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Analytical data and sample locality map of stream-sediment and heavy-mineral-concentrate samples collected from the Horn Mountains area, Sleetmute quadrangle, southwest Alaska

By

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STUDIES RELATED TO AMRAP

The U.S. Geological Survey is required by the Alaska National Interests Lands Conservation Act (Public Law 96-487, 1980) to survey certain federal lands to determine their mineral potential. Results from the Alaska Mineral Resource Assessment Program (AMRAP) must be made available to the public and submitted to the President and Congress. This report is one of a series of publications that presents geochemical data collected during the mineral assessment study of the Sleetmute quadrangle, Alaska (fig. 1). Geochemical data for stream-sediment samples, and geochemical and mineralogical data for heavy-mineral-concentrate samples collected from the Horn Mountains and surrounding areas are presented here. The data in this report are also available on computer diskette in Theodorakos and others (1992). An interpretation of the data appears in Gray and others (in press).

INTRODUCTION

In the summer of 1992, a reconnaissance geochemical survey was conducted in the northwestern part of the Sleetmute quadrangle as part of the Alaskan Mineral Resource Assessment Program (AMRAP). The study area covers approximately 1500 km^2 (579 mi^2) and includes the Horn Mountains and surrounding areas (fig. 2). Reconnaissance drainage basin geochemical surveys are a rapid and efficient means of locating upstream areas with possible mineral deposits. The objective of this study was to use geochemical data from stream-sediment samples, and geochemical and mineralogical data from heavy-mineral-concentrate samples, to identify areas favorable for the presence of mineral deposits.

The most rugged topography of the study area is in the Horn Mountains where the maximum elevation is approximately 1071 m (3515 ft). However, much of the terrain lying outside of the Horn Mountains is dominated by low rolling hills with broad, sediment-filled lowlands. Some of the study area is swampy, especially along part of the Kolmakof River where the minimum elevation is approximately 60 m (200 ft). The region is covered with vegetation that ranges from northern latitude forests to subarctic tundra. No roads are found in the area and access is limited to travel by air or foot. Boat access is also possible on some of the larger rivers and creeks.

GENERAL GEOLOGY

The Horn Mountains are made-up of one of several Late Cretaceous to early Tertiary volcanoplutonic complexes found in southwestern Alaska. Volcanic rocks of these complexes generally overlie or are in fault contact with plutons that intrude and partially assimilate the volcanic rocks (Bundtzen and Gilbert, 1983). The plutonic rocks in the Horn Mountains are part of a stock of mostly quartz monzonite (Cady and others, 1955). This stock intrudes Late Cretaceous and early Tertiary mafic to felsic tuffs and lavas of the Iditarod Volcanics (Miller and Bundtzen, 1988), and sedimentary rocks of the Cretaceous Kuskokwim Group (Cady and others, 1955). Contact metamorphic aureoles are found adjacent to the plutons where sedimentary and volcanic rocks are converted to hornfels.

Late Cretaceous and early Tertiary intermediate to mafic dikes and granite porphyry intrusions are found in the vicinity of the Horn

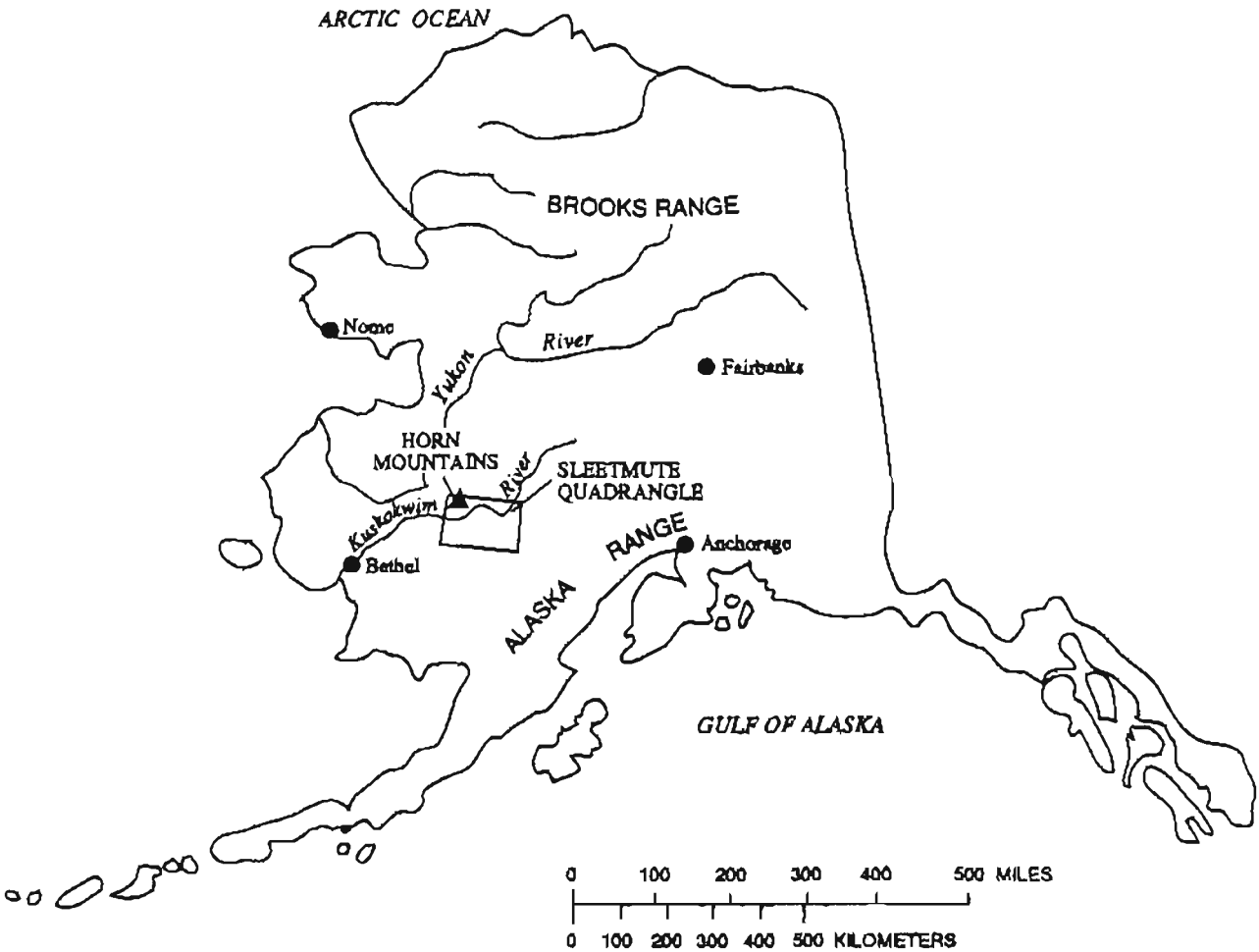

Figure 1. Location of the Horn Mountains area, Sleetmute quadrangle, Alaska.

Mountains. These intrusions cut all rock types in the study area, but most commonly intrude sedimentary rocks of the Kuskokwim Group. The largest exposure of granite porphyry is at Juninggulra Mountain approximately 20 km north of the Horn Mountains. The intermediate to mafic dikes are generally small and local, typically less than 1 meter wide, discontinuous along strike, and difficult to trace for more than 10 meters (Cady and others, 1955; Miller and Bundtzen, 1993).

Rocks of the Cretaceous Kuskokwim Group surround the Horn Mountains. The Kuskokwim Group is a sequence of flysch representing turbidite fan, foreslope, shallow-marine, and shelf facies deposited into a Late Cretaceous basin (Bundtzen and Gilbert, 1983; Miller and Bundtzen, 1992). Rocks of the Kuskokwim Group were first described and named by Cady and others (1955), who suggested graywacke and lesser siltstone compose almost all of the sequence, graywacke being approximately twice as abundant as siltstone. Minor conglomerate and interbedded volcanic tuffs and flows are also found within the Kuskokwim Group (Cady and others, 1955; Bundtzen and Laird, 1982; Miller and Bundtzen, 1993).

METHODS OF STUDY

Sample Media

In this reconnaissance geochemical study, stream-sediment and heavy-mineral-concentrate samples were collected to provide information about the rocks eroded from the drainage basin upstream from each sample site. Analyses of stream-sediment samples are representative of the chemistry of rocks contained within the drainage basins. Heavy-mineral-concentrate samples provide information about the more dense minerals in rocks eroded from the drainage basins. The heavy-mineral-concentrate collection procedure selectively concentrates the dense minerals, many of which may be related to ore deposits, permitting chemical determination of some elements that are not easily detected in stream-sediment samples. The mineralogical content of the heavy-mineral-concentrate samples was also determined to provide additional information that may help to delineate mineral deposits. All of this information is useful for identifying ground favorable for mineral deposits.

Sample Collection

Stream-sediment samples were collected from 138 sites from first- and second-order streams (fig. 2). Heavy-mineral-concentrates were collected from 137 sites. At sample site (HM0127), a heavy-mineral-concentrate sample was not collected because the stream drainage was swampy and lacked sufficient sand-sized material necessary for concentrate collection. Sampling density was approximately one site per 11 km^2 (4.2 mi^2). The area of the drainage basin sampled ranged from approximately 2.6 km^2 (1 mi^2) to 15 km^2 (5.8 mi^2).

Stream-sediment samples

Stream-sediment material collected consisted of alluvium in the active stream channel. When possible, samples were composited by collecting sediment from several localities in the active channel. However, some sites were swampy, with deep channels where it was not possible to identify the active channel bottom. In these instances,

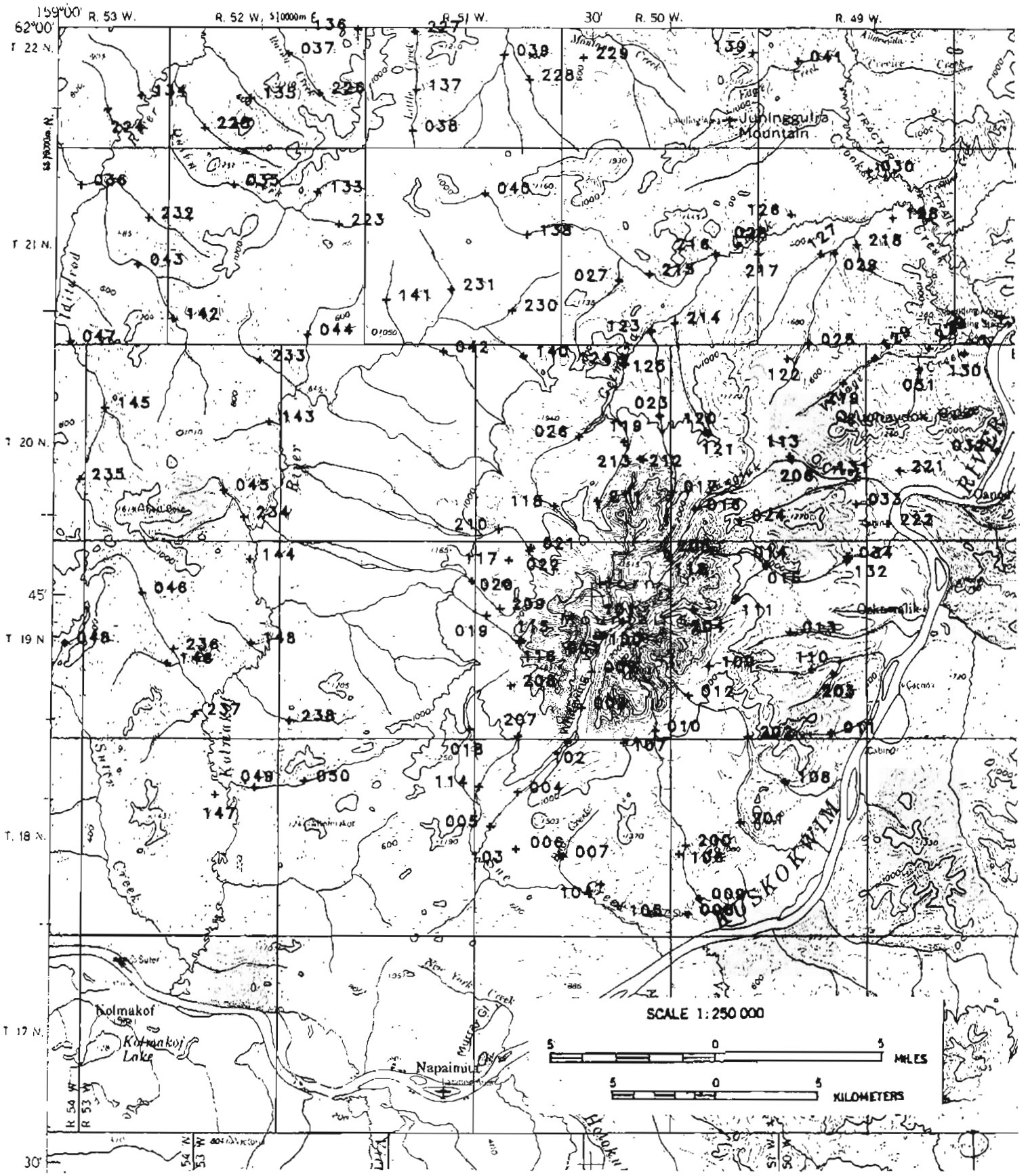

Figure 2. Localities of samples collected from the Horn Mountains study area in the Sleetmute quadrangle.

any available sediment was collected from the channel bottom using specialized shovels with extendable handles capable of reaching into these deep streams. The stream sediment was then screened to minus-10 mesh and collected in a stainless steel gold pan. Approximately 2 kg of sediment was taken from the pan and saved as the stream-sediment sample.

Heavy-mineral-concentrate samples

Heavy-mineral-concentrates were collected from the same active alluvium as the stream-sediment samples. At each sample site, the gold pan was filled with stream sediment screened to minus-10 mesh and panned until most of the less dense minerals, organic materials, and clays were removed. This panned sample was saved as the heavy-mineral-concentrate sample. Streams sampled in areas covered by swampy lowlands often contain bed load material consisting primarily of clay with minor sand-sized material. In these instances, the gold pan was refilled several times to obtain adequate sand-sized material necessary for a heavy-mineral-concentrate sample.

Sample Preparation

In the laboratory, all 138 stream-sediment samples were dried below 50°C, sieved to minus-80 mesh, pulverized, and chemically analyzed. The heavy-mineral-concentrate samples were sieved to minus-35 mesh, and then separated using bromoform (specific gravity 2.85) to remove any remaining lighter minerals, primarily quartz and feldspar. The resultant heavy-mineral-concentrate samples were then separated into magnetic, paramagnetic, and nonmagnetic fractions using a modified Frantz Isodynamic Separator. The most magnetic material was removed at a setting of 0.25 ampere and contains mostly magnetite. The paramagnetic fraction was removed at 1.75 ampere and consists largely of ferromagnesian silicates and iron oxides. The nonmagnetic fraction of the heavy-mineral-concentrate samples contains sulfide minerals, gold, and some nonmagnetic oxides and silicates; this was the only fraction chemically analyzed. The nonmagnetic heavy-mineral-concentrate samples were split using a Jones-type multiple plate splitter; one split was hand ground and chemically analyzed and the other split was used for mineralogical analysis.

All of the 137 heavy-mineral-concentrate samples collected were examined microscopically for their mineralogical content. Following heavy-liquid and magnetic separation one heavy-mineral-concentrate sample (HM0029c) lacked sufficient material necessary for chemical analysis, resulting in a total of 136 concentrates being chemically analyzed.

ANALYTICAL TECHNIQUES

Semiquantitative Emission Spectrography

The minus-80-mesh stream-sediment and minus-35-mesh nonmagnetic-heavy-mineral-concentrate samples were analyzed by a semiquantitative, direct-current arc emission spectrographic (SQS) technique adapted from Grimes and Marranzino (1968). Spectrographic results were determined by visually comparing spectra derived from the sample against spectra obtained from laboratory reference standards made from pure oxides and carbonates. Standard concentrations are geometrically spaced over any given order of magnitude as follows: 100, 50, 20, 10,

etc. Samples whose concentrations were estimated to fall between those values were assigned values of 70, 30, 15, etc. The precision of this analytical technique is approximately ± one reporting interval at the 83 percent confidence level and ± two reporting intervals at the 96 percent confidence level (Motooka and Grimes, 1976). Values determined for the major elements Fe, Mg, Ca, Na, Ti, and P are given in weight percent; all other values are in parts per million (micrograms/gram). In addition, Pd and Pt were determined in the heavy-mineral-concentrate samples by SQS. The elements determined by SQS and their limits of determination are listed in table 1. Data for stream-sediment samples determined by the SQS technique are listed in table 3; SQS data for the heavy-mineral-concentrate samples are listed in table 4.

Wet Chemical Techniques

Concentrations of Ag, As, Au, Bi, Cd, Cu, Mo, Pb, Sb, and Zn were determined in the minus-80-mesh stream-sediment samples by inductively coupled plasma-atomic emission spectroscopy (ICP-AES) using the procedure developed by Motooka (1988). The sediments were decomposed with concentrated hydrochloric acid and hydrogen peroxide in a hot-water bath. The metals were extracted in diisobutyl ketone (DIBK) in the presence of ascorbic acid and potassium iodide. The DIBK phase was then aspirated directly into the plasma and element concentrations were determined simultaneously with a multichannel ICP instrument.

Concentrations of Au, Te, and Tl in the minus-80-mesh stream-sediment samples were determined by an atomic absorption spectrophotometry (AAS) technique adapted from Hubert and Chao (1985). The samples were digested using a series of hydrogen peroxide, hydrofluoric acid, aqua-regia, and hydrobromic acid-bromine solutions. Gold, Te and Tl were separated and concentrated by extraction into methyl isobutyl ketone and determined by flame AAS. Concentrations for Au in the range of 0.002 to 0.050 ppm were determined by graphite furnace AAS on samples that were shown to be less than 0.050 ppm by the flame AAS technique. The graphite furnace AAS technique for Au was adapted from Meier (1980).

The minus-80-mesh stream-sediment samples were analyzed for Se using continuous-flow hydride generation AAS (Sanzolone and Chao, 1987). In this method, the stream-sediment samples were digested using nitric, perchloric, and hydrofluoric acids; hydrochloric acid was added to form Se (IV), which is necessary for hydride generation. A mixture of hydrochloric acid, sodium borohydride, and sodium hydroxide was added to produce selenium hydride, which is then stripped and transported with inert gas to the atomizer of the atomic absorption spectrophotometer where Se concentration was determined.

Mercury was measured in the minus-80-mesh stream-sediment samples using a modified version of the cold-vapor AAS technique (Kennedy and Crock, 1987). The samples were decomposed with nitric acid and sodium dichromate. Mercury (II) was reduced to mercury gas with hydroxylamine hydrochloride/sodium chloride and stannous chloride in a continuous flow system releasing the gas into a quartz cell of an atomic absorption spectrophotometer where concentration was determined.

Tungsten was determined in the minus-80-mesh stream-sediment samples by a visible spectrophotometric (VS) method by decomposing the samples with nitric, hydrofluoric, and hydrochloric acids (Welsch,

1983). Stannous chloride and dithiol solution was added to reduce the W, forming the blue tungsten-dithiol complex, which was then extracted into heptane. The color intensity of the tungsten-dithiol complex is proportional to the concentration of W in the sample. Tungsten concentrations were determined using a visible absorption spectrophotometer.

Concentrations of F were determined in the minus-80-mesh stream-sediment samples by selective-ion electrode (SIE) analysis using a method modified from Bodkin (1977). Samples were fused with lithium metaborate, and then dissolved in nitric acid. A complexing buffer was added, and F concentrations were determined using a F-selective ion electrode.

Concentrations of the platinum group elements (PGE) Pt, Pd, Rh, Ru, and Ir were determined in the minus-80-mesh stream-sediment samples using an inductively coupled plasma-mass spectrometry (ICP-MS) technique (Meier and others, 1991). Digestion and separation of the PGE was made using a nickel sulfide fire assay procedure similar to that described by Jackson and others (1990). The nickel sulfide button is dissolved in hydrochloric acid, tellurium is added and reduced with stannous chloride to coprecipitate PGE sulfides, which are retained by filtration. The residue is dissolved in aqua regia and the solution is analyzed for PGE using an ICP-MS instrument.

The elements determined by the various wet chemical techniques and their limits of determination are listed in table 2. Data determined for the stream-sediment samples by these methods are shown in table 3. Discrepancies in analyses for certain elements duplicated by different analytical methods, such as values determined for Au in stream-sediment samples, may be attributable to the particulate nature of minerals that contain Au, different sample aliquots used, and different extraction procedures. The AAS analysis of Au provides the most statistically representative results due to the larger sample aliquot analyzed. For example, a 10-gram sample aliquot is used for the AAS analysis, whereas a 10-milligram sample aliquot is used in the SQS technique.

Optical Mineralogy

Mineral identifications were made with a binocular microscope on each of the nonmagnetic, heavy-mineral-concentrate samples. The amount of a particular mineral in the concentrates was recorded in the following way: class 1, <1%; class 2, 1-5%; class 3, >5-20%; class 4, >20-50%; and class 5, >50%. If a particular mineral was not observed, an "0" was recorded. Mineralogy results are shown in table 5.

The following minerals were recognized in heavy-mineral-concentrate samples, abbreviations are listed here in parentheses and in the column headings in table 5: zircon (zir), apatite (apt), cassiterite (cass), rutile (rut), anatase (ant), brookite (brk), tourmaline (tour), pyroxene (pyx), sphene (spn), garnet (gar), fluorite (flu), pyrite (pyr), cinnabar (cinn), chalcopyrite (cpy), gold (gold), scheelite (schl), barite (bar), sphalerite (sphl), corundum (cor), muscovite (musc), andalusite (and), sillimanite (sil), monazite (monz), and chlorite (chl).

DATA STORAGE SYSTEM

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

The data in this report are also available on a 5.25 inch, 360-KB magnetic diskette in Theodorakos and others (1992). Access to this information requires an IBM compatible computer using MS DOS and a 5.25 inch drive capable of handling 360-KB diskettes. The diskette report contains the analytical results for the stream-sediment and heavy-mineral-concentrate samples in STATPAC file (.STP) format. An executable data conversion program STP2DAT.EXE (Grundy and Miesch, 1987) is also contained on the diskette that provides various format options into which the STATPAC file may be changed.

DESCRIPTION OF DATA TABLE

Table 3 contains the geochemical data for the stream-sediment samples collected during this study; tables 4 and 5 contain the geochemical and mineralogical data for the heavy-mineral-concentrate samples, respectively. Sample site locations are given in latitude and longitude in the tables, and these sample sites are plotted on figure 2. Sample site localities were abbreviated on figure 2 showing only a 3-digit number corresponding to sample numbers in the data tables.

The analytical method for each element shown in tables 3 and 4 is abbreviated as a suffix in the column headings. The designation "SQS" indicates semiquantitative emission spectrography, "ICP" indicates inductively coupled plasma-atomic emission spectroscopy and inductively coupled plasma-mass spectrometry, "AAS" indicates atomic absorption spectrophotometry, "VS" indicates visible spectrophotometry, and "SIE" indicates selective-ion electrode analysis. The letter "N" in the data table indicates that an element was looked for but not observed at the concentration shown, while an "<" indicates that an element was observed but present in concentrations below the lower limit of determination shown. A ">" was entered in the table after the upper limit of determination if an element was observed but was present in concentrations above this value. Lower and upper limits of determination for the ICP methods listed in tables 2 and 3 may be variable due to variable sample aliquot weight, dilution of an analytical aliquot, or instrumental interference correction.

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REFERENCES CITED

Bodkin, J.B., 1977, Determination of fluorine in silicates by use of an ion-selective electrode following fusion with lithium metaborate: The Analyst, v. 102, no. 1215, p. 409-413.

Bundtzen, T.K. and Gilbert, W.G., 1983, Outline of geology and mineral resources of upper Kuskokwim region, Alaska: Journal of the Alaska Geological Society, v. 3, p. 101-119.

Bundtzen, T.K., and Laird, G.M., 1982, Geologic map of the Iditarod D-2 and eastern D-3 quadrangles, Alaska: Alaska Division of Geological and Geophysical Surveys, Geologic Report 72, 1 sheet, scale 1:63,360.

Cady, W.M., Wallace, R.E., Hoare, J.M., and Webber, E.J., 1955, The central Kuskokwim region, Alaska: U.S. Geological Survey Professional Paper 268, 132 p.

Gray, J.E., Theodorakos, P.M., Bradley, L.A., and Bullock, J.H., Jr., in press, Favorable areas for metallic mineral resources in and near the Horn Mountains, Sleetmute quadrangle, southwestern Alaska, in Dusel-Bacon, Cynthia, and Till, A.B., eds., Geologic studies in Alaska by the U.S. Geological Survey during 1992: U.S. Geological Survey Bulletin.

Grimes, D.J., and Marranzino, A.P., 1968, Direct-current arc and alternating-current spark emission spectrographic field methods for the semiquantitative analysis of geological materials: U.S. Geological Survey Circular 591, 6 p.

Grundy, W.R., and Miesch, A.T., 1987, Brief descriptions of STATPAC and related statistical programs for the IBM personal computer: U.S. Geological Survey Open-File Report 87-411-A, 34 p.

Hubert, A.E., and Chao, T.T., 1985, Determination of gold, indium, tellurium and thallium in the same sample digestion of geological materials by atomic-absorption spectroscopy and two-step solvent extraction: Talanta, v. 32, p. 383-387.

Jackson, S.E., Fryer, B.J., Gosse, W., Healey, D.C., Longerich, H.P., and Strong, D.F., 1990, Determination of the precious metals in geological materials by inductively coupled plasma-mass spectrometry (ICP-MS) with nickel sulphide fire-assay collection and tellurium coprecipitation, in Potts, P.J., Dupuy, C., and Bowles, J.F.W., eds., Microanalytical Methods in Mineralogy and Geochemistry: Chemical Geology, v. 83, p. 119-132.

Kennedy, K.R., and Crock, J.G., 1987, Determination of mercury in geological materials by continuous flow, cold-vapor, atomic-absorption spectrophotometry: Analytical Letters, v. 20, p. 899-908.

Meier, A.L., 1980, Flameless atomic-absorption determination of gold in geological materials: Journal of Geochemical Exploration, v. 13, p. 77-85.

Meier, A.L., Carlson, R.R., and Taggart, J.E., 1991, The determination of the platinum group elements in geologic materials by inductively coupled plasma mass spectrometry [abs.]: The Sixth Annual International Platinum Symposium, Perth, Australia, Abstracts with Programs.

Miller, M.L., and Bundtzen, T.K., 1988, Right-lateral offset solution for the Iditarod-Nixon Fork fault, western Alaska, in Galloway, J.P., and Hamilton, T.D., eds., Geologic studies in Alaska by the U.S. Geological Survey during 1987: U.S. Geological Survey Circular 1016, p. 99-103.

Miller, M.L., and Bundtzen, T.K., 1992, Geologic history of the post-accretionary rocks, Iditarod quadrangle, west-central Alaska [abs.]: Geological Society of America Abstracts with Programs, v.24, no. 5, p. 71.

Miller, M.L., and Bundtzen, T.K., 1993, Geologic map of the Iditarod quadrangle, Alaska: U.S. Geological Survey Miscellaneous Field Studies Map MF-2219-A, scale 1:250,000.

Motooka, J.M., 1988, An exploration geochemical technique for the determination of preconcentrated organometallic halides by ICP-AES: Applied Spectroscopy, v. 42, no. 7, p. 1293-1296.

Motooka, J. M., and Grimes, D. J., 1976, Analytical precision of one-sixth order semiquantitative spectrographic analyses: U.S. Geological Survey Circular 738, 25 p.

Sanzolone, R.F., and Chao, T.T., 1987, Determination of selenium in thirty-two geochemical reference materials by continuous-flow hydride generation atomic absorption spectrophotometry: Geostandards Newsletter, v. 11, p. 81-85.

Theodorakos, P.M., Borden, J.C., Bullock, J.H., Jr., Gray, J.E., Hageman, P.L., 1992, Diskette version of analytical data for stream-sediment and heavy-mineral-concentrate samples collected from the Horn Mountains area, Sleetmute quadrangle, Alaska: U.S. Geological Survey Open-File Report 92-708-B, 1-360 KB diskette.

VanTrump, George, Jr., and Miesch, A.T., 1976, The U.S. Geological Survey RASS-STATPAC system for management and statistical reduction of geochemical data: Computers and Geosciences, v. 3, p. 475-388.

Welsch, E.P., 1983, A rapid geochemical spectrophotometric determination of tungsten with dithiol: Talanta, v. 30, p. 876-878.

Table 1. Limits of determination for the spectrographic analysis of stream-sediment samples, based on a 10-mg sample.

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

Elements	Lower determination limit	Upper determination limit
	Percent	
Iron (Fe)	0.05	20
Magnesium (Mg)	0.02	10
Calcium (Ca)	0.05	20
Sodium (Na)	0.2	5
Titanium (Ti)	0.002	1
Phosphorous (P)	0.2	10
	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	100
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.

Table 2. Other analytical methods used and limits of determination*. [ICP-AES, inductively coupled plasma-atomic emission spectroscopy; AAS, atomic absorption spectrophotometry; VS, visible spectrophotometry; SIE, selective-ion electrode analysis; ICP-MS, inductively coupled plasma-mass spectrometry].

Element	Analytical Method	Lower limit	Upper limit
Silver (Ag)	ICP-AES	0.045 ppm	1,500 ppm
Arsenic (As)	ICP-AES	0.6 ppm	3,000 ppm
Gold (Au)	ICP-AES	0.15 ppm	2,400 ppm
Bismuth (Bi)	ICP-AES	0.6 ppm	1,500 ppm
Cadmium (Cd)	ICP-AES	0.03 ppm	500 ppm
Copper (Cu)	ICP-AES	0.03 ppm	1,200 ppm
Molybdenum (Mo)	ICP-AES	0.09 ppm	1,500 ppm
Lead (Pb)	ICP-AES	0.6 ppm	12,000 ppm
Antimony (Sb)	ICP-AES	0.6 ppm	800 ppm
Zinc (Zn)	ICP-AES	0.03 ppm	500 ppm
Tellurium (Te)	AAS	0.050 ppm	
Thallium (Tl)	AAS	0.050 ppm	
Gold (Au)	AAS	0.002 ppm	
Mercury (Hg)	AAS	0.02 ppm	
Selenium (Se)	AAS	0.1 ppm	
Tungsten (W)	VS	1 ppm	
Fluoride (F)	SIE	0.03 %	
Platinum (Pt)	ICP-MS	0.5 ppb	
Palladium (Pd)	ICP-MS	0.5 ppb	
Rhodium (Rh)	ICP-MS	0.5 ppb	
Ruthenium (Ru)	ICP-MS	0.5 ppb	
Iridium (Ir)	ICP-MS	0.5 ppb	

* NOTE: Limits of determination for the ICP-AES and ICP-MS methods listed in this table are nominal, and in table 3 may be variable. The variability in limits of determination for an element is due to variable sample aliquot weight, dilution of an analytical aliquot, or instrumental interference correction.

Table 3. Analytical data for stream-sediment samples collected from the Horn Mountains area, Sleetmute quadrangle, Alaska. [ICP, inductively coupled plasma spectroscopy; SQS, semiquantitative emission spectrography; AAS, atomic absorption spectrophotometry; VS, visible spectrophotometry; SIE, selective-ion electrode analysis; N, not detected; <, detected but below the limit of determination shown; >, determined to be greater than the value shown]

Sample	Latitude	Longitude	Ag ppm-ICP	As ppm-ICP	Au ppm-ICP	Bi ppm-ICP	Cd ppm-ICP	Cu ppm-ICP	Mo ppm-ICP	Pb ppm-ICP
HM0001S	61 43 55	158 29 30	.13	180	N	1.3	.3	35	1.1	13
HM0002S	61 42 59	158 29 58	.24	280	.14	.74	.28	32	1.2	15
HM0003S	61 42 1	158 30 32	.12	360	N	N	.28	26	1.9	16
HM0004S	61 39 48	158 34 5	.18	150	N	N	.56	42	1.4	14
HM0005S	61 38 54	158 35 38	.072	5.4	N	N	.15	12	.35	8.1
HM0006S	61 38 9	158 31 45	N	8	N	N	.097	6.6	.42	5.3
HM0007S	61 38 8	158 31 32	.59	210	N	1.9	.14	120	.76	16
HM0008S	61 36 35	158 24 37	N	3.8	N	N	.11	10	.25	5.6
HM0009S	61 37 1	158 24 0	N	9.1	N	N	.21	12	.74	9.1
HM0010S	61 41 25	158 26 26	.68	140	N	N	1.9	30	.84	54
HM0011S	61 41 22	158 16 41	N	4.2	N	N	.15	12	.32	5.6
HM0012S	61 42 20	158 24 35	N	14	N	N	.15	15	1.6	12
HM0013S	61 44 0	158 18 56	N	2.9	N	N	.14	16	.43	7.6
HM0014S	61 45 46	158 20 17	N	18	N	N	.13	13	.93	9.1
HM0015S	61 45 44	158 20 16	N	18	N	N	.16	14	1.1	11
HM0016S	61 47 13	158 24 15	.14	180	N	1.7	.43	18	1.5	17
HM0017S	61 47 43	158 25 33	.95	120	N	5	1.5	33	.92	56
HM0018S	61 41 27	158 36 46	N	10	N	N	.17	9.1	.62	6.5
HM0019S	61 44 27	158 35 51	.091	30	N	N	.29	18	.8	11
HM0020S	61 45 21	158 36 40	N	12	N	N	.16	14	.79	11
HM0021S	61 46 13	158 33 24	N	25	N	N	.25	20	.69	11
HM0022S	61 46 9	158 33 30	.11	20	N	.68	.35	17	.95	13
HM0023S	61 49 39	158 26 24	.2	120	N	2.2	.79	20	1.3	30
HM0024S	61 46 57	158 21 45	N	25	N	N	.18	12	.9	9.3
HM0025S	61 51 31	158 18 5	N	3	N	N	.1	11	.34	7.2
HM0026S	61 49 10	158 30 40	N	27	N	N	.15	15	.56	8.9
HM0027S	61 53 12	158 28 40	N	.98	N	N	.078	6.1	.37	6.4
HM0028S	61 54 7	158 22 5	N	4.6	N	N	.14	8.4	.31	7.5
HM0029S	61 53 53	158 16 37	N	5.8	N	N	.23	16	.48	9.3
HM0030S	61 56 11	158 14 31	N	N	N	N	.11	8.8	.3	5.8
HM0031S	61 50 56	158 11 41	N	N	N	N	.088	9.5	.42	5.6
HM0032S	61 48 47	158 7 21	N	4.3	N	N	.11	10	.35	4.5
HM0033S	61 47 21	158 15 17	N	N	N	N	.11	12	.35	5.7
HM0034S	61 45 57	158 15 48	N	2.9	N	N	.14	11	.26	5.6
HM0035S	61 55 49	158 50 5	N	24	N	N	.15	15	.81	6.6
HM0036S	61 55 48	158 58 38	N	5.3	N	N	.16	9.2	.41	4.7
HM0037S	61 59 19	158 47 3	N	8.3	N	N	.11	11	.54	6.5
HM0038S	61 57 15	158 40 8	.14	4.8	N	N	.27	14	.61	11
HM0039S	61 59 16	158 34 58	N	4.7	N	N	.099	14	.35	6.6
HM0040S	61 55 36	158 36 1	N	8.6	N	N	.16	7.7	.42	9.8
HM0041S	61 59 0	158 18 44	N	6.2	N	N	.098	13	.66	6.8
HM0042S	61 51 25	158 38 19	N	5	N	N	.14	9.2	.17	7
HM0043S	61 53 42	158 55 25	.1	4.7	N	N	.24	14	.31	8.3
HM0044S	61 51 52	158 45 54	.072	N	N	N	.28	14	.41	8.1
HM0045S	61 47 45	158 50 32	N	6	N	N	.077	15	.76	7.1
HM0046S	61 45 3	158 55 1	N	7.1	N	N	.1	15	.81	7.3
HM0047S	61 51 40	158 59 9	N	8.3	N	N	.095	14	.46	7.2
HM0048S	61 43 44	158 59 17	.095	6.1	N	N	.22	19	1	8.2
HM0049S	61 39 55	158 48 41	N	5.7	N	N	.081	14	.5	5.5
HM0050S	61 40 6	158 45 55	N	18	N	N	.14	18	.55	6.2
HM0100S	61 43 56	158 29 19	.14	370	N	.96	.34	28	1.8	14
HM0101S	61 44 18	158 28 15	.15	340	N	1.5	.24	39	1.6	11
HM0102S	61 41 7	158 31 18	.08	210	.15	N	.19	19	1.3	12
HM0103S	61 38 19	158 34 12	.084	15	N	N	.13	6.5	.23	6
HM0104S	61 37 24	158 29 28	N	11	N	N	.086	20	.9	8.9
HM0105S	61 36 49	158 28 30	N	5.7	N	N	.11	10	.44	7
HM0106S	61 38 11	158 25 7	N	5.6	N	N	.097	14	.47	5.6
HM0107S	61 41 6	158 28 10	N	13	N	N	.13	14	.63	11
HM0108S	61 40 4	158 19 13	N	7.2	N	N	.14	20	.71	7.1
HM0109S	61 43 6	158 23 27	.11	18	N	N	.28	15	1.1	9.3
HM0110S	61 43 1	158 17 45	N	8.3	N	N	.17	20	1	8.2
HM0111S	61 44 55	158 21 58	N	38	N	N	.4	17	.96	13
HM0112S	61 45 59	158 25 43	.26	290	N	2.2	.45	25	1.4	21
HM0113S	61 48 35	158 19 4	N	3.7	N	N	.078	12	.42	7.1
HM0114S	61 39 56	158 36 13	N	29	N	N	.21	8.3	.84	9.1

Table 3. Analytical data for stream-sediment samples collected from the Horn Mountains area--Continued.

Sample	Sb ppm-ICP	Zn ppm-ICP	Ca %-SQS	Fe %-SQS	Mg %-SQS	Na %-SQS	P %-SQS	Ti %-SQS	Ag ppm-SQS	As ppm-SQS
HM0001S	6.9	67	.15	3	.5	2	N	.3	N	N
HM0002S	12	76	.1	2	.2	1.5	N	.5	N	N
HM0003S	7.2	71	.15	3	.5	2	N	.5	N	N
HM0004S	27	96	.2	7	.5	1.5	N	1	N	N
HM0005S	N	64	.1	2	.2	2	N	.15	N	N
HM0006S	N	49	.15	2	.2	2	N	.5	N	N
HM0007S	35	87	.15	5	.5	1.5	N	.3	.5	N
HM0008S	N	53	.15	2	.3	3	N	.2	N	N
HM0009S	2	66	.1	5	.5	2	N	.5	N	N
HM0010S	30	150	.2	5	1	2	N	.5	<.5	N
HM0011S	N	52	.15	2	.3	2	N	.3	N	N
HM0012S	.95	67	.15	3	.5	3	N	.5	N	N
HM0013S	N	88	.1	2	.3	1	N	.2	N	N
HM0014S	1.4	74	.1	3	.3	3	N	.5	N	N
HM0015S	1	93	.2	5	1	3	N	1	N	N
HM0016S	9.2	78	.2	5	.5	3	N	.5	N	N
HM0017S	35	170	.2	3	.5	3	N	.5	.5	N
HM0018S	N	81	.15	3	.5	2	N	.3	N	N
HM0019S	3.5	70	.2	3	.3	3	N	.5	N	N
HM0020S	.72	77	.2	5	.7	2	N	1	N	N
HM0021S	1.5	89	.5	3	1.5	3	N	.5	N	N
HM0022S	4	65	.3	5	.5	2	N	.7	N	N
HM0023S	15	110	.2	3	.5	2	N	.3	N	N
HM0024S	7	66	.2	5	.7	5	N	1	N	N
HM0025S	N	67	.15	3	.5	3	N	.3	N	N
HM0026S	1.4	81	.5	5	1.5	2	N	.7	N	N
HM0027S	N	41	.15	2	.2	3	N	.5	N	N
HM0028S	N	57	.2	2	.2	3	N	.5	N	N
HM0029S	N	65	.2	3	.5	2	N	.3	N	N
HM0030S	N	64	.15	5	.3	3	N	.3	N	N
HM0031S	N	60	.07	2	.3	2	N	.3	N	N
HM0032S	N	56	.15	2	.5	1.5	N	.3	N	N
HM0033S	N	58	.1	1.5	.3	3	N	.2	N	N
HM0034S	1.3	61	.1	2	.5	1.5	N	.2	N	N
HM0035S	N	92	.05	5	.3	1.5	N	.15	N	N
HM0036S	N	66	.05	2	.2	1.5	N	.2	N	N
HM0037S	N	77	.15	5	.5	1.5	N	.5	N	N
HM0038S	N	66	.15	3	.2	2	N	.2	N	N
HM0039S	N	81	.1	3	.3	2	N	.5	N	N
HM0040S	1.7	45	.3	5	.7	.2	N	1	N	N
HM0041S	N	77	.05	2	.2	1.5	N	.2	N	N
HM0042S	1	56	.15	3	.3	2	N	.5	N	N
HM0043S	N	64	.15	3	.2	2	N	.3	N	N
HM0044S	.8	63	.15	3	.3	2	N	.3	N	N
HM0045S	N	89	.1	3	.5	3	N	.2	N	N
HM0046S	.76	91	.07	5	.3	2	N	.3	N	N
HM0047S	N	81	.15	3	.5	1.5	N	.5	N	N
HM0048S	N	99	.05	3	.3	1.5	N	.2	N	N
HM0049S	N	88	.05	3	.7	1.5	N	.3	N	N
HM0050S	1	84	.05	3	.3	1.5	N	.3	N	N
HM0100S	12	64	.1	1.5	.2	2	N	.3	N	N
HM0101S	17	56	.15	3	.3	3	N	.2	N	N
HM0102S	6.3	60	.1	2	.3	3	N	.5	N	N
HM0103S	1.4	43	.1	2	.3	2	N	.7	N	N
HM0104S	N	96	.15	5	.5	1.5	N	.3	<.5	N
HM0105S	.71	74	.1	3	.3	2	N	.3	N	N
HM0106S	N	71	.07	2	.3	1.5	N	.2	N	N
HM0107S	2.3	89	.15	3	.5	3	N	.3	N	N
HM0108S	N	96	.05	5	.5	1	N	.3	N	N
HM0109S	N	67	.2	3	.5	3	N	.3	N	N
HM0110S	N	97	.07	3	.3	1.5	N	.3	N	N
HM0111S	5	73	.15	3	.3	3	N	.5	N	N
HM0112S	19	86	.2	5	.5	2	N	.5	N	<200
HM0113S	N	74	.1	2	.3	3	N	.2	N	N
HM0114S	1.4	57	.2	3	.3	3	N	.3	N	N

Table 3. Analytical data for stream-sediment samples collected from the Horn Mountains area--Continued.

Sample	Au ppm-SQS	B ppm-SQS	Ba ppm-SQS	Be ppm-SQS	Bi ppm-SQS	Cd ppm-SQS	Co ppm-SQS	Cr ppm-SQS	Cu ppm-SQS	Ga ppm-SQS
HM0001S	N	70	500	<1	N	N	10	100	50	30
HM0002S	N	150	300	N	N	N	<10	70	30	7
HM0003S	N	50	300	<1	N	N	10	100	50	20
HM0004S	N	150	1,000	<1	N	N	30	500	100	20
HM0005S	N	<10	300	N	N	N	10	30	10	15
HM0006S	N	70	700	<1	N	N	<10	100	15	20
HM0007S	N	15	700	N	N	N	20	300	150	15
HM0008S	N	N	300	N	N	N	<10	50	10	30
HM0009S	N	15	500	N	N	N	15	200	20	30
HM0010S	N	<10	300	1	N	N	20	500	50	20
HM0011S	N	10	500	N	N	N	<10	100	15	20
HM0012S	N	N	500	N	N	N	10	200	30	30
HM0013S	N	10	300	N	N	N	10	50	15	7
HM0014S	N	N	300	N	N	N	10	200	20	20
HM0015S	N	10	500	N	N	N	30	700	50	50
HM0016S	N	100	500	<1	N	N	10	200	30	30
HM0017S	N	100	500	<1	N	N	15	200	70	50
HM0018S	N	10	500	N	N	N	10	100	15	20
HM0019S	N	<10	300	N	N	N	<10	50	30	30
HM0020S	N	<10	500	<1	N	N	20	500	30	30
HM0021S	N	N	500	<1	N	N	15	500	20	30
HM0022S	N	15	500	<1	N	N	15	150	30	30
HM0023S	N	100	500	N	N	N	15	300	30	20
HM0024S	N	<10	500	N	N	N	10	500	50	70
HM0025S	N	<10	300	N	N	N	15	300	7	30
HM0026S	N	15	500	N	N	N	30	1,000	30	50
HM0027S	N	N	2,000	N	N	N	<10	200	7	30
HM0028S	N	N	1,000	N	N	N	<10	200	7	30
HM0029S	N	10	500	N	N	N	20	100	20	30
HM0030S	N	10	300	N	N	N	15	300	15	30
HM0031S	N	N	200	N	N	N	<10	70	7	15
HM0032S	N	10	500	N	N	N	<10	50	15	20
HM0033S	N	N	300	N	N	N	<10	70	10	10
HM0034S	N	10	300	N	N	N	<10	100	20	10
HM0035S	N	<10	500	N	N	N	10	500	10	15
HM0036S	N	<10	300	N	N	N	15	300	15	15
HM0037S	N	15	500	N	N	N	20	1,500	20	15
HM0038S	N	10	500	N	N	N	15	50	15	15
HM0039S	N	10	500	N	N	N	20	500	20	15
HM0040S	N	10	700	<1	N	N	15	1,000	20	20
HM0041S	N	<10	200	N	N	N	10	500	10	10
HM0042S	N	10	500	N	N	N	10	150	20	20
HM0043S	N	<10	500	N	N	N	10	70	20	30
HM0044S	N	15	700	N	N	N	20	100	20	20
HM0045S	N	N	300	N	N	N	20	200	20	30
HM0046S	N	10	300	N	N	N	20	1,000	15	20
HM0047S	N	10	700	N	N	N	15	500	15	15
HM0048S	N	10	300	N	N	N	15	200	20	20
HM0049S	N	20	500	N	N	N	15	200	20	30
HM0050S	N	10	500	N	N	N	15	500	20	15
HM0100S	N	100	300	<1	N	N	<10	50	30	15
HM0101S	N	100	500	N	N	N	10	100	50	20
HM0102S	N	50	300	N	N	N	<10	200	30	20
HM0103S	N	30	500	N	N	N	<10	200	15	20
HM0104S	N	20	700	N	N	N	20	500	50	30
HM0105S	N	15	500	N	N	N	10	200	15	20
HM0106S	N	<10	200	N	N	N	15	150	10	15
HM0107S	N	<10	500	N	N	N	15	700	20	30
HM0108S	N	10	300	N	N	N	20	150	30	30
HM0109S	N	<10	500	N	N	N	10	100	30	30
HM0110S	N	20	300	N	N	N	15	150	20	20
HM0111S	N	<10	300	N	N	N	10	50	20	20
HM0112S	N	70	500	1	N	N	15	100	50	50
HM0113S	N	N	300	N	N	N	10	50	10	20
HM0114S	N	20	700	N	N	N	10	100	15	30

Table 3. Analytical data for stream-sediment samples collected from the Horn Mountains area--Continued.

Sample	Ge ppm-SQS	La ppm-SQS	Mn ppm-SQS	Mo ppm-SQS	Nb ppm-SQS	Ni ppm-SQS	Pb ppm-SQS	Sb ppm-SQS	Sc ppm-SQS
HM0001S	N	N	500	N	N	15	15	N	5
HM0002S	N	N	300	N	N	7	10	N	<5
HM0003S	N	N	300	<5	N	15	15	N	5
HM0004S	N	N	1,000	<5	N	70	10	N	10
HM0005S	N	N	200	N	N	15	<10	N	<5
HM0006S	N	N	200	N	N	10	<10	N	<5
HM0007S	N	N	300	N	N	30	<10	N	5
HM0008S	N	N	100	N	N	10	<10	N	<5
HM0009S	N	N	300	N	N	30	<10	N	5
HM0010S	N	N	500	N	N	100	30	N	7
HM0011S	N	N	100	N	N	20	N	N	<5
HM0012S	N	N	200	<5	N	15	10	N	5
HM0013S	N	N	100	N	N	30	N	N	<5
HM0014S	N	N	150	N	N	15	<10	N	<5
HM0015S	N	N	200	N	N	70	10	N	7
HM0016S	N	N	200	<5	N	15	10	N	5
HM0017S	N	N	200	N	N	20	50	N	5
HM0018S	N	N	700	N	N	20	<10	N	5
HM0019S	N	N	300	N	N	10	10	N	<5
HM0020S	N	N	300	<5	N	50	10	N	10
HM0021S	N	N	300	N	N	15	10	N	5
HM0022S	N	N	300	N	N	20	<10	N	7
HM0023S	N	N	300	N	N	30	20	N	7
HM0024S	N	N	500	N	N	7	15	N	5
HM0025S	N	N	100	N	N	15	<10	N	5
HM0026S	N	N	500	N	N	50	<10	N	10
HM0027S	N	N	70	N	N	7	15	N	<5
HM0028S	N	100	70	N	N	7	20	N	<5
HM0029S	N	N	500	N	N	20	<10	N	5
HM0030S	N	N	100	N	N	20	N	N	<5
HM0031S	N	N	100	N	N	15	N	N	<5
HM0032S	N	<50	500	N	N	15	<10	N	<5
HM0033S	N	N	70	N	N	10	<10	N	<5
HM0034S	N	N	150	N	N	20	N	N	<5
HM0035S	N	N	150	N	N	15	N	N	<5
HM0036S	N	N	100	N	N	15	N	N	<5
HM0037S	N	N	200	N	N	50	N	N	7
HM0038S	N	N	150	N	N	15	N	N	5
HM0039S	N	N	100	N	N	30	N	N	5
HM0040S	N	N	300	N	N	15	10	N	7
HM0041S	N	N	150	N	N	20	N	N	<5
HM0042S	N	N	200	N	N	10	<10	N	<5
HM0043S	N	N	150	N	N	20	<10	N	<5
HM0044S	N	<50	200	N	N	20	N	N	5
HM0045S	N	N	200	N	N	15	<10	N	5
HM0046S	N	N	200	N	N	30	N	N	<5
HM0047S	N	N	100	N	N	50	N	N	5
HM0048S	N	N	100	N	N	30	N	N	5
HM0049S	N	N	150	N	N	30	N	N	<5
HM0050S	N	N	70	N	N	50	N	N	<5
HM0100S	N	N	150	N	N	10	10	N	<5
HM0101S	N	N	150	N	N	15	15	N	<5
HM0102S	N	N	150	N	N	7	10	N	<5
HM0103S	N	N	300	N	N	10	10	N	<5
HM0104S	N	N	200	<5	N	70	N	N	7
HM0105S	N	50	150	N	N	20	<10	N	<5
HM0106S	N	N	70	N	N	20	N	N	<5
HM0107S	N	N	200	N	N	30	10	N	<5
HM0108S	N	N	100	N	N	50	N	N	5
HM0109S	N	N	150	<5	N	15	10	N	5
HM0110S	N	N	100	N	N	50	N	N	<5
HM0111S	N	N	200	N	N	10	15	N	5
HM0112S	N	N	300	<5	N	20	15	N	7
HM0113S	N	N	50	N	N	7	10	N	<5
HM0114S	N	N	500	N	N	15	<10	N	<5

Table 3. Analytical data for stream-sediment samples collected from the Horn Mountains area--Continued.

Sample	Sn ppm-SQS	Sr ppm-SQS	Th ppm-SQS	V ppm-SQS	W ppm-SQS	Y ppm-SQS	Zn ppm-SQS	Zr ppm-SQS	Se ppm-AAS	Te ppm-AAS
HM0001S	N	N	N	30	N	<10	N	70	1	.2
HM0002S	N	N	N	20	N	N	N	20	1	.1
HM0003S	N	N	N	30	N	10	N	30	1	N
HM0004S	N	N	N	100	N	15	N	150	1.2	.05
HM0005S	N	N	N	50	N	<10	N	50	.3	N
HM0006S	N	<100	N	30	N	<10	N	150	.1	N
HM0007S	N	N	N	50	N	N	N	50	.1	N
HM0008S	N	N	N	30	N	N	N	100	.2	.05
HM0009S	N	N	N	70	N	10	N	150	.3	.05
HM0010S	N	N	N	70	<20	15	N	70	1.4	N
HM0011S	N	N	N	50	N	15	N	150	.3	N
HM0012S	N	N	N	30	N	<10	N	50	.7	.2
HM0013S	N	N	N	100	N	N	N	30	1.1	N
HM0014S	N	N	N	30	N	<10	N	30	.7	.1
HM0015S	N	N	N	50	N	10	N	100	.4	N
HM0016S	N	N	N	30	N	10	N	70	1	.1
HM0017S	N	N	N	30	N	10	N	70	2	.45
HM0018S	N	N	N	70	<20	<10	N	30	.6	N
HM0019S	N	N	N	30	N	<10	N	50	.8	N
HM0020S	N	<100	N	50	N	15	N	100	.5	.1
HM0021S	N	<100	N	50	N	N	N	30	1	N
HM0022S	N	N	N	50	N	15	N	150	1.3	N
HM0023S	N	N	N	50	N	10	N	70	2.3	.15
HM0024S	N	N	N	20	N	<10	N	50	.4	N
HM0025S	N	N	N	50	N	<10	N	50	.1	N
HM0026S	N	<100	N	70	N	15	N	100	.3	.1
HM0027S	N	N	N	30	N	N	N	150	.1	N
HM0028S	N	N	N	30	N	10	N	200	.1	N
HM0029S	N	N	N	70	N	15	N	70	.4	N
HM0030S	N	N	N	50	N	<10	N	150	<.1	.05
HM0031S	N	N	N	50	N	N	N	100	.2	N
HM0032S	N	N	N	50	N	<10	N	100	.2	N
HM0033S	N	N	N	30	N	N	N	50	.2	.05
HM0034S	N	N	N	30	N	<10	N	150	.2	N
HM0035S	N	N	N	30	N	N	N	20	.2	.1
HM0036S	N	N	N	50	N	N	N	50	.2	N
HM0037S	N	N	N	100	N	N	N	70	.2	.2
HM0038S	N	N	N	50	N	<10	N	30	.4	.05
HM0039S	N	N	N	70	N	N	N	70	.1	N
HM0040S	N	<100	N	50	N	10	N	100	.1	N
HM0041S	N	N	N	50	N	N	N	100	.1	N
HM0042S	N	<100	N	30	N	<10	N	50	.1	N
HM0043S	N	N	N	70	N	<10	N	70	.3	N
HM0044S	N	<100	N	100	N	10	N	100	.3	N
HM0045S	N	N	N	70	<20	N	N	50	.2	N
HM0046S	N	N	N	70	N	N	N	50	.3	N
HM0047S	N	N	N	50	N	<10	N	100	.2	.3
HM0048S	N	N	N	50	N	N	N	50	.5	N
HM0049S	N	N	N	70	N	N	N	30	.3	N
HM0050S	N	N	N	50	N	N	N	70	.3	N
HM0100S	N	N	N	50	N	10	N	70	1.1	.15
HM0101S	N	N	N	20	N	<10	N	50	1.2	N
HM0102S	N	N	N	15	N	N	N	15	.5	.15
HM0103S	N	N	N	20	N	<10	N	150	.2	N
HM0104S	N	N	N	150	N	10	N	150	.3	N
HM0105S	N	N	N	50	N	N	N	100	.2	N
HM0106S	N	N	N	50	N	N	N	100	.2	N
HM0107S	N	N	N	50	N	N	N	70	.6	N
HM0108S	N	N	N	70	N	<10	N	70	.3	N
HM0109S	N	N	N	50	N	15	N	70	2.1	N
HM0110S	N	N	N	100	N	N	N	70	1	N
HM0111S	N	N	N	30	N	15	N	70	1.1	N
HM0112S	N	<100	N	50	N	15	N	100	1	.2
HM0113S	N	N	N	30	N	N	N	20	.1	N
HM0114S	N	N	N	50	N	<10	N	50	.6	N

Table 3. Analytical data for stream-sediment samples collected from the Horn Mountains area--Continued.

Sample	Tl ppm-AAS	Au ppm-AAS	Hg ppm-AAS	W ppm-VS	F %-SIE	Pt ppb-ICP	Pd ppb-ICP	Rh ppb-ICP	Ru ppb-ICP	Ir ppb-ICP
HM0001S	.3	.01	.12	2	.06	<.5	1.1	<.5	<.5	<.5
HM0002S	.35	.7	.1	6	.06	1	.5	<.5	<.5	<.5
HM0003S	.25	.004	.18	2	.12	<.5	.5	<.5	<.5	<.5
HM0004S	.6	.002	.19	3	.09	<1	1.5	<.5	<.5	<.5
HM0005S	.3	N	.07	1	.15	<.5	<.5	<.5	<.5	<.5
HM0006S	.4	N	.81	2	.04	<1	<.5	<.5	<.5	<.5
HM0007S	.3	.05	.41	2	.06	<.5	<.5	<.5	<.5	<.5
HM0008S	.35	N	.05	1	.05	<.5	<.5	<.5	<.5	<.5
HM0009S	.4	.004	.06	2	.04	<1	.6	<.5	<.5	<.5
HM0010S	.2	.01	.22	2	.05	<.5	<.5	<.5	<.5	<.5
HM0011S	.3	N	.04	1	.06	<.5	<.5	<.5	<.5	<.5
HM0012S	.2	N	.04	2	.05	<.5	<.5	<.5	<.5	<.5
HM0013S	.25	N	.08	3	.08	<.5	.7	<.5	1.3	<.5
HM0014S	.2	N	.32	1	.06	<.5	<.5	<.5	<.5	<.5
HM0015S	.35	N	.08	3	.1	<1	<.5	<.5	<.5	<.5
HM0016S	.5	<.002	.46	4	.07	<1	.5	<.5	<.5	<.5
HM0017S	.5	<.002	2	2	.08	<1	.7	<.5	<.5	<.5
HM0018S	.3	<.002	.08	1	.06	<.5	<.5	<.5	<.5	<.5
HM0019S	.5	N	.04	5	.06	<1	<.5	<.5	<.5	<.5
HM0020S	.25	N	.12	2	.06	<.5	<.5	<.5	<.5	<.5
HM0021S	.15	N	1.73	2	.05	<.5	<.5	<.5	<.5	<.5
HM0022S	.5	N	.14	2	.06	<1	<.5	<.5	<.5	<.5
HM0023S	.2	N	.85	2	.07	<1	<1	<1	<1	<1
HM0024S	.3	N	.33	5	.05	<1	<.5	<.5	<.5	<.5
HM0025S	.2	N	.02	1	.04	<2	<.5	<.5	<1	<.5
HM0026S	.3	N	.21	1	.06	<.5	<.5	<.5	<.5	<.5
HM0027S	.35	N	.12	N	.03	<.5	<.5	<.5	<.5	<.5
HM0028S	.3	N	.02	5	.06	<.5	<.5	<.5	<.5	<.5
HM0029S	.2	N	.06	2	.05	<.5	.5	<.5	<.5	<.5
HM0030S	.35	N	.04	3	.04	<1	<.5	<.5	.5	<.5
HM0031S	.25	.012	.04	2	.05	<.5	<.5	<.5	<.5	<.5
HM0032S	.25	N	3.4	2	.05	<.5	<.5	<.5	<.5	<.5
HM0033S	.3	N	.06	1	.03	<.5	<.5	<.5	<.5	<.5
HM0034S	.4	N	.07	1	.04	<1	<.5	<.5	<.5	<.5
HM0035S	.2	N	.07	2	.04	<.5	<.5	<.5	<.5	<.5
HM0036S	.3	N	.03	2	.04	<1	<.5	<.5	<.5	<.5
HM0037S	.2	N	.14	2	.06	<.5	<.5	<.5	<.5	<.5
HM0038S	.45	<.002	.11	2	.05	<1	.5	<.5	.5	<.5
HM0039S	.15	.004	.04	1	.04	<.5	<.5	<.5	<.5	<.5
HM0040S	.35	N	.04	1	.04	<1	.5	<.5	.6	<.5
HM0041S	.2	.002	.09	2	.05	<.5	<.5	<.5	<.5	<.5
HM0042S	.35	N	.22	1	.04	<1	<.5	<.5	.7	<.5
HM0043S	.4	N	.16	2	.06	<1	.5	<.5	<.5	<.5
HM0044S	.4	N	.11	3	.04	<1	<.5	<.5	<.5	<.5
HM0045S	.15	N	.04	2	.04	<.5	<.5	<.5	<.5	<.5
HM0046S	.2	N	1	1	.05	<.5	<.5	<.5	<.5	<.5
HM0047S	.25	<.002	2.2	1	.05	<.5	<.5	<.5	<.5	<.5
HM0048S	.25	N	.08	1	.06	<.5	.7	<.5	<.5	<.5
HM0049S	.2	N	.74	1	.06	<.5	<.5	<.5	<.5	<.5
HM0050S	.2	<.002	5.6	2	.04	<.5	<.5	<.5	<.5	<.5
HM0100S	.3	.008	.16	4	.06	<.5	.7	<.5	<.5	<.5
HM0101S	.35	.25	.16	10	.06	<.5	.9	<.5	<.5	<.5
HM0102S	.3	.15	.07	6	.06	<1	<1	<1	<1	<1
HM0103S	.5	.002	.07	3	.04	<1	<.5	<.5	<.5	<.5
HM0104S	.2	N	.41	2	.06	<.5	.5	<.5	<.5	<.5
HM0105S	.45	.006	.18	2	.05	2	2.5	<.5	1.5	<.5
HM0106S	.2	N	.04	2	.05	<.5	<.5	<.5	<.5	<.5
HM0107S	.15	N	.07	N	.04	<.5	<.5	<.5	<.5	<.5
HM0108S	.15	.018	.03	2	.05	<.5	<.5	<.5	<.5	<.5
HM0109S	.25	N	.1	2	.05	<.5	1.3	<.5	<.5	<.5
HM0110S	.3	N	.1	2	.06	<.5	.7	<.5	<.5	<.5
HM0111S	.25	N	.25	3	.05	<.5	<.5	<.5	<.5	<.5
HM0112S	.45	.026	.35	2	.06	<1	1.3	<.5	.5	<.5
HM0113S	.2	N	.05	2	.13	<.5	<.5	<.5	<.5	<.5
HM0114S	.5	N	.08	7	.04	<1	<.5	<.5	<.5	<.5

Table 3. Analytical data for stream-sediment samples collected from the Horn Mountains area--Continued.

Sample	Latitude	Longitude	Ag ppm-ICP	As ppm-ICP	Au ppm-ICP	Bi ppm-ICP	Cd ppm-ICP	Cu ppm-ICP	Mo ppm-ICP	Pb ppm-ICP
HM0115S	61 43 48	158 33 56	.13	28	N	N	.25	25	1	15
HM0116S	61 43 44	158 34 2	N	57	N	N	.24	19	1.1	12
HM0117S	61 45 54	158 34 38	N	13	N	N	.3	9.8	1.2	11
HM0118S	61 47 19	158 32 6	.1	120	N	N	.53	24	.7	17
HM0119S	61 49 2	158 28 9	.25	130	N	N	.7	12	.9	25
HM0120S	61 49 11	158 23 47	N	15	N	N	.13	7.1	.46	8.5
HM0121S	61 49 10	158 23 42	N	14	N	N	.18	9.2	.56	9.5
HM0122S	61 51 8	158 19 16	N	6.6	N	N	.11	8.7	.39	7.1
HM0123S	61 51 53	158 26 53	.095	53	N	.74	.36	10	.75	17
HM0124S	61 51 1	158 28 25	N	4	N	N	.097	7.4	.53	6.2
HM0125S	61 51 0	158 28 17	N	29	N	N	.18	12	.57	10
HM0126S	61 54 57	158 19 1	N	10	N	N	.15	12	.46	7.5
HM0127S	61 53 53	158 17 24	.1	5.2	N	N	.28	15	.57	9.8
HM0128S	61 54 56	158 13 9	N	6.3	N	N	.14	13	.73	8.4
HM0129S	61 51 14	158 14 9	N	4.5	N	N	.15	10	.37	7
HM0130S	61 51 21	158 9 9	N	6.2	N	N	.11	6.6	.21	4.6
HM0131S	61 47 59	158 15 19	N	19	N	N	.12	13	.57	7
HM0132S	61 45 51	158 15 50	N	11	N	N	.14	13	.72	6.5
HM0133S	61 55 38	158 45 25	N	5.4	N	N	.18	16	.59	10
HM0134S	61 58 11	158 55 19	N	6.2	N	N	.16	11	.56	7.4
HM0135S	61 58 8	158 49 25	.07	N	N	N	.17	12	.6	7.7
HM0136S	61 59 56	158 43 12	N	3	N	N	.13	14	.52	6.7
HM0137S	61 58 20	158 39 55	N	11	N	N	.17	20	.96	10
HM0138S	61 54 30	158 33 39	N	3.5	N	N	.33	19	.63	11
HM0139S	61 59 13	158 21 18	N	N	N	N	.099	13	.65	7.5
HM0140S	61 51 14	158 34 2	.087	6.8	N	N	.22	12	.47	6.9
HM0141S	61 52 47	158 41 31	N	18	N	N	.23	19	1	13
HM0142S	61 52 17	158 53 23	.23	67	N	N	.15	59	.43	11
HM0143S	61 49 34	158 48 0	N	8.9	N	N	.098	17	.29	6.9
HM0144S	61 45 56	158 49 3	N	3.8	N	N	.12	11	.56	5.8
HM0145S	61 49 55	158 57 10	N	5.1	N	N	.088	8.5	.33	5.1
HM0146S	61 43 11	158 53 35	.23	72	N	1.7	.12	65	.63	9.5
HM0147S	61 39 43	158 50 51	N	12	N	N	.12	20	.71	8
HM0148S	61 43 44	158 48 57	N	1.4	N	N	.82	12	.55	6.6
HM0200S	61 38 25	158 24 46	N	14	N	N	.24	13	.78	11
HM0201S	61 38 59	158 21 47	N	10	N	N	.22	14	.7	8.2
HM0202S	61 41 15	158 21 18	.083	1.9	N	N	.21	14	.35	7.8
HM0203S	61 42 54	158 16 33	N	4.8	N	N	.15	12	.46	5.8
HM0204S	61 44 36	158 24 20	.11	34	N	N	.56	13	1.1	14
HM0205S	61 46 9	158 25 54	.53	250	N	6.4	.69	71	.65	27
HM0206S	61 48 27	158 18 58	N	85	N	N	.24	18	1.1	13
HM0207S	61 41 17	158 34 4	.074	100	N	N	.27	14	1.3	11
HM0208S	61 42 37	158 34 30	N	20	N	N	.31	21	1.2	12
HM0209S	61 44 38	158 35 7	.11	14	N	N	.25	14	.93	12
HM0210S	61 46 43	158 35 11	N	17	N	N	.22	11	.56	9
HM0211S	61 47 27	158 29 42	.25	220	N	N	.62	15	1.6	33
HM0212S	61 48 29	158 27 18	.5	180	N	4	.68	22	.97	57
HM0213S	61 48 31	158 27 23	.076	130	N	1.6	.46	16	1.1	14
HM0214S	61 52 7	158 25 31	N	8.5	N	N	.099	5.8	.41	6.2
HM0215S	61 53 22	158 26 58	N	5.4	N	N	.13	6.1	.51	6.7
HM0216S	61 53 55	158 23 16	N	18	N	N	.11	9.8	.37	7.4
HM0217S	61 53 54	158 20 54	N	5.7	N	N	.19	16	.48	9
HM0218S	61 54 8	158 15 22	N	4.3	N	N	.13	12	.48	6.1
HM0219S	61 50 31	158 16 9	N	2.8	N	N	.13	10	.41	5.5
HM0220S	61 51 29	158 11 7	N	5.4	N	N	.11	14	.69	6.4
HM0221S	61 48 15	158 12 50	N	1.8	N	N	.12	7.5	.2	3.6
HM0222S	61 46 49	158 13 31	N	5.2	N	N	.15	14	.35	5.8
HM0223S	61 54 46	158 44 13	N	4.3	N	N	.075	13	.49	5.9
HM0224S	61 57 49	158 57 22	N	4.1	N	N	.13	9.4	.46	5.4
HM0225S	61 57 20	158 51 53	N	2.8	N	N	.16	7.3	.37	4.9
HM0226S	61 58 15	158 45 20	N	1.3	N	N	.12	15	.64	7.8
HM0227S	61 59 53	158 40 1	N	3.5	N	N	.14	13	.53	7.2
HM0228S	61 58 36	158 33 32	.14	79	N	N	.2	22	.85	7.8
HM0229S	61 59 11	158 30 29	N	16	N	N	.25	15	.91	9.6
HM0230S	61 52 31	158 34 28	.078	6.5	N	N	.23	13	.53	8.1

Table 3. Analytical data for stream-sediment samples collected from the Horn Mountains area--Continued.

Sample	Sb ppm-ICP	Zn ppm-ICP	Ca %-SQS	Fe %-SQS	Mg %-SQS	Na %-SQS	P %-SQS	Ti %-SQS	Ag ppm-SQS	As ppm-SQS
HM0115S	6	86	.2	3	.5	3	N	.7	N	N
HM0116S	1.1	64	.3	5	.7	3	N	.7	N	N
HM0117S	N	87	.2	5	.3	3	N	.7	N	N
HM0118S	7.9	95	.2	3	.7	3	N	.5	N	N
HM0119S	45	100	.15	5	.7	3	N	.7	N	N
HM0120S	N	73	.2	3	.7	3	N	.7	N	N
HM0121S	1.2	62	.7	5	.7	2	N	>1	N	N
HM0122S	N	60	.2	5	1	2	N	1	N	N
HM0123S	5.1	81	.3	3	.7	2	N	.5	N	N
HM0124S	N	50	.15	2	.2	3	N	.15	N	N
HM0125S	3	70	.3	3	1	1.5	N	1	N	N
HM0126S	N	58	.15	3	.2	2	N	.3	N	N
HM0127S	N	64	.15	3	.2	2	N	.3	N	N
HM0128S	.97	80	.15	7	1	3	N	.5	N	N
HM0129S	N	73	.1	1.5	.3	3	N	.2	N	N
HM0130S	1.2	53	.1	3	.5	2	N	.3	N	N
HM0131S	N	70	.15	3	.5	2	N	.5	N	N
HM0132S	.99	70	.15	5	.5	1.5	N	1	N	N
HM0133S	.71	75	.07	2	.2	2	N	.2	N	N
HM0134S	N	74	<.05	2	.2	.7	N	.15	N	N
HM0135S	.72	73	.07	2	.3	1.5	N	.2	N	N
HM0136S	N	76	.15	5	.5	2	N	.5	N	N
HM0137S	1.8	95	.15	5	.5	1.5	N	.5	N	N
HM0138S	N	71	.1	2	.2	2	N	.15	N	N
HM0139S	N	73	.05	3	.5	2	N	.3	N	N
HM0140S	N	61	.1	3	.3	.2	N	.2	N	N
HM0141S	.72	76	.1	3	.2	2	N	.2	N	N
HM0142S	17	77	.1	2	.3	2	N	.3	N	N
HM0143S	2.6	61	.07	1.5	.2	3	N	.2	N	N
HM0144S	N	76	.1	3	.3	2	N	.3	N	N
HM0145S	N	60	.1	2	.3	3	N	.3	N	N
HM0146S	22	77	.07	3	.3	2	N	.3	N	N
HM0147S	1.4	100	.05	3	.3	1.5	N	.3	N	N
HM0148S	N	84	.1	3	.3	2	N	.3	N	N
HM0200S	3.8	80	.1	5	.5	3	N	.5	N	N
HM0201S	1.6	79	.1	3	.3	2	N	.3	N	N
HM0202S	.76	60	.15	5	.3	2	N	.5	N	N
HM0203S	1.4	71	.1	3	.3	1.5	N	.5	N	N
HM0204S	7.5	59	.15	3	.5	2	N	.5	N	N
HM0205S	24	120	.2	3	.5	2	N	.5	<.5	N
HM0206S	2.5	83	.2	5	1	2	N	1	N	N
HM0207S	1.5	66	.15	3	.3	3	N	.3	N	N
HM0208S	N	73	.2	3	.3	3	N	.5	N	N
HM0209S	1.9	69	.1	3	.3	3	N	.5	N	N
HM0210S	1.6	67	.3	3	.7	3	N	.5	N	N
HM0211S	57	110	.07	2	.3	2	N	.2	N	N
HM0212S	29	120	.15	3	.7	2	N	.2	<.5	N
HM0213S	7	70	.15	3	.7	1.5	N	.5	N	N
HM0214S	N	51	.3	2	.5	2	N	.7	N	N
HM0215S	1.3	51	.05	1.5	.15	3	N	.2	N	N
HM0216S	1.5	68	.15	1.5	.5	3	N	.3	N	N
HM0217S	N	61	.2	2	.3	1.5	N	.3	N	N
HM0218S	N	62	.1	3	.3	1.5	N	.5	N	N
HM0219S	.81	73	.07	3	.5	3	N	.2	N	N
HM0220S	N	87	.1	3	.5	2	N	.5	N	N
HM0221S	N	48	.15	2	.5	2	N	.3	N	N
HM0222S	N	62	.15	2	.2	1.5	N	.3	N	N
HM0223S	N	78	.15	3	.5	2	N	.3	N	N
HM0224S	1.3	56	.07	2	.15	1	N	.5	N	N
HM0225S	1.8	47	.15	2	.3	1.5	N	.5	N	N
HM0226S	N	79	.07	2	.5	1.5	N	.2	N	N
HM0227S	2.1	73	.1	3	.5	2	N	.5	N	N
HM0228S	5.7	79	.07	3	.5	2	N	.5	N	N
HM0229S	2.9	85	.05	3	.3	3	N	.2	N	N
HM0230S	N	75	.2	5	.3	3	N	.3	N	N

Table 3. Analytical data for stream-sediment samples collected from the Horn Mountains area--Continued.

Sample	Au ppm-SQS	B ppm-SQS	Ba ppm-SQS	Be ppm-SQS	Bi ppm-SQS	Cd ppm-SQS	Co ppm-SQS	Cr ppm-SQS	Cu ppm-SQS	Ga ppm-SQS
HM0115S	N	10	300	<1	N	N	10	50	30	20
HM0116S	N	10	700	<1	N	N	15	150	50	50
HM0117S	N	<10	500	N	N	N	15	100	30	50
HM0118S	N	20	500	<1	N	N	15	500	50	30
HM0119S	N	20	300	N	N	N	15	500	30	50
HM0120S	N	20	300	N	N	N	15	500	10	30
HM0121S	N	15	1,500	<1	N	N	20	500	30	50
HM0122S	N	N	300	N	N	N	30	1,000	30	30
HM0123S	N	150	1,000	<1	N	N	15	200	15	20
HM0124S	N	<10	500	N	N	N	N	50	5	30
HM0125S	N	10	500	N	N	N	15	300	20	15
HM0126S	N	10	500	N	N	N	15	150	15	10
HM0127S	N	10	500	N	N	N	20	30	15	10
HM0128S	N	<10	1,000	N	N	N	30	1,000	20	30
HM0129S	N	<10	300	N	N	N	10	50	10	15
HM0130S	N	<10	300	N	N	N	10	100	10	30
HM0131S	N	20	500	N	N	N	15	100	20	20
HM0132S	N	15	500	N	N	N	15	200	30	20
HM0133S	N	<10	200	N	N	N	10	200	15	15
HM0134S	N	N	200	N	N	N	10	200	10	7
HM0135S	N	<10	300	N	N	N	10	50	10	15
HM0136S	N	10	300	N	N	N	15	500	20	20
HM0137S	N	15	500	N	N	N	30	500	50	30
HM0138S	N	10	300	N	N	N	10	50	15	15
HM0139S	N	<10	300	N	N	N	15	200	15	20
HM0140S	N	10	500	N	N	N	10	50	15	15
HM0141S	N	<10	300	N	N	N	15	200	15	20
HM0142S	N	10	500	N	N	N	15	150	70	10
HM0143S	N	<10	200	N	N	N	<10	200	15	10
HM0144S	N	10	300	N	N	N	15	50	10	15
HM0145S	N	15	500	N	N	N	<10	150	10	30
HM0146S	N	<10	300	N	N	N	15	700	70	15
HM0147S	N	10	300	N	N	N	15	100	20	20
HM0148S	N	10	300	N	N	N	15	100	15	15
HM0200S	N	10	500	N	N	N	20	300	20	50
HM0201S	N	<10	300	N	N	N	10	70	15	15
HM0202S	N	10	500	N	N	N	20	100	20	20
HM0203S	N	10	500	N	N	N	10	200	20	15
HM0204S	N	<10	300	<1	N	N	10	70	20	30
HM0205S	N	200	500	<1	N	N	15	150	70	20
HM0206S	N	70	500	N	N	N	20	300	50	30
HM0207S	N	15	500	N	N	N	10	50	15	30
HM0208S	N	<10	300	N	N	N	10	150	30	30
HM0209S	N	N	300	<1	N	N	<10	70	20	30
HM0210S	N	15	500	N	N	N	10	300	20	30
HM0211S	N	10	300	N	N	N	10	200	15	30
HM0212S	N	100	300	<1	N	N	10	300	20	30
HM0213S	N	20	300	<1	N	N	15	150	20	10
HM0214S	N	<10	700	N	N	N	10	300	15	30
HM0215S	N	N	700	N	N	N	N	100	5	30
HM0216S	N	10	700	N	N	N	10	200	10	50
HM0217S	N	10	300	N	N	N	15	200	20	10
HM0218S	N	15	500	N	N	N	15	150	20	20
HM0219S	N	<10	500	N	N	N	15	300	20	20
HM0220S	N	<10	300	N	N	N	20	70	20	20
HM0221S	N	10	300	N	N	N	<10	100	10	30
HM0222S	N	15	300	N	N	N	10	150	15	10
HM0223S	N	10	500	N	N	N	15	150	15	20
HM0224S	N	10	300	N	N	N	10	150	15	10
HM0225S	N	15	500	N	N	N	10	100	10	10
HM0226S	N	10	500	N	N	N	15	300	15	15
HM0227S	N	<10	500	N	N	N	15	700	20	30
HM0228S	N	70	500	N	N	N	10	300	50	30
HM0229S	N	<10	300	N	N	N	<10	300	15	30
HM0230S	N	<10	700	N	N	N	20	100	20	30

Table 3. Analytical data for stream-sediment samples collected from the Horn Mountains area--Continued.

Sample	Ge ppm-SQS	La ppm-SQS	Mn ppm-SQS	Mo ppm-SQS	Nb ppm-SQS	Ni ppm-SQS	Pb ppm-SQS	Sb ppm-SQS	Sc ppm-SQS
HM0115S	N	N	300	N	N	10	10	N	7
HM0116S	N	N	700	<5	N	20	15	N	7
HM0117S	N	N	500	N	N	10	10	N	7
HM0118S	N	N	500	N	N	20	15	N	5
HM0119S	N	N	300	N	N	20	20	N	5
HM0120S	N	N	300	N	N	10	<10	N	5
HM0121S	N	N	700	N	N	15	10	N	7
HM0122S	N	N	300	N	N	50	<10	N	7
HM0123S	N	N	300	N	N	20	15	N	<5
HM0124S	N	<50	30	N	N	7	15	N	<5
HM0125S	N	N	300	N	N	30	10	N	5
HM0126S	N	N	300	N	N	15	N	N	<5
HM0127S	N	N	500	N	N	15	<10	N	5
HM0128S	N	N	300	N	N	50	<10	N	5
HM0129S	N	N	200	N	N	10	10	N	N
HM0130S	N	N	150	N	N	15	<10	N	<5
HM0131S	N	N	200	N	N	30	N	N	5
HM0132S	N	N	700	<5	<20	30	N	N	7
HM0133S	N	N	70	N	N	15	<10	N	<5
HM0134S	N	N	200	N	N	15	N	N	<5
HM0135S	N	N	100	N	N	15	N	N	<5
HM0136S	N	N	200	N	N	30	N	N	<5
HM0137S	N	N	500	N	N	70	<10	N	7
HM0138S	N	N	200	N	N	10	10	N	<5
HM0139S	N	N	100	N	N	30	N	N	<5
HM0140S	N	N	200	N	N	15	N	N	<5
HM0141S	N	N	300	N	N	15	<10	N	5
HM0142S	N	N	200	N	N	20	<10	N	5
HM0143S	N	N	50	N	N	10	<10	N	<5
HM0144S	N	N	100	N	N	20	N	N	<5
HM0145S	N	N	70	N	N	15	N	N	<5
HM0146S	N	N	70	N	N	30	N	N	<5
HM0147S	N	N	100	N	N	30	N	N	<5
HM0148S	N	N	150	N	N	20	N	N	<5
HM0200S	N	N	300	N	N	30	<10	N	<5
HM0201S	N	N	300	N	N	15	N	N	<5
HM0202S	N	N	300	N	N	50	<10	N	7
HM0203S	N	N	100	N	N	70	N	N	<5
HM0204S	N	N	300	N	N	10	15	N	5
HM0205S	N	<50	500	N	N	15	20	N	7
HM0206S	N	N	500	N	N	30	10	N	10
HM0207S	N	N	150	N	N	10	15	N	5
HM0208S	N	N	300	N	N	10	15	N	5
HM0209S	N	N	150	N	N	10	10	N	5
HM0210S	N	N	500	N	N	10	10	N	5
HM0211S	N	N	150	N	N	10	20	N	<5
HM0212S	N	N	150	N	N	15	70	N	5
HM0213S	N	N	200	N	N	15	<10	N	5
HM0214S	N	N	200	N	N	10	10	N	<5
HM0215S	N	N	70	N	N	5	15	N	N
HM0216S	N	<50	70	N	N	15	20	N	<5
HM0217S	N	N	200	N	N	15	<10	N	5
HM0218S	N	N	300	N	N	30	N	N	5
HM0219S	N	N	100	N	N	20	<10	N	<5
HM0220S	N	N	200	N	N	50	N	N	5
HM0221S	N	<50	100	N	N	15	<10	N	<5
HM0222S	N	<50	150	N	N	20	N	N	<5
HM0223S	N	<50	200	N	N	30	N	N	5
HM0224S	N	N	100	N	N	20	N	N	<5
HM0225S	N	N	200	N	N	30	N	N	<5
HM0226S	N	N	100	N	N	30	N	N	5
HM0227S	N	N	100	N	N	50	N	N	<5
HM0228S	N	N	500	N	N	20	10	N	5
HM0229S	N	N	150	N	N	15	<10	N	<5
HM0230S	N	N	1,000	N	N	20	<10	N	5

Table 3. Analytical data for stream-sediment samples collected from the Horn Mountains area--Continued.

Sample	Sn ppm-SQS	Sr ppm-SQS	Th ppm-SQS	V ppm-SQS	W ppm-SQS	Y ppm-SQS	Zn ppm-SQS	Zr ppm-SQS	Se ppm-AAS	Te ppm-AAS
HM0115S	N	N	N	50	N	10	N	50	.8	.2
HM0116S	N	<100	N	50	N	20	N	70	1.2	N
HM0117S	N	<100	N	30	N	20	N	100	.5	N
HM0118S	N	<100	N	50	N	<10	N	70	.5	N
HM0119S	N	N	N	50	N	<10	N	30	1.3	N
HM0120S	N	N	N	20	N	<10	N	50	.3	N
HM0121S	N	<100	N	70	N	10	N	200	.2	N
HM0122S	N	N	N	70	N	<10	N	70	.1	N
HM0123S	N	N	N	70	N	N	N	150	.6	N
HM0124S	N	N	N	20	N	N	N	30	.3	N
HM0125S	N	<100	N	50	N	<10	N	70	.4	N
HM0126S	N	N	N	30	N	<10	N	70	.2	N
HM0127S	N	N	N	50	N	<10	N	50	.3	.05
HM0128S	N	N	N	100	N	N	N	50	.2	N
HM0129S	N	N	N	30	N	N	N	30	.3	N
HM0130S	N	N	N	30	N	<10	N	200	.1	N
HM0131S	N	<100	N	70	N	10	N	100	.3	N
HM0132S	N	N	N	50	N	10	N	100	.4	N
HM0133S	N	N	N	50	N	N	N	30	.3	N
HM0134S	N	N	N	50	N	N	N	30	.2	N
HM0135S	N	N	N	30	N	N	N	30	.1	N
HM0136S	N	N	N	100	N	<10	N	200	.2	N
HM0137S	N	N	N	100	N	10	N	70	.3	N
HM0138S	N	N	N	30	N	N	N	20	.5	N
HM0139S	N	N	N	50	N	N	N	200	.2	N
HM0140S	N	N	N	50	N	<10	N	70	.3	N
HM0141S	N	N	N	50	N	<10	N	50	.3	N
HM0142S	N	N	N	50	N	<10	N	50	.3	N
HM0143S	N	N	N	30	N	N	N	30	.1	N
HM0144S	N	N	N	70	N	N	N	70	.1	.05
HM0145S	N	N	N	20	N	N	N	30	.4	N
HM0146S	N	N	N	70	N	N	N	100	.3	N
HM0147S	N	N	N	70	N	N	N	50	.5	.05
HM0148S	N	N	N	50	<20	<10	N	70	.1	N
HM0200S	N	N	N	70	N	<10	N	70	.4	N
HM0201S	N	N	N	50	N	N	N	70	.4	N
HM0202S	N	<100	N	100	N	15	N	150	.2	N
HM0203S	N	N	N	70	N	<10	N	500	.3	N
HM0204S	N	N	N	30	N	10	N	50	1.5	N
HM0205S	N	N	N	30	N	15	N	50	.9	.6
HM0206S	N	<100	N	70	N	10	N	150	.6	.05
HM0207S	N	N	N	30	N	<10	N	50	1.2	N
HM0208S	N	N	N	50	N	10	N	30	1.1	N
HM0209S	N	N	N	30	N	10	N	50	.9	N
HM0210S	N	<100	N	50	N	<10	N	50	.5	N
HM0211S	N	N	N	30	<20	N	N	20	.9	N
HM0212S	N	N	N	30	N	<10	N	50	2	.2
HM0213S	N	N	N	50	N	<10	N	50	1.6	.1
HM0214S	N	<100	N	30	N	N	N	30	.2	N
HM0215S	N	N	N	15	N	N	N	20	.1	N
HM0216S	N	N	N	30	N	N	N	30	.3	N
HM0217S	N	N	N	50	N	<10	N	70	.3	.2
HM0218S	N	N	N	70	N	10	N	150	.1	N
HM0219S	N	N	N	50	N	<10	N	70	.1	N
HM0220S	N	N	N	100	N	<10	N	200	.2	.05
HM0221S	N	N	N	50	N	<10	N	300	<.1	N
HM0222S	N	N	N	50	N	N	N	150	.2	N
HM0223S	N	N	N	70	N	<10	N	70	.2	N
HM0224S	N	N	N	70	N	<10	N	70	.2	N
HM0225S	N	N	N	70	N	<10	N	300	.1	N
HM0226S	N	N	N	70	N	<10	N	70	.3	N
HM0227S	N	N	N	70	N	10	N	50	.2	N
HM0228S	N	N	N	50	N	<10	N	70	.5	N
HM0229S	N	N	N	50	N	N	N	30	.2	N
HM0230S	N	<100	N	50	N	10	N	100	.4	N

Table 3. Analytical data for stream-sediment samples collected from the Horn Mountains area--Continued.

Sample	Tl ppm-AAS	Au ppm-AAS	Hg ppm-AAS	W ppm-VS	F %-SIE	Pt ppb-ICP	Pd ppb-ICP	Rh ppb-ICP	Ru ppb-ICP	Ir ppb-ICP
HM0115S	.65	<.002	.12	3	.11	<2	<.5	<.5	<1	<.5
HM0116S	.2	N	.07	4	.06	<.5	<.5	<.5	<.5	<.5
HM0117S	.35	N	.11	7	.04	<.5	<.5	<.5	<.5	<.5
HM0118S	.4	N	.65	2	.04	<1	<.5	<.5	<.5	<.5
HM0119S	.45	.002	.23	2	.06	<1	<.5	<.5	.7	<.5
HM0120S	.25	<.002	1.32	1	.05	<.5	<.5	<.5	<.5	<.5
HM0121S	.4	N	.85	3	.05	<1	<.5	<.5	.6	<.5
HM0122S	.2	N	.05	1	.04	<1	<.5	<.5	.6	<.5
HM0123S	.3	N	.56	4	.08	--	--	--	--	--
HM0124S	.4	N	.18	4	.05	<1	<.5	<.5	.5	<.5
HM0125S	.4	N	.35	1	.08	<1	<.5	<.5	<.5	<.5
HM0126S	.2	N	2.4	1	.04	.5	<.5	<.5	<.5	<.5
HM0127S	.45	N	.08	N	.05	<1	.8	<.6	<.6	<.6
HM0128S	.3	N	6.7	3	.08	<1	<.5	<.5	<.5	<.5
HM0129S	.2	N	.07	N	.04	<.5	<.5	<.5	<.5	<.5
HM0130S	.35	N	1.25	1	.03	<1	<.5	<.5	<.5	<.5
HM0131S	.25	N	.07	2	.05	<.5	<.5	<.5	<.5	<.5
HM0132S	.25	.004	.43	2	.05	<.5	<.5	<.5	<.5	<.5
HM0133S	.3	N	.1	1	.04	<.5	.5	<.5	<.5	<.5
HM0134S	.3	N	.18	1	.04	<1	<.5	<.5	4	.9
HM0135S	.4	N	.06	2	.05	<1	<.5	<.5	<.5	<.5
HM0136S	.3	.006	.04	2	.04	<1	<.5	<.5	<.5	<.5
HM0137S	.4	N	.07	1	.05	1	.5	<.5	<.5	<.5
HM0138S	.2	N	.39	3	.05	<.5	.6	<.5	<.5	<.5
HM0139S	.25	N	.09	1	.04	<.5	<.5	<.5	<.5	<.5
HM0140S	.3	N	1.54	1	.04	<1	<.5	<.5	<.5	<.5
HM0141S	.2	N	.09	1	.04	<.5	.5	<.5	<.5	<.5
HM0142S	.2	.028	.28	1	.04	<.5	<.5	<.5	<.5	<.5
HM0143S	.2	.006	.11	2	.04	<.5	<.5	<.5	<.5	<.5
HM0144S	.35	N	.64	2	.04	<1	<.5	<.5	<.5	<.5
HM0145S	.2	<.002	3.4	2	.04	<.5	<.5	<.5	<.5	<.5
HM0146S	.35	.028	.88	2	.04	<1	<.5	<.5	.5	<.5
HM0147S	.25	<.002	.05	1	.06	<.5	.7	<.5	<.5	<.5
HM0148S	.15	N	.04	2	.04	<.5	<.5	<.5	<.5	<.5
HM0200S	.15	N	.11	3	.05	<1	<.5	<.5	<.5	<.5
HM0201S	.2	N	.04	2	.05	<.5	<.5	<.5	<.5	<.5
HM0202S	.4	N	.68	3	.05	<1	.6	<.5	<.5	<.5
HM0203S	.15	.012	.12	3	.06	<1	.9	<.5	.5	<.5
HM0204S	.45	N	.53	2	.05	<1	<.5	<.5	<.5	<.5
HM0205S	.45	.01	.31	5	.09	<.5	.8	<.5	<.5	<.5
HM0206S	.25	N	2.13	2	.05	<.5	<.5	<.5	<.5	<.5
HM0207S	.35	<.002	.05	16	.06	<.5	<.5	<.5	<.5	<.5
HM0208S	.2	.006	.09	2	.06	<.5	.5	<.5	<.5	<.5
HM0209S	.45	N	.19	2	.05	<1	<.5	<.5	.6	<.5
HM0210S	.4	N	.39	2	.05	2	<.5	<.5	<.5	<.5
HM0211S	.3	.004	.33	2	.08	<.5	<.5	<.5	<.5	<.5
HM0212S	.25	.018	4	2	.09	<.5	<.5	<.5	<.5	<.5
HM0213S	.45	N	.14	1	.05	<1	<.5	<.5	<.5	<.5
HM0214S	.25	N	.64	1	.05	<.5	<.5	<.5	<.5	<.5
HM0215S	.3	N	8	3	.04	<1	<.5	<.5	.6	<.5
HM0216S	.3	N	.2	1	.06	<.5	<.5	<.5	<.5	<.5
HM0217S	.2	N	.07	N	.04	<.5	<.5	<.5	<.5	<.5
HM0218S	.1	N	.41	1	.04	<.5	<.5	<.5	<.5	<.5
HM0219S	.35	.002	.04	1	.04	<1	<.5	<.5	.5	<.5
HM0220S	.2	N	.02	2	.04	.7	<.5	<.5	<.5	<.5
HM0221S	.45	N	.02	3	.05	<1	<.5	<.5	<.5	<.5
HM0222S	.25	N	.3	1	.04	<.5	<.5	<.5	<.5	<.5
HM0223S	.15	N	.13	1	.04	<.5	<.5	<.5	<.5	<.5
HM0224S	.3	N	.05	2	.05	<1	<.5	<.5	<.5	<.5
HM0225S	.35	N	.47	2	.04	<1	<.5	<.5	<.5	<.5
HM0226S	.25	N	.04	2	.06	<.5	<.5	<.5	<.5	<.5
HM0227S	.3	N	.22	3	.04	<1	<.5	<.5	<.5	<.5
HM0228S	.25	.1	.18	2	.06	<.5	.5	<.5	<.5	<.5
HM0229S	.4	.002	.65	3	.05	<1	<.5	<.5	<.5	<.5
HM0230S	.4	N	.14	3	.04	<1	.8	<.5	<.5	<.5

Table 3. Analytical data for stream-sediment samples collected from the Horn Mountains area--Continued.

Sample	Latitude	Longitude	Ag ppm-ICP	As ppm-ICP	Au ppm-ICP	Bi ppm-ICP	Cd ppm-ICP	Cu ppm-ICP	Mo ppm-ICP	Pb ppm-ICP
HM0231S	61 53 4	158 37 54	.086	5.5	N	N	.22	12	.34	7.9
HM0232S	61 54 56	158 54 51	N	5.3	N	N	.15	14	.54	7.2
HM0233S	61 51 11	158 48 33	N	4.2	N	N	.12	11	.44	6.5
HM0234S	61 47 2	158 49 23	N	3.5	N	N	.13	10	.5	6
HM0235S	61 48 1	158 58 34	N	5.7	N	N	.1	10	.44	6.2
HM0236S	61 43 34	158 53 13	N	6	N	N	.15	13	.63	7.2
HM0237S	61 41 51	158 52 1	N	4.7	N	N	.094	13	.52	6.3
HM0238S	61 41 41	158 46 46	N	6.2	N	N	.11	13	.5	6.1

Sample	Sb ppm-ICP	Zn ppm-ICP	Ca %-SQS	Fe %-SQS	Mg %-SQS	Na %-SQS	P %-SQS	Ti %-SQS	Ag ppm-SQS	As ppm-SQS
HM0231S	N	62	.2	5	.5	3	N	.5	N	N
HM0232S	N	65	.15	2	.3	2	N	.3	N	N
HM0233S	N	71	.1	3	.5	2	N	.3	N	N
HM0234S	N	72	.1	5	.3	2	N	.5	N	N
HM0235S	N	74	.1	3	.5	2	N	.2	N	N
HM0236S	1.6	71	.15	5	.5	3	N	.7	N	N
HM0237S	N	82	.05	2	.3	1.5	N	.2	N	N
HM0238S	N	79	.07	2	.3	1	N	.2	N	N

Sample	Au ppm-SQS	B ppm-SQS	Ba ppm-SQS	Be ppm-SQS	Bi ppm-SQS	Cd ppm-SQS	Co ppm-SQS	Cr ppm-SQS	Cu ppm-SQS	Ga ppm-SQS
HM0231S	N	<10	500	N	N	N	20	150	20	50
HM0232S	N	<10	500	N	N	N	15	100	20	15
HM0233S	N	10	300	N	N	N	15	70	15	20
HM0234S	N	<10	500	N	N	N	20	150	20	30
HM0235S	N	N	500	N	N	N	10	500	10	20
HM0236S	N	10	500	N	N	N	20	100	30	30
HM0237S	N	10	300	N	N	N	<10	200	15	20
HM0238S	N	<10	300	N	N	N	15	70	15	7

Sample	Ge ppm-SQS	La ppm-SQS	Mn ppm-SQS	Mo ppm-SQS	Nb ppm-SQS	Ni ppm-SQS	Pb ppm-SQS	Sb ppm-SQS	Sc ppm-SQS
HM0231S	N	N	300	N	N	20	10	N	7
HM0232S	N	N	300	N	N	20	<10	N	5
HM0233S	N	N	500	N	N	20	<10	N	<5
HM0234S	N	N	150	N	N	50	N	N	<5
HM0235S	N	N	150	N	N	10	N	N	<5
HM0236S	N	N	200	N	N	50	N	N	5
HM0237S	N	N	70	N	N	20	N	N	<5
HM0238S	N	N	100	N	N	20	N	N	<5

Sample	Sn ppm-SQS	Sr ppm-SQS	Th ppm-SQS	V ppm-SQS	W ppm-SQS	Y ppm-SQS	Zn ppm-SQS	Zr ppm-SQS	Se ppm-AAS	Te ppm-AAS
HM0231S	N	<100	N	70	N	10	N	150	.3	N
HM0232S	N	N	N	70	N	<10	N	70	.2	N
HM0233S	N	N	N	50	N	<10	N	70	.1	N
HM0234S	N	N	N	100	N	<10	N	50	.1	.05
HM0235S	N	N	N	50	N	<10	N	70	.2	N
HM0236S	N	N	N	100	N	<10	N	100	.2	N
HM0237S	N	N	N	50	N	N	N	30	.4	N
HM0238S	N	N	N	70	N	N	N	50	.3	N

Sample	Tl ppm-AAS	Au ppm-AAS	Hg ppm-AAS	W ppm-VS	F %-SIE	Pt ppb-ICP	Pd ppb-ICP	Rh ppb-ICP	Ru ppb-ICP	Ir ppb-ICP
HM0231S	.4	N	.09	1	.05	<1	<.5	<.5	<.5	<.5
HM0232S	.2	N	.04	1	.04	<.5	.5	<.5	<.5	<.5
HM0233S	.2	N	.07	1	.04	<.5	<.5	<.5	<.5	<.5
HM0234S	.3	N	.04	2	.04	4	.5	<.5	.6	<.5
HM0235S	.3	N	.19	2	.04	<1	<.5	<.5	<.5	<.5
HM0236S	.3	N	.18	2	.04	<1	.5	<.5	.5	<.5
HM0237S	.4	N	.11	2	.05	<1	1.2	<.5	<.5	<.5
HM0238S	.25	N	.19	1	.04	<.5	<.5	<.5	<.5	<.5

Table 4. Analytical data for heavy-mineral-concentrate samples collected from the Horn Mountains area, Sleetmute quadrangle, Alaska. [SQS, semiquantitative emission spectrography; N, not detected; <, detected but below the limit of determination shown; >, determined to be greater than the value shown]

Sample	Latitude	Longitude	Ca %-SQS	Fe %-SQS	Mg %-SQS	Na %-SQS	P %-SQS	Ti %-SQS	Ag ppm-SQS	As ppm-SQS
HM0001C	61 43 55	158 29 30	5	.1	.07	N	5	>2	N	N
HM0002C	61 42 59	158 29 58	5	<.1	.07	N	5	>2	N	N
HM0003C	61 42 1	158 30 32	5	.15	.1	N	5	>2	N	N
HM0004C	61 39 48	158 34 5	5	2	.1	N	3	>2	3	N
HM0005C	61 38 54	158 35 38	5	<.1	.05	N	5	>2	15	N
HM0006C	61 38 9	158 31 45	2	.1	<.05	N	5	>2	N	N
HM0007C	61 38 8	158 31 32	5	.1	.07	N	5	>2	N	N
HM0008C	61 36 35	158 24 37	1.5	.1	.15	N	.7	>2	N	N
HM0009C	61 37 1	158 24 0	2	<.1	.1	N	2	>2	N	N
HM0010C	61 41 25	158 26 26	7	.1	.05	N	7	2	N	N
HM0011C	61 41 22	158 16 41	.5	<.1	.15	.5	.5	2	N	N
HM0012C	61 42 20	158 24 35	1.5	.1	.07	N	2	>2	N	N
HM0013C	61 44 0	158 18 56	.3	.1	.1	.5	.5	2	N	N
HM0014C	61 45 46	158 20 17	2	<.1	.07	N	3	>2	N	N
HM0015C	61 45 44	158 20 16	5	.1	.1	N	7	>2	N	N
HM0016C	61 47 13	158 24 15	5	.2	.1	N	5	>2	N	N
HM0017C	61 47 43	158 25 33	1.5	<.1	.1	N	5	>2	N	N
HM0018C	61 41 27	158 36 46	2	N	.05	<.5	1.5	2	N	N
HM0019C	61 44 27	158 35 51	5	<.1	.07	N	5	>2	N	N
HM0020C	61 45 21	158 36 40	.7	<.1	.05	N	2	>2	N	N
HM0021C	61 46 13	158 33 24	5	.1	.1	<.5	3	2	N	N
HM0022C	61 46 9	158 33 30	3	.1	.07	N	5	>2	20	N
HM0023C	61 49 39	158 26 24	2	.1	.1	<.5	3	>2	N	N
HM0024C	61 46 57	158 21 45	2	N	.07	N	5	>2	N	N
HM0025C	61 51 31	158 18 5	2	.1	.1	<.5	2	>2	N	N
HM0026C	61 49 10	158 30 40	5	.1	.07	N	5	>2	N	N
HM0027C	61 53 12	158 28 40	7	.1	.15	N	5	2	N	N
HM0028C	61 54 7	158 22 5	5	N	<.05	N	3	1	N	N
HM0029C	61 53 53	158 16 37	--	--	--	--	--	--	--	--
HM0030C	61 56 11	158 14 31	2	N	.07	N	5	2	N	N
HM0031C	61 50 56	158 11 41	1.5	N	.1	N	<.5	>2	N	N
HM0032C	61 48 47	158 7 21	.5	<.1	.07	N	<.5	2	N	N
HM0033C	61 47 21	158 15 17	.5	.1	.15	<.5	.5	2	N	N
HM0034C	61 45 57	158 15 48	.2	N	.05	N	.7	2	N	N
HM0035C	61 55 49	158 50 5	.3	<.1	.05	N	1	>2	N	N
HM0036C	61 55 48	158 58 38	N	N	<.05	N	<.5	>2	N	N
HM0037C	61 59 19	158 47 3	1.5	.1	.05	N	2	>2	N	N
HM0038C	61 57 15	158 40 8	2	<.1	.1	N	3	>2	N	N
HM0039C	61 59 16	158 34 58	.5	N	.05	N	.7	>2	N	N
HM0040C	61 55 36	158 36 1	.2	N	<.05	N	1	>2	N	N
HM0041C	61 59 0	158 18 44	.7	N	<.05	N	1.5	>2	N	N
HM0042C	61 51 25	158 38 19	2	<.1	.07	N	3	>2	N	N
HM0043C	61 53 42	158 55 25	1	<.1	.1	N	1.5	>2	N	N
HM0044C	61 51 52	158 45 54	.3	<.1	.07	N	.7	>2	N	N
HM0045C	61 47 45	158 50 32	.7	N	.05	N	1.5	>2	N	N
HM0046C	61 45 3	158 55 1	.3	N	<.05	N	1	>2	N	N
HM0047C	61 51 40	158 59 9	1	<.1	.07	N	2	>2	N	N
HM0048C	61 43 44	158 59 17	.3	.1	.07	N	.7	>2	N	N
HM0049C	61 39 55	158 48 41	.5	N	.05	N	1	>2	N	N
HM0050C	61 40 6	158 45 55	<.1	N	N	N	<.5	>2	N	N
HM0100C	61 43 56	158 29 19	2	.1	.1	N	3	>2	N	N
HM0101C	61 44 18	158 28 15	2	<.1	.07	N	3	>2	N	N
HM0102C	61 41 7	158 31 18	5	.15	.1	N	3	>2	N	N
HM0103C	61 38 19	158 34 12	3	<.1	.05	N	3	2	N	N
HM0104C	61 37 24	158 29 28	5	<.1	.07	N	5	>2	N	N
HM0105C	61 36 49	158 28 30	.2	N	.07	N	1	>2	N	N
HM0106C	61 38 11	158 25 7	.3	N	.05	N	.5	>2	N	N
HM0107C	61 41 6	158 28 10	1	<.1	.05	N	3	>2	N	N
HM0108C	61 40 4	158 19 13	.1	N	.05	N	<.5	>2	N	N
HM0109C	61 43 6	158 23 27	.3	N	<.05	N	2	>2	N	N
HM0110C	61 43 1	158 17 45	1	.15	.1	N	2	>2	N	N
HM0111C	61 44 55	158 21 58	5	.1	.1	N	5	>2	N	N
HM0112C	61 45 59	158 25 43	5	.2	.1	N	5	>2	N	N
HM0113C	61 48 35	158 19 4	1.5	<.1	.05	N	1.5	>2	N	N
HM0114C	61 39 56	158 36 13	7	<.1	.07	N	7	>2	N	N

Table 4. Analytical data for heavy-mineral-concentrate samples collected from the Horn Mountains area--Continued.

Sample	Au ppm-SQS	B ppm-SQS	Ba ppm-SQS	Be ppm-SQS	Bi ppm-SQS	Cd ppm-SQS	Co ppm-SQS	Cr ppm-SQS	Cu ppm-SQS
HM0001C	N	50	100	N	N	N	N	500	N
HM0002C	<20	50	200	N	300	N	N	500	N
HM0003C	N	150	150	N	N	N	N	700	N
HM0004C	<20	20	7,000	N	200	N	<20	200	N
HM0005C	20	30	200	N	70	N	N	70	N
HM0006C	N	20	1,000	N	N	N	N	500	N
HM0007C	N	30	1,000	N	N	N	N	300	N
HM0008C	N	20	500	7	N	N	N	100	N
HM0009C	N	<20	300	N	N	N	N	150	N
HM0010C	N	N	70	N	N	N	N	70	N
HM0011C	N	N	500	N	N	N	N	30	N
HM0012C	N	N	200	N	N	N	N	700	N
HM0013C	N	<20	1,000	N	N	N	N	50	N
HM0014C	N	N	150	N	N	N	N	700	N
HM0015C	N	50	200	N	N	N	N	700	N
HM0016C	N	30	200	N	100	N	N	1,000	N
HM0017C	N	30	150	N	30	N	N	1,500	N
HM0018C	N	N	100	N	N	N	N	50	N
HM0019C	N	<20	100	N	N	N	N	500	N
HM0020C	N	N	100	N	N	N	N	1,500	N
HM0021C	N	N	200	N	N	N	N	150	N
HM0022C	500	100	150	N	N	N	N	700	N
HM0023C	N	50	300	N	50	N	N	2,000	N
HM0024C	N	N	200	N	N	N	N	1,000	N
HM0025C	N	20	300	N	N	N	N	50	N
HM0026C	N	N	100	N	N	N	N	300	N
HM0027C	N	N	300	N	N	N	N	70	N
HM0028C	N	N	100	N	N	N	N	30	N
HM0029C	--	--	--	--	--	--	--	--	--
HM0030C	N	<20	500	N	N	N	N	50	N
HM0031C	N	N	300	N	N	N	N	50	N
HM0032C	N	N	500	N	N	N	N	50	N
HM0033C	N	<20	500	N	N	N	N	50	N
HM0034C	N	<20	500	N	N	N	N	70	N
HM0035C	N	N	700	N	N	N	N	1,000	N
HM0036C	N	<20	300	N	N	N	N	300	N
HM0037C	N	20	500	N	N	N	N	150	N
HM0038C	N	20	200	N	N	N	N	50	N
HM0039C	N	N	200	N	N	N	N	70	N
HM0040C	N	<20	3,000	N	N	N	N	100	N
HM0041C	N	N	500	N	N	N	N	20	N
HM0042C	N	20	500	N	N	N	N	70	N
HM0043C	N	20	1,000	N	N	N	N	100	N
HM0044C	N	20	300	N	N	N	N	200	N
HM0045C	N	N	300	N	N	N	N	20	N
HM0046C	N	<20	1,500	N	N	N	N	500	N
HM0047C	N	20	2,000	N	N	N	N	500	N
HM0048C	N	70	500	N	N	N	N	300	N
HM0049C	N	20	500	N	N	N	N	300	N
HM0050C	N	N	100	N	N	N	N	70	N
HM0100C	30	30	150	<2	500	N	N	700	N
HM0101C	N	30	100	N	1,000	N	N	1,000	N
HM0102C	N	20	70	N	N	N	N	500	N
HM0103C	N	N	300	N	N	N	N	500	N
HM0104C	N	<20	5,000	N	N	N	N	30	N
HM0105C	N	30	700	N	N	N	N	70	N
HM0106C	N	<20	500	N	N	N	N	30	N
HM0107C	N	N	150	N	N	N	N	700	N
HM0108C	N	<20	500	N	N	N	N	50	N
HM0109C	N	N	100	N	N	N	N	1,000	N
HM0110C	N	50	10,000	N	N	N	N	200	N
HM0111C	N	50	150	N	N	N	N	500	N
HM0112C	N	50	200	N	1,000	N	N	1,000	N
HM0113C	N	<20	300	N	N	N	N	100	N
HM0114C	N	<20	200	N	N	N	N	150	N

Table 4. Analytical data for heavy-mineral-concentrate samples collected from the Horn Mountains area--Continued.

Sample	Ga ppm-SQS	Ge ppm-SQS	La ppm-SQS	Mn ppm-SQS	Mo ppm-SQS	Nb ppm-SQS	Ni ppm-SQS	Pb ppm-SQS	Sb ppm-SQS	Sc ppm-SQS
HM0001C	N	N	150	200	N	100	N	N	N	15
HM0002C	N	N	150	200	N	<50	N	200	N	10
HM0003C	<10	N	100	300	N	<50	N	20	N	<10
HM0004C	N	N	150	100	N	50	10	20	N	10
HM0005C	N	N	100	100	N	<50	N	N	N	<10
HM0006C	N	N	150	100	N	50	N	N	N	30
HM0007C	N	N	150	150	N	70	N	N	N	20
HM0008C	10	N	<100	30	N	<50	N	N	N	20
HM0009C	15	N	<100	50	N	N	N	N	N	<10
HM0010C	N	N	200	50	N	N	N	2,000	300	<10
HM0011C	<10	N	N	20	N	N	N	N	N	<10
HM0012C	N	N	N	20	N	70	N	20	N	30
HM0013C	<10	N	N	<20	N	N	N	N	N	<10
HM0014C	N	N	N	30	N	<50	N	N	N	30
HM0015C	N	N	150	50	N	50	N	N	N	70
HM0016C	N	N	150	200	N	50	N	N	N	20
HM0017C	N	N	<100	50	N	50	N	N	N	30
HM0018C	N	N	N	20	N	N	N	N	N	N
HM0019C	N	N	100	50	N	<50	N	N	N	30
HM0020C	N	N	N	20	N	70	N	<20	N	100
HM0021C	N	N	100	50	N	N	N	N	N	<10
HM0022C	N	N	100	70	N	<50	N	<20	N	30
HM0023C	N	N	<100	70	N	70	N	20	N	15
HM0024C	N	N	<100	30	N	<50	N	N	N	30
HM0025C	N	N	<100	50	N	<50	N	<20	N	10
HM0026C	N	N	150	100	N	N	N	N	N	<10
HM0027C	N	N	300	150	N	N	N	70	N	15
HM0028C	N	N	200	200	N	N	N	N	N	20
HM0029C	--	--	--	--	--	--	--	--	--	--
HM0030C	N	N	100	30	N	N	N	<20	N	<10
HM0031C	N	N	N	30	N	N	N	N	N	15
HM0032C	10	N	N	30	N	N	N	N	N	10
HM0033C	<10	N	N	30	N	N	N	<20	N	<10
HM0034C	<10	N	N	<20	N	N	N	N	N	10
HM0035C	N	N	N	<20	N	N	N	N	N	<10
HM0036C	N	N	N	N	N	N	N	N	N	20
HM0037C	N	N	N	20	N	N	N	N	N	30
HM0038C	N	N	100	30	N	50	N	<20	N	10
HM0039C	N	N	N	<20	N	<50	N	N	N	15
HM0040C	N	N	100	<20	N	<50	N	N	N	15
HM0041C	N	N	N	<20	N	N	N	N	N	<10
HM0042C	N	N	<100	50	N	N	N	<20	N	15
HM0043C	N	N	100	30	N	<50	N	N	N	20
HM0044C	N	N	<100	N	N	50	N	<20	N	<10
HM0045C	N	N	N	<20	N	N	N	<20	N	<10
HM0046C	N	N	<100	<20	N	N	N	N	N	20
HM0047C	N	N	100	20	N	N	N	<20	N	<10
HM0048C	N	N	<100	20	N	50	N	N	N	<10
HM0049C	N	N	N	<20	N	<50	N	N	N	10
HM0050C	N	N	N	N	N	N	N	N	N	<10
HM0100C	N	N	100	200	N	50	N	<20	N	10
HM0101C	N	N	<100	100	N	50	N	20	N	10
HM0102C	N	N	200	200	N	<50	N	N	N	20
HM0103C	<10	N	150	100	N	<50	N	<20	N	20
HM0104C	N	N	150	150	N	N	N	<20	N	N
HM0105C	N	N	100	<20	N	<50	N	N	N	15
HM0106C	<10	N	N	<20	N	N	N	N	N	<10
HM0107C	N	N	N	<20	N	<50	N	20	N	30
HM0108C	N	N	N	<20	N	N	N	N	N	10
HM0109C	N	N	N	<20	N	<50	N	30	N	20
HM0110C	N	N	100	<20	N	<50	N	N	N	30
HM0111C	N	N	150	100	N	50	N	<20	N	20
HM0112C	N	N	150	100	N	70	N	50	N	20
HM0113C	N	N	<100	20	N	<50	N	N	N	10
HM0114C	N	N	200	100	N	<50	N	<20	N	10

Table 4. Analytical data for heavy-mineral-concentrate samples collected from the Horn Mountains area--Continued.

Sample	Sn ppm-SQS	Sr ppm-SQS	Th ppm-SQS	V ppm-SQS	W ppm-SQS	Y ppm-SQS	Zn ppm-SQS	Zr ppm-SQS	Pd ppm-SQS	Pt ppm-SQS
HM0001C	N	N	N	30	N	300	N	2,000	N	N
HM0002C	<20	N	N	70	700	500	N	2,000	N	N
HM0003C	20	N	N	50	300	300	N	>2,000	N	N
HM0004C	N	N	N	30	<50	500	N	2,000	N	N
HM0005C	N	N	N	30	100	500	N	>2,000	N	N
HM0006C	N	N	N	100	N	300	N	>2,000	N	N
HM0007C	N	N	N	150	N	300	N	>2,000	N	N
HM0008C	300	N	N	100	N	500	N	>2,000	N	N
HM0009C	300	N	N	70	N	200	N	>2,000	N	N
HM0010C	N	N	N	500	N	500	N	>2,000	N	N
HM0011C	1,000	N	N	50	N	200	N	>2,000	N	N
HM0012C	20	N	N	70	70	100	N	2,000	N	N
HM0013C	500	N	N	50	N	100	N	>2,000	N	N
HM0014C	20	N	N	50	N	150	N	2,000	N	N
HM0015C	N	N	N	70	N	300	N	>2,000	N	N
HM0016C	N	N	N	50	50	500	N	2,000	N	N
HM0017C	N	N	N	50	N	200	N	>2,000	N	N
HM0018C	200	N	N	30	N	70	N	>2,000	N	N
HM0019C	N	N	N	50	N	300	N	>2,000	N	N
HM0020C	N	N	N	50	N	100	N	1,000	N	N
HM0021C	N	N	N	<20	N	150	N	2,000	N	N
HM0022C	N	N	N	30	N	200	N	>2,000	N	N
HM0023C	<20	N	N	100	<50	150	N	2,000	N	N
HM0024C	20	N	N	30	N	70	N	2,000	N	N
HM0025C	20	N	N	70	N	150	N	>2,000	N	N
HM0026C	N	N	N	30	N	150	N	1,500	N	N
HM0027C	70	N	N	30	N	300	N	>2,000	N	N
HM0028C	300	N	N	<20	N	200	N	>2,000	N	N
HM0029C	--	--	--	--	--	--	--	--	--	--
HM0030C	N	<200	N	50	N	100	N	>2,000	N	N
HM0031C	500	N	N	50	N	300	N	>2,000	N	N
HM0032C	1,500	N	N	50	N	500	N	>2,000	N	N
HM0033C	300	N	N	50	N	200	N	>2,000	N	N
HM0034C	500	N	N	30	N	100	N	>2,000	N	N
HM0035C	N	N	N	50	N	50	N	>2,000	N	N
HM0036C	N	N	N	100	N	100	N	>2,000	N	N
HM0037C	N	N	N	100	N	200	N	>2,000	N	N
HM0038C	N	N	N	70	N	100	N	>2,000	N	N
HM0039C	N	N	N	70	N	100	N	>2,000	N	N
HM0040C	N	N	N	50	N	100	N	>2,000	N	N
HM0041C	<20	N	N	50	N	150	N	>2,000	N	N
HM0042C	N	N	N	30	N	200	N	>2,000	N	N
HM0043C	N	<200	N	150	N	100	N	>2,000	N	N
HM0044C	N	N	N	50	N	30	N	>2,000	N	N
HM0045C	N	N	N	30	N	70	N	>2,000	N	N
HM0046C	N	N	N	100	N	200	N	>2,000	N	N
HM0047C	300	<200	N	100	N	70	N	>2,000	N	N
HM0048C	N	N	N	100	N	70	N	>2,000	N	N
HM0049C	N	N	N	100	N	100	N	>2,000	N	N
HM0050C	70	N	N	30	N	150	N	>2,000	N	N
HM0100C	20	N	N	50	500	150	N	1,500	N	N
HM0101C	<20	N	N	30	300	200	N	1,000	N	N
HM0102C	<20	N	N	30	100	500	N	2,000	N	N
HM0103C	70	N	N	20	<50	300	N	>2,000	N	N
HM0104C	N	<200	N	70	N	100	N	>2,000	N	N
HM0105C	30	N	N	100	N	150	N	>2,000	N	N
HM0106C	200	N	N	50	N	150	N	>2,000	N	N
HM0107C	N	N	N	70	N	100	N	1,000	N	N
HM0108C	700	N	N	100	N	300	N	>2,000	N	N
HM0109C	150	N	N	30	N	20	N	300	N	N
HM0110C	500	N	N	100	N	500	N	>2,000	N	N
HM0111C	N	N	N	30	N	150	N	2,000	N	N
HM0112C	N	N	N	70	50	300	N	1,000	N	N
HM0113C	<20	N	N	70	N	150	N	>2,000	N	N
HM0114C	N	N	N	30	N	700	N	>2,000	N	N

Table 4. Analytical data for heavy-mineral-concentrate samples collected from the Horn Mountains area--Continued.

Sample	Latitude	Longitude	Ca %-SQS	Fe %-SQS	Mg %-SQS	Na %-SQS	P %-SQS	Ti %-SQS	Ag ppm-SQS	As ppm-SQS
HM0115C	61 43 48	158 33 56	7	.2	.15	<.5	5	>2	<1	N
HM0116C	61 43 44	158 34 2	5	.1	.07	N	3	>2	N	N
HM0117C	61 43 54	158 34 38	.7	N	<.05	N	2	>2	N	N
HM0118C	61 47 19	158 32 6	5	<.1	.1	N	5	2	N	N
HM0119C	61 49 2	158 28 9	3	.1	.07	N	2	>2	5	N
HM0120C	61 49 11	158 23 47	3	<.1	.07	N	3	>2	N	N
HM0121C	61 49 10	158 23 42	2	<.1	.1	N	2	>2	N	N
HM0122C	61 51 8	158 19 16	1	<.1	.07	N	1	2	N	N
HM0123C	61 51 53	158 26 53	2	<.1	.07	N	2	>2	N	N
HM0124C	61 51 1	158 28 25	5	N	.07	N	5	2	N	N
HM0125C	61 51 0	158 28 17	5	.1	.1	1.5	2	>2	N	N
HM0126C	61 54 57	158 19 1	1	<.1	.05	N	2	>2	N	N
HM0128C	61 54 56	158 13 9	.2	<.1	.05	N	1.5	>2	N	N
HM0129C	61 51 14	158 14 9	1	<.1	.07	N	1	>2	N	N
HM0130C	61 51 21	158 9 9	.7	N	.07	N	.5	2	N	N
HM0131C	61 47 59	158 15 19	2	<.1	.07	N	5	>2	N	N
HM0132C	61 45 51	158 15 50	2	.1	.1	N	2	>2	N	N
HM0133C	61 55 38	158 45 25	3	.2	.1	<.5	2	>2	N	N
HM0134C	61 58 11	158 55 19	N	<.1	<.05	N	N	>2	N	N
HM0135C	61 58 8	158 49 25	2	<.1	.07	N	2	>2	N	N
HM0136C	61 59 56	158 43 12	.7	.1	.07	N	2	>2	N	N
HM0137C	61 58 20	158 39 55	.5	.15	.07	N	1.5	>2	N	N
HM0138C	61 54 30	158 33 39	1.5	.15	.3	<.5	.7	>2	N	N
HM0139C	61 59 13	158 21 18	.7	N	.05	N	1	>2	N	N
HM0140C	61 51 14	158 34 2	2	<.1	.07	1	2	1.5	N	N
HM0141C	61 52 47	158 41 31	.7	.15	.1	N	1	>2	N	N
HM0142C	61 52 17	158 53 23	1.5	<.1	.07	N	2	>2	N	N
HM0143C	61 49 34	158 48 0	.3	N	.07	N	.7	>2	N	N
HM0144C	61 45 56	158 49 3	1	<.1	.1	N	2	>2	N	N
HM0145C	61 49 55	158 57 10	.7	<.1	.07	N	2	>2	N	N
HM0146C	61 43 11	158 53 35	.7	N	.05	N	2	>2	N	N
HM0147C	61 39 43	158 50 51	.7	.1	.05	N	2	>2	N	N
HM0148C	61 43 44	158 48 57	.5	<.1	.07	N	1.5	>2	N	N
HM0200C	61 38 25	158 24 46	5	N	.07	N	7	>2	N	N
HM0201C	61 38 59	158 21 47	2	.1	.1	N	1.5	>2	N	N
HM0202C	61 41 15	158 21 18	2	<.1	.07	N	2	>2	N	N
HM0203C	61 42 54	158 16 33	.3	N	.07	N	N	2	N	N
HM0204C	61 44 36	158 24 20	3	<.1	.07	N	3	2	N	N
HM0205C	61 46 9	158 25 54	5	<.1	.05	N	5	>2	N	N
HM0206C	61 48 27	158 18 58	5	.1	.07	N	5	>2	N	N
HM0207C	61 41 17	158 34 4	3	<.1	.07	.5	3	>2	N	N
HM0208C	61 42 37	158 34 30	3	<.1	.07	.5	5	2	N	N
HM0209C	61 44 38	158 35 7	1.5	N	<.05	N	3	>2	N	N
HM0210C	61 46 43	158 35 11	10	.2	.15	N	15	>2	N	N
HM0211C	61 47 27	158 29 42	2	.1	.07	N	2	>2	N	N
HM0212C	61 48 29	158 27 18	1	.15	.1	N	2	>2	N	N
HM0213C	61 48 31	158 27 23	2	.15	1	N	2	>2	N	N
HM0214C	61 52 7	158 25 31	3	N	.05	.5	3	>2	N	N
HM0215C	61 53 22	158 26 58	2	N	.05	N	2	>2	N	N
HM0216C	61 53 55	158 23 16	5	.1	.07	.7	2	>2	N	N
HM0217C	61 53 54	158 20 54	3	<.1	.1	N	3	>2	N	N
HM0218C	61 54 8	158 15 22	.7	N	.05	N	1.5	>2	N	N
HM0219C	61 50 31	158 16 9	.3	N	.05	N	.7	2	N	N
HM0220C	61 51 29	158 11 7	2	<.1	.05	N	1.5	>2	N	N
HM0221C	61 48 15	158 12 50	1.5	N	.2	N	1.5	>2	N	N
HM0222C	61 46 49	158 13 31	.5	<.1	.07	N	.5	>2	N	N
HM0223C	61 54 46	158 44 13	2	<.1	.07	<.5	2	>2	N	N
HM0224C	61 57 49	158 57 22	<.1	<.1	<.05	N	<.5	>2	N	N
HM0225C	61 57 20	158 51 53	1.5	<.1	.07	N	2	>2	N	N
HM0226C	61 58 15	158 45 20	.5	<.1	.07	N	1.5	>2	N	N
HM0227C	61 59 53	158 40 1	.7	N	.05	N	1.5	>2	N	N
HM0228C	61 58 36	158 33 32	3	.1	.07	N	3	>2	N	N
HM0229C	61 59 11	158 30 29	3	N	.07	N	7	>2	N	N
HM0230C	61 52 31	158 34 28	2	.1	.1	N	2	>2	N	N
HM0231C	61 53 4	158 37 54	1.5	<.1	.1	N	2	>2	N	N
HM0232C	61 54 56	158 54 51	.5	N	.05	N	1	>2	N	N
HM0233C	61 51 11	158 48 33	1.5	<.1	.05	N	1.5	>2	N	N
HM0234C	61 47 2	158 49 23	.5	N	<.05	N	2	2	N	N
HM0235C	61 48 1	158 58 34	1	N	.05	N	1.5	>2	N	N
HM0236C	61 43 34	158 53 13	.5	N	<.05	N	.5	>2	N	N
HM0237C	61 41 51	158 52 1	.3	N	.07	N	2	>2	N	N
HM0238C	61 41 41	158 46 46	1	N	.05	N	1.5	>2	N	N

Table 4. Analytical data for heavy-mineral-concentrate samples collected from the Horn Mountains area--Continued.

Sample	Au ppm-SQS	B ppm-SQS	Ba ppm-SQS	Be ppm-SQS	Bi ppm-SQS	Cd ppm-SQS	Co ppm-SQS	Cr ppm-SQS	Cu ppm-SQS
HM0115C	N	50	100	N	N	N	N	1,000	<10
HM0116C	N	20	70	N	500	N	N	200	N
HM0117C	N	N	50	N	N	N	N	500	N
HM0118C	N	N	200	N	N	N	N	500	N
HM0119C	30	30	100	N	N	N	N	1,000	N
HM0120C	N	N	100	N	N	N	N	1,000	N
HM0121C	N	N	300	<2	N	N	N	1,500	N
HM0122C	N	N	300	N	N	N	N	70	N
HM0123C	N	200	300	N	N	N	N	1,500	N
HM0124C	N	20	500	2	N	N	N	100	N
HM0125C	N	N	700	N	N	N	N	700	N
HM0126C	N	<20	500	N	N	N	N	200	N
HM0128C	N	30	3,000	N	N	N	N	150	N
HM0129C	N	N	2,000	N	N	N	N	50	N
HM0130C	N	N	150	N	N	N	N	20	N
HM0131C	N	30	2,000	N	N	N	N	150	N
HM0132C	N	<20	200	N	N	N	N	700	N
HM0133C	N	<20	1,000	N	N	N	N	100	N
HM0134C	N	N	>10,000	N	N	N	N	300	N
HM0135C	N	20	300	N	N	N	N	70	N
HM0136C	N	20	300	<2	N	N	N	700	N
HM0137C	N	<20	3,000	N	N	N	N	150	N
HM0138C	N	N	500	N	N	N	N	100	N
HM0139C	N	30	500	N	N	N	N	70	N
HM0140C	N	<20	300	N	N	N	N	30	N
HM0141C	N	30	300	N	N	N	N	150	N
HM0142C	N	30	700	N	N	N	N	100	N
HM0143C	N	<20	1,000	<2	N	N	N	100	N
HM0144C	N	50	300	N	N	N	N	100	N
HM0145C	N	50	3,000	N	N	N	N	300	N
HM0146C	N	<20	7,000	N	N	N	N	50	N
HM0147C	N	50	>10,000	N	N	N	N	50	N
HM0148C	N	N	100	N	N	N	N	150	N
HM0200C	N	20	200	N	N	N	N	500	N
HM0201C	N	30	200	N	N	N	N	500	N
HM0202C	N	N	200	N	N	N	N	500	N
HM0203C	N	N	3,000	N	N	N	N	70	N
HM0204C	N	100	150	N	N	N	N	500	N
HM0205C	N	20	70	N	1,500	N	N	300	N
HM0206C	N	70	150	N	N	N	N	500	N
HM0207C	N	N	150	N	N	N	N	150	N
HM0208C	N	N	100	N	N	N	N	100	N
HM0209C	N	N	70	N	N	N	N	1,000	N
HM0210C	N	N	100	N	N	N	N	300	N
HM0211C	N	N	100	N	N	N	N	1,500	N
HM0212C	N	200	150	<2	500	N	N	1,500	N
HM0213C	N	1,000	200	<2	150	N	N	2,000	N
HM0214C	N	N	300	N	N	N	N	200	N
HM0215C	N	N	300	N	N	N	N	20	N
HM0216C	N	20	300	N	N	N	N	500	N
HM0217C	N	N	500	N	N	N	N	70	N
HM0218C	N	N	2,000	N	N	N	N	50	N
HM0219C	N	N	100	N	N	N	N	30	N
HM0220C	N	N	200	N	N	N	N	20	N
HM0221C	N	20	700	3	N	N	N	150	N
HM0222C	N	<20	700	N	N	N	N	50	N
HM0223C	N	<20	300	N	N	N	N	70	N
HM0224C	N	<20	500	N	N	N	N	500	N
HM0225C	N	20	300	N	N	N	N	100	N
HM0226C	N	<20	300	N	N	N	N	100	N
HM0227C	N	N	500	N	N	N	N	150	N
HM0228C	N	50	200	N	N	N	N	50	N
HM0229C	N	<20	700	N	N	N	N	50	N
HM0230C	N	50	200	N	N	N	N	30	N
HM0231C	N	<20	500	N	N	N	N	20	N
HM0232C	N	20	1,000	N	N	N	N	100	N
HM0233C	N	30	200	N	N	N	N	30	N
HM0234C	N	N	500	N	N	N	N	20	N
HM0235C	N	20	700	N	N	N	N	100	N
HM0236C	N	N	1,000	N	N	N	N	100	N
HM0237C	N	30	10,000	N	N	N	N	150	N
HM0238C	N	20	200	N	N	N	N	70	N

Table 4. Analytical data for heavy-mineral-concentrate samples collected from the Horn Mountains area--Continued.

Sample	Ga ppm-SQS	Ge ppm-SQS	La ppm-SQS	Mn ppm-SQS	Mo ppm-SQS	Nb ppm-SQS	Ni ppm-SQS	Pb ppm-SQS	Sb ppm-SQS	Sc ppm-SQS
HM0115C	<10	N	200	100	N	N	N	50	N	30
HM0116C	N	N	100	50	N	N	N	N	N	<10
HM0117C	N	N	N	N	N	<50	N	N	N	50
HM0118C	<10	N	150	150	N	N	N	<20	<200	<10
HM0119C	N	N	150	70	N	50	N	<20	N	30
HM0120C	N	N	<100	50	N	N	N	N	N	10
HM0121C	N	N	<100	30	N	<50	N	20	N	15
HM0122C	N	N	100	<20	N	<50	N	N	N	10
HM0123C	N	N	<100	70	N	70	N	20	N	20
HM0124C	N	N	500	150	N	N	N	N	<200	70
HM0125C	<10	N	150	70	N	N	N	<20	N	10
HM0126C	N	N	100	20	N	N	N	<20	N	N
HM0128C	N	N	N	N	N	<50	N	<20	N	<10
HM0129C	N	N	<100	20	N	N	N	N	N	<10
HM0130C	<10	N	N	<20	N	N	N	N	N	10
HM0131C	N	N	100	70	N	70	N	N	N	<10
HM0132C	N	N	100	50	N	50	N	N	N	20
HM0133C	N	N	<100	<20	N	70	N	N	N	N
HM0134C	N	N	N	<20	N	50	N	N	N	10
HM0135C	N	N	N	20	N	<50	N	N	N	15
HM0136C	N	N	<100	20	N	50	N	<20	N	30
HM0137C	N	N	N	30	N	50	N	N	N	<10
HM0138C	N	N	100	50	N	<50	N	<20	N	10
HM0139C	N	N	<100	20	N	N	N	N	N	10
HM0140C	<10	N	100	30	N	N	N	N	N	N
HM0141C	N	N	150	<20	N	100	N	<20	N	20
HM0142C	N	N	100	20	N	50	N	N	N	<10
HM0143C	N	N	300	N	N	<50	N	<20	N	<10
HM0144C	N	N	<100	30	N	N	N	<20	N	<10
HM0145C	N	N	150	20	N	<50	N	N	N	<10
HM0146C	N	N	N	<20	N	N	N	N	N	<10
HM0147C	N	N	100	<20	N	<50	N	N	N	<10
HM0148C	N	N	N	<20	N	<50	N	N	N	<10
HM0200C	N	N	150	70	N	N	N	70	200	30
HM0201C	N	N	<100	70	N	N	N	<20	N	30
HM0202C	N	N	N	20	N	<50	N	200	<200	10
HM0203C	<10	N	N	<20	N	N	N	N	N	10
HM0204C	N	N	150	50	N	<50	N	20	N	15
HM0205C	N	N	100	150	N	50	N	500	N	<10
HM0206C	N	N	150	70	N	<50	N	N	N	<10
HM0207C	N	N	100	50	N	<50	N	N	N	10
HM0208C	N	N	100	50	N	N	N	N	N	<10
HM0209C	N	N	N	<20	N	50	N	<20	N	70
HM0210C	N	N	200	200	N	N	N	N	N	15
HM0211C	N	N	<100	50	N	<50	N	20	200	20
HM0212C	N	N	N	50	N	<50	N	500	N	10
HM0213C	N	N	<100	50	N	50	N	N	N	70
HM0214C	N	N	<100	50	N	N	N	<20	N	10
HM0215C	N	N	<100	30	N	N	N	N	N	10
HM0216C	<10	N	150	70	N	<50	N	N	N	10
HM0217C	N	N	<100	50	N	N	N	N	N	10
HM0218C	N	N	N	<20	N	<50	N	N	N	<10
HM0219C	N	N	N	<20	N	<50	N	N	N	10
HM0220C	N	N	N	20	N	N	N	N	N	30
HM0221C	10	N	<100	70	N	<50	N	N	N	20
HM0222C	<10	N	N	20	N	N	N	N	N	10
HM0223C	N	N	150	30	N	<50	N	<20	N	N
HM0224C	N	N	N	N	N	70	N	<20	N	15
HM0225C	N	N	<100	<20	N	<50	N	N	N	30
HM0226C	N	N	N	<20	N	70	N	N	N	<10
HM0227C	N	N	N	<20	N	N	N	N	N	<10
HM0228C	N	N	150	30	N	<50	N	N	N	15
HM0229C	N	N	<100	30	N	<50	N	N	N	<10
HM0230C	N	N	100	70	N	<50	N	N	N	10
HM0231C	N	N	<100	20	N	<50	N	N	N	15
HM0232C	N	N	N	<20	N	50	N	N	N	<10
HM0233C	N	N	<100	20	N	<50	N	N	N	15
HM0234C	N	N	N	<20	N	N	N	N	N	<10
HM0235C	N	N	100	<20	N	N	N	N	N	20
HM0236C	N	N	N	<20	N	<50	N	N	N	10
HM0237C	N	N	150	20	N	<50	N	N	N	20
HM0238C	N	N	N	30	N	<50	N	<20	N	N

Table 4. Analytical data for heavy-mineral-concentrate samples collected from the Horn Mountains area--Continued.

Sample	Sn ppm-SQS	Sr ppm-SQS	Th ppm-SQS	V ppm-SQS	W ppm-SQS	Y ppm-SQS	Zn ppm-SQS	Zr ppm-SQS	Pd ppm-SQS	Pt ppm-SQS
HM0115C	<20	N	N	50	100	300	N	2,000	N	N
HM0116C	N	N	N	30	N	200	N	2,000	N	N
HM0117C	N	N	N	N	N	20	N	300	N	N
HM0118C	<20	N	N	50	<50	200	N	2,000	N	N
HM0119C	N	N	N	100	<50	200	N	1,500	N	N
HM0120C	N	N	N	20	N	100	N	700	N	N
HM0121C	N	N	N	150	N	100	N	700	N	N
HM0122C	100	N	N	20	N	200	N	>2,000	N	N
HM0123C	N	N	N	100	N	70	N	>2,000	N	N
HM0124C	50	N	N	20	N	150	N	>2,000	N	N
HM0125C	N	N	N	30	N	200	N	2,000	N	N
HM0126C	N	<200	N	30	N	50	N	2,000	N	N
HM0128C	N	200	N	70	N	50	N	>2,000	N	N
HM0129C	50	N	N	70	N	100	N	>2,000	N	N
HM0130C	300	N	N	30	N	150	N	>2,000	N	N
HM0131C	30	N	N	70	<50	100	N	>2,000	N	N
HM0132C	200	N	N	50	N	70	N	2,000	N	N
HM0133C	N	<200	N	100	N	100	N	>2,000	N	N
HM0134C	N	<200	N	100	N	20	N	>2,000	N	N
HM0135C	N	N	N	100	N	100	N	>2,000	N	N
HM0136C	N	N	N	300	N	70	N	>2,000	N	N
HM0137C	N	<200	N	50	N	30	N	>2,000	N	N
HM0138C	N	<200	N	70	N	70	N	>2,000	N	N
HM0139C	N	N	N	70	N	150	N	>2,000	N	N
HM0140C	50	N	N	30	N	150	N	>2,000	N	N
HM0141C	N	<200	N	150	N	100	N	>2,000	N	N
HM0142C	N	<200	N	70	N	70	N	>2,000	N	N
HM0143C	N	300	N	50	N	70	N	>2,000	N	N
HM0144C	N	N	N	100	N	70	N	>2,000	N	N
HM0145C	N	300	N	100	N	70	700	>2,000	N	N
HM0146C	N	N	N	70	N	100	N	>2,000	N	N
HM0147C	N	<200	N	70	N	70	N	>2,000	N	N
HM0148C	N	N	N	70	N	70	N	>2,000	N	N
HM0200C	N	N	N	70	N	200	N	>2,000	N	N
HM0201C	30	N	N	100	N	300	N	>2,000	N	N
HM0202C	150	N	N	50	N	150	N	>2,000	N	N
HM0203C	1,000	N	N	30	N	300	N	>2,000	N	N
HM0204C	N	N	N	50	70	200	N	2,000	N	N
HM0205C	N	N	N	<20	<50	200	N	1,500	N	N
HM0206C	N	N	N	30	1,000	300	N	>2,000	N	N
HM0207C	<20	N	N	30	N	300	N	2,000	N	N
HM0208C	N	N	N	20	N	150	N	>2,000	N	N
HM0209C	N	N	N	50	N	100	N	1,000	N	N
HM0210C	N	N	N	20	N	500	N	2,000	N	N
HM0211C	N	N	N	100	N	100	N	1,500	N	N
HM0212C	<20	N	N	70	50	50	N	300	N	N
HM0213C	N	N	N	100	N	150	N	1,000	N	N
HM0214C	N	N	N	30	N	100	N	>2,000	N	N
HM0215C	N	N	N	50	N	150	N	>2,000	N	N
HM0216C	<20	N	N	70	N	150	N	>2,000	N	N
HM0217C	20	N	N	20	N	200	N	>2,000	N	N
HM0218C	100	<200	N	50	N	70	N	>2,000	N	N
HM0219C	500	N	N	20	N	150	N	>2,000	N	N
HM0220C	100	N	N	70	N	200	N	>2,000	N	N
HM0221C	300	N	N	100	N	700	N	>2,000	N	N
HM0222C	500	N	N	50	N	300	N	>2,000	N	N
HM0223C	N	<200	N	50	N	150	N	>2,000	N	N
HM0224C	N	N	N	200	N	70	N	>2,000	N	N
HM0225C	N	N	N	70	N	100	N	>2,000	N	N
HM0226C	20	N	N	70	N	30	N	>2,000	N	N
HM0227C	N	N	N	70	N	70	N	>2,000	N	N
HM0228C	N	<200	N	100	N	200	N	>2,000	N	N
HM0229C	50	N	N	50	N	100	N	>2,000	N	N
HM0230C	N	<200	N	30	N	150	N	>2,000	N	N
HM0231C	N	N	N	50	N	200	N	>2,000	N	N
HM0232C	30	N	N	100	N	50	N	>2,000	N	N
HM0233C	N	N	N	70	N	150	N	>2,000	N	N
HM0234C	N	N	N	30	N	100	N	>2,000	N	N
HM0235C	N	<200	N	70	N	150	N	>2,000	N	N
HM0236C	N	N	N	20	N	150	N	>2,000	N	N
HM0237C	N	200	N	100	N	200	N	>2,000	N	N
HM0238C	30	N	N	70	<50	70	N	>2,000	N	N

Table 5. Mineralogical data for heavy-mineral-concentrate samples collected from the Horn Mountains area, Sleetmute quadrangle, Alaska. [0, not observed; 1, <1%; 2, 1-5%; 3, >5-20%; 4, >20-50%; and 5, >50%]

Sample	Latitude	Longitude	zir	apt	cass	rut	ant	brk	tour	pyx	spn	gar	flu	pyr	cinn	cpy	gold	schl	bar	sphl	cor	musc	and	sil	monz	chl
HM0001	61 41 27	158 36 46	5	3	0	4	3	1	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0
HM0002	61 44 00	158 18 56	4	3	1	2	3	0	0	0	0	0	1	0	1	0	1	1	0	0	0	0	0	0	0	0
HM0003	61 53 55	158 23 16	3	4	0	4	3	2	0	1	1	1	0	0	1	0	0	1	0	0	1	0	0	2	0	0
HM0004	61 52 17	158 53 23	4	3	0	3	4	1	0	0	1	0	0	3	0	0	1	0	2	0	2	0	1	1	0	0
HM0005	61 41 25	158 26 26	3	4	0	4	4	1	0	0	1	1	0	0	1	0	1	1	1	0	0	1	0	0	0	0
HM0006	61 42 01	158 30 32	4	3	1	3	4	1	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0
HM0007	61 41 41	158 46 46	3	3	0	4	3	1	0	0	1	1	0	0	1	0	0	0	1	0	0	1	0	1	0	0
HM0008	61 54 07	158 22 05	5	2	0	3	4	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0
HM0009	61 51 14	158 14 09	4	3	2	3	4	1	0	0	1	1	0	0	1	0	0	0	0	0	0	0	2	0	0	0
HM0010	61 54 46	158 44 13	2	5	0	3	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HM0011	61 54 30	158 33 39	5	2	0	2	1	1	0	0	1	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0
HM0012	61 44 18	158 28 15	2	2	0	5	2	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
HM0013	61 38 11	158 25 07	4	3	0	2	3	1	0	1	0	2	0	1	0	0	0	0	0	0	0	1	0	0	0	0
HM0014	61 42 37	158 34 30	4	3	0	4	2	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
HM0015	61 37 24	158 29 28	3	4	0	1	3	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
HM0016	61 49 39	158 26 24	3	4	1	3	4	1	0	0	1	1	0	0	0	0	0	0	1	0	0	1	0	1	0	0
HM0017	61 48 35	158 19 04	3	3	0	3	4	2	1	0	1	0	0	0	1	0	0	0	0	0	1	1	0	1	0	0
HM0018	61 48 47	158 07 21	4	3	0	2	3	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	1	0
HM0019	61 54 56	158 54 51	2	4	0	1	4	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0
HM0020	61 47 45	158 50 32	2	3	0	5	3	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HM0021	61 39 55	158 48 41	3	5	0	1	2	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
HM0022	61 51 11	158 48 33	3	4	1	1	3	0	0	0	1	0	0	0	1	0	1	0	0	0	1	0	0	0	1	0
HM0023	61 54 08	158 15 22	4	2	0	3	4	1	0	0	1	1	0	0	1	0	0	0	0	0	1	0	0	1	0	0
HM0024	61 43 44	158 34 02	4	3	1	4	4	1	0	0	2	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0
HM0025	61 43 06	158 23 27	4	2	0	3	4	1	0	0	1	1	0	0	0	0	0	0	0	0	0	2	0	0	1	0
HM0026	61 47 59	158 15 19	3	3	0	3	3	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0
HM0027	61 40 04	158 19 13	5	4	0	2	2	1	0	0	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0
HM0028	61 59 00	158 18 44	5	2	0	2	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0
HM0029	61 58 36	158 33 32	3	2	0	1	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	4	0	0	0	1
HM0030	61 38 54	158 35 38	4	3	0	3	4	0	0	0	1	2	0	0	0	0	0	1	0	0	0	2	2	0	0	0
HM0031	61 47 27	158 29 42	5	2	1	2	3	0	0	0	1	1	0	0	0	0	0	1	1	0	0	1	1	0	0	0
HM0032	61 41 17	158 34 04	5	1	2	4	3	1	0	0	2	1	0	0	1	0	0	1	0	0	0	0	3	0	0	0
HM0033	61 43 44	158 59 17	4	3	0	3	3	0	0	1	1	2	0	0	1	0	0	1	0	0	0	2	0	0	0	0
HM0034	61 52 07	158 25 31	4	1	1	3	4	1	0	0	1	1	0	0	1	0	0	1	0	0	1	1	0	0	0	0
HM0035	61 46 09	158 25 54	4	2	0	3	4	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
HM0036	61 43 44	158 48 57	3	2	1	3	4	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0
HM0037	61 38 08	158 31 32	5	2	0	2	4	1	0	0	1	2	0	0	1	0	0	0	1	0	0	1	1	0	0	0
HM0038	61 49 55	158 57 10	3	2	0	3	4	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HM0039	61 55 49	158 50 05	5	2	0	3	3	0	0	0	1	2	0	0	1	0	0	0	0	0	0	2	0	0	0	0
HM0040	61 51 31	158 18 05	5	2	0	3	4	1	1	0	1	1	0	0	2	0	0	0	0	0	1	1	0	0	0	0
HM0041	61 45 51	158 15 50	5	1	0	4	3	0	0	0	1	2	0	0	1	0	0	0	1	0	0	1	1	0	0	0
HM0042	61 53 53	158 16 37	4	3	0	3	4	1	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
HM0043	61 41 22	158 16 41	5	1	0	3	2	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0
HM0044	61 48 29	158 27 18	3	2	0	4	3	1	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0
HM0045	61 51 40	158 59 09	4	3	0	3	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0
HM0046	61 40 06	158 45 55	4	2	0	3	4	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	0	0
HM0047	61 54 57	158 19 01	5	2	0	2	2	1	1	1	1	2	0	1	3	0	0	0	0	0	0	1	0	0	0	0
HM0048	61 42 59	158 29 58	3	1	0	3	4	0	0	0	1	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0
HM0049	61 49 34	158 48 00	4	2	0	3	4	0	0	0	1	2	0	0	3	0	0	0	0	0	1	0	0	0	0	0
HM0050	61 42 20	158 24 35	5	1	0	1	1	0	0	1	1	2	0	1	4	0	0	0	0	0	0	1	0	0	0	0

Table 5. Mineralogical data for heavy-mineral-concentrate samples collected from the Horn Mountains area--Continued.

Sample	Latitude	Longitude	zir	apt	cass	rut	ant	brk	tour	pyx	spn	gar	flu	pyr	cinn	cpy	gold	schl	bar	sphl	cor	musc	and	sil	monz	chl
HM0100	61 38 59	158 21 47	3	4	0	4	3	2	0	0	0	1	0	0	0	0	1	1	0	0	1	0	0	1	0	0
HM0101	61 50 56	158 11 41	3	4	0	3	4	0	0	1	0	0	1	0	0	0	0	1	0	0	1	2	0	1	0	0
HM0102	61 53 12	158 28 40	3	4	0	3	4	1	0	0	1	0	0	0	0	0	1	1	1	0	2	0	1	1	0	0
HM0103	61 59 13	158 21 18	4	3	0	3	4	1	0	0	2	1	0	0	1	0	0	0	1	0	1	0	0	0	0	0
HM0104	61 47 21	158 15 17	3	3	0	4	3	0	0	1	0	1	0	0	1	0	0	1	1	0	0	1	1	0	0	0
HM0105	61 45 46	158 20 17	4	3	0	4	4	1	0	0	1	1	0	1	1	0	0	0	0	0	1	1	1	0	0	0
HM0106	61 58 15	158 45 20	5	1	0	4	2	0	0	0	0	2	0	0	1	0	0	0	1	0	0	0	1	0	0	0
HM0107	61 43 56	158 29 19	3	4	0	4	3	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
HM0108	61 44 55	158 21 58	5	2	2	4	3	0	0	0	1	1	0	0	1	0	0	0	1	0	0	1	3	0	0	0
HM0109	61 45 21	158 36 40	1	3	1	2	5	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
HM0110	61 43 55	158 29 30	4	2	1	4	3	1	0	1	0	2	0	0	0	0	1	0	2	0	0	1	0	0	0	0
HM0111	61 41 07	158 31 18	3	3	1	3	3	1	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
HM0112	61 59 19	158 47 03	3	4	1	4	4	1	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	1	0	0
HM0113	61 43 48	158 33 56	4	1	0	4	3	0	0	0	1	2	0	0	1	0	0	0	1	0	0	2	0	1	0	0
HM0114	61 53 54	158 20 54	3	4	0	3	4	1	0	0	1	1	0	0	1	0	0	0	1	0	0	0	0	1	0	0
HM0115	61 59 16	158 34 58	3	3	1	2	3	0	1	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
HM0116	61 46 49	158 13 31	3	4	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0
HM0117	61 52 47	158 41 31	1	3	0	5	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HM0118	61 43 01	158 17 45	3	4	0	2	3	0	0	0	1	1	1	0	1	0	0	0	0	0	0	1	0	0	0	0
HM0119	61 55 38	158 45 25	3	4	0	3	4	2	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
HM0120	61 45 54	158 34 38	3	4	0	4	3	1	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	0	0
HM0121	61 48 27	158 18 58	3	4	0	4	3	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
HM0122	61 49 11	158 23 47	4	3	0	3	4	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0
HM0123	61 51 29	158 11 07	4	4	1	1	3	1	0	0	1	0	0	0	1	0	0	0	1	0	1	1	0	0	1	0
HM0124	61 36 35	158 24 37	5	3	1	2	3	0	0	1	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0
HM0125	61 39 43	158 50 51	4	3	0	4	3	1	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0
HM0126	61 46 13	158 33 24	3	4	0	3	3	0	0	0	1	1	0	0	1	0	0	0	1	0	0	2	0	0	0	0
HM0128	61 41 06	158 28 10	4	2	0	4	3	1	0	0	1	1	0	0	1	0	0	0	0	0	0	1	1	0	0	0
HM0129	61 49 10	158 30 40	4	2	1	4	2	0	0	1	1	2	0	0	0	0	0	0	1	0	0	2	2	0	0	0
HM0130	61 45 57	158 15 48	5	2	0	2	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
HM0131	61 44 36	158 24 20	3	4	1	4	4	1	0	0	2	2	0	0	0	0	0	0	1	0	1	1	0	1	0	0
HM0132	61 48 31	158 27 23	4	3	2	3	2	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
HM0133	61 49 02	158 28 09	2	3	1	3	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0
HM0134	61 51 21	158 09 09	4	3	0	4	4	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0
HM0135	61 38 19	158 34 12	4	3	1	3	4	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0
HM0136	61 51 25	158 38 19	3	3	1	4	4	1	0	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0
HM0137	61 50 31	158 16 09	4	1	0	3	4	0	0	0	0	1	0	0	1	0	0	1	0	0	0	2	0	0	0	0
HM0138	61 51 00	158 28 17	3	2	0	3	4	0	0	0	1	1	0	0	1	0	0	1	0	0	0	1	0	0	0	0
HM0139	61 38 09	158 31 45	5	2	0	4	2	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0
HM0140	61 52 31	158 34 28	5	3	0	3	3	0	0	0	1	1	0	0	1	0	0	0	0	0	1	1	1	0	1	0
HM0141	61 47 43	158 25 33	3	4	0	3	3	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HM0142	61 58 20	158 39 55	4	2	0	3	3	1	0	1	1	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0
HM0143	61 51 08	158 19 16	4	3	0	3	4	0	0	0	1	2	0	1	1	0	0	0	0	0	0	2	0	0	0	0
HM0144	61 53 04	158 37 54	4	3	0	3	3	1	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0
HM0145	61 58 11	158 55 19	3	2	0	4	2	1	0	1	1	0	0	1	1	0	0	0	1	1	0	1	1	0	0	0
HM0146	61 51 14	158 34 02	5	3	0	2	4	1	0	0	1	1	0	0	2	0	0	0	1	0	0	1	1	0	0	0
HM0147	61 55 36	158 36 01	4	2	0	3	2	1	0	0	1	1	0	0	1	0	0	0	2	0	0	0	0	0	0	0
HM0148	61 48 15	158 12 50	4	2	0	3	4	1	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0
HM0200	61 36 49	158 28 30	4	4	0	4	4	1	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0
HM0201	61 41 51	158 52 01	5	3	0	4	3	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0

Table 5. Mineralogical data for heavy-mineral-concentrate samples collected from the Horn Mountains area--Continued.

Sample	Latitude	Longitude	zir	apt	cass	rut	ant	brk	tour	pyx	spn	gar	flu	pyr	cinn	cpy	gold	schl	bar	sphl	cor	musc	and	sil	monz	chl
HM0202	61 47 19	158 32 06	4	3	1	2	4	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
HM0203	61 46 43	158 35 11	5	2	0	3	4	1	0	0	1	1	0	1	0	0	0	1	1	0	0	1	1	0	0	0
HM0204	61 45 56	158 49 03	3	4	1	4	2	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
HM0205	61 43 11	158 53 35	3	4	0	4	4	1	0	1	2	0	0	0	0	0	0	1	1	0	1	1	0	1	0	0
HM0206	61 47 13	158 24 15	4	3	0	3	3	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0
HM0207	61 59 11	158 30 29	3	4	0	3	4	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
HM0208	61 41 15	158 21 18	3	4	0	2	4	1	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0
HM0209	61 51 01	158 28 25	3	4	0	4	4	1	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
HM0210	61 53 53	158 17 24	4	4	1	3	4	2	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
HM0211	61 37 01	158 24 00	3	4	0	4	3	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0
HM0212	61 45 59	158 25 43	3	4	2	2	4	2	1	1	2	0	1	0	1	0	0	1	1	0	0	1	0	0	0	0
HM0213	61 44 38	158 35 07	2	4	0	3	3	1	0	0	1	1	0	0	1	0	0	0	1	0	1	1	0	1	0	0
HM0214	61 56 11	158 14 31	4	2	0	4	3	1	0	1	3	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0
HM0215	61 58 08	158 49 25	4	3	0	3	3	1	0	0	1	1	0	0	3	0	0	0	0	0	0	1	1	1	0	0
HM0216	61 57 15	158 40 08	5	3	0	4	3	1	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0
HM0217	61 48 01	158 58 34	3	4	1	2	3	0	0	0	2	2	0	0	1	0	0	0	1	0	0	0	0	0	1	0
HM0218	61 55 48	158 58 38	4	3	0	4	3	1	0	1	2	1	0	0	1	0	0	0	1	0	0	1	1	0	0	0
HM0219	61 57 20	158 51 53	5	3	1	3	4	1	0	0	1	1	0	0	0	0	0	1	0	0	0	1	1	0	0	0
HM0220	61 54 56	158 13 09	5	2	0	4	3	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
HM0221	61 59 56	158 43 12	5	3	1	3	4	0	1	1	2	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0
HM0222	61 47 02	158 49 23	5	2	0	2	4	1	1	0	1	1	0	0	1	0	0	0	0	0	0	1	3	0	0	0
HM0223	61 53 42	158 55 25	3	2	0	3	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	4	1	0	0	0
HM0224	61 45 44	158 20 16	4	2	0	4	4	1	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
HM0225	61 46 57	158 21 45	4	2	0	4	4	1	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
HM0226	61 43 34	158 53 13	4	2	0	4	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
HM0227	61 57 49	158 57 22	4	2	1	4	4	0	1	0	1	1	0	1	2	1	0	0	0	0	0	1	1	0	0	0
HM0228	61 59 53	158 40 01	3	3	0	3	3	0	0	0	1	0	0	0	0	0	0	0	1	0	0	4	0	0	0	0
HM0229	61 53 22	158 26 58	4	3	1	3	4	0	0	0	1	1	0	0	1	0	0	0	0	0	0	3	0	0	0	0
HM0230	61 44 27	158 35 51	4	2	0	3	4	1	0	0	1	1	0	0	1	0	0	0	0	0	0	2	0	1	0	0
HM0231	61 42 54	158 16 33	4	3	0	4	4	0	0	0	1	1	0	0	1	1	0	0	0	0	0	2	0	0	0	0
HM0232	61 49 10	158 23 42	3	1	0	4	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0
HM0233	61 39 48	158 34 05	4	3	0	3	3	0	0	0	1	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0
HM0234	61 39 56	158 36 13	5	3	1	4	3	1	0	0	1	1	0	0	1	0	0	1	0	0	0	1	0	0	0	0
HM0235	61 51 53	158 26 53	4	3	0	4	4	1	0	0	1	1	0	0	2	0	0	0	0	0	0	1	1	0	0	0
HM0236	61 46 09	158 33 30	5	3	1	4	3	1	0	0	1	1	0	1	2	0	0	0	1	0	0	1	0	0	0	0
HM0237	61 38 25	158 24 46	4	3	1	4	4	1	0	0	0	1	0	1	1	0	0	1	2	0	0	1	0	1	0	0
HM0238	61 51 52	158 45 54	5	2	0	4	3	0	0	0	1	2	0	0	1	0	0	0	0	0	0	1	0	0	0	0