UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

Analytical results and sample locality maps of stream-sediment, heavy-mineral-concentrate, and rock samples from the Smoky Mountains Roadless Study Area, Blaine and Camas Counties, Idaho

By

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CONTENTS

ILLUSTRATIONS

TABLES

STUDIES RELATED TO WILDERNESS

The Wilderness Act (Public Law 88-577, September 3, 1964) and related acts require the U.S. Geological Survey and the U.S. Bureau of Mines to survey certain areas on Federal lands 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 Smoky Mountains Roadless Area in the Sawtooth National Forest, Blaine and Camas Counties, Idaho. The Smoky Mountains Roadless Area was classified as a further planning area during the Second Roadless Area Review and Evaluation (RARE II) by the U.S. Forest Service, January 1979.

INTRODUCTION

In October 1989, and June-August 1990, the U.S. Geological Survey conducted a reconnaissance geochemical survey of the Smoky Mountains Roadless Study Area in Blaine and Camas Counties, Idaho.

The Smoky Mountains RSA comprises about 181 sq mi (471 sq km) in northwestern Blaine County and northern Camas County, Idaho, and lies about 12 mi (19 km) west of Ketchum (fig. 1). Access to the study area is provided on the northeast by U.S. Highway 93, on the east by the gravel road along Baker Creek leading off highway 93, on the west by the gravel road along South Fork Boise River, and on the south by the gravel road along Little Smoky and Carrie Creeks. Additional gravel roads, dirt roads, and jeep trails leading off these roads provide further access.

Tertiary plutons have intruded Paleozoic sedimentary rocks chiefly in the northeastern part of the study area, where both the plutonic and sedimentary rocks are unconformably overlain by Tertiary Challis volcanics. Granodiorite of the Atlanta lobe of the Cretaceous Idaho batholith is intruded by the Tertiary plutons along the eastern boundary of the batholith in the study area and predominantly underlies the southern and western parts of the study area. The rock units have been described in detail by Bennett and Knowles (1985), Hall (1985), Kiilsgaard and Lewis (1985), and Moye and others (1988).

The topographic relief in the study area is about 4,840 ft (1,475 m), with a maximum elevation of 10,441 ft (3,182 m). The entire study area is mountainous. Valleys are generally V-shaped, with narrow bottoms and ridges, and steep slopes. Summers are warm, sunny, and dry; winters are cold, and snow is usually heavy.

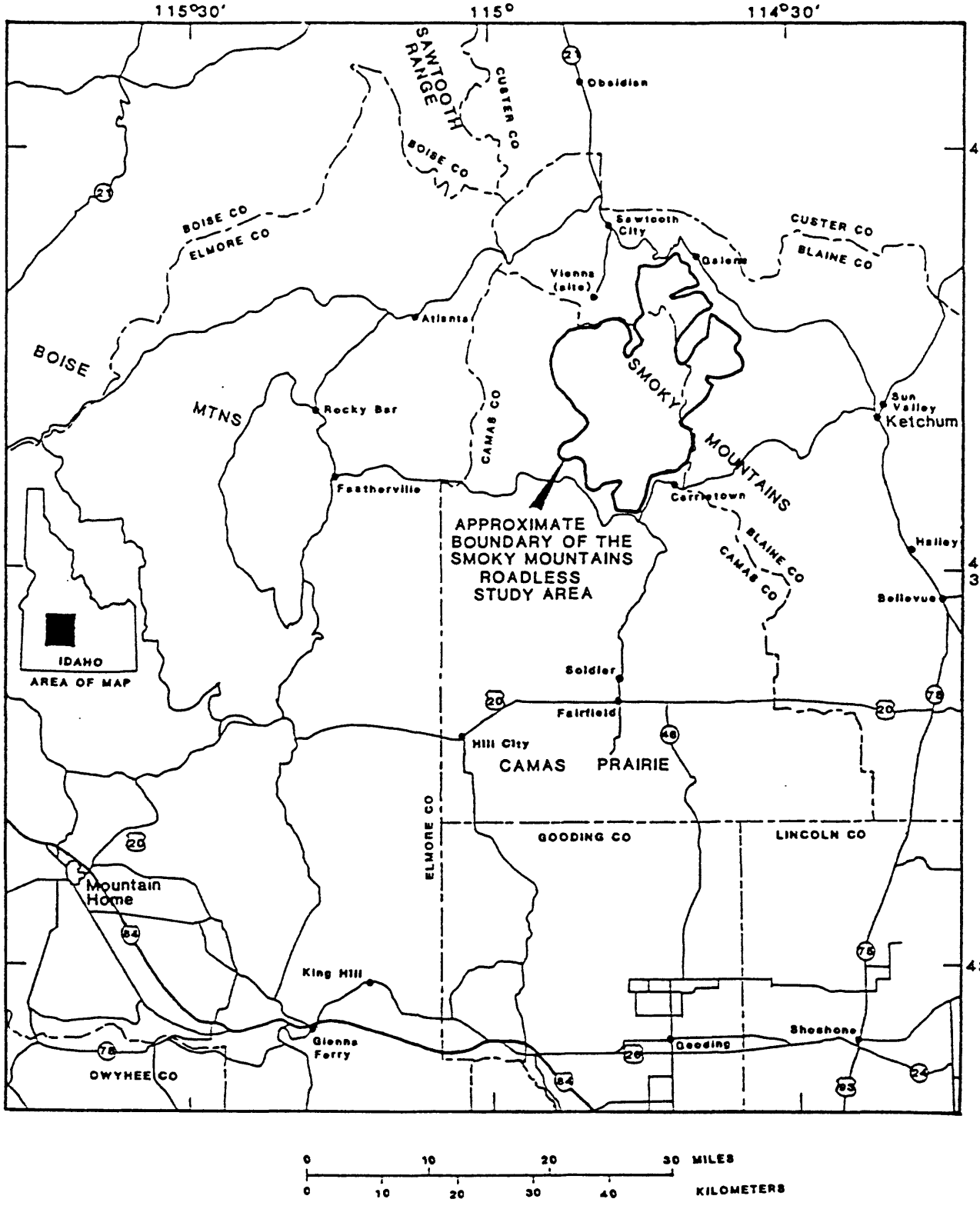

Figure 1.--Location of the Smoky Mountains Roadless Study Area, Blaine and Camas Counties, Idaho.

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 a limited number of 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.

Sample Collection

Samples were collected at a total of 138 sites (fig. 2). At all sites, both a stream-sediment sample and a heavy-mineral-concentrate sample were collected. Nine rock samples were also collected. Sampling density for the stream-sediment and heavy-mineral-concentrate samples was about one sample site per 1.3 square miles. The area of the drainage basins sampled ranged from 0.2 to 40 square miles. Sufficient heavy-mineral-concentrate for spectrographic analysis (5 mg) was recovered from all sample sites.

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) stream 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 50 feet from the center of the site symbol 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.

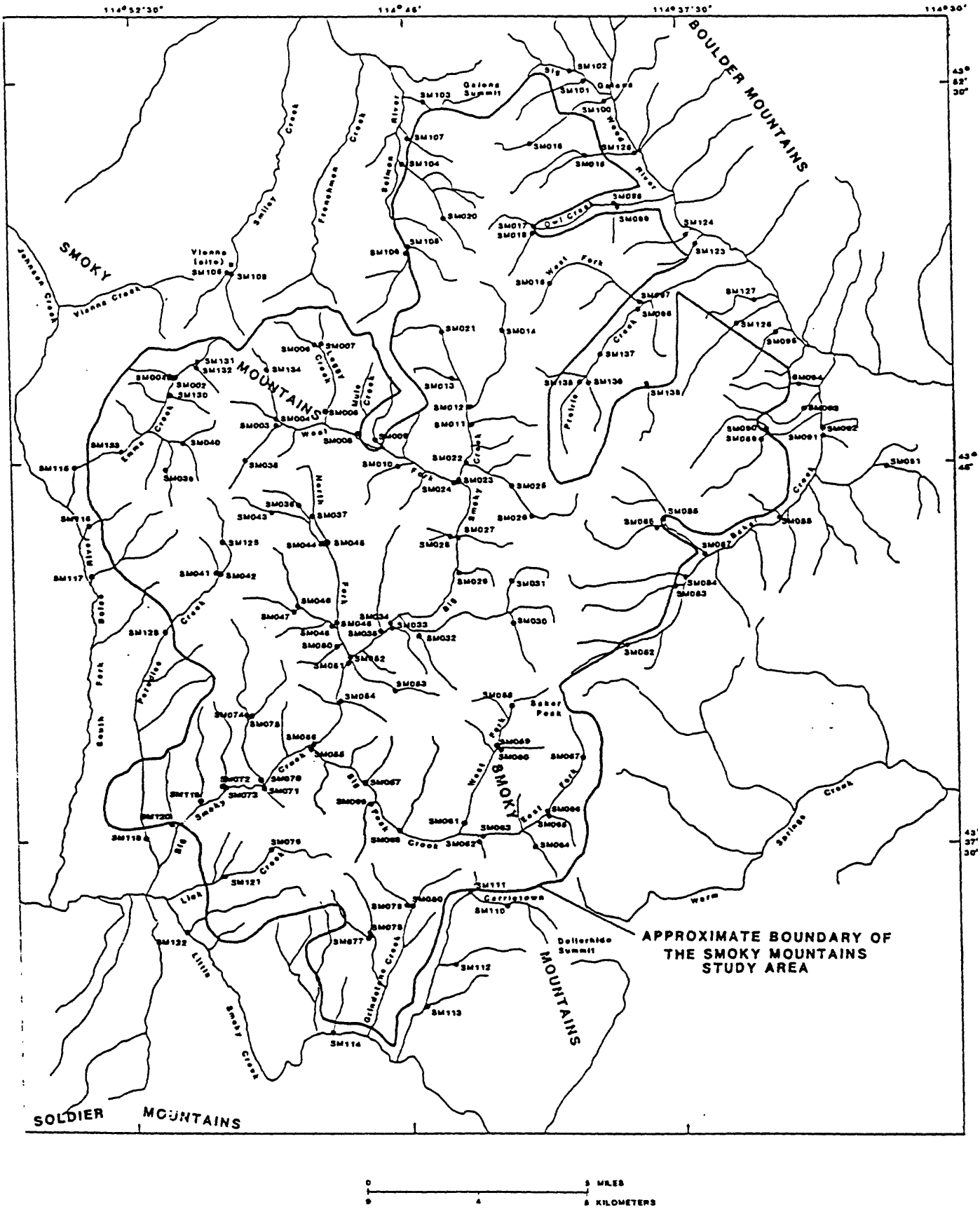

Figure 2.--Localities of stream-sediment, heavy-mineral-concentrate, and rock samples from the Smoky Mountains Roadless Study Area, Blaine and Camas Counties, Idaho.

Rock Samples

Rock samples were collected from float in the vicinity of the plotted site location. Descriptions of the 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 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 ferromagnesium 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 degrees and a tilt of 10 degrees 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 0.15mm with ceramic plates.

Sample Analysis

Spectrographic Method

Stream-sediment and rock samples were analyzed for 35 elements using a semiquantitative, direct-current arc emission spectrographic method (Grimes and Marranzino, 1968). Heavy-mineral-concentrate samples were analyzed for those 35 elements plus platinum and palladium. 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 intervals 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, sodium, phosphorus, and titanium) are given in weight percent; all others are given in parts per million (micrograms/gram). Analytical data are listed in tables 3, 4, and 5 for stream-sediment, heavy-mineral-concentrate, and rock samples, respectively.

Other Methods

The stream-sediment and rock samples from the RSA were also analyzed by inductively coupled plasma emission spectroscopy (ICP) and atomic absorption spectroscopy (AA). Silver (Ag), arsenic (As), gold (Au), bismuth (Bi), cadmium (Cd), copper (Cu), molybdenum (Mo), lead (Pb), antimony (Sb), and zinc (Zn) were analyzed by ICP (Motooka, 1988), and gold (Au) and mercury (Hg) were analyzed by AA. In addition, the rock samples were also analyzed by delayed neutron analysis (DNA) for thorium (Th) and uranium (U). Limits of determination and references are listed in table 2. Analytical results using these methods are listed in tables 3 and 5.

DATA STORAGE SYSTEM

Upon completion of all analytical work, the analytical results were entered into a U.S. Geological Survey computer data base called PLUTO. 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 (Van Trump and Miesch, 1977).

DESCRIPTION OF DATA TABLES

Tables 3, 4, and 5 list the results of analyses for the stream-sediment, heavy-mineral-concentrate, and rock samples, respectively. For these tables, the data are arranged so that column 1 contains the USGS-assigned sample numbers. These numbers correspond to the numbers shown on figure 2. Columns in which the element headings show the letter "s" following the element symbol indicate emission spectrographic analyses, "icp" indicates inductively couple plasma analyses, "dna" indicates delayed neutron analyses, and "aa" indicates atomic absorption analyses. A letter "N" in the tables indicates that a given element was looked for but not detected at the lower limit of determination (LLD) shown for that element in table 1. For emission spectrographic and AA analyses, a "less than" symbol (<) entered in the tables in front of the LLD indicates that an element was observed but was below the lowest reporting value. For DNA analyses, a "less than" symbol (<) indicates that the

element was below the value reported. 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 the tables in place of the analytical value. Because of the formatting used in the computer program that produced the data tables, some of the elements listed in these tables (Fe, Mg, Ca, Ti, Ag, and Be) may 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 listed, except as noted]

Elements	Lower determination limit	Upper determination limit
	Weight percent	
Calcium (Ca)	0.05	20
Iron (Fe)	0.05	20
Magnesium (Mg)	0.02	10
Sodium (Na)	0.2	5
Phosphorus (P)	0.2	10
Titanium (Ti)	0.002	1
	Parts per million	
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)	10	2,000
Chromium (Cr)	10	5,000
Copper (Cu)	5	20,000
Gallium (Ga)	5	500
Germanium (Ge)	10	100
Lanthanum (La)	50	1,000
Manganese (Mn)	10	5,000
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
Thorium (Th)	100	2,000
Vanadium (V)	10	10,000
Tungsten (W)	20	10,000
Yttrium (Y)	10	2,000
Zinc (Zn)	200	10,000
Zirconium (Zr)	10	1,000
Palladium (Pd)*	5	1,000
Platinum (Pt)*	20	1,000

*Determined in heavy-mineral-concentrate samples only. Limits are for heavy-mineral-concentrate samples.

TABLE 2. Other Methods Used

(AA, atomic absorption spectroscopy; ICP, inductively coupled plasma emission spectroscopy; DNA, delayed neutron analysis; ss, stream sediments; rk, rocks)

Element determined	Sample type	Method	LLD (PPM)	References
Silver (Ag)	ss/rk	ICP	0.045	Motooka, 1988.
Arsenic (As)	"	"	0.6	
Gold (Au)	"	"	0.15	
Bismuth (Bi)	"	"	0.6	
Cadmium (Cd)	"	"	0.03	
Copper (Cu)	"	"	0.03	
Molybdenum (Mo)	"	"	0.09	
Lead (Pb)	"	"	0.6	
Antimony (Sb)	"	"	0.6	
Zinc (Zn)	"	"	0.03	
Gold (Au)	"	AA	0.05	Thompson and others, 1968; O'Leary and Meier, 1986.
Mercury (Hg)	"	AA	0.02	Koirtyohann and Khalil, 1976.
Thorium (Th)	rk	DNA	--	McKown and Millard, 1987.
Uranium (U)	"	"	--	

TABLE 3--RESULTS OF ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE SMOKY MOUNTAINS ROADLESS STUDY AREA, BLAINE AND CAMAS COUNTIES, IDAHO.

[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	Na-pct. s	P-pct. s	Ag-ppm s	As-ppm s	Au-ppm s
SM001S	43 46 43	114 51 28	3	.7	.3	.3	2	<.2	N	N	N
SM002S	43 46 43	114 51 24	5	.7	.7	.3	2	<.2	N	N	N
SM003S	43 45 45	114 48 30	3	.7	.5	.3	2	<.2	N	N	N
SM004S	43 45 51	114 48 28	5	.7	1.5	.3	3	<.2	N	N	N
SM005S	43 45 55	114 47 12	5	1.5	2	.3	2	<.2	N	N	N
SM006S	43 47 20	114 47 25	2	.7	.7	.3	2	<.2	N	N	N
SM007S	43 47 20	114 47 20	3	2	3	.3	2	<.2	N	N	N
SM008S	43 45 35	114 46 20	5	1.5	1.5	.3	2	<.2	1	N	N
SM009S	43 45 30	114 45 50	5	2	1.5	.3	1.5	.2	1.5	N	N
SM010S	43 44 56	114 45 21	3	1	1	.3	2	N	N	N	N
SM011S	43 45 48	114 43 17	3	.7	.7	.3	2	<.2	N	N	N
SM012S	43 46 8	114 43 18	2	1	1	.2	1.5	<.2	N	N	N
SM013S	43 46 40	114 43 41	5	1.5	1	.3	2	<.2	N	N	N
SM014S	43 47 37	114 42 23	1.5	.7	.3	.15	.7	N	N	N	N
SM015S	43 51 4	114 40 3	3	1.5	.7	.2	2	<.2	N	N	N
SM016S	43 51 20	114 41 32	3	1.5	.3	.3	1.5	<.2	N	N	N
SM017S	43 49 42	114 41 29	3	1.5	.5	.2	1.5	<.2	N	N	N
SM018S	43 49 36	114 41 28	1.5	.7	.3	.15	1.5	<.2	N	N	N
SM019S	43 48 33	114 41 6	2	1.5	.7	.3	1.5	<.2	N	N	N
SM020S	43 49 54	114 44 0	2	1.5	.5	.2	1	<.2	N	N	N
SM021S	43 47 34	114 44 3	3	1.5	.7	.15	2	N	N	N	N
SM022S	43 45 3	114 43 24	3	1	.7	.3	1.5	<.2	N	N	N
SM023S	43 44 46	114 43 37	5	1	1.5	.5	2	<.2	N	N	N
SM024S	43 44 40	114 43 45	3	1.5	2	.3	2	<.2	N	N	N
SM025S	43 44 37	114 42 12	3	1.5	1.5	.5	2	<.2	N	N	N
SM026S	43 44 1	114 41 40	7	1	1	.3	2	<.2	N	N	N
SM027S	43 43 35	114 43 40	3	1	.7	.3	2	<.2	N	N	N
SM028S	43 43 33	114 43 47	3	1.5	2	.3	2	N	N	N	N
SM029S	43 42 55	114 43 40	10	1	1.5	.5	3	<.2	N	N	N
SM030S	43 41 53	114 42 10	3	1	.7	.3	2	<.2	N	N	N
SM031S	43 42 39	114 42 13	2	.7	.7	.2	2	N	N	N	N
SM032S	43 41 39	114 44 45	5	1	.7	.3	2	<.2	N	N	N
SM033S	43 41 49	114 45 30	5	1	1.5	.5	2	N	N	N	N
SM034S	43 41 55	114 45 30	3	1	1	.3	1.5	<.2	N	N	N
SM035S	43 41 44	114 45 45	3	1	1.5	.5	2	N	N	N	N
SM036S	43 44 15	114 47 58	3	1.5	.7	.3	2	<.2	N	N	N
SM037S	43 44 5	114 47 36	3	1.5	1	.3	2	<.2	N	N	N
SM038S	43 45 5	114 49 24	2	.7	.3	.2	3	N	N	N	N
SM039S	43 44 57	114 51 32	3	.7	.7	.3	2	<.2	N	N	N
SM040S	43 45 23	114 51 2	3	1.5	.5	.3	2	<.2	N	N	N
SM041S	43 42 55	114 50 12	3	.7	.5	.2	3	<.2	N	N	N
SM042S	43 42 53	114 50 4	3	1	.5	.3	2	N	3	N	N
SM043S	43 44 4	114 48 46	3	1	.3	.3	2	<.2	<.5	N	N
SM044S	43 43 23	114 47 22	3	1	.7	.3	2	N	N	N	N
SM045S	43 43 26	114 47 18	3	1.5	1	.3	2	N	N	N	N
SM046S	43 42 12	114 48 0	5	1	1.5	.3	2	N	1	N	N
SM047S	43 42 8	114 48 1	2	.7	1.5	.2	3	N	<.5	N	N
SM048S	43 41 51	114 46 58	3	1	.7	.3	2	<.2	N	N	N
SM049S	43 41 50	114 47 3	3	1	1.5	.3	3	N	N	N	N
SM050S	43 41 27	114 46 52	5	1.5	3	.5	3	N	N	N	N
SM051S	43 41 7	114 46 36	3	1	1.5	.3	2	N	N	N	N
SM052S	43 41 12	114 46 35	5	1.5	3	.5	2	<.2	N	N	N
SM053S	43 40 34	114 45 27	3	1	1.5	.3	3	N	N	N	N
SM054S	43 40 18	114 46 52	5	1	1.5	.5	2	N	N	N	N
SM055S	43 39 27	114 47 41	5	1	3	.5	2	<.2	N	N	N
SM056S	43 39 30	114 27 36	3	1.5	1.5	.3	1.5	<.2	N	N	N
SM057S	43 38 44	114 46 15	5	1	1.5	.5	2	<.2	N	N	N
SM058S	43 40 18	114 42 13	5	1	3	.5	3	N	N	N	N
SM059S	43 39 26	114 42 40	3	1	1	.3	1.5	N	N	N	N
SM060S	43 39 24	114 42 37	3	1	1.5	.3	3	N	N	N	N

TABLE 3--RESULTS OF ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE SMOKY MOUNTAINS ROADLESS STUDY AREA, BLAINE AND CAMAS COUNTIES, IDAHO.--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	Ga-ppm s	Ge-ppm s	La-ppm s	Mn-ppm s	Mo-ppm s
SM001S	30	1,000	1.5	N	N	<10	<10	7	30	N	150	500	N
SM002S	30	1,000	2	N	N	<10	15	10	30	N	150	700	N
SM003S	30	700	2	N	N	15	50	15	30	N	100	700	N
SM004S	10	1,000	2	N	N	<10	70	7	30	N	200	700	N
SM005S	30	1,000	1.5	N	N	20	150	30	30	N	100	700	N
SM006S	<10	700	2	N	N	N	<10	7	30	N	100	700	N
SM007S	50	1,000	2	N	N	20	150	30	30	N	100	700	N
SM008S	20	1,000	2	N	N	20	150	30	30	N	100	700	N
SM009S	50	1,000	2	N	N	20	150	30	30	N	100	700	N
SM010S	<10	1,000	1.5	N	N	15	70	20	30	N	70	700	N
SM011S	N	700	3	N	N	15	70	20	30	N	200	700	N
SM012S	N	1,000	2	N	N	15	100	15	15	N	70	500	N
SM013S	<10	1,000	2	N	N	20	150	20	30	N	70	700	N
SM014S	20	500	1.5	N	N	N	70	15	10	N	50	200	N
SM015S	10	1,000	2	N	N	20	150	20	30	N	50	500	N
SM016S	30	700	2	N	N	20	150	20	30	N	50	500	N
SM017S	20	1,000	1.5	N	N	20	150	20	20	N	50	500	N
SM018S	20	700	2	N	N	<10	70	15	15	N	50	500	N
SM019S	20	1,000	2	N	N	15	150	20	20	N	70	700	N
SM020S	30	700	1.5	N	N	10	100	20	15	N	50	300	N
SM021S	15	700	2	N	N	10	100	15	30	N	50	700	N
SM022S	10	700	3	N	N	10	100	15	20	N	150	500	N
SM023S	10	700	2	N	N	20	150	15	20	N	200	500	N
SM024S	20	1,000	1.5	N	N	20	100	15	30	N	70	700	N
SM025S	N	700	2	N	N	15	70	15	30	N	150	700	N
SM026S	N	700	2	N	N	20	150	20	20	N	200	700	N
SM027S	10	700	2	N	N	15	70	15	30	N	150	500	N
SM028S	N	1,000	1.5	N	N	20	100	30	30	N	100	700	N
SM029S	N	700	2	N	N	20	150	20	50	N	700	700	N
SM030S	10	1,000	1.5	N	N	15	150	30	30	N	70	500	N
SM031S	15	500	2	N	N	10	70	20	20	N	<50	500	N
SM032S	10	700	1.5	N	N	15	100	20	30	N	150	700	N
SM033S	15	1,000	2	N	N	20	100	15	30	N	150	700	N
SM034S	20	700	1.5	N	N	20	100	15	30	N	150	500	N
SM035S	15	1,000	1.5	N	N	20	100	15	30	N	200	700	N
SM036S	20	1,000	2	N	N	20	70	30	30	N	70	1,000	N
SM037S	15	700	1.5	N	N	15	70	20	30	N	50	1,000	N
SM038S	20	700	2	N	N	10	50	20	30	N	50	700	N
SM039S	20	1,500	1.5	N	N	10	50	20	30	N	150	700	N
SM040S	30	1,000	1.5	N	N	20	70	20	30	N	100	700	N
SM041S	20	1,000	1.5	N	N	10	20	10	30	N	200	700	N
SM042S	15	1,500	1.5	N	N	15	100	15	30	N	70	700	N
SM043S	20	1,000	1.5	N	N	20	100	20	30	N	150	700	N
SM044S	15	1,000	2	N	N	15	70	20	30	N	70	700	7
SM045S	10	1,500	1.5	N	N	20	100	20	50	N	150	700	N
SM046S	20	1,500	1.5	N	N	15	70	10	50	N	150	700	N
SM047S	20	700	2	N	N	N	50	20	30	N	70	500	N
SM048S	15	1,000	1.5	N	N	20	100	15	30	N	100	700	N
SM049S	20	1,500	1.5	N	N	15	70	10	50	N	150	700	N
SM050S	10	1,500	1	N	N	20	150	20	50	N	200	700	N
SM051S	10	1,000	2	N	N	20	150	15	30	N	200	700	N
SM052S	10	1,500	1.5	N	N	20	150	15	50	N	200	700	N
SM053S	10	1,000	2	N	N	15	100	15	30	N	150	700	N
SM054S	<10	1,500	2	N	N	20	200	20	30	N	200	700	N
SM055S	10	1,500	1.5	N	N	15	100	10	30	N	300	700	N
SM056S	10	700	1.5	N	N	20	100	15	30	N	150	700	N
SM057S	10	1,500	1.5	N	N	15	70	15	30	N	200	700	N
SM058S	<10	1,500	2	N	N	15	100	20	5	N	500	700	N
SM059S	10	700	1.5	N	N	20	100	20	30	N	200	700	N
SM060S	15	1,500	1.5	N	N	15	100	15	30	N	150	700	N

TABLE 3--RESULTS OF ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE SMOKY MOUNTAINS ROADLESS STUDY AREA, BLAINE AND CAMAS COUNTIES, IDAHO.--Continued

Sample	Nb-ppm s	Ni-ppm s	Pb-ppm s	Sb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s	Th-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s
SM001S	20	<5	150	N	7	N	500	N	150	N	30	N	300
SM002S	20	5	70	N	7	N	700	N	150	N	30	N	500
SM003S	<20	20	100	N	5	N	300	N	70	N	20	N	150
SM004S	20	7	70	N	7	N	700	N	150	N	30	N	300
SM005S	<20	70	70	N	15	N	500	N	150	N	30	N	200
SM006S	20	<5	30	N	5	N	500	N	70	N	20	N	200
SM007S	<20	70	70	N	15	N	500	N	150	N	30	N	200
SM008S	<20	50	150	N	15	N	500	N	150	N	30	<200	300
SM009S	<20	50	200	N	15	30	500	N	150	N	50	300	200
SM010S	20	30	100	N	10	N	500	N	100	N	20	N	300
SM011S	30	20	100	N	10	15	300	<100	150	N	70	N	1,000
SM012S	20	20	70	N	7	N	300	N	100	N	20	N	700
SM013S	<20	30	70	N	10	N	500	N	150	N	20	N	200
SM014S	<20	15	70	N	<5	N	<100	N	70	N	20	N	700
SM015S	<20	70	30	N	10	N	500	N	150	N	20	N	200
SM016S	<20	70	70	N	10	N	200	N	150	N	20	N	300
SM017S	<20	70	50	N	7	N	300	N	150	N	20	N	300
SM018S	<20	15	30	N	7	N	200	N	70	N	20	N	300
SM019S	<20	70	70	N	7	N	300	N	100	N	30	N	300
SM020S	<20	50	30	N	5	N	150	N	70	N	20	N	500
SM021S	<20	30	50	N	7	N	300	N	100	N	20	N	500
SM022S	30	30	50	N	7	<10	200	<100	100	N	50	N	700
SM023S	20	30	70	N	10	<10	300	150	150	N	70	N	>1,000
SM024S	<20	50	50	N	15	N	700	N	150	N	50	N	150
SM025S	30	15	70	N	10	<10	300	100	150	N	50	N	1,000
SM026S	30	30	70	N	10	15	300	100	200	N	70	N	>1,000
SM027S	20	20	70	N	7	N	300	N	100	N	30	N	300
SM028S	20	30	100	N	15	N	700	N	150	N	30	N	200
SM029S	50	20	70	N	15	20	300	100	150	N	100	N	>1,000
SM030S	<20	30	50	N	7	N	500	N	100	N	20	N	300
SM031S	<20	20	50	N	7	N	300	N	70	N	20	N	150
SM032S	30	30	70	N	10	N	300	N	150	N	30	N	500
SM033S	30	30	70	N	15	<10	500	N	150	N	50	N	1,000
SM034S	20	30	70	N	10	N	300	N	100	N	30	N	300
SM035S	20	30	70	N	10	<10	500	N	150	N	70	N	300
SM036S	<20	30	100	N	10	N	500	N	150	N	20	N	150
SM037S	<20	30	70	N	10	N	500	N	100	N	20	N	150
SM038S	<20	15	100	N	5	N	500	N	100	N	15	N	100
SM039S	20	7	70	N	7	N	500	N	100	N	20	N	300
SM040S	<20	30	100	N	7	N	500	N	100	N	20	N	200
SM041S	<20	7	50	N	5	N	500	N	100	N	20	N	200
SM042S	<20	20	150	N	7	N	700	N	100	N	20	N	200
SM043S	<20	30	150	N	7	N	500	N	150	N	20	N	150
SM044S	<20	30	100	N	7	N	500	N	150	N	20	N	150
SM045S	<20	30	100	N	10	N	500	N	150	N	20	N	500
SM046S	30	20	100	N	10	N	700	N	150	N	30	N	300
SM047S	<20	10	70	N	7	N	300	N	100	N	30	N	200
SM048S	20	30	70	N	7	N	500	N	150	N	20	N	300
SM049S	20	20	70	N	7	N	700	N	150	N	30	N	300
SM050S	<20	20	100	N	15	N	700	N	150	N	30	N	500
SM051S	20	30	70	N	10	<10	500	N	150	N	30	N	300
SM052S	30	30	70	N	15	N	700	N	150	N	50	N	700
SM053S	<20	20	70	N	15	N	500	N	100	N	30	N	200
SM054S	20	30	100	N	15	<10	500	N	150	N	30	N	500
SM055S	30	15	70	N	15	N	700	N	150	N	70	N	700
SM056S	<20	30	50	N	15	N	500	N	150	N	30	N	300
SM057S	20	7	70	N	15	N	700	N	150	N	30	N	300
SM058S	30	15	100	N	15	N	500	N	150	N	70	N	1,000
SM059S	30	20	70	N	15	<10	500	N	150	N	50	N	1,000
SM060S	20	30	100	N	10	N	700	N	100	N	30	N	300

TABLE 3--RESULTS OF ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE SMOKY MOUNTAINS ROADLESS STUDY AREA, BLAINE AND CAMAS COUNTIES, IDAHO.--Continued

Sample	Au-ppm aa	Ag-ppm icp	As-ppm icp	Au-ppm icp	Bi-ppm icp	Cd-ppm icp	Cu-ppm icp	Mo-ppm icp	Pb-ppm icp	Sb-ppm icp	Zn-ppm icp	Hg-ppm aa
SM001S	.2	.32	77	N	N	.11	4.8	.37	28	1	59	--
SM002S	.5	.36	27	N	N	.27	4.5	.6	35	N	76	--
SM003S	<.05	.23	24	N	N	.32	9.9	.71	35	N	57	--
SM004S	N	N	6.8	N	N	.087	4.2	.6	14	N	48	--
SM005S	N	.16	43	N	N	.47	21	1.2	27	1.2	82	--
SM006S	N	N	10	N	N	.055	3.7	.49	9	N	52	--
SM007S	N	.23	38	N	N	.74	21	1.2	30	1.3	83	--
SM008S	N	.54	78	N	N	.91	21	1.7	87	2.2	160	--
SM009S	N	1.1	52	N	N	2.1	34	1.3	120	2.9	200	--
SM010S	N	.11	6.4	N	N	.76	11	1.1	33	N	91	--
SM011S	N	.09	3.5	N	N	.31	10	.96	25	N	61	--
SM012S	N	.053	11	N	N	.23	8.5	.75	25	N	51	--
SM013S	N	.052	15	N	N	.061	12	.59	22	N	45	--
SM014S	N	N	7.1	N	N	.24	5.8	.36	20	N	33	--
SM015S	N	N	10	N	N	.092	17	.49	16	.61	47	--
SM016S	N	.19	62	N	N	.22	15	1.4	17	3.5	56	--
SM017S	N	.058	16	N	N	.22	12	.9	13	N	36	--
SM018S	N	.17	17	N	N	.31	10	.57	15	.6	36	--
SM019S	N	.12	19	N	N	.41	9.7	1.3	25	N	46	--
SM020S	N	.17	29	N	N	.44	9.8	.53	13	1.5	42	--
SM021S	N	N	10	N	N	.066	10	.38	17	N	42	--
SM022S	N	N	3	N	N	.36	8.1	.44	20	N	51	--
SM023S	N	.077	9.7	N	N	.25	9.4	.98	29	N	51	--
SM024S	N	.076	16	N	N	.3	12	.81	19	N	62	--
SM025S	N	N	1.8	N	N	.39	8.4	.33	24	N	64	--
SM026S	N	.075	4.2	N	N	.4	9.9	.93	39	N	59	--
SM027S	N	.15	2.2	N	N	.3	12	.44	17	N	55	--
SM028S	N	.2	N	N	N	.25	30	.78	23	N	59	--
SM029S	N	.078	N	N	2.6	.13	8.7	.81	17	N	69	--
SM030S	N	.075	1.2	N	N	.17	28	1.5	15	N	54	--
SM031S	N	.23	5.2	N	N	.55	16	.54	23	N	70	--
SM032S	N	.055	.91	N	N	.17	13	.46	22	N	61	--
SM033S	N	N	N	N	N	.2	7.6	.58	13	N	59	--
SM034S	N	.064	11	N	N	.25	11	.73	19	N	54	--
SM035S	N	.087	2.1	N	N	.39	8.3	.5	27	N	67	--
SM036S	N	.33	55	N	N	.21	24	2.2	37	.68	70	--
SM037S	N	.32	50	N	N	.31	19	1.5	34	.68	72	--
SM038S	N	.21	27	N	N	.33	12	1.1	46	N	70	--
SM039S	N	.87	8	1.6	N	.29	9.9	1	21	N	69	--
SM040S	N	.23	6.1	N	N	.43	14	.92	42	N	91	--
SM041S	N	N	8.3	N	N	.099	5.9	.39	13	N	57	--
SM042S	.15	.17	4	N	N	.29	9.9	.5	32	N	61	--
SM043S	N	.36	11	N	N	.74	16	.72	65	N	85	--
SM044S	.8	.22	24	N	N	.22	14	1.3	34	N	62	--
SM045S	<.05	.1	9.9	N	N	.23	9.7	.61	31	N	63	--
SM046S	.8	.31	3.4	.43	N	.17	7	.29	20	N	52	--
SM047S	N	.5	2.7	N	N	.55	16	.93	31	N	61	--
SM048S	N	.11	13	N	N	.17	8.2	.68	21	N	53	--
SM049S	N	.076	2.7	N	N	.14	6.7	.36	22	N	51	--
SM050S	N	N	2.8	N	N	.11	7.5	.27	19	N	53	--
SM051S	N	N	2.8	N	N	.18	7.3	.33	21	N	60	--
SM052S	N	N	8.6	N	N	.25	10	.77	19	N	55	--
SM053S	N	.13	4.8	N	N	.3	9.2	.45	20	N	68	--
SM054S	N	N	2	N	N	.16	8.4	.2	24	N	57	--
SM055S	N	.066	6.4	N	N	.12	4.8	.41	14	N	53	--
SM056S	N	N	6	N	N	.16	8.4	.54	16	N	48	--
SM057S	N	.13	7.4	N	N	.11	6.6	.31	16	N	56	--
SM058S	N	N	1.2	N	N	.44	11	.85	30	N	66	--
SM059S	N	.085	1	N	N	.37	11	1	32	N	65	--
SM060S	N	.14	25	N	N	.46	8.4	.56	31	N	74	--

TABLE 3--RESULTS OF ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE SMOKY MOUNTAINS ROADLESS STUDY AREA, BLAINE AND CAMAS COUNTIES, IDAHO.--Continued

Sample	Latitude	Longitude	Fe-pct. s	Mg-pct. s	Ca-pct. s	Ti-pct. s	Na-pct. s	P-pct. s	Ag-ppm s	As-ppm s	Au-ppm s
SM061S	43 37 57	114 43 35	3	1	1.5	.5	2	<.2	N	N	N
SM062S	43 37 38	114 43 7	5	.7	.7	.3	2	<.2	N	N	N
SM063S	43 37 42	114 43 2	5	1.5	1	.3	3	N	N	N	N
SM064S	43 37 28	114 41 42	3	1.5	1	.3	3	<.2	N	N	N
SM065S	43 38 6	114 41 17	3	1	1	.3	3	N	N	N	N
SM066S	43 38 10	114 41 18	3	.7	.7	.2	3	<.2	N	N	N
SM067S	43 39 13	114 40 20	3	1	.5	.3	2	N	N	N	N
SM068S	43 37 48	114 45 20	3	1	1.5	.3	3	<.2	N	N	N
SM069S	43 38 20	114 46 2	5	.7	1.5	.5	3	<.2	N	N	N
SM070S	43 38 47	114 49 3	10	1	2	.7	3	<.2	N	N	N
SM071S	43 38 38	114 48 58	7	1	1.5	.7	3	<.2	N	N	N
SM072S	43 38 39	114 50 5	5	.7	.7	.3	2	<.2	N	N	N
SM073S	43 38 37	114 50 0	5	1	1	.5	2	<.2	N	N	N
SM074S	43 40 2	114 49 25	5	1	1	.3	3	N	N	N	N
SM075S	43 40 2	114 49 19	5	1	1.5	.5	3	N	N	N	N
SM076S	43 37 27	114 48 48	7	1	1.5	.5	3	<.2	N	N	N
SM077S	43 35 42	114 46 9	7	1	2	.7	3	<.2	N	N	N
SM078S	43 35 44	114 46 7	7	1	2	.7	3	<.2	N	N	N
SM079S	43 36 17	114 45 3	3	.7	.7	.3	3	<.2	N	N	N
SM080S	43 36 17	114 44 59	5	.7	.7	.3	3	<.2	N	N	N
SM081S	43 44 59	114 31 59	5	1.5	1	.5	2	N	N	N	N
SM082S	43 41 25	114 39 2	3	1	.7	.3	1.5	N	N	N	N
SM083S	43 42 37	114 37 39	1	.5	.5	.3	.7	N	N	N	N
SM084S	43 42 47	114 37 52	1.5	.7	1	.3	.7	N	N	N	N
SM085S	43 43 47	114 38 14	2	1	1.5	.3	1	<.2	N	N	N
SM086S	43 43 56	114 37 58	3	1	1.5	.3	2	N	N	N	N
SM087S	43 43 14	114 36 49	5	1	1	.5	2	N	N	N	N
SM088S	43 43 57	114 34 47	5	1.5	2	.5	2	N	N	N	N
SM089S	43 45 33	114 35 11	3	1.5	3	.5	3	N	N	N	N
SM090S	43 45 40	114 35 8	3	1	1	.3	1.5	N	N	N	N
SM091S	43 45 33	114 33 36	3	1.5	.7	.5	1.5	N	2	N	N
SM092S	43 45 45	114 33 34	5	1.5	.5	.5	1	N	<.5	N	N
SM093S	43 46 3	114 34 8	5	1.5	1.5	.3	2	N	N	N	N
SM094S	43 46 36	114 34 16	5	1.5	.7	.5	2	N	N	N	N
SM095S	43 47 37	114 34 50	3	1.5	1	.5	2	N	N	N	N
SM096S	43 48 4	114 38 39	5	1	1	.5	3	<.2	N	N	N
SM097S	43 48 15	114 38 41	5	2	1	.3	3	N	N	N	N
SM098S	43 50 8	114 39 13	3	1.5	.7	.3	1.5	N	N	N	N
SM099S	43 50 0	114 39 10	5	1.5	.7	.3	2	N	N	N	N
SM100S	43 52 12	114 39 29	5	1.5	1	.7	1.5	<.2	N	N	N
SM101S	43 52 32	114 40 1	5	2	3	.7	3	N	N	N	N
SM102S	43 52 43	114 40 23	5	2	3	.5	2	N	N	N	N
SM103S	43 52 8	114 44 31	5	2	1.5	.7	1.5	<.2	N	N	N
SM104S	43 50 57	114 45 5	2	1	.7	.3	.7	<.2	N	N	N
SM105S	43 49 15	114 44 57	3	1.5	3	.7	2	N	N	N	N
SM106S	43 49 13	114 44 58	5	2	2	.7	2	N	N	N	N
SM107S	43 52 8	114 44 31	5	1.5	1.5	>1	1	<.2	N	N	N
SM108S	43 48 47	114 49 44	3	.5	.7	.5	1.5	<.2	N	N	N
SM109S	43 48 48	114 49 47	5	.7	1	.5	3	N	5	N	N
SM110S	43 36 18	114 42 25	5	1.5	1.5	.3	1.5	<.2	30	700	N
SM111S	43 36 30	114 43 25	3	1	1.5	.7	2	<.2	N	N	N
SM112S	43 35 7	114 43 51	5	1.5	2	.5	1.5	<.2	3	N	N
SM113S	43 34 21	114 44 35	7	2	2	.7	2	N	15	N	N
SM114S	43 33 47	114 47 8	3	.7	.7	.3	2	N	N	N	N
SM115S	43 44 54	114 54 7	5	.5	.5	.3	2	<.2	N	N	N
SM116S	43 43 47	114 53 39	3	.7	.7	.5	2	<.2	N	N	N
SM117S	43 42 48	114 53 37	3	.7	1	.5	3	<.2	N	N	N
SM118S	43 37 35	114 52 10	5	1	1	.7	2	<.2	N	N	N
SM119S	43 38 17	114 50 35	5	.7	1	.7	2	.2	N	N	N
SM120S	43 37 54	114 51 26	10	.7	1.5	1	3	N	N	N	N

TABLE 3--RESULTS OF ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE SMOKY MOUNTAINS ROADLESS STUDY AREA, BLAINE AND CAMAS COUNTIES, IDAHO.--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	Ga-ppm s	Ge-ppm s	La-ppm s	Mn-ppm s	Mo-ppm s
SM061S	10	1,000	1.5	N	N	15	100	15	30	N	200	700	N
SM062S	10	1,000	1.5	N	N	10	10	7	30	N	150	700	N
SM063S	10	1,000	1.5	N	N	15	100	15	30	N	150	700	N
SM064S	10	1,000	1.5	N	N	15	50	20	30	N	100	1,000	N
SM065S	15	1,000	1.5	N	N	15	70	15	30	N	200	700	N
SM066S	15	700	2	N	N	10	70	20	30	N	70	700	N
SM067S	15	1,000	2	N	N	15	70	20	30	N	70	700	N
SM068S	<10	1,500	2	N	N	15	70	10	50	N	200	700	N
SM069S	10	1,500	2	N	N	10	15	7	50	N	200	700	N
SM070S	<10	1,500	2	N	N	15	100	15	50	N	300	700	N
SM071S	10	1,000	2	N	N	15	100	10	70	N	300	700	N
SM072S	15	1,000	2	N	N	15	30	10	30	N	150	500	N
SM073S	15	1,000	1.5	N	N	15	100	15	30	N	300	700	N
SM074S	10	1,000	2	N	N	15	100	15	50	N	200	700	N
SM075S	10	1,500	1.5	N	N	15	100	15	50	N	200	700	N
SM076S	<10	1,500	1.5	N	N	15	100	15	70	N	200	700	N
SM077S	<10	1,500	1.5	N	N	15	20	10	70	N	200	700	N
SM078S	<10	1,500	1.5	N	N	<10	20	7	50	N	300	700	N
SM079S	20	1,500	1.5	N	N	<10	<10	10	50	N	100	500	N
SM080S	10	1,500	1.5	N	N	10	10	7	50	N	150	500	N
SM081S	10	1,000	1	N	N	30	150	20	30	N	50	1,000	N
SM082S	15	700	1	N	N	15	100	30	20	N	<50	500	N
SM083S	20	300	<1	N	N	N	30	7	<5	N	<50	150	N
SM084S	30	200	<1	N	N	<10	50	7	<5	N	<50	200	N
SM085S	15	200	<1	N	N	10	70	7	5	N	<50	300	N
SM086S	<10	200	2	N	N	10	50	15	20	N	100	500	N
SM087S	<10	300	2	N	N	10	100	10	20	N	200	500	N
SM088S	10	700	1	N	N	20	500	20	30	N	70	700	N
SM089S	10	1,000	<1	N	N	15	300	10	30	N	50	700	N
SM090S	15	700	1	N	N	15	100	15	20	N	70	500	N
SM091S	20	700	1.5	<10	N	30	150	20	30	N	50	700	15
SM092S	20	700	1.5	<10	N	30	150	30	20	N	50	1,000	15
SM093S	15	700	1.5	N	N	20	200	20	30	N	50	700	N
SM094S	15	700	1	N	N	20	150	20	30	N	70	500	N
SM095S	10	700	1.5	N	N	20	150	15	20	N	70	500	N
SM096S	10	700	2	N	N	10	50	10	30	N	200	700	N
SM097S	15	1,000	1	N	N	20	200	20	30	N	50	700	N
SM098S	15	700	<1	N	N	20	150	20	20	N	<50	500	N
SM099S	10	700	1.5	N	N	20	150	30	30	N	50	500	N
SM100S	15	700	1	N	N	20	200	30	30	N	70	700	N
SM101S	10	700	<1	N	N	20	500	20	30	N	<50	1,000	N
SM102S	10	700	1	N	N	20	500	20	30	N	<50	1,000	N
SM103S	15	700	<1	N	N	30	500	30	30	N	<50	700	N
SM104S	30	500	<1	N	N	<10	100	10	7	N	N	200	N
SM105S	15	700	<1	N	N	20	150	20	20	N	<50	700	N
SM106S	10	700	<1	N	N	30	200	20	30	N	70	500	N
SM107S	10	300	<1	N	N	20	150	20	20	N	<50	700	N
SM108S	30	500	1.5	N	N	N	<10	<5	30	N	150	500	N
SM109S	20	700	1.5	N	N	10	70	15	50	N	200	500	N
SM110S	20	700	1	N	N	20	100	30	30	N	<50	700	N
SM111S	20	700	1.5	N	N	10	20	20	30	N	150	700	N
SM112S	20	700	1	N	N	20	200	30	30	N	<50	700	N
SM113S	15	700	<1	N	N	20	200	200	30	N	150	700	N
SM114S	10	700	1.5	N	N	<10	10	5	30	N	200	500	N
SM115S	20	700	1	N	N	<10	10	7	30	N	150	300	N
SM116S	15	700	1.5	N	N	10	30	20	50	N	200	500	N
SM117S	15	1,000	1	N	N	10	50	10	30	N	100	500	N
SM118S	20	700	1	N	N	15	50	10	30	N	150	500	N
SM119S	15	700	1	N	N	10	30	10	30	N	200	500	N
SM120S	<10	700	<1	N	N	10	100	15	50	N	300	500	N

TABLE 3--RESULTS OF ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE SMOKY MOUNTAINS ROADLESS STUDY AREA, BLAINE AND CAMAS COUNTIES, IDAHO.--Continued

Sample	Nb-ppm s	Ni-ppm s	Pb-ppm s	Sb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s	Th-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s
SM061S	20	20	100	N	15	N	500	N	100	N	50	N	500
SM062S	20	N	70	N	10	N	500	N	150	N	50	N	300
SM063S	20	20	50	N	10	N	500	N	150	N	30	N	300
SM064S	<20	15	50	N	10	N	500	N	150	N	30	N	200
SM065S	20	15	70	N	10	N	700	N	150	N	30	N	200
SM066S	<20	20	50	N	10	N	500	N	100	N	20	N	200
SM067S	<20	30	70	N	7	N	300	N	100	N	30	N	300
SM068S	30	20	70	N	10	N	700	N	150	N	50	N	300
SM069S	30	<5	50	N	7	<10	700	N	150	N	50	N	300
SM070S	50	<5	50	N	10	15	700	N	150	N	70	N	500
SM071S	30	5	50	N	10	<10	700	N	150	N	70	N	300
SM072S	<20	5	50	N	7	N	500	N	150	N	30	N	300
SM073S	20	15	50	N	10	<10	500	N	150	N	50	N	500
SM074S	30	10	50	N	10	N	500	N	150	N	30	N	300
SM075S	20	10	70	N	15	N	700	N	150	N	30	N	500
SM076S	30	N	50	N	10	15	700	N	150	N	70	N	500
SM077S	50	N	50	N	10	10	700	N	150	N	70	N	300
SM078S	50	N	50	N	10	<10	700	N	150	N	70	N	300
SM079S	20	<5	70	N	7	<10	500	N	150	N	20	N	300
SM080S	20	<5	50	N	10	N	500	N	150	N	30	N	300
SM081S	<20	100	70	N	10	N	500	N	150	N	20	N	700
SM082S	<20	30	70	N	7	N	300	N	100	N	15	N	500
SM083S	<20	15	20	N	<5	N	150	N	50	N	10	N	500
SM084S	<20	20	20	N	5	N	200	N	70	N	15	N	1,000
SM085S	<20	30	30	N	7	N	200	N	70	N	15	N	700
SM086S	20	20	70	N	7	<10	300	N	70	N	30	N	300
SM087S	30	70	50	N	10	10	300	<100	150	N	50	N	1,000
SM088S	20	50	50	N	15	10	700	N	150	N	20	N	300
SM089S	20	30	50	N	15	N	700	N	150	N	20	N	500
SM090S	20	30	50	N	10	N	300	N	150	N	20	N	300
SM091S	20	100	150	N	15	<10	500	N	150	N	20	N	300
SM092S	20	150	100	N	15	N	300	N	150	N	30	N	700
SM093S	20	70	70	N	15	N	500	N	150	N	30	N	700
SM094S	20	70	50	N	15	N	500	N	150	N	30	N	>1,000
SM095S	<20	30	30	N	10	N	500	N	150	N	20	N	300
SM096S	50	15	70	N	15	15	300	N	150	N	70	N	>1,000
SM097S	<20	100	70	N	15	N	700	N	150	N	20	N	200
SM098S	<20	100	30	N	10	N	500	N	150	N	15	N	300
SM099S	<20	50	50	N	15	N	300	N	150	N	20	N	200
SM100S	20	70	50	N	15	N	500	N	150	N	20	N	500
SM101S	<20	70	50	N	20	N	700	N	150	N	20	N	500
SM102S	<20	70	50	N	20	N	700	N	200	N	20	N	300
SM103S	<20	100	50	N	20	N	500	N	150	N	20	N	200
SM104S	<20	50	20	N	5	N	150	N	70	N	15	N	700
SM105S	<20	50	50	N	5	N	700	N	200	N	30	N	1,000
SM106S	<20	100	30	N	5	N	700	N	200	N	30	N	500
SM107S	30	50	20	N	5	N	500	N	150	N	20	N	1,000
SM108S	20	N	30	N	5	N	500	N	100	N	20	N	300
SM109S	20	30	100	N	7	<10	700	N	150	N	30	<200	700
SM110S	<20	50	700	N	10	N	500	N	150	N	15	1,000	200
SM111S	30	5	50	N	15	N	700	N	150	N	30	N	500
SM112S	<20	70	100	N	15	<10	700	N	200	N	20	<200	500
SM113S	20	70	700	N	15	<10	500	N	300	N	30	200	1,000
SM114S	20	N	50	N	5	N	700	N	100	N	30	N	300
SM115S	30	<5	30	N	<5	N	500	N	150	N	20	N	300
SM116S	30	15	50	N	5	15	500	N	100	N	20	N	300
SM117S	30	10	50	N	7	N	700	N	100	N	20	N	300
SM118S	30	15	50	N	7	N	500	N	150	N	30	N	700
SM119S	30	7	50	N	7	10	500	N	150	N	30	N	500
SM120S	30	N	50	N	10	<10	500	N	150	N	50	N	700

TABLE 3--RESULTS OF ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE SMOKY MOUNTAINS ROADLESS STUDY AREA, BLAINE AND CAMAS COUNTIES, IDAHO.--Continued

Sample	Au-ppm aa	Ag-ppm icp	As-ppm icp	Au-ppm icp	Bi-ppm icp	Cd-ppm icp	Cu-ppm icp	Mo-ppm icp	Pb-ppm icp	Sb-ppm icp	Zn-ppm icp	Hg-ppm aa
SM061S	N	.073	6.1	N	N	.3	7.5	.56	22	N	59	--
SM062S	N	.069	14	N	1.2	.11	5	.9	12	N	65	--
SM063S	N	.068	25	N	N	.22	7.4	.83	16	N	58	--
SM064S	N	.075	33	N	N	.15	13	.73	18	N	72	--
SM065S	N	.16	23	N	N	.13	7.3	.51	17	N	54	--
SM066S	N	.17	33	N	1.7	.54	11	1.2	23	N	73	--
SM067S	N	.073	24	N	.99	.36	13	1.5	28	N	73	--
SM068S	N	N	1.6	N	N	.15	6.5	.2	16	N	63	--
SM069S	N	N	.93	N	N	.073	4.1	.39	9	N	64	--
SM070S	N	N	N	N	N	.043	5.1	.52	9.2	N	69	--
SM071S	N	N	N	N	N	.064	3.9	.45	6.5	N	74	--
SM072S	N	N	N	N	N	.19	5	.39	12	N	76	--
SM073S	N	N	5.8	N	N	.12	6.8	.53	14	N	50	--
SM074S	N	N	2.5	N	N	.055	6	.34	13	N	47	--
SM075S	N	N	4.4	N	N	.12	7.6	.3	16	N	56	--
SM076S	N	N	.6	N	N	.076	4.9	.41	9.3	N	72	--
SM077S	N	N	N	N	N	.11	4.2	.48	9.3	N	68	--
SM078S	N	N	N	N	N	.057	3.7	.48	9.4	N	69	--
SM079S	N	N	N	N	N	.065	5	.3	11	N	67	--
SM080S	N	N	1.9	N	N	.11	4	.29	14	N	62	--
SM081S	N	.12	20	N	N	.18	14	1.2	42	1.9	110	--
SM082S	N	.11	12	N	N	.46	22	1.9	37	N	67	--
SM083S	N	N	4.1	N	N	.15	4.5	.22	16	N	20	--
SM084S	N	N	5.2	N	N	.14	3.8	.13	19	N	19	--
SM085S	N	N	1.6	N	N	.23	5.3	.1	26	N	27	--
SM086S	N	N	1.7	N	N	.25	8.3	.29	38	N	45	--
SM087S	N	.051	1.9	N	.66	.15	6.2	.92	35	N	44	--
SM088S	N	N	3.4	N	N	.077	10	.75	18	.62	52	--
SM089S	N	N	4.5	N	N	.087	7.4	.41	18	N	37	--
SM090S	N	N	2.6	N	N	.11	6.7	.21	23	N	32	--
SM091S	N	.55	14	N	1.9	.48	15	9.3	120	1.6	79	--
SM092S	N	.25	19	N	2.5	.5	16	7.2	94	1.6	65	--
SM093S	N	.15	7.4	N	N	.17	12	.58	32	N	50	--
SM094S	N	.052	16	N	N	.093	9	1.1	24	.65	48	--
SM095S	N	N	9.3	N	N	.049	8.6	.69	17	N	46	--
SM096S	N	.053	3.5	N	N	.2	5.4	.67	43	N	50	--
SM097S	N	.14	5.1	N	N	.21	15	.58	27	N	42	--
SM098S	N	.053	8.3	N	N	.15	8.4	.47	16	N	36	--
SM099S	N	.14	3.2	N	N	.087	15	.43	25	N	46	--
SM100S	N	.051	20	N	N	.088	8.6	.64	21	1.5	49	--
SM101S	N	.075	4.7	N	N	.077	9.4	.34	18	N	42	--
SM102S	.05	.087	5.2	N	N	.071	11	.68	18	.66	52	--
SM103S	N	.084	21	N	N	.065	13	.58	19	.84	44	--
SM104S	N	.13	20	N	.95	.23	5.6	.4	13	1.1	31	--
SM105S	N	.12	15	N	N	.23	8.4	.81	20	1.2	48	--
SM106S	N	.068	20	N	N	.11	10	.69	20	2.6	56	--
SM107S	N	.054	32	N	2.9	.15	8.4	.57	13	1.9	47	--
SM108S	N	.13	72	N	N	.096	1.7	.44	19	1.2	42	--
SM109S	.1	1.5	110	N	N	.45	4.6	.61	57	3	170	--
SM110S	N	17	690	N	N	11	36	1.8	670	7.7	>1,100	--
SM111S	N	.11	11	N	.87	.17	7	1.4	24	N	66	--
SM112S	N	8.4	120	N	N	1.6	24	1.4	140	3.8	260	--
SM113S	N	11	170	N	N	1.1	73	5.1	1,400	7.4	230	--
SM114S	N	.058	1.9	N	N	.033	2.3	.092	14	N	46	--
SM115S	N	.23	42	N	N	.11	4	.43	31	1	49	--
SM116S	N	.092	3.2	N	N	.15	12	.83	17	N	56	--
SM117S	N	.069	3.8	N	N	.12	6.1	.43	19	N	54	--
SM118S	N	.063	2.4	N	N	.069	3.9	.36	17	N	59	--
SM119S	N	.055	1.3	N	N	.092	3.6	.34	14	N	64	--
SM120S	N	N	1.1	N	N	.065	3.5	.31	9.7	N	68	--

TABLE 3--RESULTS OF ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE SMOKY MOUNTAINS ROADLESS STUDY AREA, BLAINE AND CAMAS COUNTIES, IDAHO.--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	Ga-ppm s	Ge-ppm s	La-ppm s	Mn-ppm s	Mo-ppm s
SM121S	<10	700	1	N	N	<10	50	10	30	N	200	500	N
SM122S	10	700	1	N	N	10	20	15	30	N	200	500	N
SM123S	10	700	1.5	N	N	15	100	15	30	N	50	500	N
SM124S	15	1,000	1.5	N	N	20	100	20	20	N	70	700	N
SM125S	15	700	1	N	N	30	500	20	20	N	50	700	N
SM126S	10	700	1.5	N	N	20	100	20	20	N	50	700	N
SM127S	10	700	1	N	N	20	200	15	20	N	70	700	N
SM128S	15	1,000	1	N	N	10	50	10	30	N	100	700	N
SM129S	15	1,000	1	N	N	15	100	20	30	N	150	700	N
SM130S	15	1,500	1.5	N	N	<10	70	20	30	N	150	1,000	N
SM131S	15	700	1.5	N	N	N	<10	7	30	N	100	700	N
SM132S	20	700	1	N	N	10	50	15	30	N	150	700	N
SM133S	30	1,000	1.5	N	N	10	30	10	30	N	150	700	N
SM134S	10	1,000	1	N	N	<10	15	5	30	N	200	700	N
SM135S	10	500	1.5	N	N	10	70	15	30	N	300	700	N
SM136S	10	500	1.5	N	N	10	70	20	30	N	300	700	N
SM137S	<10	500	1.5	N	N	<10	70	15	30	N	300	700	N
SM138S	10	500	1.5	N	N	15	70	20	30	N	150	700	N

Sample	Latitude	Longitude	Fe-pct. s	Mg-pct. s	Ca-pct. s	Ti-pct. s	Na-pct. s	P-pct. s	Ag-ppm s	As-ppm s	Au-ppm s
SM121S	43 36 52	114 50 3	7	.7	2	1	2	<.2	N	N	N
SM122S	43 35 45	114 51 5	7	.7	1	.7	2	.2	N	N	N
SM123S	43 49 20	114 37 0	3	.7	1.5	.5	3	N	N	N	N
SM124S	43 49 30	114 37 16	3	1	1.5	.5	2	N	N	N	N
SM125S	43 51 10	114 38 32	5	2	2	.5	2	N	N	N	N
SM126S	43 47 44	114 35 53	3	1	.7	.3	1.5	N	N	N	N
SM127S	43 48 14	114 35 24	3	1	.7	.3	2	N	N	N	N
SM128S	43 41 43	114 51 38	3	1	1	.5	2	N	N	N	N
SM129S	43 43 35	114 50 5	3	1	1	.5	2	N	N	N	N
SM130S	43 46 22	114 51 28	3	1	1.5	.5	3	<.2	N	N	N
SM131S	43 47 0	114 50 45	3	.5	.7	.3	2	<.2	<.5	N	N
SM132S	43 46 57	114 50 46	3	.7	.7	.5	2	<.2	N	N	N
SM133S	43 45 12	114 52 46	5	.7	1	.5	2	<.2	N	N	N
SM134S	43 46 55	114 48 48	3	.7	1.5	.5	3	N	N	N	N
SM135S	43 46 38	114 40 11	5	.7	.7	.5	3	<.2	N	N	N
SM136S	43 46 38	114 40 3	5	.7	.7	.5	3	N	N	N	N
SM137S	43 47 10	114 39 40	5	.7	1	.5	3	<.2	N	N	N
SM138S	43 39 8	114 38 23	5	.7	.7	.3	2	N	N	N	N

TABLE 3--RESULTS OF ANALYSES OF STREAM-SEDIMENT SAMPLES FROM THE SMOKY MOUNTAINS ROADLESS STUDY AREA, BLAINE AND CAMAS COUNTIES, IDAHO.--Continued

Sample	Nb-ppm s	Ni-ppm s	Pb-ppm s	Sb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s	Th-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s
SM121S	30	<5	50	N	7	<10	500	N	150	N	70	N	700
SM122S	30	<5	50	N	10	N	500	N	150	N	50	N	500
SM123S	<20	30	30	N	10	N	700	N	100	N	20	N	300
SM124S	20	30	50	N	15	N	700	N	150	N	20	N	700
SM125S	<20	70	50	N	20	N	700	N	200	N	20	N	700
SM126S	<20	50	50	N	10	N	500	N	100	N	15	N	300
SM127S	<20	70	20	N	10	N	500	N	100	N	20	N	500
SM128S	20	15	50	N	7	N	500	N	100	N	20	N	500
SM129S	20	30	100	N	10	N	700	N	150	N	20	N	300
SM130S	20	10	100	N	7	N	700	N	150	N	20	N	300
SM131S	20	<5	100	N	5	N	700	N	70	N	20	N	200
SM132S	20	10	70	N	7	N	700	N	100	N	20	N	300
SM133S	20	10	70	N	7	N	700	N	100	N	20	N	300
SM134S	30	7	30	N	7	N	1,000	N	150	N	30	N	700
SM135S	30	7	70	N	7	10	300	150	150	N	70	N	1,000
SM136S	30	20	70	N	7	15	300	100	150	N	70	N	1,000
SM137S	30	7	70	N	7	15	300	150	150	N	70	N	>1,000
SM138S	20	20	70	N	7	N	300	<100	100	N	30	N	700

Sample	Au-ppm aa	Ag-ppm icp	As-ppm icp	Au-ppm icp	Bi-ppm icp	Cd-ppm icp	Cu-ppm icp	Mo-ppm icp	Pb-ppm icp	Sb-ppm icp	Zn-ppm icp	Hg-ppm aa
SM121S	N	.048	1.9	N	N	.072	4.6	.36	13	N	70	--
SM122S	N	.06	2.2	N	N	.076	4.9	.38	15	N	57	--
SM123S	N	N	2.1	N	N	.066	8.8	.53	15	N	47	N
SM124S	N	.12	N	N	N	.097	10	.47	18	N	44	N
SM125S	N	N	1.9	N	N	.062	16	1.2	17	N	52	N
SM126S	N	.077	15	N	N	.14	14	.91	29	.92	53	N
SM127S	N	.052	4.4	N	N	.076	11	.66	24	N	59	.04
SM128S	N	.076	6.4	N	N	.15	6.9	.36	37	N	60	N
SM129S	N	.28	5.8	N	N	.46	16	.47	100	N	79	N
SM130S	N	.25	8.9	N	.66	.43	9.3	.66	73	N	89	N
SM131S	.5	.56	21	.25	N	.35	3.3	.52	89	.62	100	.02
SM132S	1.15	1.9	7.4	4.3	N	.29	7.5	1.6	38	N	90	N
SM133S	.05	.2	35	N	N	.17	5.6	.48	36	.94	58	N
SM134S	N	N	5.9	N	N	.067	1.6	.68	10	.87	46	.04
SM135S	N	.092	5.3	N	.94	.25	8	.89	63	N	67	N
SM136S	N	.15	4.2	N	.99	.36	12	1.6	56	N	71	.02
SM137S	N	.093	4.4	N	.74	.26	7.8	1.2	52	N	62	N
SM138S	N	.063	4.6	N	N	.19	11	1.3	53	N	64	N

TABLE 4--RESULTS OF ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE SMOKY MOUNTAINS ROADLESS STUDY AREA, BLAINE AND CAMAS COUNTIES, IDAHO.

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

Sample	Latitude	Longitude	Ca-pct. s	Fe-pct. s	Mg-pct. s	Na-pct. s	P-pct. s	Ti-pct. s	Ag-ppm s	As-ppm s	Au-ppm s	B-ppm s
SM001C3	43 46 43	114 51 28	10	2	.2	N	10	1.5	1.5	N	N	N
SM002C3	43 46 43	114 51 24	7	2	.15	N	3	2	N	N	N	N
SM003C3	43 45 45	114 48 30	.3	1	.15	N	1	2	N	N	N	N
SM004C3	43 45 51	114 48 28	7	2	.2	N	2	>2	N	N	N	N
SM005C3	43 45 55	114 47 12	10	1.5	1	N	<.5	.7	N	N	N	20
SM006C3	43 47 20	114 47 25	5	3	.5	N	2	>2	N	N	N	N
SM007C3	43 47 20	114 47 20	20	2	1.5	N	<.5	.5	<1	<500	N	50
SM008C3	43 45 35	114 46 20	15	3	1	N	.5	.7	7	N	N	N
SM009C3	43 45 30	114 45 50	7	2	2	N	<.5	.5	70	N	N	N
SM010C3	43 44 56	114 45 21	5	3	.5	N	.5	>2	N	N	N	N
SM011C3	43 45 48	114 43 17	5	2	.3	N	1	1.5	N	N	N	N
SM012C3	43 46 8	114 43 18	15	1.5	7	N	N	.7	N	N	N	<20
SM013C3	43 46 40	114 43 41	.5	15	.7	N	N	1	N	N	N	<20
SM014C3	43 47 37	114 42 23	3	5	.5	N	N	.7	N	N	N	20
SM015C3	43 51 4	114 40 3	3	2	2	N	1.5	.5	N	N	N	N
SM016C3	43 51 20	114 41 32	2	1.5	.2	N	2	1.5	N	N	N	150
SM017C3	43 49 42	114 41 29	1	5	2	N	1	.7	N	N	N	50
SM018C3	43 49 36	114 41 28	.5	5	.3	N	.7	1	<1	N	N	70
SM019C3	43 48 33	114 41 6	.5	10	.2	N	N	1	N	N	N	<20
SM020C3	43 49 54	114 44 0	7	3	10	N	N	.5	N	N	N	<20
SM021C3	43 47 34	114 44 3	.7	2	2	<.5	.7	.5	N	N	N	N
SM022C3	43 45 3	114 43 24	10	5	2	N	1.5	2	N	N	N	N
SM023C3	43 44 46	114 43 37	7	3	2	N	1	.7	N	N	N	N
SM024C3	43 44 40	114 43 45	10	1.5	.7	N	.7	1	N	N	N	20
SM025C3	43 44 37	114 42 12	10	2	2	N	2	1	N	<500	N	N
SM026C3	43 44 1	114 41 40	10	7	.5	N	.7	1.5	N	500	N	N
SM027C3	43 43 35	114 43 40	7	3	.3	N	1	2	N	N	N	N
SM028C3	43 43 33	114 43 47	7	2	.3	N	N	>2	N	N	N	N
SM029C3	43 42 55	114 43 40	7	N	.1	N	1.5	2	N	700	N	N
SM030C3	43 41 53	114 42 10	3	1.5	1	N	<.5	1.5	N	N	N	N
SM031C3	43 42 39	114 42 13	10	1.5	3	N	.5	2	N	N	N	<20
SM032C3	43 41 39	114 44 45	10	2	1	N	.5	>2	N	N	N	N
SM033C3	43 41 49	114 45 30	5	1.5	.5	N	1.5	2	N	N	N	N
SM034C3	43 41 55	114 45 30	10	1	2	N	1	1.5	N	N	N	20
SM035C3	43 41 44	114 45 45	7	1.5	.7	N	.7	1.5	N	N	N	N
SM036C3	43 44 15	114 47 58	.7	10	.5	N	<.5	2	300	N	>1,000	<20
SM037C3	43 44 5	114 47 36	5	3	.5	N	N	1.5	N	N	N	N
SM038C3	43 45 5	114 49 24	.5	7	.3	N	.5	>2	<1	N	20	<20
SM039C3	43 44 57	114 51 32	10	2	.3	N	5	>2	2	N	N	N
SM040C3	43 45 23	114 51 2	1	3	1	N	1	>2	<1	N	20	20
SM041C3	43 42 55	114 50 12	3	3	.2	N	1.5	>2	N	N	<20	<20
SM042C3	43 42 53	114 50 4	.7	5	.5	N	<.5	>2	N	N	N	N
SM043C3	43 44 4	114 48 46	.2	20	.15	N	N	2	3	N	N	<20
SM044C3	43 43 23	114 47 22	.3	10	.15	N	1	2	5	N	20	<20
SM045C3	43 43 26	114 47 18	5	7	.3	N	<.5	2	N	N	N	N
SM046C3	43 42 12	114 48 0	5	7	.5	N	.7	>2	N	N	<20	N
SM047C3	43 42 8	114 48 1	3	5	.3	N	<.5	>2	N	N	N	N
SM048C3	43 41 51	114 46 58	2	3	.15	N	1	2	N	N	N	N
SM049C3	43 41 50	114 47 3	3	2	.2	N	.5	>2	N	N	N	N
SM050C3	43 41 27	114 46 52	3	1.5	.1	N	<.5	2	N	N	N	N
SM051C3	43 41 7	114 46 36	7	2	.5	N	.7	>2	N	N	N	N
SM052C3	43 41 12	114 46 35	7	1	1.5	N	.5	1.5	N	N	N	20
SM053C3	43 40 34	114 45 27	5	1	.1	N	.7	>2	N	N	N	N
SM054C3	43 40 18	114 46 52	7	1	.07	N	2	>2	N	N	N	N
SM055C3	43 39 27	114 47 41	10	1	.05	N	1.5	>2	N	N	N	N
SM056C3	43 39 30	114 27 36	10	.7	1	N	1	2	N	N	N	<20
SM057C3	43 38 44	114 46 15	7	1	.07	N	.5	>2	N	N	N	N
SM058C3	43 40 18	114 42 13	10	1.5	<.05	N	3	>2	N	<500	N	N
SM059C3	43 39 26	114 42 40	7	3	.1	N	1	>2	N	N	N	N
SM060C3	43 39 24	114 42 37	5	2	.07	N	1.5	>2	N	N	N	N

TABLE 4--RESULTS OF ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE SMOKY MOUNTAINS ROADLESS STUDY AREA, BLAINE AND CAMAS COUNTIES, IDAHO.--Continued

Sample	Ba-ppm s	Be-ppm s	Bi-ppm s	Cd-ppm s	Co-ppm s	Cr-ppm s	Cu-ppm s	Ga-ppm s	Ge-ppm s	La-ppm s	Mn-ppm s	Mo-ppm s	Nb-ppm s
SM001C3	300	N	N	N	20	N	N	<10	N	300	150	20	70
SM002C3	100	N	150	N	N	N	N	<10	N	300	70	15	100
SM003C3	100	<2	N	N	N	N	N	N	N	N	30	15	50
SM004C3	150	N	500	N	N	N	N	<10	N	700	300	N	150
SM005C3	100	N	50	N	N	30	N	10	N	N	300	N	<50
SM006C3	70	2	N	N	<20	<20	N	<10	N	1,000	500	N	300
SM007C3	50	N	N	N	<20	30	N	20	N	N	500	N	N
SM008C3	70	N	N	N	N	70	N	30	N	N	500	100	N
SM009C3	50	N	N	N	N	50	N	20	N	N	100	10	N
SM010C3	150	N	N	N	N	30	N	15	N	200	500	N	100
SM011C3	<50	3	N	N	<20	<20	N	N	N	500	150	N	70
SM012C3	100	<2	N	N	N	100	N	<10	N	100	150	N	N
SM013C3	100	N	N	N	100	100	150	10	N	150	100	N	N
SM014C3	70	<2	N	N	20	100	30	15	N	100	200	200	N
SM015C3	200	N	N	N	<20	500	10	<10	N	100	200	N	N
SM016C3	10,000	N	150	N	N	50	50	N	N	100	70	N	<50
SM017C3	5,000	N	N	N	30	700	70	<10	N	500	200	N	N
SM018C3	2,000	N	N	N	30	300	50	N	N	150	100	N	N
SM019C3	200	<2	N	N	70	500	100	<10	N	200	70	50	N
SM020C3	300	N	50	N	<20	70	30	N	N	100	70	N	N
SM021C3	100	N	N	N	<20	150	<10	<10	N	100	300	N	N
SM022C3	70	5	N	N	20	70	30	N	N	1,500	700	N	100
SM023C3	100	<2	N	N	<20	70	50	N	N	200	150	N	50
SM024C3	70	N	N	N	N	50	N	10	N	100	200	N	70
SM025C3	70	<2	N	N	<20	100	<10	<10	N	700	150	N	<50
SM026C3	70	5	N	N	30	70	<10	N	N	2,000	1,000	N	70
SM027C3	70	3	N	N	<20	50	10	N	N	1,000	500	100	200
SM028C3	150	N	N	N	N	70	N	15	N	500	150	20	50
SM029C3	100	2	N	N	<20	N	<10	N	N	300	200	N	50
SM030C3	100	N	150	N	<20	1,000	N	10	N	500	150	N	50
SM031C3	70	N	N	N	N	150	N	20	N	500	500	N	70
SM032C3	100	<2	N	N	N	50	N	20	N	700	1,000	N	100
SM033C3	150	<2	N	N	N	20	N	N	N	700	300	N	50
SM034C3	100	N	N	N	N	50	N	50	N	150	300	N	100
SM035C3	100	N	200	N	N	30	N	15	N	200	700	N	70
SM036C3	500	<2	20	N	70	<20	150	<10	N	150	500	20	150
SM037C3	70	N	<20	N	<20	30	N	20	N	200	1,000	N	<50
SM038C3	300	2	N	N	50	30	N	N	N	150	70	N	500
SM039C3	200	<2	N	N	<20	<20	N	N	N	1,000	500	10	200
SM040C3	500	3	N	N	20	20	N	<10	N	700	300	N	500
SM041C3	300	<2	N	N	<20	N	N	<10	N	1,500	200	<10	300
SM042C3	200	2	<20	N	30	70	N	<10	N	500	70	N	150
SM043C3	3,000	<2	N	N	150	<20	70	N	N	300	50	15	200
SM044C3	150	<2	50	N	100	30	50	N	N	500	300	<10	200
SM045C3	100	N	N	N	20	70	<10	50	N	700	500	10	100
SM046C3	200	5	N	N	20	50	<10	30	N	1,000	500	30	500
SM047C3	150	2	N	N	<20	30	N	20	N	700	500	<10	200
SM048C3	100	<2	150	N	20	20	N	15	N	500	200	N	50
SM049C3	200	3	N	N	<20	<20	N	10	N	500	300	15	200
SM050C3	70	N	N	N	N	<20	N	<10	N	150	200	N	70
SM051C3	100	N	N	N	N	150	N	15	N	1,000	500	N	200
SM052C3	50	N	N	N	N	50	N	<10	N	300	300	N	<50
SM053C3	100	N	N	N	N	N	N	N	N	200	200	<10	200
SM054C3	100	7	N	N	N	N	N	N	N	200	300	N	200
SM055C3	70	N	N	N	N	N	N	N	N	100	500	15	300
SM056C3	70	N	N	N	N	30	N	<10	N	500	200	N	50
SM057C3	70	N	N	N	N	N	N	N	N	200	200	<10	150
SM058C3	70	5	N	N	<20	N	10	N	N	500	200	30	50
SM059C3	100	<2	N	N	<20	30	<10	N	N	500	300	<10	70
SM060C3	100	N	N	N	N	N	N	N	N	200	150	<10	150

TABLE 4--RESULTS OF ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE SMOKY MOUNTAINS ROADLESS STUDY AREA, BLAINE AND CAMAS COUNTIES, IDAHO.--Continued

Sample	Ni-ppm s	Pb-ppm s	Pd-ppm s	Pt-ppm s	Sb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s	Th-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s
SM001C3	N	3,000	N	N	N	N	N	<200	N	30	150	200	N	2,000
SM002C3	N	150	N	N	N	N	<20	N	<200	20	100	200	N	>2,000
SM003C3	N	300	N	N	N	N	N	N	N	20	N	30	N	1,000
SM004C3	N	100	N	N	N	<10	30	N	<200	100	200	500	N	2,000
SM005C3	<10	70	N	N	N	N	N	N	N	70	70	70	N	>2,000
SM006C3	N	20	N	N	N	<10	30	N	700	50	N	700	N	>2,000
SM007C3	10	300	N	N	N	N	N	N	N	100	70	50	N	>2,000
SM008C3	10	3,000	N	N	N	N	N	N	N	100	N	50	N	>2,000
SM009C3	10	5,000	N	N	N	N	>2,000	N	N	100	N	30	500	>2,000
SM010C3	<10	100	N	N	N	10	50	N	N	70	N	150	N	>2,000
SM011C3	N	200	N	N	N	10	70	N	>5,000	20	N	1,500	N	>2,000
SM012C3	10	300	N	N	N	N	N	N	1,000	70	N	70	N	>2,000
SM013C3	70	70	N	N	N	<10	N	N	N	50	N	70	N	>2,000
SM014C3	30	2,000	N	N	N	<10	N	N	N	200	50	100	N	>2,000
SM015C3	30	20	N	N	N	<10	20	N	N	50	N	100	N	>2,000
SM016C3	15	<20	N	N	N	N	N	N	N	30	N	100	N	>2,000
SM017C3	70	30	N	N	N	15	N	N	N	50	N	300	N	>2,000
SM018C3	50	30	N	N	N	<10	N	N	N	30	N	200	N	>2,000
SM019C3	100	500	N	N	N	<10	N	N	N	30	<50	100	N	>2,000
SM020C3	30	70	N	N	N	N	N	N	N	20	<50	50	N	>2,000
SM021C3	30	<20	N	N	N	<10	N	N	200	50	N	100	N	>2,000
SM022C3	10	500	N	N	N	30	50	N	>5,000	N	N	1,500	N	>2,000
SM023C3	10	500	N	N	N	<10	30	N	5,000	N	50	300	N	>2,000
SM024C3	<10	100	N	N	N	N	70	N	<200	70	70	100	N	>2,000
SM025C3	<10	300	N	N	N	10	30	N	5,000	N	N	1,000	N	>2,000
SM026C3	15	2,000	N	N	N	20	100	N	>5,000	200	N	1,500	N	>2,000
SM027C3	<10	500	N	N	N	15	150	N	3,000	70	100	1,000	N	>2,000
SM028C3	<10	70	N	N	N	10	N	N	<200	100	100	300	N	>2,000
SM029C3	N	30	N	N	N	10	70	N	>5,000	N	N	700	N	>2,000
SM030C3	15	50	N	N	N	<10	20	N	500	70	<50	200	N	>2,000
SM031C3	10	2,000	N	N	N	10	30	N	1,000	150	70	300	N	>2,000
SM032C3	<10	700	N	N	N	15	100	N	1,500	200	N	700	N	>2,000
SM033C3	<10	<20	N	N	N	15	50	N	2,000	N	N	700	N	>2,000
SM034C3	<10	30	N	N	N	N	30	N	1,500	50	<50	150	N	>2,000
SM035C3	N	70	N	N	N	<10	30	N	1,000	70	N	200	N	>2,000
SM036C3	50	300	N	N	N	N	N	N	<200	30	50	50	N	>2,000
SM037C3	15	200	N	N	N	N	N	N	N	70	N	100	N	>2,000
SM038C3	15	300	N	N	N	<10	N	N	300	N	100	70	N	>2,000
SM039C3	<10	150	N	N	N	10	50	N	N	100	<50	300	N	>2,000
SM040C3	10	500	N	N	N	10	N	N	200	100	100	100	N	>2,000
SM041C3	N	30	N	N	N	10	30	N	200	70	50	300	N	>2,000
SM042C3	10	300	N	N	N	<10	<20	N	1,000	50	N	150	N	>2,000
SM043C3	50	3,000	N	N	N	N	N	N	N	30	<50	100	N	>2,000
SM044C3	30	500	N	N	N	<10	N	N	500	50	70	150	N	>2,000
SM045C3	15	150	N	N	N	10	N	<200	N	150	N	200	N	>2,000
SM046C3	<10	300	N	N	N	15	N	N	2,000	150	N	300	N	>2,000
SM047C3	N	200	N	N	N	10	<20	<200	1,000	100	N	300	N	>2,000
SM048C3	10	300	N	N	N	<10	N	N	300	50	N	150	N	>2,000
SM049C3	<10	500	N	N	N	<10	30	N	1,500	70	N	200	N	>2,000
SM050C3	N	30	N	N	N	<10	20	N	N	70	N	300	N	>2,000
SM051C3	<10	100	N	N	N	10	70	N	N	150	100	500	N	>2,000
SM052C3	<10	<20	N	N	N	N	20	N	1,000	70	N	200	N	>2,000
SM053C3	N	<20	N	N	N	<10	150	N	N	150	100	500	N	>2,000
SM054C3	N	150	N	N	N	<10	50	N	N	150	N	700	N	>2,000
SM055C3	N	<20	N	N	N	10	100	N	1,000	200	200	700	N	>2,000
SM056C3	N	70	N	N	N	N	N	N	1,500	50	70	100	N	>2,000
SM057C3	N	<20	N	N	N	<10	50	N	300	70	N	300	N	2,000
SM058C3	N	200	N	N	N	20	N	N	>5,000	70	50	1,000	N	>2,000
SM059C3	N	150	N	N	N	30	100	N	5,000	100	<50	1,000	N	>2,000
SM060C3	N	300	N	N	N	<10	100	N	700	100	200	200	N	2,000

TABLE 4--RESULTS OF ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE SMOKY MOUNTAINS ROADLESS STUDY AREA, BLAINE AND CAMAS COUNTIES, IDAHO.--Continued

Sample	Latitude	Longitude	Ca-pct. s	Fe-pct. s	Mg-pct. s	Na-pct. s	P-pct. s	Ti-pct. s	Ag-ppm s	As-ppm s	Au-ppm s	B-ppm s
SM061C3	43 37 57	114 43 35	10	1	.1	N	1.5	>2	N	N	N	N
SM062C3	43 37 38	114 43 7	7	1.5	.07	N	2	>2	15	N	N	N
SM063C3	43 37 42	114 43 2	10	3	.1	N	.5	>2	N	N	N	N
SM064C3	43 37 28	114 41 42	10	2	.15	N	2	>2	N	N	N	N
SM065C3	43 38 6	114 41 17	7	5	.3	N	.7	>2	70	N	N	N
SM066C3	43 38 10	114 41 18	5	2	.1	N	1.5	>2	N	N	N	N
SM067C3	43 39 13	114 40 20	3	1.5	.1	N	.7	2	200	N	1,000	N
SM068C3	43 37 48	114 45 20	15	2	.07	N	2	>2	N	N	N	N
SM069C3	43 38 20	114 46 2	10	5	.1	N	1	>2	N	N	N	N
SM070C3	43 38 47	114 49 3	10	2	.05	N	.7	>2	N	N	N	N
SM071C3	43 38 38	114 48 58	10	3	.07	N	1	>2	N	N	<20	N
SM072C3	43 38 39	114 50 5	15	3	.07	N	2	>2	N	N	N	N
SM073C3	43 38 37	114 50 0	7	1.5	.2	N	1.5	>2	N	N	N	N
SM074C3	43 40 2	114 49 25	7	2	.07	N	2	>2	N	N	N	N
SM075C3	43 40 2	114 49 19	7	3	.15	N	5	>2	N	N	N	N
SM076C3	43 37 27	114 48 48	10	5	.1	N	1	>2	N	N	<20	N
SM077C3	43 35 42	114 46 9	10	2	.05	N	1	>2	N	N	N	N
SM078C3	43 35 44	114 46 7	10	2	.07	N	.7	>2	N	N	N	N
SM079C3	43 36 17	114 45 3	7	2	.1	N	2	>2	N	N	N	N
SM080C3	43 36 17	114 44 59	5	3	.07	N	1	>2	<1	N	N	N
SM081C3	43 44 59	114 31 59	10	2	.7	N	3	>2	N	N	N	300
SM082C3	43 41 25	114 39 2	10	1.5	2	N	2	>2	N	N	N	200
SM083C3	43 42 37	114 37 39	15	1.5	1.5	N	3	>2	N	N	N	200
SM084C3	43 42 47	114 37 52	1.5	.7	1.5	N	1.5	>2	N	N	N	200
SM085C3	43 43 47	114 38 14	15	1.5	7	N	N	.3	N	N	N	<20
SM086C3	43 43 56	114 37 58	15	1.5	7	N	1.5	1	N	N	N	<20
SM087C3	43 43 14	114 36 49	20	1.5	7	N	1.5	1.5	N	N	N	20
SM088C3	43 43 57	114 34 47	20	1.5	3	N	3	2	N	N	N	<20
SM089C3	43 45 33	114 35 11	15	1.5	2	N	3	2	N	N	N	<20
SM090C3	43 45 40	114 35 8	20	1.5	2	N	2	1.5	N	N	N	20
SM091C3	43 45 33	114 33 36	.7	1.5	.7	N	N	>2	N	N	N	<20
SM092C3	43 45 45	114 33 34	.7	5	1	.5	N	>2	N	N	N	30
SM093C3	43 46 3	114 34 8	.7	1.5	.5	<.5	1.5	>2	N	N	N	<20
SM094C3	43 46 36	114 34 16	7	1	.3	N	3	>2	N	N	N	<20
SM095C3	43 47 37	114 34 50	7	.7	.3	N	1.5	>2	N	N	N	<20
SM096C3	43 48 4	114 38 34	20	1	5	N	7	>2	N	N	N	20
SM097C3	43 48 15	114 38 41	10	1.5	1	.5	7	>2	N	N	N	30
SM098C3	43 50 8	114 39 13	7	1	.3	N	7	>2	N	N	N	50
SM099C3	43 50 0	114 39 10	15	1	.7	N	7	>2	N	N	N	<20
SM100C3	43 52 12	114 39 29	3	.5	.3	N	7	>2	N	N	N	200
SM101C3	43 52 32	114 40 1	7	1.5	3	1	.7	.7	N	N	N	N
SM102C3	43 52 43	114 40 23	7	1	2	.7	1.5	1	N	N	N	N
SM103C3	43 52 8	114 44 31	7	1.5	1.5	.7	3	>2	N	N	N	30
SM104C3	43 50 57	114 45 5	15	1.5	7	N	1.5	2	N	N	N	70
SM105C3	43 49 15	114 44 57	7	1	1.5	N	1.5	>2	N	N	N	30
SM106C3	43 49 13	114 44 58	15	2	3	N	1.5	2	N	N	N	100
SM107C3	43 52 8	114 44 31	15	1	1	N	7	>2	N	N	N	150
SM108C3	43 48 47	114 49 44	15	.7	.2	N	10	>2	N	N	N	20
SM109C3	43 48 48	114 49 47	10	1	.2	N	10	>2	200	3,000	500	20
SM110C3	43 36 18	114 42 25	5	15	.7	N	1.5	.7	1,000	>20,000	N	70
SM111C3	43 36 30	114 43 25	10	.7	.3	N	7	>2	15	N	<20	50
SM112C3	43 35 7	114 43 51	20	5	2	N	5	1.5	700	20,000	<20	70
SM113C3	43 34 21	114 44 35	7	1.5	.3	N	1.5	>2	70	7,000	<20	20
SM114C3	43 33 47	114 47 8	15	1.5	.5	3	3	>2	N	N	N	<20
SM115C3	43 44 54	114 54 7	15	1.5	.3	N	15	>2	N	N	N	30
SM116C3	43 43 47	114 53 39	15	.7	.2	N	3	>2	N	N	N	N
SM117C3	43 42 48	114 53 37	7	.7	.2	N	5	>2	N	N	N	N
SM118C3	43 37 35	114 52 10	15	.5	.2	N	7	>2	N	N	N	N
SM119C3	43 38 17	114 50 35	10	.3	.15	N	3	>2	N	N	N	N
SM120C3	43 37 54	114 51 26	15	.7	.15	N	3	>2	N	N	N	N

TABLE 4--RESULTS OF ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE SMOKY MOUNTAINS ROADLESS STUDY AREA, BLAINE AND CAMAS COUNTIES, IDAHO.--Continued

Sample	Ba-ppm s	Be-ppm s	Bi-ppm s	Cd-ppm s	Co-ppm s	Cr-ppm s	Cu-ppm s	Ga-ppm s	Ge-ppm s	La-ppm s	Mn-ppm s	Mo-ppm s	Nb-ppm s
SM061C3	150	<2	50	N	<20	N	<10	N	N	300	1,000	10	200
SM062C3	70	150	>2,000	N	<20	N	10	N	N	500	500	<10	200
SM063C3	70	3	<20	N	<20	N	N	N	N	500	700	<10	100
SM064C3	100	N	70	N	N	N	N	N	N	200	500	10	150
SM065C3	150	3	N	N	<20	N	N	N	N	500	300	N	200
SM066C3	100	N	N	N	N	N	N	N	N	100	300	N	70
SM067C3	100	<2	1,000	N	N	N	<10	N	N	200	30	N	150
SM068C3	70	N	N	N	N	N	N	N	N	150	500	10	500
SM069C3	100	N	N	N	<20	N	N	N	N	200	500	15	300
SM070C3	<50	N	N	N	<20	N	N	N	N	150	300	15	200
SM071C3	<50	N	N	N	<20	N	N	N	N	300	500	10	500
SM072C3	70	N	N	N	N	N	N	N	N	300	700	<10	200
SM073C3	500	N	N	N	N	<20	N	N	N	100	300	<10	20
SM074C3	150	N	N	N	N	N	N	N	N	150	200	N	70
SM075C3	200	2	N	N	N	N	N	N	N	200	300	N	150
SM076C3	150	N	N	N	<20	N	N	N	N	700	500	10	300
SM077C3	<50	N	N	N	N	N	N	N	N	200	300	10	200
SM078C3	70	N	N	N	N	N	N	N	N	200	300	10	200
SM079C3	200	2	N	N	<20	N	<10	<10	N	300	300	10	150
SM080C3	70	<2	700	N	<20	N	N	N	N	200	300	10	150
SM081C3	>10,000	N	N	N	N	200	<10	N	N	700	500	N	50
SM082C3	1,500	N	70	N	N	150	15	<10	N	500	500	30	70
SM083C3	500	N	N	N	N	200	15	<10	N	700	500	N	70
SM084C3	150	N	N	N	N	150	15	N	N	300	200	N	50
SM085C3	50	N	N	N	N	30	N	N	N	N	500	N	N
SM086C3	150	N	N	N	N	100	15	N	N	300	500	N	100
SM087C3	150	N	N	N	N	150	30	N	N	300	700	N	100
SM088C3	200	N	N	N	N	1,000	<10	<10	N	500	700	N	50
SM089C3	200	N	N	N	N	700	<10	<10	N	1,000	700	N	50
SM090C3	150	N	N	N	N	100	<10	15	N	300	500	N	50
SM091C3	1,500	N	N	N	N	70	<10	10	N	300	500	20	<50
SM092C3	>10,000	N	200	N	N	200	15	15	N	150	500	N	<50
SM093C3	1,000	N	N	N	N	50	10	<10	N	500	500	N	50
SM094C3	300	N	N	N	N	150	<10	<10	N	1,000	500	N	<50
SM095C3	500	N	N	N	N	150	<10	N	N	200	500	N	<50
SM096C3	150	N	N	N	N	150	15	N	N	500	700	N	100
SM097C3	700	N	N	N	N	150	15	<10	N	1,000	300	N	<50
SM098C3	300	N	N	N	N	100	<10	N	N	700	300	N	50
SM099C3	300	N	N	N	N	150	<10	N	N	70	500	N	50
SM100C3	700	N	700	N	N	150	15	N	N	70	300	N	70
SM101C3	500	N	N	N	<20	1,500	N	N	N	<100	300	N	<50
SM102C3	500	N	N	N	N	300	<10	<10	N	200	300	N	<50
SM103C3	700	N	300	N	<20	200	100	<10	N	500	500	N	70
SM104C3	500	N	30	N	<20	150	<10	<10	N	200	300	N	50
SM105C3	500	N	100	N	N	200	<10	N	N	150	300	N	<50
SM106C3	200	N	N	N	N	200	<10	<10	N	150	500	N	50
SM107C3	150	N	700	N	N	200	20	<10	N	500	300	N	70
SM108C3	20	N	200	N	N	<20	30	<10	N	700	700	15	300
SM109C3	20	N	N	N	N	<20	50	<10	N	1,000	500	15	300
SM110C3	70	N	N	300	20	20	100	10	N	200	500	150	<50
SM111C3	50	N	300	N	N	30	20	<10	N	700	700	30	300
SM112C3	70	N	N	100	50	200	70	10	N	150	300	50	<50
SM113C3	20	N	N	N	N	70	200	<10	N	1,000	700	150	300
SM114C3	<50	N	N	N	N	<20	500	10	N	1,500	300	N	200
SM115C3	30	N	N	N	N	<20	20	<10	N	700	500	<10	500
SM116C3	N	N	N	N	N	<20	20	N	N	500	700	30	500
SM117C3	N	N	N	N	N	20	30	<10	N	500	500	30	500
SM118C3	N	N	150	N	N	20	50	<10	N	500	500	30	300
SM119C3	N	N	N	N	N	30	20	<10	N	500	700	30	300
SM120C3	N	N	N	N	N	30	20	<10	N	500	700	50	500

TABLE 4--RESULTS OF ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE SMOKY MOUNTAINS ROADLESS STUDY AREA, BLAINE AND CAMAS COUNTIES, IDAHO.--Continued

Sample	Ni-ppm s	Pb-ppm s	Pd-ppm s	Pt-ppm s	Sb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s	Th-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s
SM061C3	N	20	N	N	N	10	100	N	5,000	150	70	700	N	>2,000
SM062C3	N	500	N	N	N	<10	150	N	>5,000	150	500	300	N	>2,000
SM063C3	N	20	N	N	N	<10	100	N	500	200	500	500	N	>2,000
SM064C3	N	100	N	N	N	N	200	N	200	100	N	300	N	2,000
SM065C3	N	30	N	N	N	10	200	N	<200	150	150	700	N	2,000
SM066C3	N	70	N	N	N	N	100	N	500	100	500	200	N	>2,000
SM067C3	N	10	N	N	N	N	20	N	1,500	70	700	200	N	>2,000
SM068C3	N	30	N	N	N	N	70	N	<200	100	N	300	N	>2,000
SM069C3	N	N	N	N	N	N	100	N	N	100	70	300	N	700
SM070C3	N	N	N	N	N	N	150	N	N	150	<50	300	N	1,000
SM071C3	N	<20	N	N	N	<10	200	N	N	200	<50	1,000	N	700
SM072C3	N	200	N	N	N	<10	70	N	N	200	N	500	N	2,000
SM073C3	N	<20	N	N	N	N	70	N	1,500	100	300	200	N	>2,000
SM074C3	N	N	N	N	N	<10	50	N	N	70	N	200	N	>2,000
SM075C3	N	200	N	N	N	10	50	N	1,000	70	<50	300	N	>2,000
SM076C3	N	N	N	N	N	10	150	N	N	200	N	1,000	N	700
SM077C3	N	N	N	N	N	N	50	N	N	100	N	300	N	1,000
SM078C3	N	N	N	N	N	N	150	N	300	150	N	300	N	700
SM079C3	N	200	N	N	N	<10	150	N	3,000	100	N	200	N	2,000
SM080C3	N	70	N	N	N	<10	70	N	1,500	100	N	200	N	1,000
SM081C3	20	200	N	N	N	50	N	2,000	N	150	N	700	N	>2,000
SM082C3	20	300	N	N	N	30	N	500	N	300	200	700	N	>2,000
SM083C3	10	200	N	N	N	70	20	N	N	500	N	700	N	>2,000
SM084C3	<10	500	N	N	N	50	20	N	N	700	N	1,000	N	>2,000
SM085C3	N	300	N	N	N	<10	N	N	N	150	N	70	N	>2,000
SM086C3	<10	150	N	N	N	20	<20	<200	5,000	150	N	500	N	>2,000
SM087C3	<10	300	N	N	N	30	20	300	>5,000	300	N	700	N	>2,000
SM088C3	70	20	N	N	N	100	N	N	500	200	N	700	N	>2,000
SM089C3	100	30	N	N	N	70	N	N	<200	150	N	700	N	>2,000
SM090C3	<10	300	N	N	N	15	N	200	N	200	<50	300	N	>2,000
SM091C3	70	150	N	N	N	70	N	N	N	200	N	700	N	>2,000
SM092C3	50	100	N	N	N	70	N	2,000	N	150	N	500	N	>2,000
SM093C3	15	20	N	N	N	50	N	500	N	150	N	300	N	>2,000
SM094C3	50	30	N	N	N	100	N	N	N	200	N	700	N	>2,000
SM095C3	50	<20	N	N	N	150	N	N	500	300	N	700	N	>2,000
SM096C3	N	70	N	N	N	70	<20	N	5,000	200	N	700	N	>2,000
SM097C3	30	50	N	N	N	50	N	700	N	150	N	500	N	>2,000
SM098C3	20	30	N	N	N	70	N	N	N	150	N	700	N	>2,000
SM099C3	50	<20	N	N	N	100	N	200	<200	300	N	700	N	>2,000
SM100C3	<10	20	N	N	N	50	N	N	N	300	N	700	N	>2,000
SM101C3	70	<20	N	N	N	30	N	700	<200	100	N	200	N	>2,000
SM102C3	30	150	N	N	N	30	700	700	200	150	300	500	N	>2,000
SM103C3	50	50	N	N	N	30	<20	700	N	300	<50	150	N	>2,000
SM104C3	10	50	N	N	N	30	N	N	N	150	N	300	N	>2,000
SM105C3	<10	70	N	N	N	50	N	<200	N	300	<50	700	N	>2,000
SM106C3	50	<20	N	N	N	20	N	N	<200	150	300	150	N	>2,000
SM107C3	10	<20	N	N	N	30	50	500	N	300	N	300	N	>2,000
SM108C3	N	70	N	N	N	30	70	<200	500	200	700	700	N	>2,000
SM109C3	N	1,000	N	N	<200	30	700	<200	<200	200	1,500	700	N	>2,000
SM110C3	50	30,000	N	N	1,500	15	30	<200	N	150	700	150	10,000	>2,000
SM111C3	N	700	N	N	N	30	150	N	700	200	300	700	N	>2,000
SM112C3	50	20,000	N	N	N	50	700	1,000	200	300	1,500	500	3,000	>2,000
SM113C3	N	20,000	N	N	<200	30	50	N	2,000	300	700	700	N	>2,000
SM114C3	N	300	N	N	N	30	N	1,000	300	100	N	500	N	>2,000
SM115C3	N	150	N	N	N	30	20	700	300	150	1,000	500	N	>2,000
SM116C3	<10	70	N	N	N	50	100	N	N	150	200	700	N	>2,000
SM117C3	N	70	N	N	N	50	100	N	N	150	150	700	N	>2,000
SM118C3	15	70	N	N	N	50	70	<200	N	200	<50	700	N	>2,000
SM119C3	N	30	N	N	N	30	100	N	N	200	N	700	N	2,000
SM120C3	N	70	N	N	N	30	70	<200	N	200	N	700	N	>2,000

TABLE 4--RESULTS OF ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE SMOKY MOUNTAINS ROADLESS STUDY AREA, BLAINE AND CAMAS COUNTIES, IDAHO.--Continued

Sample	Latitude	Longitude	Ca-pct. s	Fe-pct. s	Mg-pct. s	Na-pct. s	P-pct. s	Ti-pct. s	Ag-ppm s	As-ppm s	Au-ppm s	B-ppm s
SM121C3	43 36 52	114 50 3	15	.7	.2	N	3	>2	N	N	N	N
SM122C3	43 35 45	114 51 5	10	.7	.1	N	5	>2	N	N	N	N
SM123C3	43 49 20	114 37 0	.7	1.5	.7	N	.7	.3	N	N	N	N
SM124C3	43 49 30	114 37 16	.5	1.5	.5	N	.7	.7	N	N	N	N
SM125C3	43 51 10	114 38 32	7	2	2	<.5	2	.7	N	N	N	<20
SM126C3	43 47 44	114 35 53	3	5	1	N	3	1	N	N	N	20
SM127C3	43 48 14	114 35 24	1	2	1	N	2	>2	N	N	N	<20
SM128C3	43 41 43	114 51 38	5	1.5	.7	N	3	>2	N	N	N	20
SM129C3	43 43 35	114 50 5	3	3	1	N	3	>2	N	N	N	30
SM130C3	43 46 22	114 51 28	7	3	.7	N	10	>2	N	N	N	20
SM131C3	43 47 0	114 50 45	10	2	.3	N	10	>2	150	N	100	20
SM132C3	43 46 57	114 50 46	5	2	.3	N	7	>2	15	N	100	30
SM133C3	43 45 12	114 52 46	7	3	.3	N	15	>2	15	N	<20	20
SM134C3	43 46 55	114 48 48	7	1.5	.2	N	7	>2	7	N	20	N
SM135C3	43 46 38	114 40 11	7	1.5	1	N	5	1	N	N	N	N
SM136C3	43 46 38	114 40 3	7	1.5	2	N	3	1.5	N	N	N	<20
SM137C3	43 47 10	114 39 40	7	1.5	2	N	3	1.5	N	N	N	N
SM138C3	43 39 8	114 38 23	15	2	3	N	3	1	N	N	N	30

Sample	Ba-ppm s	Be-ppm s	Bi-ppm s	Cd-ppm s	Co-ppm s	Cr-ppm s	Cu-ppm s	Ga-ppm s	Ge-ppm s	La-ppm s	Mn-ppm s	Mo-ppm s	Nb-ppm s
SM121C3	N	N	N	N	N	30	20	<10	N	500	700	50	500
SM122C3	N	N	N	N	N	N	20	N	N	700	700	50	500
SM123C3	150	<2	N	N	N	150	10	<10	N	150	200	N	N
SM124C3	150	N	N	N	N	50	15	N	N	150	200	N	N
SM125C3	150	N	N	N	<20	700	<10	<10	N	200	500	100	N
SM126C3	150	N	N	N	30	200	15	<10	N	500	500	N	N
SM127C3	7,000	N	N	N	N	1,500	<10	<10	N	700	500	N	N
SM128C3	300	N	N	N	N	70	<10	20	N	700	700	10	300
SM129C3	300	N	N	N	50	70	70	15	N	700	700	50	300
SM130C3	500	N	N	N	30	<20	<10	15	N	700	700	50	300
SM131C3	200	N	700	N	N	N	N	10	N	700	700	<10	300
SM132C3	300	N	1,000	N	20	30	N	15	N	700	700	<10	300
SM133C3	300	N	300	N	20	<20	N	<10	N	1,000	500	30	300
SM134C3	200	N	300	N	N	N	N	<10	N	1,000	700	30	500
SM135C3	50	N	N	N	N	100	15	N	N	300	500	N	50
SM136C3	100	N	N	N	N	70	<10	N	N	300	500	<10	70
SM137C3	150	N	N	N	N	100	15	N	N	300	500	<10	70
SM138C3	300	N	N	N	N	30	<10	<10	N	300	500	100	50

TABLE 4--RESULTS OF ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES FROM THE SMOKY MOUNTAINS ROADLESS STUDY AREA, BLAINE AND CAMAS COUNTIES, IDAHO.--Continued

Sample	Ni-ppm s	Pb-ppm s	Pd-ppm s	Pt-ppm s	Sb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s	Th-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s
SM121C3	<10	20	N	N	N	50	100	N	N	200	N	700	N	1,500
SM122C3	N	<20	N	N	N	30	70	N	N	200	N	700	N	>2,000
SM123C3	N	<20	N	N	N	50	N	N	200	100	N	700	N	>2,000
SM124C3	N	<20	N	N	N	70	N	N	<200	70	N	700	N	>2,000
SM125C3	70	20	N	N	N	70	N	N	300	150	N	500	N	>2,000
SM126C3	70	70	N	N	N	70	N	<200	N	150	N	500	N	>2,000
SM127C3	50	70	N	N	N	70	N	N	<200	150	N	700	N	>2,000
SM128C3	N	150	N	N	N	50	100	<200	700	150	150	500	N	>2,000
SM129C3	70	3,000	N	N	N	70	30	N	1,000	300	70	300	N	>2,000
SM130C3	N	300	N	N	N	30	30	<200	1,000	100	100	300	N	>2,000
SM131C3	N	300	N	N	N	20	70	N	700	150	500	500	N	>2,000
SM132C3	N	300	N	N	N	30	70	N	300	150	500	300	N	>2,000
SM133C3	N	700	N	N	N	20	70	N	300	150	300	500	N	>2,000
SM134C3	N	150	N	N	N	30	100	N	500	150	1,500	700	N	>2,000
SM135C3	N	300	N	N	N	50	N	N	>5,000	100	N	1,000	N	>2,000
SM136C3	N	150	N	N	N	50	N	N	>5,000	70	70	700	N	>2,000
SM137C3	N	300	N	N	N	70	N	N	>5,000	100	70	1,000	N	>2,000
SM138C3	N	700	N	N	N	50	N	N	>5,000	200	N	700	N	>2,000

TABLE 5--RESULTS OF ANALYSES OF ROCK SAMPLES FROM THE SMOKY MOUNTAINS ROADLESS STUDY AREA, BLAINE AND CAMAS COUNTIES, IDAHO.

[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	Na-pct. s	P-pct. s	Ag-ppm s	As-ppm s	Au-ppm s
SM001R1	43 46 43	114 51 28	.7	.2	.2	.05	5	N	N	N	N
SM001R2	43 46 43	114 51 28	.7	.3	.15	.1	3	N	N	N	N
SM002R	43 46 43	114 51 24	1	.5	.5	.1	5	N	N	N	N
SM004R	43 45 51	114 48 28	3	1.5	.2	.2	5	N	N	N	N
SM005R	43 45 55	114 47 12	1.5	3	3	.2	1.5	N	1	N	N
SM007R	43 47 20	114 47 20	5	5	1	.2	5	N	N	N	N
SM009R	43 45 30	114 45 50	.5	2	20	.05	.7	N	N	N	N
SM036R	43 44 15	114 47 58	.7	N	N	N	N	N	<.5	N	N
SM050R	43 41 27	114 46 52	2	1	.7	.2	3	N	N	N	N

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	Ga-ppm s	Ge-ppm s	La-ppm s	Mn-ppm s	Mo-ppm s
SM001R1	N	1,500	N	N	N	N	N	N	50	N	N	20	N
SM001R2	10	1,000	N	N	N	N	N	N	50	N	N	30	N
SM002R	N	1,000	N	N	N	N	N	N	70	N	N	50	N
SM004R	N	1,000	N	N	N	10	30	<5	50	N	<50	70	N
SM005R	N	300	N	N	N	N	50	15	20	N	N	70	N
SM007R	N	1,500	<1	N	N	10	70	20	70	N	<50	300	N
SM009R	N	20	N	N	N	N	N	<5	N	N	N	1,000	N
SM036R	N	N	N	N	N	N	N	30	N	N	N	N	30
SM050R	N	1,000	N	N	N	N	20	N	50	N	<50	150	<5

Sample	Nb-ppm s	Ni-ppm s	Pb-ppm s	Sb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s	Th-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s	Au-ppm aa
SM001R1	N	<5	<10	N	N	N	<100	N	<10	N	N	N	50	N
SM001R2	N	N	10	N	N	N	<100	N	10	N	N	N	70	N
SM002R	N	N	15	N	N	N	150	N	<10	N	N	N	30	N
SM004R	N	7	10	N	<5	N	<100	N	30	N	<10	N	50	N
SM005R	N	5	N	N	<5	N	N	N	50	N	10	N	50	N
SM007R	N	10	<10	N	7	N	N	N	30	N	10	N	30	N
SM009R	N	<5	<10	N	N	N	300	N	<10	N	<10	N	20	N
SM036R	N	N	N	N	N	N	N	N	N	N	N	N	N	N
SM050R	N	5	20	N	<5	N	<100	N	20	N	N	N	70	N

Sample	Hg-ppm aa	Th-ppm dna	U-ppm dna	Ag-ppm icp	As-ppm icp	Au-ppm icp	Bi-ppm icp	Cd-ppm icp	Cu-ppm icp	Mo-ppm icp	Pb-ppm icp	Sb-ppm icp	Zn-ppm icp
SM001R1	N	6.21	1.66	N	9.3	N	N	N	1.4	.1	6.4	N	7
SM001R2	N	12.7	1.63	N	85	N	N	N	4.8	.11	9.4	N	29
SM002R	N	10.7	1.76	N	N	N	N	.05	1.5	.11	14	N	63
SM004R	N	20.9	6	N	2	N	N	N	6.1	.4	22	N	36
SM005R	N	5.27	3.21	1.7	23	N	N	.81	21	1.1	22	.97	49
SM007R	N	11	3.62	N	1.4	N	N	.045	30	1.1	5.9	N	17
SM009R	N	<1.5	.79	N	3.9	N	N	.075	5.7	.28	6.7	N	8.8
SM036R	N	1.4	1.47	.96	98	N	N	.037	80	67	14	N	18
SM050R	N	15.6	5.16	N	2.4	N	N	N	1.7	2.6	27	N	27

Table 6. Rock Descriptions

Sample #	Description
SM001R1	Felsic intrusive, light colored, fine grained
SM001R2	Felsic intrusive, light colored, course grained, argillic alteration
SM002R	Felsic intrusive, light colored, course grained
SM004R	Dacite porphyry
SM005R	Argillite ?, dark gray, reddish brown iron oxide on weathered surfaces
SM007R	Unidentified, fractured, disseminated limonite
SM009R	Limestone, dark gray, calcite veinlets
SM036R	Quartz vein, rusty
SM050R	Unidentified, largely quartz, heavily iron stained