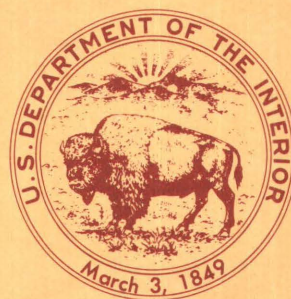


# Analytical Data for a Suite of Granitoid Rocks from the Basin and Range Province

U.S. GEOLOGICAL SURVEY BULLETIN 1602







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By Donald E. Lee

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# CONTENTS

Abstract	1
Introduction	1
Methods of analysis	1
Uses of data	3
References cited	3

## FIGURE

1. Outline map showing general distribution of samples included in tables 1–11 2

## TABLES

1. Rapid-rock analyses of granitoid rocks from the Basin and Range province 6
2. Rapid-rock analyses of replicate samples of granitoid rocks from the Basin and Range province 16
3. Rapid-rock norms for granitoid rocks in table 1 18
4. Rapid-rock norms for replicate samples of granitoid rocks in table 2 28
5. Plate-reader semiquantitative emission spectrographic analyses of granitoid rocks from the Basin and Range province 30
6. Plate-reader semiquantitative emission spectrographic analyses of replicate samples of granitoid rocks from the Basin and Range province 40
7. Quantitative X-ray fluorescence values for barium, rubidium, and strontium in granitoid rocks from the Basin and Range province 42
8. Quantitative neutron activation values for uranium and thorium in granitoid rocks from the Basin and Range province 45
9. Quantitative neutron activation values for uranium and thorium in replicate samples of granitoid rocks from the Basin and Range province 48
10. Quantitative emission spectrographic analyses of granitoid rocks from the Basin and Range province 49
11. Quantitative emission spectrographic analyses of replicate samples of granitoid rocks from the Basin and Range province 54



# Analytical Data for a Suite of Granitoid Rocks from the Basin and Range Province

By DONALD E. LEE

## Abstract

This report presents the following data for a suite of 228 random samples of granitoid rocks from the Basin and Range province of Arizona, California, Nevada, and Utah: major-element analyses and rock norms, semiquantitative spectrographic analyses, and quantitative data for antimony, arsenic, barium, bismuth, cadmium, cesium, chlorine, fluorine, lithium, mercury, rubidium, strontium, thallium, and zinc.

## INTRODUCTION

This report presents analytical data for a suite of granitoid rocks from the Basin and Range province of Arizona, California, Nevada, and Utah. Two random samples were collected from each of two randomly selected plutons within each  $1^{\circ} \times 1^{\circ}$  area shown on figure 1. A total of 230 samples was collected. However, sample GR-128 was lost, and its odd-numbered counterpart (GR-127) also is excluded from this study. The general distribution of samples is shown on figure 1, where only odd-numbered samples are shown for the sake of simplicity. At the map scale of figure 1, the even-numbered samples would plot at or near the locations of their odd-numbered counterparts. Exact locations of all samples are listed in table 1.

About 80 percent of the samples were collected by D. E. Lee, and about 20 percent were collected by D. E. Lee with the assistance of R. E. Van Loenen. Thus, for practical purposes, terrane not accessible to a single worker with a reasonable degree of safety was not amenable to sampling. In addition to being chosen at random, the samples were both fresh (zones of alteration, iron staining, and friable rock were avoided) and typical of the main intrusive phase in the area of the sample site (inclusions, dikes, and other minor variants were rejected).

Usually a minimum of 4 hours was spent on the study of each pluton sampled. Samples that could not be broken out with a 5-kg sledge hammer were essentially

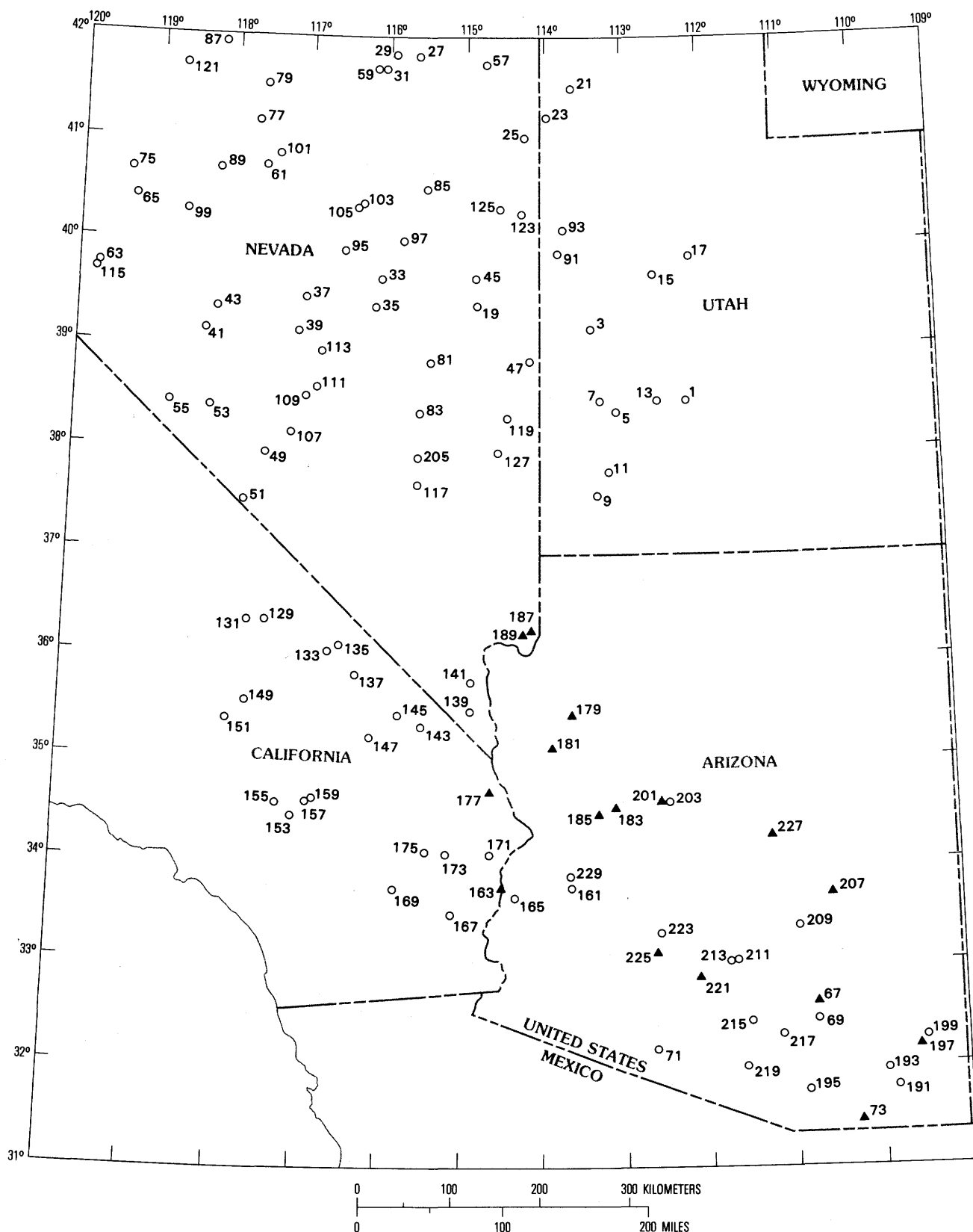
inaccessible because no drilling or blasting was done. In the study area, many plutons display an erosion pattern of large rounded monoliths, impossible to break open with a sledge hammer. In such terrane, road cuts and rock falls often provided the only access to fresh material.

Because we sampled only fresh material, the sample suite as a whole is no doubt biased in favor of those igneous materials that were originally relatively impermeable. Few of the plutons in the study area appear in outcrop as uniformly fresh and coherent rock. Commonly the area properly mapped as intrusive igneous rock contains monoliths ranging in size from a few meters to a few tens of meters across surrounded by igneous rubble; in other words, the monoliths appear as large raisins floating in a pudding of igneous rubble. In deep road cuts and in canyons exposing a vertical section, the same relationship between coherent rock and grus commonly was seen to persist for tens of meters below the surface. The different susceptibility to weathering from place to place within a pluton must result from original differences in permeability and access to surface waters.

## METHODS OF ANALYSIS

Quantitative values for barium, rubidium, and strontium were obtained by analysis of samples submitted in order of consecutive field numbers (that is, GR-1, GR-2, GR-3, and so forth). For other analyses listed, the samples were submitted in a randomized sequence (R-1, R-2, R-3, and so forth), and replicates were included in the suite analyzed. For example, samples GR-6 (table 1) and GR-6a (table 2) are the same material. For most types of analyses, 50 replicates were included in the randomized sequence. However, only 30 replicates were included in the suite analyzed for uranium and thorium (table 9).

Major elements were determined by "rapid-rock" methods (Shapiro and Brannock, 1962; Shapiro, 1967). Totals determined by these methods would ordinarily be listed to the nearest whole percent. In this report, however, totals are recorded to two significant numbers



**Figure 1.** Outline map showing general distribution of samples included in tables 1–11. Solid triangle—Precambrian intrusion; open circle—post-Cambrian intrusion.



beyond the decimal point, indicating more precision than is justified by the analytical methods used. Listed in this fashion, the totals provide the reader with somewhat more information, and they may be rounded at a glance.

The plate-reader emission spectrographic analyses were obtained by methods described by Dorrzapf (1973). George A. Sellers and Robert G. Johnson determined the quantitative values for barium, rubidium, and strontium by X-ray fluorescence. Harriet G. Neiman determined the quantitative fluorine values by using an unpublished selective ion electrode method devised by Daniel R. Norton and Johnnie M. McDade. James S. Wahlberg obtained the quantitative values for chlorine by X-ray fluorescence (Wahlberg, 1976). Hugh T. Millard, Jr. used a neutron activation method (Millard, 1975) for determination of the quantitative uranium and thorium values.

Other elements were determined by specially sensitive quantitative emission spectrographic methods (unpublished) devised by Robert E. Mays and Chris Heropoulos. Mays determined the lithium and cesium values; Heropoulos determined values for arsenic, bismuth, antimony, cadmium, zinc, thallium, and mercury. All values for gold, tellurium, and selenium were below the limits of detection, which are 0.1, 1.0, and 10.0 ppm, respectively.

## USES OF DATA

Little has been done to develop the usefulness of these data. McNeal and others (1981) carried out a statistical analysis of the uranium and thorium data, Lee and others (1980) discussed the barium analyses, and Lee and others (1981) presented oxygen-isotope data for the odd-numbered samples in the suite. In addition, Ronald W. Kistler of the U.S. Geological Survey is engaged in a study of the strontium-isotope compositions of all the samples in table 1.

Each reader, depending on his special interests, will have his own list of additional uses to which these data might be put. Such a list might include: supplementing previous data on abundance figures and on the geochemical affinity of certain elements; study of the regional distribution of individual elements or groups of elements; investigation of possible correlations between certain elements and ore deposits associated with the intrusions; and study of possible correlations between the chemical nature of the country rock and the element content of the intrusion. In terms of scale, these data might be useful to those interested in the evolution of the Basin and Range province, or to others concerned primarily with a particular mining district.

It will take a variety of interests and talents to make the most of these data. For this reason, and to prevent undue delay in release of this information, I have decided to make these data available now.

In tables 3 and 4, Q, quartz; C, corundum; OR, orthoclase; AB, albite; AN, anorthosite; HL, halite; WO, wollastonite; EN, enstatite; FS, ferrosilite; MT, magnetite; HM, hematite; IL, ilmenite; TN, titanite; RU, rutile; AP, apatite; FR, fluorite; CC, calcite; MG, magnesite.

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TABLES 1–11

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**Table 1. Rapid-rock analyses (in percent) of granitoid rocks from the Basin and Range province**

Sample	Latitude deg min s	Longitude deg min s	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	FeO	MgO	CaO	Na <sub>2</sub> O	K <sub>2</sub> O
GR- 1	38 30 17	112 11 12	58.3	15.6	3.70	3.00	3.10	5.00	3.80	4.7
GR- 2	38 30 08	112 11 48	59.9	15.8	3.40	2.20	2.30	3.60	4.20	5.1
GR- 3	39 11 15	113 23 05	71.7	13.8	1.20	.64	.62	1.70	4.00	3.6
GR- 4	39 11 05	113 26 10	72.1	14.0	.99	.72	.57	2.10	4.00	3.7
GR- 5	38 21 30	113 04 40	64.2	14.9	2.70	2.50	3.00	4.10	3.60	3.3
GR- 6	38 20 20	113 04 20	67.7	14.6	1.70	1.80	1.60	2.80	3.70	4.0
GR- 7	38 27 50	113 17 35	60.2	15.0	3.60	2.80	3.00	5.00	3.60	3.4
GR- 8	38 29 30	113 17 05	63.0	15.3	2.60	2.50	2.50	3.90	3.60	4.0
GR- 9	37 34 00	113 21 15	63.5	15.0	2.80	2.00	2.60	4.00	3.30	3.6
GR- 10	37 33 00	113 25 00	63.0	15.0	4.40	.48	2.60	4.20	3.20	3.7
GR- 11	37 46 10	113 10 10	62.3	15.0	4.00	.88	2.10	3.80	3.30	3.8
GR- 12	37 46 50	113 10 40	62.4	14.6	3.70	1.00	2.30	3.70	3.80	3.6
GR- 13	38 26 00	112 33 00	57.4	15.7	2.90	3.60	3.30	5.20	3.50	4.0
GR- 14	38 26 15	112 34 30	58.8	15.5	2.30	3.90	3.00	4.80	3.50	4.6
GR- 15	39 43 00	112 35 35	69.8	14.7	1.10	.92	.57	2.30	3.80	4.3
GR- 16	39 44 25	112 35 35	74.1	13.5	1.20	.72	.38	1.70	3.50	4.0
GR- 17	39 53 55	112 06 40	60.6	15.1	4.10	2.30	2.50	4.20	3.70	3.7
GR- 18	39 54 30	112 07 45	61.3	15.3	3.50	2.40	2.50	4.00	3.70	3.8
GR- 19	39 23 48	114 51 45	70.8	14.6	1.20	1.40	.83	2.80	3.20	3.9
GR- 20	39 23 45	114 51 59	69.9	14.0	1.40	1.70	.83	2.90	3.10	4.0
GR- 21	41 31 55	113 45 35	70.4	14.2	1.20	1.50	.61	2.10	3.90	3.5
GR- 22	41 31 30	113 43 35	72.3	13.3	1.40	.72	.54	2.00	3.70	3.6
GR- 23	41 14 00	113 59 35	70.3	14.7	.89	1.00	.81	2.40	3.90	4.0
GR- 24	41 12 00	113 59 55	73.1	13.3	.82	.68	.69	2.00	3.70	3.4
GR- 25	41 00 20	114 17 40	74.0	14.1	.58	.16	.12	.89	4.00	4.2
GR- 26	41 00 35	114 17 30	73.5	14.8	.55	.12	.05	.96	4.40	4.2
GR- 27	41 47 47	115 38 04	68.1	15.4	1.70	1.40	.96	3.30	3.70	3.4
GR- 28	41 48 15	115 38 58	70.0	15.2	1.40	1.20	.87	3.30	3.70	3.3
GR- 29	41 49 16	115 55 37	68.5	14.9	1.90	1.90	1.30	3.40	3.30	3.6
GR- 30	41 51 03	115 53 23	67.7	14.9	1.70	1.80	1.30	3.10	3.40	3.6
GR- 31	41 40 45	116 04 11	58.6	16.1	.41	4.80	5.00	5.90	3.90	1.6
GR- 32	41 40 57	116 04 39	61.6	15.9	1.10	4.00	3.50	5.60	3.90	2.1
GR- 33	39 38 48	116 04 40	73.6	14.1	.55	.12	.10	.65	3.80	4.3
GR- 34	39 39 52	116 06 07	74.8	14.9	.44	.36	.10	.83	3.90	4.2
GR- 35	39 22 53	116 08 42	70.8	14.1	.94	1.60	.72	2.40	2.80	4.7
GR- 36	39 22 38	116 09 06	71.1	13.6	1.00	1.40	.62	2.10	2.90	4.9
GR- 37	39 29 38	117 03 34	67.2	14.9	1.30	2.00	1.70	3.30	3.60	3.8
GR- 38	39 28 46	117 02 15	66.0	15.5	1.80	1.80	1.90	3.50	3.60	3.8
GR- 39	39 08 09	117 07 54	68.3	15.6	1.90	1.40	.97	3.50	3.50	3.1
GR- 40	39 07 16	117 09 28	71.2	15.0	1.10	.96	.66	2.70	3.50	3.9
GR- 41	39 08 25	118 20 35	70.7	14.8	1.10	.88	.59	2.60	4.90	2.8
GR- 42	39 09 40	118 21 15	73.2	14.4	.90	.44	.29	1.60	4.50	3.6
GR- 43	39 39 44	118 12 40	64.0	15.2	2.50	2.00	1.90	4.00	3.60	3.8
GR- 44	39 38 30	118 11 30	64.6	14.7	1.80	2.80	2.00	3.40	3.30	4.3
GR- 45	39 37 55	114 54 20	76.4	12.4	.72	.28	.14	.80	3.80	4.5
GR- 46	39 40 10	114 51 50	73.5	13.3	.63	.52	.24	1.20	3.50	4.7
GR- 47	38 51 28	114 12 24	74.1	13.0	.98	.20	.29	2.10	3.40	3.1
GR- 48	38 50 57	114 11 04	71.7	14.3	1.10	.44	.44	2.10	3.70	3.2
GR- 49	37 57 15	117 31 10	77.8	12.1	.48	.16	.06	.75	3.50	4.6
GR- 50	37 57 35	117 32 00	74.5	13.2	.84	.36	.33	1.20	3.90	4.3

**Table 1.** Rapid-rock analyses (in percent) of granitoid rocks—Continued

Sample	H <sub>2</sub> O <sup>+</sup>	H <sub>2</sub> O <sup>-</sup>	TiO <sub>2</sub>	P <sub>2</sub> O <sub>5</sub>	MnO	CO <sub>2</sub>	Cl	F	Total
GR- 1	0.46	0.36	1.20	0.43	0.10	0.09	0.02	0.11	99.97
GR- 2	.56	.34	1.10	.38	.08	.16	.03	.12	99.27
GR- 3	.44	.23	.25	.11	.02	.26	<.01	.04	98.62
GR- 4	.27	.10	.26	.16	.03	.15	<.01	.04	99.20
GR- 5	.97	.17	.68	.17	.06	.03	.02	.06	100.46
GR- 6	.88	.12	.48	.19	.06	.05	.03	.08	99.79
GR- 7	.70	.19	.76	.31	.12	.06	.03	.08	98.85
GR- 8	.58	.16	.66	.26	.08	.08	.02	.06	99.30
GR- 9	.99	.79	.67	.28	.06	.20	.02	.06	99.87
GR- 10	1.30	1.40	.64	.25	.06	.08	<.01	.04	100.36
GR- 11	1.40	1.60	.67	.28	.06	.10	.01	.06	99.36
GR- 12	1.70	1.40	.65	.28	.06	.02	.02	.04	99.27
GR- 13	1.40	.50	1.10	.45	.11	.34	.01	.05	99.56
GR- 14	1.20	.18	1.10	.44	.10	.08	.04	.11	99.65
GR- 15	.37	.10	.29	.15	.03	.20	<.01	.05	98.69
GR- 16	.58	.12	.21	.09	.03	.02	<.01	.03	100.19
GR- 17	.98	.14	.83	.36	.09	.03	.02	.09	98.74
GR- 18	1.00	.35	.81	.36	.08	.07	.03	.10	99.30
GR- 19	.69	.07	.39	.14	.06	.02	.01	.07	100.18
GR- 20	.46	.09	.44	.15	.05	.02	<.01	.06	99.11
GR- 21	.39	.21	.31	.13	.07	.05	.01	.05	98.63
GR- 22	.35	.14	.26	.12	.05	.02	<.01	.05	98.56
GR- 23	.35	.10	.23	.14	.04	.04	<.01	.03	98.94
GR- 24	.37	.06	.19	.08	.05	.07	<.01	.02	98.54
GR- 25	.56	.06	.06	.12	.02	.02	<.01	.02	98.92
GR- 26	.49	.08	.04	.14	.02	.06	<.01	.03	99.45
GR- 27	.39	.16	.40	.23	.11	.04	<.01	.04	99.34
GR- 28	.56	.10	.35	.15	.08	.01	<.01	.04	100.27
GR- 29	.57	.15	.41	.19	.12	.06	<.01	.04	100.35
GR- 30	.64	.18	.39	.17	.13	.06	.02	.03	99.12
GR- 31	1.10	.13	.77	.21	.09	.25	.02	.03	98.91
GR- 32	.82	.09	.87	.26	.08	.02	.03	.06	99.93
GR- 33	.76	.28	.03	.15	.03	.02	<.01	.04	98.54
GR- 34	.83	.14	.02	.09	.06	.06	<.01	.03	100.77
GR- 35	.40	.30	.44	.12	.06	.06	<.01	.06	99.51
GR- 36	.39	.11	.37	.12	.04	.02	.01	.07	98.75
GR- 37	.73	.04	.49	.18	.02	.03	<.01	.05	99.35
GR- 38	1.10	.08	.56	.25	.08	.02	.01	.06	100.06
GR- 39	.95	.12	.38	.20	.07	.05	.01	.04	100.09
GR- 40	.25	.10	.26	.14	.08	.01	.01	.04	99.91
GR- 41	.25	.08	.30	.17	.05	.03	<.01	.04	99.30
GR- 42	.42	.22	.13	.06	.07	.02	<.01	.02	99.88
GR- 43	.52	.01	.62	.27	.11	.01	.03	.06	98.63
GR- 44	.73	.15	.64	.21	.10	.05	.02	.08	98.88
GR- 45	.28	.03	.08	.04	.04	.01	<.01	.03	99.56
GR- 46	.48	.19	.19	.04	.04	.10	.01	.10	98.74
GR- 47	.53	.01	.11	.12	.05	.01	<.01	.03	98.64
GR- 48	.95	.10	.21	.10	.03	.02	.02	.04	98.45
GR- 49	.35	.07	.10	.03	<.01	.02	<.01	<.02	100.05
GR- 50	.51	.01	.18	.06	.05	.01	<.01	.03	99.49



Table 1. Rapid-rock analyses (in percent) of granitoid rocks—Continued

Sample	Latitude deg min s	Longitude deg min s	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	FeO	MgO	CaO	Na <sub>2</sub> O	K <sub>2</sub> O
GR- 51	37 31 45	117 48 15	67.0	14.6	1.80	1.60	1.20	2.50	3.70	4.3
GR- 52	37 27 35	117 46 00	66.0	15.0	2.00	1.60	1.20	2.90	4.00	4.2
GR- 53	38 24 04	118 14 00	74.6	13.0	.66	.12	.13	.17	3.60	5.4
GR- 54	38 24 32	118 13 52	72.8	12.9	.62	.96	.30	.70	4.00	5.1
GR- 55	38 26 45	118 45 25	72.8	13.4	.94	.60	.54	1.30	4.40	3.8
GR- 56	38 25 15	118 46 15	67.9	15.6	1.60	1.60	1.10	3.40	3.80	3.5
GR- 57	41 44 55	114 46 10	65.3	15.0	1.40	1.80	2.80	4.30	3.80	3.5
GR- 58	41 43 25	114 43 20	66.1	15.3	1.50	2.00	3.00	4.30	3.80	3.5
GR- 59	41 42 06	116 09 00	65.5	15.8	.78	2.80	2.30	4.30	4.00	2.5
GR- 60	41 42 30	116 09 57	66.2	15.4	.87	2.70	2.30	3.50	4.00	2.7
GR- 61	40 45 26	117 36 56	69.4	14.1	.56	1.70	1.40	2.40	3.30	4.6
GR- 62	40 45 26	117 37 40	65.0	14.5	.90	2.80	2.80	3.80	3.00	4.4
GR- 63	39 47 35	119 40 20	62.2	16.1	2.70	2.60	2.40	5.10	3.90	2.5
GR- 64	39 47 50	119 41 10	62.1	16.4	3.10	2.10	2.50	5.10	3.90	2.4
GR- 65	40 26 05	119 15 45	61.0	16.7	2.20	2.80	2.50	5.60	3.80	2.3
GR- 66	40 24 30	119 17 35	62.5	17.1	1.40	3.00	2.40	5.10	3.80	2.3
GR- 67	32 35 10	110 44 45	67.5	13.9	2.40	2.60	1.10	2.80	3.10	3.8
GR- 68	32 35 40	110 45 00	68.1	14.0	2.80	2.40	1.20	2.60	2.80	4.1
GR- 69	32 26 45	110 46 10	71.9	14.9	1.30	.48	.30	1.20	4.30	3.8
GR- 70	32 25 50	110 44 50	73.8	13.8	.86	.20	.14	1.30	3.90	4.1
GR- 71	32 09 15	112 38 50	66.0	15.7	1.80	1.50	1.30	3.30	4.30	3.4
GR- 72	32 09 30	112 38 25	66.3	15.9	2.10	1.40	1.70	3.40	4.20	3.5
GR- 73	31 27 10	110 18 20	70.4	14.5	1.60	1.20	.75	.69	.41	5.6
GR- 74	31 26 25	110 16 55	71.4	13.6	1.30	1.40	.60	1.50	2.80	5.4
GR- 75	40 40 35	119 23 05	66.1	15.9	1.80	1.80	1.60	3.90	4.40	2.6
GR- 76	40 40 15	119 22 25	67.6	14.8	1.70	1.50	1.40	3.40	4.00	3.0
GR- 77	41 10 19	117 44 28	65.7	15.8	2.20	2.00	1.70	4.60	3.90	2.6
GR- 78	41 11 10	117 43 29	67.3	16.4	1.50	1.80	1.50	3.90	3.80	3.0
GR- 79	41 29 30	117 38 35	66.5	15.4	1.30	1.60	1.70	3.40	4.60	2.4
GR- 80	41 33 13	117 35 56	66.8	15.9	.83	1.80	1.40	3.30	4.70	2.4
GR- 81	38 50 46	115 28 52	69.5	14.7	1.40	2.00	1.00	3.60	3.00	3.6
GR- 82	38 50 40	115 28 58	69.5	14.4	1.10	2.20	.91	3.10	2.90	3.8
GR- 83	38 20 55	115 34 40	72.8	14.9	.73	.84	.39	2.20	3.70	3.1
GR- 84	38 21 05	115 35 20	70.0	14.6	1.30	1.00	.44	2.50	4.00	4.1
GR- 85	40 19 34	115 30 30	69.8	14.6	.90	1.80	.82	3.00	3.20	3.5
GR- 86	40 19 46	115 30 52	69.7	14.7	.96	2.10	.92	3.00	3.30	3.5
GR- 87	41 55 45	118 12 00	65.1	16.1	2.60	1.60	1.50	3.80	4.60	2.6
GR- 88	41 54 50	118 12 25	66.8	16.3	2.10	1.40	1.30	3.70	4.60	2.7
GR- 89	40 41 48	118 14 46	67.0	15.1	1.50	1.60	1.50	3.30	3.60	3.5
GR- 90	40 42 12	118 14 10	66.7	16.0	1.50	1.90	1.80	4.00	3.60	3.0
GR- 91	39 51 20	113 48 25	71.2	14.2	.69	1.50	.88	2.10	3.40	4.4
GR- 92	39 47 40	113 53 15	72.3	13.7	.84	.96	.59	1.50	3.80	4.6
GR- 93	40 08 45	113 45 12	61.0	14.7	2.10	2.80	3.40	5.00	3.40	3.9
GR- 94	40 07 25	113 45 24	62.6	15.7	2.10	2.50	2.30	3.60	4.00	4.0
GR- 95	39 55 12	116 33 20	66.8	15.2	1.60	2.00	1.40	3.20	3.20	3.9
GR- 96	39 54 50	116 34 00	66.5	14.9	1.60	2.00	1.40	3.10	3.40	4.4
GR- 97	40 00 50	115 50 15	67.5	15.8	1.00	2.30	1.10	3.50	3.60	3.2
GR- 98	40 01 05	115 50 20	66.9	15.2	.71	2.30	1.10	3.70	3.40	3.5
GR- 99	40 17 20	118 37 25	69.0	15.0	1.10	2.00	1.60	3.50	3.60	3.7
GR-100	40 17 10	118 38 25	68.3	14.9	1.30	1.60	1.40	3.30	3.60	3.4

Table 1. Rapid-rock analyses (in percent) of granitoid rocks—Continued

Sample	H <sub>2</sub> O <sup>+</sup>	H <sub>2</sub> O <sup>-</sup>	TiO <sub>2</sub>	P <sub>2</sub> O <sub>5</sub>	MnO	CO <sub>2</sub>	Cl	F	Total
GR- 51	0.87	0.15	0.53	0.29	0.03	0.02	0.01	0.07	98.67
GR- 52	.69	.16	.60	.26	.03	.01	<.01	.08	98.74
GR- 53	.67	.08	.08	.04	<.01	.01	.02	.05	98.64
GR- 54	.63	.17	.09	.08	.02	.28	.02	.06	98.73
GR- 55	.35	.01	.19	.12	.08	.03	<.01	.02	98.59
GR- 56	.57	.22	.39	.17	.09	.08	<.01	.03	100.06
GR- 57	.61	.14	.46	.30	.06	.09	.02	.07	99.65
GR- 58	.70	.01	.51	.22	.07	<.01	.02	.07	101.11
GR- 59	.94	.12	.58	.20	.06	.17	.02	.05	100.12
GR- 60	.55	.04	.54	.20	.06	.20	<.01	.03	99.30
GR- 61	.53	.07	.37	.16	.01	.02	.02	.06	98.70
GR- 62	.88	.02	.68	.23	.02	.04	.01	.11	99.19
GR- 63	.73	.10	.66	.18	.07	.05	.01	.04	99.34
GR- 64	.44	.08	.66	.11	.10	<.01	.02	.03	99.05
GR- 65	.58	.17	.61	.24	.08	.08	.01	.03	98.70
GR- 66	.71	.24	.52	.17	.09	.06	.02	.03	99.44
GR- 67	.59	.09	.92	.32	.10	.07	<.01	.09	99.39
GR- 68	.53	.07	.80	.23	.11	.02	<.01	.09	99.86
GR- 69	.60	.24	.18	.10	.06	.04	<.01	.07	99.48
GR- 70	.38	.02	.08	.10	.05	.01	<.01	.04	98.79
GR- 71	.47	.06	.49	.21	.06	.04	<.01	.04	98.68
GR- 72	.60	.07	.65	.21	.08	.03	.01	.04	100.19
GR- 73	1.90	.21	.70	.26	.03	.31	.01	.09	98.66
GR- 74	.82	.11	.45	.15	.08	.02	<.01	.09	99.73
GR- 75	.45	.09	.52	.20	.04	.08	<.01	.03	99.52
GR- 76	.39	.01	.47	.16	.05	.08	<.01	.03	98.60
GR- 77	.83	.07	.46	.23	.11	.02	<.01	.03	100.26
GR- 78	.49	.19	.46	.16	.08	.01	.01	.03	100.63
GR- 79	.80	.31	.48	.21	.06	.03	<.01	.03	98.83
GR- 80	.84	.23	.43	.24	.06	<.01	<.01	.04	98.98
GR- 81	.77	.10	.62	.14	.07	.03	.02	.06	100.61
GR- 82	.52	.11	.57	.16	.05	.04	<.01	.05	99.42
GR- 83	.57	.18	.20	.10	.05	.02	<.01	.05	99.84
GR- 84	.51	.07	.20	.08	.06	.08	.01	.03	98.98
GR- 85	.54	.19	.47	.22	.02	.06	<.01	.05	99.18
GR- 86	.51	.10	.50	.19	.02	.06	<.01	.06	99.63
GR- 87	.44	.15	.60	.29	.06	.07	.01	.04	99.56
GR- 88	.79	.19	.50	.18	.08	.02	<.01	.03	100.70
GR- 89	.77	.10	.35	.16	.08	.01	<.01	.03	98.61
GR- 90	.82	.18	.45	.17	.06	.02	.01	.04	100.25
GR- 91	.48	.05	.40	.10	.04	.02	<.01	.07	99.54
GR- 92	.49	<.01	.26	.12	.05	.02	<.01	.08	99.32
GR- 93	1.30	.04	.74	.42	.08	.34	.02	.13	99.37
GR- 94	1.10	.27	.65	.46	.05	.08	.03	.10	99.54
GR- 95	1.30	.23	.53	.19	.05	.01	.02	.06	99.69
GR- 96	.39	.03	.60	.26	.01	.02	.03	.06	98.70
GR- 97	.72	.19	.49	.18	.06	.01	.05	.08	99.78
GR- 98	.85	.18	.53	.26	.01	.06	.05	.08	98.83
GR- 99	.56	.16	.43	.12	.05	.01	.02	.03	100.88
GR-100	.58	.23	.36	.15	.03	.05	<.01	.03	99.24

Table 1. Rapid-rock analyses (in percent) of granitoid rocks—Continued

Sample	Latitude deg min s	Longitude deg min s	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	FeO	MgO	CaO	Na <sub>2</sub> O	K <sub>2</sub> O
GR-101	40 49 05	117 26 00	64.3	15.9	1.60	2.40	2.30	3.80	3.90	3.0
GR-102	40 49 20	117 26 40	63.7	15.6	2.10	2.10	2.10	4.30	3.80	3.0
GR-103	40 21 50	116 21 05	70.3	14.3	.90	1.40	.93	1.50	3.40	4.5
GR-104	40 22 10	116 20 55	72.5	14.0	.47	.48	.62	.82	4.50	4.6
GR-105	40 19 50	116 24 10	64.2	14.9	.94	1.70	3.00	5.10	4.10	4.0
GR-106	40 20 10	116 23 20	62.0	15.2	.73	2.20	4.20	4.90	6.00	2.1
GR-107	38 09 05	117 12 10	62.8	15.9	2.30	2.20	1.60	4.70	3.30	3.7
GR-108	38 09 05	117 11 50	63.4	16.3	2.30	1.80	1.50	4.60	3.30	3.8
GR-109	38 30 30	117 01 15	71.7	14.7	.71	.36	.29	1.40	4.70	4.4
GR-110	38 30 00	117 01 05	72.3	14.4	.67	.20	.15	1.30	4.60	4.0
GR-111	38 34 24	116 53 05	71.5	15.3	.64	.92	.38	1.40	4.50	3.7
GR-112	38 35 24	116 52 25	71.5	15.2	.71	.64	.35	1.60	4.50	4.3
GR-113	38 57 10	116 50 35	64.9	16.2	.70	2.70	2.20	4.00	4.20	2.2
GR-114	38 57 10	116 50 35	66.0	16.1	.93	2.40	2.10	3.80	4.30	2.3
GR-115	39 43 20	119 42 35	68.4	15.8	1.50	1.10	.84	2.70	4.20	3.6
GR-116	39 43 55	119 42 25	63.4	16.1	2.70	1.90	1.80	4.50	4.20	2.7
GR-117	37 39 10	115 37 45	70.1	15.5	1.60	.60	.35	2.00	3.80	4.6
GR-118	37 39 20	115 37 20	68.3	15.3	1.60	.96	.57	2.60	3.70	4.1
GR-119	38 18 25	114 27 55	66.5	14.3	2.80	1.30	1.80	3.70	2.90	3.8
GR-120	38 18 25	114 27 55	67.3	15.0	3.00	1.30	1.70	3.70	3.00	4.0
GR-121	41 41 35	118 42 10	70.0	15.6	1.30	.76	.63	2.50	4.90	2.9
GR-122	40 40 35	118 43 00	71.8	14.6	.81	.48	.34	1.80	4.90	3.0
GR-123	40 15 55	114 17 10	70.1	14.0	1.10	1.20	1.10	2.30	3.70	4.0
GR-124	40 15 15	114 18 00	69.7	14.3	1.50	1.10	1.20	2.60	3.70	3.7
GR-125	40 20 30	114 33 30	60.1	17.8	2.50	1.50	1.40	2.80	4.50	6.3
GR-126	40 21 40	114 34 25	66.2	14.6	1.70	1.60	1.40	3.70	3.60	4.1
GR-129	36 20 15	117 28 30	53.4	17.9	3.90	3.90	3.30	7.20	3.70	3.0
GR-130	36 20 25	117 28 50	55.7	16.7	3.30	4.00	3.50	6.40	3.50	3.2
GR-131	36 19 25	117 41 10	72.1	13.9	1.40	.24	.31	1.20	3.60	5.1
GR-132	36 19 00	117 40 35	72.4	13.1	1.10	.64	.52	1.60	3.70	4.6
GR-133	36 02 20	116 40 35	67.5	16.0	1.70	1.40	1.20	2.70	4.80	3.7
GR-134	36 02 40	116 40 25	69.4	14.2	1.20	1.30	.71	1.80	3.60	5.0
GR-135	36 06 55	116 32 30	69.1	14.6	1.60	.72	.82	1.40	4.90	4.0
GR-136	36 06 10	116 33 30	69.8	14.6	1.30	.56	.71	1.40	5.10	3.8
GR-137	35 47 25	116 20 00	72.2	14.3	1.50	.36	.42	.75	4.60	5.1
GR-138	35 47 15	116 19 30	71.0	13.7	1.30	.52	.43	.79	4.40	5.1
GR-139	35 27 45	114 54 50	65.3	14.9	2.20	1.10	1.70	2.70	4.20	4.4
GR-140	35 27 20	114 54 50	64.2	15.0	2.60	1.40	2.20	3.50	4.10	4.0
GR-141	35 43 00	114 55 25	73.7	13.8	.91	.24	.14	.56	4.60	5.0
GR-142	35 42 40	114 55 20	74.1	13.4	.81	.16	.17	.48	4.40	4.9
GR-143	35 18 00	115 32 20	69.8	15.3	1.60	.72	.74	2.20	4.10	4.0
GR-144	35 18 50	115 32 50	69.4	16.1	.75	1.00	.69	2.50	5.10	3.2
GR-145	35 24 30	115 48 10	72.9	13.5	.71	.44	.40	1.00	4.00	4.4
GR-146	35 24 40	115 47 20	73.3	13.4	.83	.48	.42	1.20	3.80	4.3
GR-147	35 11 10	116 08 40	76.7	12.2	1.10	.16	.11	.37	4.30	4.4
GR-148	35 11 45	116 09 00	76.5	11.8	.85	.16	.03	.16	4.40	4.5
GR-149	35 32 30	117 41 35	68.7	14.8	1.80	1.40	1.10	2.60	3.00	4.6
GR-150	35 31 15	117 40 20	69.1	14.0	1.70	1.40	1.00	2.40	3.10	5.0
GR-151	35 22 20	117 54 35	65.6	16.3	2.10	1.70	1.40	5.00	4.10	1.8
GR-152	35 22 05	117 55 20	57.9	18.0	2.60	3.40	3.50	8.10	3.60	1.3

**Table 1.** Rapid-rock analyses (in percent) of granitoid rocks—Continued

Sample	H <sub>2</sub> O <sup>+</sup>	H <sub>2</sub> O <sup>-</sup>	TiO <sub>2</sub>	P <sub>2</sub> O <sub>5</sub>	MnO	CO <sub>2</sub>	Cl	F	Total
GR-101	0.91	0.14	0.62	0.33	0.06	0.23	0.01	0.06	99.56
GR-102	.76	.19	.67	.32	.09	.08	.02	.05	98.88
GR-103	1.10	.39	.27	.12	.01	.34	.02	.04	99.52
GR-104	.63	.12	.22	.14	.01	.15	.03	.03	99.32
GR-105	.59	.32	.98	.32	.09	.08	.02	.09	100.43
GR-106	.72	.28	1.00	.19	.05	.17	.02	.09	99.85
GR-107	.95	.21	.44	.30	.10	.55	.01	.04	99.10
GR-108	.91	.11	.40	.22	.14	.10	<.01	.03	98.92
GR-109	.22	.12	.21	.12	.01	.03	<.01	.05	99.03
GR-110	.37	.30	.19	.14	<.01	.08	<.01	.03	98.74
GR-111	.53	.15	.26	.09	.07	.02	<.01	.07	99.54
GR-112	.45	.10	.25	.10	.04	.01	.01	.08	99.84
GR-113	1.10	.14	.47	.23	.06	.28	.01	.03	99.42
GR-114	.98	.19	.44	.23	.06	.18	.01	.03	100.05
GR-115	.34	.26	.37	.16	.03	.08	<.01	.03	99.42
GR-116	.50	.31	.53	.20	.09	.09	.03	.03	99.08
GR-117	.33	.15	.22	.17	.05	.04	<.01	.03	99.55
GR-118	.63	.22	.33	.23	.08	.05	<.01	.07	98.75
GR-119	.84	.76	.52	.19	.08	.13	.01	.07	99.70
GR-120	.82	.68	.55	.17	.09	.01	.02	.07	101.41
GR-121	.43	.28	.29	.11	.05	.01	<.01	.03	99.80
GR-122	.29	.19	.19	.15	.01	.05	<.01	.02	98.64
GR-123	.89	.03	.41	.14	.03	.31	.01	.04	99.36
GR-124	.46	.32	.42	.18	.05	.06	.01	.07	99.37
GR-125	.49	.27	.82	.28	.06	.02	.04	.16	99.04
GR-126	.55	.20	.53	.32	<.01	.88	.02	.07	99.48
GR-129	.78	.19	1.00	.52	.12	.25	.02	.12	99.30
GR-130	1.20	.15	.85	.45	.14	.10	.04	.07	99.30
GR-131	.45	.16	.20	.13	.07	.10	.04	.02	99.02
GR-132	.66	.06	.20	.12	.06	.14	.02	.04	98.96
GR-133	.56	.08	.54	.20	.02	.08	.05	.04	100.57
GR-134	.48	.09	.40	.14	.05	.06	.02	.03	98.48
GR-135	.40	.32	.37	.13	.06	.15	.04	.02	98.63
GR-136	.40	.31	.34	.14	.05	.13	.04	.03	98.71
GR-137	.30	.11	.38	.09	.03	.04	.04	.09	100.31
GR-138	.43	.18	.34	.13	.11	.08	.04	.10	98.65
GR-139	1.10	.22	.66	.23	.04	.11	.02	.08	98.96
GR-140	.87	.44	.75	.29	.06	.28	.01	.09	99.79
GR-141	.22	.04	.17	.02	.07	.02	.02	<.02	99.52
GR-142	.30	.14	.12	.03	.08	.10	.01	.07	99.27
GR-143	.20	.25	.39	.14	.04	<.01	.01	.05	99.55
GR-144	.48	.20	.28	.11	.06	<.01	<.01	.06	99.94
GR-145	.68	.05	.21	.07	.06	.16	<.01	.03	98.62
GR-146	.42	.06	.19	.07	.01	.06	<.01	.02	98.57
GR-147	.27	.03	.10	.01	.07	.04	<.01	.07	99.94
GR-148	.06	.12	.10	.03	.05	.03	<.01	.12	98.92
GR-149	.84	.17	.42	.14	.06	.08	.02	.06	99.79
GR-150	.70	.11	.37	.17	.03	.07	.02	.06	99.23
GR-151	.63	.10	.39	.15	.12	.02	<.01	.03	99.45
GR-152	.83	.24	.57	.18	.12	.03	.01	.04	100.42

**Table 1. Rapid-rock analyses (in percent) of granitoid rocks—Continued**

Sample	Latitude deg min s	Longitude deg min s	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	FeO	MgO	CaO	Na <sub>2</sub> O	K <sub>2</sub> O
GR-153	34 27 30	117 03 35	61.4	19.0	1.90	1.30	0.63	4.20	4.70	4.9
GR-154	34 28 05	117 04 55	60.0	19.2	2.40	1.40	.55	3.90	5.00	5.2
GR-155	34 32 35	117 16 35	70.7	14.6	1.40	.92	.73	2.40	3.80	3.8
GR-156	34 32 45	117 17 15	74.1	13.5	.74	.20	.20	1.50	3.50	4.7
GR-157	34 33 25	116 54 30	74.2	13.7	.84	.56	.33	1.70	3.40	4.6
GR-158	34 33 05	116 54 25	73.5	14.1	.78	.80	.33	1.70	3.40	4.6
GR-159	34 34 30	116 49 00	68.8	14.7	1.60	1.40	1.30	2.90	3.70	3.8
GR-160	34 34 25	116 49 35	68.5	15.1	1.80	1.40	1.30	3.10	3.70	3.7
GR-161	33 44 20	113 40 15	66.7	15.5	1.70	1.90	1.90	3.50	3.70	3.5
GR-162	33 44 40	113 40 10	66.4	15.6	1.80	2.10	2.00	3.90	3.80	3.3
GR-163	33 44 35	114 30 45	74.0	12.5	1.50	.48	.37	.27	2.70	5.8
GR-164	33 44 30	114 31 10	74.5	12.3	2.10	.28	.29	.43	2.70	5.7
GR-165	33 39 40	114 19 25	68.0	15.1	2.00	1.40	1.20	3.10	3.30	4.4
GR-166	33 39 00	114 22 45	68.0	14.5	2.00	1.10	1.00	2.70	3.40	4.5
GR-167	33 27 20	115 08 00	62.0	16.1	2.00	2.90	2.30	4.70	3.70	3.0
GR-168	33 28 35	115 07 15	67.6	15.2	1.50	1.80	1.60	3.20	3.80	3.8
GR-169	33 42 40	115 48 20	64.6	16.0	2.10	2.40	1.30	2.40	4.50	5.2
GR-170	33 43 40	115 49 25	73.7	13.4	.58	.36	.31	.85	3.90	4.5
GR-171	34 03 55	114 39 15	65.0	15.6	1.90	2.10	1.30	4.50	3.50	2.9
GR-172	34 04 45	114 40 00	66.1	15.8	1.80	2.20	1.50	4.40	3.50	3.0
GR-173	34 04 50	115 11 05	73.2	14.5	.73	.56	.27	1.80	4.10	4.0
GR-174	34 02 25	115 12 55	71.7	14.4	1.30	.68	.33	1.90	4.30	3.5
GR-175	34 05 40	115 24 35	74.3	14.3	.52	.28	.20	1.60	4.00	4.4
GR-176	34 06 30	115 27 35	73.4	14.0	.92	.28	.14	1.50	4.00	4.0
GR-177	34 40 20	114 41 40	64.4	13.5	2.50	3.90	.61	3.50	2.70	4.1
GR-178	34 40 15	114 38 55	67.6	13.1	2.20	3.20	.76	2.80	2.80	5.4
GR-179	35 25 20	113 39 00	70.6	14.9	.99	1.00	.73	2.30	4.90	3.2
GR-180	35 24 05	113 39 20	71.6	15.6	1.10	.44	.42	1.80	5.10	3.2
GR-181	35 06 00	113 52 35	67.4	15.0	1.80	1.10	.66	1.50	3.10	6.9
GR-182	35 07 15	113 54 45	72.4	12.6	1.70	.60	.35	1.10	3.10	6.2
GR-183	34 31 25	113 07 15	72.6	13.7	1.40	.64	.42	1.60	3.00	4.6
GR-184	34 31 05	113 05 40	73.5	13.2	1.70	.12	.22	.80	3.00	4.9
GR-185	34 28 15	113 19 05	68.7	13.8	2.20	1.90	.91	2.40	3.10	4.8
GR-186	34 28 55	113 22 00	72.1	13.4	1.10	1.00	.31	1.10	3.20	5.4
GR-187	36 16 25	114 11 35	68.2	13.1	2.50	1.80	.86	1.90	2.80	5.6
GR-188	36 15 50	114 09 15	66.5	14.1	2.30	2.90	1.10	2.50	3.20	4.0
GR-189	36 13 50	114 15 25	70.6	12.4	3.00	1.60	.32	1.60	2.30	5.1
GR-190	36 12 00	114 15 10	70.1	13.3	1.70	2.30	.55	2.20	2.80	5.1
GR-191	31 45 20	109 52 25	76.1	12.8	.49	.04	.02	.25	3.70	4.6
GR-192	31 45 00	109 51 55	72.8	13.3	1.30	.44	.50	.15	4.20	4.3
GR-193	31 55 15	109 57 55	75.4	12.9	.78	.48	.08	.43	3.90	5.0
GR-194	31 55 50	109 57 55	74.4	12.9	1.10	.40	.14	.85	3.90	5.0
GR-195	31 44 40	110 53 15	65.0	15.8	2.20	2.10	2.00	4.00	3.90	3.8
GR-196	31 44 00	110 52 55	75.6	12.7	1.00	.60	.58	1.50	3.20	4.6
GR-197	32 10 05	109 35 15	68.2	14.3	1.80	2.70	.98	2.80	3.00	4.9
GR-198	32 10 00	109 34 50	65.8	13.3	2.20	3.10	.99	2.90	3.00	4.4
GR-199	32 14 00	109 29 45	71.6	14.8	.85	1.00	.61	2.30	4.10	3.4
GR-200	32 14 30	109 30 30	70.9	14.6	.98	.88	.51	1.90	4.10	3.9
GR-201	34 35 05	112 34 00	68.1	13.9	2.10	1.80	1.00	2.20	3.20	4.2
GR-202	34 34 55	112 33 20	68.6	13.6	1.90	1.80	1.10	2.10	3.30	4.7



Table 1. Rapid-rock analyses (in percent) of granitoid rocks—Continued

Sample	H <sub>2</sub> O <sup>+</sup>	H <sub>2</sub> O <sup>-</sup>	TiO <sub>2</sub>	P <sub>2</sub> O <sub>5</sub>	MnO	CO <sub>2</sub>	Cl	F	Total
GR-153	0.39	0.14	0.42	0.12	0.10	0.08	<0.01	0.07	99.36
GR-154	.31	.10	.46	.15	.10	.04	<.01	.04	98.86
GR-155	.39	.09	.45	.23	.05	.01	<.01	.06	99.64
GR-156	.24	.13	.19	.10	.01	<.01	<.01	.02	99.14
GR-157	.48	.09	.18	.07	.03	.02	<.01	.05	100.26
GR-158	.38	.03	.19	.07	.05	.01	<.01	.03	99.98
GR-159	1.20	.26	.44	.15	.03	.11	<.01	.05	100.45
GR-160	.73	.19	.42	.15	.05	.08	<.01	.05	100.28
GR-161	.97	.32	.44	.15	.07	.08	.01	.04	100.48
GR-162	.54	.14	.51	.16	.07	.08	.01	.04	100.45
GR-163	.44	.16	.21	.09	.05	.11	<.01	.11	98.80
GR-164	.42	.16	.18	.08	.04	.13	<.01	.11	99.43
GR-165	.47	.11	.45	.15	.05	.02	.02	.05	99.82
GR-166	.92	.03	.41	.13	.06	.02	.02	.08	98.87
GR-167	.62	.28	.59	.22	.08	.06	.01	.05	98.61
GR-168	.74	.06	.51	.14	.07	.03	<.01	.05	100.11
GR-169	.61	.08	.97	.30	.02	.01	.02	.07	100.58
GR-170	.33	.24	.17	.09	.06	.07	<.01	.02	98.59
GR-171	.78	.03	.46	.29	.10	.10	<.01	.03	98.60
GR-172	1.20	.20	.47	.21	.11	.03	<.01	.03	100.56
GR-173	.55	.14	.18	.07	.02	.02	<.01	.04	100.19
GR-174	.28	.12	.24	.11	.05	.15	<.01	.03	99.10
GR-175	.64	.07	.11	.06	.02	.02	<.01	.02	100.55
GR-176	.18	.23	.10	.08	.04	.05	<.01	.02	98.95
GR-177	1.00	.26	.95	.34	.09	.65	<.01	.04	98.55
GR-178	.89	.18	.73	.17	.10	.25	.02	.21	100.41
GR-179	.35	.20	.35	.08	.06	.06	.02	.07	99.81
GR-180	.51	.15	.18	.07	.02	.08	<.01	.04	100.32
GR-181	.55	.03	.59	.13	.06	.02	<.01	.12	98.97
GR-182	.21	.03	.40	.07	.05	.01	.02	.11	98.95
GR-183	.59	.05	.24	.14	<.01	.13	<.01	.05	99.17
GR-184	.53	.13	.18	.20	<.01	.05	<.01	.03	98.57
GR-185	.65	.05	.69	.30	.09	.04	.01	.18	99.82
GR-186	.39	.07	.23	.11	.01	.05	.01	.16	98.64
GR-187	.64	.11	.77	.24	.08	.01	.02	.35	98.98
GR-188	.63	.14	1.00	.32	.09	.02	.02	.23	99.05
GR-189	.97	.05	.68	.14	.06	<.01	<.01	.03	98.86
GR-190	.61	.16	.61	.16	.06	.02	.02	.22	99.91
GR-191	.46	.08	.08	.09	<.01	.06	<.01	<.02	98.80
GR-192	.75	.23	.26	.12	.04	.06	<.01	<.02	98.47
GR-193	.25	.13	.20	.07	.05	.05	<.01	.07	99.80
GR-194	.19	.04	.19	.08	.04	.03	<.01	.12	99.39
GR-195	.70	.03	.64	.18	.05	.01	.02	.04	100.47
GR-196	.39	.11	.23	.07	.01	.02	<.01	<.02	100.63
GR-197	.33	.16	.91	.30	.10	.02	.01	.13	100.64
GR-198	.93	.06	.99	.37	.11	.45	<.01	.15	98.76
GR-199	.51	.08	.24	.11	.05	.02	<.01	.05	99.73
GR-200	.28	.05	.22	.20	.07	.04	<.01	.04	98.68
GR-201	.59	.24	.68	.26	.10	.17	.01	.19	98.74
GR-202	.35	.13	.74	.23	.07	.03	.01	.21	98.87

**Table 1. Rapid-rock analyses (in percent) of granitoid rocks—Continued**

Sample	Latitude deg min s	Longitude deg min s	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	FeO	MgO	CaO	Na <sub>2</sub> O	K <sub>2</sub> O
GR-203	34 34 20	112 30 00	68.7	15.6	1.20	1.40	0.92	2.40	5.10	2.3
GR-204	34 34 00	112 26 25	69.1	15.4	1.70	1.60	1.10	2.80	4.70	2.6
GR-205	37 56 25	115 36 00	72.7	13.4	1.30	.24	.21	.97	3.60	4.9
GR-206	37 56 15	115 36 15	75.1	13.2	.42	.32	.05	.26	3.40	5.3
GR-207	33 39 00	110 34 45	71.6	12.7	1.40	1.20	.79	1.30	2.80	5.2
GR-208	33 39 00	110 34 15	71.7	13.3	1.80	1.20	.85	1.50	2.90	5.2
GR-209	33 21 50	110 58 10	70.0	15.3	1.10	.60	.39	2.20	4.60	3.6
GR-210	33 22 10	110 56 45	71.0	15.5	1.20	.56	.45	2.10	4.60	3.3
GR-211	33 02 20	111 43 45	72.2	15.1	.86	.80	.58	2.80	4.30	2.8
GR-212	30 02 20	111 43 25	72.4	15.1	1.10	.72	.62	2.50	4.00	3.5
GR-213	33 01 50	111 46 20	69.3	15.5	1.90	1.20	1.10	3.30	3.60	3.2
GR-214	33 01 35	111 46 35	66.5	15.9	2.10	1.60	1.30	3.90	3.70	3.0
GR-215	32 25 55	111 32 55	72.8	13.7	.78	.60	.47	.96	3.70	4.5
GR-216	32 25 55	111 33 35	74.0	13.8	.97	.60	.55	1.70	3.70	4.7
GR-217	32 17 30	111 09 45	56.9	16.2	3.50	3.60	3.60	5.80	3.80	3.0
GR-218	32 17 00	111 10 20	59.3	15.9	2.80	3.20	3.20	5.20	3.90	3.3
GR-219	31 59 10	111 36 00	63.2	16.7	1.80	2.60	1.60	4.10	4.20	3.3
GR-220	31 58 15	111 37 10	76.2	12.5	.65	.56	.26	1.40	2.80	5.1
GR-221	32 50 15	112 08 50	74.1	12.6	.69	.64	.24	1.10	3.00	5.2
GR-222	32 50 15	112 09 20	74.2	12.5	.87	.64	.32	1.20	3.10	4.8
GR-223	33 18 00	112 37 45	74.1	13.5	.63	.64	.40	1.20	3.50	4.5
GR-224	33 18 45	112 37 15	70.2	14.5	1.10	1.10	.59	1.50	3.90	4.7
GR-225	33 11 50	112 38 55	70.3	12.9	2.10	1.20	.65	1.90	3.20	5.1
GR-226	33 11 35	112 38 55	71.2	13.4	1.40	1.20	.67	1.60	3.30	4.7
GR-227	34 15 00	111 16 15	75.4	11.9	.91	.24	.14	.45	3.10	5.4
GR-228	34 15 50	111 14 45	75.1	12.5	1.10	.24	.10	.27	3.20	5.3
GR-229	33 50 40	113 40 55	75.5	13.7	.57	.08	.05	.85	4.70	4.0
GR-230	33 51 20	113 41 35	75.3	13.5	.59	.08	<.01	.62	4.70	4.1

**Table 1.** Rapid-rock analyses (in percent) of granitoid rocks—Continued

Sample	H <sub>2</sub> O <sup>+</sup>	H <sub>2</sub> O <sup>-</sup>	TiO <sub>2</sub>	P <sub>2</sub> O <sub>5</sub>	MnO	CO <sub>2</sub>	Cl	F	Total
GR-203	0.59	0.14	0.37	0.11	0.07	0.08	<0.01	0.06	99.05
GR-204	.70	.16	.35	.12	.02	.04	<.01	.05	100.45
GR-205	.44	.36	.23	.09	.03	.08	.01	.04	98.60
GR-206	.78	.19	.15	.06	.01	.02	<.01	<.02	99.28
GR-207	.77	.24	.44	.15	.06	.06	.04	.09	98.84
GR-208	.85	.13	.49	.12	.10	.04	.04	.12	100.34
GR-209	.24	.10	.22	.16	.05	.09	<.01	.05	98.71
GR-210	.41	.19	.23	.12	.02	.08	<.01	.06	99.83
GR-211	.47	.07	.19	.08	.06	.02	<.01	.03	100.37
GR-212	.25	.19	.23	.09	.05	.01	<.01	.03	100.80
GR-213	.35	.19	.38	.13	.11	.04	<.01	.03	100.34
GR-214	.54	.30	.41	.16	.09	.02	<.01	.04	99.57
GR-215	.79	.12	.19	.08	.04	.30	.01	.03	99.07
GR-216	.65	.16	.20	.09	.05	.16	<.01	.04	101.38
GR-217	.85	.24	1.00	.31	.09	.02	.04	.07	99.02
GR-218	.68	.06	.86	.30	.03	.02	.03	.09	98.87
GR-219	.55	.06	.62	.21	.13	.10	.01	.07	99.25
GR-220	.49	.11	.16	.05	<.01	.06	.02	.04	100.41
GR-221	.57	.04	.28	.16	.07	.01	<.01	.07	98.78
GR-222	.44	.03	.25	.12	.09	.01	.01	.08	98.66
GR-223	.24	.17	.24	.06	.04	.01	<.01	.07	99.31
GR-224	.30	.07	.42	.17	.08	.03	<.01	.06	98.73
GR-225	.48	.09	.49	.18	.07	.01	<.01	.13	98.81
GR-226	.58	.13	.51	.15	.11	.04	<.01	.12	99.12
GR-227	.60	.20	.13	.05	.01	.01	.01	<.02	98.56
GR-228	.58	.21	.14	.07	.02	.05	.01	.02	98.91
GR-229	.21	.19	.02	.02	.04	.01	<.01	<.02	99.96
GR-230	.14	.06	.05	.05	.02	.05	<.01	<.02	99.29

**Table 2.** Rapid-rock analyses (in percent) of replicate samples of granitoid rocks from the Basin and Range province

Sample	Latitude deg min s	Longitude deg min s	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	FeO	MgO	CaO	Na <sub>2</sub> O	K <sub>2</sub> O
GR- 6a	38 20 20	113 04 20	67.6	14.5	1.90	1.70	1.50	2.80	3.9	3.8
GR- 10a	37 33 00	113 25 00	62.6	14.7	4.30	.52	2.60	4.40	3.1	3.6
GR- 11a	37 46 10	113 10 10	63.2	15.1	4.00	1.00	2.20	3.40	3.3	3.7
GR- 18a	39 54 30	112 07 45	61.0	15.3	3.70	2.40	2.50	4.20	3.7	3.7
GR- 21a	41 31 55	113 45 35	71.9	14.3	.98	1.50	.63	2.20	4.1	3.5
GR- 29a	41 49 16	115 55 37	69.0	13.7	1.80	1.80	1.40	3.10	3.6	3.7
GR- 32a	41 40 57	116 04 39	61.5	15.9	1.10	4.10	3.40	5.60	3.9	2.0
GR- 43a	39 39 44	118 12 40	65.1	16.2	2.00	2.20	2.10	4.10	3.9	3.7
GR- 46a	39 40 10	114 51 50	74.6	13.7	.57	.72	.28	1.30	3.6	4.6
GR- 55a	38 26 45	118 45 25	74.0	14.2	.91	.64	.45	1.30	4.4	3.7
GR- 56a	38 25 15	118 46 15	66.4	15.7	1.80	1.60	1.20	3.70	3.7	3.5
GR- 72a	32 09 30	112 38 25	66.9	15.7	2.10	1.40	1.60	3.20	4.0	3.6
GR- 75a	40 40 35	119 23 05	66.8	15.8	1.80	1.90	1.60	3.90	4.5	2.6
GR- 79a	41 29 30	117 38 35	65.9	15.7	1.30	1.60	1.70	3.50	4.7	2.4
GR- 83a	38 20 55	115 34 40	71.9	14.6	.82	.92	.36	2.20	3.7	3.2
GR- 85a	40 19 34	115 30 30	68.0	14.6	1.10	2.10	1.00	2.90	3.5	3.7
GR- 87a	41 55 45	118 12 00	64.7	16.1	2.30	1.50	1.50	4.00	4.5	3.0
GR- 95a	39 55 12	116 33 20	67.3	14.8	1.50	2.00	1.30	3.00	3.3	4.1
GR- 96a	39 54 50	116 34 00	65.8	15.0	2.30	1.80	1.60	2.90	3.5	4.1
GR-102a	40 49 20	117 26 40	64.7	15.9	1.70	2.10	2.10	4.00	3.7	3.0
GR-103a	40 21 50	116 21 05	70.1	13.8	1.20	1.10	.91	1.30	3.6	4.8
GR-105a	40 19 50	116 24 10	63.4	15.3	.80	1.70	2.90	5.00	4.0	3.8
GR-107a	38 09 05	117 12 10	62.6	16.1	2.10	2.20	1.60	4.70	3.4	3.8
GR-108a	38 09 05	117 11 50	63.7	16.3	2.70	1.80	1.60	5.00	3.2	3.8
GR-111a	38 34 24	116 53 05	71.8	15.0	.57	1.00	.79	1.50	4.5	3.8
GR-115a	39 43 20	119 42 35	69.4	15.5	1.20	1.10	.82	2.40	4.1	3.4
GR-124a	40 15 15	114 18 00	68.7	14.4	1.80	1.20	1.20	2.80	3.6	3.8
GR-125a	40 20 30	114 33 30	60.8	16.9	2.60	1.50	1.40	2.90	4.6	6.1
GR-129a	36 20 15	117 28 30	53.7	18.5	4.00	3.90	3.50	7.70	3.9	3.1
GR-133a	36 02 20	116 40 35	67.0	16.0	1.50	1.30	1.20	3.00	4.8	3.7
GR-144a	35 18 50	115 32 50	69.7	16.4	1.10	.80	.78	2.60	4.9	3.3
GR-156a	34 32 45	117 17 15	73.7	13.6	.88	.20	.22	1.30	3.6	4.6
GR-166a	33 39 00	114 22 45	67.9	14.8	2.20	1.00	1.00	2.80	3.6	4.5
GR-167a	33 27 20	115 08 00	62.0	15.8	3.20	2.20	2.40	4.60	3.6	3.0
GR-178a	34 40 15	114 38 55	66.8	13.5	2.10	3.20	.54	2.70	2.9	5.3
GR-185a	34 28 15	113 19 05	69.1	14.1	2.20	2.00	1.10	2.40	3.4	4.9
GR-188a	36 15 50	114 09 15	66.9	14.0	4.20	1.40	1.10	2.80	3.1	4.0
GR-195a	31 44 40	110 53 15	65.4	15.8	2.40	2.00	2.00	3.60	3.9	3.6
GR-196a	31 44 00	110 52 55	75.0	11.9	1.10	.60	.61	1.30	3.0	4.7
GR-203a	34 34 20	112 30 00	69.8	15.6	1.20	1.50	.90	2.70	5.0	2.5
GR-205a	37 56 25	115 36 00	72.8	13.3	1.30	.20	.22	1.00	3.6	5.0
GR-206a	37 56 15	115 36 15	75.3	12.5	.87	.04	.11	.25	3.4	5.4
GR-208a	33 39 00	110 34 15	70.9	13.1	1.80	1.20	.77	1.60	2.9	4.9
GR-212a	33 02 20	111 43 25	71.5	14.9	.82	.76	.49	2.20	4.2	3.4
GR-215a	32 25 55	111 32 55	73.3	13.0	.74	.64	.41	1.10	3.6	4.8
GR-217a	32 17 30	111 09 45	58.1	16.2	2.90	3.70	3.50	5.90	3.8	2.8
GR-218a	32 17 00	111 10 20	60.5	16.0	3.00	3.30	3.20	5.10	3.7	3.4
GR-221a	32 50 15	112 08 50	74.1	12.8	.63	.64	.27	.95	3.1	5.0
GR-224a	33 18 45	112 37 15	71.4	14.3	.92	1.10	.62	1.70	3.8	4.7
GR-225a	33 11 50	112 38 55	70.2	13.3	1.70	1.40	.62	2.10	3.4	5.0

**Table 2.** Rapid-rock analyses (in percent) of replicate samples of granitoid rocks from the Basin and Range province—Continued

Sample	H <sub>2</sub> O <sup>+</sup>	H <sub>2</sub> O <sup>-</sup>	TiO <sub>2</sub>	P <sub>2</sub> O <sub>5</sub>	MnO	CO <sub>2</sub>	Cl	F	Total
GR- 6a	0.62	0.24	0.43	0.17	0.05	0.13	0.03	0.08	99.45
GR- 10a	1.60	1.20	.65	.27	.07	.08	<.01	.03	99.73
GR- 11a	1.00	1.30	.65	.26	.07	.02	.01	.07	99.28
GR- 18a	1.30	.25	.85	.34	.08	.01	.03	.10	99.46
GR- 21a	.53	.12	.30	.11	.05	.02	<.01	.05	100.30
GR- 29a	.73	.10	.38	.20	.10	.05	<.01	.04	99.71
GR- 32a	.72	.15	.86	.24	.08	.08	.04	.05	99.72
GR- 43a	.77	.07	.62	.22	.06	.01	.03	.05	101.13
GR- 46a	.70	.10	.19	.06	.04	.02	.01	.10	100.59
GR- 55a	.45	.09	.18	.08	.09	.02	<.01	.02	100.54
GR- 56a	.62	.13	.42	.23	.05	.23	.01	.03	99.32
GR- 72a	.56	.21	.54	.19	.04	.08	<.01	.05	100.18
GR- 75a	.54	.05	.54	.16	.05	.04	<.01	.03	100.32
GR- 79a	1.10	.21	.46	.17	.03	.06	<.01	.05	98.89
GR- 83a	.77	.03	.22	.18	.03	.02	<.01	.04	99.00
GR- 85a	.82	.09	.47	.16	.03	.02	<.01	.06	98.56
GR- 87a	.45	.20	.60	.24	.04	.09	<.01	.03	99.26
GR- 95a	1.20	.31	.53	.21	.05	.05	.02	.07	99.74
GR- 96a	.35	.15	.61	.20	.08	.04	.03	.07	98.53
GR-102a	.67	.29	.65	.28	.06	.08	.02	.07	99.32
GR-103a	1.00	.28	.28	.11	<.01	.49	.02	.02	99.02
GR-105a	.55	.19	1.00	.28	.06	.03	.02	.08	99.11
GR-107a	1.20	.05	.43	.21	.08	.20	.01	.04	98.72
GR-108a	.95	.13	.43	.23	.12	.11	<.01	.04	100.12
GR-111a	.43	.06	.29	.10	.05	.01	.02	.07	99.99
GR-115a	.62	.15	.34	.11	.08	.04	<.01	.03	99.30
GR-124a	.52	.28	.46	.20	.03	.12	.02	.05	99.18
GR-125a	.45	.32	.81	.29	.06	.06	.04	.06	98.89
GR-129a	1.20	.13	1.10	.52	.05	.05	.03	.12	101.50
GR-133a	.48	.09	.53	.19	.06	.08	.04	.04	100.01
GR-144a	.66	.14	.26	.08	.02	.02	.01	.05	100.82
GR-156a	.25	.26	.19	.08	<.01	.03	<.01	.04	98.96
GR-166a	<.01	.06	.43	.20	.06	.03	.02	.08	98.69
GR-167a	.64	.17	.62	.25	.10	.02	.02	.05	98.67
GR-178a	.81	.23	.67	.20	.05	.60	.02	.28	99.90
GR-185a	.60	.06	.71	.27	.08	.01	<.01	.16	101.10
GR-188a	.50	.27	1.00	.32	.06	.01	.02	.23	99.91
GR-195a	.58	.12	.61	.16	.09	<.01	.02	.04	100.33
GR-196a	.32	.09	.20	.08	.05	.02	.01	.02	99.00
GR-203a	.57	.12	.38	.15	.01	.08	<.01	.06	100.58
GR-205a	.47	.21	.25	.12	.02	.01	.01	.03	98.54
GR-206a	.68	.19	.13	.05	.01	.03	<.01	.03	99.00
GR-208a	.80	.17	.55	.16	.08	.06	.04	.12	99.15
GR-212a	.31	.10	.18	.13	.01	.04	<.01	.03	99.08
GR-215a	.66	.08	.22	.12	.04	.46	.01	.03	99.21
GR-217a	.87	.13	.96	.30	.07	.04	.04	.08	99.39
GR-218a	.67	.15	.94	.31	.04	.02	.03	.08	100.44
GR-221a	.72	.03	.25	.08	.03	<.01	<.01	.08	98.69
GR-224a	.35	.04	.39	.10	.07	.01	<.01	.08	99.59
GR-225a	.44	<.01	.56	.24	.05	.03	<.01	.14	99.19



**Table 3. Rapid-rock norms for granitoid rocks in table 1**

[Norms could not be calculated for samples GR-148 and GR-192. Sample GR- 148 does not contain enough calcium to make the necessary fluorite, and sample GR-192 does not contain enough calcium to make the necessary apatite]

Sample	Q	C	OR	AB	AN	HL	WO	EN	FS	MT
GR- 1	6.41	0.0	28.03	32.30	11.81	0.03	3.87	7.79	0.66	5.41
GR- 2	7.83	.0	30.65	35.92	9.47	.05	1.88	5.83	.0	4.23
GR- 3	31.92	1.22	21.72	34.49	5.97	.02	.0	1.58	.0	1.43
GR- 4	30.62	.42	22.13	34.18	8.34	.02	.0	1.44	.13	1.45
GR- 5	18.53	.0	19.64	30.53	14.93	.03	1.63	7.52	1.36	3.94
GR- 6	23.32	.0	23.94	31.50	11.68	.05	.14	4.04	1.24	2.50
GR- 7	13.74	.0	20.52	30.88	15.16	.05	3.06	7.63	1.16	5.33
GR- 8	16.04	.0	23.99	30.77	14.06	.03	1.28	6.32	1.52	3.83
GR- 9	20.05	.0	21.69	28.33	15.87	.03	.40	6.60	.37	4.14
GR- 10	19.47	.0	22.39	27.66	16.06	.02	1.18	6.63	.0	.0
GR- 11	19.49	.0	23.31	28.91	15.50	.02	.52	5.43	.0	1.13
GR- 12	17.72	.0	22.13	33.29	12.72	.03	1.76	5.96	.0	1.60
GR- 13	8.10	.0	24.21	30.26	15.73	.02	2.26	8.42	2.67	4.31
GR- 14	7.92	.0	27.68	29.85	13.39	.07	2.87	7.61	3.70	3.40
GR- 15	26.92	.56	25.88	32.67	9.06	.02	.0	1.45	.36	1.62
GR- 16	34.82	.66	23.76	29.70	7.60	.02	.0	.95	.04	1.75
GR- 17	14.83	.0	22.41	31.93	14.09	.03	1.77	6.38	.0	5.43
GR- 18	15.23	.0	22.94	31.75	14.33	.05	1.07	6.36	.33	5.18
GR- 19	30.42	.58	23.19	27.17	12.51	.02	.0	2.08	1.05	1.75
GR- 20	29.71	.0	23.99	26.55	12.70	.02	.18	2.10	1.35	2.06
GR- 21	29.55	.74	21.10	33.60	9.15	.02	.0	1.55	1.41	1.78
GR- 22	33.13	.14	21.70	31.86	8.90	.02	.0	1.37	.0	1.76
GR- 23	26.61	.08	24.00	33.44	10.78	.02	.0	2.05	.81	1.31
GR- 24	34.25	.31	20.48	31.84	9.03	.02	.0	1.75	.36	1.21
GR- 25	33.62	1.76	25.25	34.36	3.50	.02	.0	.30	.0	.41
GR- 26	30.72	1.83	25.10	37.58	3.38	.02	.0	.13	.0	.34
GR- 27	25.93	.35	20.34	31.62	14.65	.02	.0	2.42	.72	2.50
GR- 28	27.90	.01	19.58	31.36	15.20	.02	.0	2.18	.62	2.04
GR- 29	26.56	.06	21.36	27.96	15.14	.02	.0	3.25	1.47	2.77
GR- 30	26.12	.40	21.64	29.12	14.02	.03	.0	3.29	1.52	2.51
GR- 31	8.92	.0	9.68	33.64	22.30	.03	1.91	12.75	7.55	.61
GR- 32	13.79	.0	12.54	33.11	20.00	.05	2.49	8.81	5.20	1.61
GR- 33	34.99	2.57	26.07	32.91	1.97	.02	.0	.26	.0	.41
GR- 34	34.56	2.86	24.87	33.00	3.00	.02	.0	.25	.38	.64
GR- 35	30.69	.62	28.12	23.91	10.51	.02	.0	1.82	1.57	1.38
GR- 36	30.68	.22	29.48	24.91	9.24	.02	.0	1.57	1.23	1.48
GR- 37	22.67	.0	22.78	30.83	13.51	.02	.61	4.30	1.85	1.91
GR- 38	20.96	.0	22.72	30.74	15.12	.02	.16	4.79	1.05	2.64
GR- 39	28.00	.80	18.50	29.84	15.74	.02	.0	2.44	.51	2.78
GR- 40	29.58	.56	23.15	29.68	12.27	.02	.0	1.65	.58	1.60
GR- 41	26.13	.0	16.72	41.83	10.27	.02	.53	1.49	.31	1.61
GR- 42	29.94	.44	21.44	38.30	7.37	.02	.0	.73	.0	1.28
GR- 43	18.94	.0	22.90	30.84	14.49	.05	1.51	4.83	.80	3.70
GR- 44	19.28	.0	25.94	28.35	12.94	.03	.88	5.08	2.84	2.66
GR- 45	35.70	.03	26.80	32.33	3.48	.02	.0	.35	.0	.81

**Table 3. Rapid-rock norms for granitoid rocks in table 1—Continued**

Sample	HM	IL	TN	RU	AP	FR	CC	MG
GR- 1	0.0	2.30	0.0	0.0	1.03	0.15	0.21	0.0
GR- 2	.54	2.13	.0	.0	.92	.18	.37	.0
GR- 3	.24	.48	.0	.0	.27	.06	.60	.0
GR- 4	.0	.50	.0	.0	.38	.05	.35	.0
GR- 5	.0	1.30	.0	.0	.41	.09	.07	.0
GR- 6	.0	.92	.0	.0	.46	.13	.12	.0
GR- 7	.0	1.47	.0	.0	.75	.11	.14	.0
GR- 8	.0	1.27	.0	.0	.63	.08	.18	.0
GR- 9	.0	1.30	.0	.0	.68	.07	.46	.0
GR- 10	4.51	1.17	.10	.0	.61	.04	.19	.0
GR- 11	3.37	1.32	.0	.0	.69	.07	.24	.0
GR- 12	2.75	1.28	.0	.0	.69	.03	.05	.0
GR- 13	.0	2.14	.0	.0	1.09	.02	.79	.0
GR- 14	.0	2.13	.0	.0	1.06	.15	.19	.0
GR- 15	.0	.56	.0	.0	.36	.08	.46	.0
GR- 16	.0	.40	.0	.0	.21	.05	.05	.0
GR- 17	.46	1.62	.0	.0	.87	.12	.07	.0
GR- 18	.0	1.57	.0	.0	.87	.14	.16	.0
GR- 19	.0	.75	.0	.0	.33	.12	.05	.0
GR- 20	.0	.85	.0	.0	.36	.10	.05	.0
GR- 21	.0	.60	.0	.0	.31	.08	.12	.0
GR- 22	.21	.50	.0	.0	.29	.08	.05	.0
GR- 23	.0	.44	.0	.0	.34	.04	.09	.0
GR- 24	.0	.37	.0	.0	.19	.03	.16	.0
GR- 25	.30	.12	.0	.0	.29	.02	.05	.0
GR- 26	.32	.08	.0	.0	.34	.04	.14	.0
GR- 27	.0	.77	.0	.0	.55	.04	.09	.0
GR- 28	.0	.67	.0	.0	.36	.05	.02	.0
GR- 29	.0	.78	.0	.0	.45	.05	.14	.0
GR- 30	.0	.75	.0	.0	.41	.03	.14	.0
GR- 31	.0	1.50	.0	.0	.51	.02	.58	.0
GR- 32	.0	1.67	.0	.0	.62	.08	.05	.0
GR- 33	.28	.06	.0	.0	.36	.06	.05	.0
GR- 34	.0	.04	.0	.0	.21	.05	.14	.0
GR- 35	.0	.85	.0	.0	.29	.10	.14	.0
GR- 36	.0	.72	.0	.0	.29	.12	.05	.0
GR- 37	.0	.94	.0	.0	.43	.07	.07	.0
GR- 38	.0	1.08	.0	.0	.60	.08	.05	.0
GR- 39	.0	.73	.0	.0	.48	.05	.11	.0
GR- 40	.0	.50	.0	.0	.33	.06	.02	.0
GR- 41	.0	.58	.0	.0	.41	.05	.07	.0
GR- 42	.02	.25	.0	.0	.14	.03	.05	.0
GR- 43	.0	1.20	.0	.0	.65	.08	.02	.0
GR- 44	.0	1.24	.0	.0	.51	.13	.12	.0
GR- 45	.17	.15	.0	.0	.10	.05	.02	.0

**Table 3. Rapid-rock norms for granitoid rocks in table 1—Continued**

Sample	Q	C	OR	AB	AN	HL	WO	EN	FS	MT
GR- 46	33.54	0.89	28.33	30.14	4.44	0.02	0.0	0.61	0.20	0.93
GR- 47	38.75	1.23	18.68	29.26	9.61	.02	.0	.74	.0	.50
GR- 48	34.21	1.37	19.42	32.00	9.66	.03	.0	1.13	.0	.93
GR- 49	38.53	.18	27.28	29.65	3.28	.02	.0	.15	.0	.26
GR- 50	32.97	.20	25.68	33.27	5.37	.02	.0	.83	.0	.81
GR- 51	23.21	.19	26.03	32.00	10.30	.02	.0	3.06	.65	2.67
GR- 52	20.27	.0	25.36	34.51	10.84	.02	.68	3.05	.36	2.96
GR- 53	33.54	1.22	32.61	30.98	.18	.03	.0	.33	.0	.19
GR- 54	29.43	.55	30.78	34.42	.81	.03	.0	.76	1.16	.92
GR- 55	30.04	.08	22.86	37.83	5.51	.02	.0	1.37	.16	1.39
GR- 56	23.93	.03	20.84	32.32	15.26	.02	.0	2.76	1.15	2.34
GR- 57	18.32	.0	20.92	32.37	13.77	.03	2.06	7.05	1.52	2.05
GR- 58	18.06	.0	20.61	31.89	14.38	.03	2.09	7.44	1.72	2.17
GR- 59	19.97	.0	14.92	34.03	18.03	.03	.36	5.78	3.69	1.14
GR- 60	21.58	.53	16.17	34.22	14.90	.02	.0	5.80	3.50	1.28
GR- 61	25.73	.0	27.72	28.32	10.35	.03	.10	3.56	2.11	.83
GR- 62	19.03	.0	26.47	25.76	13.38	.02	1.40	7.10	3.37	1.33
GR- 63	16.73	.0	15.00	33.43	19.37	.02	1.93	6.07	1.61	3.97
GR- 64	17.05	.0	14.40	33.35	20.54	.03	1.75	6.32	.40	4.56
GR- 65	15.38	.0	13.88	32.76	22.22	.02	1.66	6.36	2.52	3.26
GR- 66	16.64	.0	13.80	32.50	23.24	.03	.35	6.07	3.72	2.06
GR- 67	28.34	.71	22.76	26.51	11.05	.02	.0	2.78	1.48	3.53
GR- 68	29.52	1.03	24.42	23.80	10.85	.02	.0	3.01	.99	4.09
GR- 69	30.39	2.07	22.77	36.82	4.66	.02	.0	.76	.0	1.24
GR- 70	33.43	.96	24.63	33.47	5.60	.02	.0	.35	.0	.59
GR- 71	20.13	.0	20.47	37.00	13.79	.02	.45	3.30	.58	2.66
GR- 72	19.75	.0	20.79	35.64	14.31	.02	.38	4.26	.0	2.90
GR- 73	47.33	8.06	34.29	3.52	.0	.02	.0	1.66	.0	2.01
GR- 74	31.08	1.06	32.31	23.92	5.85	.02	.0	1.51	.91	1.91
GR- 75	20.74	.0	15.52	37.55	16.16	.02	.61	4.03	1.04	2.64
GR- 76	24.74	.0	18.06	34.40	13.86	.02	.68	3.55	.68	2.51
GR- 77	21.69	.0	15.47	33.14	18.08	.02	1.33	4.26	1.31	3.21
GR- 78	23.05	.27	17.74	32.10	18.14	.02	.0	3.74	1.46	2.18
GR- 79	21.65	.0	14.52	39.76	14.66	.02	.38	4.33	1.21	1.93
GR- 80	21.46	.24	14.49	40.55	14.92	.02	.0	3.56	2.06	1.23
GR- 81	29.21	.0	21.34	25.31	16.14	.03	.13	2.50	1.63	2.04
GR- 82	30.15	.47	22.74	24.77	13.99	.02	.0	2.29	2.31	1.61
GR- 83	34.64	1.89	18.49	31.53	9.93	.02	.0	.98	.71	1.07
GR- 84	26.07	.0	24.63	34.33	9.97	.02	.59	1.11	.55	1.92
GR- 85	30.73	.87	21.01	27.44	13.05	.02	.0	2.07	1.85	1.33
GR- 86	29.46	.76	20.89	28.13	13.08	.02	.0	2.31	2.30	1.41
GR- 87	19.49	.0	15.53	39.26	15.81	.02	.32	3.78	.0	3.65
GR- 88	20.72	.0	16.00	38.96	15.94	.02	.44	3.25	.16	3.05
GR- 89	23.99	.0	21.16	31.10	15.09	.02	.17	3.82	1.30	2.23
GR- 90	23.13	.09	17.87	30.62	18.57	.02	.0	4.52	1.63	2.19

**Table 3. Rapid-rock norms for granitoid rocks in table 1—Continued**

Sample	HM	IL	TN	RU	AP	FR	CC	MG
GR- 46	0.0	0.37	0.0	0.0	0.10	0.20	0.23	0.0
GR- 47	.66	.21	.0	.0	.29	.04	.02	.0
GR- 48	.49	.41	.0	.0	.24	.07	.05	.0
GR- 49	.30	.19	.0	.0	.07	.04	.05	.0
GR- 50	.29	.35	.0	.0	.14	.05	.02	.0
GR- 51	.0	1.03	.0	.0	.70	.09	.05	.0
GR- 52	.0	1.16	.0	.0	.63	.12	.02	.0
GR- 53	.54	.16	.0	.0	.10	.10	.02	.0
GR- 54	.0	.17	.0	.0	.19	.11	.65	.0
GR- 55	.0	.37	.0	.0	.29	.02	.07	.0
GR- 56	.0	.75	.0	.0	.41	.03	.18	.0
GR- 57	.0	.88	.0	.0	.72	.09	.21	.0
GR- 58	.0	.97	.0	.0	.52	.10	.02	.0
GR- 59	.0	1.11	.0	.0	.48	.07	.39	.0
GR- 60	.0	1.04	.0	.0	.48	.03	.46	.0
GR- 61	.0	.72	.0	.0	.39	.10	.05	.0
GR- 62	.0	1.31	.0	.0	.55	.19	.09	.0
GR- 63	.0	1.27	.0	.0	.43	.05	.12	.0
GR- 64	.0	1.27	.0	.0	.26	.04	.02	.0
GR- 65	.0	1.18	.0	.0	.58	.02	.19	.0
GR- 66	.0	1.00	.0	.0	.41	.03	.14	.0
GR- 67	.0	1.77	.0	.0	.77	.13	.16	.0
GR- 68	.0	1.53	.0	.0	.55	.14	.05	.0
GR- 69	.46	.35	.0	.0	.24	.13	.09	.0
GR- 70	.47	.15	.0	.0	.24	.06	.02	.0
GR- 71	.0	.95	.0	.0	.51	.04	.09	.0
GR- 72	.11	1.24	.0	.0	.50	.04	.07	.0
GR- 73	.27	1.38	.0	.0	.64	.14	.46	.23
GR- 74	.0	.87	.0	.0	.36	.16	.05	.0
GR- 75	.0	1.00	.0	.0	.48	.03	.18	.0
GR- 76	.0	.91	.0	.0	.39	.03	.19	.0
GR- 77	.0	.88	.0	.0	.55	.02	.05	.0
GR- 78	.0	.87	.0	.0	.38	.03	.02	.0
GR- 79	.0	.93	.0	.0	.51	.02	.07	.0
GR- 80	.0	.83	.0	.0	.58	.04	.02	.0
GR- 81	.0	1.18	.0	.0	.33	.10	.07	.0
GR- 82	.0	1.10	.0	.0	.38	.07	.09	.0
GR- 83	.0	.38	.0	.0	.24	.09	.05	.0
GR- 84	.0	.39	.0	.0	.19	.05	.18	.0
GR- 85	.0	.91	.0	.0	.53	.06	.14	.0
GR- 86	.0	.96	.0	.0	.45	.09	.14	.0
GR- 87	.11	1.15	.0	.0	.69	.03	.16	.0
GR- 88	.0	.95	.0	.0	.43	.03	.05	.0
GR- 89	.0	.68	.0	.0	.39	.03	.02	.0
GR- 90	.0	.86	.0	.0	.41	.05	.05	.0

Table 3. Rapid-rock norms for granitoid rocks in table 1—Continued

Sample	Q	C	OR	AB	AN	HL	WO	EN	FS	MT
GR- 91	28.92	0.50	26.27	28.99	9.29	0.02	0.0	2.21	1.61	1.01
GR- 92	29.18	.28	27.51	32.47	6.10	.02	.0	1.49	.74	1.23
GR- 93	13.49	.0	23.52	29.21	13.69	.03	2.48	8.64	2.38	3.11
GR- 94	14.31	.0	24.09	34.27	13.44	.05	.31	5.84	1.91	3.10
GR- 95	24.87	.53	23.49	27.44	14.53	.03	.0	3.55	1.60	2.36
GR- 96	22.14	.0	26.46	29.06	12.74	.05	.33	3.55	1.40	2.36
GR- 97	25.23	.76	19.13	30.45	15.84	.08	.0	2.77	2.73	1.47
GR- 98	24.78	.08	21.16	29.05	16.23	.08	.0	2.80	2.84	1.05
GR- 99	24.06	.0	21.83	30.27	13.90	.03	1.02	3.98	2.14	1.59
GR-100	25.76	.0	20.42	30.88	14.73	.02	.19	3.54	1.35	1.92
GR-101	19.58	.76	18.00	33.43	15.25	.02	.0	5.82	2.21	2.36
GR-102	19.33	.0	18.11	32.69	17.09	.03	.79	5.34	1.21	3.11
GR-103	30.13	2.34	27.13	29.20	4.38	.03	.0	2.36	1.43	1.33
GR-104	27.38	.91	27.58	38.41	2.11	.05	.0	1.57	.15	.69
GR-105	13.26	.0	23.76	34.73	10.57	.03	4.93	7.51	.90	1.37
GR-106	5.66	.0	12.56	51.23	8.52	.03	5.51	10.59	1.90	1.07
GR-107	19.12	.0	22.33	28.44	18.06	.02	.04	4.07	1.63	3.41
GR-108	18.96	.0	22.94	28.45	18.88	.02	.94	3.82	1.03	3.41
GR-109	25.02	.14	26.35	40.23	5.76	.02	.0	.73	.0	.59
GR-110	28.50	.74	24.10	39.62	5.00	.02	.0	.38	.0	.13
GR-111	28.09	1.81	22.12	38.45	5.85	.02	.0	.96	.87	.94
GR-112	25.58	.71	25.60	38.29	6.75	.02	.0	.88	.25	1.04
GR-113	20.38	.89	13.24	36.13	16.81	.02	.0	5.58	3.78	1.03
GR-114	21.00	.64	13.75	36.73	16.33	.02	.0	5.29	3.06	1.36
GR-115	24.11	.72	21.53	35.89	11.87	.02	.0	2.12	.23	2.20
GR-116	18.06	.0	16.24	35.95	17.53	.05	1.33	4.56	.56	3.98
GR-117	26.52	1.20	27.44	32.39	8.53	.02	.0	.88	.0	1.47
GR-118	26.20	.88	24.76	31.91	10.95	.02	.0	1.45	.05	2.37
GR-119	26.33	.0	22.90	24.95	15.11	.02	.46	4.57	.0	3.00
GR-120	25.12	.0	23.67	25.27	15.75	.03	.44	4.24	.0	2.89
GR-121	24.79	.21	17.30	41.77	11.58	.02	.0	1.58	.0	1.79
GR-122	28.62	.54	18.06	42.17	7.73	.02	.0	.86	.0	1.05
GR-123	28.22	.55	24.02	31.74	8.47	.02	.0	2.78	.68	1.62
GR-124	27.87	.21	22.18	31.69	11.11	.02	.0	3.03	.18	2.21
GR-125	3.49	.0	37.91	38.47	10.10	.02	.44	3.55	.0	2.70
GR-126	23.09	.46	24.55	30.71	10.54	.03	.0	3.53	.69	2.50
GR-129	2.90	.0	18.04	31.71	23.86	.03	2.87	8.36	2.56	5.75
GR-130	6.15	.0	19.31	29.95	21.00	.07	3.15	8.90	3.55	4.89
GR-131	29.96	.91	30.63	30.66	4.48	.07	.0	.78	.0	.43
GR-132	30.60	.0	27.68	31.73	5.73	.03	.18	1.32	.05	1.62
GR-133	18.84	.0	21.89	40.29	11.39	.08	.02	2.99	.31	2.47
GR-134	25.28	.15	30.18	30.97	7.67	.03	.0	1.81	.85	1.78
GR-135	22.55	.41	24.15	42.05	5.20	.07	.0	2.09	.0	1.48
GR-136	23.01	.30	22.92	43.74	5.19	.07	.0	1.80	.0	1.00
GR-137	24.55	.44	30.18	38.68	2.28	.07	.0	1.05	.0	.16



**Table 3.** Rapid-rock norms for granitoid rocks in table 1—Continued

Sample	HM	IL	TN	RU	AP	FR	CC	MG
GR- 91	0.0	0.77	0.0	0.0	0.24	0.13	0.05	0.0
GR- 92	.0	.50	.0	.0	.29	.14	.05	.0
GR- 93	.0	1.43	.0	.0	1.02	.19	.79	.0
GR- 94	.0	1.26	.0	.0	1.11	.12	.19	.0
GR- 95	.0	1.03	.0	.0	.46	.09	.02	.0
GR- 96	.0	1.16	.0	.0	.63	.08	.05	.0
GR- 97	.0	.94	.0	.0	.43	.13	.02	.0
GR- 98	.0	1.03	.0	.0	.63	.12	.14	.0
GR- 99	.0	.82	.0	.0	.28	.04	.02	.0
GR-100	.0	.69	.0	.0	.36	.03	.12	.0
GR-101	.0	1.20	.0	.0	.79	.06	.53	.0
GR-102	.0	1.30	.0	.0	.77	.05	.19	.0
GR-103	.0	.52	.0	.0	.29	.06	.79	.0
GR-104	.0	.42	.0	.0	.34	.04	.35	.0
GR-105	.0	1.87	.0	.0	.76	.13	.18	.0
GR-106	.0	1.92	.0	.0	.46	.15	.39	.0
GR-107	.0	.85	.0	.0	.73	.03	1.28	.0
GR-108	.0	.78	.0	.0	.53	.02	.23	.0
GR-109	.31	.40	.0	.0	.29	.08	.07	.0
GR-110	.59	.37	.0	.0	.34	.04	.19	.0
GR-111	.0	.50	.0	.0	.22	.13	.05	.0
GR-112	.0	.48	.0	.0	.24	.15	.02	.0
GR-113	.0	.91	.0	.0	.56	.02	.65	.0
GR-114	.0	.85	.0	.0	.55	.02	.41	.0
GR-115	.0	.71	.0	.0	.38	.03	.18	.0
GR-116	.0	1.02	.0	.0	.48	.03	.21	.0
GR-117	.60	.42	.0	.0	.41	.03	.09	.0
GR-118	.0	.64	.0	.0	.56	.10	.12	.0
GR-119	.78	1.01	.0	.0	.46	.11	.30	.0
GR-120	1.01	1.05	.0	.0	.40	.11	.02	.0
GR-121	.08	.56	.0	.0	.26	.04	.02	.0
GR-122	.10	.37	.0	.0	.36	.01	.12	.0
GR-123	.0	.79	.0	.0	.34	.06	.72	.0
GR-124	.0	.81	.0	.0	.43	.11	.14	.0
GR-125	.68	1.59	.0	.0	.68	.28	.05	.0
GR-126	.0	1.02	.0	.0	.77	.09	2.03	.0
GR-129	.0	1.93	.0	.0	1.25	.15	.58	.0
GR-130	.0	1.65	.0	.0	1.09	.06	.23	.0
GR-131	1.13	.39	.0	.0	.31	.02	.23	.0
GR-132	.0	.39	.0	.0	.29	.06	.32	.0
GR-133	.0	1.03	.0	.0	.47	.05	.18	.0
GR-134	.0	.78	.0	.0	.34	.04	.14	.0
GR-135	.62	.72	.0	.0	.31	.02	.35	.0
GR-136	.64	.66	.0	.0	.34	.04	.30	.0
GR-137	1.39	.72	.0	.0	.21	.17	.09	.0

Table 3. Rapid-rock norms for granitoid rocks in table 1—Continued

Sample	Q	C	OR	AB	AN	HL	WO	EN	FS	MT
GR-138	25.13	0.30	30.76	37.69	1.96	0.07	0.0	1.09	0.0	1.07
GR-139	17.78	.0	26.64	36.26	9.11	.03	.80	4.34	.0	1.81
GR-140	16.90	.0	24.01	35.17	10.92	.02	1.05	5.57	.0	2.57
GR-141	26.89	.0	29.77	39.07	2.34	.03	.03	.35	.0	.51
GR-142	29.45	.49	29.31	37.61	1.07	.02	.0	.43	.0	.43
GR-143	25.66	.71	23.86	34.94	9.75	.02	.0	1.86	.0	1.33
GR-144	21.42	.14	19.05	43.41	11.34	.02	.0	1.73	.87	1.10
GR-145	31.49	.98	26.57	34.51	3.39	.02	.0	1.02	.0	1.03
GR-146	32.63	.68	25.91	32.71	5.11	.02	.0	1.07	.0	1.05
GR-147	34.43	.01	26.10	36.45	1.02	.02	.0	.28	.0	.46
GR-149	27.41	.85	27.53	25.56	11.27	.03	.0	2.77	.51	2.64
GR-150	26.45	.0	30.03	26.51	9.75	.03	.18	2.53	.62	2.51
GR-151	23.10	.0	10.78	35.07	21.07	.02	1.18	3.53	.98	3.08
GR-152	10.71	.0	7.73	30.59	29.35	.02	3.99	8.78	3.40	3.80
GR-153	6.71	.0	29.31	40.18	16.51	.02	1.18	1.59	.31	2.79
GR-154	3.26	.0	31.22	42.91	14.86	.02	1.40	1.39	.01	3.54
GR-155	28.93	.57	22.65	32.36	10.14	.02	.0	1.83	.0	1.84
GR-156	33.04	.24	28.12	29.91	6.73	.02	.0	.50	.0	.13
GR-157	33.19	.38	27.27	28.79	7.55	.02	.0	.82	.09	1.22
GR-158	32.20	.71	27.30	28.82	7.77	.02	.0	.83	.61	1.14
GR-159	25.50	.0	22.69	31.56	12.45	.02	.05	3.27	.58	2.34
GR-160	24.99	.03	22.01	31.44	13.72	.02	.0	3.26	.49	2.63
GR-161	21.80	.0	20.86	31.50	15.52	.02	.12	4.77	1.50	2.49
GR-162	20.82	.0	19.55	32.16	15.84	.02	.76	4.99	1.66	2.62
GR-163	36.42	1.83	34.92	23.20	.0	.02	.0	.69	.0	1.12
GR-164	37.03	1.71	34.09	23.05	.04	.02	.0	.73	.0	.52
GR-165	24.41	.0	26.21	28.00	13.58	.03	.22	3.01	.27	2.92
GR-166	25.18	.0	27.17	29.24	11.33	.03	.35	2.54	.0	2.61
GR-167	16.10	.0	18.15	31.97	18.94	.02	1.19	5.86	2.91	2.97
GR-168	22.17	.0	22.62	32.31	13.33	.02	.53	4.01	1.36	2.19
GR-169	12.37	.0	30.77	37.98	8.19	.03	.58	3.24	1.11	3.05
GR-170	32.69	1.01	27.13	33.60	3.16	.02	.0	.79	.01	.86
GR-171	23.16	.0	17.53	30.21	18.75	.02	.61	3.31	1.75	2.82
GR-172	23.00	.0	17.88	29.80	18.74	.02	.68	3.77	2.00	2.63
GR-173	30.28	.47	23.76	34.80	8.14	.02	.0	.68	.17	1.06
GR-174	29.96	.77	20.96	36.80	7.71	.02	.0	.83	.0	1.68
GR-175	30.84	.29	26.05	33.83	7.32	.02	.0	.50	.0	.65
GR-176	32.33	.73	23.99	34.28	6.61	.02	.0	.35	.0	.75
GR-177	26.45	.63	24.91	23.41	11.27	.02	.0	1.56	3.80	3.73
GR-178	24.73	.0	32.15	23.72	7.36	.03	1.04	1.91	3.06	3.21
GR-179	24.63	.0	19.06	41.64	9.36	.03	.32	1.83	.56	1.45
GR-180	25.87	.94	18.98	43.24	7.75	.02	.0	1.05	.0	.97
GR-181	19.91	.37	41.46	26.60	5.77	.02	.0	1.67	.0	2.07
GR-182	29.23	.0	37.14	26.44	2.26	.03	.82	.88	.0	.95
GR-183	34.93	1.65	27.59	25.69	6.02	.02	.0	1.06	.0	1.42

**Table 3. Rapid-rock norms for granitoid rocks in table 1—Continued**

Sample	HM	IL	TN	RU	AP	FR	CC	MG
GR-138	0.59	0.66	0.0	0.0	0.31	0.19	0.19	0.0
GR-139	1.01	1.28	.0	.0	.56	.13	.26	.0
GR-140	.87	1.45	.0	.0	.70	.13	.65	.0
GR-141	.56	.33	.0	.0	.05	.04	.05	.0
GR-142	.52	.23	.0	.0	.07	.14	.23	.0
GR-143	.70	.75	.0	.0	.33	.08	.02	.0
GR-144	.0	.54	.0	.0	.26	.10	.02	.0
GR-145	.02	.41	.0	.0	.17	.05	.37	.0
GR-146	.12	.37	.0	.0	.17	.03	.14	.0
GR-147	.79	.19	.0	.0	.02	.14	.09	.0
GR-149	.0	.81	.0	.0	.34	.10	.18	.0
GR-150	.0	.71	.0	.0	.41	.09	.16	.0
GR-151	.0	.75	.0	.0	.36	.03	.05	.0
GR-152	.0	1.09	.0	.0	.43	.05	.07	.0
GR-153	.0	.81	.0	.0	.29	.12	.18	.0
GR-154	.0	.89	.0	.0	.36	.06	.09	.0
GR-155	.14	.86	.0	.0	.55	.08	.02	.0
GR-156	.66	.37	.0	.0	.24	.02	.02	.0
GR-157	.0	.34	.0	.0	.17	.09	.05	.0
GR-158	.0	.36	.0	.0	.17	.05	.02	.0
GR-159	.0	.84	.0	.0	.36	.08	.25	.0
GR-160	.0	.80	.0	.0	.36	.08	.18	.0
GR-161	.0	.84	.0	.0	.36	.06	.18	.0
GR-162	.0	.97	.0	.0	.38	.05	.18	.0
GR-163	.75	.41	.0	.0	.22	.21	.00	.21
GR-164	1.77	.35	.0	.0	.19	.21	.30	.0
GR-165	.0	.86	.0	.0	.36	.08	.05	.0
GR-166	.24	.80	.0	.0	.31	.14	.05	.0
GR-167	.0	1.15	.0	.0	.53	.06	.14	.0
GR-168	.0	.98	.0	.0	.33	.08	.07	.0
GR-169	.0	1.84	.0	.0	.71	.09	.02	.0
GR-170	.0	.33	.0	.0	.22	.03	.16	.0
GR-171	.0	.89	.0	.0	.70	.01	.23	.0
GR-172	.0	.90	.0	.0	.50	.02	.07	.0
GR-173	.0	.34	.0	.0	.17	.07	.05	.0
GR-174	.16	.46	.0	.0	.26	.04	.35	.0
GR-175	.07	.21	.0	.0	.14	.03	.05	.0
GR-176	.41	.19	.0	.0	.19	.03	.12	.0
GR-177	.0	1.85	.0	.0	.83	.02	1.52	.0
GR-178	.0	1.40	.0	.0	.41	.40	.57	.0
GR-179	.0	.67	.0	.0	.19	.13	.14	.0
GR-180	.44	.34	.0	.0	.17	.07	.18	.0
GR-181	.41	1.14	.0	.0	.31	.23	.05	.0
GR-182	1.07	.77	.0	.0	.17	.22	.02	.0
GR-183	.44	.46	.0	.0	.34	.08	.30	.0

**Table 3. Rapid-rock norms for granitoid rocks in table 1—Continued**

Sample	Q	C	OR	AB	AN	HL	WO	EN	FS	MT
GR-184	36.82	2.19	29.58	25.85	2.31	0.02	0.0	0.56	0.0	0.0
GR-185	27.23	.38	28.64	26.41	8.65	.02	.0	2.29	.71	3.22
GR-186	31.31	1.11	32.52	27.52	3.39	.02	.0	.79	.58	1.63
GR-187	27.45	.50	33.74	24.01	5.49	.03	.0	2.18	.12	3.70
GR-188	26.88	1.37	24.08	27.43	8.87	.03	.0	2.79	1.98	3.40
GR-189	35.09	.62	30.80	19.82	6.98	.02	.0	.81	.0	3.46
GR-190	29.43	.19	30.43	23.77	8.32	.03	.0	1.38	1.94	2.49
GR-191	37.57	1.71	27.66	31.79	.19	.02	.0	.05	.0	.0
GR-193	33.33	.76	29.73	33.13	.90	.02	.0	.20	.0	1.14
GR-194	31.55	.11	29.81	33.22	2.70	.02	.0	.35	.0	.88
GR-195	17.35	.0	22.52	32.95	14.50	.03	1.66	5.00	1.08	3.20
GR-196	35.61	.0	27.15	26.97	6.73	.02	.01	1.44	.0	1.30
GR-197	24.81	.03	28.93	25.29	11.04	.02	.0	2.44	2.15	2.61
GR-198	26.00	.60	26.61	25.91	8.46	.02	.0	2.52	2.50	3.26
GR-199	29.33	.63	20.27	34.93	10.36	.02	.0	1.53	.84	1.24
GR-200	28.30	.84	23.44	35.21	7.83	.02	.0	1.29	.58	1.45
GR-201	29.33	1.60	25.37	27.60	7.07	.02	.0	2.55	.65	3.11
GR-202	26.82	.42	28.25	28.33	7.47	.02	.0	2.79	.66	2.80
GR-203	24.37	.97	13.83	43.83	10.49	.02	.0	2.33	1.12	1.77
GR-204	24.45	.26	15.43	39.87	12.62	.02	.0	2.75	1.00	2.48
GR-205	31.95	.93	29.61	31.08	3.56	.02	.0	.53	.0	.21
GR-206	35.32	1.67	31.86	29.19	.68	.02	.0	.13	.01	.62
GR-207	33.02	.88	31.42	23.93	4.63	.07	.0	2.01	.44	2.08
GR-208	31.63	.91	30.94	24.41	5.64	.07	.0	2.13	.09	2.63
GR-209	25.45	.55	21.63	39.50	9.19	.02	.0	.99	.0	1.48
GR-210	27.43	1.17	19.66	39.16	8.84	.02	.0	1.13	.0	1.21
GR-211	29.81	.22	16.58	36.38	13.10	.02	.0	1.45	.56	1.25
GR-212	29.70	.50	20.61	33.66	11.55	.02	.0	1.54	.13	1.59
GR-213	27.95	.58	18.95	30.45	15.17	.02	.0	2.75	.21	2.76
GR-214	23.84	.0	17.96	31.64	18.19	.02	.01	3.28	.70	3.08
GR-215	32.98	2.00	27.09	31.82	2.22	.02	.0	1.19	.22	1.15
GR-216	30.67	.22	27.62	31.06	6.56	.02	.0	1.36	.06	1.40
GR-217	7.63	.0	18.11	32.54	18.84	.07	3.36	9.16	2.28	5.18
GR-218	10.03	.0	19.88	33.42	16.57	.05	2.98	8.13	2.24	4.14
GR-219	15.33	.0	19.78	35.97	17.25	.02	.40	4.04	2.54	2.65
GR-220	37.49	.21	30.20	23.59	5.99	.03	.0	.65	.25	.94
GR-221	35.27	.62	31.31	25.79	4.02	.02	.0	.61	.28	1.02
GR-222	35.95	.54	28.90	26.65	4.69	.02	.0	.81	.22	1.29
GR-223	34.04	1.06	26.90	29.88	5.08	.02	.0	1.01	.34	.92
GR-224	26.37	.90	28.24	33.48	5.91	.02	.0	1.49	.58	1.62
GR-225	28.93	.0	30.69	27.50	5.92	.02	.66	1.65	.0	2.73
GR-226	30.83	.74	28.24	28.31	6.02	.02	.0	1.70	.42	2.06
GR-227	36.62	.34	32.64	26.76	1.77	.02	.0	.36	.0	.44
GR-228	36.60	1.37	31.92	27.52	.47	.02	.0	.25	.0	.44
GR-229	31.29	.23	23.74	39.87	3.91	.02	.0	.13	.0	.33
GR-230	31.59	.50	24.45	40.06	2.34	.02	.0	.03	.0	.18

**Table 3. Rapid-rock norms for granitoid rocks in table 1—Continued**

Sample	HM	IL	TN	RU	AP	FR	CC	MG
GR-184	1.74	0.28	0.0	0.04	0.48	0.03	0.12	0.0
GR-185	.0	1.32	.0	.0	.72	.32	.09	.0
GR-186	.0	.45	.0	.0	.27	.31	.12	.0
GR-187	.0	1.49	.0	.0	.58	.69	.02	.0
GR-188	.0	1.93	.0	.0	.77	.42	.05	.0
GR-189	.68	1.32	.0	.0	.34	.04	.02	.0
GR-190	.0	1.17	.0	.0	.38	.43	.05	.0
GR-191	.50	.11	.0	.02	.22	.03	.14	.0
GR-193	.0	.38	.0	.0	.17	.13	.11	.0
GR-194	.51	.36	.0	.0	.19	.23	.07	.0
GR-195	.0	1.22	.0	.0	.43	.05	.02	.0
GR-196	.10	.44	.0	.0	.17	.03	.05	.0
GR-197	.0	1.73	.0	.0	.71	.21	.05	.0
GR-198	.0	1.92	.0	.0	.90	.25	1.05	.0
GR-199	.0	.46	.0	.0	.26	.08	.05	.0
GR-200	.0	.42	.0	.0	.48	.05	.09	.0
GR-201	.0	1.32	.0	.0	.63	.35	.40	.0
GR-202	.0	1.43	.0	.0	.55	.40	.07	.0
GR-203	.0	.71	.0	.0	.27	.10	.19	.0
GR-204	.0	.67	.0	.0	.29	.08	.09	.0
GR-205	1.19	.45	.0	.0	.22	.07	.19	.0
GR-206	.0	.29	.0	.0	.14	.03	.05	.0
GR-207	.0	.85	.0	.0	.36	.16	.14	.0
GR-208	.0	.94	.0	.0	.29	.23	.09	.0
GR-209	.10	.42	.0	.0	.39	.07	.21	.0
GR-210	.37	.44	.0	.0	.29	.10	.18	.0
GR-211	.0	.36	.0	.0	.19	.05	.05	.0
GR-212	.0	.44	.0	.0	.21	.05	.02	.0
GR-213	.0	.72	.0	.0	.31	.04	.09	.0
GR-214	.0	.79	.0	.0	.38	.05	.05	.0
GR-215	.0	.37	.0	.0	.19	.05	.70	.0
GR-216	.0	.38	.0	.0	.21	.07	.36	.0
GR-217	.0	1.94	.0	.0	.75	.09	.05	.0
GR-218	.0	1.67	.0	.0	.72	.13	.05	.0
GR-219	.0	1.19	.0	.0	.50	.11	.23	.0
GR-220	.0	.30	.0	.0	.12	.07	.14	.0
GR-221	.0	.54	.0	.0	.39	.12	.02	.0
GR-222	.0	.48	.0	.0	.29	.15	.02	.0
GR-223	.0	.46	.0	.0	.14	.13	.02	.0
GR-224	.0	.81	.0	.0	.41	.09	.07	.0
GR-225	.26	.95	.0	.0	.43	.24	.02	.0
GR-226	.0	.98	.0	.0	.36	.22	.09	.0
GR-227	.63	.25	.0	.0	.12	.03	.02	.0
GR-228	.82	.27	.0	.0	.17	.03	.12	.0
GR-229	.34	.04	.0	.0	.05	.04	.02	.0
GR-230	.47	.10	.0	.0	.12	.03	.11	.0

**Table 4. Rapid-rock norms for replicate samples of granitoid rocks in table 2**

Sample	Q	C	OR	AB	AN	HL	WO	EN	FS
GR- 6a	23.36	0.0	22.79	33.26	11.11	0.05	0.22	3.79	0.95
GR- 10a	20.00	.0	21.95	26.99	16.10	.02	1.69	6.68	.0
GR- 11a	20.91	.30	22.55	28.73	15.16	.02	.0	5.65	.0
GR- 18a	15.03	.0	22.34	31.77	14.64	.05	1.58	6.36	.10
GR- 21a	28.95	.20	20.76	34.75	9.81	.02	.0	1.57	1.55
GR- 29a	26.37	.0	22.12	30.74	10.45	.02	1.38	3.53	1.39
GR- 32a	14.17	.0	11.96	33.10	20.37	.07	2.27	8.57	5.41
GR- 43a	17.11	.0	21.81	32.69	15.85	.05	1.14	5.22	1.47
GR- 46a	33.23	.90	27.25	30.47	5.25	.02	.0	.70	.61
GR- 55a	31.03	.88	21.87	37.16	5.71	.02	.0	1.12	.29
GR- 56a	23.07	.22	20.99	31.69	15.55	.02	.0	3.03	.86
GR- 72a	21.65	.15	21.40	33.98	13.97	.02	.0	4.01	.02
GR- 75a	20.68	.0	15.41	38.11	15.32	.02	1.11	4.00	1.21
GR- 79a	20.32	.0	14.54	40.69	15.06	.02	.40	4.34	1.19
GR- 83a	33.87	1.64	19.26	31.81	9.61	.02	.0	.91	.72
GR- 85a	26.08	.13	22.40	30.26	13.19	.02	.0	2.55	2.28
GR- 87a	18.08	.0	17.98	38.55	15.12	.02	1.16	3.79	.0
GR- 95a	24.74	.27	24.67	28.29	13.06	.03	.0	3.30	1.68
GR- 96a	22.34	.29	24.72	30.00	12.70	.05	.0	4.07	.56
GR-102a	20.92	.31	18.03	31.69	17.47	.03	.0	5.32	1.52
GR-103a	28.82	1.81	29.02	31.02	2.62	.03	.0	2.32	.60
GR-105a	13.61	.0	22.84	34.27	12.86	.03	4.13	7.35	.94
GR-107a	17.39	.0	23.04	29.45	17.94	.02	1.30	4.09	1.79
GR-108a	19.19	.0	22.68	27.27	19.12	.02	1.49	4.02	.59
GR-111a	26.99	1.22	22.58	38.13	6.31	.03	.0	1.98	.98
GR-115a	26.83	1.15	20.39	35.14	10.95	.02	.0	2.07	.63
GR-124a	26.96	.15	22.83	30.82	11.78	.03	.0	3.04	.01
GR-125a	4.70	.0	36.75	39.38	7.76	.07	1.81	3.55	.0
GR-129a	.61	.0	18.30	32.74	23.91	.05	4.18	8.71	2.13
GR-133a	18.02	.0	21.99	40.56	11.41	.07	.68	3.01	.39
GR-144a	22.23	.41	19.50	41.39	11.94	.02	.0	1.94	.17
GR-156a	33.02	.71	27.61	30.87	5.58	.02	.0	.56	.0
GR-166a	23.73	.0	26.97	30.75	11.17	.03	.39	2.53	.0
GR-167a	17.81	.0	18.12	30.98	18.57	.03	1.15	6.11	.57
GR-178a	25.08	.69	31.72	24.70	6.46	.03	.0	1.36	3.17
GR-185a	24.65	.0	28.85	28.59	8.75	.02	.13	2.73	.83
GR-188a	27.86	.85	23.87	26.34	10.36	.03	.0	2.77	.0
GR-195a	18.92	.0	21.36	32.98	15.11	.03	.63	5.00	.85
GR-196a	36.88	.0	28.17	25.68	5.24	.02	.23	1.54	.0
GR-203a	24.37	.44	14.79	42.29	11.58	.02	.0	2.24	1.16
GR-205a	31.41	.54	30.20	31.06	4.06	.02	.0	.56	.0
GR-206a	35.18	.90	32.52	29.25	.55	.02	.0	.28	.0
GR-208a	32.47	1.00	29.51	24.71	5.85	.07	.0	1.95	.0
GR-212a	29.39	.79	20.37	35.95	9.81	.02	.0	1.24	.45
GR-215a	33.12	1.32	28.81	30.86	1.65	.02	.0	1.04	.28
GR-217a	9.21	.0	16.82	32.39	19.35	.07	3.24	8.86	2.99
GR-218a	11.83	.0	20.18	31.22	17.20	.05	2.37	8.00	2.11
GR-221a	35.64	1.01	30.18	26.71	3.67	.02	.0	.69	.30
GR-224a	27.22	.34	28.01	32.35	7.26	.02	.0	1.56	.77
GR-225a	27.58	.0	29.94	29.08	6.38	.02	.63	1.56	.34

**Table 4.** Rapid-rock norms for replicate samples of granitoid rocks—Continued

Sample	MT	HM	IL	RU	AP	FR	CC
GR- 6a	2.80	0.0	0.83	0.0	0.41	0.14	0.30
GR- 10a	.02	4.42	1.27	.0	.66	.01	.19
GR- 11a	1.62	3.01	1.27	.0	.64	.10	.05
GR- 18a	5.48	.0	1.65	.0	.82	.15	.02
GR- 21a	1.43	.0	.57	.0	.26	.08	.05
GR- 29a	2.64	.0	.73	.0	.48	.05	.12
GR- 32a	1.61	.0	1.65	.0	.58	.06	.18
GR- 43a	2.89	.0	1.17	.0	.52	.06	.02
GR- 46a	.83	.0	.36	.0	.14	.20	.05
GR- 55a	1.32	.0	.34	.0	.19	.03	.05
GR- 56a	2.65	.0	.81	.0	.55	.02	.53
GR- 72a	3.06	.0	1.03	.0	.45	.07	.18
GR- 75a	2.62	.0	1.03	.0	.38	.03	.09
GR- 79a	1.93	.0	.90	.0	.41	.07	.14
GR- 83a	1.21	.0	.43	.0	.43	.05	.05
GR- 85a	1.63	.0	.91	.0	.39	.10	.05
GR- 87a	3.27	.08	1.16	.0	.58	.02	.21
GR- 95a	2.21	.0	1.03	.0	.51	.11	.12
GR- 96a	3.40	.0	1.18	.0	.48	.11	.09
GR-102a	2.51	.0	1.26	.0	.67	.09	.19
GR-103a	1.78	.0	.54	.0	.27	.02	1.14
GR-105a	1.18	.0	1.93	.0	.67	.12	.07
GR-107a	3.12	.0	.84	.0	.51	.04	.47
GR-108a	3.95	.0	.82	.0	.55	.04	.25
GR-111a	.83	.0	.55	.0	.24	.13	.02
GR-115a	1.77	.0	.66	.0	.26	.04	.09
GR-124a	2.65	.0	.89	.0	.48	.07	.28
GR-125a	2.73	.76	1.57	.0	.70	.07	.14
GR-129a	5.79	.0	2.09	.0	1.23	.15	.11
GR-133a	2.19	.0	1.01	.0	.45	.05	.18
GR-144a	1.59	.0	.49	.0	.19	.09	.05
GR-156a	.13	.81	.37	.0	.19	.07	.07
GR-166a	2.20	.71	.83	.0	.48	.13	.07
GR-167a	4.74	.0	1.20	.0	.61	.06	.05
GR-178a	3.08	.0	1.29	.0	.48	.55	1.38
GR-185a	3.18	.0	1.34	.0	.64	.28	.02
GR-188a	1.83	2.98	1.92	.0	.77	.42	.02
GR-195a	3.49	.0	1.16	.0	.38	.05	.02
GR-196a	1.54	.05	.39	.0	.19	.03	.05
GR-203a	1.74	.0	.72	.0	.36	.10	.18
GR-205a	.0	1.33	.48	.01	.29	.04	.02
GR-206a	.0	.89	.11	.08	.12	.05	.07
GR-208a	2.58	.05	1.06	.0	.39	.22	.14
GR-212a	1.21	.0	.35	.0	.31	.04	.09
GR-215a	1.09	.0	.42	.0	.29	.04	1.06
GR-217a	4.28	.0	1.85	.0	.72	.11	.09
GR-218a	4.37	.0	1.79	.0	.74	.11	.05
GR-221a	.93	.0	.48	.0	.19	.15	.02
GR-224a	1.35	.0	.75	.0	.24	.15	.02
GR-225a	2.50	.0	1.08	.0	.58	.25	.07

**Table 5. Plate-reader semiquantitative emission spectrographic analyses (in parts per million) of granitoid rocks from the Basin and Range province**

Sample	Ag	B	Be	Co	Cr	Cu	La
GR- 1	<0.46	20.0	2.7	24.00	50.00	68.00	96.0
GR- 2	<.46	49.0	2.8	16.00	38.00	70.00	120.0
GR- 3	<.46	<5.0	2.3	5.50	10.00	2.30	53.0
GR- 4	<.46	<5.0	2.3	4.70	9.20	.46	49.0
GR- 5	<.46	6.9	1.3	22.00	81.00	55.00	50.0
GR- 6	<.46	<5.0	1.6	13.00	23.00	11.00	65.0
GR- 7	<.46	8.1	<1.0	21.00	26.00	55.00	48.0
GR- 8	.59	6.2	<1.0	22.00	33.00	51.00	74.0
GR- 9	<.46	<5.0	<1.0	19.00	46.00	30.00	72.0
GR- 10	<.46	6.4	<1.0	18.00	39.00	34.00	71.0
GR- 11	<.46	<5.0	<1.0	20.00	48.00	38.00	77.0
GR- 12	<.46	<5.0	<1.0	18.00	40.00	47.00	69.0
GR- 13	<.46	32.0	2.2	24.00	48.00	56.00	80.0
GR- 14	<.46	34.0	2.5	24.00	50.00	49.00	100.0
GR- 15	<.46	<5.0	1.2	3.00	3.90	.70	50.0
GR- 16	<.46	<5.0	1.8	3.20	3.30	4.90	46.0
GR- 17	<.46	22.0	<1.0	18.00	17.00	26.00	62.0
GR- 18	<.46	<5.0	<1.0	17.00	20.00	3.20	71.0
GR- 19	<.46	<5.0	<1.0	4.30	4.60	.69	45.0
GR- 20	<.46	<5.0	1.6	6.10	7.50	.81	78.0
GR- 21	<.46	<5.0	2.5	6.20	6.30	1.60	84.0
GR- 22	<.46	<5.0	1.7	4.30	3.90	16.00	51.0
GR- 23	<.46	<5.0	1.2	5.70	10.00	1.20	37.0
GR- 24	<.46	<5.0	1.4	4.60	8.90	2.20	29.0
GR- 25	<.46	<5.0	5.3	1.10	2.20	<.22	19.0
GR- 26	<.46	<5.0	74.0	<.46	2.00	.50	26.0
GR- 27	<.46	<5.0	1.3	5.30	3.30	.67	44.0
GR- 28	<.46	<5.0	<1.0	4.40	4.90	.25	36.0
GR- 29	<.46	<5.0	1.9	8.10	7.90	5.00	42.0
GR- 30	<.46	<5.0	1.3	7.40	6.50	1.70	44.0
GR- 31	<.46	17.0	<1.0	30.00	160.00	24.00	25.0
GR- 32	<.46	24.0	<1.0	15.00	32.00	20.00	29.0
GR- 33	<.46	17.0	2.0	.80	1.90	<.22	18.0
GR- 34	<.46	<5.0	1.8	<.46	3.00	<.22	19.0
GR- 35	<.46	<5.0	1.4	6.50	5.30	.95	180.0
GR- 36	<.46	<5.0	1.2	4.00	3.90	1.30	110.0
GR- 37	<.46	<5.0	2.2	9.90	17.00	39.00	52.0
GR- 38	<.46	14.0	2.7	11.00	26.00	5.00	54.0
GR- 39	<.46	<5.0	1.4	5.70	3.50	5.10	36.0
GR- 40	<.46	<5.0	1.7	4.40	3.80	3.50	29.0
GR- 41	<.46	<5.0	<1.0	4.50	2.80	4.90	19.0
GR- 42	<.46	<5.0	1.1	1.60	2.00	2.50	35.0
GR- 43	<.46	<5.0	<1.0	8.80	9.40	3.90	43.0
GR- 44	<.46	<5.0	<1.0	11.00	20.00	2.30	46.0
GR- 45	<.46	<5.0	2.5	.96	1.50	.51	7.2
GR- 46	<.46	<5.0	2.8	2.40	3.90	2.10	49.0
GR- 47	<.46	<5.0	1.5	1.40	2.20	<.22	38.0
GR- 48	<.46	<5.0	2.1	1.70	3.20	.24	58.0
GR- 49	<.46	<5.0	<1.0	.79	1.60	.64	20.0
GR- 50	<.46	<5.0	1.9	2.20	3.70	<.22	31.0

**Table 5. Plate-reader semiquantitative emission spectrographic analyses (in parts per million) of granitoid rocks—Continued**

Sample	Mo	Nb	Ni	Pb	Sc	Sn	V	W
GR- 1	5.3	24.0	31.0	27.0	21.0	<4.6	150.0	<46
GR- 2	4.1	37.0	24.0	23.0	17.0	<4.6	110.0	<46
GR- 3	1.5	43.0	5.4	26.0	4.5	<4.6	25.0	<46
GR- 4	<1.0	43.0	4.8	21.0	4.0	<4.6	23.0	<46
GR- 5	5.2	9.5	36.0	.0	19.0	<4.6	130.0	<46
GR- 6	2.5	13.0	12.0	17.0	13.0	5.0	86.0	<46
GR- 7	3.7	22.0	18.0	16.0	19.0	<4.6	160.0	<46
GR- 8	5.3	15.0	23.0	31.0	14.0	<4.6	150.0	<46
GR- 9	2.4	12.0	26.0	18.0	17.0	<4.6	130.0	<46
GR- 10	2.1	18.0	26.0	20.0	16.0	<4.6	99.0	<46
GR- 11	3.3	16.0	29.0	21.0	17.0	<4.6	120.0	<46
GR- 12	2.7	13.0	24.0	22.0	16.0	<4.6	110.0	<46
GR- 13	3.9	26.0	30.0	25.0	17.0	<4.6	180.0	<46
GR- 14	5.3	23.0	30.0	25.0	23.0	<4.6	160.0	<46
GR- 15	<1.0	13.0	2.9	13.0	4.0	<4.6	17.0	<46
GR- 16	<1.0	29.0	2.5	24.0	2.5	<4.6	13.0	<46
GR- 17	2.4	11.0	12.0	14.0	16.0	<4.6	120.0	<46
GR- 18	3.1	15.0	11.0	14.0	16.0	<4.6	130.0	<46
GR- 19	<1.0	15.0	2.0	13.0	4.2	<4.6	25.0	<46
GR- 20	1.1	35.0	3.1	18.0	8.7	<4.6	39.0	<46
GR- 21	1.2	46.0	4.9	42.0	4.6	<4.6	22.0	<46
GR- 22	1.0	53.0	3.9	37.0	3.1	<4.6	18.0	<46
GR- 23	1.0	18.0	9.3	16.0	4.7	<4.6	24.0	<46
GR- 24	<1.0	20.0	7.5	20.0	3.1	<4.6	20.0	<46
GR- 25	<1.0	37.0	2.5	31.0	2.2	<4.6	2.9	<46
GR- 26	<1.0	45.0	2.8	27.0	2.5	5.2	2.4	<46
GR- 27	1.7	33.0	3.5	9.0	5.9	<4.6	45.0	<46
GR- 28	1.1	16.0	3.3	9.1	4.8	<4.6	38.0	<46
GR- 29	1.9	30.0	5.2	15.0	8.6	<4.6	65.0	<46
GR- 30	2.1	20.0	5.1	15.0	6.6	<4.6	75.0	<46
GR- 31	3.8	9.1	130.0	15.0	26.0	<4.6	180.0	<46
GR- 32	3.3	17.0	18.0	13.0	16.0	<4.6	170.0	<46
GR- 33	<1.0	32.0	3.5	25.0	6.1	<4.6	1.6	<46
GR- 34	1.2	23.0	4.1	28.0	4.0	5.0	2.9	<46
GR- 35	2.9	25.0	8.1	17.0	6.2	<4.6	33.0	<46
GR- 36	1.0	17.0	3.5	14.0	4.0	<4.6	20.0	<46
GR- 37	1.7	24.0	12.0	21.0	10.0	<4.6	71.0	<46
GR- 38	1.8	24.0	13.0	16.0	12.0	<4.6	66.0	<46
GR- 39	1.2	13.0	3.4	14.0	4.7	<4.6	43.0	<46
GR- 40	2.3	29.0	7.5	25.0	4.5	<4.6	32.0	<46
GR- 41	1.2	9.2	2.4	14.0	3.0	<4.6	26.0	<46
GR- 42	<1.0	5.6	2.3	19.0	1.9	<4.6	8.0	<46
GR- 43	1.8	7.5	4.6	14.0	7.6	<4.6	84.0	<46
GR- 44	2.3	8.0	6.2	16.0	13.0	<4.6	95.0	<46
GR- 45	<1.0	80.0	2.0	42.0	3.7	5.9	3.4	<46
GR- 46	<1.0	54.0	3.0	31.0	4.2	5.5	9.5	<46
GR- 47	<1.0	7.3	2.4	17.0	1.8	<4.6	10.0	<46
GR- 48	<1.0	13.0	2.4	20.0	2.6	<4.6	13.0	<46
GR- 49	<1.0	22.0	<1.0	7.5	1.5	<4.6	5.0	<46
GR- 50	<1.0	37.0	2.8	17.0	2.1	<4.6	12.0	<46



**Table 5. Plate-reader semiquantitative emission spectrographic analyses (in parts per million) of granitoid rocks—Continued**

Sample	Y	Zr	Ce	Ga	Ge	Yb	Pr	Nd
GR- 1	37.0	590	220	13.0	<0.46	2.30	<68	130
GR- 2	50.0	640	230	12.0	1.60	2.30	<68	110
GR- 3	14.0	160	130	9.5	1.80	1.20	<68	93
GR- 4	12.0	98	100	8.9	<.46	1.10	<68	<46
GR- 5	28.0	240	130	12.0	<.46	2.00	<68	<46
GR- 6	25.0	140	140	11.0	<.46	1.90	<68	110
GR- 7	25.0	210	130	11.0	.78	1.70	<68	120
GR- 8	31.0	320	180	15.0	<.46	2.20	<68	150
GR- 9	25.0	260	160	11.0	.82	1.60	<68	<46
GR- 10	23.0	250	150	12.0	1.80	1.60	<68	180
GR- 11	24.0	180	170	11.0	.78	1.50	<68	56
GR- 12	24.0	210	150	12.0	.80	1.70	<68	71
GR- 13	36.0	290	180	12.0	1.30	2.50	<68	51
GR- 14	39.0	370	230	12.0	1.10	2.10	<68	68
GR- 15	10.0	190	83	4.7	<.46	.79	<68	68
GR- 16	11.0	91	85	8.0	1.40	1.00	<68	<46
GR- 17	24.0	210	140	11.0	<.46	1.60	<68	68
GR- 18	26.0	310	150	11.0	<.46	1.70	<68	<46
GR- 19	14.0	86	75	5.0	<.46	1.20	<68	<46
GR- 20	33.0	250	140	8.7	1.30	1.80	<68	65
GR- 21	37.0	120	150	13.0	<.46	1.80	<68	97
GR- 22	20.0	120	96	9.1	1.90	1.30	<68	50
GR- 23	10.0	72	67	5.9	<.46	.96	<68	75
GR- 24	15.0	83	58	7.7	2.20	1.20	<68	59
GR- 25	16.0	57	51	15.0	1.00	1.20	<68	53
GR- 26	18.0	43	67	14.0	<.46	1.10	<68	46
GR- 27	22.0	130	120	9.9	<.46	1.80	<68	110
GR- 28	15.0	130	67	10.0	1.20	1.20	<68	90
GR- 29	23.0	150	110	11.0	2.60	1.80	<68	70
GR- 30	19.0	120	110	8.7	<.46	1.60	<68	<46
GR- 31	21.0	160	110	10.0	<.46	1.50	<68	160
GR- 32	21.0	140	94	9.4	.72	1.50	<68	47
GR- 33	17.0	42	<46	11.0	<.46	1.20	<68	<46
GR- 34	22.0	43	64	11.0	2.60	1.50	<68	<46
GR- 35	16.0	400	300	10.0	<.46	1.20	<68	140
GR- 36	13.0	200	190	7.3	<.46	1.30	<68	<46
GR- 37	22.0	110	120	13.0	1.50	1.50	<68	92
GR- 38	27.0	150	120	8.5	<.46	1.70	<68	<46
GR- 39	15.0	88	59	7.6	1.30	1.20	<68	58
GR- 40	14.0	92	70	9.0	<.46	1.20	<68	<46
GR- 41	5.8	69	57	12.0	<.4	6.59	<68	72
GR- 42	6.0	91	54	9.7	2.00	.61	<68	53
GR- 43	16.0	180	85	8.6	<.46	1.30	<68	49
GR- 44	20.0	180	130	9.3	<.46	1.50	<68	<46
GR- 45	52.0	52	47	12.0	<.46	3.10	<68	<46
GR- 46	33.0	77	130	14.0	1.70	2.10	<68	<46
GR- 47	7.0	120	69	10.0	<.46	.59	<68	<46
GR- 48	11.0	130	89	15.0	2.00	.76	<68	52
GR- 49	4.9	26	52	4.6	<.46	.48	<68	<46
GR- 50	8.6	71	<46	8.8	<.46	1.10	<68	<46

**Table 5. Plate-reader semiquantitative emission spectrographic analyses (in parts per million) of granitoid rocks—Continued**

Sample	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
GR- 1	<46	7.1	6.0	<22	<10	<10	<4.6	<2.2
GR- 2	<46	3.7	<2.2	<22	<10	<10	<4.6	<2.2
GR- 3	<46	3.5	14.0	<22	<10	<10	<4.6	3.4
GR- 4	<46	<1.0	17.0	<22	<10	<10	<4.6	<2.2
GR- 5	<46	5.3	<2.2	<22	<10	<10	<4.6	<2.2
GR- 6	<46	3.0	7.7	<22	<10	<10	<4.6	<2.2
GR- 7	<46	3.3	20.0	<22	<10	<10	<4.6	<2.2
GR- 8	<46	4.3	13.0	<22	<10	<10	<4.6	<2.2
GR- 9	<46	2.7	<2.2	<22	<10	<10	<4.6	<2.2
GR- 10	<46	4.6	4.1	<22	<10	<10	<4.6	<2.2
GR- 11	<46	3.5	4.3	<22	<10	<10	<4.6	<2.2
GR- 12	<46	4.3	4.0	<22	<10	<10	<4.6	<2.2
GR- 13	<46	5.2	4.0	<22	<10	<10	<4.6	<2.2
GR- 14	<46	6.0	14.0	<22	<10	<10	<4.6	<2.2
GR- 15	<46	2.9	7.0	<22	<10	<10	<4.6	<2.2
GR- 16	<46	2.6	8.7	<22	<10	<10	<4.6	<2.2
GR- 17	<46	4.0	3.2	<22	<10	<10	<4.6	<2.2
GR- 18	47	3.1	13.0	<22	<10	<10	<4.6	<2.2
GR- 19	<46	2.7	6.7	<22	<10	<10	<4.6	<2.2
GR- 20	<46	2.7	18.0	<22	<10	<10	<4.6	<2.2
GR- 21	<46	2.9	13.0	<22	<10	<10	<4.6	<2.2
GR- 22	<46	2.8	14.0	<22	<10	<10	<4.6	<2.2
GR- 23	<46	<1.0	4.8	<22	15	<10	<4.6	<2.2
GR- 24	<46	2.5	7.3	<22	<10	<10	<4.6	2.8
GR- 25	<46	<1.0	8.6	<22	14	<10	<4.6	<2.2
GR- 26	48	2.8	11.0	<22	<10	<10	<4.6	2.2
GR- 27	<46	4.4	9.9	<22	<10	<10	<4.6	<2.2
GR- 28	<46	3.3	22.0	<22	<10	<10	<4.6	<2.2
GR- 29	<46	3.8	<2.2	<22	<10	<10	<4.6	<2.2
GR- 30	<46	1.8	6.1	<22	<10	<10	<4.6	<2.2
GR- 31	<46	2.6	22.0	<22	<10	<10	<4.6	<2.2
GR- 32	<46	2.6	12.0	<22	<10	<10	<4.6	<2.2
GR- 33	<46	2.1	<2.2	<22	12	<10	<4.6	3.1
GR- 34	<46	<1.0	6.0	<22	11	<10	<4.6	3.1
GR- 35	<46	6.1	5.7	<22	<10	<10	<4.6	<2.2
GR- 36	<46	3.1	18.0	<22	<10	<10	<4.6	<2.2
GR- 37	<46	3.4	<2.2	<22	<10	<10	<4.6	<2.2
GR- 38	<46	2.5	14.0	<22	<10	<10	<4.6	<2.2
GR- 39	<46	<1.0	13.0	<22	<10	<10	<4.6	<2.2
GR- 40	<46	3.2	2.6	<22	<10	<10	<4.6	<2.2
GR- 41	<46	3.3	5.2	<22	<10	<10	<4.6	3.2
GR- 42	<46	<1.0	19.0	<22	<10	<10	<4.6	<2.2
GR- 43	<46	3.2	<2.2	<22	<10	<10	<4.6	<2.2
GR- 44	<46	<1.0	<2.2	<22	<10	<10	<4.6	<2.2
GR- 45	<46	1.7	4.2	<22	<10	<10	<4.6	<2.2
GR- 46	<46	<1.0	<2.2	<22	<10	<10	<4.6	<2.2
GR- 47	<46	<1.0	7.1	<22	<10	<10	<4.6	2.4
GR- 48	<46	2.5	<2.2	<22	<10	<10	<4.6	<2.2
GR- 49	<46	<1.0	<2.2	<22	<10	<10	<4.6	<2.2
GR- 50	<46	1.8	18.0	<22	<10	<10	<4.6	2.7

**Table 5. Plate-reader semiquantitative emission spectrographic analyses (in parts per million) of granitoid rocks—Continued**

Sample	Ag	B	Be	Co	Cr	Cu	La
GR- 51	<0.46	<5.0	1.8	11.00	8.30	38.00	88.0
GR- 52	<.46	<5.0	1.7	9.70	7.90	21.00	75.0
GR- 53	<.46	8.7	<1.0	<.46	2.00	.48	52.0
GR- 54	<.46	<5.0	2.0	2.10	4.00	.83	110.0
GR- 55	<.46	<5.0	<1.0	2.60	2.70	.27	32.0
GR- 56	<.46	<5.0	<1.0	6.80	4.30	21.00	29.0
GR- 57	<.46	<5.0	1.4	13.00	67.00	2.30	96.0
GR- 58	<.46	<5.0	1.7	15.00	78.00	.90	81.0
GR- 59	<.46	5.3	<1.0	12.00	38.00	10.00	41.0
GR- 60	<.46	<5.0	<1.0	10.00	39.00	5.30	62.0
GR- 61	<.46	10.0	2.4	8.80	51.00	1.00	70.0
GR- 62	<.46	15.0	3.2	15.00	120.00	8.00	75.0
GR- 63	<.46	<5.0	<1.0	18.00	15.00	32.00	34.0
GR- 64	<.46	8.3	<1.0	16.00	18.00	39.00	31.0
GR- 65	<.46	16.0	<1.0	18.00	16.00	45.00	24.0
GR- 66	.70	23.0	<1.0	15.00	15.00	16.00	31.0
GR- 67	<.46	9.5	1.9	11.00	12.00	19.00	76.0
GR- 68	<.46	7.1	1.9	11.00	12.00	15.00	48.0
GR- 69	<.46	<5.0	2.4	3.10	4.90	6.50	32.0
GR- 70	<.46	<5.0	<1.0	1.20	1.60	2.60	11.0
GR- 71	<.46	<5.0	1.2	11.00	10.00	3.60	43.0
GR- 72	<.46	<5.0	<1.0	13.00	17.00	26.00	42.0
GR- 73	<.46	67.0	4.0	6.20	6.10	37.00	83.0
GR- 74	<.46	6.1	2.4	7.10	7.60	9.70	66.0
GR- 75	<.46	<5.0	1.1	8.50	9.00	7.70	35.0
GR- 76	<.46	<5.0	<1.0	8.60	7.90	3.60	28.0
GR- 77	<.46	<5.0	1.3	9.10	9.10	5.60	42.0
GR- 78	<.46	<5.0	1.5	8.80	8.00	2.80	37.0
GR- 79	<.46	<5.0	1.2	8.30	16.00	6.80	44.0
GR- 80	<.46	<5.0	<1.0	9.90	14.00	11.00	49.0
GR- 81	<.46	<5.0	1.4	8.00	8.90	1.20	64.0
GR- 82	<.46	<5.0	1.6	6.90	7.80	1.20	65.0
GR- 83	<.46	<5.0	1.5	2.00	2.40	<.22	42.0
GR- 84	<.46	<5.0	1.5	2.20	2.00	.31	65.0
GR- 85	<.46	<5.0	1.9	6.50	5.90	.32	81.0
GR- 86	<.46	<5.0	1.5	5.50	5.10	.67	67.0
GR- 87	<.46	<5.0	<1.0	11.00	11.00	6.50	33.0
GR- 88	<.46	8.3	<1.0	11.00	11.00	5.00	29.0
GR- 89	<.46	<5.0	1.3	7.30	8.20	28.00	40.0
GR- 90	<.46	<5.0	1.4	9.70	12.00	4.60	39.0
GR- 91	<.46	<5.0	1.7	5.80	12.00	1.20	110.0
GR- 92	<.46	<5.0	2.5	3.90	5.60	.45	64.0
GR- 93	<.46	41.0	2.6	22.00	82.00	30.00	170.0
GR- 94	<.46	32.0	2.7	14.00	29.00	51.00	130.0
GR- 95	<.46	<5.0	2.2	11.00	15.00	36.00	80.0
GR- 96	<.46	<5.0	2.1	12.00	23.00	2.40	79.0
GR- 97	<.46	<5.0	1.4	5.80	5.30	25.00	73.0
GR- 98	<.46	<5.0	1.5	6.50	5.20	3.40	88.0
GR- 99	<.46	8.9	2.1	11.00	25.00	4.70	47.0
GR-100	<.46	11.0	1.8	7.90	19.00	5.00	42.0

**Table 5. Plate-reader semiquantitative emission spectrographic analyses (in parts per million) of granitoid rocks—Continued**

Sample	Mo	Nb	Ni	Pb	Sc	Sn	V	W
GR- 51	2.3	24.0	12.0	14.0	5.2	<4.6	70.0	<46
GR- 52	1.9	18.0	11.0	15.0	4.6	<4.6	62.0	<46
GR- 53	<1.0	24.0	1.3	3.5	2.0	<4.6	2.6	<46
GR- 54	<1.0	35.0	2.4	4.9	2.5	<4.6	5.8	<46
GR- 55	<1.0	23.0	2.3	8.9	2.5	<4.6	12.0	<46
GR- 56	1.7	6.6	3.6	9.0	4.4	<4.6	56.0	<46
GR- 57	1.3	37.0	49.0	11.0	11.0	<4.6	62.0	<46
GR- 58	1.7	27.0	62.0	12.0	13.0	<4.6	69.0	<46
GR- 59	1.7	23.0	23.0	18.0	9.7	<4.6	66.0	<46
GR- 60	1.4	14.0	22.0	11.0	8.1	<4.6	56.0	<46
GR- 61	1.8	38.0	19.0	21.0	7.1	<4.6	48.0	<46
GR- 62	2.3	36.0	38.0	19.0	14.0	<4.6	90.0	<46
GR- 63	3.1	13.0	11.0	9.9	17.0	<4.6	150.0	<46
GR- 64	3.2	5.5	15.0	10.0	20.0	<4.6	150.0	<46
GR- 65	3.4	13.0	14.0	13.0	19.0	<4.6	150.0	<46
GR- 66	3.5	19.0	13.0	16.0	16.0	<4.6	150.0	<46
GR- 67	2.3	28.0	11.0	21.0	18.0	<4.6	66.0	<46
GR- 68	2.3	23.0	12.0	21.0	19.0	<4.6	59.0	<46
GR- 69	1.2	27.0	3.1	16.0	4.1	<4.6	13.0	<46
GR- 70	<1.0	30.0	<1.0	13.0	2.5	<4.6	3.8	<46
GR- 71	2.2	3.2	12.0	11.0	8.5	<4.6	62.0	<46
GR- 72	2.0	14.0	15.0	13.0	8.1	<4.6	92.0	<46
GR- 73	<1.0	27.0	7.0	24.0	13.0	<4.6	30.0	<46
GR- 74	1.6	22.0	5.9	35.0	13.0	<4.6	21.0	<46
GR- 75	1.8	9.6	5.9	13.0	6.6	<4.6	75.0	<46
GR- 76	2.1	14.0	5.8	12.0	5.2	<4.6	66.0	<46
GR- 77	1.8	15.0	7.0	14.0	10.0	<4.6	82.0	<46
GR- 78	2.2	14.0	10.0	19.0	11.0	<4.6	64.0	<46
GR- 79	1.8	6.3	11.0	14.0	8.5	<4.6	72.0	<46
GR- 80	1.5	17.0	9.8	16.0	10.0	<4.6	66.0	<46
GR- 81	1.8	18.0	5.3	19.0	6.8	<4.6	58.0	<46
GR- 82	1.8	34.0	4.3	19.0	7.4	<4.6	44.0	<46
GR- 83	<1.0	10.0	2.5	12.0	2.9	<4.6	10.0	<46
GR- 84	1.3	22.0	3.5	21.0	3.4	<4.6	11.0	<46
GR- 85	1.8	27.0	5.4	18.0	6.1	<4.6	31.0	<46
GR- 86	1.5	33.0	4.1	17.0	4.2	<4.6	30.0	<46
GR- 87	1.8	6.1	8.6	8.7	7.1	<4.6	87.0	<46
GR- 88	2.0	12.0	9.2	12.0	6.5	<4.6	100.0	<46
GR- 89	1.6	16.0	7.5	14.0	9.7	<4.6	69.0	<46
GR- 90	1.8	30.0	9.4	16.0	13.0	<4.6	83.0	<46
GR- 91	1.9	35.0	8.9	19.0	5.4	<4.6	44.0	<46
GR- 92	<1.0	52.0	5.7	28.0	4.6	<4.6	20.0	<46
GR- 93	4.3	56.0	51.0	34.0	19.0	<4.6	140.0	<46
GR- 94	3.2	94.0	21.0	15.0	10.0	<4.6	89.0	<46
GR- 95	4.6	22.0	17.0	18.0	10.0	<4.6	69.0	120
GR- 96	2.9	34.0	14.0	17.0	11.0	<4.6	83.0	<46
GR- 97	2.7	35.0	9.4	11.0	5.7	<4.6	29.0	<46
GR- 98	1.6	23.0	4.0	9.9	4.7	<4.6	29.0	<46
GR- 99	3.0	30.0	14.0	18.0	12.0	<4.6	80.0	<46
GR-100	1.1	26.0	11.0	16.0	7.7	<4.6	67.0	<46

**Table 5. Plate-reader semiquantitative emission spectrographic analyses (in parts per million) of granitoid rocks—Continued**

Sample	Y	Zr	Ce	Ga	Ge	Yb	Pr	Nd
GR- 51	13.0	180	170	13.0	1.70	1.00	<68	110
GR- 52	12.0	200	150	13.0	1.10	1.00	<68	140
GR- 53	35.0	94	73	6.5	<.46	1.60	<68	67
GR- 54	47.0	210	200	8.2	1.90	3.00	<68	69
GR- 55	11.0	99	60	6.6	1.50	1.10	<68	<46
GR- 56	11.0	96	65	6.3	<.46	.98	<68	75
GR- 57	15.0	150	170	7.9	.99	1.10	<68	100
GR- 58	16.0	140	170	8.7	<.46	1.20	<68	56
GR- 59	17.0	200	110	8.8	.88	1.50	<68	60
GR- 60	16.0	120	120	7.6	<.46	1.30	<68	<46
GR- 61	26.0	210	160	11.0	1.40	1.60	<68	69
GR- 62	27.0	240	150	11.0	1.60	1.80	<68	61
GR- 63	21.0	150	92	11.0	<.46	1.50	<68	94
GR- 64	20.0	130	110	10.0	<.46	1.50	<68	64
GR- 65	20.0	120	100	9.5	1.30	1.40	<68	120
GR- 66	15.0	100	110	11.0	2.00	1.30	<68	100
GR- 67	69.0	250	170	10.0	1.50	5.20	<68	<46
GR- 68	52.0	180	130	8.8	2.00	4.30	<68	47
GR- 69	19.0	89	65	10.0	<.46	1.30	<68	81
GR- 70	15.0	65	<46	6.9	<.46	1.40	<68	<46
GR- 71	13.0	110	120	9.4	<.46	1.10	<68	80
GR- 72	13.0	73	110	14.0	<.46	1.20	<68	<46
GR- 73	63.0	260	180	10.0	<.46	6.30	<68	59
GR- 74	56.0	190	150	9.6	2.00	5.40	<68	110
GR- 75	13.0	90	68	13.0	.55	1.10	<68	<46
GR- 76	13.0	100	62	9.8	<.46	1.30	<68	62
GR- 77	15.0	90	86	10.0	.97	1.20	<68	<46
GR- 78	14.0	120	120	11.0	1.10	1.40	<68	53
GR- 79	14.0	140	110	11.0	<.46	1.10	<68	58
GR- 80	15.0	120	110	16.0	<.46	1.40	<68	92
GR- 81	20.0	180	150	11.0	<.46	1.50	<68	52
GR- 82	21.0	200	140	11.0	.75	1.60	<68	67
GR- 83	6.6	150	63	9.0	<.46	.61	<68	77
GR- 84	8.8	170	140	11.0	1.30	.72	<68	50
GR- 85	20.0	120	140	12.0	2.30	1.20	<68	120
GR- 86	20.0	140	130	9.3	<.46	1.20	<68	62
GR- 87	14.0	110	83	9.7	<.46	1.10	<68	64
GR- 88	11.0	73	94	13.0	<.46	.99	<68	75
GR- 89	17.0	84	100	11.0	1.70	1.20	<68	63
GR- 90	18.0	130	98	10.0	<.46	1.40	<68	50
GR- 91	24.0	140	180	10.0	<.46	1.60	<68	<46
GR- 92	21.0	180	110	14.0	<.46	1.60	<68	<46
GR- 93	43.0	410	300	11.0	<.46	2.50	<68	160
GR- 94	21.0	240	220	11.0	<.46	1.60	<68	130
GR- 95	23.0	230	170	11.0	1.90	1.60	<68	110
GR- 96	24.0	280	160	12.0	<.46	1.60	<68	96
GR- 97	16.0	360	160	15.0	<.46	1.10	<68	92
GR- 98	17.0	230	150	11.0	.95	1.10	<68	140
GR- 99	20.0	85	110	10.0	2.40	1.50	<68	58
GR-100	17.0	97	110	8.3	1.20	1.40	<68	<46

**Table 5. Plate-reader semiquantitative emission spectrographic analyses (in parts per million) of granitoid rocks—Continued**

Sample	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
GR- 51	<46	3.2	7.3	<22	<10	<10	<4.6	<2.2
GR- 52	<46	4.4	5.1	<22	<10	<10	<4.6	<2.2
GR- 53	<46	<1.0	<2.2	<22	<10	<10	<4.6	<2.2
GR- 54	<46	2.1	9.1	<22	<10	<10	<4.6	<2.2
GR- 55	<46	<1.0	12.0	<22	<10	<10	<4.6	<2.2
GR- 56	<46	2.0	12.0	<22	<10	<10	<4.6	<2.2
GR- 57	<46	4.1	4.5	<22	<10	<10	<4.6	<2.2
GR- 58	<46	3.5	12.0	30	<10	<10	<4.6	<2.2
GR- 59	<46	4.2	8.7	<22	<10	<10	<4.6	<2.2
GR- 60	<46	<1.0	4.9	<22	<10	<10	<4.6	<2.2
GR- 61	<46	3.6	16.0	<22	<10	<10	<4.6	<2.2
GR- 62	48	3.8	<2.2	<22	<10	<10	<4.6	<2.2
GR- 63	<46	3.1	8.4	<22	<10	<10	<4.6	<2.2
GR- 64	<46	3.0	6.6	<22	<10	<10	<4.6	<2.2
GR- 65	<46	2.5	10.0	<22	<10	<10	<4.6	<2.2
GR- 66	<46	3.0	14.0	<22	<10	<10	<4.6	<2.2
GR- 67	<46	3.4	<2.2	<22	<10	<10	<4.6	<2.2
GR- 68	<46	5.3	15.0	<22	<10	<10	<4.6	<2.2
GR- 69	<46	1.9	<2.2	<22	<10	<10	<4.6	<2.2
GR- 70	<46	2.6	3.5	<22	<10	<10	<4.6	2.6
GR- 71	<46	1.4	6.4	<22	<10	<10	<4.6	<2.2
GR- 72	<46	3.0	<2.2	<22	<10	<10	<4.6	<2.2
GR- 73	<46	3.9	<2.2	<22	<10	<10	<4.6	<2.2
GR- 74	<46	4.6	5.4	36	<10	<10	<4.6	<2.2
GR- 75	<46	4.5	4.5	<22	<10	<10	<4.6	<2.2
GR- 76	<46	3.5	16.0	<22	<10	<10	<4.6	<2.2
GR- 77	<46	2.7	<2.2	<22	<10	<10	<4.6	<2.2
GR- 78	<46	2.8	14.0	<22	<10	<10	<4.6	<2.2
GR- 79	<46	2.7	8.9	<22	<10	<10	<4.6	<2.2
GR- 80	<46	3.7	<2.2	<22	<10	<10	<4.6	<2.2
GR- 81	<46	3.9	7.8	<22	<10	<10	<4.6	<2.2
GR- 82	<46	3.7	18.0	<22	<10	<10	<4.6	<2.2
GR- 83	<46	1.9	3.7	<22	<10	<10	<4.6	<2.2
GR- 84	<46	<1.0	12.0	<22	<10	<10	<4.6	<2.2
GR- 85	<46	2.7	11.0	<22	<10	<10	<4.6	<2.2
GR- 86	<46	4.1	4.0	<22	<10	<10	<4.6	<2.2
GR- 87	<46	<1.0	<2.2	<22	<10	<10	<4.6	<2.2
GR- 88	<46	2.4	12.0	<22	<10	<10	<4.6	<2.2
GR- 89	<46	2.7	12.0	<22	<10	<10	<4.6	<2.2
GR- 90	<46	3.5	9.7	<22	<10	<10	<4.6	<2.2
GR- 91	<46	3.6	11.0	25	<10	<10	<4.6	<2.2
GR- 92	<46	2.6	14.0	<22	<10	<10	<4.6	<2.2
GR- 93	48	7.5	<2.2	<22	<10	<10	<4.6	<2.2
GR- 94	<46	5.6	6.5	<22	<10	<10	<4.6	<2.2
GR- 95	<46	4.5	3.5	36	<10	<10	<4.6	<2.2
GR- 96	<46	4.5	8.0	<22	<10	<10	<4.6	<2.2
GR- 97	<46	<1.0	7.4	<22	<10	<10	<4.6	<2.2
GR- 98	<46	4.2	<2.2	<22	<10	<10	<4.6	<2.2
GR- 99	<46	3.1	5.5	<22	<10	<10	<4.6	<2.2
GR-100	<46	3.2	6.0	<22	<10	<10	<4.6	<2.2

**Table 5. Plate-reader semiquantitative emission spectrographic analyses (in parts per million) of granitoid rocks—Continued**

Sample	Ag	B	Be	Co	Cr	Cu	La
GR-101	<0.46	<5.0	1.3	11.00	36.00	84.00	60.0
GR-102	<0.46	<5.0	1.5	9.20	26.00	3.40	50.0
GR-103	<0.46	<5.0	1.9	4.60	18.00	.80	49.0
GR-104	<0.46	<5.0	3.0	3.80	7.60	.76	18.0
GR-105	<0.46	<5.0	1.6	7.70	64.00	1.50	53.0
GR-106	<0.46	18.0	1.5	7.90	160.00	1.30	35.0
GR-107	<0.46	6.2	1.1	12.00	9.00	8.00	78.0
GR-108	<0.46	8.8	2.0	11.00	8.10	2.10	81.0
GR-109	<0.46	<5.0	1.6	2.20	2.30	1.80	49.0
GR-110	<0.46	<5.0	1.3	1.40	2.40	.54	50.0
GR-111	<0.46	<5.0	2.7	2.90	3.00	36.00	43.0
GR-112	<0.46	<5.0	2.0	2.60	3.20	8.40	45.0
GR-113	<0.46	<5.0	<1.0	11.00	40.00	4.30	34.0
GR-114	<0.46	<5.0	1.2	10.00	38.00	3.80	40.0
GR-115	<0.46	<5.0	1.2	6.30	5.00	14.00	38.0
GR-116	<0.46	<5.0	<1.0	17.00	17.00	5.70	32.0
GR-117	<0.46	<5.0	3.1	2.50	3.60	2.30	54.0
GR-118	<0.46	<5.0	2.6	3.90	4.10	60.00	68.0
GR-119	<0.46	7.1	1.6	11.00	13.00	10.00	69.0
GR-120	<0.46	<5.0	1.7	12.00	16.00	15.00	78.0
GR-121	<0.46	<5.0	<1.0	4.50	3.90	.95	32.0
GR-122	<0.46	<5.0	1.1	2.50	3.50	1.40	22.0
GR-123	<0.46	<5.0	2.6	8.00	21.00	6.40	77.0
GR-124	<0.46	<5.0	1.5	6.60	15.00	.98	56.0
GR-125	<0.46	8.5	3.1	6.50	6.60	9.40	59.0
GR-126	<0.46	<5.0	1.8	8.90	24.00	14.00	140.0
GR-129	<0.46	15.0	<1.0	24.00	22.00	54.00	69.0
GR-130	.54	37.0	<1.0	25.00	26.00	57.00	62.0
GR-131	<0.46	<5.0	<1.0	2.30	2.40	.25	54.0
GR-132	<0.46	<5.0	1.4	4.00	3.10	.69	68.0
GR-133	<0.46	22.0	1.5	6.80	12.00	2.40	66.0
GR-134	<0.46	7.9	1.1	4.70	5.10	2.00	140.0
GR-135	<0.46	18.0	1.2	4.60	6.70	.36	41.0
GR-136	<0.46	18.0	1.2	4.80	5.50	3.60	60.0
GR-137	<0.46	<5.0	2.5	2.00	2.50	.78	86.0
GR-138	<0.46	<5.0	2.7	2.60	3.10	1.20	110.0
GR-139	<0.46	30.0	1.6	13.00	35.00	67.00	97.0
GR-140	<0.46	<5.0	1.5	12.00	30.00	19.00	84.0
GR-141	<0.46	<5.0	3.0	1.10	3.80	1.60	62.0
GR-142	<0.46	<5.0	2.5	<0.46	1.90	.87	51.0
GR-143	<0.46	<5.0	1.3	5.80	5.20	3.20	58.0
GR-144	<0.46	<5.0	1.7	5.90	6.50	42.00	39.0
GR-145	<0.46	<5.0	1.0	3.50	8.90	.32	36.0
GR-146	<0.46	<5.0	<1.0	2.70	6.20	1.40	51.0
GR-147	<0.46	<5.0	3.6	.92	2.40	.40	31.0
GR-148	<0.46	<5.0	2.2	.64	<0.46	<.22	38.0
GR-149	<0.46	<5.0	<1.0	8.20	7.00	23.00	76.0
GR-150	<0.46	<5.0	<1.0	7.30	5.70	9.20	71.0
GR-151	<0.46	<5.0	<1.0	8.20	2.60	49.00	24.0
GR-152	<0.46	6.9	<1.0	26.00	22.00	50.00	25.0

**Table 5. Plate-reader semiquantitative emission spectrographic analyses (in parts per million) of granitoid rocks—Continued**

Sample	Mo	Nb	Ni	Pb	Sc	Sn	V	W
GR-101	3.4	19.0	19.0	11.0	12.0	<4.6	79.0	<46
GR-102	1.5	24.0	13.0	6.8	9.9	<4.6	89.0	<46
GR-103	1.3	42.0	12.0	12.0	6.7	<4.6	53.0	<46
GR-104	<1.0	35.0	7.4	8.6	6.0	5.0	11.0	<46
GR-105	1.4	24.0	22.0	4.9	17.0	<4.6	100.0	<46
GR-106	2.6	19.0	25.0	9.5	23.0	<4.6	150.0	<46
GR-107	2.8	31.0	6.6	10.0	13.0	<4.6	96.0	<46
GR-108	3.0	33.0	6.2	11.0	12.0	<4.6	130.0	<46
GR-109	<1.0	9.2	3.6	18.0	2.2	<4.6	15.0	<46
GR-110	<1.0	13.0	2.9	17.0	2.3	<4.6	16.0	<46
GR-111	1.8	19.0	5.1	17.0	3.3	<4.6	19.0	<46
GR-112	1.7	24.0	5.4	20.0	3.1	<4.6	22.0	<46
GR-113	8.6	15.0	24.0	6.6	10.0	<4.6	67.0	<46
GR-114	1.9	18.0	23.0	6.0	8.6	<4.6	67.0	<46
GR-115	1.3	7.3	7.4	20.0	4.8	<4.6	38.0	<46
GR-116	3.0	7.6	14.0	10.0	15.0	<4.6	120.0	<46
GR-117	<1.0	41.0	2.8	21.0	2.4	<4.6	15.0	<46
GR-118	1.5	27.0	3.8	12.0	4.1	<4.6	28.0	<46
GR-119	3.0	30.0	10.0	21.0	13.0	<4.6	94.0	<46
GR-120	3.7	23.0	12.0	23.0	13.0	<4.6	74.0	<46
GR-121	1.3	3.2	3.8	11.0	3.2	<4.6	33.0	<46
GR-122	<1.0	14.0	2.6	11.0	3.2	<4.6	15.0	<46
GR-123	1.4	59.0	16.0	16.0	6.2	<4.6	36.0	<46
GR-124	<1.0	53.0	12.0	9.5	4.0	<4.6	41.0	<46
GR-125	1.5	39.0	6.0	34.0	12.0	<4.6	23.0	<46
GR-126	2.2	85.0	13.0	14.0	9.1	<4.6	78.0	<46
GR-129	4.4	16.0	15.0	13.0	18.0	<4.6	180.0	<46
GR-130	5.8	20.0	20.0	22.0	19.0	<4.6	170.0	<46
GR-131	<1.0	14.0	2.7	12.0	2.6	<4.6	11.0	<46
GR-132	<1.0	20.0	3.5	12.0	3.4	<4.6	20.0	<46
GR-133	2.2	23.0	16.0	13.0	6.2	<4.6	56.0	<46
GR-134	<1.0	15.0	4.8	17.0	2.7	<4.6	18.0	<46
GR-135	1.4	23.0	8.0	9.1	4.0	<4.6	27.0	<46
GR-136	1.3	25.0	7.2	9.0	4.7	<4.6	24.0	<46
GR-137	3.6	48.0	7.3	18.0	5.0	<4.6	14.0	<46
GR-138	2.1	42.0	2.6	27.0	5.8	<4.6	15.0	<46
GR-139	2.4	20.0	36.0	21.0	10.0	<4.6	71.0	<46
GR-140	4.3	37.0	29.0	21.0	9.7	<4.6	82.0	<46
GR-141	1.5	63.0	4.0	30.0	2.4	4.8	4.6	<46
GR-142	1.4	74.0	7.8	23.0	1.8	<4.6	5.0	<46
GR-143	1.9	9.2	9.0	16.0	4.2	<4.6	41.0	<46
GR-144	2.1	12.0	8.5	16.0	5.7	<4.6	28.0	<46
GR-145	<1.0	34.0	4.1	20.0	3.8	<4.6	17.0	<46
GR-146	1.0	19.0	3.3	16.0	2.9	<4.6	16.0	<46
GR-147	<1.0	51.0	2.3	10.0	2.7	5.0	2.9	<46
GR-148	<1.0	47.0	1.7	11.0	2.9	<4.6	3.4	<46
GR-149	1.6	15.0	5.0	9.6	9.4	<4.6	51.0	<46
GR-150	1.8	26.0	6.1	12.0	6.1	<4.6	48.0	<46
GR-151	1.7	6.8	3.8	11.0	6.7	<4.6	80.0	<46
GR-152	5.0	2.6	13.0	7.7	30.0	<4.6	240.0	<46

**Table 5.** Plate-reader semiquantitative emission spectrographic analyses (in parts per million) of granitoid rocks—Continued

Sample	Y	Zr	Ce	Ga	Ge	Yb	Pr	Nd
GR-101	19.0	230	130	11.0	1.80	1.30	<68	110
GR-102	19.0	170	120	9.7	<.46	1.40	<68	52
GR-103	18.0	220	100	10.0	<.46	1.50	<68	<46
GR-104	15.0	130	<46	14.0	<.46	1.10	<68	<46
GR-105	30.0	200	130	13.0	1.60	1.90	<68	100
GR-106	26.0	140	120	16.0	<.46	1.80	<68	58
GR-107	26.0	170	150	9.8	<.46	1.80	<68	<46
GR-108	21.0	180	170	10.0	1.50	1.60	<68	57
GR-109	7.2	120	98	13.0	1.20	.59	<68	<46
GR-110	7.9	120	66	12.0	<.46	.67	<68	64
GR-111	5.3	120	100	17.0	1.70	.62	<68	54
GR-112	4.9	89	76	15.0	1.40	.58	<68	<46
GR-113	15.0	82	86	8.5	1.40	1.20	<68	100
GR-114	15.0	92	110	7.8	<.46	1.20	<68	130
GR-115	11.0	130	95	11.0	.74	.91	<68	82
GR-116	15.0	78	100	12.0	2.10	1.20	<68	<46
GR-117	16.0	240	120	14.0	2.00	1.10	<68	78
GR-118	19.0	200	130	11.0	<.46	1.20	<68	98
GR-119	26.0	170	160	9.1	1.80	1.60	<68	110
GR-120	23.0	190	180	14.0	1.70	1.70	<68	<46
GR-121	8.2	96	77	12.0	1.20	.74	<68	110
GR-122	8.5	100	62	12.0	1.40	.85	<68	69
GR-123	18.0	260	150	9.4	1.10	1.40	<68	79
GR-124	16.0	160	97	6.2	<.46	1.30	<68	<46
GR-125	59.0	420	140	11.0	1.80	5.40	<68	68
GR-126	28.0	250	260	8.9	.65	1.70	85	98
GR-129	27.0	170	180	14.0	1.30	1.60	<68	61
GR-130	26.0	200	180	14.0	<.46	1.60	<68	48
GR-131	15.0	93	100	6.1	<.46	1.20	<68	76
GR-132	18.0	110	130	9.8	2.20	1.30	<68	59
GR-133	15.0	360	140	14.0	1.40	1.20	<68	<46
GR-134	10.0	320	200	9.0	1.90	.91	<68	78
GR-135	14.0	240	82	10.0	<.46	1.20	<68	130
GR-136	14.0	200	120	8.6	1.00	1.30	<68	130
GR-137	34.0	320	170	13.0	<.46	2.60	74	<46
GR-138	45.0	330	230	16.0	<.46	3.00	<68	130
GR-139	26.0	310	190	17.0	<.46	1.90	<68	120
GR-140	24.0	360	170	9.7	1.10	2.20	<68	53
GR-141	11.0	150	130	10.0	<.46	1.30	<68	<46
GR-142	7.7	120	76	9.6	.85	1.00	<68	<46
GR-143	9.4	230	130	14.0	<.46	.94	<68	98
GR-144	8.2	77	96	15.0	1.50	.94	<68	57
GR-145	14.0	56	84	12.0	1.00	1.00	<68	<46
GR-146	8.6	91	110	8.1	1.60	.89	<68	49
GR-147	41.0	120	86	11.0	<.46	3.80	<68	<46
GR-148	39.0	97	99	11.0	2.00	3.60	<68	67
GR-149	29.0	160	140	7.1	<.46	2.40	<68	110
GR-150	38.0	140	150	7.6	1.20	2.70	<68	100
GR-151	16.0	78	70	9.7	1.90	1.40	<68	62
GR-152	15.0	75	95	10.0	1.10	1.50	<68	<46

**Table 5.** Plate-reader semiquantitative emission spectrographic analyses (in parts per million) of granitoid rocks—Continued

Sample	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
GR-101	<46	2.9	4.7	<22	<10	<10	<4.6	<2.2
GR-102	46	3.3	<2.2	<22	<10	<10	<4.6	<2.2
GR-103	<46	4.1	15.0	<22	<10	<10	<4.6	<2.2
GR-104	<46	4.0	19.0	<22	<10	<10	<4.6	<2.2
GR-105	<46	5.7	<2.2	<22	<10	<10	<4.6	<2.2
GR-106	<46	4.6	11.0	<22	<10	<10	<4.6	<2.2
GR-107	<46	2.6	<2.2	<22	<10	<10	<4.6	<2.2
GR-108	48	3.5	20.0	37	<10	<10	<4.6	<2.2
GR-109	<46	4.5	11.0	<22	<10	<10	<4.6	<2.2
GR-110	<46	2.9	16.0	<22	<10	<10	<4.6	2.2
GR-111	<46	2.7	<2.2	<22	<10	<10	<4.6	<2.2
GR-112	<46	1.2	13.0	<22	<10	<10	<4.6	<2.2
GR-113	<46	<1.0	<2.2	<22	<10	<10	<4.6	<2.2
GR-114	<46	2.7	20.0	<22	<10	<10	<4.6	<2.2
GR-115	<46	1.4	<2.2	<22	<10	<10	<4.6	<2.2
GR-116	<46	2.7	15.0	<22	<10	<10	<4.6	<2.2
GR-117	<46	2.1	<2.2	<22	<10	<10	<4.6	<2.2
GR-118	<46	4.3	9.8	<22	<10	<10	<4.6	<2.2
GR-119	51	2.0	6.3	<22	<10	<10	<4.6	<2.2
GR-120	<46	3.4	12.0	<22	<10	<10	<4.6	<2.2
GR-121	<46	1.7	5.3	<22	<10	<10	<4.6	<2.2
GR-122	<46	2.2	8.0	<22	<10	<10	<4.6	<2.2
GR-123	<46	2.6	19.0	<22	<10	<10	<4.6	<2.2
GR-124	<46	2.3	17.0	<22	<10	<10	<4.6	<2.2
GR-125	<46	4.3	9.1	35	<10	<10	<4.6	<2.2
GR-126	<46	4.5	<2.2	<22	<10	<10	<4.6	<2.2
GR-129	<46	<1.0	19.0	<22	<10	<10	<4.6	<2.2
GR-130	<46	5.0	16.0	<22	<10	<10	<4.6	<2.2
GR-131	<46	<1.0	<2.2	<22	<10	<10	<4.6	<2.2
GR-132	<46	<1.0	14.0	<22	13	<10	<4.6	<2.2
GR-133	<46	3.5	<2.2	<22	<10	<10	<4.6	<2.2
GR-134	<46	2.8	<2.2	<22	<10	<10	<4.6	<2.2
GR-135	<46	2.3	13.0	<22	<10	<10	<4.6	<2.2
GR-136	<46	2.4	10.0	<22	<10	<10	<4.6	<2.2
GR-137	<46	3.9	3.5	<22	<10	<10	<4.6	<2.2
GR-138	<46	3.3	8.3	<22	<10	<10	<4.6	<2.2
GR-139	<46	4.8	6.7	<22	<10	<10	<4.6	<2.2
GR-140	<46	4.6	11.0	<22	<10	<10	<4.6	<2.2
GR-141	<46	2.7	14.0	<22	<10	<10	<4.6	<2.2
GR-142	<46	1.1	9.3	<22	<10	<10	<4.6	<2.2
GR-143	<46	3.3	15.0	<22	<10	<10	<4.6	<2.2
GR-144	<46	3.4	5.8	<22	<10	<10	<4.6	<2.2
GR-145	<46	<1.0	<2.2	<22	<10	<10	<4.6	<2.2
GR-146	<46	2.6	13.0	<22	<10	<10	<4.6	<2.2
GR-147	48	2.6	16.0	<22	13	<10	<4.6	<2.2
GR-148	50	1.7	5.4	<22	10	<10	<4.6	<2.2
GR-149	<46	2.0	<2.2	<22	<10	<10	<4.6	<2.2
GR-150	<46	3.9	<2.2	<22	<10	<10	<4.6	<2.2
GR-151	<46	<1.0	<2.2	<22	<10	<10	<4.6	<2.2
GR-152	<46	<1.0	8.6	<22	<10	<10	<4.6	<2.2

**Table 5. Plate-reader semiquantitative emission spectrographic analyses (in parts per million) of granitoid rocks—Continued**

Sample	Ag	B	Be	Co	Cr	Cu	La
GR-153	<0.46	<5.0	1.3	5.20	6.40	3.20	79.0
GR-154	.48	<5.0	1.4	7.10	2.30	12.00	58.0
GR-155	<.46	<5.0	1.3	5.20	3.50	1.00	54.0
GR-156	<.46	<5.0	1.4	1.90	2.00	.89	48.0
GR-157	<.46	<5.0	1.5	2.70	5.10	6.30	68.0
GR-158	<.46	<5.0	1.4	2.70	3.80	2.30	52.0
GR-159	<.46	<5.0	1.1	8.30	8.70	7.00	47.0
GR-160	<.46	6.2	1.9	12.00	15.00	7.50	74.0
GR-161	<.46	9.8	<1.0	12.00	18.00	38.00	39.0
GR-162	<.46	<5.0	1.5	14.00	22.00	38.00	35.0
GR-163	<.46	<5.0	1.3	3.20	4.10	1.10	180.0
GR-164	<.46	<5.0	2.3	2.60	3.40	3.90	270.0
GR-165	<.46	7.5	1.3	8.30	7.10	45.00	55.0
GR-166	<.46	5.0	1.9	7.10	6.50	4.10	82.0
GR-167	<.46	<5.0	1.3	19.00	16.00	33.00	50.0
GR-168	<.46	<5.0	1.2	11.00	16.00	11.00	77.0
GR-169	<.46	<5.0	<1.0	6.40	7.40	3.30	97.0
GR-170	<.46	<5.0	<1.0	2.30	5.10	.83	70.0
GR-171	<.46	9.3	<1.0	9.10	8.70	3.80	37.0
GR-172	<.46	5.8	<1.0	9.90	11.00	4.30	41.0
GR-173	<.46	<5.0	<1.0	1.80	2.30	.40	37.0
GR-174	<.46	<5.0	<1.0	2.00	2.10	1.20	33.0
GR-175	<.46	<5.0	1.0	1.70	2.20	1.80	16.0
GR-176	<.46	<5.0	1.0	1.80	2.60	1.00	14.0
GR-177	<.46	<5.0	<1.0	9.20	4.10	6.40	120.0
GR-178	<.46	<5.0	2.0	7.40	12.00	8.00	210.0
GR-179	<.46	<5.0	1.1	7.50	9.10	1.30	40.0
GR-180	<.46	<5.0	1.5	5.10	9.70	.47	23.0
GR-181	<.46	<5.0	1.2	4.80	6.40	8.00	250.0
GR-182	<.46	<5.0	1.3	4.50	3.20	3.20	150.0
GR-183	<.46	<5.0	1.3	4.20	5.30	25.00	80.0
GR-184	<.46	<5.0	<1.0	2.30	3.40	9.40	54.0
GR-185	<.46	<5.0	1.8	7.00	4.60	8.40	100.0
GR-186	<.46	<5.0	3.4	3.40	3.50	.71	180.0
GR-187	<.46	<5.0	2.8	7.50	6.10	4.00	150.0
GR-188	<.46	8.6	2.5	11.00	4.20	10.00	170.0
GR-189	<.46	<5.0	<1.0	4.60	2.30	8.30	150.0
GR-190	<.46	<5.0	<1.0	5.40	2.60	4.00	180.0
GR-191	<.46	<5.0	<1.0	.79	2.20	1.60	8.9
GR-192	.62	<5.0	1.4	3.10	3.80	2.90	55.0
GR-193	<.46	<5.0	2.4	<.46	1.20	.62	70.0
GR-194	<.46	<5.0	3.5	1.80	2.30	.42	130.0
GR-195	<.46	<5.0	1.5	18.00	18.00	250.00	47.0
GR-196	<.46	<5.0	1.1	4.50	6.50	23.00	39.0
GR-197	<.46	<5.0	1.8	11.00	7.90	6.80	94.0
GR-198	<.46	5.7	3.3	14.00	9.80	8.70	120.0
GR-199	<.46	<5.0	1.3	4.60	3.40	4.10	28.0
GR-200	<.46	<5.0	1.1	3.00	2.20	4.70	29.0
GR-201	<.46	6.6	2.2	8.40	13.00	7.10	160.0
GR-202	<.46	6.1	1.7	7.80	12.00	5.70	120.0

**Table 5. Plate-reader semiquantitative emission spectrographic analyses (in parts per million) of granitoid rocks—Continued**

Sample	Mo	Nb	Ni	Pb	Sc	Sn	V	W
GR-153	2.1	11.0	9.9	29.0	5.6	<4.6	69.0	<46
GR-154	3.1	13.0	8.0	27.0	5.8	<4.6	110.0	<46
GR-155	1.1	14.0	3.5	16.0	3.7	<4.6	35.0	<46
GR-156	<1.0	18.0	2.4	21.0	2.8	<4.6	14.0	<46
GR-157	<1.0	21.0	3.2	26.0	4.8	4.7	14.0	<46
GR-158	1.4	22.0	5.6	23.0	3.8	<4.6	11.0	<46
GR-159	<1.0	15.0	8.0	15.0	5.2	<4.6	55.0	<46
GR-160	1.8	26.0	11.0	24.0	11.0	<4.6	76.0	<46
GR-161	1.7	20.0	16.0	23.0	7.3	<4.6	87.0	<46
GR-162	2.4	20.0	18.0	22.0	8.7	<4.6	91.0	<46
GR-163	1.1	46.0	2.3	24.0	4.2	<4.6	5.6	<46
GR-164	1.1	52.0	2.4	23.0	5.2	<4.6	6.0	<46
GR-165	1.6	26.0	7.3	20.0	9.0	<4.6	65.0	<46
GR-166	2.4	35.0	8.2	22.0	14.0	<4.6	54.0	<46
GR-167	3.1	18.0	14.0	18.0	16.0	<4.6	120.0	<46
GR-168	2.1	9.3	13.0	16.0	7.6	<4.6	64.0	<46
GR-169	2.7	18.0	5.8	17.0	16.0	<4.6	34.0	<46
GR-170	<1.0	59.0	3.7	27.0	4.6	<4.6	6.2	<46
GR-171	2.8	20.0	6.6	12.0	12.0	<4.6	68.0	<46
GR-172	2.6	24.0	9.7	9.2	10.0	<4.6	80.0	<46
GR-173	<1.0	21.0	8.4	20.0	3.2	<4.6	9.5	<46
GR-174	<1.0	9.7	3.1	15.0	3.0	<4.6	11.0	<46
GR-175	<1.0	22.0	3.9	25.0	2.3	<4.6	6.6	<46
GR-176	<1.0	20.0	2.0	23.0	3.2	<4.6	8.1	<46
GR-177	3.2	22.0	3.9	19.0	26.0	<4.6	24.0	<46
GR-178	4.5	50.0	9.4	22.0	28.0	<4.6	21.0	<46
GR-179	1.4	15.0	8.2	15.0	5.5	<4.6	28.0	<46
GR-180	1.2	6.1	8.7	25.0	3.6	<4.6	18.0	<46
GR-181	1.9	41.0	4.7	48.0	5.7	<4.6	26.0	<46
GR-182	<1.0	46.0	3.4	37.0	5.3	<4.6	17.0	<46
GR-183	<1.0	34.0	3.2	19.0	5.6	<4.6	17.0	<46
GR-184	<1.0	16.0	3.0	24.0	6.4	<4.6	10.0	<46
GR-185	1.7	45.0	3.9	19.0	8.4	<4.6	33.0	<46
GR-186	1.0	66.0	3.0	33.0	4.0	<4.6	11.0	<46
GR-187	3.0	80.0	5.0	26.0	19.0	5.9	48.0	<46
GR-188	4.0	24.0	9.4	28.0	21.0	<4.6	50.0	<46
GR-189	3.9	34.0	3.2	21.0	26.0	4.6	9.3	<46
GR-190	1.8	28.0	2.8	22.0	14.0	<4.6	13.0	<46
GR-191	<1.0	38.0	1.7	12.0	3.5	<4.6	2.2	<46
GR-192	<1.0	14.0	3.0	19.0	3.7	<4.6	15.0	<46
GR-193	1.0	68.0	2.7	19.0	5.1	<4.6	3.8	<46
GR-194	1.4	55.0	2.7	24.0	6.3	5.9	4.9	<46
GR-195	4.3	18.0	21.0	10.0	9.5	<4.6	120.0	<46
GR-196	4.5	22.0	6.2	13.0	3.6	<4.6	27.0	<46
GR-197	3.6	19.0	13.0	26.0	13.0	<4.6	57.0	<46
GR-198	4.5	19.0	8.7	34.0	21.0	<4.6	69.0	<46
GR-199	<1.0	20.0	3.4	18.0	2.7	<4.6	18.0	<46
GR-200	<1.0	15.0	2.6	17.0	2.3	<4.6	12.0	<46
GR-201	2.2	27.0	7.8	23.0	18.0	<4.6	38.0	<46
GR-202	2.5	28.0	9.8	24.0	15.0	<4.6	46.0	<46

**Table 5.** Plate-reader semiquantitative emission spectrographic analyses (in parts per million) of granitoid rocks—Continued

Sample	Y	Zr	Ce	Ga	Ge	Yb	Pr	Nd
GR-153	33.0	340	180	18.0	<0.46	2.20	<68	<46
GR-154	26.0	130	150	18.0	<.46	1.90	<68	110
GR-155	11.0	140	120	12.0	1.80	.86	<68	<46
GR-156	8.8	170	100	13.0	1.70	.65	<68	93
GR-157	41.0	120	140	9.4	<.46	2.90	<68	82
GR-158	54.0	120	130	7.7	1.90	3.70	<68	71
GR-159	11.0	160	87	11.0	<.46	1.10	<68	53
GR-160	20.0	200	160	18.0	1.60	1.50	<68	75
GR-161	16.0	140	97	13.0	1.20	1.20	<68	99
GR-162	16.0	110	110	13.0	.64	1.40	<68	<46
GR-163	50.0	140	300	8.3	<.46	3.30	<68	160
GR-164	69.0	270	410	8.4	<.46	3.70	96	210
GR-165	29.0	140	130	8.6	<.46	2.70	<68	74
GR-166	53.0	360	170	11.0	1.20	4.30	<68	130
GR-167	22.0	130	140	12.0	2.70	1.50	<68	54
GR-168	15.0	160	140	10.0	<.46	1.30	<68	86
GR-169	50.0	480	200	12.0	<.46	4.10	<68	76
GR-170	72.0	78	130	6.8	1.30	5.70	<68	97
GR-171	33.0	150	110	12.0	<.46	2.60	<68	130
GR-172	23.0	180	120	9.8	1.70	1.90	<68	54
GR-173	12.0	80	100	8.1	1.20	.90	<68	79
GR-174	6.5	170	56	10.0	<.46	.64	<68	<46
GR-175	9.5	90	68	7.8	<.46	.79	<68	57
GR-176	19.0	140	62	11.0	<.46	1.40	<68	<46
GR-177	88.0	750	230	14.0	<.46	6.00	<68	77
GR-178	140.0	600	470	13.0	<.46	23.00	110	130
GR-179	7.5	130	98	12.0	<.46	.77	<68	<46
GR-180	6.3	160	60	15.0	<.46	.55	<68	96
GR-181	65.0	560	470	12.0	1.20	4.00	100	220
GR-182	50.0	530	320	8.1	1.80	2.70	91	170
GR-183	26.0	360	160	7.6	<.46	1.70	<68	62
GR-184	41.0	130	96	6.6	<.46	2.80	<68	77
GR-185	61.0	210	190	6.6	<.46	3.90	<68	110
GR-186	66.0	370	290	9.5	<.46	4.60	<68	<46
GR-187	100.0	770	330	11.0	<.46	9.60	100	180
GR-188	76.0	590	320	13.0	1.80	5.00	73	160
GR-189	110.0	1,000	320	12.0	1.50	6.70	95	190
GR-190	65.0	530	300	12.0	<.46	6.00	87	150
GR-191	13.0	30	<46	5.3	1.10	1.20	<68	<46
GR-192	13.0	100	100	7.1	1.60	1.20	<68	61
GR-193	53.0	270	150	9.0	<.46	4.50	<68	<46
GR-194	63.0	250	250	12.0	1.30	4.70	<68	130
GR-195	15.0	110	120	12.0	<.46	1.40	<68	<46
GR-196	11.0	64	68	6.1	1.80	1.20	<68	69
GR-197	79.0	300	200	9.7	2.60	6.80	<68	64
GR-198	110.0	650	250	14.0	2.00	12.00	78	170
GR-199	16.0	130	54	8.1	1.70	1.60	<68	<46
GR-200	18.0	180	55	9.5	<.46	1.70	<68	<46
GR-201	58.0	380	300	11.0	<.46	4.20	<68	120
GR-202	48.0	180	230	9.0	<.46	3.50	<68	<46

**Table 5.** Plate-reader semiquantitative emission spectrographic analyses (in parts per million) of granitoid rocks—Continued

Sample	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
GR-153	<46	4.2	9.7	<22	<10	<10	<4.6	<2.2
GR-154	<46	5.5	13.0	<22	<10	<10	<4.6	<2.2
GR-155	<46	4.4	11.0	<22	<10	<10	<4.6	<2.2
GR-156	<46	3.0	9.2	<22	<10	<10	<4.6	2.6
GR-157	<46	3.1	9.2	<22	15	<10	<4.6	<2.2
GR-158	<46	<1.0	11.0	<22	<10	<10	<4.6	<2.2
GR-159	<46	3.3	15.0	<22	<10	<10	<4.6	<2.2
GR-160	<46	4.9	2.5	<22	<10	<10	<4.6	<2.2
GR-161	<46	2.9	6.5	<22	<10	<10	<4.6	<2.2
GR-162	<46	2.4	13.0	<22	<10	<10	<4.6	<2.2
GR-163	47	3.6	<2.2	<22	<10	<10	<4.6	<2.2
GR-164	53	2.2	5.9	<22	20	<10	<4.6	<2.2
GR-165	<46	3.0	9.5	<22	<10	<10	<4.6	<2.2
GR-166	<46	3.7	12.0	<22	<10	<10	<4.6	<2.2
GR-167	47	3.1	8.7	<22	<10	<10	<4.6	<2.2
GR-168	<46	3.6	4.9	<22	<10	<10	<4.6	<2.2
GR-169	<46	5.7	5.5	<22	<10	<10	<4.6	<2.2
GR-170	<46	<1.0	7.9	<22	15	<10	<4.6	<2.2
GR-171	<46	<1.0	<2.2	<22	<10	<10	<4.6	<2.2
GR-172	<46	4.2	11.0	<22	<10	<10	<4.6	<2.2
GR-173	<46	2.9	<2.2	<22	<10	<10	<4.6	<2.2
GR-174	<46	2.1	7.7	<22	<10	<10	<4.6	2.3
GR-175	<46	<1.0	<2.2	<22	<10	<10	<4.6	<2.2
GR-176	<46	1.8	5.8	<22	<10	<10	<4.6	<2.2
GR-177	<46	8.2	11.0	<22	<10	<10	5.2	<2.2
GR-178	57	7.3	<2.2	<22	77	14	7.8	<2.2
GR-179	<46	<1.0	5.7	<22	<10	<10	<4.6	<2.2
GR-180	<46	2.2	12.0	<22	<10	<10	<4.6	<2.2
GR-181	62	10.0	<2.2	<22	<10	<10	<4.6	<2.2
GR-182	<46	<1.0	<2.2	<22	<10	<10	<4.6	<2.2
GR-183	<46	2.4	14.0	<22	<10	<10	<4.6	<2.2
GR-184	<46	2.0	20.0	<22	<10	<10	<4.6	<2.2
GR-185	<46	2.2	9.5	<22	<10	<10	<4.6	<2.2
GR-186	<46	2.8	<2.2	<22	<10	<10	<4.6	<2.2
GR-187	49	7.8	9.0	<22	<10	<10	4.8	<2.2
GR-188	<46	9.3	<2.2	<22	<10	<10	<4.6	<2.2
GR-189	50	11.0	<2.2	<22	<10	<10	5.2	<2.2
GR-190	50	9.3	<2.2	<22	<10	<10	<4.6	<2.2
GR-191	<46	<1.0	6.1	<22	<10	<10	<4.6	3.8
GR-192	<46	1.6	8.0	<22	<10	<10	<4.6	<2.2
GR-193	<46	3.0	13.0	<22	16	<10	<4.6	<2.2
GR-194	<46	5.2	10.0	<22	19	<10	<4.6	<2.2
GR-195	<46	3.3	8.4	<22	<10	<10	<4.6	<2.2
GR-196	<46	1.7	4.8	<22	<10	<10	<4.6	<2.2
GR-197	<46	6.5	<2.2	<22	<10	<10	<4.6	<2.2
GR-198	53	6.1	15.0	<22	<10	<10	5.4	<2.2
GR-199	<46	3.3	14.0	<22	<10	<10	<4.6	<2.2
GR-200	<46	<1.0	19.0	<22	<10	<10	<4.6	<2.2
GR-201	<46	6.2	6.2	<22	<10	<10	<4.6	<2.2
GR-202	<46	5.7	<2.2	<22	<10	<10	<4.6	<2.2

**Table 5.** Plate-reader semiquantitative emission spectrographic analyses (in parts per million) of granitoid rocks—Continued

Sample	Ag	B	Be	Co	Cr	Cu	La
GR-203	<0.46	<5.0	1.6	4.00	8.20	0.88	49.0
GR-204	<.46	<5.0	<1.0	11.00	16.00	40.00	34.0
GR-205	<.46	<5.0	1.2	2.10	8.50	1.70	54.0
GR-206	<.46	<5.0	<1.0	<.46	1.80	<.22	78.0
GR-207	<.46	12.0	1.8	7.40	6.60	13.00	100.0
GR-208	<.46	20.0	2.8	7.10	6.70	14.00	89.0
GR-209	<.46	<5.0	1.6	4.60	4.30	2.60	40.0
GR-210	<.46	<5.0	1.4	4.30	4.80	.78	44.0
GR-211	<.46	<5.0	<1.0	4.90	4.30	2.60	26.0
GR-212	<.46	<5.0	1.5	5.50	5.40	2.60	11.0
GR-213	<.46	<5.0	1.2	9.00	7.80	6.20	34.0
GR-214	<.46	<5.0	<1.0	8.40	5.60	4.20	32.0
GR-215	<.46	<5.0	1.7	4.00	8.30	.87	49.0
GR-216	<.46	<5.0	2.4	3.90	5.10	.78	60.0
GR-217	<.46	7.0	<1.0	25.00	43.00	74.00	59.0
GR-218	<.46	9.7	<1.0	31.00	49.00	160.00	61.0
GR-219	<.46	<5.0	1.6	12.00	7.70	12.00	63.0
GR-220	<.46	<5.0	1.1	3.00	1.80	1.80	57.0
GR-221	<.46	<5.0	3.0	3.70	4.70	4.40	49.0
GR-222	<.46	<5.0	2.6	3.80	4.30	4.00	38.0
GR-223	<.46	<5.0	3.6	3.10	3.20	9.20	58.0
GR-224	<.46	<5.0	1.3	3.10	4.80	4.20	85.0
GR-225	<.46	<5.0	2.6	6.40	5.20	7.60	130.0
GR-226	<.46	<5.0	2.5	6.20	5.50	5.10	78.0
GR-227	<.46	<5.0	<1.0	1.40	2.00	.45	90.0
GR-228	<.46	<5.0	1.1	<.46	2.30	.48	63.0
GR-229	<.46	<5.0	<1.0	.76	1.60	3.60	<4.6
GR-230	<.46	<5.0	<1.0	<.46	2.10	2.50	5.0

**Table 5.** Plate-reader semiquantitative emission spectrographic analyses (in parts per million) of granitoid rocks—Continued

Sample	Mo	Nb	Ni	Pb	Sc	Sn	V	W
GR-203	1.9	33.0	12.0	13.0	3.3	<4.6	16.0	<46
GR-204	1.9	11.0	13.0	17.0	7.7	4.7	42.0	<46
GR-205	1.2	26.0	2.6	15.0	4.7	<4.6	12.0	<46
GR-206	1.0	40.0	1.7	18.0	3.0	<4.6	2.5	<46
GR-207	1.4	22.0	5.0	40.0	13.0	<4.6	25.0	<46
GR-208	2.2	26.0	11.0	34.0	12.0	<4.6	34.0	<46
GR-209	1.7	24.0	4.8	17.0	4.0	<4.6	23.0	<46
GR-210	1.0	15.0	4.5	16.0	3.8	<4.6	22.0	<46
GR-211	1.3	11.0	4.5	14.0	3.7	<4.6	24.0	<46
GR-212	1.2	27.0	11.0	19.0	4.5	<4.6	25.0	<46
GR-213	2.1	11.0	7.3	14.0	9.4	<4.6	53.0	<46
GR-214	1.4	24.0	5.6	11.0	7.7	<4.6	59.0	<46
GR-215	2.0	33.0	12.0	13.0	3.3	<4.6	17.0	<46
GR-216	1.4	33.0	11.0	16.0	4.8	<4.6	17.0	<46
GR-217	3.3	11.0	57.0	11.0	18.0	<4.6	190.0	<46
GR-218	4.1	4.6	69.0	15.0	22.0	<4.6	210.0	<46
GR-219	2.5	23.0	7.4	12.0	16.0	<4.6	79.0	<46
GR-220	<1.0	11.0	2.5	11.0	2.5	<4.6	15.0	<46
GR-221	1.1	37.0	4.4	28.0	12.0	4.7	14.0	<46
GR-222	1.1	37.0	3.5	22.0	8.3	4.5	11.0	<46
GR-223	<1.0	37.0	3.7	18.0	4.0	<4.6	14.0	<46
GR-224	1.2	26.0	3.3	26.0	4.2	<4.6	27.0	<46
GR-225	2.6	40.0	5.3	24.0	11.0	<4.6	34.0	<46
GR-226	2.0	22.0	5.5	23.0	11.0	<4.6	29.0	<46
GR-227	<1.0	19.0	2.1	17.0	2.4	<4.6	4.3	<46
GR-228	<1.0	29.0	2.1	16.0	2.6	<4.6	4.4	<46
GR-229	<1.0	16.0	1.6	31.0	1.4	<4.6	2.9	<46
GR-230	<1.0	12.0	1.5	22.0	1.7	<4.6	2.4	<46



**Table 5.** Plate-reader semiquantitative emission spectrographic analyses (in parts per million) of granitoid rocks—Continued

Sample	Y	Zr	Ce	Ga	Ge	Yb	Pr	Nd
GR-203	16.0	83	110	9.4	1.90	1.30	<68	48
GR-204	12.0	200	100	14.0	1.90	1.10	<68	<46
GR-205	40.0	210	120	6.9	<.46	2.30	<68	60
GR-206	27.0	150	120	8.0	1.80	2.00	<68	83
GR-207	71.0	180	210	8.9	1.60	5.20	<68	65
GR-208	77.0	200	200	8.8	1.80	11.00	<68	120
GR-209	20.0	220	86	15.0	<.46	1.50	<68	72
GR-210	11.0	270	94	13.0	<.46	1.10	<68	69
GR-211	11.0	110	59	14.0	1.10	.94	<68	53
GR-212	9.8	100	73	14.0	1.60	1.10	<68	<46
GR-213	25.0	86	110	11.0	1.30	2.10	<68	<46
GR-214	28.0	170	85	9.0	1.90	2.40	<68	91
GR-215	15.0	84	110	9.4	<.46	1.30	<68	49
GR-216	20.0	150	120	10.0	<.46	1.70	<68	74
GR-217	25.0	130	140	11.0	.66	1.50	<68	72
GR-218	28.0	220	170	13.0	1.10	1.80	<68	47
GR-219	39.0	200	150	9.4	1.00	2.30	<68	180
GR-220	19.0	43	99	5.4	.60	1.50	<68	<46
GR-221	84.0	64	120	10.0	2.00	8.70	<68	110
GR-222	87.0	98	100	7.2	2.40	9.10	<68	<46
GR-223	27.0	130	120	6.5	<.46	1.70	<68	<46
GR-224	31.0	230	170	8.1	.99	2.00	<68	<46
GR-225	65.0	350	210	9.3	2.20	5.10	<68	130
GR-226	62.0	380	170	8.7	<.46	5.50	<68	76
GR-227	27.0	140	170	5.3	.85	1.40	<68	63
GR-228	26.0	210	140	5.7	<.46	1.90	<68	50
GR-229	3.1	27	<46	14.0	.91	<.46	<68	<46
GR-230	2.9	17	47	12.0	<.46	<.46	<68	<46

**Table 5.** Plate-reader semiquantitative emission spectrographic analyses (in parts per million) of granitoid rocks—Continued

Sample	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
GR-203	46	<1.0	4.3	<22	<10	<10	<4.6	<2.2
GR-204	<46	3.5	16.0	<22	<10	<10	<4.6	<2.2
GR-205	<46	<1.0	<2.2	<22	16	<10	<4.6	<2.2
GR-206	51	<1.0	2.9	<22	<10	<10	<4.6	<2.2
GR-207	<46	5.1	12.0	<22	<10	<10	<4.6	<2.2
GR-208	48	5.4	7.7	<22	<10	<10	<4.6	<2.2
GR-209	<46	<1.0	12.0	<22	<10	<10	<4.6	<2.2
GR-210	<46	2.6	8.3	<22	<10	<10	<4.6	<2.2
GR-211	<46	2.7	12.0	<22	<10	<10	<4.6	<2.2
GR-212	<46	3.5	25.0	<22	<10	<10	<4.6	<2.2
GR-213	<46	4.0	22.0	<22	<10	<10	<4.6	<2.2
GR-214	<46	3.9	11.0	<22	<10	<10	<4.6	<2.2
GR-215	<46	<1.0	3.8	26	<10	<10	<4.6	<2.2
GR-216	<46	<1.0	19.0	<22	<10	<10	<4.6	2.4
GR-217	<46	2.8	13.0	<22	<10	<10	<4.6	<2.2
GR-218	<46	3.8	13.0	<22	<10	<10	<4.6	<2.2
GR-219	<46	3.7	9.9	<22	<10	<10	<4.6	<2.2
GR-220	<46	<1.0	7.7	<22	<10	<10	<4.6	<2.2
GR-221	<46	2.8	12.0	<22	24	<10	<4.6	<2.2
GR-222	<46	2.1	16.0	<22	18	<10	<4.6	3.2
GR-223	<46	2.1	13.0	<22	11	<10	<4.6	<2.2
GR-224	<46	3.5	9.5	<22	<10	<10	<4.6	<2.2
GR-225	<46	4.8	11.0	<22	<10	<10	<4.6	<2.2
GR-226	<46	6.1	11.0	<22	<10	<10	<4.6	<2.2
GR-227	<46	<1.0	7.9	<22	<10	<10	<4.6	<2.2
GR-228	<46	3.1	7.1	<22	<10	<10	<4.6	<2.2
GR-229	<46	<1.0	8.9	<22	<10	<10	<4.6	2.4
GR-230	<46	2.2	9.9	<22	<10	<10	<4.6	<2.2

**Table 6.** Plate-reader semiquantitative emission spectrographic analyses (in parts per million) of replicate samples of granitoid rocks from the Basin and Range province

Sample	Ag	B	Be	Co	Cr	Cu	La
GR- 6a	<0.46	<5.0	<1.0	12.00	21.0	11.00	61
GR- 10a	.48	18.0	1.4	20.00	49.0	37.00	77
GR- 11a	<.46	11.0	<1.0	22.00	53.0	61.00	69
GR- 18a	<.46	8.2	<1.0	22.00	24.0	3.30	74
GR- 21a	<.46	<5.0	2.0	5.50	5.2	1.40	67
GR- 29a	<.46	<5.0	1.3	7.20	6.5	3.90	30
GR- 32a	<.46	12.0	<1.0	18.00	26.0	16.00	42
GR- 43a	<.46	<5.0	1.4	11.00	12.0	3.60	43
GR- 46a	<.46	<5.0	2.3	2.30	3.9	1.60	33
GR- 55a	<.46	<5.0	1.4	2.80	2.7	.46	41
GR- 56a	<.46	<5.0	<1.0	7.50	3.7	34.00	40
GR- 72a	<.46	<5.0	<1.0	11.00	11.0	20.00	41
GR- 75a	<.46	<5.0	1.2	11.00	11.0	7.80	39
GR- 79a	<.46	<5.0	<1.0	9.20	17.0	6.70	56
GR- 83a	<.46	<5.0	2.1	2.10	3.1	<.22	74
GR- 85a	<.46	<5.0	1.7	6.40	8.0	.26	69
GR- 87a	<.46	<5.0	<1.0	13.00	14.0	6.80	39
GR- 95a	<.46	<5.0	1.7	11.00	15.0	38.00	73
GR- 96a	<.46	<5.0	1.4	10.00	22.0	2.00	86
GR-102a	<.46	9.9	1.7	11.00	26.0	21.00	86
GR-103a	<.46	<5.0	1.8	3.90	14.0	.92	31
GR-105a	<.46	<5.0	1.7	6.80	66.0	1.40	43
GR-107a	<.46	9.7	1.4	11.00	8.8	8.50	62
GR-108a	<.46	8.5	2.0	12.00	8.2	2.30	89
GR-111a	<.46	<5.0	1.8	2.90	2.4	18.00	37
GR-115a	<.46	<5.0	1.3	6.20	5.5	14.00	37
GR-124a	<.46	<5.0	1.9	7.50	18.0	1.30	68
GR-125a	<.46	16.0	2.8	14.00	11.0	55.00	270
GR-129a	<.46	15.0	<1.0	25.00	25.0	44.00	61
GR-133a	<.46	19.0	1.3	7.20	10.0	2.60	73
GR-144a	<.46	<5.0	1.4	5.30	5.5	44.00	33
GR-156a	<.46	<5.0	<1.0	1.90	3.2	.71	48
GR-166a	<.46	<5.0	1.5	6.40	4.6	4.40	84
GR-167a	<.46	<5.0	<1.0	18.00	15.0	39.00	45
GR-178a	<.46	<5.0	1.7	6.10	9.1	6.50	220
GR-185a	<.46	<5.0	3.0	10.00	7.9	13.00	130
GR-188a	<.46	<5.0	1.8	9.50	4.4	11.00	210
GR-195a	.48	<5.0	1.3	14.00	14.0	230.00	49
GR-196a	<.46	<5.0	<1.0	4.60	5.2	43.00	42
GR-203a	<.46	<5.0	<1.0	8.20	7.1	22.00	41
GR-205a	<.46	<5.0	1.4	2.10	6.2	2.30	83
GR-206a	<.46	<5.0	1.4	.92	1.9	.31	120
GR-208a	<.46	14.0	2.9	7.10	5.4	6.90	81
GR-212a	<.46	<5.0	1.0	5.00	4.0	2.40	19
GR-215a	<.46	<5.0	1.6	4.20	8.3	.91	70
GR-217a	<.46	6.3	<1.0	24.00	40.0	71.00	46
GR-218a	<.46	6.7	<1.0	28.00	48.0	120.00	61
GR-221a	<.46	<5.0	2.9	3.60	3.9	3.80	45
GR-224a	<.46	<5.0	1.7	4.50	6.1	3.70	88
GR-225a	<.46	<5.0	2.5	6.50	5.4	7.90	120

**Table 6.** Plate-reader semiquantitative emission spectrographic analyses (in parts per million) of replicate samples of granitoid rocks—Continued

Sample	Mo	Nb	Ni	Pb	Sc	Sn	V	W
GR- 6a	1.8	19.0	12.0	16.0	11.0	<4.6	75.0	<46
GR- 10a	.2	18.0	30.0	24.0	18.0	<4.6	130.0	<46
GR- 11a	3.7	7.3	31.0	25.0	18.0	<4.6	120.0	<46
GR- 18a	4.2	10.0	17.0	18.0	17.0	<4.6	160.0	<46
GR- 21a	1.1	45.0	3.9	41.0	3.5	<4.6	19.0	<46
GR- 29a	1.3	12.0	4.4	15.0	6.6	<4.6	58.0	<46
GR- 32a	2.1	8.8	17.0	12.0	18.0	<4.6	150.0	<46
GR- 43a	4.1	16.0	8.7	16.0	12.0	<4.6	99.0	<46
GR- 46a	<1.0	<2.2	3.0	24.0	3.4	<4.6	9.7	<46
GR- 55a	1.2	23.0	4.4	13.0	2.7	<4.6	13.0	<46
GR- 56a	2.4	13.0	4.8	11.0	6.0	<4.6	61.0	<46
GR- 72a	1.4	12.0	12.0	12.0	4.8	<4.6	73.0	<46
GR- 75a	2.8	9.6	11.0	14.0	11.0	<4.6	90.0	<46
GR- 79a	1.6	12.0	13.0	16.0	7.7	<4.6	78.0	<46
GR- 83a	<1.0	10.0	3.5	18.0	3.8	<4.6	13.0	<46
GR- 85a	1.7	32.0	4.9	21.0	5.7	<4.6	31.0	<46
GR- 87a	2.8	8.6	10.0	12.0	10.0	<4.6	100.0	<46
GR- 95a	2.0	27.0	8.5	15.0	10.0	<4.6	65.0	<46
GR- 96a	2.6	24.0	11.0	14.0	10.0	<4.6	63.0	<46
GR-102a	1.9	44.0	15.0	9.6	9.6	<4.6	85.0	<46
GR-103a	<1.0	29.0	10.0	8.9	7.2	<4.6	39.0	<46
GR-105a	1.6	15.0	23.0	6.5	13.0	<4.6	110.0	<46
GR-107a	2.7	21.0	7.0	11.0	11.0	<4.6	120.0	<46
GR-108a	3.7	35.0	9.1	11.0	13.0	<4.6	110.0	<46
GR-111a	1.8	19.0	11.0	15.0	2.9	<4.6	21.0	<46
GR-115a	2.5	5.5	6.1	18.0	5.6	<4.6	46.0	<46
GR-124a	1.4	62.0	15.0	13.0	5.8	<4.6	46.0	<46
GR-125a	3.6	130.0	7.3	26.0	7.0	<4.6	85.0	<46
GR-129a	6.6	20.0	19.0	13.0	16.0	<4.6	190.0	<46
GR-133a	1.5	12.0	11.0	12.0	6.3	<4.6	51.0	<46
GR-144a	<1.0	5.3	4.2	16.0	4.1	<4.6	23.0	<46
GR-156a	1.0	25.0	2.4	20.0	2.9	<4.6	13.0	<46
GR-166a	2.2	32.0	6.7	17.0	10.0	<4.6	59.0	<46
GR-167a	2.9	14.0	12.0	18.0	14.0	<4.6	110.0	<46
GR-178a	2.3	70.0	4.1	19.0	23.0	<4.6	20.0	<46
GR-185a	3.4	32.0	5.9	32.0	15.0	<4.6	42.0	<46
GR-188a	2.9	24.0	5.9	21.0	18.0	<4.6	44.0	<46
GR-195a	4.2	15.0	21.0	12.0	8.6	<4.6	94.0	68
GR-196a	1.0	10.0	5.7	11.0	2.4	<4.6	26.0	<46
GR-203a	1.1	6.6	7.4	12.0	4.2	<4.6	39.0	<46
GR-205a	1.7	43.0	3.6	18.0	5.7	4.9	14.0	<46
GR-206a	<1.0	43.0	1.9	19.0	3.8	<4.6	2.2	<46
GR-208a	1.6	36.0	6.8	30.0	13.0	<4.6	32.0	<46
GR-212a	1.0	20.0	5.2	17.0	4.2	<4.6	21.0	<46
GR-215a	1.0	17.0	5.8	14.0	4.0	<4.6	17.0	<46
GR-217a	3.5	2.4	52.0	13.0	15.0	<4.6	170.0	<46
GR-218a	3.7	13.0	64.0	16.0	19.0	<4.6	190.0	<46
GR-221a	1.0	44.0	3.9	26.0	8.7	<4.6	12.0	<46
GR-224a	1.3	34.0	3.7	29.0	5.9	<4.6	31.0	<46
GR-225a	2.5	18.0	5.4	25.0	10.0	<4.6	32.0	<46

**Table 6.** Plate-reader semiquantitative emission spectrographic analyses (in parts per million) of replicate samples of granitoid rocks—Continued

Sample	Y	Zr	Ce	Ga	Ge	Yb	Pr	Nd
GR- 6a	29.0	290	130	12.0	<0.46	2.10	<68	76
GR- 10a	27.0	350	170	13.0	2.10	1.70	<68	140
GR- 11a	21.0	170	170	15.0	<.46	1.70	<68	130
GR- 18a	26.0	130	170	13.0	1.40	2.30	<68	98
GR- 21a	31.0	120	130	11.0	1.20	1.60	<68	59
GR- 29a	17.0	91	75	9.6	1.30	1.40	<68	<46
GR- 32a	22.0	120	91	7.6	.63	1.50	<68	85
GR- 43a	16.0	200	110	10.0	<.46	1.50	<68	79
GR- 46a	32.0	60	94	9.3	1.50	2.80	<68	63
GR- 55a	12.0	130	96	7.5	<.46	1.20	<68	<46
GR- 56a	12.0	91	120	8.0	<.46	1.20	<68	110
GR- 72a	11.0	78	90	9.5	.56	1.00	<68	<46
GR- 75a	13.0	83	100	16.0	.57	1.30	<68	<46
GR- 79a	14.0	180	99	13.0	<.46	1.10	<68	49
GR- 83a	7.9	160	120	14.0	<.46	.76	<68	110
GR- 85a	22.0	200	150	12.0	1.10	1.40	<68	59
GR- 87a	14.0	78	110	14.0	.64	1.20	<68	160
GR- 95a	22.0	120	160	10.0	1.50	1.60	<68	91
GR- 96a	22.0	250	170	11.0	1.00	1.50	<68	70
GR-102a	20.0	170	180	8.8	.98	1.20	<68	84
GR-103a	17.0	160	83	10.0	2.40	1.30	<68	70
GR-105a	25.0	190	120	12.0	1.40	1.90	<68	51
GR-107a	21.0	71	130	9.6	<.46	1.60	<68	87
GR-108a	24.0	130	170	12.0	2.10	1.70	<68	59
GR-111a	5.2	68	81	14.0	1.40	.62	<68	<46
GR-115a	11.0	140	100	12.0	<.46	.98	<68	82
GR-124a	20.0	240	160	7.4	<.46	1.20	<68	<46
GR-125a	34.0	750	420	13.0	.99	1.90	81	160
GR-129a	21.0	140	190	14.0	.69	1.80	<68	<46
GR-133a	15.0	220	150	13.0	1.70	1.30	<68	63
GR-144a	6.5	100	59	15.0	.81	.77	<68	77
GR-156a	8.3	130	110	9.8	<.46	.67	<68	76
GR-166a	45.0	220	160	8.5	1.90	3.30	<68	79
GR-167a	19.0	93	100	14.0	<.46	1.40	<68	57
GR-178a	150.0	770	430	11.0	<.46	17.00	110	130
GR-185a	66.0	330	270	12.0	<.46	7.00	<68	69
GR-188a	69.0	730	360	12.0	1.40	4.40	<68	150
GR-195a	15.0	130	120	11.0	<.46	1.30	<68	90
GR-196a	9.8	77	79	6.4	1.90	1.00	<68	73
GR-203a	9.7	230	99	13.0	.90	.77	<68	60
GR-205a	45.0	410	150	9.4	3.20	3.10	<68	81
GR-206a	41.0	290	170	8.9	<.46	2.60	<68	94
GR-208a	94.0	220	200	8.0	<.46	9.90	<68	140
GR-212a	11.0	110	<46	12.0	<.46	.99	<68	<46
GR-215a	20.0	87	120	10.0	1.80	1.50	<68	110
GR-217a	23.0	140	110	11.0	<.46	1.40	<68	55
GR-218a	27.0	150	160	14.0	1.20	2.00	<68	90
GR-221a	83.0	92	97	7.9	1.90	8.00	<68	75
GR-224a	39.0	300	190	11.0	1.80	2.40	<68	120
GR-225a	62.0	350	230	10.0	<.46	5.60	<68	82

**Table 6.** Plate-reader semiquantitative emission spectrographic analyses (in parts per million) of replicate samples of granitoid rocks—Continued

Sample	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
GR- 6a	<46	1.6	4.1	<22	<10	<10	<4.6	<2.2
GR- 10a	<46	<1.0	24.0	<22	<10	<10	<4.6	<2.2
GR- 11a	<46	4.8	<2.2	<22	<10	<10	<4.6	<2.2
GR- 18a	<46	4.4	<2.2	<22	<10	<10	<4.6	<2.2
GR- 21a	<46	2.4	5.7	<22	<10	<10	<4.6	<2.2
GR- 29a	<46	3.6	9.1	<22	<10	<10	<4.6	<2.2
GR- 32a	<46	3.3	<2.2	<22	<10	<10	<4.6	<2.2
GR- 43a	<46	2.9	16.0	<22	<10	<10	<4.6	<2.2
GR- 46a	<46	3.1	11.0	36	<10	<10	<4.6	<2.2
GR- 55a	<46	1.7	14.0	33	<10	<10	<4.6	<2.2
GR- 56a	<46	2.9	2.6	<22	<10	<10	<4.6	<2.2
GR- 72a	<46	3.7	17.0	<22	<10	<10	<4.6	<2.2
GR- 75a	<46	3.1	25.0	<22	<10	<10	<4.6	<2.2
GR- 79a	<46	<1.0	8.2	<22	<10	<10	<4.6	<2.2
GR- 83a	<46	3.2	5.7	<22	<10	<10	<4.6	<2.2
GR- 85a	<46	3.0	12.0	<22	<10	<10	<4.6	<2.2
GR- 87a	<46	5.1	<2.2	<22	<10	<10	<4.6	<2.2
GR- 95a	<46	<1.0	9.9	<22	<10	<10	<4.6	<2.2
GR- 96a	<46	<1.0	<2.2	<22	<10	<10	<4.6	<2.2
GR-102a	<46	3.3	<2.2	<22	<10	<10	<4.6	<2.2
GR-103a	<46	5.0	11.0	<22	<10	<10	<4.6	<2.2
GR-105a	<46	4.4	12.0	<22	<10	<10	<4.6	<2.2
GR-107a	<46	4.0	14.0	<22	<10	<10	<4.6	<2.2
GR-108a	<46	6.2	18.0	<22	<10	<10	<4.6	<2.2
GR-111a	<46	<1.0	14.0	<22	<10	<10	<4.6	<2.2
GR-115a	<46	3.2	7.7	<22	<10	<10	<4.6	<2.2
GR-124a	<46	3.3	8.5	<22	<10	<10	<4.6	<2.2
GR-125a	<46	7.6	<2.2	<22	<10	<10	<4.6	<2.2
GR-129a	<46	5.0	29.0	<22	<10	<10	<4.6	<2.2
GR-133a	<46	4.1	<2.2	<22	<10	<10	<4.6	<2.2
GR-144a	<46	<1.0	8.2	<22	<10	<10	<4.6	<2.2
GR-156a	<46	3.2	14.0	<22	<10	<10	<4.6	<2.2
GR-166a	<46	3.0	<2.2	<22	<10	<10	<4.6	<2.2
GR-167a	<46	4.2	<2.2	<22	<10	<10	<4.6	<2.2
GR-178a	64	5.3	31.0	<22	67	12	7.2	<2.2
GR-185a	<46	5.2	10.0	<22	<10	<10	<4.6	<2.2
GR-188a	<46	8.5	6.8	<22	<10	<10	<4.6	<2.2
GR-195a	<46	2.1	<2.2	<22	<10	<10	<4.6	<2.2
GR-196a	<46	2.5	14.0	<22	<10	<10	<4.6	<2.2
GR-203a	<46	<1.0	6.3	<22	<10	<10	<4.6	<2.2
GR-205a	<46	2.9	15.0	<22	<10	<10	<4.6	2.5
GR-206a	<46	2.4	7.0	<22	<10	<10	<4.6	<2.2
GR-208a	<46	4.1	<2.2	<22	<10	<10	<4.6	<2.2
GR-212a	<46	3.1	11.0	<22	<10	<10	<4.6	<2.2
GR-215a	<46	2.4	12.0	<22	<10	<10	<4.6	<2.2
GR-217a	<46	2.3	7.2	<22	<10	<10	<4.6	<2.2
GR-218a	<46	4.7	16.0	<22	<10	<10	<4.6	<2.2
GR-221a	<46	<1.0	22.0	<22	23	<10	<4.6	2.5
GR-224a	<46	4.0	4.7	<22	<10	<10	<4.6	<2.2
GR-225a	47	4.7	<2.2	<22	<10	<10	<4.6	<2.2

**Table 7.** Quantitative X-ray fluorescence values (in parts per million) for barium, rubidium, and strontium in granitoid rocks from the Basin and Range province

Sample	Ba	Rb	Sr
GR- 1	826	216	706
GR- 2	709	277	549
GR- 3	545	171	387
GR- 4	598	180	391
GR- 5	717	112	537
GR- 6	759	150	482
GR- 7	831	105	670
GR- 8	810	139	587
GR- 9	1,012	112	664
GR- 10	1,068	118	657
GR- 11	1,058	116	677
GR- 12	994	112	639
GR- 13	823	179	753
GR- 14	797	187	680
GR- 15	790	183	453
GR- 16	445	179	348
GR- 17	1,094	125	624
GR- 18	948	141	622
GR- 19	680	174	282
GR- 20	739	159	302
GR- 21	827	138	217
GR- 22	567	123	202
GR- 23	1,169	116	328
GR- 24	694	112	264
GR- 25	852	174	204
GR- 26	598	190	155
GR- 27	1,112	107	731
GR- 28	1,200	91	684
GR- 29	1,182	124	462
GR- 30	1,238	124	463
GR- 31	1,168	39	642
GR- 32	1,266	50	811
GR- 33	1,478	152	212
GR- 34	1,548	145	226
GR- 35	2,574	113	513
GR- 36	2,209	124	453
GR- 37	1,181	131	438
GR- 38	1,512	141	502
GR- 39	1,127	89	714
GR- 40	1,018	137	588
GR- 41	801	92	639
GR- 42	995	158	343
GR- 43	1,491	114	704
GR- 44	1,171	146	545
GR- 45	39	393	19
GR- 46	499	236	188
GR- 47	662	101	610
GR- 48	724	113	671
GR- 49	143	151	88
GR- 50	571	173	234

**Table 7.** Quantitative X-ray fluorescence values (in parts per million) for barium, rubidium, and strontium in granitoid rocks—Continued

Sample	Ba	Rb	Sr
GR- 51	1,305	139	748
GR- 52	1,341	122	800
GR- 53	75	279	26
GR- 54	153	230	34
GR- 55	1,218	100	218
GR- 56	1,120	134	607
GR- 57	1,272	117	807
GR- 58	1,330	112	836
GR- 59	1,450	71	592
GR- 60	1,473	74	580
GR- 61	961	220	370
GR- 62	1,142	231	439
GR- 63	768	69	452
GR- 64	798	61	473
GR- 65	912	67	620
GR- 66	883	82	600
GR- 67	671	182	166
GR- 68	699	188	174
GR- 69	787	204	342
GR- 70	916	157	284
GR- 71	942	104	667
GR- 72	979	100	684
GR- 73	738	411	26
GR- 74	709	307	134
GR- 75	923	73	533
GR- 76	929	71	464
GR- 77	1,001	82	585
GR- 78	1,081	92	553
GR- 79	1,298	53	594
GR- 80	1,461	52	590
GR- 81	905	128	449
GR- 82	917	135	429
GR- 83	1,118	107	795
GR- 84	1,286	116	785
GR- 85	986	130	432
GR- 86	1,004	135	439
GR- 87	1,016	50	777
GR- 88	978	60	745
GR- 89	1,003	108	471
GR- 90	1,001	91	499
GR- 91	1,042	163	308
GR- 92	639	256	203
GR- 93	1,388	122	724
GR- 94	1,529	156	888
GR- 95	1,007	139	478
GR- 96	1,125	164	479
GR- 97	1,319	87	717
GR- 98	1,445	87	761
GR- 99	872	117	333
GR-100	880	122	338

**Table 7.** Quantitative X-ray fluorescence values (in parts per million) for barium, rubidium, and strontium in granitoid rocks—Continued

Sample	Ba	Rb	Sr
GR-101	895	87	552
GR-102	1,059	84	681
GR-103	1,051	121	390
GR-104	1,116	115	323
GR-105	1,008	79	613
GR-106	650	47	530
GR-107	1,418	118	722
GR-108	1,421	122	854
GR-109	1,800	117	779
GR-110	1,577	117	711
GR-111	1,168	165	832
GR-112	1,512	151	829
GR-113	1,078	70	584
GR-114	1,021	71	565
GR-115	988	112	472
GR-116	970	58	676
GR-117	1,041	167	768
GR-118	1,100	181	966
GR-119	917	142	463
GR-120	965	140	468
GR-121	1,104	50	643
GR-122	922	81	490
GR-123	763	153	415
GR-124	790	138	482
GR-125	1,694	198	924
GR-126	1,144	140	625
GR-129	1,163	81	1,357
GR-130	860	79	1,073
GR-131	728	133	220
GR-132	732	141	274
GR-133	1,438	72	502
GR-134	1,643	103	436
GR-135	1,092	81	312
GR-136	1,109	69	309
GR-137	576	176	178
GR-138	624	194	274
GR-139	1,073	113	566
GR-140	1,155	104	667
GR-141	39	206	20
GR-142	38	215	27
GR-143	1,260	108	709
GR-144	380	123	625
GR-145	402	163	167
GR-146	750	100	224
GR-147	23	192	3
GR-148	20	196	4
GR-149	829	165	327
GR-150	769	193	281
GR-151	651	42	604
GR-152	496	26	574

**Table 7.** Quantitative X-ray fluorescence values (in parts per million) for barium, rubidium, and strontium in granitoid rocks—Continued

Sample	Ba	Rb	Sr
GR-153	1,590	118	1,283
GR-154	1,944	134	1,606
GR-155	1,091	118	559
GR-156	831	147	315
GR-157	844	185	201
GR-158	834	173	201
GR-159	915	131	617
GR-160	735	133	507
GR-161	787	102	646
GR-162	786	107	653
GR-163	316	336	44
GR-164	295	289	48
GR-165	741	162	305
GR-166	679	186	281
GR-167	925	94	581
GR-168	882	99	488
GR-169	1,275	100	206
GR-170	321	119	148
GR-171	910	80	643
GR-172	931	96	646
GR-173	915	90	653
GR-174	1,178	92	595
GR-175	940	150	323
GR-176	1,038	129	396
GR-177	1,626	94	224
GR-178	1,115	181	158
GR-179	651	105	520
GR-180	812	103	837
GR-181	1,580	190	568
GR-182	989	160	585
GR-183	1,550	188	556
GR-184	555	238	106
GR-185	896	234	269
GR-186	513	344	120
GR-187	1,435	234	204
GR-188	2,233	116	335
GR-189	2,382	91	265
GR-190	2,279	144	258
GR-191	91	302	22
GR-192	666	231	162
GR-193	198	305	35
GR-194	238	306	47
GR-195	827	160	541
GR-196	717	181	157
GR-197	932	219	164
GR-198	642	205	172
GR-199	658	146	300
GR-200	818	149	304
GR-201	1,538	120	498
GR-202	1,692	138	506

**Table 7.** Quantitative X-ray fluorescence values (in parts per million) for barium, rubidium, and strontium in granitoid rocks—Continued

Sample	Ba	Rb	Sr
GR-203	1,127	57	746
GR-204	795	72	470
GR-205	1,027	221	256
GR-206	671	217	83
GR-207	566	277	144
GR-208	525	267	152
GR-209	971	104	674
GR-210	985	98	788
GR-211	665	77	574
GR-212	961	103	552
GR-213	686	116	502
GR-214	742	98	545
GR-215	597	220	174
GR-216	643	219	206
GR-217	895	96	794
GR-218	879	115	749
GR-219	1,123	102	469
GR-220	412	175	155
GR-221	216	329	55
GR-222	183	330	55
GR-223	688	340	194
GR-224	1,208	179	343
GR-225	867	236	166
GR-226	801	212	173
GR-227	490	158	112
GR-228	489	153	114
GR-229	16	135	21
GR-230	17	137	22

**Table 8.** Quantitative neutron activation values for uranium and thorium in granitoid rocks from the Basin and Range province

Sample	U ppm	Th ppm	Th/U
GR- 1	14.38	46.97	3.27
GR- 2	14.90	64.31	4.32
GR- 3	4.88	24.14	4.95
GR- 4	5.74	25.76	4.49
GR- 5	5.09	15.93	3.13
GR- 6	7.77	20.99	2.70
GR- 7	5.23	13.49	2.58
GR- 8	5.00	26.90	5.38
GR- 9	4.17	17.22	4.13
GR- 10	3.90	21.10	5.41
GR- 11	2.06	19.97	9.69
GR- 12	2.35	16.51	7.03
GR- 13	11.99	35.94	3.00
GR- 14	14.71	39.09	2.66
GR- 15	4.69	23.28	4.96
GR- 16	9.29	26.49	2.85
GR- 17	4.71	16.82	3.57
GR- 18	3.57	22.05	6.18
GR- 19	4.72	19.17	4.06
GR- 20	8.29	35.43	4.27
GR- 21	6.98	20.49	2.94
GR- 22	3.46	16.96	4.90
GR- 23	2.89	13.17	4.56
GR- 24	2.20	11.52	5.24
GR- 25	2.63	7.80	2.97
GR- 26	2.26	5.46	2.42
GR- 27	3.09	10.64	3.44
GR- 28	3.28	7.56	2.30
GR- 29	7.80	10.76	1.38
GR- 30	6.01	10.67	1.78
GR- 31	3.53	5.67	1.61
GR- 32	3.57	6.33	1.77
GR- 33	2.56	4.94	1.93
GR- 34	2.25	4.01	1.78
GR- 35	1.75	23.09	13.19
GR- 36	1.16	20.28	17.48
GR- 37	4.69	13.36	2.85
GR- 38	3.87	14.62	3.78
GR- 39	2.48	8.18	3.30
GR- 40	3.54	5.08	1.44
GR- 41	1.90	6.07	3.19
GR- 42	2.09	10.52	5.03
GR- 43	3.97	17.36	4.37
GR- 44	4.80	17.01	3.54
GR- 45	10.56	27.65	2.62
GR- 46	13.31	17.49	1.31
GR- 47	1.29	9.25	7.17
GR- 48	2.10	10.81	5.15
GR- 49	5.29	24.54	4.64
GR- 50	4.29	22.90	5.34

**Table 8.** Quantitative neutron activation values for uranium and thorium in granitoid rocks—Conitnued

Sample	U ppm	Th ppm	Th/U
GR- 51	1.89	13.01	6.88
GR- 52	1.73	10.11	5.84
GR- 53	5.26	30.60	5.82
GR- 54	5.63	36.85	6.55
GR- 55	2.03	12.63	6.22
GR- 56	5.86	14.49	2.47
GR- 57	4.70	22.63	4.81
GR- 58	3.08	15.17	4.93
GR- 59	2.56	10.78	4.21
GR- 60	3.04	14.27	4.69
GR- 61	5.80	25.28	4.36
GR- 62	6.49	26.14	4.03
GR- 63	2.73	6.17	2.26
GR- 64	2.48	6.77	2.73
GR- 65	3.35	7.19	2.15
GR- 66	3.84	24.64	6.42
GR- 67	2.03	16.52	8.14
GR- 68	2.22	16.16	7.28
GR- 69	2.65	5.84	2.20
GR- 70	.95	4.54	4.78
GR- 71	2.72	9.22	3.39
GR- 72	2.81	6.72	2.39
GR- 73	9.46	29.88	3.16
GR- 74	6.71	27.97	4.17
GR- 75	2.53	5.31	2.10
GR- 76	2.30	7.99	3.47
GR- 77	2.08	6.50	3.13
GR- 78	2.87	8.85	3.08
GR- 79	2.39	6.25	2.62
GR- 80	2.10	6.72	3.20
GR- 81	2.77	16.74	6.04
GR- 82	4.11	17.40	4.23
GR- 83	1.19	8.97	7.54
GR- 84	.95	8.82	9.28
GR- 85	3.57	20.95	5.87
GR- 86	6.43	18.25	2.84
GR- 87	2.17	2.93	1.35
GR- 88	1.87	5.26	2.81
GR- 89	2.54	12.13	4.78
GR- 90	2.42	9.47	3.91
GR- 91	3.47	30.31	8.73
GR- 92	5.28	31.46	5.96
GR- 93	10.91	10.90	1.00
GR- 94	6.76	20.35	3.01
GR- 95	4.29	26.23	6.11
GR- 96	4.72	27.13	5.75
GR- 97	2.08	15.49	7.45
GR- 98	2.13	13.53	6.35
GR- 99	2.60	16.47	6.33
GR-100	2.28	14.12	6.19

**Table 8.** Quantitative neutron activation values for uranium and thorium in granitoid rocks—Conitnued

Sample	U ppm	Th ppm	Th/U
GR-101	3.64	7.09	1.95
GR-102	2.76	7.62	2.76
GR-103	3.75	14.80	3.95
GR-104	2.35	15.65	6.66
GR-105	3.00	10.76	3.59
GR-106	1.88	13.23	7.04
GR-107	3.90	11.77	3.02
GR-108	3.70	13.70	3.70
GR-109	1.77	13.63	7.70
GR-110	1.74	10.44	6.00
GR-111	7.32	12.54	1.71
GR-112	2.85	7.54	2.65
GR-113	2.31	6.65	2.88
GR-114	2.26	7.49	3.31
GR-115	3.27	12.74	3.90
GR-116	3.11	5.25	1.69
GR-117	2.76	12.60	4.57
GR-118	2.08	7.28	3.50
GR-119	4.32	22.48	5.20
GR-120	4.63	21.84	4.72
GR-121	.72	3.06	4.25
GR-122	1.34	10.03	7.49
GR-123	3.35	21.06	6.29
GR-124	2.25	15.69	6.97
GR-125	14.91	63.78	4.28
GR-126	6.74	30.45	4.52
GR-129	2.49	6.85	2.75
GR-130	2.89	7.49	2.59
GR-131	.93	8.26	8.88
GR-132	1.84	13.45	7.31
GR-133	1.84	7.97	4.33
GR-134	1.50	15.52	10.35
GR-135	2.39	12.14	5.08
GR-136	2.44	7.05	2.89
GR-137	6.15	18.63	3.03
GR-138	6.19	25.29	4.09
GR-139	2.98	17.97	6.03
GR-140	3.11	17.34	5.58
GR-141	5.50	34.74	6.32
GR-142	5.41	39.58	7.32
GR-143	1.70	10.01	5.89
GR-144	2.12	10.87	5.13
GR-145	2.02	16.19	8.01
GR-146	1.75	12.94	7.39
GR-147	2.46	16.55	6.73
GR-148	3.71	18.60	5.01
GR-149	8.37	45.16	5.40
GR-150	11.82	43.41	3.67

**Table 8.** Quantitative neutron activation values for uranium and thorium in granitoid rocks—Conitnued

Sample	U ppm	Th ppm	Th/U
GR-151	1.15	3.64	3.17
GR-152	.86	2.12	2.47
GR-153	2.45	11.71	4.78
GR-154	2.91	15.74	5.41
GR-155	1.29	7.50	5.81
GR-156	2.47	12.06	4.88
GR-157	2.63	19.19	7.30
GR-158	3.77	19.20	5.09
GR-159	2.26	11.63	5.15
GR-160	2.95	22.19	7.52
GR-161	3.61	8.09	2.24
GR-162	5.01	13.13	2.62
GR-163	15.68	131.70	8.40
GR-164	13.92	124.70	8.96
GR-165	6.93	29.31	4.23
GR-166	7.76	26.25	3.38
GR-167	2.30	8.21	3.57
GR-168	2.04	12.12	5.94
GR-169	2.27	15.66	6.90
GR-170	3.36	46.77	13.92
GR-171	1.51	5.05	3.34
GR-172	1.24	7.43	5.99
GR-173	1.26	17.21	13.66
GR-174	.99	5.94	6.00
GR-175	1.48	7.94	5.36
GR-176	2.83	5.56	1.96
GR-177	.81	4.84	5.98
GR-178	1.41	6.09	4.32
GR-179	2.65	8.05	3.04
GR-180	1.25	7.39	5.91
GR-181	3.07	19.86	6.47
GR-182	2.68	16.12	6.01
GR-183	3.30	18.39	5.57
GR-184	3.46	14.21	4.11
GR-185	6.27	34.02	5.43
GR-186	14.09	82.46	5.85
GR-187	3.74	22.19	5.93
GR-188	1.40	12.59	8.99
GR-189	.67	3.52	5.26
GR-190	1.00	11.87	11.87
GR-191	4.02	12.83	3.19
GR-192	4.96	18.54	3.74
GR-193	9.43	36.23	3.84
GR-194	6.07	36.73	6.05
GR-195	9.38	29.72	3.17
GR-196	6.87	27.15	3.95
GR-197	4.41	26.86	6.09
GR-198	4.17	26.16	6.27
GR-199	4.33	14.23	3.29
GR-200	2.44	11.87	4.86



**Table 8.** Quantitative neutron activation values for uranium and thorium in granitoid rocks—Conitnued

Sample	U ppm	Th ppm	Th/U
GR-201	3.97	13.14	3.31
GR-202	4.15	12.37	2.98
GR-203	1.66	3.85	2.32
GR-204	1.98	6.19	3.13
GR-205	5.78	32.81	5.68
GR-206	6.87	26.92	3.92
GR-207	6.51	26.18	4.02
GR-208	8.62	31.87	3.70
GR-209	1.21	5.71	4.72
GR-210	.97	6.63	6.84
GR-211	.58	4.02	6.93
GR-212	.58	3.02	5.21
GR-213	2.16	6.15	2.85
GR-214	2.10	8.71	4.15
GR-215	5.25	22.92	4.37
GR-216	6.22	19.24	3.09
GR-217	3.19	9.56	3.00
GR-218	3.47	10.84	3.12
GR-219	3.81	11.36	2.98
GR-220	6.78	42.75	6.31
GR-221	5.62	27.85	4.96
GR-222	5.94	22.32	3.76
GR-223	4.58	19.03	4.16
GR-224	3.14	23.16	7.38
GR-225	6.61	29.43	4.45
GR-226	4.58	22.12	4.83
GR-227	7.14	22.69	3.18
GR-228	6.83	17.88	2.62
GR-229	3.64	5.02	1.38
GR-230	3.34	3.75	1.12

**Table 9.** Quantitative neutron activation values for uranium and thorium in replicate samples of granitoid rocks from the Basin and Range province

Sample	U ppm	Th ppm	Th/U
GR- 3a	4.98	24.38	4.90
GR- 6a	8.05	21.18	2.63
GR- 9a	3.89	19.21	4.94
GR- 12a	2.45	17.84	7.28
GR- 14a	14.16	36.95	2.61
GR- 16a	8.76	20.55	2.35
GR- 36a	1.41	22.99	16.31
GR- 49a	4.96	23.56	4.75
GR- 58a	2.73	19.01	6.96
GR- 64a	2.55	7.54	2.96
GR- 71a	2.79	7.12	2.55
GR-104a	2.45	12.41	5.07
GR-109a	1.92	11.76	6.13
GR-122a	1.72	8.05	4.68
GR-123a	3.58	19.41	5.42
GR-137a	5.51	24.29	4.41
GR-138a	6.47	23.95	3.70
GR-139a	3.14	17.17	5.47
GR-147a	2.39	18.26	7.64
GR-148a	3.73	19.08	5.12
GR-163a	14.78	129.40	8.76
GR-177a	.60	4.43	7.38
GR-178a	1.33	5.94	4.47
GR-179a	2.70	8.55	3.17
GR-205a	5.49	30.32	5.52
GR-206a	6.49	26.54	4.09
GR-211a	.71	3.96	5.56
GR-212a	.55	3.00	5.45
GR-214a	2.18	8.86	4.06
GR-223a	4.11	26.57	6.46

**Table 10.** Quantitative emission spectrographic analyses (in parts per million) of granitoid rocks from the Basin and Range province

Sample	As	Bi	Cd	Sb	Zn	Tl	Cs	Hg	Li
GR- 1	24.0	<0.20	0.120	<1.0	60.0	<1.0	8	<0.5	20
GR- 2	18.0	<.20	.080	<1.0	49.0	<1.0	12	<.5	30
GR- 3	7.0	1.30	<.010	<1.0	39.0	1.5	8	<.5	57
GR- 4	8.0	<.20	.020	<1.0	36.0	1.4	5	<.5	37
GR- 5	3.0	<.20	.055	<1.0	96.0	<1.0	<5	<.5	20
GR- 6	3.0	.36	.040	1.0	46.0	1.2	<5	<.5	27
GR- 7	4.0	.60	.020	3.0	23.0	<1.0	6	<.5	20
GR- 8	11.0	<.20	.080	<1.0	73.0	<1.0	<5	<.5	9
GR- 9	6.0	<.20	.190	<1.0	23.0	1.4	<5	<.5	28
GR- 10	3.0	<.20	.280	<1.0	41.0	<1.0	<5	<.5	23
GR- 11	5.0	<.20	.045	<1.0	64.0	<1.0	8	<.5	40
GR- 12	3.0	<.20	<.010	1.8	22.0	<1.0	6	<.5	13
GR- 13	7.0	<.20	.180	1.5	100.0	<1.0	14	<.5	11
GR- 14	6.0	<.20	.210	<1.0	110.0	<1.0	6	<.5	16
GR- 15	1.7	<.20	<.010	<1.0	34.0	2.1	5	<.5	38
GR- 16	3.0	.70	<.010	1.4	8.0	2.0	<5	<.5	20
GR- 17	23.0	.25	.230	<1.0	82.0	1.0	<5	<.5	11
GR- 18	3.9	.83	.070	<1.0	43.0	<1.0	6	<.5	32
GR- 19	11.0	<.20	.350	3.0	37.0	1.6	5	<.5	18
GR- 20	2.2	<.20	.040	<1.0	57.0	2.0	<5	<.5	30
GR- 21	5.0	<.20	.063	<1.0	64.0	<1.0	<5	<.5	42
GR- 22	<1.0	<.20	.020	1.0	21.0	1.5	<5	<.5	46
GR- 23	7.0	<.20	.015	<1.0	39.0	1.4	<5	<.5	40
GR- 24	1.3	<.20	<.010	1.0	16.0	<1.0	<5	<.5	20
GR- 25	2.4	.65	<1.000	<1.0	71.0	1.0	5	<.5	53
GR- 26	3.3	.60	.070	<1.0	21.0	1.0	5	<.5	55
GR- 27	14.0	<.20	<.010	<1.0	40.0	<1.0	<5	<.5	30
GR- 28	7.0	<.20	.100	1.0	38.0	<1.0	<5	<.5	24
GR- 29	15.0	<.20	<.010	<1.0	55.0	<1.0	<5	<.5	50
GR- 30	9.0	<.20	.020	<1.0	42.0	<1.0	5	<.5	39
GR- 31	5.2	<.20	.100	1.0	84.0	<1.0	<5	<.5	18
GR- 32	3.0	<.20	.470	<1.0	79.0	<1.0	<5	<.5	30
GR- 33	<1.0	.26	.060	<1.0	76.0	<1.0	6	<.5	50
GR- 34	7.0	<.20	.080	<1.0	50.0	2.0	<5	<.5	50
GR- 35	11.0	<.20	.040	<1.0	68.0	1.6	<5	<.5	24
GR- 36	1.0	<.20	<.010	1.5	22.0	<1.0	<5	<.5	28
GR- 37	2.9	.35	.028	<1.0	32.0	1.4	10	<.5	75
GR- 38	8.0	<.20	.280	<1.0	54.0	1.0	7	<.5	33
GR- 39	1.6	<.20	.040	<1.0	55.0	<1.0	<5	<.5	36
GR- 40	<1.0	<.20	.023	<1.0	67.0	<1.0	<5	<.5	26
GR- 41	8.0	<.20	.032	<1.0	69.0	<1.0	5	<.5	50
GR- 42	6.0	.70	.250	<1.0	32.0	1.7	5	<.5	38
GR- 43	12.0	<.20	.310	<1.0	39.0	1.8	<5	<.5	34
GR- 44	5.0	<.20	.060	<1.0	42.0	<1.0	5	<.5	20
GR- 45	2.9	<.20	.090	1.0	23.0	7.0	<5	<.5	33
GR- 46	8.0	<.20	<.010	<1.0	31.0	2.0	5	<.5	29
GR- 47	1.7	<.20	<.010	1.1	18.0	2.0	<5	<.5	41
GR- 48	3.0	<.20	<.010	1.0	21.0	1.4	<5	<.5	55
GR- 49	2.0	.20	<.010	<1.0	2.0	1.0	<5	<.5	15
GR- 50	<1.0	<.20	<.010	1.0	48.0	1.1	<5	<.5	41

**Table 10.** Quantitative emission spectrographic analyses (in parts per million) of granitoid rocks from the Basin and Range province

Sample	As	Bi	Cd	Sb	Zn	Tl	Cs	Hg	Li
GR- 51	2.8	<0.20	<0.010	<1.0	50.0	1.2	<5	<0.5	15
GR- 52	2.3	<.20	<.010	1.0	99.0	1.1	<5	<.5	25
GR- 53	3.0	<.20	<.010	2.7	4.8	3.2	<5	<.5	2
GR- 54	3.0	<.20	<.010	2.1	6.0	1.4	<5	<.5	3
GR- 55	2.2	<.20	.035	<1.0	26.0	<1.0	<5	<.5	16
GR- 56	4.0	<.20	.100	<1.0	17.0	1.3	5	<.5	10
GR- 57	10.0	<.20	.050	<1.0	47.0	<1.0	<5	<.5	39
GR- 58	16.0	<.20	.023	<1.0	29.0	<1.0	<5	<.5	17
GR- 59	6.0	<.20	.260	<1.0	100.0	<1.0	<5	<.5	18
GR- 60	4.3	<.20	.050	1.8	41.0	<1.0	<5	<.5	16
GR- 61	2.5	<.20	.040	<1.0	65.0	1.6	9	<.5	79
GR- 62	4.6	<.20	.090	1.8	48.0	2.2	6	<.5	44
GR- 63	12.0	<.20	.230	<1.0	54.0	<1.0	<5	<.5	33
GR- 64	14.0	<.20	.035	<1.0	42.0	<1.0	<5	<.5	10
GR- 65	8.0	<.20	.022	<1.0	70.0	<1.0	6	<.5	39
GR- 66	15.0	.70	.100	1.5	92.0	<1.0	<5	<.5	21
GR- 67	1.7	1.00	.350	<1.0	57.0	<1.0	19	<.5	75
GR- 68	3.0	<.20	.020	<1.0	39.0	<1.0	7	<.5	38
GR- 69	9.0	.60	.014	<1.0	42.0	1.7	8	<.5	45
GR- 70	1.0	<.20	<.010	1.0	17.0	2.5	<5	<.5	18
GR- 71	10.0	<.20	.035	<1.0	48.0	<1.0	<5	<.5	40
GR- 72	<1.0	<.20	.010	<1.0	78.0	<1.0	<5	<.5	22
GR- 73	3.4	1.60	.250	3.8	60.0	3.1	41	<.5	175
GR- 74	14.0	<.20	.050	<1.0	55.0	3.0	15	<.5	38
GR- 75	1.8	<.20	.060	<1.0	61.0	<1.0	<5	<.5	30
GR- 76	8.1	<.20	.050	2.0	32.0	1.0	<5	<.5	35
GR- 77	<1.0	<.20	.030	<1.0	30.0	<1.0	5	<.5	30
GR- 78	<1.0	<.20	.012	<1.0	64.0	<1.0	<5	<.5	36
GR- 79	3.3	<.20	.030	1.0	29.0	<1.0	<5	<.5	35
GR- 80	4.1	<.20	.060	<1.0	62.0	<1.0	<5	<.5	49
GR- 81	<1.0	<.20	.018	<1.0	80.0	<1.0	<5	<.5	25
GR- 82	12.0	<.20	.080	<1.0	45.0	1.5	<5	<.5	28
GR- 83	<1.0	<.20	<.010	<1.0	25.0	2.0	6	<.5	50
GR- 84	12.0	<.20	.038	<1.0	84.0	1.0	<5	<.5	40
GR- 85	11.0	<.20	.030	<1.0	49.0	1.4	<5	<.5	28
GR- 86	<1.0	<.20	<.010	<1.0	60.0	2.0	5	<.5	41
GR- 87	1.7	<.20	.020	<1.0	48.0	<1.0	<5	<.5	16
GR- 88	9.0	<.20	.020	<1.0	58.0	<1.0	<5	<.5	26
GR- 89	9.0	1.20	.030	1.0	24.0	<1.0	5	<.5	26
GR- 90	8.0	<.20	.290	4.8	12.0	1.7	<5	<.5	34
GR- 91	10.0	<.20	.031	<1.0	35.0	1.4	<5	.9	34
GR- 92	5.6	1.00	.010	1.0	24.0	1.8	8	<.5	55
GR- 93	11.0	<.20	.050	4.6	62.0	<1.0	6	<.5	29
GR- 94	7.0	<.20	.300	<1.0	19.0	1.0	28	<.5	50
GR- 95	12.0	1.50	.100	<1.0	48.0	1.0	<5	<.5	36
GR- 96	1.8	<.20	.060	<1.0	84.0	1.2	<5	<.5	31
GR- 97	14.0	<.20	.200	<1.0	38.0	<1.0	<5	<.5	22
GR- 98	15.0	<.20	1.000	<1.0	62.0	1.3	<5	<.5	16
GR- 99	18.0	.67	.210	<1.0	93.0	<1.0	<5	<.5	50
GR-100	2.3	<.20	.050	<1.0	38.0	<1.0	7	<.5	50

**Table 10.** Quantitative emission spectrographic analyses (in parts per million) of granitoid rocks from the Basin and Range province

Sample	As	Bi	Cd	Sb	Zn	Tl	Cs	Hg	Li
GR-101	2.2	<0.20	0.060	1.8	31.0	<1.0	<5	<0.5	23
GR-102	5.5	<.20	.020	<1.0	42.0	<1.0	7	<.5	20
GR-103	13.0	.60	.080	2.0	14.0	<1.0	<5	<.5	20
GR-104	<1.0	<.20	<1.000	<1.0	26.0	<1.0	<5	<.5	15
GR-105	<1.0	<.20	.100	<1.0	15.0	<1.0	8	<.5	6
GR-106	<1.0	<.20	.040	<1.0	41.0	<1.0	6	<.5	24
GR-107	<1.0	.78	.150	<1.0	42.0	<1.0	7	<.5	22
GR-108	18.0	.80	.080	2.0	44.0	<1.0	<5	<.5	24
GR-109	2.3	<.20	<.010	<1.0	20.0	<1.0	<5	<.5	42
GR-110	6.5	1.70	<.010	<1.0	23.0	1.2	<5	<.5	33
GR-111	16.0	<.20	<.010	<1.0	64.0	2.0	<5	<.5	56
GR-112	11.0	<.20	.060	<1.0	100.0	2.0	<5	<.5	47
GR-113	3.0	<.20	.069	<1.0	34.0	<1.0	<5	<.5	29
GR-114	7.0	<.20	.037	<1.0	26.0	<1.0	<5	<.5	19
GR-115	2.6	<.20	.056	<1.0	56.0	<1.0	6	<.5	50
GR-116	7.0	<.20	.014	<1.0	46.0	<1.0	<5	<.5	10
GR-117	<1.0	<.20	.094	<1.0	24.0	<1.0	<5	<.5	64
GR-118	13.0	.40	.048	<1.0	54.0	1.7	6	<.5	53
GR-119	6.0	.80	.025	<1.0	50.0	<1.0	5	<.5	43
GR-120	13.0	1.40	.170	<1.0	82.0	1.0	<5	<.5	38
GR-121	8.0	<.20	.160	1.0	41.0	<1.0	<5	<.5	30
GR-122	6.0	2.50	<.010	<1.0	36.0	<1.0	<5	<.5	38
GR-123	1.5	<.20	<.010	<1.0	55.0	<1.0	5	<.5	35
GR-124	3.0	<.20	.070	<1.0	19.0	<1.0	5	<.5	51
GR-125	23.0	<.20	.100	<1.0	74.0	1.0	<5	<.5	32
GR-126	3.6	.90	.120	2.4	22.0	2.2	8	<.5	27
GR-129	7.0	.50	.260	<1.0	100.0	<1.0	<5	<.5	59
GR-130	5.0	.80	.200	<1.0	110.0	<1.0	<5	<.5	49
GR-131	8.0	<.20	.017	<1.0	27.0	1.2	<5	<.5	13
GR-132	3.0	<.20	<.010	<1.0	20.0	<1.0	<5	<.5	13
GR-133	4.0	<.20	.080	<1.0	30.0	<1.0	<5	<.5	8
GR-134	6.2	<.20	.020	1.0	20.0	<1.0	<5	<.5	18
GR-135	3.0	<.20	.020	<1.0	25.0	<1.0	<5	<.5	6
GR-136	4.0	<.20	.010	<1.0	29.0	<1.0	<5	<.5	6
GR-137	11.0	<.20	.012	<1.0	60.0	1.3	<5	<.5	28
GR-138	1.5	.28	.080	<1.0	44.0	2.0	5	<.5	20
GR-139	12.0	.30	.070	1.0	80.0	1.2	<5	<.5	20
GR-140	2.9	<.20	.094	<1.0	45.0	<1.0	<5	<.5	16
GR-141	17.0	<.20	.073	<1.0	60.0	2.0	<5	<.5	13
GR-142	8.0	<.20	.020	<1.0	18.0	2.0	<5	<.5	10
GR-143	22.0	1.20	<.010	<1.0	63.0	<1.0	<5	<.5	6
GR-144	24.0	<.20	<.010	<1.0	56.0	<1.0	<5	<.5	25
GR-145	1.0	<.20	<.010	<1.0	46.0	1.0	<5	<.5	28
GR-146	1.4	<.20	<.010	<1.0	19.0	1.0	<5	<.5	14
GR-147	6.0	<.20	.400	<1.0	40.0	1.0	<5	<.5	13
GR-148	4.0	<.20	<.010	<1.0	36.0	1.0	<5	<.5	13
GR-149	2.0	<.20	.070	<1.0	21.0	1.3	5	<.5	5
GR-150	3.9	<.20	.030	<1.0	34.0	1.0	<5	<.5	4
GR-151	2.0	<.20	.260	1.0	72.0	<1.0	<5	<.5	4
GR-152	<1.0	<.20	.014	<1.0	48.0	<1.0	<5	<.5	5

**Table 10.** Quantitative emission spectrographic analyses (in parts per million) of granitoid rocks from the Basin and Range province

Sample	As	Bi	Cd	Sb	Zn	Tl	Cs	Hg	Li
GR-153	6.0	<0.20	0.600	<1.0	43.0	<1.0	<5	<0.5	9
GR-154	12.0	<.20	.050	<1.0	72.0	<1.0	<5	<.5	9
GR-155	16.0	<.20	.450	1.2	38.0	<1.0	<5	.8	38
GR-156	<1.0	<.20	<.010	<1.0	56.0	<1.0	<5	<.5	27
GR-157	10.0	<.20	.200	<1.0	18.0	1.0	<5	<.5	13
GR-158	14.0	<.20	<.010	<1.0	50.0	1.2	<5	<.5	14
GR-159	7.0	<.20	.090	1.6	20.0	1.2	<5	<.5	16
GR-160	16.0	<.20	.130	<1.0	69.0	2.0	<5	<.5	11
GR-161	7.0	<.20	.300	1.0	100.0	1.0	<5	<.5	14
GR-162	<1.0	<.20	.020	<1.0	96.0	<1.0	<5	<.5	15
GR-163	14.0	.40	.055	<1.0	22.0	1.9	<5	<.5	13
GR-164	3.0	<.20	<.010	<1.0	19.0	1.7	<5	<.5	6
GR-165	24.0	1.00	.100	<1.0	75.0	1.4	<5	<.5	10
GR-166	4.6	4.40	.390	1.0	80.0	1.5	6	<.5	14
GR-167	9.0	<.20	.060	<1.0	64.0	<1.0	<5	<.5	22
GR-168	16.0	<.20	.055	<1.0	86.0	<1.0	<5	<.5	10
GR-169	16.0	.80	.130	<1.0	110.0	<1.0	<5	<.5	8
GR-170	4.0	<.20	.200	<1.0	27.0	<1.0	<5	<.5	6
GR-171	4.1	<.20	.030	<1.0	88.0	<1.0	5	<.5	18
GR-172	<1.0	<.20	.013	<1.0	74.0	<1.0	<5	<.5	14
GR-173	20.0	<.20	<.010	<1.0	90.0	1.3	<5	<.5	20
GR-174	<1.0	<.20	.040	<1.0	36.0	<1.0	<5	<.5	21
GR-175	<1.0	<.20	.016	<1.0	42.0	<1.0	<5	<.5	23
GR-176	14.0	<.20	.065	<1.0	44.0	1.1	<5	<.5	10
GR-177	4.3	.91	.370	1.8	72.0	<1.0	<5	<.5	7
GR-178	10.0	.80	.170	<1.0	180.0	1.0	<5	<.5	6
GR-179	20.0	.69	<.010	<1.0	77.0	1.5	<5	<.5	36
GR-180	10.0	<.20	<.010	<1.0	40.0	2.0	<5	<.5	50
GR-181	1.8	<.20	.020	<1.0	86.0	1.5	<5	<.5	39
GR-182	6.3	<.20	<.010	<1.0	29.0	1.8	<5	<.5	10
GR-183	6.0	.90	.044	1.0	26.0	3.9	8	<.5	34
GR-184	2.0	<.20	.030	<1.0	20.0	2.0	11	<.5	18
GR-185	3.0	.30	.400	<1.0	93.0	1.2	11	<.5	51
GR-186	2.9	<.20	.340	<1.0	36.0	2.4	20	<.5	65
GR-187	1.3	<.20	.015	<1.0	48.0	1.5	6	<.5	39
GR-188	6.0	1.00	.070	<1.0	54.0	<1.0	<5	<.5	44
GR-189	5.5	<.20	.300	<1.0	69.0	<1.0	<5	<.5	9
GR-190	<1.0	<.20	.170	<1.0	36.0	2.6	<5	<.5	14
GR-191	4.0	.40	.055	<1.0	28.0	1.5	7	<.5	10
GR-192	2.4	1.10	.040	<1.0	28.0	<1.0	6	<.5	16
GR-193	1.7	<.20	<.010	<1.0	26.0	1.4	6	<.5	37
GR-194	1.2	<.20	<.010	<1.0	64.0	1.5	<5	<.5	22
GR-195	27.0	1.10	.053	<1.0	68.0	1.0	<5	.5	23
GR-196	10.0	<.20	.140	<1.0	16.0	<1.0	6	<.5	9
GR-197	20.0	1.20	.110	<1.0	72.0	1.0	<5	<.5	14
GR-198	9.0	.20	.670	<1.0	150.0	1.4	8	<.5	29
GR-199	3.0	<.20	.090	<1.0	20.0	<1.0	<5	<.5	36
GR-200	<1.0	<.20	<.010	<1.0	34.0	1.5	5	<.5	31
GR-201	5.0	<.20	.010	<1.0	55.0	<1.0	6	<.5	54
GR-202	9.0	<.20	.011	<1.0	49.0	<1.0	<5	<.5	47

**Table 10.** Quantitative emission spectrographic analyses (in parts per million) of granitoid rocks from the Basin and Range province

Sample	As	Bi	Cd	Sb	Zn	Tl	Cs	Hg	Li
GR-203	5.0	0.50	0.040	<1.0	52.0	<1.0	<5	<0.5	40
GR-204	8.0	<.20	.040	<1.0	70.0	<1.0	<5	<.5	32
GR-205	9.0	<.20	.094	<1.0	52.0	1.2	5	<.5	40
GR-206	1.6	<.20	.030	<1.0	33.0	<1.0	<5	<.5	20
GR-207	5.0	1.60	.055	<1.0	46.0	2.1	8	<.5	39
GR-208	14.0	.50	.050	<1.0	38.0	2.0	7	<.5	30
GR-209	3.6	<.20	.020	<1.0	80.0	1.0	<5	<.5	36
GR-210	5.0	<.20	.030	<1.0	35.0	<1.0	<5	<.5	50
GR-211	14.0	<.20	.300	<1.0	42.0	1.0	<5	<.5	37
GR-212	24.0	.80	.058	<1.0	75.0	<1.0	<5	.6	37
GR-213	28.0	1.30	<.010	<1.0	100.0	<1.0	<5	<.5	32
GR-214	6.0	<.20	.220	1.8	68.0	<1.0	18	<.5	46
GR-215	14.0	<.20	<.010	<1.0	10.0	2.0	<5	<.5	12
GR-216	5.0	<.20	<.010	<1.0	40.0	1.0	6	<.5	12
GR-217	5.0	<.20	.480	1.0	69.0	<1.0	<5	<.5	15
GR-218	7.0	<.20	.050	<1.0	95.0	<1.0	5	<.5	27
GR-219	11.0	<.20	.046	<1.0	56.0	<1.0	6	<.5	38
GR-220	2.0	<.20	.080	1.3	9.0	1.9	<5	<.5	15
GR-221	1.4	.61	.040	<1.0	64.0	1.8	30	<.5	55
GR-222	<1.0	.48	<.010	<1.0	30.0	1.7	49	<.5	65
GR-223	<1.0	3.00	.100	<1.0	18.0	3.8	21	<.5	38
GR-224	2.6	.65	.070	<1.0	43.0	2.0	12	<.5	49
GR-225	2.6	.50	.010	1.0	24.0	1.7	9	<.5	42
GR-226	17.0	<.20	.040	1.0	64.0	2.0	7	<.5	40
GR-227	2.6	<.20	.100	<1.0	11.0	1.0	<5	<.5	4
GR-228	3.1	<.20	<.010	<1.0	19.0	1.3	<5	<.5	4
GR-229	<1.0	<.20	.060	<1.0	16.0	1.6	<5	<.5	5
GR-230	<1.0	<.20	.030	<1.0	22.0	1.0	<5	<.5	6

**Table 11.** Quantitative emission spectrographic analyses (in parts per million) of replicate samples of granitoid rocks from the Basin and Range province

Sample	As	Bi	Cd	Sb	Zn	Tl	Cs	Hg	Li
GR- 6a	1.8	<0.20	0.044	<1.0	32	1.1	6	<0.5	28
GR- 10a	20.0	2.00	.800	9.0	50	<1.0	<5	<.5	26
GR- 11a	18.0	.90	.100	<1.0	60	<1.0	6	<.5	50
GR- 18a	15.0	.27	.280	<1.0	71	1.0	6	<.5	32
GR- 21a	8.0	<.20	.430	2.0	75	2.6	<5	<.5	50
GR- 29a	3.8	<.20	.020	1.0	22	<1.0	6	<.5	60
GR- 32a	<1.0	<.20	.200	<1.0	34	<1.0	<5	<.5	22
GR- 43a	20.0	.90	.110	<1.0	71	1.0	<5	<.5	15
GR- 46a	16.0	<.20	.027	<1.0	24	1.5	<5	.7	27
GR- 55a	10.0	<.20	.020	<1.0	26	<1.0	<5	<.5	11
GR- 56a	13.0	<.20	.054	<1.0	51	1.0	5	<.5	13
GR- 72a	<1.0	<.20	<.010	<1.0	24	<1.0	12	<.5	27
GR- 75a	14.0	<.20	.100	<1.0	120	<1.0	<5	<.5	38
GR- 79a	13.0	<.20	.110	<1.0	110	<1.0	<5	<.5	32
GR- 83a	2.6	<.20	<.010	<1.0	23	<1.0	5	<.5	55
GR- 85a	5.3	<.20	.020	<1.0	120	1.5	<5	<.5	44
GR- 87a	7.0	<.20	.010	<1.0	66	<1.0	<5	<.5	22
GR- 95a	12.0	<.20	.091	<1.0	32	1.2	<5	<.5	16
GR- 96a	5.0	<.20	.020	<1.0	33	1.5	<5	<.5	28
GR-102a	1.2	<.20	.230	<1.0	56	1.0	<5	<.5	54
GR-103a	1.7	<.20	.015	<1.0	6	<1.0	<5	<.5	15
GR-105a	16.0	<.20	.069	<1.0	20	<1.0	<5	<.5	8
GR-107a	5.8	<.20	.030	<1.0	59	<1.0	7	<.5	25
GR-108a	12.0	<.20	.040	<1.0	52	<1.0	<5	<.5	20
GR-111a	26.0	<.20	<.010	<1.0	94	1.5	5	<.5	24
GR-115a	18.0	<.20	<.010	1.0	66	<1.0	6	<.5	40
GR-124a	3.6	<.20	<.010	<1.0	33	<1.0	5	<.5	47
GR-125a	3.5	.50	.020	1.5	23	<1.0	5	<.5	28
GR-129a	<1.0	<.20	.026	<1.0	120	<1.0	<5	<.5	28
GR-133a	9.0	<.20	<.010	<1.0	18	<1.0	<5	<.5	6
GR-144a	5.0	<.20	<.010	2.5	20	1.0	<5	<.5	21
GR-156a	<1.0	<.20	<.010	<1.0	21	1.0	<5	<.5	24
GR-166a	3.3	.65	.270	<1.0	50	2.0	6	<.5	16
GR-167a	4.1	<.20	.020	2.5	24	<1.0	<5	<.5	18
GR-178a	2.6	<.20	.140	<1.0	72	<1.0	<5	<.5	7
GR-185a	22.0	.88	.081	<1.0	150	1.8	7	<.5	50
GR-188a	<1.0	<.20	.130	<1.0	28	<1.0	12	<.5	28
GR-195a	11.0	.80	.030	<1.0	31	<1.0	6	<.5	31
GR-196a	2.0	<.20	<.010	1.4	12	1.8	6	<.5	10
GR-203a	6.0	<.20	.130	1.0	22	<1.0	<5	<.5	40
GR-205a	1.0	<.20	.060	<1.0	68	1.0	6	<.5	41
GR-206a	2.3	<.20	.030	<1.0	9	1.0	5	<.5	20
GR-208a	12.0	.50	.078	<1.0	33	2.0	7	<.5	29
GR-212a	2.0	<.20	<.010	<1.0	35	<1.0	<5	<.5	39
GR-215a	1.2	<.20	<1.000	<1.0	20	1.0	<5	<.5	12
GR-217a	4.8	<.20	.050	<1.0	52	<1.0	6	<.5	29
GR-218a	6.0	<.20	.220	<1.0	10	<1.0	<5	<.5	12
GR-221a	1.3	.44	<.010	<1.0	48	1.5	23	<.5	70
GR-224a	1.0	.62	.060	<1.0	120	1.5	13	<.5	98
GR-225a	2.4	<.20	.110	<1.0	60	1.6	13	<.5	59





