8	N	N	39
TM109	100	N	10	N	100	N	N	N	N	N	N	5	N	N	40
TM110	100	N	20	N	200	N	N	N	N	N	N	7	N	N	80
TM111	100	N	15	<200	100	N	N	N	N	N	N	N	N	N	65
TM112	100	N	20	N	200	N	N	N	N	N	N	7	N	N	97
TM113	150	N	20	<200	200	N	N	N	N	N	N	6	N	N	100

TABLE 3--ANALYTICAL RESULTS OF STREAM-SEDIMENT SAMPLES FROM THE TRIGO MOUNTAINS WILDERNESS STUDY AREA, LAPAZ COUNTY, ARIZONA.--Continued

Sample	Latitude	Longitude	Fe-pct. s	Hg-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	Pe-ppm s
TM114	33 17 6	114 37 5	7	2.0	2.0	1.0	500	N	N	N	10	300	<1.0
TM115	33 17 12	114 35 50	5	1.5	3.0	.5	300	N	N	N	20	1,000	<1.0
TM116	33 16 45	114 35 30	7	3.0	5.0	.7	500	N	N	N	30	700	1.0
TM117	33 16 20	114 35 29	7	3.0	5.0	.5	500	N	N	N	30	1,500	1.0
TM118	33 16 19	114 35 17	3	3.0	2.0	.5	500	N	N	N	20	700	1.0
TM119	33 16 0	114 35 9	5	2.0	1.5	1.0	500	N	N	N	20	500	<1.0
TM120	33 15 43	114 35 18	7	5.0	5.0	>1.0	700	N	N	N	30	700	1.0
TM121	33 15 7	114 35 18	5	3.0	3.0	1.0	700	N	N	N	15	>5,000	<1.0
TM122	33 13 59	114 35 52	3	2.0	1.5	.7	500	N	N	N	30	700	1.5
TM123	33 14 11	114 37 22	5	2.0	2.0	>1.0	500	N	N	N	20	500	1.0
TM124	33 14 23	114 37 23	5	2.0	1.5	.7	500	N	N	N	30	700	1.0
TM125	33 14 54	114 37 10	7	5.0	2.0	1.0	1,000	N	N	N	15	2,000	1.5
TM126	33 13 39	114 36 35	3	2.0	1.5	.5	700	N	N	N	20	700	1.5
TM127	33 13 5	114 37 3	7	5.0	7.0	>1.0	1,500	N	N	N	20	700	1.0
TM128	33 12 53	114 37 25	7	3.0	2.0	1.0	700	N	N	N	20	1,000	1.0
TM129	33 12 53	114 36 11	10	5.0	5.0	>1.0	1,500	N	N	N	30	1,000	1.0
TM130	33 13 0	114 35 36	7	1.5	2.0	>1.0	700	N	N	N	30	700	1.0
TM131	33 12 56	114 35 20	5	2.0	2.0	1.0	500	N	N	N	20	500	<1.0
TM132	33 12 59	114 35 18	5	1.5	3.0	1.0	500	N	N	N	15	700	<1.0
TM133	33 13 29	114 35 27	7	3.0	5.0	>1.0	700	N	N	N	10	300	<1.0
TM134	33 13 32	114 35 13	5	1.5	1.5	.5	500	N	N	N	30	500	1.0
TM135	33 13 37	114 35 10	5	2.0	1.5	.5	500	N	N	N	20	700	1.0
TM136	33 12 2	114 37 8	5	3.0	1.0	.3	700	N	N	N	20	300	<1.0
TM137	33 11 32	114 36 4	7	3.0	1.5	.5	300	N	N	N	15	300	<1.0
TM138	33 11 32	114 35 29	10	2.0	2.0	1.0	500	N	N	N	20	200	1.0
TM139	33 11 21	114 34 53	3	2.0	1.0	.3	200	N	N	N	15	500	1.0
TM140	33 11 7	114 34 40	5	2.0	1.0	.7	200	N	N	N	20	300	1.0
TM141	33 10 41	114 36 21	5	3.0	1.5	.5	300	<.5	N	N	10	300	1.0
TM142	33 10 34	114 36 24	10	3.0	2.0	>1.0	700	N	N	N	<10	500	1.0
TM143	33 10 52	114 36 38	7	3.0	1.5	1.0	500	N	N	N	<10	200	<1.0
TM144	33 9 38	114 35 31	5	2.0	2.0	.2	200	N	N	N	20	500	1.0
TM145	33 9 20	114 35 13	3	1.5	2.0	.5	300	N	N	N	<10	300	<1.0
TM146	33 8 36	114 34 33	5	1.5	1.5	.5	200	N	N	N	20	5,000	1.0
TM147	33 8 32	114 34 33	3	1.0	1.0	.3	200	<.5	N	N	10	5,000	<1.0
TM148	33 7 54	114 34 34	10	2.0	2.0	1.0	500	10.0	N	N	20	>5,000	2.0
TM149	33 7 31	114 34 38	5	1.0	2.0	.3	300	30.0	N	N	10	>5,000	5.0

TABLE 3--ANALYTICAL RESULTS OF STREAM-SEDIMENT SAMPLES FROM THE TRIGO MOUNTAINS WILDERNESS STUDY AREA, LAPAZ COUNTY, ARIZONA.--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
TM114	N	N	30	70	50	30	N	N	50	<10	N	10	N	100
TM115	N	N	10	20	50	20	N	N	20	10	N	10	N	200
TM116	N	N	20	50	50	<20	N	N	30	15	N	10	N	200
TM117	N	N	7	30	20	30	N	<20	20	20	N	15	N	300
TM118	N	N	20	30	20	20	N	N	50	10	N	10	N	200
TM119	N	N	15	50	50	70	N	<20	30	15	N	10	N	300
TM120	N	N	10	50	70	50	N	N	50	30	N	15	N	300
TM121	N	N	20	30	50	<20	N	N	30	15	N	15	N	500
TM122	N	N	10	50	30	30	N	N	30	20	N	7	N	100
TM123	N	N	30	70	30	50	N	N	100	15	N	15	N	150
TM124	N	N	15	30	50	<20	N	N	30	20	N	10	N	100
TM125	N	N	30	70	200	20	N	N	70	30	N	20	N	200
TM126	N	N	7	30	30	20	N	N	30	30	N	7	N	150
TM127	N	N	15	100	70	70	N	<20	70	30	N	20	N	300
TM128	N	N	30	20	70	50	N	N	50	20	N	15	N	200
TM129	N	N	30	70	50	100	N	<20	50	30	N	20	N	300
TM130	N	N	20	50	150	50	N	<20	50	20	N	15	N	200
TM131	N	N	20	20	50	<20	N	N	50	20	N	15	N	150
TM132	N	N	7	20	20	20	N	N	30	20	N	10	N	200
TM133	N	N	50	70	30	<20	N	N	100	10	N	20	N	200
TM134	N	N	7	30	20	20	N	<20	30	20	N	7	N	200
TM135	N	N	10	30	150	20	N	<20	50	30	N	10	N	150
TM136	N	N	10	10	30	<20	N	N	20	20	N	7	N	150
TM137	N	N	20	30	20	<20	N	N	30	10	N	10	N	200
TM138	N	N	30	50	70	30	N	20	70	10	N	15	N	200
TM139	N	N	5	30	20	<20	N	N	30	15	N	5	N	200
TM140	N	N	10	20	50	<20	N	N	30	15	N	10	N	200
TM141	N	N	10	20	70	20	N	N	20	10	N	10	N	200
TM142	N	N	50	30	50	20	N	<20	50	15	N	15	N	300
TM143	N	N	50	30	30	<20	N	<20	30	10	N	15	N	150
TM144	N	N	10	15	20	<20	N	N	30	15	N	5	N	300
TM145	N	N	7	15	20	20	N	N	5	15	N	7	N	200
TM146	N	N	10	20	50	30	N	N	30	20	N	10	N	200
TM147	N	N	7	10	20	<20	N	N	10	20	N	7	N	150
TM148	N	N	20	30	50	100	N	N	30	100	N	15	N	500
TM149	N	N	<5	10	20	100	N	N	5	200	N	5	N	500

TABLE 3--ANALYTICAL RESULTS OF STREAM-SEDIMENT SAMPLES FROM THE TRIGO MOUNTAINS WILDERNESS STUDY AREA, LAPAZ COUNTY, ARIZONA.--Continued

Sample	V-ppm S	W-ppm S	Y-ppm S	Zn-ppm S	Zr-ppm S	Th-ppm S	Au-ppm aa	As-ppm aa	Bi-ppm aa	Sb-ppm aa	Zn-ppm aa	As-ppm icp	Pi-ppm icp	Sb-ppm icp	%n-ppm icp
TM114	100	N	15	<200	150	N	N	--	--	--	--	N	N	N	68
TM115	700	N	15	N	500	N	N	--	--	--	--	6	N	N	62
TM116	100	N	15	N	300	N	N	--	--	--	--	N	N	N	53
TM117	70	N	20	N	700	N	N	--	--	--	--	6	N	N	49
TM118	100	N	15	N	300	N	N	--	--	--	--	6	N	N	52
TM119	100	N	15	N	500	N	N	--	--	--	--	N	N	N	72
TM120	100	N	20	<200	200	N	N	--	--	--	--	N	N	N	79
TM121	100	N	15	<200	100	N	N	--	--	--	--	N	N	3	69
TM122	70	N	15	N	500	N	N	--	--	--	--	10	N	3	55
TM123	100	N	20	N	300	N	N	--	--	--	--	10	N	N	60
TM124	70	N	10	N	70	N	N	--	--	--	--	5	N	N	68
TM125	150	N	20	<200	150	N	--	--	--	--	--	6	N	4	94
TM126	70	N	15	N	200	N	N	--	--	--	--	8	N	N	59
TM127	150	N	30	<200	200	N	N	--	--	--	--	N	N	N	48
TM128	100	N	30	<200	100	N	N	--	--	--	--	N	N	N	72
TM129	100	N	30	N	700	N	N	--	--	--	--	6	N	3	48
TM130	100	N	30	N	1,000	N	--	--	--	--	--	N	N	N	53
TM131	70	N	15	N	200	N	N	--	--	--	--	6	N	N	47
TM132	70	N	20	N	300	N	N	--	--	--	--	N	N	N	54
TM133	150	N	15	N	150	N	N	--	--	--	--	N	N	N	48
TM134	70	N	15	N	700	N	N	--	--	--	--	N	N	N	58
TM135	70	N	15	N	700	N	N	--	--	--	--	7	N	4	52
TM136	50	N	10	N	70	N	N	--	--	--	--	10	N	N	59
TM137	70	N	10	N	100	N	N	--	--	--	--	N	N	N	45
TM138	150	N	15	N	200	N	N	--	--	--	--	N	N	N	51
TM139	50	N	10	N	100	N	N	--	--	--	--	N	N	N	42
TM140	70	N	15	N	100	N	N	--	--	--	--	N	N	N	43
TM141	70	N	15	N	150	N	N	--	--	--	--	N	N	N	49
TM142	150	N	15	<200	100	N	N	--	--	--	--	N	N	N	47
TM143	100	N	15	N	200	N	N	--	--	--	--	N	N	N	38
TM144	70	N	10	N	700	N	N	--	--	--	--	N	N	N	44
TM145	50	N	10	N	70	N	N	--	--	--	--	N	N	N	40
TM146	100	N	15	N	300	N	N	--	--	--	--	N	N	3	49
TM147	50	N	20	N	100	N	N	--	--	--	--	5	N	N	44
TM148	150	N	20	N	70	N	N	--	--	--	--	7	N	11	73
TM149	100	N	10	N	150	N	N	--	--	--	--	9	N	3	54

TABLE 4--ANALYTICAL RESULTS OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE TRIGO MOUNTAINS WILDERNESS STUDY AREA,
LA PAZ COUNTY, ARIZONA.

Sample	Latitude	Longitude	Fe-pct. S	Hg-pct. S	Ca-pct. S	Ti-pct. S	Mn-ppm S	Ag-ppm S	As-ppm S	Au-ppm S
TH01C	33 4 7	114 39 38	1.0	.50	2.0	1.00	100	N	N	N
TH02C	33 4 58	114 40 12	1.0	.70	2.0	.70	70	N	N	N
TH03C	33 5 33	114 41 8	1.0	.70	2.0	1.00	150	N	N	N
TH04C	33 5 53	114 40 26	1.0	.50	2.0	1.00	100	N	N	N
TH05C	33 6 27	114 40 38	1.5	.30	5.0	1.00	100	N	N	N
TH06C	33 6 51	114 40 40	1.5	.30	3.0	2.00	150	N	N	N
TH07C	33 7 24	114 40 42	.3	.15	2.0	.70	50	N	N	N
TH08C	33 7 44	114 40 6	.5	.70	10.0	.70	200	N	N	N
TH09C	33 8 10	114 39 42	.7	.50	15.0	.70	150	N	N	N
TH10C	33 9 8	114 39 4	1.0	.50	10.0	1.00	150	N	N	N
TH11C	33 9 17	114 39 7	1.0	.50	7.0	>2.00	200	N	N	N
TH12C	33 8 44	114 38 2	.5	.30	3.0	1.50	70	N	N	N
TH13C	33 8 47	114 37 58	.7	.50	10.0	2.00	100	N	N	N
TH14C	33 9 11	114 37 39	1.0	.50	5.0	>2.00	100	N	N	N
TH15C	33 9 22	114 37 23	.5	.50	20.0	2.00	70	N	N	N
TH16C	33 9 27	114 37 25	.3	.70	15.0	>2.00	20	N	N	N
TH17C	33 9 12	114 36 49	1.0	.70	3.0	1.00	150	N	N	N
TH18C	33 9 15	114 36 49	1.5	1.00	3.0	2.00	150	N	N	N
TH19C	33 8 46	114 36 16	.2	.10	10.0	.70	50	N	N	N
TH20C	33 8 51	114 36 16	.7	.50	3.0	1.00	200	N	N	N
TH21C	33 9 57	114 39 48	1.5	.50	15.0	>2.00	700	N	N	N
TH22C	33 10 43	114 39 36	1.0	.70	10.0	1.00	500	N	N	N
TH23C	33 11 34	114 39 14	1.0	.70	7.0	1.50	500	N	N	N
TH24C	33 5 43	114 38 42	1.0	.70	5.0	2.00	100	N	N	N
TH25C	33 6 18	114 38 37	1.5	1.00	10.0	2.00	500	N	N	N
TH26C	33 6 0	114 37 53	1.5	1.00	7.0	1.00	300	N	N	N
TH27C	33 7 39	114 36 59	.5	.20	20.0	1.50	20	N	N	N
TH28C	33 7 42	114 36 53	.5	.50	15.0	.70	50	N	N	N
TH29C	33 9 57	114 36 23	.7	.70	7.0	2.00	200	N	N	N
TH30C	33 9 57	114 36 36	1.0	1.00	5.0	2.00	100	N	N	N
TH31C	33 9 49	114 37 56	.7	.50	2.0	>2.00	150	N	N	N
TH32C	33 9 54	114 37 52	.5	.70	3.0	2.00	100	N	N	N
TH33C	33 6 21	114 35 2	.7	.30	30.0	.20	500	70	N	N
TH101C	33 11 12	114 38 39	2.0	1.00	5.0	>2.00	1,000	N	N	N
TH102C	33 10 53	114 38 30	7.0	5.00	1.0	>2.00	1,000	N	N	N
TH103C	33 11 11	114 37 35	1.5	1.00	1.0	.70	300	N	N	N
TH104C	33 11 58	114 37 33	7.0	7.00	5.0	1.00	10,000	N	N	N
TH105C	33 12 25	114 38 41	5.0	5.00	1.0	>2.00	500	N	N	N
TH106C	33 13 40	114 38 20	10.0	.20	2.0	>2.00	500	N	N	N
TH107C	33 14 55	114 37 34	5.0	.20	5.0	>2.00	300	N	N	N
TH108C	33 15 41	114 38 22	3.0	1.50	2.0	2.00	300	N	N	N
TH109C	33 16 36	114 38 17	10.0	2.00	5.0	>2.00	700	N	N	N
TH110C	33 16 11	114 38 11	3.0	2.00	3.0	>2.00	500	N	N	N
TH111C	33 16 1	114 37 10	3.0	5.00	7.0	>2.00	500	N	N	N
TH112C	33 15 56	114 37 10	15.0	5.00	7.0	2.00	1,500	N	N	N

TABLE 4--ANALYTICAL RESULTS OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE TRIGO MOUNTAINS WILDERNESS STUDY AREA,
LAPAZ COUNTY, ARIZONA.--Continued

Sample	P-ppm S	Ba-ppm S	Re-ppm S	Ri-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
TM01C	20	5,000	N	N	N	N	N	N	50	N	<50	<10
TM02C	20	>10,000	N	N	N	N	<20	N	70	N	<50	<10
TM03C	30	5,000	N	N	N	N	N	N	100	N	<50	N
TM04C	20	10,000	N	N	N	N	<20	N	50	N	<50	N
TM05C	20	7,000	N	N	N	N	N	<10	150	N	N	N
TM06C	50	>10,000	N	N	N	N	<20	N	150	N	50	N
TM07C	20	>10,000	N	N	N	N	N	N	N	N	N	N
TM08C	20	2,000	N	N	N	N	N	N	150	N	N	<10
TM09C	<20	300	N	N	N	N	N	N	200	N	N	N
TM10C	20	7,000	N	N	N	N	N	<10	100	N	N	N
TM11C	30	>10,000	N	N	N	N	N	10	200	N	70	N
TM12C	20	5,000	<2	50	N	N	N	N	N	N	<50	N
TM13C	20	3,000	N	1,500	N	N	N	<10	100	N	N	N
TM14C	30	>10,000	<2	N	N	N	N	<10	100	N	<50	N
TM15C	20	>10,000	N	N	N	N	N	<10	70	N	N	N
TM16C	20	1,500	N	N	N	N	N	N	<50	N	50	N
TM17C	20	>10,000	N	N	N	N	<20	N	50	N	<50	N
TM18C	20	3,000	N	N	N	N	N	<10	<50	N	N	N
TM19C	<20	>10,000	N	N	N	N	N	<10	<50	N	N	N
TM20C	20	10,000	N	N	N	N	N	<10	<50	N	N	N
TM21C	20	>10,000	N	N	N	N	N	N	100	N	N	N
TM22C	20	7,000	N	N	N	N	N	N	70	N	N	N
TM23C	20	5,000	N	N	N	N	N	<10	50	N	N	<10
TM24C	30	2,000	N	N	N	N	N	<10	70	N	N	N
TM25C	<20	3,000	N	N	N	N	N	10	200	N	N	N
TM26C	20	2,000	N	N	N	N	N	<10	50	N	N	N
TM27C	20	>10,000	N	50	N	N	N	<10	70	N	N	N
TM28C	20	>10,000	N	>2,000	N	N	N	<10	<50	30	N	N
TM29C	20	>10,000	N	50	N	N	N	N	150	N	<50	N
TM30C	20	3,000	N	<20	N	N	N	N	50	N	<50	N
TM31C	20	3,000	N	N	N	N	<20	N	100	N	50	N
TM32C	20	5,000	N	N	N	N	N	N	50	N	N	N
TM33C	20	>10,000	N	N	<50	N	50	15	100	200	N	N
TM101C	200	>10,000	2	N	N	<10	100	N	300	N	50	30
TM102C	200	500	<2	N	N	70	100	N	200	N	<50	100
TM103C	20	>10,000	N	N	N	<10	70	N	N	N	N	10
TM104C	<20	>10,000	N	N	N	100	200	15	150	N	N	150
TM105C	150	>10,000	N	N	N	50	150	N	100	N	<50	70
TM106C	200	700	N	N	N	50	30	N	300	<10	70	10
TM107C	300	>10,000	<2	N	N	<10	30	N	1,000	10	100	<10
TM108C	N	>10,000	N	N	N	N	100	N	200	15	70	10
TM109C	500	1,500	<2	N	N	20	150	N	300	<10	70	20
TM110C	N	>10,000	N	N	N	<10	300	N	200	10	70	50
TM111C	N	>10,000	N	N	N	20	300	N	200	<10	70	50
TM112C	20	>10,000	<2	N	N	50	150	10	1,000	N	50	50

TABLE 4--ANALYTICAL RESULTS OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE TRIGO MOUNTAINS WILDERNESS STUDY AREA,
 LAPAZ COUNTY, ARIZONA.--Continued

Sample	Ph-ppm S	Sb-ppm S	Sc-ppm S	Sn-ppm S	Str-ppm S	V-ppm S	W-ppm S	Y-ppm S	Zn-ppm S	Zr-ppm S	Th-ppm S
TM01C	<20	N	10	N	1,000	20	N	100	N	>2,000	N
TM02C	N	N	<10	N	2,000	20	N	70	N	>2,000	N
TM03C	<20	N	10	N	300	20	N	50	N	>2,000	N
TM04C	<20	N	20	N	300	30	N	100	N	>2,000	N
TM05C	N	N	20	N	500	30	N	150	N	>2,000	N
TM06C	20	N	30	N	1,000	50	N	200	N	>2,000	N
TM07C	N	N	15	N	>10,000	<20	N	150	N	>2,000	N
TM08C	N	N	N	N	500	20	N	200	N	>2,000	N
TM09C	N	N	N	N	200	20	N	200	N	>2,000	N
TM10C	<20	N	10	N	500	30	N	300	N	>2,000	N
TM11C	30	N	10	N	500	100	N	700	N	>2,000	N
TM12C	30	N	10	N	300	30	N	200	N	>2,000	N
TM13C	N	N	15	500	200	30	N	500	N	>2,000	N
TM14C	<20	N	15	N	>10,000	50	N	500	N	>2,000	N
TM15C	70	N	10	N	7,000	50	N	500	N	>2,000	N
TM16C	N	N	15	N	300	30	N	200	N	>2,000	N
TM17C	50	N	N	N	3,000	50	N	100	N	>2,000	N
TM18C	20	N	10	N	500	30	N	150	N	>2,000	N
TM19C	100	N	N	N	5,000	20	N	100	N	>2,000	N
TM20C	70	N	<10	N	500	30	N	150	N	>2,000	N
TM21C	<20	N	10	N	2,000	50	N	700	N	>2,000	N
TM22C	50	N	<10	N	500	30	N	300	N	>2,000	N
TM23C	50	N	10	N	500	30	N	200	N	>2,000	N
TM24C	N	N	20	N	200	50	N	300	N	>2,000	N
TM25C	N	N	10	N	500	100	N	500	N	>2,000	N
TM26C	70	N	10	N	200	50	N	200	N	>2,000	N
TM27C	N	N	20	N	7,000	20	N	300	N	>2,000	N
TM28C	2,000	N	15	100	1,000	700	N	150	N	>2,000	N
TM29C	70	N	30	100	2,000	50	N	700	N	>2,000	200
TM30C	<20	N	20	N	500	30	N	200	N	>2,000	N
TM31C	20	N	50	70	700	50	N	700	N	>2,000	N
TM32C	70	N	20	N	1,000	20	N	200	N	>2,000	N
TM33C	>50,000	N	N	N	700	5,000	N	300	7,000	>2,000	N
TM101C	<20	N	15	N	1,500	200	N	700	N	>2,000	N
TM102C	<20	N	20	N	N	150	N	500	N	>2,000	N
TM103C	N	N	N	300	200	100	N	30	N	>2,000	N
TM104C	N	N	30	N	500	300	N	50	N	>2,000	N
TM105C	<20	N	10	N	200	150	N	150	N	>2,000	N
TM106C	20	N	20	N	<200	100	N	300	N	>2,000	300
TM107C	20	N	15	N	700	200	N	500	N	>2,000	200
TM108C	<20	N	<10	N	500	100	N	200	N	>2,000	N
TM109C	N	N	30	N	300	200	N	500	N	>2,000	N
TM110C	N	N	10	N	2,000	150	N	300	N	>2,000	N
TM111C	20	N	15	N	300	150	N	200	N	>2,000	N
TM112C	N	N	15	N	500	200	N	100	N	>2,000	N

TABLE 4--ANALYTICAL RESULTS OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE TRIGO MOUNTAINS WILDERNESS STUDY AREA,
 LAPAZ COUNTY, ARIZONA.--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
TM113C	33 16 38	114 36 41	2.0	7.00	7.0	2.00	500	N	N	N
TM114C	33 17 6	114 37 5	1.0	.70	2.0	>2.00	150	N	N	N
TM115C	33 17 12	114 35 50	.5	.15	3.0	2.00	100	N	N	N
TM116C	33 16 45	114 35 30	.5	.20	3.0	2.00	150	N	N	N
TM117C	33 16 20	114 35 29	3.0	2.00	1.5	2.00	500	N	N	N
TM118C	33 16 19	114 35 17	3.0	1.50	5.0	>2.00	700	N	N	N
TM119C	33 16 0	114 35 9	5.0	3.00	3.0	>2.00	700	N	N	N
TM120C	33 15 43	114 35 18	3.0	3.00	5.0	>2.00	1,000	N	N	N
TM121C	33 15 7	114 35 18	1.0	.50	1.0	.50	700	N	N	N
TM122C	33 13 59	114 35 52	3.0	2.00	5.0	>2.00	5,000	10	N	N
TM123C	33 14 11	114 37 22	5.0	3.00	5.0	>2.00	1,000	N	N	N
TM124C	33 14 23	114 37 23	7.0	7.00	3.0	>2.00	1,500	N	N	N
TM125C	33 14 54	114 37 10	5.0	2.00	7.0	>2.00	700	N	N	N
TM126C	33 13 39	114 36 35	1.0	7.00	3.0	2.00	1,000	N	N	N
TM127C	33 13 5	114 37 3	1.5	5.00	7.0	2.00	1,000	N	N	N
TM128C	33 12 53	114 37 25	10.0	10.00	5.0	2.00	2,000	N	N	N
TM129C	33 12 53	114 36 11	1.5	5.00	5.0	>2.00	1,500	<1	N	N
TM130C	33 13 0	114 35 36	2.0	2.00	2.0	>2.00	700	N	N	N
TM131C	33 12 56	114 35 20	5.0	10.00	7.0	>2.00	3,000	N	N	N
TM132C	33 12 59	114 35 18	.5	.30	1.5	>2.00	150	N	N	N
TM133C	33 13 29	114 35 27	1.5	2.00	1.5	1.50	150	N	N	N
TM134C	33 13 32	114 35 13	5.0	.70	2.0	>2.00	700	N	N	N
TM135C	33 13 37	114 35 10	1.5	1.00	1.5	1.00	1,000	N	N	N
TM136C	33 12 2	114 37 8	7.0	7.00	7.0	>2.00	3,000	N	N	N
TM137C	33 11 32	114 36 4	.7	.50	2.0	2.00	150	N	N	N
TM138C	33 11 32	114 35 29	.5	.20	1.0	.70	70	N	N	N
TM139C	33 11 21	114 34 53	.3	.50	2.0	2.00	150	N	N	N
TM140C	33 11 7	114 34 40	1.0	.50	1.5	.50	100	N	N	N
TM142C	33 10 34	114 36 24	2.0	1.50	7.0	>2.00	300	N	N	N
TM143C	33 10 52	114 36 38	3.0	2.00	5.0	>2.00	300	N	N	N
TM144C	33 9 38	114 35 30	1.0	.20	1.5	2.00	100	N	N	N
TM145C	33 9 20	114 35 13	1.5	.70	7.0	2.00	700	N	N	N
TM146C	33 8 36	114 34 33	.7	.10	5.0	.30	50	N	N	N
TM147C	33 8 32	114 34 33	1.5	.05	1.0	.30	200	N	N	N
TM148C	33 7 54	114 34 34	2.0	<.05	5.0	.15	100	50	N	N
TM149C	33 7 31	114 34 38	1.0	.07	5.0	.50	150	10	N	N

TABLE 4--ANALYTICAL RESULTS OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE TRIGO MOUNTAINS WILDERNESS STUDY AREA,
 LAPAZ COUNTY, ARIZONA.--Continued

Sample	B--ppm S	Ba--ppm S	Be--ppm S	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
TM113C	20	>10,000	N	N	N	30	1,000	N	<50	N	<50	100
TM114C	30	10,000	N	N	N	N	100	N	100	N	50	<10
TM115C	N	>10,000	N	N	N	N	N	N	50	N	N	N
TM116C	N	>10,000	N	N	N	N	70	N	<50	N	N	N
TM117C	50	>10,000	N	N	N	<10	100	N	70	N	N	20
TM118C	100	>10,000	N	N	N	10	100	N	300	10	70	20
TM119C	70	>10,000	3	N	N	10	150	N	200	N	N	50
TM120C	50	>10,000	2	N	N	10	70	N	150	N	N	30
TM121C	N	>10,000	N	N	N	N	70	<10	100	N	N	10
TM122C	150	>10,000	2	N	N	<10	150	N	200	N	50	30
TM123C	150	10,000	N	N	N	<10	200	N	200	<10	50	50
TM124C	100	1,500	N	N	N	20	200	N	200	10	70	100
TM125C	20	>10,000	N	N	N	<10	200	N	300	10	70	50
TM126C	100	>10,000	N	N	N	<10	500	N	100	N	<50	70
TM127C	50	10,000	N	N	N	<10	300	<10	150	N	<50	70
TM128C	50	1,500	N	N	N	20	150	20	200	N	50	100
TM129C	30	>10,000	N	N	N	<10	700	N	50	N	50	50
TM130C	50	>10,000	2	N	N	<10	150	N	200	N	<50	30
TM131C	100	2,000	N	N	N	15	2,000	N	100	N	<50	100
TM132C	20	>10,000	<2	N	N	N	50	N	50	N	<50	<10
TM133C	30	10,000	N	N	N	<10	100	N	<50	N	<50	30
TM134C	70	2,000	7	N	N	<10	150	N	300	N	<50	50
TM135C	70	>10,000	<2	N	N	<10	50	N	100	N	<50	20
TM136C	100	>10,000	<2	N	N	20	500	N	300	N	50	100
TM137C	<20	>10,000	N	N	N	N	N	N	50	N	<50	N
TM138C	<20	1,500	<2	N	N	N	N	N	N	N	N	N
TM139C	N	>10,000	3	N	N	N	N	N	100	N	N	N
TM140C	N	10,000	N	N	N	N	N	N	N	N	N	<10
TM142C	N	>10,000	<2	N	N	N	100	N	200	N	<50	10
TM143C	70	>10,000	<2	N	N	<10	50	N	70	N	N	20
TM144C	50	>10,000	5	N	N	N	N	N	70	N	N	N
TM145C	50	>10,000	<2	N	N	<10	70	N	70	N	N	<10
TM146C	<20	>10,000	N	N	N	N	N	<10	<50	N	N	N
TM147C	N	>10,000	N	N	N	N	N	10	N	N	N	N
TM148C	30	>10,000	5	N	N	N	N	20	N	N	N	N
TM149C	N	>10,000	N	N	N	N	N	10	<50	N	N	N

TABLE 4--ANALYTICAL RESULTS OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE TRICO MOUNTAINS WILDERNESS STUDY AREA,
 LAPAZ COUNTY, ARIZONA.--Continued

Sample	Pb-ppm S	Sb-ppm S	Sc-ppm S	Sn-ppm S	Sr-ppm S	V-ppm S	W-ppm S	Y-ppm S	Zn-ppm S	Zr-ppm S	Th-ppm S
TM113C	N	N	20	2,000	200	100	N	200	N	>2,000	N
TM114C	10,000	N	15	200	<200	100	N	500	N	>2,000	200
TM115C	N	N	<10	N	2,000	70	<100	200	N	>2,000	N
TM116C	N	N	N	N	1,500	70	N	150	N	>2,000	N
TM117C	<20	N	N	N	1,500	100	N	150	N	>2,000	N
TM118C	<20	N	10	<20	700	150	N	200	N	>2,000	N
TM119C	50	N	30	1,000	2,000	100	N	200	N	>2,000	N
TM120C	20	N	20	N	1,500	100	N	200	N	>2,000	N
TM121C	N	N	N	N	2,000	70	N	<20	N	2,000	N
TM122C	30	N	20	700	1,000	200	N	300	N	>2,000	N
TM123C	20	N	15	<20	200	200	N	300	N	>2,000	N
TM124C	<20	N	50	<20	200	200	N	200	N	>2,000	N
TM125C	<20	N	10	20	2,000	200	N	300	N	>2,000	N
TM126C	N	N	10	N	1,000	70	N	70	N	>2,000	N
TM127C	N	N	15	N	700	150	<100	100	N	>2,000	N
TM128C	<20	N	20	N	<200	500	N	50	N	>2,000	N
TM129C	70	N	15	N	500	100	<100	70	N	>2,000	N
TM130C	N	N	15	N	500	200	N	150	N	>2,000	N
TM131C	N	N	20	N	300	200	N	70	N	>2,000	N
TM132C	N	N	10	30	<200	70	N	200	N	>2,000	N
TM133C	N	N	10	N	1,000	50	N	50	N	>2,000	N
TM134C	<20	N	15	300	500	70	N	700	N	>2,000	N
TM135C	<20	N	10	N	1,000	300	N	100	N	>2,000	N
TM136C	20	N	20	<20	3,000	30	N	200	N	>2,000	N
TM137C	<20	N	<10	20	700	20	N	100	N	>2,000	N
TM138C	N	N	<10	100	200	30	N	150	N	>2,000	N
TM139C	N	N	N	N	2,000	30	150	500	N	>2,000	N
TM140C	N	N	<10	N	500	30	N	50	N	>2,000	N
TM142C	<20	N	<10	<20	700	100	N	500	N	>2,000	N
TM143C	20	N	20	<20	500	70	N	300	N	>2,000	N
TM144C	700	N	20	N	200	50	N	500	N	>2,000	N
TM145C	50	N	N	<20	1,500	70	N	300	N	>2,000	N
TM146C	20	N	N	30	1,500	20	N	50	N	>2,000	N
TM147C	70	N	N	50	3,000	50	N	--	N	50	N
TM148C	2,000	N	N	N	1,500	70	N	50	N	300	N
TM149C	200	N	N	<20	2,000	70	N	50	N	2,000	N

TABLE 5--ANALYTICAL RESULTS OF ROCK SAMPLES FROM THE TRIGO MOUNTAINS WILDERNESS STUDY AREA, LAPAZ COUNTY, ARIZONA.

Sample	Latitude	Longitude	Fe-pct. s	Hg-pct. s	Ca-pct. s	Ti-pct. s	Mn-ppm s	Ag-ppm s	As-ppm s	Au-ppm s	B-ppm s
TM8601RA	33 5 18	114 35 33	15.0	.10	3.00	<.002	2,000	500.0	N	N	20
TM8601RR	33 5 18	114 35 33	1.0	.30	1.00	.100	20	1.5	N	N	N
TM8601RC	33 5 18	114 35 33	3.0	.70	1.50	.200	500	5.0	N	N	10
TM8602R	33 6 2	114 35 57	3.0	.30	2.00	N	3,000	200.0	<200	N	15
TM8602RA	33 6 2	114 35 57	5.0	.20	2.00	N	1,500	100.0	1,500	N	50
TM8603R	33 8 13	114 34 57	7.0	.15	3.00	.200	1,500	200.0	N	N	20
TM8604R	33 6 22	114 35 3	5.0	.15	7.00	N	3,000	5.0	N	N	10
TM8605RA	33 6 58	114 35 9	15.0	.20	2.00	<.002	1,000	20.0	N	N	20
TM8605RB	33 6 58	114 35 9	20.0	.02	3.00	.100	500	150.0	N	N	10
TM8605RC	33 6 58	114 35 9	5.0	.70	.07	.100	1,000	100.0	N	N	15
TM8606RA	33 6 58	114 36 46	7.0	.20	1.50	N	3,000	200.0	N	N	10
TM8607R	33 7 16	114 36 39	15.0	.10	2.00	.002	500	50.0	N	N	10
TM8618R	33 9 13	114 36 50	1.5	.20	.50	.200	200	N	N	N	15
TM87001R	33 14 45	114 35 25	3.0	.05	.30	.150	>5,000	N	200	N	100
TM87002R	33 14 45	114 35 25	2.0	.03	.10	.100	>5,000	N	N	N	15
TM87003R	33 12 58	114 35 19	3.0	.70	2.00	.500	100	N	N	N	<10
TM87004R	33 12 58	114 35 29	3.0	.30	1.00	.100	>5,000	N	200	N	150
TM87005R	33 8 19	114 36 39	2.0	1.00	.70	.200	700	N	N	N	20
TM87006R	33 8 19	114 36 39	2.0	.70	.70	.150	200	N	N	N	10
TM87007R	33 8 19	114 36 39	1.5	1.00	1.00	.150	300	N	N	N	30
TM87008R	33 8 19	114 36 39	3.0	5.00	1.50	.200	300	N	N	N	10
TM87009R	33 8 19	114 36 39	2.0	.30	1.50	.300	150	N	N	N	30
TM87010R	33 8 22	114 36 37	3.0	1.50	2.00	.200	200	N	N	N	15
TM87011R	33 8 22	114 36 37	2.0	1.50	20.00	.150	200	N	N	N	10
TM87012R	33 8 22	114 36 37	2.0	1.00	1.00	.150	150	N	N	N	10
TM87013R	33 8 22	114 36 37	2.0	1.00	1.00	.200	300	N	N	N	20
TM87014R	33 8 22	114 36 37	2.0	.70	15.00	.150	300	N	N	N	10
TM87015R	33 7 55	114 36 53	3.0	.30	10.00	.150	150	N	N	N	100
TM87016R	33 7 55	114 36 53	2.0	.20	.30	.200	150	N	N	N	70
TM87017R	33 7 55	114 36 53	10.0	.30	3.00	.200	100	N	N	N	300
TM87018R	33 7 55	114 36 53	7.0	2.00	2.00	.500	700	N	N	N	<10
TM87019R	33 17 38	114 34 59	1.0	.20	.07	.005	30	1.0	N	N	N
TM87020R	33 17 38	114 34 59	2.0	.02	<.05	.007	10	5.0	N	10	N
TM87021R	33 17 38	114 34 59	1.5	<.02	N	N	10	2.0	N	N	N
TM87022R	33 17 38	114 34 59	.5	.07	<.05	.100	30	<.5	N	N	N
TM87023R	33 17 38	114 34 59	.7	<.02	N	.007	<10	2.0	N	N	N

TABLE 5--ANALYTICAL RESULTS OF ROCK SAMPLES FROM THE TRIGO MOUNTAINS WILDERNESS STUDY AREA, LAPAZ COUNTY, ARIZONA.--Continued

Sample	Ba-ppm S	Be-ppm S	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
TM8601PA	>5,000	30	N	70	N	N	20	<20	10	N	N	700
TM8601PB	200	N	N	N	N	N	<5	N	N	N	N	100
TM8601PC	3,000	1	N	N	<5	N	N	<20	N	<20	N	30
TM8602R	300	20	N	300	N	10	70	150	70	N	<5	15,000
TM8602RA	200	20	N	<20	<5	150	100	100	2,000	N	10	20,000
TM8603R	>5,000	20	N	N	<5	<10	20	50	<5	N	<5	500
TM8604R	200	10	N	N	N	N	30	100	<5	N	N	700
TM8605PA	500	15	N	N	N	N	N	50	N	N	N	20
TM8605PB	>5,000	5	N	N	N	N	70	50	<5	N	N	>20,000
TM8605RC	5,000	3	N	N	20	N	10	N	N	<20	15	1,000
TM8606RA	1,500	70	N	N	N	N	10	N	N	N	N	10,000
TM8607R	>5,000	10	N	N	N	N	100	70	100	N	<5	>20,000
TM8618R	300	N	N	N	<5	N	N	N	N	N	N	100
TM87001R	>5,000	50	N	N	20	N	500	150	20	<20	N	5,000
TM87002R	>5,000	7	N	N	<5	N	100	<20	5	20	N	70
TM87003R	1,000	1	N	N	5	N	10	20	N	<20	N	10
TM87004R	>5,000	15	N	N	20	N	200	50	70	N	<5	100
TM87005R	500	<1	N	N	<5	<10	15	N	N	N	7	20
TM87006R	300	<1	N	N	<5	<10	20	N	N	N	5	10
TM87007R	500	1	N	N	<5	<10	7	N	N	N	5	15
TM87008R	300	2	N	N	10	<10	15	N	N	N	10	10
TM87009R	500	1	N	N	<5	N	5	<20	N	<20	N	15
TM87010R	700	1	N	N	5	20	20	<20	N	N	10	30
TM87011R	200	<1	N	N	<5	10	15	<20	N	N	7	20
TM87012R	300	<1	N	N	5	N	10	N	N	N	5	10
TM87013R	300	<1	N	N	5	<10	10	N	N	N	10	10
TM87014R	300	<1	N	N	<5	N	7	<20	N	N	N	15
TM87015R	700	1	<10	N	N	N	5	20	N	<20	N	20
TM87016R	300	<1	N	N	<5	N	5	<20	N	<20	N	20
TM87017R	700	3	N	N	N	N	15	20	7	20	N	20
TM87018R	1,000	3	N	N	15	N	20	20	N	<20	5	20
TM87019R	50	N	<10	N	N	N	20	N	N	N	N	50
TM87020R	20	N	<10	N	5	N	30	N	N	N	<5	50
TM87021R	<20	N	10	N	N	N	15	N	<5	N	N	<10
TM87022R	20	N	N	N	N	N	70	N	20	N	<5	70
TM87023R	30	N	N	N	N	N	30	N	5	N	N	100

TABLE 5--ANALYTICAL RESULTS OF ROCK SAMPLES FROM THE TRIGO MOUNTAINS WILDERNESS STUDY AREA, LAPAZ COUNTY, ARIZONA.--Continued

Sample	Sb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s	Th-ppm s	Au-ppm aa	Hg-ppm aa
TM8601RA	N	N	N	300	100	100	30	7,000	N	N	N	4.20
TM8601RB	N	N	N	200	<10	N	10	N	20	N	N	N
TM8601RC	N	<5	N	1,000	20	N	N	N	50	N	N	N
TM8602R	<100	N	N	200	10	N	150	10,000	N	N	N	5.40
TM8602RA	200	N	N	N	<10	N	70	>10,000	N	N	.35	>10.00
TM8603R	<100	<5	N	1,500	100	<50	50	N	50	N	N	.40
TM8604R	N	N	N	300	300	<50	70	N	N	N	<.05	N
TM8605RA	<100	N	N	100	300	200	70	N	<10	N	N	4.30
TM8605RB	300	5	N	2,000	200	50	200	1,500	30	N	N	8.90
TM8605RC	N	<5	N	N	20	N	10	>10,000	100	N	N	.32
TM8606RA	<100	N	N	<100	10	N	15	2,000	N	N	N	.40
TM8607R	300	N	N	5,000	500	150	70	5,000	N	N	<.05	4.60
TM8618R	N	N	N	100	15	N	N	N	50	N	N	N
TM87001R	100	<5	N	2,000	200	50	15	N	100	N	.10	N
TM87002R	N	<5	N	300	50	N	20	N	150	N	.05	.03
TM87003R	N	10	N	200	50	N	15	N	150	N	N	N
TM87004R	150	<5	N	5,000	150	70	<10	N	50	N	.07	.07
TM87005R	N	<5	N	200	30	N	N	N	70	N	N	N
TM87006R	N	<5	N	200	30	N	N	N	50	N	N	.03
TM87007R	N	<5	N	300	30	N	N	N	70	N	N	.02
TM87008R	N	<5	N	500	50	N	N	N	70	N	N	.03
TM87009R	N	5	N	100	20	N	15	N	100	N	N	.05
TM87010R	N	5	N	500	50	N	<10	N	70	N	N	N
TM87011R	N	<5	N	200	30	N	10	N	100	N	N	.02
TM87012R	N	N	N	200	20	N	N	N	50	N	N	N
TM87013R	N	N	N	300	50	N	N	N	70	N	N	N
TM87014R	N	5	N	150	<10	N	20	N	50	N	N	N
TM87015R	N	5	N	100	30	N	15	N	150	N	N	N
TM87016R	N	<5	N	<100	10	N	15	N	150	N	N	.02
TM87017R	N	<5	N	100	100	N	10	N	200	N	N	N
TM87018R	N	10	N	300	150	N	20	N	100	N	N	N
TM87019R	N	N	N	N	<10	N	N	N	N	N	1.50	.55
TM87020R	N	N	N	N	15	N	N	N	N	N	59.00	2.40
TM87021R	N	N	N	N	<10	N	N	N	N	N	10.00	.41
TM87022R	N	N	N	N	20	N	N	N	10	N	.40	.02
TM87023R	N	N	N	N	100	N	N	N	N	N	.30	.02

TABLE 5--ANALYTICAL RESULTS OF ROCK SAMPLES FROM THE TRIGO MOUNTAINS WILDERNESS STUDY AREA, LAPAZ COUNTY, ARIZONA.--Continued

Sample	As-ppm aa	Bi-ppm aa	Cd-ppm aa	Sb-ppm aa	Zn-ppm aa	W-ppm cm	P%	As-ppm icp	Bi-ppm icp	Cd-ppm icp	Sb-ppm icp	Zn-ppm icp
TM8601RA	100	N	55.0	18	>2,000	252.0	1.82	--	--	--	--	--
TM8601RB	N	N	<.1	N	5	<.5	.01	--	--	--	--	--
TM8601RC	N	N	.2	4	25	1.5	.02	--	--	--	--	--
TM8602R	260	N	>100.0	38	>2,000	5.3	1.19	--	--	--	--	--
TM8602RA	>2,000	N	24.0	140	>2,000	27.0	2.99	--	--	--	--	--
TM8603R	<10	N	N	22	40	50.0	3.39	--	--	--	--	--
TM8604R	20	N	5.4	2	130	82.0	5.99	--	--	--	--	--
TM8605RA	N	N	.1	36	25	337.0	.89	--	--	--	--	--
TM8605RB	80	N	2.7	160	1,400	220.0	13.30	--	--	--	--	--
TM8605RC	10	N	5.5	8	>2,000	17.0	.08	--	--	--	--	--
TM8606RA	10	N	14.0	20	1,300	2.3	2.15	--	--	--	--	--
TM8607R	240	N	8.0	210	1,900	304.0	1.99	--	--	--	--	--
TM8618R	<10	N	N	N	10	.8	.01	--	--	--	--	--
TM87001R	--	--	--	--	--	--	--	340	3	.2	75	64
TM87002R	--	--	--	--	--	--	--	97	N	.3	23	40
TM87003R	--	--	--	--	--	--	--	6	N	.4	3	36
TM87004R	--	--	--	--	--	--	--	700	N	.1	220	49
TM87005R	--	--	--	--	--	--	--	N	N	.2	4	41
TM87006R	--	--	--	--	--	--	--	N	N	.2	2	28
TM87007R	--	--	--	--	--	--	--	N	N	N	N	9
TM87008R	--	--	--	--	--	--	--	N	N	.2	2	39
TM87009R	--	--	--	--	--	--	--	N	N	.7	N	19
TM87010R	--	--	--	--	--	--	--	N	N	.3	N	31
TM87011R	--	--	--	--	--	--	--	N	N	.4	N	22
TM87012R	--	--	--	--	--	--	--	N	N	.2	N	38
TM87013R	--	--	--	--	--	--	--	N	N	.2	N	31
TM87014R	--	--	--	--	--	--	--	N	N	1.2	N	35
TM87015R	--	--	--	--	--	--	--	12	2	1.1	N	20
TM87016R	--	--	--	--	--	--	--	8	N	.5	N	40
TM87017R	--	--	--	--	--	--	--	48	N	1.7	N	23
TM87018R	--	--	--	--	--	--	--	N	N	.8	N	58
TM87019R	--	--	--	--	--	--	--	N	16	.2	N	19
TM87020R	--	--	--	--	--	--	--	N	15	.7	N	3
TM87021R	--	--	--	--	--	--	--	N	27	.2	N	N
TM87022P	--	--	--	--	--	--	--	N	3	N	N	5
TM87023R	--	--	--	--	--	--	--	N	3	.2	N	N

Table 6. Description of rock samples

Sample No.	Description
TM-01RA	Calcite/quartz vein: Black Rock Mine
TM-01RB	Gneiss: hanging wall Black Rock Mine
TM-01RC	Granite; stock work veins: footwall Black Rock Mine
TM-02R	Brown calcite vein: Red Cloud Mine
TM-02RA	(same as above)
TM-03R	Black calcite vein: Clip Mine
TM-04R	Black calcite vein: Princess Mine
TM-05RA	Black calcite vein: Dives Mine
TM-05RB	(same as above)
TM-05RC	Tuffaceous sediments: Dives Mine
TM-06RA	Calcite vein: Geronimo Mine South
TM-07R	Calcite vein: Geronimo Mine North
TM-18R	Silica banding in rhyolite
TM87001R	Fractured red volcanic rock with manganese coating
TM87002R	(same as above)
TM87003R	Quartz vein material
TM87004R	Mn/Fe oxide vein
TM87005R	Intermediate volcanic rock
TM87006R	Quartz vein
TM87007R	Unknown rock in intermediate volcanics
TM87008R	Clay-altered intermediate volcanic rock
TM87009R	Vuggy/silicified red volcanic rock
TM87010R	Volcanic rock
TM87011R	Quartz/calcite vein in TM87010R
TM87012R	Bleached volcanic rock
TM87013R	Fractured, bleached volcanic rock
TM87014R	Vein in silicified volcanic rock
TM87015R	Vein in volcanic breccia
TM87016R	Green chalcedony stockwork in volcanic rock
TM87017R	Red volcanic rock with Mn/Fe oxide staining
TM87018R	Gneiss: country rock, Hart Mine
TM87019R	Quartz vein with Fe/Mn oxides: Hart Mine
TM87020R	(same as above)
TM87021R	(same as above)
TM87022R	(same as above)
TM87023R	(same as above)