UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

Analytical and statistical results for samples collected from the Sandia Mountain Wilderness, Bernalillo and Sandoval Counties, New Mexico

by

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STUDIES

The Wilderness Act (Public Law 88-577, September 3, 1964) and related acts require the U.S. Geological Survey and the U.S. Bureau of Mines to survey certain areas on Federal lands to determine their mineral resource potential. Results must be made available to the public and be submitted to the President and the Congress. This report presents the results of a geochemical survey of the Sandia Mountain Wilderness in the Cibola National Forest, Bernalillo and Sandoval Counties, New Mexico. The Sandia Mountain Wilderness was established by Public Law 95-237, February 24, 1978.

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ACKNOWLEDGEMENTS

Acknowledgements are given to: C. M. McDougal for computer data manipulation and retrieval; W. H. Ficklin for water analyses; L. Sherlock for wet chemical analyses; R. Baker for spectrographic analyses and D. C. Hedlund for index map privileges.

INTRODUCTION

The Sandia Mountain Wilderness is situated within the Cibola National Forest directly northeast of Albuquerque, New Mexico, with portions of city property bordering directly on the wilderness. The 245 km^2 of mountainous terrain comprising this wilderness includes most of the Sandia Crest Range.

A geochemical reconnaissance survey was undertaken in June 1982, to provide data that would aid in the evaluation of the mineral resource potential of the Sandia Mountain Wilderness. A representative sampling of 50 stream sediments, 50 panned concentrates of stream sediments, 23 rocks, 6 mineralized rocks and 11 waters was taken within and adjacent to the wilderness boundary. Sample localities were plotted on a 1:50,000 scale topographic map (Plate 1). All samples taken in the Sandia study were given the prefix SAN, as well as a single letter suffix for sample type differentiation. P, S, R, O and W were used respectively to designate; panned concentrate, stream sediment, rock, mineralized rock and water samples.

SAMPLE COLLECTION AND PREPARATION

Stream sediment and panned concentrate samples were collected from first and second order drainages, most of which were dry washes. Stream sediments were sieved on site through a 2 mm stainless steel screen into a 40 cm gold pan. A small portion of the -2 mm material was placed in a 9 X 24 cm paper bag to be analyzed as a stream sediment. The remaining material in the gold pan, depending on the availability of water, was either panned to a heavy mineral concentrate on site or placed in a 25 X 40 cm canvas bag to be panned at the nearest available water. The panned concentrate was then placed in a 9 X 24 cm paper bag and air dried. Stream sediment samples originally wet in the field were also air dried.

Rock samples were collected from various locations within the wilderness, with the unmineralized samples being used to obtain background geochemical information. Mineralized samples were taken from areas of recognizable mining activity, such as mines and prospect pits.

Water samples were taken from flowing springs only, some with just a trickle of water. At each site the water was filtered through a 0.45 µm filter into a 60 ml acid rinsed polyethylene bottle and acidified with reagent-grade concentrated nitric acid to pH <2. A 500 mL unfiltered and unacidified sample was also collected at each location.

Following field collection, certain preparations were still needed on stream sediment, panned concentrate and rock samples. Stream sediment samples were sieved through a 177 µm stainless steel sieve and the -177 µm fraction was pulverized to pass a minus -150 mesh sieve. Panned concentrate samples were split down to a small fraction, which was then pulverized to pass a minus -150 mesh sieve. Rock samples were crushed and then pulverized to pass a minus -150 mesh sieve.

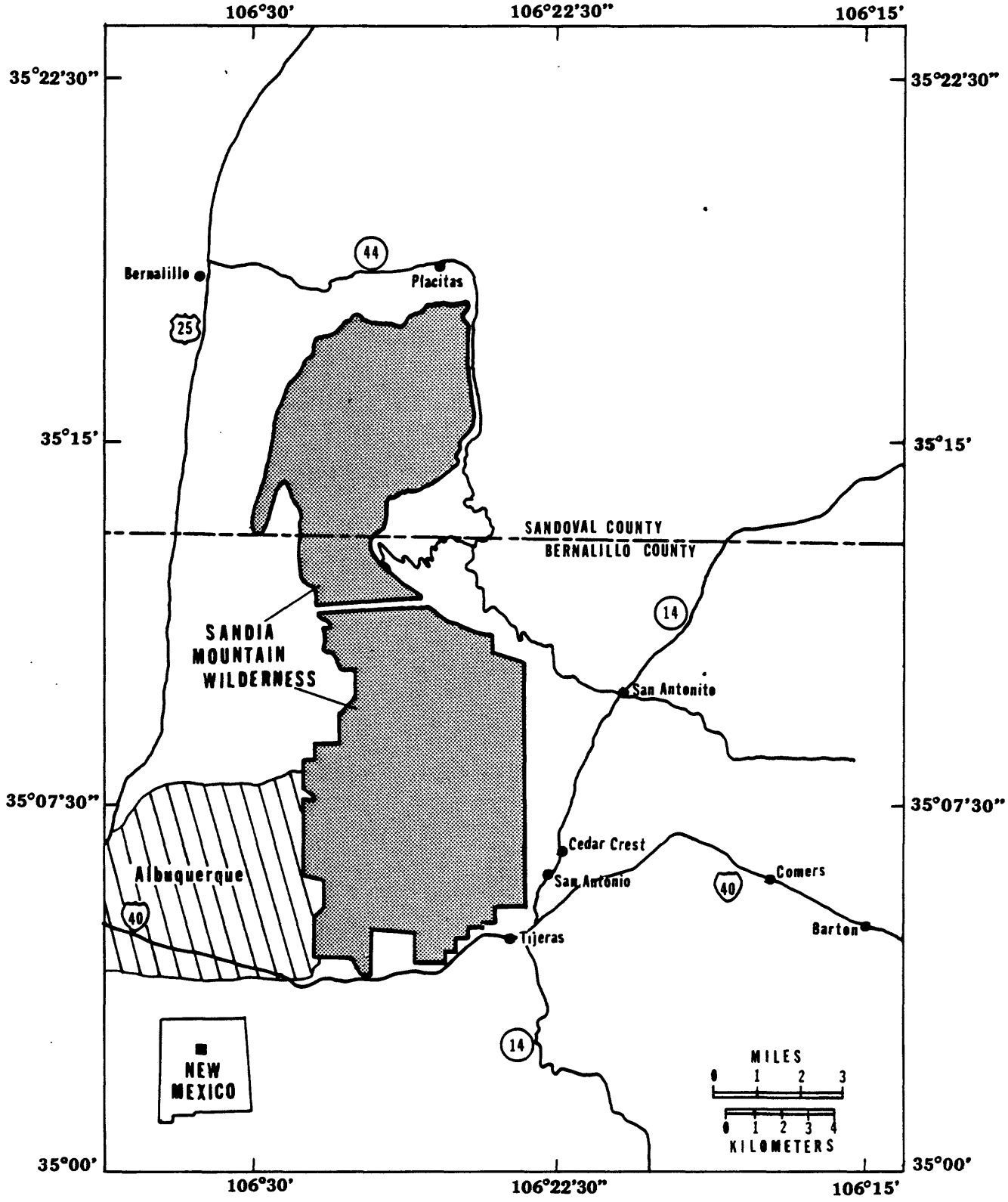

Figure 1. Index map showing location of the Sandia Mountain Wilderness, New Mexico.

ANALYTICAL METHODS

The pulverized stream sediment, panned concentrate and rock samples were analyzed for 31 elements by a semiquantitative emission spectrographic method (Grimes and Marranzino, 1968). No values were reported for 10 of these 31 elements (Ag, As, Au, Bi, Cd, Mo, Sb, Sn, W and Zn) at or above their detection limits in analyses of stream sediment samples. These elements were therefore not included in the analytical data in Table 1. Similarly, 5 elements (As, Au, Cd, Sb and Zn) in analyses of panned concentrates were not included in Table 4 because they were not detected in any of the analyses. For the same reason, 9 elements (As, Au, Bi, Cd, Sb, Sn, W, Zn and Th) were not included in the analytical data for rocks (Table 7).

Panned concentrates were analyzed for gold using methods described by Ward and others, (1969), but gold was not detected in any of them. Chemical analyses were made of rock samples by atomic absorption spectrometry for As, Zn, Cd, Bi and Sb using methods modified from Viets, (1978). Water samples were analyzed by three methods: atomic absorption spectrometry for copper, molybdenum, lead and zinc (perkin-Elmer Corp., 1977); ion chromatography for flouride, chloride and sulfate (Smee and Hall, 1978), and laser flourescence for uranium (Scientrex Corp., 1978). Values for concentrations, except for major elements and water values, are given in parts per million (ppm). Concentrations of the major elements (magnesium, calcium, iron and titanium) are given as weight percents. Water analyses for copper, molybdenum, lead, zinc and uranium are given in micrograms per liter (µg/L) and for flouide, chloride and sulfate in milligrams per liter (mg/L).

Data listed in tables 1, 4 and 7 were entered into a computerized rock analysis storage system (RASS) (Van Trump and Miesch, 1977). Once in RASS the data was processed by various statistical packages STATPAC (Van Trump and Miesch, 1977) which produced the statistics found in tables 2, 3, 5, 6, 8, and 9.

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Ward, F. N., Nakagawa, H. M., Harms, T. F., and Van Sickle, G. H., 1969, Atomic-absorption methods of analysis useful in geochemical exploration, U.S. Geological Survey Bulletin 1289, pp. 33-38.

Table 1. Analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

(The following qualifiers are used in reporting spectrographic data: *****, no determination made; N, concentration less than the detection limit; <, detected, but present at a concentration less than the value reported; >, element present at a concentration greater than the upper calibration limit; and H, interfering spectra render analytical lines unusable.)

Sample	Latitude	Longitude	Fe-pct. s(.05)	Mg-pct. s(.02)	Ca-pct. s(.05)	Ti-pct. s(.002)	Mn-ppm s(10)	B-ppm s(10)	Ba-ppm s(20)	Be-ppm s(1.0)	Co-ppm s(5)	Cr-ppm s(10)
SAN003S	35 15 52	106 28 41	7	1.0	1.5	.70	1,000	30	700	1.5	20	15
SAN005S	35 13 12	106 28 48	5	1.5	1.5	1.00	1,000	20	700	1.5	20	20
SAN007S	35 12 57	106 29 7	10	1.0	1.5	1.00	1,000	20	700	2.0	20	20
SAN013S	35 17 21	106 27 0	5	.7	7.0	.50	1,000	30	700	1.5	20	50
SAN016S	35 14 34	106 24 53	1	.3	15.0	.15	300	30	500	1.0	5	20
SAN018S	35 17 48	106 25 18	2	.7	7.0	.30	500	100	1,000	1.0	10	70
SAN021S	35 17 17	106 24 56	2	.5	5.0	.30	300	50	500	1.5	10	70
SAN023S	35 16 22	106 25 9	2	.5	3.0	.50	500	100	500	1.0	10	100
SAN025S	35 16 17	106 25 7	2	.5	5.0	.50	500	150	1,500	1.0	15	50
SAN028S	35 4 56	106 24 21	3	.7	3.0	.50	700	100	700	1.5	20	100
SAN030S	35 4 38	106 24 48	15	1.0	1.0	.70	1,000	20	700	1.0	50	100
SAN032S	35 4 6	106 26 3	5	1.5	1.5	1.00	1,000	30	700	1.5	20	70
SAN034S	35 4 53	106 26 39	7	1.0	1.5	1.00	1,000	30	700	1.0	30	70
SAN036S	35 4 21	106 27 36	10	1.5	2.0	1.00	1,000	15	500	1.0	30	150
SAN038S	35 6 40	106 23 6	3	.7	1.5	.50	500	100	500	1.0	10	50
SAN040S	35 7 1	106 23 7	2	.7	2.0	.50	300	100	500	1.0	7	70
SAN042S	35 7 50	106 23 18	2	1.0	1.0	.50	500	100	700	1.5	10	150
SAN046S	35 10 52	106 27 30	10	1.0	3.0	1.00	1,000	50	300	2.0	30	15
SAN048S	35 10 55	106 27 34	10	1.0	2.0	1.00	1,000	20	500	1.5	20	15
SAN050S	35 8 52	106 26 56	20	.7	2.0	1.00	1,000	10	300	1.0	50	100
SAN052S	35 7 42	106 28 41	10	1.0	2.0	1.00	1,000	20	700	1.0	30	70
SAN054S	35 6 41	106 29 7	>20	.7	2.0	1.00	500	<10	300	<1.0	50	100
SAN202S	35 11 51	106 28 48	20	.3	.7	.30	500	N	300	<1.0	20	150
SAN204S	35 12 22	106 28 50	5	1.0	1.5	.70	1,000	30	500	1.5	15	30
SAN206S	35 13 29	106 29 36	10	1.0	1.0	1.00	700	50	500	1.5	20	70
SAN208S	35 16 40	106 28 36	20	.7	1.0	1.00	500	30	500	1.0	50	150
SAN210S	35 16 56	106 28 45	20	.7	1.0	.50	500	30	500	1.0	30	150
SAN212S	35 17 18	106 27 5	>20	.3	.7	.50	300	<10	1,000	<1.0	70	200
SAN214S	35 17 25	106 26 16	5	.7	7.0	.50	500	100	5,000	1.0	15	100
SAN216S	35 15 28	106 24 27	2	.7	10.0	.30	500	100	500	1.5	10	150
SAN218S	35 16 5	106 28 45	10	1.0	1.5	1.00	1,000	30	700	1.5	30	70
SAN220S	35 16 4	106 28 47	7	1.0	1.5	1.00	1,000	50	500	1.5	20	50
SAN222S	35 17 28	106 28 12	5	1.0	3.0	.50	700	150	700	1.5	15	70
SAN224S	35 5 36	106 23 30	2	1.0	5.0	.30	500	150	500	1.5	20	100
SAN226S	35 8 24	106 23 28	2	.5	7.0	.20	700	50	500	1.0	10	50
SAN228S	35 8 44	106 23 11	2	.7	10.0	.30	500	70	500	1.0	10	70
SAN230S	35 10 8	106 26 32	>20	.5	1.5	.70	500	<10	500	1.5	50	200
SAN232S	35 10 8	106 27 3	20	.5	.7	.50	500	<10	500	1.0	50	150
SAN234S	35 10 3	106 28 32	7	.7	1.5	.70	700	30	700	1.5	30	30
SAN236S	35 8 59	106 26 22	10	1.0	1.5	>1.00	1,000	20	500	1.5	30	100
SAN238S	35 9 3	106 26 24	15	.7	1.5	1.00	1,000	100	300	1.5	30	70
SAN240S	35 8 52	106 26 57	7	1.5	1.5	1.00	1,000	20	500	1.5	30	30
SAN242S	35 5 46	106 27 40	15	1.0	2.0	1.00	700	20	500	1.0	50	70
SAN245S	35 6 11	106 27 56	>20	1.0	1.5	1.00	700	<10	500	<1.0	70	150
SAN248S	35 7 50	106 27 37	20	1.0	1.5	1.00	700	20	300	1.0	50	100

Table 1. Analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

Sample	Cu-ppm s(5)	La-ppm s(20)	Nb-ppm s(20)	Ni-ppm s(5)	Pb-ppm s(10)	Sc-ppm s(5)	Sr-ppm s(100)	V-ppm s(10)	Y-ppm s(10)	Zr-ppm s(10)	Th-ppm s(100)
SAN003S	30	100	20	10	100	30	150	100	100	1,000	<100
SAN005S	50	100	20	15	100	30	150	100	100	700	N
SAN007S	70	150	20	15	100	30	150	100	100	1,000	N
SAN013S	20	50	N	15	100	15	150	100	70	500	N
SAN016S	7	N	N	10	50	N	<100	30	20	100	N
SAN018S	15	<20	<20	15	50	10	200	70	30	300	N
SAN021S	10	70	N	15	50	10	150	70	50	500	N
SAN023S	15	100	<20	15	70	5	150	70	50	1,000	N
SAN025S	10	50	<20	15	50	5	200	70	20	300	N
SAN028S	30	70	<20	20	70	15	200	70	50	200	N
SAN030S	50	100	<20	20	70	30	150	200	100	>1,000	N
SAN032S	30	150	20	15	100	30	150	100	100	500	N
SAN034S	70	150	<20	15	70	30	150	150	100	>1,000	N
SAN036S	70	150	<20	20	70	50	150	150	100	>1,000	N
SAN038S	15	<20	<20	15	50	10	<100	70	30	500	N
SAN040S	15	<20	<20	15	70	7	<100	50	20	500	N
SAN042S	30	50	<20	20	100	15	<100	70	50	500	N
SAN046S	70	500	20	15	100	50	150	150	200	>1,000	N
SAN048S	50	100	20	10	100	30	150	200	200	>1,000	N
SAN050S	50	100	<20	20	30	30	<100	500	150	>1,000	N
SAN052S	50	100	20	15	70	30	150	150	150	>1,000	N
SAN054S	70	100	N	20	70	20	<100	500	200	>1,000	N
SAN202S	5	100	N	15	15	30	N	500	70	>1,000	N
SAN204S	30	100	20	10	100	30	200	100	100	500	N
SAN206S	50	100	20	15	70	30	150	200	200	>1,000	N
SAN208S	50	100	<20	30	50	20	<100	300	150	1,000	N
SAN210S	30	100	<20	30	50	20	<100	300	200	1,000	N
SAN212S	50	100	N	20	30	20	N	1,000	100	>1,000	N
SAN214S	30	50	<20	15	100	10	300	100	70	1,000	N
SAN216S	70	50	<20	20	50	10	200	70	50	300	N
SAN218S	50	100	20	15	70	30	150	150	150	1,000	N
SAN220S	50	100	20	15	50	30	150	150	100	1,000	N
SAN222S	10	50	<20	20	50	10	150	100	30	300	N
SAN224S	20	50	<20	15	50	10	150	70	30	300	N
SAN226S	10	50	N	10	70	N	150	50	30	150	N
SAN228S	10	N	N	10	70	<5	150	50	30	200	N
SAN230S	50	100	N	15	50	20	N	500	300	>1,000	200
SAN232S	50	100	<20	15	50	20	N	300	100	>1,000	N
SAN234S	30	100	20	10	70	30	150	100	100	1,000	N
SAN236S	50	100	20	15	70	50	150	200	150	>1,000	N
SAN238S	50	100	20	15	70	70	<100	200	200	>1,000	<100
SAN240S	50	100	20	15	100	50	<100	150	150	500	N
SAN242S	70	100	20	15	70	50	150	200	150	700	N
SAN245S	70	100	N	20	70	50	<100	500	200	>1,000	N
SAN248S	70	100	<20	20	100	30	<100	300	150	>1,000	N

Table 1. Analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

Sample	Latitude	Longitude	Fe-pct. s(.05)	Mg-pct. s(.02)	Ca-pct. s(.05)	Ti-pct. s(.002)	Mn-ppm s(10)	B-ppm s(10)	Ba-ppm s(20)	Be-ppm s(1.0)	Co-ppm s(5)	Cr-ppm s(10)
SAN251S	35 8 3	106 28 28	10	1.5	2.0	1.00	1,000	20	500	1.5	30	50
SAN253S	35 9 38	106 23 28	2	.5	10.0	.30	300	100	300	1.5	10	70
SAN255S	35 9 24	106 23 24	3	.7	.5	.30	500	70	200	1.0	15	20
SAN257S	35 10 10	106 23 9	3	.7	.7	.50	1,000	100	700	1.5	15	100
SAN260S	35 10 22	106 23 20	2	.5	.7	.30	1,000	70	500	1.5	10	50

Sample	Cu-ppm s(5)	La-ppm s(20)	Nb-ppm s(20)	Ni-ppm s(5)	Pb-ppm s(10)	Sc-ppm s(5)	Sr-ppm s(100)	V-ppm s(10)	Y-ppm s(10)	Zr-ppm s(10)	Th-ppm s(100)
SAN251S	70	150	20	20	70	70	150	150	200	>1,000	N
SAN253S	15	<20	N	20	100	7	<100	50	30	300	N
SAN255S	5	<20	<20	20	N	N	N	50	30	300	N
SAN257S	20	<20	<20	30	70	10	<100	50	30	300	N
SAN260S	20	<20	<20	20	100	10	150	70	50	500	N

Table 2. Frequency tables and histograms of analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

(The following qualifiers are used in reporting spectrographic data: *****, no determination made; N, concentration less than the detection limit; L, detected, but present at a concentration less than the value reported; G, element present at a concentration greater than the upper calibration limit; H, interfering spectra render analytical lines unusable.)

FREQUENCY TABLE FOR VARIABLE 3 (S-FE%)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N			0	0	0.00	0.00		
L			0	0	0.00	0.00		
T			0	0	0.00	0.00	0.62	0.62
-8.400E-02	-	8.267E-02	1	1	2.00	2.00	1.11	0.01
8.267E-02	-	2.493E-01	0	1	0.00	2.00	2.39	2.39
2.493E-01	-	4.160E-01	12	13	24.00	26.00	4.30	13.80
4.160E-01	-	5.827E-01	4	17	8.00	34.00	6.45	0.93
5.827E-01	-	7.493E-01	6	23	12.00	46.00	8.07	0.53
7.493E-01	-	9.160E-01	5	28	10.00	56.00	8.44	1.40
9.160E-01	-	1.083E+00	9	37	18.00	74.00	7.35	0.37
1.083E+00	-	1.249E+00	3	40	6.00	80.00	5.35	1.03
1.249E+00	-	1.416E+00	6	46	12.00	92.00	5.92	0.00
G			4	50	8.00	100.00	0.62	18.60
H			0	50				
B			0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 3 (S-FE%)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
 9.985E-01 XX
 1.466E+00
 2.151E+00 XXXXXXXXXXXXXXXXXXXXXXXX
 3.157E+00 XXXXXXXX
 4.634E+00 XXXXXXXXXXXX
 6.802E+00 XXXXXXXXXX
 9.985E+00 XXXXXXXXXXXXXXXXX
 1.466E+01 XXXXXX
 2.151E+01 XXXXXXXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  1.00000E+00
MAXIMUM ANTILOG      =  2.00000E+01
GEOMETRIC MEAN       =  5.56033E+00
GEOMETRIC DEVIATION  =  2.36163E+00
VARIANCE OF LOGS     =  1.39288E-01
```

Table 2. Frequency tables and histograms of analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 4 (S-MG%)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	0.16	0.16
-5.840E-01	-4.173E-01	3	3	6.00	6.00	1.76	0.87
-4.173E-01	-2.507E-01	8	11	16.00	22.00	8.60	0.04
-2.507E-01	-8.400E-02	16	27	32.00	54.00	17.65	0.15
-8.400E-02	8.267E-02	18	45	36.00	90.00	15.31	0.47
8.267E-02	2.493E-01	5	50	10.00	100.00	6.53	0.36
G		0	50	0.00	100.00	0.16	0.16
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 4 (S-MG%)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
3.157E-01 XXXXXX
4.634E-01 XXXXXXXXXXXXXXX
6.802E-01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
9.985E-01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.466E+00 XXXXXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG	=	3.00000E-01
MAXIMUM ANTILOG	=	1.50000E+00
GEOMETRIC MEAN	=	7.73576E-01
GEOMETRIC DEVIATION	=	1.48855E+00
VARIANCE OF LOGS	=	2.98476E-02

Table 2. Frequency tables and histograms of analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 5 (S-CA%)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	0.96	0.96
-4.170E-01	-2.503E-01	1	1	2.00	2.00	1.79	0.35
-2.503E-01	-8.367E-02	5	6	10.00	12.00	3.75	0.42
-8.367E-02	8.300E-02	5	11	10.00	22.00	6.32	0.28
8.300E-02	2.497E-01	16	27	32.00	54.00	8.56	6.47
2.497E-01	4.163E-01	8	35	16.00	70.00	9.31	0.19
4.163E-01	5.830E-01	4	39	8.00	78.00	8.15	2.11
5.830E-01	7.497E-01	3	42	6.00	84.00	5.73	1.30
7.497E-01	9.163E-01	4	46	8.00	92.00	3.23	0.18
9.163E-01	1.083E+00	3	49	6.00	98.00	1.47	1.60
1.083E+00	1.250E+00	1	50	2.00	100.00	0.74	0.09
G		0	50	0.00	100.00	0.96	0.96
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 5 (S-CA%)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E-01 XX
6.808E-01 XXXXXXXXXX
9.992E-01 XXXXXXXXXX
1.467E+00 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
2.153E+00 XXXXXXXXXXXXXXXX
3.160E+00 XXXXXXXX
4.638E+00 XXXXXX
6.808E+00 XXXXXXXX
9.992E+00 XXXXXX
1.467E+01 XX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  5.00000E-01
MAXIMUM ANTILOG      =  1.50000E+01
GEOMETRIC MEAN       =  2.06177E+00
GEOMETRIC DEVIATION  =  2.25494E+00
VARIANCE OF LOGS     =  1.24705E-01
```

Table 2. Frequency tables and histograms of analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 6 (S-TI%)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	0.05	0.05
-9.170E-01	- -7.503E-01	1	1	2.00	2.00	0.43	0.74
-7.503E-01	- -5.837E-01	1	2	2.00	4.00	2.23	0.68
-5.837E-01	- -4.170E-01	9	11	18.00	22.00	6.86	0.67
-4.170E-01	- -2.503E-01	13	24	26.00	48.00	12.63	0.01
-2.503E-01	- -8.367E-02	5	29	10.00	58.00	13.93	5.73
-8.367E-02	- 8.300E-02	20	49	40.00	98.00	13.86	2.72
G		1	50	2.00	100.00	0.05	16.56
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 6 (S-TI%)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
1.467E-01 XX
2.153E-01 XX
3.160E-01 XXXXXXXXXXXXXXXXXX
4.638E-01 XXXXXXXXXXXXXXXXXXXXXXXXXX
6.808E-01 XXXXXXXXXX
9.992E-01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  1.50000E-01
MAXIMUM ANTILOG      =  1.00000E+00
GEOMETRIC MEAN       =  5.98702E-01
GEOMETRIC DEVIATION  =  1.69020E+00
VARIANCE OF LOGS     =  5.19563E-02
```

Table 2. Frequency tables and histograms of analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 7 (S-MN)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	0.48	0.48
2.416E+00 -	2.583E+00	5	5	10.00	10.00	3.62	0.52
2.583E+00 -	2.749E+00	16	21	32.00	42.00	12.38	1.06
2.749E+00 -	2.916E+00	8	29	16.00	58.00	18.27	5.77
2.916E+00 -	3.083E+00	21	50	42.00	100.00	15.25	2.17
G		0	50	0.00	100.00	0.48	0.48
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 7 (S-MN)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
3.157E+02 XXXXXXXXXX
4.634E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
6.802E+02 XXXXXXXXXXXXXXXX
9.985E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  3.00000E+02
MAXIMUM ANTILOG      =  1.00000E+03
GEOMETRIC MEAN       =  6.70808E+02
GEOMETRIC DEVIATION  =  1.49720E+00
VARIANCE OF LOGS     =  3.07233E-02
```

Table 2. Frequency tables and histograms of analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 8 (S-B)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		1	1	2.00	2.00		
	L		5	6	10.00	12.00		
	T		0	6	0.00	12.00	1.91	1.91
9.160E-01	-	1.083E+00	1	7	2.00	14.00	2.76	1.12
1.083E+00	-	1.249E+00	1	8	2.00	16.00	4.95	3.15
1.249E+00	-	1.416E+00	10	18	20.00	36.00	7.28	1.01
1.416E+00	-	1.583E+00	10	28	20.00	56.00	8.76	0.17
1.583E+00	-	1.749E+00	5	33	10.00	66.00	8.64	1.53
1.749E+00	-	1.916E+00	3	36	6.00	72.00	6.96	2.26
1.916E+00	-	2.083E+00	11	47	22.00	94.00	4.60	8.91
2.083E+00	-	2.249E+00	3	50	6.00	100.00	4.14	0.31
	G		0	50	0.00	100.00	0.00	0.00
	H		0	50				
	B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 8 (S-B)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
 9.985E+00 XX
 1.466E+01 XX
 2.151E+01 XXXXXXXXXXXXXXXXXXXX
 3.157E+01 XXXXXXXXXXXXXXXXXXXX
 4.634E+01 XXXXXXXXXX
 6.802E+01 XXXXXX
 9.985E+01 XXXXXXXXXXXXXXXXXXXXXX
 1.466E+02 XXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  1.00000E+01
MAXIMUM ANTILOG      =  1.50000E+02
GEOMETRIC MEAN       =  4.44725E+01
GEOMETRIC DEVIATION  =  2.10054E+00
VARIANCE OF LOGS     =  1.03898E-01
```

Table 2. Frequency tables and histograms of analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 9 (S-BA)

LOG LIMITS LOWER - UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N	0	0	0.00	0.00		
L	0	0	0.00	0.00		
T	0	0	0.00	0.00	0.45	0.45
2.250E+00 - 2.417E+00	1	1	2.00	2.00	2.48	0.88
2.417E+00 - 2.583E+00	7	8	14.00	16.00	8.17	0.17
2.583E+00 - 2.750E+00	24	32	48.00	64.00	14.63	6.01
2.750E+00 - 2.917E+00	14	46	28.00	92.00	14.23	0.00
2.917E+00 - 3.083E+00	2	48	4.00	96.00	7.52	4.05
3.083E+00 - 3.250E+00	1	49	2.00	98.00	2.16	0.62
3.250E+00 - 3.417E+00	0	49	0.00	98.00	0.34	0.34
3.417E+00 - 3.583E+00	0	49	0.00	98.00	0.03	0.03
3.583E+00 - 3.750E+00	1	50	2.00	100.00	0.00	766.28
G	0	50	0.00	100.00	0.45	0.45
H	0	50				
B	0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 9 (S-BA)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
2.154E+02 XX
3.162E+02 XXXXXXXXXXXXXX
4.642E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
6.813E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.000E+03 XXXX
1.468E+03 XX
2.154E+03
3.162E+03
4.642E+03 XX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG     =  2.00000E+02
MAXIMUM ANTILOG     =  5.00000E+03
GEOMETRIC MEAN      =  5.57652E+02
GEOMETRIC DEVIATION =  1.61367E+00
VARIANCE OF LOGS    =  4.31874E-02
```

Table 2. Frequency tables and histograms of analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 10 (S-BE)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		4	4	8.00	8.00		
T		0	4	0.00	8.00	1.55	1.55
-8.400E-02 -	8.267E-02	20	24	40.00	48.00	20.59	0.02
8.267E-02 -	2.493E-01	24	48	48.00	96.00	24.99	0.04
2.493E-01 -	4.160E-01	2	50	4.00	100.00	2.86	0.26
G		0	50	0.00	100.00	0.00	0.00
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 10 (S-BE)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
 9.985E-01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 1.466E+00 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 2.151E+00 XXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 1.00000E+00
MAXIMUM ANTILOG = 2.00000E+00
GEOMETRIC MEAN = 1.27339E+00
GEOMETRIC DEVIATION = 1.24869E+00
VARIANCE OF LOGS = 9.30335E-03

Table 2. Frequency tables and histograms of analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 11 (S-CO)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	0.17	0.17
5.830E-01 -	7.497E-01	1	1	2.00	2.00	0.72	0.11
7.497E-01 -	9.163E-01	1	2	2.00	4.00	2.48	0.88
9.163E-01 -	1.083E+00	10	12	20.00	24.00	5.95	2.75
1.083E+00 -	1.250E+00	6	18	12.00	36.00	10.03	1.62
1.250E+00 -	1.416E+00	11	29	22.00	58.00	11.87	0.06
1.416E+00 -	1.583E+00	11	40	22.00	80.00	9.85	0.13
1.583E+00 -	1.750E+00	8	48	16.00	96.00	5.74	0.89
1.750E+00 -	1.916E+00	2	50	4.00	100.00	3.18	0.44
G		0	50	0.00	100.00	0.17	0.17
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 11 (S-CO)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E+00 XX
6.808E+00 XX
9.992E+00 XXXXXXXXXXXXXXXXXXX
1.467E+01 XXXXXXXXXXXX
2.153E+01 XXXXXXXXXXXXXXXXXXXXX
3.160E+01 XXXXXXXXXXXXXXXXXXXXX
4.638E+01 XXXXXXXXXXXXXXX
6.808E+01 XXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  5.00000E+00
MAXIMUM ANTILOG      =  7.00000E+01
GEOMETRIC MEAN       =  2.13228E+01
GEOMETRIC DEVIATION  =  1.88781E+00
VARIANCE OF LOGS     =  7.61526E-02
```

Table 2. Frequency tables and histograms of analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 12 (S-CR)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	0.40	0.40
1.083E+00 -	1.250E+00	3	3	6.00	6.00	1.15	2.98
1.250E+00 -	1.416E+00	4	7	8.00	14.00	3.10	0.26
1.416E+00 -	1.583E+00	3	10	6.00	20.00	6.27	1.70
1.583E+00 -	1.750E+00	7	17	14.00	34.00	9.48	0.65
1.750E+00 -	1.916E+00	13	30	26.00	60.00	10.73	0.48
1.916E+00 -	2.083E+00	10	40	20.00	80.00	9.09	0.09
2.083E+00 -	2.250E+00	8	48	16.00	96.00	5.77	0.86
2.250E+00 -	2.416E+00	2	50	4.00	100.00	4.03	1.02
G		0	50	0.00	100.00	0.40	0.40
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 12 (S-CR)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
1.467E+01 XXXXXX
2.153E+01 XXXXXXXX
3.160E+01 XXXXXX
4.638E+01 XXXXXXXXXXXXXX
6.808E+01 XXXXXXXXXXXXXXXXXXXXXXXXXX
9.992E+01 XXXXXXXXXXXXXXXXXXXX
1.467E+02 XXXXXXXXXXXXXXXX
2.153E+02 XXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  1.50000E+01
MAXIMUM ANTILOG      =  2.00000E+02
GEOMETRIC MEAN       =  6.62327E+01
GEOMETRIC DEVIATION  =  2.02264E+00
VARIANCE OF LOGS     =  9.35862E-02
```

Table 2. Frequency tables and histograms of analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 13 (S-CU)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	0.17	0.17
5.830E-01 -	7.497E-01	2	2	4.00	4.00	0.52	4.20
7.497E-01 -	9.163E-01	1	3	2.00	6.00	1.54	0.19
9.163E-01 -	1.083E+00	5	8	10.00	16.00	3.54	0.61
1.083E+00 -	1.250E+00	5	13	10.00	26.00	6.37	0.30
1.250E+00 -	1.416E+00	4	17	8.00	34.00	8.97	2.76
1.416E+00 -	1.583E+00	8	25	16.00	50.00	9.88	0.36
1.583E+00 -	1.750E+00	15	40	30.00	80.00	8.51	4.96
1.750E+00 -	1.916E+00	10	50	20.00	100.00	10.50	0.02
G		0	50	0.00	100.00	0.17	0.17
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 13 (S-CU)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E+00 XXXX
6.808E+00 XX
9.992E+00 XXXXXXXXXX
1.467E+01 XXXXXXXXXX
2.153E+01 XXXXXXXX
3.160E+01 XXXXXXXXXXXXXXXX
4.638E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
6.808E+01 XXXXXXXXXXXXXXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG	=	5.00000E+00
MAXIMUM ANTILOG	=	7.00000E+01
GEOMETRIC MEAN	=	3.03111E+01
GEOMETRIC DEVIATION	=	2.15029E+00
VARIANCE OF LOGS	=	1.10554E-01

Table 2. Frequency tables and histograms of analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 14 (S-LA)

LOG LIMITS LOWER - UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N	2	2	4.00	4.00		
L	7	9	14.00	18.00		
T	0	9	0.00	18.00	9.67	9.67
1.583E+00 - 1.750E+00	8	17	16.00	34.00	8.90	0.09
1.750E+00 - 1.916E+00	2	19	4.00	38.00	10.58	6.96
1.916E+00 - 2.083E+00	25	44	50.00	88.00	9.48	25.43
2.083E+00 - 2.250E+00	5	49	10.00	98.00	6.40	0.31
2.250E+00 - 2.416E+00	0	49	0.00	98.00	3.26	3.26
2.416E+00 - 2.583E+00	0	49	0.00	98.00	1.25	1.25
2.583E+00 - 2.750E+00	1	50	2.00	100.00	0.46	0.64
G	0	50	0.00	100.00	0.00	0.00
H	0	50				
B	0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 14 (S-LA)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E+01 XXXXXXXXXXXXXXXX
6.808E+01 XXXX
9.992E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.467E+02 XXXXXXXXXX
2.153E+02
3.160E+02
4.638E+02 XX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  5.00000E+01
MAXIMUM ANTILOG      =  5.00000E+02
GEOMETRIC MEAN       =  9.38056E+01
GEOMETRIC DEVIATION  =  1.53487E+00
VARIANCE OF LOGS     =  3.46231E-02
```

Table 2. Frequency tables and histograms of analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 16 (S-NI)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	0.33	0.33
9.160E-01 -	1.083E+00	7	7	14.00	14.00	6.91	0.00
1.083E+00 -	1.249E+00	25	32	50.00	64.00	24.80	0.00
1.249E+00 -	1.416E+00	15	47	30.00	94.00	16.08	0.07
1.416E+00 -	1.583E+00	3	50	6.00	100.00	1.88	0.67
G		0	50	0.00	100.00	0.33	0.33
H		0	50				
A		0	50				

TOTALS LESS H AND A 50

HISTOGRAM FOR VARIABLE 16 (S-NI)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
9.985E+00 XXXXXXXXXXXXXX
1.466E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
2.151E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
3.157E+01 XXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 1.00000E+01
MAXIMUM ANTILOG = 3.00000E+01
GEOMETRIC MEAN = 1.61058E+01
GEOMETRIC DEVIATION = 1.31039E+00
VARIANCE OF LOGS = 1.37826E-02

Table 2. Frequency tables and histograms of analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 17 (S-PB)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		1	1	2.00	2.00		
L		0	1	0.00	2.00		
T		0	1	0.00	2.00	0.01	0.01
1.083E+00 -	1.250E+00	1	2	2.00	4.00	0.13	5.78
1.250E+00 -	1.416E+00	0	2	0.00	4.00	1.16	1.16
1.416E+00 -	1.583E+00	2	4	4.00	8.00	5.37	2.11
1.583E+00 -	1.750E+00	13	17	26.00	34.00	12.84	0.00
1.750E+00 -	1.916E+00	19	36	38.00	72.00	15.98	0.57
1.916E+00 -	2.083E+00	14	50	28.00	100.00	14.50	0.02
G		0	50	0.00	100.00	0.00	0.00
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 17 (S-PB)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
1.467E+01 XX
2.153E+01
3.160E+01 XXXX
4.638E+01 XXXXXXXXXXXXXXXXXXXXXXXXX
6.808E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
9.992E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  1.50000E+01
MAXIMUM ANTILOG      =  1.00000E+02
GEOMETRIC MEAN       =  6.63612E+01
GEOMETRIC DEVIATION  =  1.46191E+00
VARIANCE OF LOGS     =  2.71992E-02
```

Table 2. Frequency tables and histograms of analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 18 (S-SC)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		3	3	6.00	6.00		
L		1	4	2.00	8.00		
T		0	4	0.00	8.00	0.95	0.95
5.830E-01 -	7.497E-01	2	6	4.00	12.00	1.94	0.00
7.497E-01 -	9.163E-01	2	8	4.00	16.00	4.18	1.14
9.163E-01 -	1.083E+00	9	17	18.00	34.00	7.07	0.53
1.083E+00 -	1.250E+00	3	20	6.00	40.00	9.36	4.32
1.250E+00 -	1.416E+00	6	26	12.00	52.00	9.71	1.42
1.416E+00 -	1.583E+00	16	42	32.00	84.00	7.89	8.33
1.583E+00 -	1.750E+00	6	48	12.00	96.00	5.02	0.19
1.750E+00 -	1.916E+00	2	50	4.00	100.00	3.87	0.90
G		0	50	0.00	100.00	0.00	0.00
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 18 (S-SC)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E+00 XXXX
6.808E+00 XXXX
9.992E+00 XXXXXXXXXXXXXXXXX
1.467E+01 XXXXXX
2.153E+01 XXXXXXXXXXX
3.160E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
4.638E+01 XXXXXXXXXXX
6.808E+01 XXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 5.00000E+00
MAXIMUM ANTILOG = 7.00000E+01
GEOMETRIC MEAN = 2.11249E+01
GEOMETRIC DEVIATION = 1.98937E+00
VARIANCE OF LOGS = 8.92313E-02

Table 2. Frequency tables and histograms of analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 19 (S-SR)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		5	5	10.00	10.00		
	L		14	19	28.00	38.00		
	T		0	19	0.00	38.00	17.40	17.40
2.083E+00	-	2.250E+00	25	44	50.00	88.00	25.45	0.01
2.250E+00	-	2.416E+00	5	49	10.00	98.00	6.86	0.51
2.416E+00	-	2.583E+00	1	50	2.00	100.00	0.29	1.74
	G		0	50	0.00	100.00	0.00	0.00
	H		0	50				
	B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 19 (S-SR)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
1.467E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
2.153E+02 XXXXXXXXXX
3.160E+02 XX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  1.50000E+02
MAXIMUM ANTILOG      =  3.00000E+02
GEOMETRIC MEAN       =  1.60677E+02
GEOMETRIC DEVIATION  =  1.17102E+00
VARIANCE OF LOGS     =  4.70094E-03
```

Table 2. Frequency tables and histograms of analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 20 (S-V)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		0	0	0.00	0.00		
	L		0	0	0.00	0.00		
	T		0	0	0.00	0.00	0.94	0.94
1.416E+00	-	1.583E+00	1	1	2.00	2.00	1.90	0.42
1.583E+00	-	1.749E+00	6	7	12.00	14.00	4.09	0.89
1.749E+00	-	1.916E+00	10	17	20.00	34.00	6.93	1.36
1.916E+00	-	2.083E+00	9	26	18.00	52.00	9.24	0.01
2.083E+00	-	2.249E+00	8	34	16.00	68.00	9.67	0.29
2.249E+00	-	2.416E+00	6	40	12.00	80.00	7.97	0.49
2.416E+00	-	2.583E+00	4	44	8.00	88.00	5.16	0.26
2.583E+00	-	2.749E+00	5	49	10.00	98.00	2.62	2.15
2.749E+00	-	2.916E+00	0	49	0.00	98.00	1.05	1.05
2.916E+00	-	3.083E+00	1	50	2.00	100.00	0.43	0.75
	G		0	50	0.00	100.00	0.94	0.94
	H		0	50				
	B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 20 (S-V)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
3.157E+01 XX
4.634E+01 XXXXXXXXXXXX
6.802E+01 XXXXXXXXXXXXXXXXXXXX
9.985E+01 XXXXXXXXXXXXXXXXXX
1.466E+02 XXXXXXXXXXXXXXXX
2.151E+02 XXXXXXXXXXXX
3.157E+02 XXXXXXXX
4.634E+02 XXXXXXXXXX
6.803E+02
9.985E+02 XX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  3.00000E+01
MAXIMUM ANTILOG      =  1.00000E+03
GEOMETRIC MEAN       =  1.30258E+02
GEOMETRIC DEVIATION  =  2.16942E+00
VARIANCE OF LOGS     =  1.13127E-01
```

Table 2. Frequency tables and histograms of analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 21 (S-Y)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	1.16	1.16
1.250E+00 -	1.417E+00	3	3	6.00	6.00	2.28	0.23
1.417E+00 -	1.583E+00	9	12	18.00	24.00	4.77	3.75
1.583E+00 -	1.750E+00	6	18	12.00	36.00	7.75	0.39
1.750E+00 -	1.917E+00	3	21	6.00	42.00	9.79	4.71
1.917E+00 -	2.083E+00	12	33	24.00	66.00	9.61	0.60
2.083E+00 -	2.250E+00	8	41	16.00	82.00	7.33	0.06
2.250E+00 -	2.417E+00	8	49	16.00	98.00	4.35	3.07
2.417E+00 -	2.583E+00	1	50	2.00	100.00	2.97	1.31
G		0	50	0.00	100.00	1.16	1.16
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 21 (S-Y)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
2.154E+01 XXXXXX
3.162E+01 XXXXXXXXXXXXXXXXXX
4.642E+01 XXXXXXXXXXXX
6.813E+01 XXXXXX
1.000E+02 XXXXXXXXXXXXXXXXXXXXXXXX
1.469E+02 XXXXXXXXXXXXXXXX
2.154E+02 XXXXXXXXXXXXXXXX
3.162E+02 XX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      = 2.00000E+01
MAXIMUM ANTILOG      = 3.00000E+02
GEOMETRIC MEAN       = 8.02431E+01
GEOMETRIC DEVIATION  = 2.13029E+00
VARIANCE OF LOGS     = 1.07873E-01
```

Table 2. Frequency tables and histograms of analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 22 (S-ZR)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	0.03	0.03
1.916E+00 -	2.083E+00	1	1	2.00	2.00	0.18	3.75
2.083E+00 -	2.249E+00	1	2	2.00	4.00	0.88	0.02
2.249E+00 -	2.416E+00	2	4	4.00	8.00	2.96	0.31
2.416E+00 -	2.583E+00	8	12	16.00	24.00	6.87	0.19
2.583E+00 -	2.749E+00	9	21	18.00	42.00	10.96	0.35
2.749E+00 -	2.916E+00	2	23	4.00	46.00	12.05	8.38
2.916E+00 -	3.083E+00	9	32	18.00	64.00	16.07	3.11
G		18	50	36.00	100.00	0.03	11608.28
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 22 (S-ZR)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
9.985E+01 XX
1.466E+02 XX
2.151E+02 XXXX
3.157E+02 XXXXXXXXXXXXXXXX
4.634E+02 XXXXXXXXXXXXXXXXXX
6.802E+02 XXXX
9.985E+02 XXXXXXXXXXXXXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  1.00000E+02
MAXIMUM ANTILOG      =  1.00000E+03
GEOMETRIC MEAN       =  4.72337E+02
GEOMETRIC DEVIATION  =  1.87518E+00
VARIANCE OF LOGS     =  7.45525E-02
```

Table 3. Correlation coefficients for analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

ARRAY OF NUMBER OF PAIRS AND CORRELATION COEFFICIENTS -

	3 S-FE%	4 S-MG%	5 S-CA%	6 S-TI%	7 S-MN	8 S-B	9 S-BA	10 S-BE	11 S-CO	12 S-CR
3 S-FE%	0.3732	0.3375	-0.5611	0.7114	0.4954	-0.6760	-0.1876	-0.0143	0.8977	0.1491
4 S-MG%	46	0.1728	-0.1703	0.6811	0.6807	-0.4516	0.0274	0.3061	0.2474	-0.2424
5 S-CA%	46	50	0.3531	-0.4576	-0.3134	0.2930	0.2176	-0.0829	-0.5013	-0.1205
6 S-TI%	45	49	49	0.2279	0.6318	-0.5722	-0.0244	0.2143	0.6834	-0.0551
7 S-MN	46	50	50	49	0.1753	-0.5359	-0.0134	0.3606	0.3292	-0.3241
8 S-B	44	44	44	43	44	0.3223	0.1934	0.0328	-0.6302	0.2080
9 S-BA	46	50	50	49	50	44	0.2078	-0.0972	-0.1131	0.0794
10 S-BE	45	46	46	45	46	44	46	0.0965	-0.0106	-0.3297
11 S-CO	46	50	50	49	50	44	50	46	0.2760	0.3217
12 S-CR	46	50	50	49	50	44	50	46	50	0.3059
13 S-CU	46	50	50	49	50	44	50	46	50	50
14 S-LA	37	41	41	40	41	35	41	37	41	41
15 S-NB	17	17	17	16	17	17	17	17	17	17
16 S-NI	46	50	50	49	50	44	50	46	50	50
17 S-PB	45	49	49	48	49	43	49	45	49	49
18 S-SC	42	46	46	45	46	40	46	42	46	46
19 S-SR	31	31	31	30	31	31	31	31	31	31
20 S-V	46	50	50	49	50	44	50	46	50	50
21 S-Y	46	50	50	49	50	44	50	46	50	50
22 S-ZR	32	32	32	32	32	32	32	32	32	32
23 S-TH	0	1	1	1	1	0	1	1	1	1

NOTE: THE DIAGONAL OF THE CORR MATRIX CONTAINS THE STD DEV OF THE VARIABLE FOR ONLY THE VALID PAIRS.

Table 3. Correlation coefficients for analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

ARRAY OF NUMBER OF PAIRS AND CORRELATION COEFFICIENTS -CONT.

	13 S-CU	14 S-LA	15 S-NB	16 S-NI	17 S-PB	18 S-SC	19 S-SR	20 S-V	21 S-Y	22 S-ZR
3 S-FE%	0.6115	0.5271	*******	0.2143	-0.1333	0.7583	-0.3013	0.9396	0.8485	0.7190
4 S-MG%	0.5533	0.3023	*******	0.0389	0.5646	0.5353	-0.2884	0.0012	0.3996	0.4291
5 S-CA%	-0.2856	-0.4457	*******	-0.3558	0.0926	-0.4310	0.4328	-0.5021	-0.4432	-0.5210
6 S-TI%	0.8026	0.6319	*******	0.1340	0.3012	0.7598	-0.2710	0.5493	0.7909	0.7509
7 S-MN	0.4968	0.4190	*******	-0.0717	0.4109	0.6334	-0.3869	0.1324	0.4886	0.3441
8 S-B	-0.5783	-0.5057	*******	0.0954	-0.1466	-0.7473	0.4604	-0.6254	-0.6963	-0.4007
9 S-BA	0.0179	-0.3923	*******	-0.1042	0.1463	-0.3165	0.7505	-0.1540	-0.1704	0.2179
10 S-BE	0.2574	0.2038	*******	-0.0765	0.4024	0.2175	-0.2345	-0.0285	0.2556	0.1875
11 S-CO	0.6988	0.4296	*******	0.3102	-0.1244	0.6571	-0.3137	0.8708	0.7892	0.5787
12 S-CR	0.1399	-0.3054	*******	0.5594	-0.4806	-0.2020	0.2349	0.4353	0.0881	0.0132
13 S-CU	0.3325	0.5129	*******	0.2037	0.3139	0.6833	-0.1227	0.5649	0.7954	0.6188
14 S-LA	41	0.1861	*******	-0.0015	0.1504	0.6501	-0.3919	0.3378	0.6416	0.6222
15 S-NB	17	17	0.0000	*******	*******	*******	*******	*******	*******	*******
16 S-NI	50	41	17	0.1174	-0.1739	-0.1564	0.0719	0.2790	0.1051	0.1337
17 S-PB	49	41	17	49	0.1649	0.1225	-0.0194	-0.3767	0.1256	0.2464
18 S-SC	46	40	17	46	46	0.2987	-0.4281	0.5388	0.8183	0.4687
19 S-SR	31	28	15	31	31	29	0.0686	-0.2750	-0.2999	-0.0927
20 S-V	50	41	17	50	49	46	31	0.3363	0.7760	0.7276
21 S-Y	50	41	17	50	49	46	31	50	0.3284	0.7490
22 S-ZR	32	23	10	32	31	28	22	32	32	0.2730
23 S-TH	1	1	0	1	1	1	0	1	1	0

NOTE: THE DIAGONAL OF THE CORR MATRIX CONTAINS THE STD DEV OF THE VARIABLE FOR ONLY THE VALID PAIRS.

Table 3. Correlation coefficients for analytical data from stream sediments from the Sandia Mountain Wilderness, New Mexico.

ARRAY OF NUMBER OF PAIRS AND CORRELATION COEFFICIENTS -CONT.

		23
		S-TH
3	S-FE%	*******
4	S-MG%	*******
5	S-CA%	*******
6	S-TI%	*******
7	S-MN	*******
8	S-B	*******
9	S-BA	*******
10	S-BE	*******
11	S-CO	*******
12	S-CR	*******
13	S-CU	*******
14	S-LA	*******
15	S-NB	*******
16	S-NI	*******
17	S-PB	*******
18	S-SC	*******
19	S-SR	*******
20	S-V	*******
21	S-Y	*******
22	S-ZR	*******
23	S-TH	*******

NOTE: THE DIAGONAL OF THE CORR MATRIX CONTAINS THE STD DEV OF THE VARIABLE FOR ONLY THE VALID PAIRS.

Table 4. Analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

(The following qualifiers are used in reporting spectrographic data: *****, no determination made; N, concentration less than the detection limit; <, detected, but present at a concentration less than the value reported; >, element present at a concentration greater than the upper calibration limit; and H, interfering spectra render analytical lines unusable.)

Sample	Latitude	Longitude	Fe-pct. s(.1)	Mg-pct. s(.05)	Ca-pct. s(.1)	Ti-pct. s(.005)	Mn-ppm s(20)	Ag-ppm s(1)	B-ppm s(20)	Ba-ppm s(50)	Be-ppm s(2)	Bi-ppm s(20)
SAN002P	35 13 52	106 28 41	.5	.15	7.0	2.0	500	N	50	700	3	N
SAN004P	35 13 12	106 28 48	.5	.15	10.0	>2.0	1,000	N	30	700	<2	N
SAN006P	35 12 57	106 29 7	.3	.15	7.0	>2.0	700	N	30	500	2	N
SAN012P	35 17 21	106 27 0	.5	.20	5.0	>2.0	300	N	70	>10,000	5	N
SAN015P	35 14 34	106 24 53	.7	.20	7.0	>2.0	200	N	100	10,000	3	N
SAN017P	35 17 48	106 25 18	.3	.07	1.5	.1	70	N	20	>10,000	N	N
SAN020P	35 17 17	106 24 56	.7	.20	.7	>2.0	150	N	100	>10,000	2	N
SAN022P	35 16 22	106 25 9	.3	.10	.5	>2.0	100	N	70	>10,000	2	N
SAN024P	35 16 17	106 25 7	.3	.15	.7	>2.0	100	N	100	>10,000	2	N
SAN027P	35 4 56	106 24 21	.7	.15	.1	>2.0	150	N	70	>10,000	2	N
SAN029P	35 4 38	106 24 48	.5	.15	1.5	>2.0	200	N	70	10,000	3	N
SAN031P	35 4 6	106 26 3	.5	.20	5.0	>2.0	700	N	70	2,000	3	N
SAN033P	35 4 53	106 26 39	3.0	.10	5.0	>2.0	300	N	70	1,000	2	N
SAN035P	35 4 21	106 27 36	.7	.15	10.0	>2.0	500	N	70	1,500	<2	N
SAN037P	35 6 40	106 23 6	.7	.10	.5	1.5	100	N	50	10,000	N	N
SAN039P	35 7 1	106 23 7	.5	.15	5.0	2.0	100	5.0	50	>10,000	<2	N
SAN041P	35 7 50	106 23 18	1.5	.50	2.0	>2.0	500	N	70	>10,000	2	N
SAN045P	35 10 52	106 27 30	.5	.10	15.0	1.5	1,000	N	20	700	<2	N
SAN047P	35 10 55	106 27 34	.7	.15	5.0	2.0	500	N	50	1,000	3	N
SAN049P	35 8 52	106 26 56	.7	.20	7.0	>2.0	1,000	N	70	700	3	50
SAN051P	35 7 42	106 28 41	.5	.15	5.0	>2.0	500	N	50	1,000	<2	50
SAN053P	35 6 41	106 29 7	.5	.10	3.0	1.5	300	N	50	700	3	N
SAN201P	35 11 51	106 28 48	1.0	.15	2.0	1.5	500	N	70	1,500	5	N
SAN203P	35 12 22	106 28 50	.5	.15	5.0	>2.0	500	N	100	1,000	5	N
SAN205P	35 13 29	106 29 36	.5	.10	10.0	>2.0	700	N	20	500	<2	N
SAN207P	35 16 40	106 28 36	1.0	.15	2.0	2.0	300	N	70	1,000	2	N
SAN209P	35 16 56	106 28 45	1.0	.20	3.0	2.0	300	N	70	3,000	2	N
SAN211P	35 17 18	106 27 5	.7	.20	1.5	2.0	200	N	70	>10,000	5	N
SAN213P	35 17 25	106 26 16	.5	.10	.7	2.0	100	N	50	>10,000	3	N
SAN215P	35 15 28	106 24 27	.5	.20	10.0	1.5	150	N	50	>10,000	<2	N
SAN217P	35 16 5	106 28 45	.7	.15	7.0	>2.0	500	N	30	10,000	3	N
SAN219P	35 16 4	106 28 47	.7	.15	3.0	>2.0	500	N	50	3,000	2	N
SAN221P	35 17 28	106 28 12	1.0	.30	7.0	.7	500	1.5	70	>10,000	<2	N
SAN223P	35 5 36	106 23 30	.7	.20	2.0	>2.0	500	N	150	>10,000	2	N
SAN225P	35 8 24	106 23 28	.5	.30	5.0	>2.0	300	N	200	10,000	2	N
SAN227P	35 8 44	106 23 11	.7	.15	5.0	>2.0	150	N	50	3,000	<2	N
SAN229P	35 10 8	106 26 32	.7	.10	3.0	1.5	200	N	50	700	3	70
SAN231P	35 10 8	106 27 3	.5	.15	3.0	1.5	300	N	70	700	3	N
SAN233P	35 10 3	106 28 32	.3	.10	7.0	>2.0	500	N	70	500	2	N
SAN235P	35 8 59	106 26 22	.7	.15	2.0	>2.0	300	N	200	700	2	150
SAN237P	35 9 3	106 26 24	.5	.15	7.0	>2.0	500	N	70	700	2	N
SAN239P	35 8 52	106 26 57	.7	.15	5.0	>2.0	300	N	50	700	2	<20
SAN241P	35 5 46	106 27 40	.5	.10	3.0	>2.0	300	N	50	700	2	N
SAN244P	35 6 11	106 27 56	1.5	.20	5.0	>2.0	1,000	N	50	700	<2	N
SAN247P	35 7 50	106 27 37	1.0	.20	5.0	>2.0	500	N	50	700	<2	N

Table 4. Analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

Sample	Co-ppm s(10)	Cr-ppm s(20)	Cu-ppm s(10)	La-ppm s(50)	Mo-ppm s(10)	Nb-ppm s(50)	Ni-ppm s(10)	Pb-ppm s(20)	Sc-ppm s(10)	Sn-ppm s(20)	Sr-ppm s(200)	V-ppm s(20)	W-ppm s(100)
SAN002P	N	N	<10	500	N	<50	N	150	100	N	N	50	N
SAN004P	N	<20	150	1,500	N	50	N	300	70	<20	<200	70	N
SAN006P	N	N	<10	700	N	70	N	100	150	50	N	70	N
SAN012P	N	<20	100	300	70	N	N	1,000	70	N	10,000	150	N
SAN015P	<10	20	<10	200	N	50	N	300	70	30	500	150	N
SAN017P	N	N	<10	N	N	N	N	300	N	N	10,000	50	N
SAN020P	N	1,500	<10	150	15	<50	N	700	70	N	10,000	100	N
SAN022P	N	20	<10	<50	100	<50	N	5,000	100	N	10,000	500	N
SAN024P	N	20	<10	200	N	<50	N	300	100	N	10,000	100	N
SAN027P	N	50	<10	100	<10	50	N	700	150	30	10,000	150	100
SAN029P	N	N	<10	200	15	<50	N	500	100	N	<200	100	150
SAN031P	N	N	<10	500	N	50	N	150	150	30	N	100	N
SAN033P	500	N	10	700	N	50	30	150	100	<20	N	150	N
SAN035P	<10	N	<10	700	N	50	N	150	70	<20	N	150	N
SAN037P	N	N	<10	150	N	N	N	1,500	20	N	<200	50	N
SAN039P	N	20	150	150	5,000	N	N	>50,000	30	N	10,000	5,000	N
SAN041P	15	100	<10	150	100	50	N	1,500	70	N	10,000	150	N
SAN045P	N	N	<10	1,500	N	N	N	200	50	N	N	50	N
SAN047P	10	N	<10	500	N	N	N	150	70	N	N	70	N
SAN049P	10	20	<10	500	N	N	N	200	150	50	N	150	N
SAN051P	N	<20	<10	300	N	<50	N	1,500	50	N	N	100	200
SAN053P	N	N	<10	200	N	N	N	150	50	N	N	50	N
SAN201P	<10	<20	<10	200	N	N	N	200	150	N	N	70	N
SAN203P	<10	<20	<10	500	N	<50	N	150	150	30	N	100	N
SAN205P	<10	<20	<10	700	N	50	N	100	70	50	N	150	N
SAN207P	<10	<20	<10	100	N	N	N	200	30	N	N	70	150
SAN209P	<10	20	<10	300	N	<50	N	150	30	N	N	100	100
SAN211P	N	20	<10	300	70	N	N	2,000	150	N	10,000	70	N
SAN213P	N	20	150	150	N	50	N	2,000	50	N	10,000	200	N
SAN215P	N	20	<10	200	N	<50	N	2,000	<10	N	10,000	100	N
SAN217P	N	N	<10	500	N	N	N	200	100	N	N	50	N
SAN219P	N	<20	<10	150	N	<50	N	100	50	N	N	70	N
SAN221P	N	100	<10	150	70	N	N	1,000	N	N	10,000	50	N
SAN223P	<10	50	<10	200	N	<50	N	500	150	N	10,000	100	100
SAN225P	<10	150	<10	200	N	100	N	150	150	<20	500	200	N
SAN227P	N	20	<10	100	N	50	N	150	15	N	<200	70	N
SAN229P	N	<20	<10	200	N	N	N	70	70	N	N	50	N
SAN231P	N	<20	<10	200	N	<50	N	70	70	N	N	50	150
SAN233P	N	N	<10	500	N	<50	N	70	70	N	N	70	N
SAN235P	N	<20	<10	150	N	<50	N	100	70	N	N	100	200
SAN237P	N	<20	<10	300	N	<50	N	70	70	N	N	100	N
SAN239P	N	<20	<10	200	N	<50	N	70	70	N	N	100	150
SAN241P	N	<20	<10	200	N	<50	N	2,000	150	N	N	100	<100
SAN244P	20	20	10	300	<10	50	N	1,500	70	50	N	200	150
SAN247P	15	<20	<10	300	N	50	N	70	70	N	N	100	N

Table 4. Analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

Sample	Y-ppm s(20)	Zr-ppm s(20)	Th-ppm s(200)
SAN002P	1,000	>2,000	200
SAN004P	700	>2,000	<200
SAN006P	1,000	>2,000	200
SAN012P	1,500	>2,000	<200
SAN015P	700	>2,000	<200
SAN017P	70	>2,000	N
SAN020P	700	>2,000	<200
SAN022P	1,000	>2,000	<200
SAN024P	1,000	>2,000	<200
SAN027P	1,000	>2,000	<200
SAN029P	1,500	>2,000	200
SAN031P	1,500	>2,000	<200
SAN033P	1,500	>2,000	300
SAN035P	1,000	>2,000	<200
SAN037P	500	>2,000	N
SAN039P	1,000	>2,000	N
SAN041P	1,500	>2,000	<200
SAN045P	1,500	>2,000	200
SAN047P	700	>2,000	700
SAN049P	1,500	>2,000	N
SAN051P	1,000	>2,000	N
SAN053P	1,000	>2,000	500
SAN201P	2,000	>2,000	500
SAN203P	1,500	>2,000	N
SAN205P	1,000	>2,000	N
SAN207P	700	>2,000	N
SAN209P	1,000	>2,000	N
SAN211P	2,000	>2,000	<200
SAN213P	700	>2,000	<200
SAN215P	500	>2,000	N
SAN217P	2,000	>2,000	<200
SAN219P	1,000	>2,000	200
SAN221P	100	>2,000	N
SAN223P	2,000	>2,000	200
SAN225P	1,000	>2,000	N
SAN227P	200	>2,000	N
SAN229P	1,000	>2,000	1,000
SAN231P	700	>2,000	1,000
SAN233P	1,500	>2,000	500
SAN235P	700	>2,000	N
SAN237P	1,000	>2,000	N
SAN239P	700	>2,000	N
SAN241P	1,000	>2,000	<200
SAN244P	1,000	>2,000	200
SAN247P	700	>2,000	N

Table 4. Analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

Sample	Latitude	Longitude	Fe-pct. s(.1)	Mg-pct. s(.05)	Ca-pct. s(.1)	Ti-pct. s(.005)	Mn-ppm s(20)	Ag-ppm s(1)	B-ppm s(20)	Ba-ppm s(50)	Be-ppm s(2)	Bi-ppm s(20)
SAN250P	35 8 3	106 28 28	.5	.10	10.0	>2.0	700	N	50	1,500	<2	N
SAN252P	35 9 38	106 23 28	.7	.20	1.5	>2.0	150	N	70	10,000	<2	N
SAN254P	35 9 24	106 23 24	5.0	.50	1.5	>2.0	500	N	500	>10,000	2	N
SAN256P	35 10 10	106 23 9	1.0	.20	3.0	>2.0	300	N	70	10,000	<2	N
SAN259P	35 10 22	106 23 20	1.5	.50	1.0	>2.0	1,000	N	150	>10,000	<2	N

Sample	Co-ppm s(10)	Cr-ppm s(20)	Cu-ppm s(10)	La-ppm s(50)	Mo-ppm s(10)	Nb-ppm s(50)	Ni-ppm s(10)	Pb-ppm s(20)	Sc-ppm s(10)	Sn-ppm s(20)	Sr-ppm s(200)	V-ppm s(20)	W-ppm s(100)
SAN250P	15	<20	<10	500	<10	70	N	70	50	50	N	150	N
SAN252P	10	50	30	150	300	50	N	1,500	30	N	<200	150	N
SAN254P	15	300	200	500	N	100	N	1,500	150	N	300	500	N
SAN256P	10	50	10	200	N	100	N	200	70	100	300	150	N
SAN259P	10	200	<10	300	N	<50	20	300	50	150	300	100	N

Sample	Y-ppm s(20)	Zr-ppm s(20)	Th-ppm s(200)
SAN250P	1,000	>2,000	N
SAN252P	500	>2,000	N
SAN254P	1,500	>2,000	200
SAN256P	700	>2,000	N
SAN259P	700	>2,000	N

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

(The following qualifiers are used in reporting spectrographic data: *****, no determination made; N, concentration less than the detection limit; L, detected, but present at a concentration less than the value reported; G, element present at a concentration greater than the upper calibration limit; H, interfering spectra render analytical lines unusable.)

FREQUENCY TABLE FOR VARIABLE 1 (S-FE%)

LOG LIMITS LOWER - UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N	0	0	0.00	0.00		
L	0	0	0.00	0.00		
T	0	0	0.00	0.00	1.97	1.97
-5.840E-01 - -4.173E-01	5	5	10.00	10.00	5.50	0.04
-4.173E-01 - -2.507E-01	18	23	36.00	46.00	11.23	4.07
-2.507E-01 - -8.400E-02	16	39	32.00	78.00	14.01	0.28
-8.400E-02 - 8.267E-02	6	45	12.00	90.00	10.66	2.04
8.267E-02 - 2.493E-01	3	48	6.00	96.00	4.95	0.77
2.493E-01 - 4.160E-01	0	48	0.00	96.00	1.40	1.40
4.160E-01 - 5.827E-01	1	49	2.00	98.00	0.24	2.38
5.827E-01 - 7.493E-01	1	50	2.00	100.00	0.03	35.10
G	0	50	0.00	100.00	1.97	1.97
H	0	50				
B	0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 1 (S-FE%)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
3.157E-01 XXXXXXXXXX
4.634E-01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
6.802E-01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
9.985E-01 XXXXXXXXXXXX
1.466E+00 XXXXXX
2.151E+00
3.157E+00 XX
4.634E+00 XX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  3.00000E-01
MAXIMUM ANTILOG      =  5.00000E+00
GEOMETRIC MEAN       =  6.66592E-01
GEOMETRIC DEVIATION  =  1.70654E+00
VARIANCE OF LOGS     =  5.38782E-02
```

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 2 (S-MG%)

LOG LIMITS LOWER - UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N	0	0	0.00	0.00		
L	0	0	0.00	0.00		
T	0	0	0.00	0.00	0.29	0.29
-1.250E+00 - -1.083E+00	1	1	2.00	2.00	2.44	0.85
-1.083E+00 - -9.167E-01	11	12	22.00	24.00	9.67	0.18
-9.167E-01 - -7.500E-01	20	32	40.00	64.00	17.33	0.41
-7.500E-01 - -5.833E-01	13	45	26.00	90.00	14.11	0.09
-5.833E-01 - -4.167E-01	2	47	4.00	94.00	5.22	1.98
-4.167E-01 - -2.500E-01	3	50	6.00	100.00	0.94	4.52
G	0	50	0.00	100.00	0.29	0.29
H	0	50				
B	0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 2 (S-MG%)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
6.813E-02 XX
1.000E-01 XXXXXXXXXXXXXXXXXXXX
1.468E-01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
2.154E-01 XXXXXXXXXXXXXXXXXXXXXXXXXX
3.162E-01 XXXX
4.642E-01 XXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  7.00000E-02
MAXIMUM ANTILOG      =  5.00000E-01
GEOMETRIC MEAN       =  1.60927E-01
GEOMETRIC DEVIATION  =  1.51766E+00
VARIANCE OF LOGS     =  3.28242E-02
```

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 3 (S-CA%)

LOG LIMITS LOWER - UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N	0	0	0.00	0.00		
L	0	0	0.00	0.00		
T	0	0	0.00	0.00	0.01	0.01
-1.084E+00 - -9.173E-01	1	1	2.00	2.00	0.02	55.53
-9.173E-01 - -7.507E-01	0	1	0.00	2.00	0.06	0.06
-7.507E-01 - -5.840E-01	0	1	0.00	2.00	0.19	0.19
-5.840E-01 - -4.173E-01	0	1	0.00	2.00	0.51	0.51
-4.173E-01 - -2.507E-01	2	3	4.00	6.00	1.18	0.57
-2.507E-01 - -8.400E-02	3	6	6.00	12.00	2.32	0.20
-8.400E-02 - 8.267E-02	1	7	2.00	14.00	3.93	2.18
8.267E-02 - 2.493E-01	5	12	10.00	24.00	5.72	0.09
2.493E-01 - 4.160E-01	5	17	10.00	34.00	7.17	0.66
4.160E-01 - 5.827E-01	7	24	14.00	48.00	7.74	0.07
5.827E-01 - 7.493E-01	12	36	24.00	72.00	7.18	3.24
7.493E-01 - 9.160E-01	8	44	16.00	88.00	5.73	0.90
9.160E-01 - 1.083E+00	5	49	10.00	98.00	3.93	0.29
1.083E+00 - 1.249E+00	1	50	2.00	100.00	4.30	2.53
G	0	50	0.00	100.00	0.01	0.01
H	0	50				
B	0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 3 (S-CA%)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
 9.985E-02 XX
 1.466E-01
 2.151E-01
 3.157E-01
 4.634E-01 XXXX
 6.802E-01 XXXXXX
 9.985E-01 XX
 1.466E+00 XXXXXXXXXX
 2.151E+00 XXXXXXXXXX
 3.157E+00 XXXXXXXXXXXXXX
 4.635E+00 XXXXXXXXXXXXXXXXXXXXXXXX
 6.803E+00 XXXXXXXXXXXXXXX
 9.985E+00 XXXXXXXXXX
 1.466E+01 XX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 1.00000E-01
MAXIMUM ANTILOG = 1.50000E+01
GEOMETRIC MEAN = 3.15983E+00
GEOMETRIC DEVIATION = 2.67256E+00
VARIANCE OF LOGS = 1.82267E-01

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 4 (S-TI%)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N	0	0	0.00	0.00		
	L	0	0	0.00	0.00		
	T	0	0	0.00	0.00	0.00	0.00
-1.084E+00	-9.173E-01	1	1	2.00	2.00	0.00	0.00
-9.173E-01	-7.507E-01	0	1	0.00	2.00	0.00	0.00
-7.507E-01	-5.840E-01	0	1	0.00	2.00	0.00	0.00
-5.840E-01	-4.173E-01	0	1	0.00	2.00	0.02	0.02
-4.173E-01	-2.507E-01	0	1	0.00	2.00	0.25	0.25
-2.507E-01	-8.400E-02	1	2	2.00	4.00	1.96	0.47
-8.400E-02	8.267E-02	0	2	0.00	4.00	7.69	7.69
8.267E-02	2.493E-01	7	9	14.00	18.00	15.19	4.41
2.493E-01	4.160E-01	7	16	14.00	32.00	24.90	12.87
	G	34	50	68.00	100.00	0.00	0.00
	H	0	50				
	B	0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 4 (S-TI%)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
 9.985E-02 XX
 1.466E-01
 2.151E-01
 3.157E-01
 4.634E-01
 6.802E-01 XX
 9.985E-01
 1.466E+00 XXXXXXXXXXXXXX
 2.151E+00 XXXXXXXXXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  1.00000E-01
MAXIMUM ANTILOG      =  2.00000E+00
GEOMETRIC MEAN       =  1.36949E+00
GEOMETRIC DEVIATION  =  2.10981E+00
VARIANCE OF LOGS     =  1.05134E-01
```

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 5 (S-MN)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	0.31	0.31
1.750E+00 -	1.917E+00	1	1	2.00	2.00	0.94	0.00
1.917E+00 -	2.083E+00	5	6	10.00	12.00	2.65	2.08
2.083E+00 -	2.250E+00	5	11	10.00	22.00	5.60	0.06
2.250E+00 -	2.417E+00	4	15	8.00	30.00	8.89	2.69
2.417E+00 -	2.583E+00	11	26	22.00	52.00	10.62	0.01
2.583E+00 -	2.750E+00	15	41	30.00	82.00	9.55	3.12
2.750E+00 -	2.917E+00	4	45	8.00	90.00	6.45	0.93
2.917E+00 -	3.083E+00	5	50	10.00	100.00	4.99	0.00
G		0	50	0.00	100.00	0.31	0.31
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 5 (S-MN)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
6.813E+01 XX
1.000E+02 XXXXXXXXXX
1.468E+02 XXXXXXXXXX
2.154E+02 XXXXXXXX
3.162E+02 XXXXXXXXXXXXXXXXXXXXX
4.642E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
6.813E+02 XXXXXXXX
1.000E+03 XXXXXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG	=	7.00000E+01
MAXIMUM ANTILOG	=	1.00000E+03
GEOMETRIC MEAN	=	3.31787E+02
GEOMETRIC DEVIATION	=	2.03510E+00
VARIANCE OF LOGS	=	9.52256E-02

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 6 (S-AG)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		48	48	96.00	96.00		
L		0	48	0.00	96.00		
T		0	48	0.00	96.00	37.04	37.04
8.300E-02 -	2.497E-01	1	49	2.00	98.00	12.41	10.49
2.497E-01 -	4.163E-01	0	49	0.00	98.00	0.55	0.55
4.163E-01 -	5.830E-01	0	49	0.00	98.00	0.00	0.00
5.830E-01 -	7.497E-01	1	50	2.00	100.00	0.00	471.77
G		0	50	0.00	100.00	0.00	0.00
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 6 (S-AG)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
1.467E+00 XX
2.153E+00
3.160E+00
4.638E+00 XX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  1.50000E+00
MAXIMUM ANTILOG      =  5.00000E+00
GEOMETRIC MEAN       =  2.73861E+00
GEOMETRIC DEVIATION  =  2.34278E+00
VARIANCE OF LOGS     =  1.36701E-01
```

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 7 (S-B)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	0.63	0.63
1.250E+00 -	1.417E+00	3	3	6.00	6.00	2.31	0.21
1.417E+00 -	1.583E+00	3	6	6.00	12.00	6.36	1.78
1.583E+00 -	1.750E+00	16	22	32.00	44.00	11.34	1.92
1.750E+00 -	1.917E+00	19	41	38.00	82.00	13.07	2.69
1.917E+00 -	2.083E+00	4	45	8.00	90.00	9.76	3.40
2.083E+00 -	2.250E+00	2	47	4.00	94.00	4.71	1.56
2.250E+00 -	2.417E+00	2	49	4.00	98.00	1.47	0.19
2.417E+00 -	2.583E+00	0	49	0.00	98.00	0.30	0.30
2.583E+00 -	2.750E+00	1	50	2.00	100.00	0.04	21.73
G		0	50	0.00	100.00	0.63	0.63
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 7 (S-B)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
2.154E+01 XXXXXX
3.162E+01 XXXXXX
4.642E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
6.813E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.000E+02 XXXXXXXX
1.468E+02 XXXX
2.154E+02 XXXX
3.162E+02
4.642E+02 XX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  2.00000E+01
MAXIMUM ANTILOG      =  5.00000E+02
GEOMETRIC MEAN       =  6.37619E+01
GEOMETRIC DEVIATION  =  1.77011E+00
VARIANCE OF LOGS     =  6.15036E-02
```

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 8 (S-BA)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	2.97	2.97
2.583E+00 -	2.750E+00	3	3	6.00	6.00	2.30	0.22
2.750E+00 -	2.916E+00	13	16	26.00	32.00	3.37	27.56
2.916E+00 -	3.083E+00	5	21	10.00	42.00	4.49	0.06
3.083E+00 -	3.250E+00	3	24	6.00	48.00	5.46	1.11
3.250E+00 -	3.416E+00	1	25	2.00	50.00	6.03	4.20
3.416E+00 -	3.583E+00	3	28	6.00	56.00	6.07	1.55
3.583E+00 -	3.750E+00	0	28	0.00	56.00	5.55	5.55
3.750E+00 -	3.916E+00	0	28	0.00	56.00	4.63	4.63
3.916E+00 -	4.083E+00	7	35	14.00	70.00	9.14	0.50
G		15	50	30.00	100.00	2.97	48.75
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 8 (S-BA)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E+02 XXXXXX
6.808E+02 XXXXXXXXXXXXXXXXXXXXXXXXX
9.992E+02 XXXXXXXXXX
1.467E+03 XXXXXX
2.153E+03 XX
3.160E+03 XXXXXX
4.638E+03
6.808E+03
9.992E+03 XXXXXXXXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 5.00000E+02
MAXIMUM ANTILOG = 1.00000E+04
GEOMETRIC MEAN = 1.51793E+03
GEOMETRIC DEVIATION = 2.90656E+00
VARIANCE OF LOGS = 2.14720E-01

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 9 (S-BE)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		2	2	4.00	4.00		
L		15	17	30.00	34.00		
T		0	17	0.00	34.00	7.94	7.94
2.500E-01 -	4.167E-01	18	35	36.00	70.00	24.28	1.63
4.167E-01 -	5.833E-01	11	46	22.00	92.00	15.73	1.42
5.833E-01 -	7.500E-01	4	50	8.00	100.00	2.05	1.87
G		0	50	0.00	100.00	0.00	0.00
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 9 (S-BE)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
2.154E+00 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
3.162E+00 XXXXXXXXXXXXXXXXXXXXX
4.642E+00 XXXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  2.00000E+00
MAXIMUM ANTILOG      =  5.00000E+00
GEOMETRIC MEAN       =  2.55836E+00
GEOMETRIC DEVIATION  =  1.36964E+00
VARIANCE OF LOGS     =  1.86617E-02
```

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 10 (S-BI)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		45	45	90.00	90.00		
L		1	46	2.00	92.00		
T		0	46	0.00	92.00	46.46	46.46
1.583E+00 -	1.750E+00	2	48	4.00	96.00	3.23	0.47
1.750E+00 -	1.916E+00	1	49	2.00	98.00	0.30	1.64
1.916E+00 -	2.083E+00	0	49	0.00	98.00	0.00	0.00
2.083E+00 -	2.250E+00	1	50	2.00	100.00	0.01	95.15
G		0	50	0.00	100.00	0.00	0.00
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 10 (S-BI)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E+01 XXXX
6.803E+01 XX
9.992E+01
1.467E+02 XX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  5.00000E+01
MAXIMUM ANTILOG      =  1.50000E+02
GEOMETRIC MEAN       =  7.15785E+01
GEOMETRIC DEVIATION  =  1.67884E+00
VARIANCE OF LOGS     =  5.06293E-02
```

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 11 (S-CO)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		30	30	60.00	60.00		
L		9	39	18.00	78.00		
T		0	39	0.00	78.00	14.35	14.35
9.160E-01 -	1.083E+00	5	44	10.00	88.00	12.97	4.90
1.083E+00 -	1.249E+00	4	48	8.00	96.00	12.02	5.35
1.249E+00 -	1.416E+00	1	49	2.00	98.00	7.15	5.29
1.416E+00 -	1.583E+00	0	49	0.00	98.00	2.73	2.73
1.583E+00 -	1.749E+00	0	49	0.00	98.00	0.67	0.67
1.749E+00 -	1.916E+00	0	49	0.00	98.00	0.10	0.10
1.916E+00 -	2.083E+00	0	49	0.00	98.00	0.01	0.01
2.083E+00 -	2.249E+00	0	49	0.00	98.00	0.00	0.00
2.249E+00 -	2.416E+00	0	49	0.00	98.00	0.00	0.00
2.416E+00 -	2.583E+00	0	49	0.00	98.00	0.00	0.00
2.583E+00 -	2.749E+00	1	50	2.00	100.00	0.00	1422.06
G		0	50	0.00	100.00	0.00	0.00
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 11 (S-CO)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
9.985E+00 XXXXXXXXXX
1.466E+01 XXXXXXXX
2.151E+01 XX
3.157E+01
4.634E+01
6.802E+01
9.985E+01
1.466E+02
2.151E+02
3.157E+02
4.635E+02 XX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  1.00000E+01
MAXIMUM ANTILOG      =  5.00000E+02
GEOMETRIC MEAN       =  1.76137E+01
GEOMETRIC DEVIATION  =  3.11592E+00
VARIANCE OF LOGS     =  2.43628E-01
```

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 12 (S-CR)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N	13	13	26.00	26.00		
	L	16	29	32.00	58.00		
	T	0	29	0.00	58.00	14.51	14.51
1.250E+00 -	1.417E+00	11	40	22.00	80.00	8.25	0.92
1.417E+00 -	1.583E+00	0	40	0.00	80.00	8.66	8.66
1.583E+00 -	1.750E+00	4	44	8.00	88.00	7.52	1.65
1.750E+00 -	1.917E+00	0	44	0.00	88.00	5.39	5.39
1.917E+00 -	2.083E+00	2	46	4.00	92.00	3.19	0.45
2.083E+00 -	2.250E+00	1	47	2.00	94.00	1.56	0.20
2.250E+00 -	2.417E+00	1	48	2.00	96.00	0.63	0.21
2.417E+00 -	2.583E+00	1	49	2.00	98.00	0.21	2.94
2.583E+00 -	2.750E+00	0	49	0.00	98.00	0.06	0.06
2.750E+00 -	2.917E+00	0	49	0.00	98.00	0.01	0.01
2.917E+00 -	3.083E+00	0	49	0.00	98.00	0.00	0.00
3.083E+00 -	3.250E+00	1	50	2.00	100.00	0.00	336.04
	G	0	50	0.00	100.00	0.00	0.00
	H	0	50				
	B	0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 12 (S-CR)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
 2.154E+01 XXXXXXXXXXXXXXXXXXXXX
 3.162E+01
 4.642E+01 XXXXXXXX
 6.813E+01
 1.000E+02 XXXX
 1.468E+02 XX
 2.154E+02 XX
 3.162E+02 XX
 4.642E+02
 6.813E+02
 1.000E+03
 1.468E+03 XX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  2.00000E+01
MAXIMUM ANTILOG      =  1.50000E+03
GEOMETRIC MEAN       =  4.76407E+01
GEOMETRIC DEVIATION  =  3.76863E+00
VARIANCE OF LOGS     =  2.64571E-01
```

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 13 (S-CU)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		0	0	0.00	0.00		
	L		41	41	82.00	82.00		
	T		0	41	0.00	82.00	13.93	13.93
9.160E-01	-	1.083E+00	3	44	6.00	88.00	8.66	3.70
1.083E+00	-	1.249E+00	0	44	0.00	88.00	9.15	9.15
1.249E+00	-	1.416E+00	0	44	0.00	88.00	7.82	7.82
1.416E+00	-	1.583E+00	1	45	2.00	90.00	5.40	3.58
1.583E+00	-	1.749E+00	0	45	0.00	90.00	3.01	3.01
1.749E+00	-	1.916E+00	0	45	0.00	90.00	1.36	1.36
1.916E+00	-	2.083E+00	1	46	2.00	92.00	0.49	0.52
2.083E+00	-	2.249E+00	3	49	6.00	98.00	0.15	56.01
2.249E+00	-	2.416E+00	1	50	2.00	100.00	0.04	21.62
	G		0	50	0.00	100.00	0.00	0.00
	H		0	50				
	B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 13 (S-CU)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
9.985E+00 XXXXXX
1.466E+01
2.151E+01
3.157E+01 XX
4.634E+01
6.802E+01
9.985E+01 XX
1.466E+02 XXXXXX
2.151E+02 XX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      = 1.00000E+01
MAXIMUM ANTILOG      = 2.00000E+02
GEOMETRIC MEAN       = 5.02012E+01
GEOMETRIC DEVIATION  = 3.76392E+00
VARIANCE OF LOGS     = 3.31362E-01
```

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 14 (S-LA)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		1	1	2.00	2.00		
L		1	2	2.00	4.00		
T		0	2	0.00	4.00	2.85	2.85
1.916E+00 -	2.083E+00	3	5	6.00	10.00	4.47	0.48
2.083E+00 -	2.249E+00	9	14	18.00	28.00	7.69	0.22
2.249E+00 -	2.416E+00	13	27	26.00	54.00	10.08	0.85
2.416E+00 -	2.583E+00	8	35	16.00	70.00	10.05	0.42
2.583E+00 -	2.749E+00	9	44	18.00	88.00	7.64	0.24
2.749E+00 -	2.916E+00	4	48	8.00	96.00	4.42	0.04
2.916E+00 -	3.083E+00	0	48	0.00	96.00	1.95	1.95
3.083E+00 -	3.249E+00	2	50	4.00	100.00	0.86	1.52
G		0	50	0.00	100.00	0.00	0.00
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 14 (S-LA)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
9.985E+01 XXXXXX
1.466E+02 XXXXXXXXXXXXXXXXXX
2.151E+02 XXXXXXXXXXXXXXXXXXXXXXXXXX
3.157E+02 XXXXXXXXXXXXXXXX
4.634E+02 XXXXXXXXXXXXXXXXXX
6.802E+02 XXXXXXXX
9.985E+02
1.466E+03 XXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG	=	1.00000E+02
MAXIMUM ANTILOG	=	1.50000E+03
GEOMETRIC MEAN	=	2.78325E+02
GEOMETRIC DEVIATION	=	1.92667E+00
VARIANCE OF LOGS	=	8.11146E-02

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 15 (S-MO)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		38	38	76.00	76.00		
L		3	41	6.00	82.00		
T		0	41	0.00	82.00	21.07	21.07
1.083E+00 -	1.250E+00	2	43	4.00	86.00	6.68	3.27
1.250E+00 -	1.416E+00	0	43	0.00	86.00	6.38	6.38
1.416E+00 -	1.583E+00	0	43	0.00	86.00	5.44	5.44
1.583E+00 -	1.750E+00	0	43	0.00	86.00	4.15	4.15
1.750E+00 -	1.916E+00	3	46	6.00	92.00	2.83	0.01
1.916E+00 -	2.083E+00	2	48	4.00	96.00	1.73	0.04
2.083E+00 -	2.250E+00	0	48	0.00	96.00	0.94	0.94
2.250E+00 -	2.416E+00	0	48	0.00	96.00	0.46	0.46
2.416E+00 -	2.583E+00	1	49	2.00	98.00	0.20	3.20
2.583E+00 -	2.750E+00	0	49	0.00	98.00	0.08	0.08
2.750E+00 -	2.916E+00	0	49	0.00	98.00	0.03	0.03
2.916E+00 -	3.083E+00	0	49	0.00	98.00	0.01	0.01
3.083E+00 -	3.250E+00	0	49	0.00	98.00	0.00	0.00
3.250E+00 -	3.416E+00	0	49	0.00	98.00	0.00	0.00
3.416E+00 -	3.583E+00	0	49	0.00	98.00	0.00	0.00
3.583E+00 -	3.750E+00	1	50	2.00	100.00	0.00	1338.17
G		0	50	0.00	100.00	0.00	0.00
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 15 (S-MO)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
1.467E+01 XXXX
2.153E+01
3.160E+01
4.638E+01
6.808E+01 XXXXXX
9.992E+01 XXXX
1.467E+02
2.153E+02
3.160E+02 XX
4.638E+02
6.808E+02
9.992E+02
1.467E+03
2.153E+03
3.160E+03
4.638E+03 XX
```

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG	=	1.50000E+01
MAXIMUM ANTILOG	=	5.00000E+03
GEOMETRIC MEAN	=	1.01640E+02
GEOMETRIC DEVIATION	=	5.67025E+00
VARIANCE OF LOGS	=	5.67916E-01

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 16 (S-NB)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		14	14	28.00	28.00		
L		18	32	36.00	64.00		
T		0	32	0.00	64.00	1.68	1.68
1.583E+00 -	1.750E+00	13	45	26.00	90.00	30.18	9.78
1.750E+00 -	1.916E+00	2	47	4.00	94.00	17.86	14.09
1.916E+00 -	2.083E+00	3	50	6.00	100.00	0.28	26.04
G		0	50	0.00	100.00	0.00	0.00
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 16 (S-NB)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E+01 XXXXXXXXXXXXXXXXXXXXXXXXX
6.808E+01 XXXX
9.992E+01 XXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  5.00000E+01
MAXIMUM ANTILOG      =  1.00000E+02
GEOMETRIC MEAN       =  5.82610E+01
GEOMETRIC DEVIATION  =  1.31105E+00
VARIANCE OF LOGS     =  1.38342E-02
```

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 17 (S-NI)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		48	48	96.00	96.00		
	L		0	48	0.00	96.00		
	T		0	48	0.00	96.00	49.92	49.92
1.250E+00	-	1.417E+00	1	49	2.00	98.00	0.00	0.00
1.417E+00	-	1.583E+00	1	50	2.00	100.00	0.08	11.33
	G		0	50	0.00	100.00	0.00	0.00
	H		0	50				
	B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 17 (S-NI)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

2.154E+01 XX
3.162E+01 XX

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 2.00000E+01
MAXIMUM ANTILOG = 3.00000E+01
GEOMETRIC MEAN = 2.44949E+01
GEOMETRIC DEVIATION = 1.33203E+00
VARIANCE OF LOGS = 1.55041E-02

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 18 (S-PB)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		0	0	0.00	0.00		
	L		0	0	0.00	0.00		
	T		0	0	0.00	0.00	4.81	4.81
1.750E+00	-	1.917E+00	7	7	14.00	14.00	2.81	6.23
1.917E+00	-	2.083E+00	4	11	8.00	22.00	3.74	0.02
2.083E+00	-	2.250E+00	10	21	20.00	42.00	4.59	6.37
2.250E+00	-	2.417E+00	6	27	12.00	54.00	5.23	0.11
2.417E+00	-	2.583E+00	5	32	10.00	64.00	5.52	0.05
2.583E+00	-	2.750E+00	2	34	4.00	68.00	5.39	2.13
2.750E+00	-	2.917E+00	2	36	4.00	72.00	4.87	1.69
2.917E+00	-	3.083E+00	2	38	4.00	76.00	4.08	1.06
3.083E+00	-	3.250E+00	6	44	12.00	88.00	3.17	2.53
3.250E+00	-	3.417E+00	4	48	8.00	96.00	2.28	1.30
3.417E+00	-	3.583E+00	0	48	0.00	96.00	1.52	1.52
3.583E+00	-	3.750E+00	1	49	2.00	98.00	2.00	0.50
	G		1	50	2.00	100.00	4.81	3.01
	H		0	50				
	B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 18 (S-PB)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
6.813E+01 XXXXXXXXXXXXX
1.000E+02 XXXXXXXX
1.468E+02 XXXXXXXXXXXXXXXXXXX
2.154E+02 XXXXXXXXXXX
3.162E+02 XXXXXXXXXX
4.642E+02 XXXX
6.813E+02 XXXX
1.000E+03 XXXX
1.469E+03 XXXXXXXXXXX
2.154E+03 XXXXXXXX
3.162E+03
4.642E+03 XX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  7.00000E+01
MAXIMUM ANTILOG      =  5.00000E+03
GEOMETRIC MEAN       =  3.07670E+02
GEOMETRIC DEVIATION  =  3.29139E+00
VARIANCE OF LOGS     =  2.67681E-01
```

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 19 (S-SC)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		2	2	4.00	4.00		
	L		1	3	2.00	6.00		
	T		0	3	0.00	6.00	0.52	0.52
1.083E+00	-	1.250E+00	1	4	2.00	8.00	1.35	0.09
1.250E+00	-	1.416E+00	1	5	2.00	10.00	3.38	1.68
1.416E+00	-	1.583E+00	4	9	8.00	18.00	6.46	0.94
1.583E+00	-	1.750E+00	7	16	14.00	32.00	9.40	0.61
1.750E+00	-	1.916E+00	17	33	34.00	66.00	10.40	4.19
1.916E+00	-	2.083E+00	6	39	12.00	78.00	8.76	0.87
2.083E+00	-	2.250E+00	11	50	22.00	100.00	9.73	0.16
	G		0	50	0.00	100.00	0.00	0.00
	H		0	50				
	B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 19 (S-SC)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
1.467E+01 XX
2.153E+01 XX
3.160E+01 XXXXXXXX
4.638E+01 XXXXXXXXXXXXX
6.803E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
9.992E+01 XXXXXXXXXXXX
1.467E+02 XXXXXXXXXXXXXXXXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  1.50000E+01
MAXIMUM ANTILOG      =  1.50000E+02
GEOMETRIC MEAN       =  7.30211E+01
GEOMETRIC DEVIATION  =  1.75914E+00
VARIANCE OF LOGS     =  6.01726E-02
```

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 20 (S-SN)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		35	35	70.00	70.00		
L		4	39	8.00	78.00		
T		0	39	0.00	78.00	28.06	28.06
1.416E+00 -	1.583E+00	4	43	8.00	86.00	14.27	7.39
1.583E+00 -	1.749E+00	5	48	10.00	96.00	6.20	0.23
1.749E+00 -	1.916E+00	0	48	0.00	96.00	1.32	1.32
1.916E+00 -	2.083E+00	1	49	2.00	98.00	0.14	5.39
2.083E+00 -	2.249E+00	1	50	2.00	100.00	0.01	137.48
G		0	50	0.00	100.00	0.00	0.00
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 20 (S-SN)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
3.157E+01 XXXXXXXX
4.634E+01 XXXXXXXXXX
6.802E+01
9.985E+01 XX
1.466E+02 XX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      = 3.00000E+01
MAXIMUM ANTILOG      = 1.50000E+02
GEOMETRIC MEAN       = 4.88696E+01
GEOMETRIC DEVIATION  = 1.68549E+00
VARIANCE OF LOGS     = 5.14046E-02
```

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 21 (S-SR)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		27	27	54.00	54.00		
L		5	32	10.00	64.00		
T		0	32	0.00	64.00	15.85	15.85
2.416E+00 -	2.583E+00	3	35	6.00	70.00	4.19	0.34
2.583E+00 -	2.749E+00	2	37	4.00	74.00	4.43	1.33
2.749E+00 -	2.916E+00	0	37	0.00	74.00	4.46	4.46
2.916E+00 -	3.083E+00	0	37	0.00	74.00	4.26	4.26
3.083E+00 -	3.249E+00	0	37	0.00	74.00	3.88	3.88
3.249E+00 -	3.416E+00	0	37	0.00	74.00	3.36	3.36
3.416E+00 -	3.583E+00	0	37	0.00	74.00	2.76	2.76
3.583E+00 -	3.749E+00	0	37	0.00	74.00	2.16	2.16
3.749E+00 -	3.916E+00	0	37	0.00	74.00	1.61	1.61
3.916E+00 -	4.083E+00	13	50	26.00	100.00	3.05	32.38
G		0	50	0.00	100.00	0.00	0.00
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 21 (S-SR)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
3.157E+02 XXXXXX
4.634E+02 XXXX
6.802E+02
9.985E+02
1.466E+03
2.151E+03
3.157E+03
4.634E+03
6.803E+03
9.985E+03 XXXXXXXXXXXXXXXXXXXXXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  3.00000E+02
MAXIMUM ANTILOG      =  1.00000E+04
GEOMETRIC MEAN       =  3.99602E+03
GEOMETRIC DEVIATION  =  4.60894E+00
VARIANCE OF LOGS     =  4.40367E-01
```

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 22 (S-V)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	4.33	4.33
1.583E+00 -	1.750E+00	9	9	18.00	18.00	5.39	2.41
1.750E+00 -	1.916E+00	9	18	18.00	36.00	8.22	0.07
1.916E+00 -	2.083E+00	15	33	30.00	66.00	9.81	2.74
2.083E+00 -	2.250E+00	11	44	22.00	88.00	9.17	0.37
2.250E+00 -	2.416E+00	3	47	6.00	94.00	6.70	2.05
2.416E+00 -	2.583E+00	0	47	0.00	94.00	3.84	3.84
2.583E+00 -	2.750E+00	2	49	4.00	98.00	1.72	0.05
2.750E+00 -	2.916E+00	0	49	0.00	98.00	0.60	0.60
2.916E+00 -	3.083E+00	0	49	0.00	98.00	0.17	0.17
3.083E+00 -	3.250E+00	0	49	0.00	98.00	0.04	0.04
3.250E+00 -	3.416E+00	0	49	0.00	98.00	0.01	0.01
3.416E+00 -	3.583E+00	0	49	0.00	98.00	0.00	0.00
3.583E+00 -	3.750E+00	1	50	2.00	100.00	0.00	1151.07
G		0	50	0.00	100.00	4.33	4.33
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 22 (S-V)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E+01 XXXXXXXXXXXXXXXXX
6.808E+01 XXXXXXXXXXXXXXXXX
9.992E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.467E+02 XXXXXXXXXXXXXXXXXXXXX
2.153E+02 XXXXXX
3.160E+02
4.638E+02 XXXX
6.808E+02
9.992E+02
1.467E+03
2.153E+03
3.160E+03
4.638E+03 XX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 5.00000E+01
MAXIMUM ANTILOG = 5.00000E+03
GEOMETRIC MEAN = 1.08811E+02
GEOMETRIC DEVIATION = 2.15389E+00
VARIANCE OF LOGS = 1.11038E-01

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 23 (S-W)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		39	39	78.00	78.00		
L		1	40	2.00	80.00		
T		0	40	0.00	80.00	3.53	3.53
1.916E+00 -	2.083E+00	3	43	6.00	86.00	34.16	28.42
2.083E+00 -	2.249E+00	5	48	10.00	96.00	12.20	4.25
2.249E+00 -	2.416E+00	2	50	4.00	100.00	0.11	32.05
G		0	50	0.00	100.00	0.00	0.00
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 23 (S-W)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
9.985E+01 XXXXXX
1.466E+02 XXXXXXXXXX
2.151E+02 XXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      = 1.00000E+02
MAXIMUM ANTILOG      = 2.00000E+02
GEOMETRIC MEAN       = 1.40686E+02
GEOMETRIC DEVIATION  = 1.29948E+00
VARIANCE OF LOGS     = 1.29439E-02
```

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 24 (S-Y)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	0.00	0.00
1.750E+00 -	1.917E+00	1	1	2.00	2.00	0.01	161.85
1.917E+00 -	2.083E+00	1	2	2.00	4.00	0.05	18.27
2.083E+00 -	2.250E+00	0	2	0.00	4.00	0.29	0.29
2.250E+00 -	2.417E+00	1	3	2.00	6.00	1.17	0.03
2.417E+00 -	2.583E+00	0	3	0.00	6.00	3.44	3.44
2.583E+00 -	2.750E+00	3	6	6.00	12.00	7.19	2.44
2.750E+00 -	2.917E+00	12	18	24.00	36.00	10.72	0.15
2.917E+00 -	3.083E+00	18	36	36.00	72.00	11.40	3.82
3.083E+00 -	3.250E+00	10	46	20.00	92.00	8.65	0.21
3.250E+00 -	3.417E+00	4	50	8.00	100.00	7.09	1.35
G		0	50	0.00	100.00	0.00	0.00
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 24 (S-Y)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
 6.813E+01 XX
 1.000E+02 XX
 1.468E+02
 2.154E+02 XX
 3.162E+02
 4.642E+02 XXXXXX
 6.813E+02 XXXXXXXXXXXXXXXXXXXXXXXX
 1.000E+03 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 1.468E+03 XXXXXXXXXXXXXXXXXXXX
 2.154E+03 XXXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  7.00000E+01
MAXIMUM ANTILOG      =  2.00000E+03
GEOMETRIC MEAN       =  8.85085E+02
GEOMETRIC DEVIATION  =  1.91704E+00
VARIANCE OF LOGS     =  7.98804E-02
```

Table 5. Frequency tables and histograms of analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 26 (S-TH)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		21	21	42.00	42.00		
L		14	35	28.00	70.00		
T		0	35	0.00	70.00	12.78	12.78
2.250E+00 -	2.417E+00	8	43	16.00	86.00	17.68	5.30
2.417E+00 -	2.583E+00	1	44	2.00	88.00	13.90	11.97
2.583E+00 -	2.750E+00	3	47	6.00	94.00	4.85	0.70
2.750E+00 -	2.917E+00	1	48	2.00	96.00	0.75	0.09
2.917E+00 -	3.083E+00	2	50	4.00	100.00	0.05	73.16
G		0	50	0.00	100.00	0.00	0.00
H		0	50				
B		0	50				

TOTALS LESS H AND B 50

HISTOGRAM FOR VARIABLE 26 (S-TH)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
2.154E+02 XXXXXXXXXXXXXXX
3.162E+02 XX
4.642E+02 XXXXXX
6.813E+02 XX
1.000E+03 XXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  2.00000E+02
MAXIMUM ANTILOG      =  1.00000E+03
GEOMETRIC MEAN       =  3.32525E+02
GEOMETRIC DEVIATION  =  1.87756E+00
VARIANCE OF LOGS     =  7.48535E-02
```

Table 6. Correlation coefficients for analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

ARRAY OF NUMBER OF PAIRS AND CORRELATION COEFFICIENTS -

	1 S-FE%	2 S-MG%	3 S-CA%	4 S-TI%	5 S-MN	6 S-AG	7 S-B	8 S-BA	9 S-BE	10 S-BI
1 S-FE%	0.2321	0.5662	-0.0851	0.4550	0.2537	-1.0000	0.4600	0.1480	-0.1114	0.4616
2 S-MG%	50	0.1812	-0.0501	0.3568	0.2965	-1.0000	0.6223	0.4086	-0.0622	-0.2126
3 S-CA%	50	50	0.4269	0.1015	0.5825	-1.0000	-0.3282	-0.4159	0.1928	-0.9164
4 S-TI%	16	16	16	0.3242	0.3353	1.0000	0.5705	-0.0166	-0.2993	*******
5 S-MN	50	50	50	16	0.3086	-1.0000	-0.0289	-0.5527	0.0911	-0.5617
6 S-AG	2	2	2	2	2	0.3697	-1.0000	*******	*******	*******
7 S-B	50	50	50	16	50	2	0.2480	0.2883	-0.1860	0.8868
8 S-BA	35	35	35	10	35	0	35	0.4634	0.1077	-0.4616
9 S-BE	33	33	33	10	33	0	33	23	0.1366	-0.9543
10 S-BI	4	4	4	1	4	0	4	4	3	0.2250
11 S-CO	11	11	11	1	11	0	11	8	5	1
12 S-CR	21	21	21	6	21	2	21	8	13	1
13 S-CU	9	9	9	2	9	1	9	5	4	0
14 S-LA	48	48	48	15	48	2	48	35	32	4
15 S-MO	9	9	9	3	9	2	9	2	6	0
16 S-NB	18	18	18	1	18	0	18	14	9	0
17 S-NI	2	2	2	0	2	0	2	1	1	0
18 S-PB	49	49	49	15	49	1	49	35	33	4
19 S-SC	47	47	47	13	47	1	47	35	33	4
20 S-SN	11	11	11	0	11	0	11	9	6	1
21 S-SR	18	18	18	6	18	2	18	3	12	0
22 S-V	50	50	50	16	50	2	50	35	33	4
23 S-W	10	10	10	3	10	0	10	8	8	2
24 S-Y	50	50	50	16	50	2	50	35	33	4
25 S-ZR	0	0	0	0	0	0	0	0	0	0
26 S-TH	15	15	15	7	15	0	15	13	13	1

NOTE: THE DIAGONAL OF THE CORR MATRIX CONTAINS THE STD DEV OF THE VARIABLE FOR ONLY THE VALID PAIRS.

Table 6. Correlation coefficients for analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

ARRAY OF NUMBER OF PAIRS AND CORRELATION COEFFICIENTS -CONT.

		11 S-CO	12 S-CR	13 S-CU	14 S-LA	15 S-MO	16 S-NB	17 S-NI	18 S-PB	19 S-SC	20 S-SN
1	S-FE%	0.4979	0.4475	-0.3016	-0.0533	-0.1050	0.1708	1.0000	0.1228	-0.0121	0.5499
2	S-MG%	-0.4277	0.5960	0.1957	-0.1536	-0.1150	0.3994	-1.0000	0.2264	0.1676	0.5600
3	S-CA%	0.2297	-0.2352	-0.1826	0.6023	0.4101	0.0216	1.0000	-0.4609	-0.0305	-0.0537
4	S-TI%	*******	-0.9619	*******	0.1467	0.5000	*******	*******	-0.0268	-0.0476	*******
5	S-MN	-0.2208	0.2467	-0.2132	0.6778	-0.3502	0.0834	-1.0000	-0.3669	0.2805	0.3866
6	S-AG	*******	-1.0000	*******	*******	1.0000	*******	*******	*******	*******	*******
7	S-B	-0.0629	0.6015	0.1920	-0.3022	-0.8283	0.5762	-1.0000	0.1433	0.2767	0.1502
8	S-BA	-0.2704	0.6088	-0.2105	-0.3912	*******	0.4271	*******	0.3415	-0.2197	0.1112
9	S-BE	-0.5160	-0.4372	0.3159	0.2077	0.1276	-0.4707	*******	0.0576	0.2004	-0.3489
10	S-BI	*******	*******	*******	-0.8458	*******	*******	*******	-0.5697	-0.2113	*******
11	S-CO	0.4936	-0.0364	-0.3344	0.4718	-1.0000	-0.3234	1.0000	-0.1560	0.2546	-0.6062
12	S-CR	7	0.5144	0.2603	0.0036	-0.6341	0.7001	*******	-0.0243	0.1979	0.7335
13	S-CU	5	6	0.5756	0.0699	0.4135	0.0675	*******	0.4481	-0.0692	*******
14	S-LA	11	20	9	0.2848	-0.2620	0.0249	1.0000	-0.2854	0.3040	0.0023
15	S-MO	2	7	3	8	0.7536	*******	*******	0.6403	-0.7036	*******
16	S-NB	8	10	7	18	2	0.1176	*******	-0.0983	0.3683	0.8361
17	S-NI	2	1	1	2	0	1	0.1245	-1.0000	1.0000	*******
18	S-PB	11	20	8	47	8	18	2	0.5174	0.0488	-0.0177
19	S-SC	11	19	9	46	8	18	2	46	0.2453	-0.5938
20	S-SN	5	6	2	11	0	8	1	11	11	0.2267
21	S-SR	4	16	5	16	7	7	1	17	15	4
22	S-V	11	21	9	48	9	18	2	49	47	11
23	S-W	1	4	1	10	1	2	0	10	10	2
24	S-Y	11	21	9	48	9	18	2	49	47	11
25	S-ZR	0	0	0	0	0	0	0	0	0	0
26	S-TH	4	3	3	15	1	4	1	15	15	2

NOTE: THE DIAGONAL OF THE CORR MATRIX CONTAINS THE STD DEV OF THE VARIABLE FOR ONLY THE VALID PAIRS.

Table 6. Correlation coefficients for analytical data from panned concentrates from the Sandia Mountain Wilderness, New Mexico.

ARRAY OF NUMBER OF PAIRS AND CORRELATION COEFFICIENTS -CONT.

		21	22	23	24	25	26
		S-SR	S-V	S-W	S-Y	S-ZR	S-TH
1	S-FE%	-0.5515	0.1558	-0.2507	0.1168	*******	-0.1881
2	S-MG%	-0.5174	0.2027	-0.5432	0.0961	*******	-0.3900
3	S-CA%	-0.2028	-0.1027	0.4912	0.0543	*******	-0.0901
4	S-TI%	********	0.2338	-0.5000	0.8048	*******	-0.2766
5	S-MN	-0.5057	-0.2114	0.2364	0.3739	*******	-0.4949
6	S-AG	*******	1.0000	*******	1.0000	*******	*******
7	S-B	-0.6087	0.2900	-0.0476	0.2211	*******	-0.0887
8	S-BA	*******	0.1955	-0.4042	-0.1626	*******	-0.2950
9	S-BE	0.1542	-0.2593	0.2771	0.3723	*******	0.4848
10	S-BI	*******	-0.1834	*******	-0.8456	*******	*******
11	S-CO	0.5774	0.1014	*******	0.4480	*******	-0.1543
12	S-CR	-0.2955	-0.1083	-0.5774	-0.0451	*******	*******
13	S-CU	0.4814	0.3448	*******	0.0782	*******	-0.5000
14	S-LA	-0.5050	-0.1040	0.1253	0.3947	*******	-0.2939
15	S-MO	*******	0.8248	*******	-0.0317	*******	*******
16	S-NB	-0.7902	0.4347	*******	0.1832	*******	-0.5185
17	S-NI	*******	1.0000	*******	1.0000	*******	*******
18	S-PB	0.5165	0.3988	-0.0446	-0.0584	*******	-0.5782
19	S-SC	-0.0414	-0.0088	-0.2878	0.6854	*******	-0.2864
20	S-SN	-0.6742	-0.0447	1.0000	-0.5626	*******	*******
21	S-SR	0.6636	-0.0830	*******	-0.0983	*******	*******
22	S-V	18	0.3332	-0.1834	0.1933	*******	-0.4406
23	S-W	2	10	0.1138	-0.4817	*******	0.3333
24	S-Y	18	50	10	0.2826	*******	-0.4165
25	S-ZR	0	0	0	0	*******	*******
26	S-TH	2	15	4	15	0	0.2736

NOTE: THE DIAGONAL OF THE CORR MATRIX CONTAINS THE STD DEV OF THE VARIABLE FOR ONLY THE VALID PAIRS.

Table 7. Analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

(The following qualifiers are used in reporting spectrographic data: *****, no determination made; N, concentration less than the detection limit; <, detected, but present at a concentration less than the value reported; >, element present at a concentration greater than the upper calibration limit; and H, interfering spectra render analytical lines unusable.)

Sample	Latitude	Longitude	Fe-pct. s(.05)	Mg-pct. s(.02)	Ca-pct. s(.05)	Ti-pct. s(.002)	Mn-ppm s(10)	Ag-ppm s(.5)	B-ppm s(10)	Ba-ppm s(20)	Be-ppm s(1.0)	Co-ppm s(5)
SAN008R	35 17 45	106 27 54	2.0	1.50	.5	.50	200	N	70	200	1.0	15
SAN009R	35 17 45	106 27 54	.5	1.00	5.0	.30	1,500	1.0	70	70	<1.0	15
SAN010O	35 17 45	106 27 54	.7	.70	>20.0	.03	>5,000	1.0	N	>5,000	N	10
SAN011O	35 17 42	106 27 53	2.0	.30	7.0	.07	1,000	200.0	70	100	<1.0	<5
SAN019R	35 17 48	106 25 16	5.0	2.00	15.0	.30	150	N	100	300	2.0	15
SAN055R	35 12 27	106 26 58	1.5	.15	5.0	.05	700	.7	20	300	<1.0	N
SAN056O	35 12 27	106 26 58	1.0	.15	15.0	.05	500	10.0	20	200	N	<5
SAN057O	35 12 26	106 27 6	1.5	.70	20.0	.15	1,000	.5	<10	700	1.0	7
SAN058R	35 12 26	106 27 6	2.0	1.00	1.0	.50	700	N	50	1,000	3.0	10
SAN059R	35 12 39	106 28 0	3.0	1.00	1.0	.70	1,000	N	30	1,500	2.0	10
SAN060O	35 12 26	106 27 6	3.0	1.50	.7	.50	1,000	N	20	1,000	1.5	15
SAN063R	35 17 28	106 26 11	2.0	.30	5.0	.30	500	1.0	100	1,500	<1.0	7
SAN064R	35 15 18	106 28 18	1.5	.15	.2	.15	500	N	30	1,000	2.0	5
SAN246R	35 7 9	106 27 32	5.0	1.50	2.0	1.00	1,000	N	30	1,500	1.0	30
SAN261R	35 13 33	106 27 11	.5	1.50	>20.0	.03	500	N	N	<20	N	5
SAN262R	35 14 56	106 27 2	.1	.50	>20.0	.01	300	N	N	N	N	N
SAN263R	35 16 26	106 26 20	.2	1.00	>20.0	.02	150	N	N	<20	N	N
SAN264R	35 17 28	106 25 30	5.0	2.00	3.0	.20	200	N	50	1,000	1.5	10
SAN265R	35 17 42	106 25 34	.5	.07	1.5	.20	300	N	70	700	N	5
SAN266O	35 17 43	106 25 48	.7	.30	>20.0	.03	2,000	N	N	200	N	<5
SAN267R	35 17 32	106 26 11	.5	.07	1.5	.30	300	N	100	500	N	5
SAN268R	35 11 43	106 25 58	.2	.15	5.0	.02	200	N	50	70	<1.0	5
SAN269R	35 11 0	106 24 52	1.5	1.50	>20.0	.07	300	N	<10	70	<1.0	7
SAN270R	35 9 39	106 24 50	.1	.70	>20.0	.02	200	N	N	<20	N	N
SAN271R	35 8 23	106 24 57	1.0	.50	10.0	.10	100	<.5	30	500	<1.0	5
SAN272R	35 6 47	106 25 36	.5	2.00	>20.0	.02	300	N	N	<20	N	<5
SAN274R	35 5 50	106 25 33	20.0	.15	1.0	.07	500	1.0	20	500	<1.0	50
SAN275R	35 5 49	106 24 32	1.0	.50	>20.0	.01	2,000	N	<10	300	N	N
SAN276R	35 5 45	106 23 39	.7	1.00	>20.0	.03	500	<.5	N	<20	N	5

Table 7. Analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

Sample	Cr-ppm s(10)	Cu-ppm s(5)	La-ppm s(20)	Mo-ppm s(5)	Nb-ppm s(20)	Ni-ppm s(5)	Pb-ppm s(10)	Sc-ppm s(5)	Sr-ppm s(100)	V-ppm s(10)	Y-ppm s(10)	Zr-ppm s(10)	As-ppm aa(5)
SAN008R	70	10	<20	N	N	15	20	10	<100	70	20	200	N
SAN009R	70	20	50	N	N	10	20	7	150	100	30	70	N
SAN010O	10	500	N	N	N	5	50	5	700	100	100	20	20
SAN011O	150	>20,000	N	10	N	5	300	5	200	700	20	<10	5
SAN019R	150	10	50	N	<20	70	30	15	500	100	50	100	N
SAN055R	<10	<5	N	N	N	10	1,000	<5	N	50	20	70	N
SAN056O	<10	700	N	N	N	10	>20,000	N	N	50	70	30	N
SAN057O	<10	200	150	N	<20	7	300	10	<100	50	200	200	N
SAN058R	<10	10	70	N	<20	10	100	15	200	70	70	200	N
SAN059R	N	20	100	N	20	5	100	10	150	70	100	300	N
SAN060O	<10	30	70	N	20	5	100	15	<100	70	50	300	N
SAN063R	70	7	<20	N	N	10	10	7	<100	100	20	300	<5
SAN064R	N	<5	<20	N	<20	5	100	7	<100	15	30	200	N
SAN246R	10	30	100	N	20	10	70	30	200	100	70	300	N
SAN261R	50	<5	N	N	N	7	10	N	700	15	30	10	N
SAN262R	N	<5	N	N	N	N	N	N	500	10	<10	N	N
SAN263R	10	<5	N	N	N	5	N	N	1,000	10	<10	<10	N
SAN264R	70	10	50	N	<20	20	<10	20	<100	100	30	200	N
SAN265R	100	N	<20	N	<20	5	<10	N	N	30	15	700	N
SAN266O	10	20	N	N	N	10	500	N	300	70	<10	10	5
SAN267R	70	<5	<20	N	<20	5	<10	N	N	30	20	700	5
SAN268R	10	<5	N	N	N	15	<10	N	N	30	10	20	N
SAN269R	100	<5	N	N	N	30	15	<5	500	30	30	30	N
SAN270R	20	<5	N	N	N	5	N	<5	500	20	10	<10	N
SAN271R	30	10	<20	<5	N	15	50	<5	150	30	30	500	N
SAN272R	20	N	N	N	N	10	10	N	700	20	10	20	N
SAN274R	N	70	N	20	N	100	300	N	N	30	20	50	60
SAN275R	20	N	N	N	N	5	30	N	200	10	20	20	N
SAN276R	30	<5	N	5	N	10	20	<5	1,000	15	20	20	N

Table 7. Analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

Sample	Zn-ppm aa(1)	Cd-ppm aa(.05)	Bi-ppm aa(1)	Sb-ppm aa(2)
SAN008R	40	N	N	N
SAN009R	20	N	N	N
SAN0100	10	.7	N	N
SAN0110	20	1.5	N	N
SAN019R	45	N	N	N
SAN055R	25	N	N	N
SAN0560	25	.7	2	3
SAN0570	45	N	N	N
SAN058R	90	N	N	N
SAN059R	80	.1	N	N
SAN0600	140	N	N	N
SAN063R	30	.2	N	N
SAN064R	30	.1	N	N
SAN246R	105	.2	N	N
SAN261R	15	.3	N	N
SAN262R	15	.4	N	N
SAN263R	135	.4	N	N
SAN264R	70	N	N	N
SAN265R	15	.2	N	N
SAN2660	110	.4	N	N
SAN267R	5	N	N	N
SAN268R	25	.1	N	N
SAN269R	20	.8	N	N
SAN270R	10	.2	N	N
SAN271R	40	.5	N	N
SAN272R	10	.3	N	N
SAN274R	35	.3	N	3
SAN275R	<5	.1	N	N
SAN276R	100	1.7	N	N

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

(The following qualifiers are used in reporting spectrographic data: *****, no determination made; N, concentration less than the detection limit; L, detected, but present at a concentration less than the value reported; G, element present at a concentration greater than the upper calibration limit; H, interfering spectra render analytical lines unusable.)

FREQUENCY TABLE FOR VARIABLE 3 (S-FE%)

LOG LIMITS LOWER - UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N	0	0	0.00	0.00		
L	0	0	0.00	0.00		
T	0	0	0.00	0.00	0.47	0.47
-1.084E+00 - -9.173E-01	2	2	6.90	6.90	0.53	4.14
-9.173E-01 - -7.507E-01	0	2	0.00	6.90	0.94	0.94
-7.507E-01 - -5.840E-01	2	4	6.90	13.79	1.51	0.16
-5.840E-01 - -4.173E-01	0	4	0.00	13.79	2.20	2.20
-4.173E-01 - -2.507E-01	5	9	17.24	31.03	2.89	1.54
-2.507E-01 - -8.400E-02	3	12	10.34	41.38	3.44	0.06
-8.400E-02 - 8.267E-02	3	15	10.34	51.72	3.68	0.13
8.267E-02 - 2.493E-01	4	19	13.79	65.52	3.57	0.05
2.493E-01 - 4.160E-01	4	23	13.79	79.31	3.12	0.25
4.160E-01 - 5.827E-01	2	25	6.90	86.21	2.47	0.09
5.827E-01 - 7.493E-01	3	28	10.34	96.55	1.76	0.87
7.493E-01 - 9.160E-01	0	28	0.00	96.55	1.14	1.14
9.160E-01 - 1.083E+00	0	28	0.00	96.55	0.66	0.66
1.083E+00 - 1.249E+00	0	28	0.00	96.55	0.35	0.35
1.249E+00 - 1.416E+00	1	29	3.45	100.00	0.28	1.88
G	0	29	0.00	100.00	0.47	0.47
H	0	29				
B	0	29				

TOTALS LESS H AND B 29

HISTOGRAM FOR VARIABLE 3 (S-FE%)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
9.985E-02 XXXXXXX
1.466E-01
2.151E-01 XXXXXXX
3.157E-01
4.634E-01 XXXXXXXXXXXXXXXXX
6.802E-01 XXXXXXXXXX
9.985E-01 XXXXXXXXXX
1.466E+00 XXXXXXXXXXXXXX
2.151E+00 XXXXXXXXXXXXXX
3.157E+00 XXXXXXX
4.635E+00 XXXXXXXXXX
6.803E+00
9.985E+00
1.466E+01
2.151E+01 XXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 1.00000E-01
MAXIMUM ANTILOG = 2.00000E+01
GEOMETRIC MEAN = 1.07347E+00
GEOMETRIC DEVIATION = 3.31227E+00
VARIANCE OF LOGS = 2.70531E-01

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 4 (S-MG%)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	0.41	0.41
-1.250E+00	-1.083E+00	2	2	6.90	6.90	0.58	3.52
-1.083E+00	-9.167E-01	0	2	0.00	6.90	1.13	1.13
-9.167E-01	-7.500E-01	5	7	17.24	24.14	1.92	4.95
-7.500E-01	-5.833E-01	0	7	0.00	24.14	2.85	2.85
-5.833E-01	-4.167E-01	3	10	10.34	34.48	3.71	0.14
-4.167E-01	-2.500E-01	3	13	10.34	44.83	4.21	0.35
-2.500E-01	-8.333E-02	3	16	10.34	55.17	4.17	0.33
-8.333E-02	8.334E-02	5	21	17.24	72.41	3.61	0.54
8.334E-02	2.500E-01	5	26	17.24	89.66	2.72	1.90
2.500E-01	4.167E-01	3	29	10.34	100.00	3.71	0.14
G		0	29	0.00	100.00	0.41	0.41
H		0	29				
B		0	29				

TOTALS LESS H AND B 29

HISTOGRAM FOR VARIABLE 4 (S-MG%)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
 6.813E-02 XXXXXXX
 1.000E-01
 1.468E-01 XXXXXXXXXXXXXXXXX
 2.154E-01
 3.162E-01 XXXXXXXXXX
 4.642E-01 XXXXXXXXXX
 6.813E-01 XXXXXXXXXX
 1.000E+00 XXXXXXXXXXXXXXXXX
 1.468E+00 XXXXXXXXXXXXXXXXX
 2.154E+00 XXXXXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 7.00000E-02
MAXIMUM ANTILOG = 2.00000E+00
GEOMETRIC MEAN = 5.47701E-01
GEOMETRIC DEVIATION = 2.81845E+00
VARIANCE OF LOGS = 2.02509E-01

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 5 (S-CA%)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	0.22	0.22
-7.500E-01	-5.833E-01	1	1	3.45	3.45	0.23	2.58
-5.833E-01	-4.167E-01	0	1	0.00	3.45	0.41	0.41
-4.167E-01	-2.500E-01	1	2	3.45	6.90	0.69	0.14
-2.500E-01	-8.333E-02	1	3	3.45	10.34	1.07	0.00
-8.333E-02	8.333E-02	3	6	10.34	20.69	1.54	1.40
8.333E-02	2.500E-01	2	8	6.90	27.59	2.05	0.00
2.500E-01	4.167E-01	1	9	3.45	31.03	2.54	0.94
4.167E-01	5.833E-01	1	10	3.45	34.48	2.93	1.27
5.833E-01	7.500E-01	4	14	13.79	48.28	3.13	0.24
7.500E-01	9.167E-01	1	15	3.45	51.72	3.11	1.43
9.167E-01	1.083E+00	1	16	3.45	55.17	2.87	1.22
1.083E+00	1.250E+00	2	18	6.90	62.07	2.45	0.08
1.250E+00	1.417E+00	1	19	3.45	65.52	5.76	3.94
G		10	29	34.48	100.00	0.22	439.49
H		0	29				
B		0	29				

TOTALS LESS H AND B 29

HISTOGRAM FOR VARIABLE 5 (S-CA%)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
2.154E-01 XXX
3.162E-01
4.642E-01 XXX
6.813E-01 XXX
1.000E+00 XXXXXXXXXX
1.468E+00 XXXXXXX
2.154E+00 XXX
3.162E+00 XXX
4.642E+00 XXXXXXXXXXXXX
6.813E+00 XXX
1.000E+01 XXX
1.468E+01 XXXXXXX
2.154E+01 XXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  2.00000E-01
MAXIMUM ANTILOG      =  2.00000E+01
GEOMETRIC MEAN       =  2.72423E+00
GEOMETRIC DEVIATION  =  3.57565E+00
VARIANCE OF LOGS     =  3.06202E-01
```

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 6 (S-TI%)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	1.08	1.08
-2.084E+00	-1.917E+00	2	2	6.90	6.90	0.86	1.51
-1.917E+00	-1.751E+00	0	2	0.00	6.90	1.32	1.32
-1.751E+00	-1.584E+00	4	6	13.79	20.69	1.85	2.48
-1.584E+00	-1.417E+00	4	10	13.79	34.48	2.41	1.04
-1.417E+00	-1.251E+00	2	12	6.90	41.38	2.90	0.28
-1.251E+00	-1.084E+00	3	15	10.34	51.72	3.21	0.01
-1.084E+00	-9.173E-01	1	16	3.45	55.17	3.28	1.58
-9.173E-01	-7.507E-01	2	18	6.90	62.07	3.09	0.38
-7.507E-01	-5.840E-01	2	20	6.90	68.97	2.69	0.18
-5.840E-01	-4.173E-01	4	24	13.79	82.76	2.15	1.58
-4.173E-01	-2.507E-01	3	27	10.34	93.10	1.60	1.24
-2.507E-01	-8.400E-02	1	28	3.45	96.55	1.09	0.01
-8.400E-02	8.267E-02	1	29	3.45	100.00	1.49	0.16
G		0	29	0.00	100.00	1.08	1.08
H		0	29				
B		0	29				

TOTALS LESS H AND B 29

HISTOGRAM FOR VARIABLE 6 (S-TI%)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
9.985E-03 XXXXXXX
1.466E-02
2.151E-02 XXXXXXXXXXXXXX
3.157E-02 XXXXXXXXXXXXXX
4.634E-02 XXXXXXX
6.802E-02 XXXXXXXXXX
9.985E-02 XXX
1.466E-01 XXXXXXX
2.151E-01 XXXXXXX
3.157E-01 XXXXXXXXXXXXXX
4.635E-01 XXXXXXXXXX
6.803E-01 XXX
9.985E-01 XXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 1.00000E-02
MAXIMUM ANTILOG = 1.00000E+00
GEOMETRIC MEAN = 9.12777E-02
GEOMETRIC DEVIATION = 3.84779E+00
VARIANCE OF LOGS = 3.42472E-01

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 7 (S-MN)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	0.68	0.68
1.916E+00 -	2.083E+00	1	1	3.45	3.45	1.03	0.00
2.083E+00 -	2.249E+00	2	3	6.90	10.34	1.97	0.00
2.249E+00 -	2.416E+00	4	7	13.79	24.14	3.16	0.22
2.416E+00 -	2.583E+00	5	12	17.24	41.38	4.27	0.13
2.583E+00 -	2.749E+00	6	18	20.69	62.07	4.83	0.28
2.749E+00 -	2.916E+00	2	20	6.90	68.97	4.59	1.46
2.916E+00 -	3.083E+00	5	25	17.24	86.21	3.65	0.50
3.083E+00 -	3.249E+00	1	26	3.45	89.66	2.44	0.85
3.249E+00 -	3.416E+00	2	28	6.90	96.55	2.38	0.06
G		1	29	3.45	100.00	0.68	0.15
H		0	29				
B		0	29				

TOTALS LESS H AND B 29

HISTOGRAM FOR VARIABLE 7 (S-MN)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
9.985E+01 XXX
1.466E+02 XXXXXXX
2.151E+02 XXXXXXXXXXXXXX
3.157E+02 XXXXXXXXXXXXXXXXX
4.634E+02 XXXXXXXXXXXXXXXXXXXXX
6.802E+02 XXXXXXX
9.985E+02 XXXXXXXXXXXXXXXX
1.466E+03 XXX
2.151E+03 XXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 1.00000E+02
MAXIMUM ANTILOG = 2.00000E+03
GEOMETRIC MEAN = 4.61776E+02
GEOMETRIC DEVIATION = 2.24482E+00
VARIANCE OF LOGS = 1.23328E-01

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 8 (S-AG)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		19	19	65.52	65.52		
L		2	21	6.90	72.41		
T		0	21	0.00	72.41	8.35	8.35
-4.170E-01	-2.503E-01	1	22	3.45	75.86	3.34	1.64
-2.503E-01	-8.367E-02	1	23	3.45	79.31	3.60	1.88
-8.367E-02	8.300E-02	4	27	13.79	93.10	3.53	0.06
8.300E-02	2.497E-01	0	27	0.00	93.10	3.13	3.13
2.497E-01	4.163E-01	0	27	0.00	93.10	2.52	2.52
4.163E-01	5.830E-01	0	27	0.00	93.10	1.84	1.84
5.830E-01	7.497E-01	0	27	0.00	93.10	1.22	1.22
7.497E-01	9.163E-01	0	27	0.00	93.10	0.73	0.73
9.163E-01	1.083E+00	1	28	3.45	96.55	0.40	0.91
1.083E+00	1.250E+00	0	28	0.00	96.55	0.20	0.20
1.250E+00	1.416E+00	0	28	0.00	96.55	0.09	0.09
1.416E+00	1.583E+00	0	28	0.00	96.55	0.04	0.04
1.583E+00	1.750E+00	0	28	0.00	96.55	0.01	0.01
1.750E+00	1.916E+00	0	28	0.00	96.55	0.00	0.00
1.916E+00	2.083E+00	0	28	0.00	96.55	0.00	0.00
2.083E+00	2.250E+00	0	28	0.00	96.55	0.00	0.00
2.250E+00	2.416E+00	1	29	3.45	100.00	0.00	2056.81
G		0	29	0.00	100.00	0.00	0.00
H		0	29				
B		0	29				

TOTALS LESS H AND B 29

HISTOGRAM FOR VARIABLE 8 (S-AG)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E-01 XXX
6.808E-01 XXX
9.992E-01 XXXXXXXXXXXXXX
1.467E+00
2.153E+00
3.160E+00
4.638E+00
6.808E+00
9.992E+00 XXX
1.467E+01
2.153E+01
3.160E+01
4.638E+01
6.808E+01
9.992E+01
1.467E+02
2.153E+02 XXX
```

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG	=	5.00000E-01
MAXIMUM ANTILOG	=	2.00000E+02
GEOMETRIC MEAN	=	2.26797E+00
GEOMETRIC DEVIATION	=	7.55282E+00
VARIANCE OF LOGS	=	7.71076E-01

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 9 (S-B)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		8	8	27.59	27.59		
L		3	11	10.34	37.93		
T		0	11	0.00	37.93	10.02	10.02
1.250E+00 -	1.417E+00	4	15	13.79	51.72	5.01	0.20
1.417E+00 -	1.583E+00	4	19	13.79	65.52	4.91	0.17
1.583E+00 -	1.750E+00	3	22	10.34	75.86	3.97	0.24
1.750E+00 -	1.917E+00	4	26	13.79	89.66	2.64	0.70
1.917E+00 -	2.083E+00	3	29	10.34	100.00	2.46	0.12
G		0	29	0.00	100.00	0.00	0.00
H		0	29				
B		0	29				

TOTALS LESS H AND B 29

HISTOGRAM FOR VARIABLE 9 (S-B)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
2.154E+01 XXXXXXXXXXXXX
3.162E+01 XXXXXXXXXXXXX
4.642E+01 XXXXXXXXXX
6.813E+01 XXXXXXXXXXXXX
1.000E+02 XXXXXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      = 2.00000E+01
MAXIMUM ANTILOG      = 1.00000E+02
GEOMETRIC MEAN       = 4.40437E+01
GEOMETRIC DEVIATION  = 1.81198E+00
VARIANCE OF LOGS     = 6.66435E-02
```

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 10 (S-BA)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		1	1	3.45	3.45		
	L		5	6	17.24	20.69		
	T		0	6	0.00	20.69	5.52	5.52
1.750E+00	-	1.917E+00	3	9	10.34	31.03	2.05	0.44
1.917E+00	-	2.083E+00	1	10	3.45	34.48	2.38	0.80
2.083E+00	-	2.250E+00	0	10	0.00	34.48	2.62	2.62
2.250E+00	-	2.417E+00	3	13	10.34	44.83	2.72	0.03
2.417E+00	-	2.583E+00	3	16	10.34	55.17	2.68	0.04
2.583E+00	-	2.750E+00	3	19	10.34	65.52	2.49	0.10
2.750E+00	-	2.917E+00	2	21	6.90	72.41	2.20	0.02
2.917E+00	-	3.083E+00	4	25	13.79	86.21	1.83	2.57
3.083E+00	-	3.250E+00	3	28	10.34	96.55	4.51	0.51
	G		1	29	3.45	100.00	0.00	0.00
	H		0	29				
	B		0	29				

TOTALS LESS H AND B 29

HISTOGRAM FOR VARIABLE 10 (S-BA)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
6.813E+01 XXXXXXXXXX
1.000E+02 XXX
1.468E+02
2.154E+02 XXXXXXXXXX
3.162E+02 XXXXXXXXXX
4.642E+02 XXXXXXXXXX
6.813E+02 XXXXXXX
1.000E+03 XXXXXXXXXXXXXX
1.468E+03 XXXXXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  7.00000E+01
MAXIMUM ANTILOG      =  1.50000E+03
GEOMETRIC MEAN       =  3.97488E+02
GEOMETRIC DEVIATION  =  2.78946E+00
VARIANCE OF LOGS     =  1.98488E-01
```

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 11 (S-BE)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
		N	12	12	41.38	41.38		
		L	8	20	27.59	68.97		
		T	0	20	0.00	68.97	3.79	3.79
-8.400E-02	-	8.267E-02	3	23	10.34	79.31	12.78	7.48
8.267E-02	-	2.493E-01	2	25	6.90	86.21	10.43	6.82
2.493E-01	-	4.160E-01	3	28	10.34	96.55	1.93	0.60
4.160E-01	-	5.827E-01	1	29	3.45	100.00	0.08	10.98
		G	0	29	0.00	100.00	0.00	0.00
		H	0	29				
		B	0	29				

TOTALS LESS H AND B 29

HISTOGRAM FOR VARIABLE 11 (S-BE)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
9.985E-01 XXXXXXXXXX
1.466E+00 XXXXXXX
2.151E+00 XXXXXXXXXX
3.157E+00 XXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  1.00000E+00
MAXIMUM ANTILOG      =  3.00000E+00
GEOMETRIC MEAN       =  1.55772E+00
GEOMETRIC DEVIATION  =  1.47516E+00
VARIANCE OF LOGS     =  2.85066E-02
```

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 12 (S-CO)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		5	5	17.24	17.24		
L		4	9	13.79	31.03		
T		0	9	0.00	31.03	3.74	3.74
5.830E-01 -	7.497E-01	7	16	24.14	55.17	5.19	0.63
7.497E-01 -	9.163E-01	3	19	10.34	65.52	7.04	2.32
9.163E-01 -	1.083E+00	4	23	13.79	79.31	6.52	0.97
1.083E+00 -	1.250E+00	4	27	13.79	93.10	4.11	0.00
1.250E+00 -	1.416E+00	0	27	0.00	93.10	1.77	1.77
1.416E+00 -	1.583E+00	1	28	3.45	96.55	0.52	0.45
1.583E+00 -	1.750E+00	1	29	3.45	100.00	0.12	6.55
G		0	29	0.00	100.00	0.00	0.00
H		0	29				
B		0	29				

TOTALS LESS H AND B 29

HISTOGRAM FOR VARIABLE 12 (S-CO)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E+00 XXXXXXXXXXXXXXXXXXXXXXXX
6.808E+00 XXXXXXXXXX
9.992E+00 XXXXXXXXXXXXXX
1.467E+01 XXXXXXXXXXXXXX
2.153E+01
3.160E+01 XXX
4.638E+01 XXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  5.00000E+00
MAXIMUM ANTILOG      =  5.00000E+01
GEOMETRIC MEAN       =  9.23479E+00
GEOMETRIC DEVIATION  =  1.91906E+00
VARIANCE OF LOGS     =  8.01394E-02
```

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 13 (S-CR)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		4	4	13.79	13.79		
L		5	9	17.24	31.03		
T		0	9	0.00	31.03	4.08	4.08
9.160E-01 -	1.083E+00	5	14	17.24	48.28	3.00	1.34
1.083E+00 -	1.249E+00	0	14	0.00	48.28	3.90	3.90
1.249E+00 -	1.416E+00	3	17	10.34	58.62	4.38	0.44
1.416E+00 -	1.583E+00	2	19	6.90	65.52	4.26	1.20
1.583E+00 -	1.749E+00	1	20	3.45	68.97	3.58	1.86
1.749E+00 -	1.916E+00	5	25	17.24	86.21	2.60	2.20
1.916E+00 -	2.083E+00	2	27	6.90	93.10	1.64	0.08
2.083E+00 -	2.249E+00	2	29	6.90	100.00	1.56	0.12
G		0	29	0.00	100.00	0.00	0.00
H		0	29				
B		0	29				

TOTALS LESS H AND B 29

HISTOGRAM FOR VARIABLE 13 (S-CR)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
 9.985E+00 XXXXXXXXXXXXXXXXX
 1.466E+01
 2.151E+01 XXXXXXXXXX
 3.157E+01 XXXXXXX
 4.634E+01 XXX
 6.802E+01 XXXXXXXXXXXXXXXXX
 9.985E+01 XXXXXXX
 1.466E+02 XXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  1.00000E+01
MAXIMUM ANTILOG      =  1.50000E+02
GEOMETRIC MEAN       =  3.60329E+01
GEOMETRIC DEVIATION  =  2.63147E+00
VARIANCE OF LOGS     =  1.76567E-01
```

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 14 (S-CU)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		3	3	10.34	10.34		
L		10	13	34.48	44.83		
T		0	13	0.00	44.83	8.21	8.21
7.500E-01 -	9.167E-01	1	14	3.45	48.28	2.04	0.53
9.167E-01 -	1.083E+00	5	19	17.24	65.52	2.20	3.58
1.083E+00 -	1.250E+00	0	19	0.00	65.52	2.27	2.27
1.250E+00 -	1.417E+00	3	22	10.34	75.86	2.27	0.24
1.417E+00 -	1.583E+00	2	24	6.90	82.76	2.17	0.01
1.583E+00 -	1.750E+00	0	24	0.00	82.76	2.00	2.00
1.750E+00 -	1.917E+00	1	25	3.45	86.21	1.77	0.34
1.917E+00 -	2.083E+00	0	25	0.00	86.21	1.51	1.51
2.083E+00 -	2.250E+00	0	25	0.00	86.21	1.24	1.24
2.250E+00 -	2.417E+00	1	26	3.45	89.66	0.98	0.00
2.417E+00 -	2.583E+00	0	26	0.00	89.66	0.74	0.74
2.583E+00 -	2.750E+00	1	27	3.45	93.10	0.54	0.39
2.750E+00 -	2.917E+00	1	28	3.45	96.55	1.05	0.00
G		1	29	3.45	100.00	0.00	0.00
H		0	29				
B		0	29				

TOTALS LESS H AND B 29

HISTOGRAM FOR VARIABLE 14 (S-CU)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
6.813E+00 XXX
1.000E+01 XXXXXXXXXXXXXXXXX
1.468E+01
2.154E+01 XXXXXXXXXX
3.162E+01 XXXXXXX
4.642E+01
6.813E+01 XXX
1.000E+02
1.468E+02
2.154E+02 XXX
3.162E+02
4.642E+02 XXX
6.813E+02 XXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  7.00000E+00
MAXIMUM ANTILOG      =  7.00000E+02
GEOMETRIC MEAN       =  3.11058E+01
GEOMETRIC DEVIATION  =  4.40510E+00
VARIANCE OF LOGS     =  4.14679E-01
```

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 15 (S-LA)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		15	15	51.72	51.72		
L		6	21	20.69	72.41		
T		0	21	0.00	72.41	19.61	19.61
1.583E+00 -	1.750E+00	3	24	10.34	82.76	5.24	0.96
1.750E+00 -	1.916E+00	2	26	6.90	89.66	2.79	0.22
1.916E+00 -	2.083E+00	2	28	6.90	96.55	1.04	0.89
2.083E+00 -	2.250E+00	1	29	3.45	100.00	0.32	1.41
G		0	29	0.00	100.00	0.00	0.00
H		0	29				
B		0	29				

TOTALS LESS H AND B 29

HISTOGRAM FOR VARIABLE 15 (S-LA)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E+01 XXXXXXXXXX
6.808E+01 XXXXXXX
9.992E+01 XXXXXXX
1.467E+02 XXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      = 5.00000E+01
MAXIMUM ANTILOG      = 1.50000E+02
GEOMETRIC MEAN       = 7.41993E+01
GEOMETRIC DEVIATION  = 1.49920E+00
VARIANCE OF LOGS     = 3.09264E-02
```

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 16 (S-MO)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		25	25	86.21	86.21		
L		1	26	3.45	89.66		
T		0	26	0.00	89.66	3.37	3.37
5.830E-01 -	7.497E-01	1	27	3.45	93.10	12.96	11.04
7.497E-01 -	9.163E-01	0	27	0.00	93.10	10.78	10.78
9.163E-01 -	1.083E+00	1	28	3.45	96.55	1.83	0.38
1.083E+00 -	1.250E+00	0	28	0.00	96.55	0.06	0.06
1.250E+00 -	1.416E+00	1	29	3.45	100.00	0.00	2784.39
G		0	29	0.00	100.00	0.00	0.00
H		0	29				
B		0	29				

TOTALS LESS H AND B 29

HISTOGRAM FOR VARIABLE 16 (S-MO)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E+00 XXX
6.808E+00
9.992E+00 XXX
1.467E+01
2.153E+01 XXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  5.00000E+00
MAXIMUM ANTILOG      =  2.00000E+01
GEOMETRIC MEAN       =  1.00000E+01
GEOMETRIC DEVIATION  =  2.00000E+00
VARIANCE OF LOGS     =  9.06190E-02
```

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 18 (S-NI)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		1	1	3.45	3.45		
L		0	1	0.00	3.45		
T		0	1	0.00	3.45	3.38	3.38
5.830E-01 -	7.497E-01	10	11	34.48	37.93	3.67	10.93
7.497E-01 -	9.163E-01	2	13	6.90	44.83	5.15	1.92
9.163E-01 -	1.083E+00	9	22	31.03	75.86	5.67	1.95
1.083E+00 -	1.250E+00	3	25	10.34	86.21	4.92	0.75
1.250E+00 -	1.416E+00	1	26	3.45	89.66	3.35	1.65
1.416E+00 -	1.583E+00	1	27	3.45	93.10	1.79	0.35
1.583E+00 -	1.750E+00	0	27	0.00	93.10	0.75	0.75
1.750E+00 -	1.916E+00	1	28	3.45	96.55	0.25	2.27
1.916E+00 -	2.083E+00	1	29	3.45	100.00	0.08	10.56
G		0	29	0.00	100.00	0.00	0.00
H		0	29				
B		0	29				

TOTALS LESS H AND B 29

HISTOGRAM FOR VARIABLE 18 (S-NI)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E+00 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
6.808E+00 XXXXXXX
9.992E+00 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.467E+01 XXXXXXXXXX
2.153E+01 XXX
3.160E+01 XXX
4.638E+01
6.808E+01 XXX
9.992E+01 XXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  5.00000E+00
MAXIMUM ANTILOG      =  1.00000E+02
GEOMETRIC MEAN       =  9.86232E+00
GEOMETRIC DEVIATION  =  2.17608E+00
VARIANCE OF LOGS     =  1.14024E-01
```

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 19 (S-PB)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		3	3	10.34	10.34		
L		4	7	13.79	24.14		
T		0	7	0.00	24.14	4.82	4.82
9.160E-01 -	1.083E+00	3	10	10.34	34.48	1.69	1.03
1.083E+00 -	1.249E+00	1	11	3.45	37.93	1.98	0.48
1.249E+00 -	1.416E+00	3	14	10.34	48.28	2.22	0.28
1.416E+00 -	1.583E+00	2	16	6.90	55.17	2.38	0.06
1.583E+00 -	1.749E+00	2	18	6.90	62.07	2.44	0.08
1.749E+00 -	1.916E+00	1	19	3.45	65.52	2.40	0.81
1.916E+00 -	2.083E+00	4	23	13.79	79.31	2.25	1.36
2.083E+00 -	2.249E+00	0	23	0.00	79.31	2.02	2.02
2.249E+00 -	2.416E+00	0	23	0.00	79.31	1.73	1.73
2.416E+00 -	2.583E+00	3	26	10.34	89.66	1.42	1.74
2.583E+00 -	2.749E+00	1	27	3.45	93.10	1.12	0.01
2.749E+00 -	2.916E+00	0	27	0.00	93.10	0.84	0.84
2.916E+00 -	3.083E+00	1	28	3.45	96.55	1.69	0.28
G		1	29	3.45	100.00	0.00	0.00
H		0	29				
B		0	29				

TOTALS LESS H AND B 29

HISTOGRAM FOR VARIABLE 19 (S-PB)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
9.985E+00 XXXXXXXXXX
1.466E+01 XXX
2.151E+01 XXXXXXXXXX
3.157E+01 XXXXXXX
4.634E+01 XXXXXXX
6.802E+01 XXX
9.985E+01 XXXXXXXXXXXXXX
1.466E+02
2.151E+02
3.157E+02 XXXXXXXXXX
4.635E+02 XXX
6.803E+02
9.985E+02 XXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  1.00000E+01
MAXIMUM ANTILOG      =  1.00000E+03
GEOMETRIC MEAN       =  6.04333E+01
GEOMETRIC DEVIATION  =  3.92899E+00
VARIANCE OF LOGS     =  3.53169E-01
```

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 20 (S-SC)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		11	11	37.93	37.93		
L		5	16	17.24	55.17		
T		0	16	0.00	55.17	3.55	3.55
5.830E-01 -	7.497E-01	2	18	6.90	62.07	6.28	2.92
7.497E-01 -	9.163E-01	3	21	10.34	72.41	8.44	3.51
9.163E-01 -	1.083E+00	3	24	10.34	82.76	6.66	2.01
1.083E+00 -	1.250E+00	3	27	10.34	93.10	3.08	0.00
1.250E+00 -	1.416E+00	1	28	3.45	96.55	0.84	0.03
1.416E+00 -	1.583E+00	1	29	3.45	100.00	0.15	5.03
G		0	29	0.00	100.00	0.00	0.00
H		0	29				
B		0	29				

TOTALS LESS H AND B 29

HISTOGRAM FOR VARIABLE 20 (S-SC)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E+00 XXXXXXX
6.808E+00 XXXXXXXXXX
9.992E+00 XXXXXXXXXX
1.467E+01 XXXXXXXXXX
2.153E+01 XXX
3.160E+01 XXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      = 5.00000E+00
MAXIMUM ANTILOG      = 3.00000E+01
GEOMETRIC MEAN       = 1.04336E+01
GEOMETRIC DEVIATION  = 1.71608E+00
VARIANCE OF LOGS     = 5.50077E-02
```

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 21 (S-SR)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		6	6	20.69	20.69		
L		6	12	20.69	41.38		
T		0	12	0.00	41.38	7.18	7.18
2.083E+00 -	2.250E+00	3	15	10.34	51.72	4.80	0.67
2.250E+00 -	2.416E+00	4	19	13.79	65.52	5.30	0.32
2.416E+00 -	2.583E+00	1	20	3.45	68.97	4.75	2.96
2.583E+00 -	2.750E+00	4	24	13.79	82.76	3.45	0.09
2.750E+00 -	2.916E+00	3	27	10.34	93.10	2.03	0.46
2.916E+00 -	3.083E+00	2	29	6.90	100.00	1.50	0.17
G		0	29	0.00	100.00	0.00	0.00
H		0	29				
B		0	29				

TOTALS LESS H AND B 29

HISTOGRAM FOR VARIABLE 21 (S-SR)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
1.467E+02 XXXXXXXXXX
2.153E+02 XXXXXXXXXXXXX
3.160E+02 XXX
4.638E+02 XXXXXXXXXXXXX
6.808E+02 XXXXXXXXXX
9.992E+02 XXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  1.50000E+02
MAXIMUM ANTILOG      =  1.00000E+03
GEOMETRIC MEAN       =  3.64097E+02
GEOMETRIC DEVIATION  =  1.98834E+00
VARIANCE OF LOGS     =  8.90972E-02
```

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 22 (S-V)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	1.21	1.21
9.160E-01 -	1.083E+00	3	3	10.34	10.34	1.47	1.58
1.083E+00 -	1.249E+00	3	6	10.34	20.69	2.51	0.10
1.249E+00 -	1.416E+00	2	8	6.90	27.59	3.63	0.73
1.416E+00 -	1.583E+00	6	14	20.69	48.28	4.45	0.54
1.583E+00 -	1.749E+00	3	17	10.34	58.62	4.65	0.58
1.749E+00 -	1.916E+00	5	22	17.24	75.86	4.12	0.19
1.916E+00 -	2.083E+00	6	28	20.69	96.55	3.10	2.70
2.083E+00 -	2.249E+00	0	28	0.00	96.55	1.99	1.99
2.249E+00 -	2.416E+00	0	28	0.00	96.55	1.08	1.08
2.416E+00 -	2.583E+00	0	28	0.00	96.55	0.50	0.50
2.583E+00 -	2.749E+00	0	28	0.00	96.55	0.20	0.20
2.749E+00 -	2.916E+00	1	29	3.45	100.00	0.09	9.27
G		0	29	0.00	100.00	1.21	1.21
H		0	29				
B		0	29				

TOTALS LESS H AND B 29

HISTOGRAM FOR VARIABLE 22 (S-V)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
9.985E+00 XXXXXXXXXX
1.466E+01 XXXXXXXXXX
2.151E+01 XXXXXXX
3.157E+01 XXXXXXXXXXXXXXXXXXXXX
4.634E+01 XXXXXXXXXX
6.802E+01 XXXXXXXXXXXXXXXXX
9.985E+01 XXXXXXXXXXXXXXXXXXXXX
1.466E+02
2.151E+02
3.157E+02
4.635E+02
6.803E+02 XXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  1.00000E+01
MAXIMUM ANTILOG      =  7.00000E+02
GEOMETRIC MEAN       =  4.22889E+01
GEOMETRIC DEVIATION  =  2.57084E+00
VARIANCE OF LOGS     =  1.68162E-01
```

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 23 (S-Y)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		3	3	10.34	10.34		
T		0	3	0.00	10.34	1.94	1.94
9.160E-01 -	1.083E+00	3	6	10.34	20.69	2.52	0.09
1.083E+00 -	1.249E+00	1	7	3.45	24.14	4.07	2.32
1.249E+00 -	1.416E+00	8	15	27.59	51.72	5.25	1.44
1.416E+00 -	1.583E+00	6	21	20.69	72.41	5.41	0.07
1.583E+00 -	1.749E+00	2	23	6.90	79.31	4.44	1.34
1.749E+00 -	1.916E+00	3	26	10.34	89.66	2.91	0.00
1.916E+00 -	2.083E+00	2	28	6.90	96.55	1.53	0.15
2.083E+00 -	2.249E+00	0	28	0.00	96.55	0.64	0.64
2.249E+00 -	2.416E+00	1	29	3.45	100.00	0.28	1.81
G		0	29	0.00	100.00	0.00	0.00
H		0	29				
B		0	29				

TOTALS LESS H AND B 29

HISTOGRAM FOR VARIABLE 23 (S-Y)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
9.985E+00 XXXXXXXXXX
1.466E+01 XXX
2.151E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
3.157E+01 XXXXXXXXXXXXXXXXXXXX
4.634E+01 XXXXXXX
6.802E+01 XXXXXXXXXX
9.985E+01 XXXXXXX
1.466E+02
2.151E+02 XXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  1.00000E+01
MAXIMUM ANTILOG      =  2.00000E+02
GEOMETRIC MEAN       =  3.07428E+01
GEOMETRIC DEVIATION  =  2.14585E+00
VARIANCE OF LOGS     =  1.09959E-01
```

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 24 (S-ZR)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		1	1	3.45	3.45		
L		3	4	10.34	13.79		
T		0	4	0.00	13.79	2.31	2.31
9.160E-01 -	1.083E+00	2	6	6.90	20.69	1.34	0.33
1.083E+00 -	1.249E+00	0	6	0.00	20.69	1.80	1.80
1.249E+00 -	1.416E+00	5	11	17.24	37.93	2.27	3.30
1.416E+00 -	1.583E+00	2	13	6.90	44.83	2.67	0.17
1.583E+00 -	1.749E+00	1	14	3.45	48.28	2.93	1.27
1.749E+00 -	1.916E+00	2	16	6.90	55.17	3.01	0.34
1.916E+00 -	2.083E+00	1	17	3.45	58.62	2.89	1.24
2.083E+00 -	2.249E+00	0	17	0.00	58.62	2.59	2.59
2.249E+00 -	2.416E+00	5	22	17.24	75.86	2.17	3.68
2.416E+00 -	2.583E+00	4	26	13.79	89.66	1.70	3.10
2.583E+00 -	2.749E+00	1	27	3.45	93.10	1.25	0.05
2.749E+00 -	2.916E+00	2	29	6.90	100.00	2.08	0.00
G		0	29	0.00	100.00	0.00	0.00
H		0	29				
B		0	29				

TOTALS LESS H AND B 29

HISTOGRAM FOR VARIABLE 24 (S-ZR)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
9.985E+00 XXXXXXX
1.466E+01
2.151E+01 XXXXXXXXXXXXXXXXX
3.157E+01 XXXXXXX
4.634E+01 XXX
6.802E+01 XXXXXXX
9.985E+01 XXX
1.466E+02
2.151E+02 XXXXXXXXXXXXXXXXX
3.157E+02 XXXXXXXXXXXXXX
4.635E+02 XXX
6.803E+02 XXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  1.00000E+01
MAXIMUM ANTILOG      =  7.00000E+02
GEOMETRIC MEAN       =  8.83191E+01
GEOMETRIC DEVIATION  =  3.88465E+00
VARIANCE OF LOGS     =  3.47336E-01
```

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 25 (AA-AS-P)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		23	23	79.31	79.31		
L		1	24	3.45	82.76		
T		0	24	0.00	82.76	6.40	6.40
5.830E-01 -	7.497E-01	3	27	10.34	93.10	7.73	2.89
7.497E-01 -	9.163E-01	0	27	0.00	93.10	7.90	7.90
9.163E-01 -	1.083E+00	0	27	0.00	93.10	4.81	4.81
1.083E+00 -	1.250E+00	0	27	0.00	93.10	1.74	1.74
1.250E+00 -	1.416E+00	1	28	3.45	96.55	0.37	1.06
1.416E+00 -	1.583E+00	0	28	0.00	96.55	0.05	0.05
1.583E+00 -	1.750E+00	0	28	0.00	96.55	0.00	0.00
1.750E+00 -	1.916E+00	1	29	3.45	100.00	0.00	266.88
G		0	29	0.00	100.00	0.00	0.00
H		0	29				
B		0	29				

TOTALS LESS H AND B 29

HISTOGRAM FOR VARIABLE 25 (AA-AS-P)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E+00 XXXXXXXXXX
6.808E+00
9.992E+00
1.467E+01
2.153E+01 XXX
3.160E+01
4.638E+01
6.808E+01 XXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  5.00000E+00
MAXIMUM ANTILOG      =  6.00000E+01
GEOMETRIC MEAN       =  1.08447E+01
GEOMETRIC DEVIATION  =  3.09283E+00
VARIANCE OF LOGS     =  2.40448E-01
```

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 26 (AA-ZN-P)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		1	1	3.45	3.45		
T		0	1	0.00	3.45	0.40	0.40
5.830E-01 -	7.497E-01	1	2	3.45	6.90	0.65	0.19
7.497E-01 -	9.163E-01	0	2	0.00	6.90	1.33	1.33
9.163E-01 -	1.083E+00	3	5	10.34	17.24	2.34	0.19
1.083E+00 -	1.250E+00	3	8	10.34	27.59	3.47	0.06
1.250E+00 -	1.416E+00	6	14	20.69	48.28	4.37	0.60
1.416E+00 -	1.583E+00	3	17	10.34	58.62	4.68	0.60
1.583E+00 -	1.750E+00	4	21	13.79	72.41	4.25	0.01
1.750E+00 -	1.916E+00	2	23	6.90	79.31	3.28	0.50
1.916E+00 -	2.083E+00	4	27	13.79	93.10	2.15	1.60
2.083E+00 -	2.250E+00	2	29	6.90	100.00	2.08	0.00
G		0	29	0.00	100.00	0.00	0.00
H		0	29				
B		0	29				

TOTALS LESS H AND B 29

HISTOGRAM FOR VARIABLE 26 (AA-ZN-P)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E+00 XXX
6.808E+00
9.992E+00 XXXXXXXXXX
1.467E+01 XXXXXXXXXX
2.153E+01 XXXXXXXXXXXXXXXXXXXXX
3.160E+01 XXXXXXXXXX
4.638E+01 XXXXXXXXXXXXXX
6.809E+01 XXXXXXX
9.992E+01 XXXXXXXXXXXXX
1.467E+02 XXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 5.00000E+00
MAXIMUM ANTILOG = 1.40000E+02
GEOMETRIC MEAN = 3.26118E+01
GEOMETRIC DEVIATION = 2.43670E+00
VARIANCE OF LOGS = 1.49616E-01

Table 8. Frequency tables and histograms of analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

FREQUENCY TABLE FOR VARIABLE 27 (AA-CD-P)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N	9	9	31.03	31.03		
	L	0	9	0.00	31.03		
	T	0	9	0.00	31.03	3.82	3.82
-1.084E+00	- -9.173E-01	4	13	13.79	44.83	3.30	0.15
-9.173E-01	- -7.507E-01	0	13	0.00	44.83	4.42	4.42
-7.507E-01	- -5.840E-01	4	17	13.79	58.62	4.93	0.17
-5.840E-01	- -4.173E-01	3	20	10.34	68.97	4.58	0.55
-4.173E-01	- -2.507E-01	4	24	13.79	82.76	3.55	0.06
-2.507E-01	- -8.400E-02	3	27	10.34	93.10	2.30	0.21
-8.400E-02	- 8.267E-02	0	27	0.00	93.10	1.24	1.24
8.267E-02	- 2.493E-01	2	29	6.90	100.00	0.85	1.54
	G	0	29	0.00	100.00	0.00	0.00
	H	0	29				
	B	0	29				

TOTALS LESS H AND B 29

HISTOGRAM FOR VARIABLE 27 (AA-CD-P)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
9.985E-02 XXXXXXXXXXXXXX
1.466E-01
2.151E-01 XXXXXXXXXXXXXX
3.157E-01 XXXXXXXXXX
4.634E-01 XXXXXXXXXXXXXX
6.802E-01 XXXXXXXXXX
9.985E-01
1.466E+00 XXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      = 1.00000E-01
MAXIMUM ANTILOG      = 1.70000E+00
GEOMETRIC MEAN       = 3.21383E-01
GEOMETRIC DEVIATION  = 2.35190E+00
VARIANCE OF LOGS     = 1.37953E-01
```

Table 9. Correlation coefficients for analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

ARRAY OF NUMBER OF PAIRS AND CORRELATION COEFFICIENTS -

	3 S-FE%	4 S-MG%	5 S-CA%	6 S-TI%	7 S-MN	8 S-AG	9 S-B	10 S-BA	11 S-BE	12 S-CO
3 S-FE%	0.5201	0.1419	-0.1888	0.6127	0.2338	-0.0092	-0.3049	0.4611	-0.0448	0.7667
4 S-MG%	29	0.4500	0.0337	0.1425	-0.0564	-0.2366	0.0548	0.0807	-0.2175	0.2977
5 S-CA%	19	19	0.5534	-0.4129	-0.1074	0.1772	0.1689	-0.3813	-0.2280	-0.1393
6 S-TI%	29	29	19	0.5852	0.1134	-0.2419	0.2346	0.5609	-0.0394	0.4033
7 S-MN	28	28	19	28	0.3512	0.0765	-0.2751	0.0389	-0.0428	0.3073
8 S-AG	8	8	7	8	7	0.8781	0.1968	-0.5242	*******	0.4221
9 S-B	18	18	18	18	18	6	0.2582	-0.1971	0.0778	-0.3730
10 S-BA	22	22	19	22	22	7	18	0.4455	0.2273	0.0817
11 S-BE	9	9	9	9	9	1	8	9	0.1688	-0.3712
12 S-CO	20	20	16	20	19	5	15	17	9	0.2831
13 S-CR	20	20	11	20	19	4	11	14	4	14
14 S-CU	15	15	13	15	14	6	12	14	8	13
15 S-LA	8	8	8	8	8	2	7	8	7	8
16 S-MO	3	3	2	3	3	2	2	2	0	2
17 S-NB	3	3	3	3	3	0	3	3	3	3
18 S-NI	28	28	19	28	27	8	18	22	9	20
19 S-PB	21	21	14	21	20	7	13	17	8	16
20 S-SC	13	13	12	13	12	5	11	12	9	12
21 S-SR	17	17	7	17	16	3	7	10	4	10
22 S-V	29	29	19	29	28	8	18	22	9	20
23 S-Y	26	26	19	26	25	8	18	21	9	20
24 S-ZR	25	25	18	25	24	7	17	21	9	20
25 AA-AS-P	5	5	3	5	4	3	3	4	0	3
26 AA-ZN-P	28	28	19	28	27	8	18	21	9	20
27 AA-CD-P	20	20	10	20	19	5	10	13	3	12
28 AA-BI-P	1	1	1	1	1	1	1	1	0	0
29 AA-SB-P	2	2	2	2	2	2	2	2	0	1

NOTE: THE DIAGONAL OF THE CORR MATRIX CONTAINS THE STD DEV OF THE VARIABLE FOR ONLY THE VALID PAIRS.

Table 9. Correlation coefficients for analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

ARRAY OF NUMBER OF PAIRS AND CORRELATION COEFFICIENTS -CONT.

	13 S-CR	14 S-CU	15 S-LA	16 S-MO	17 S-NB	18 S-NI	19 S-PB	20 S-SC	21 S-SR	22 S-V
3 S-FE%	0.4341	-0.2070	-0.0035	0.9775	*******	0.5499	0.3560	0.7584	-0.4688	0.5043
4 S-MG%	-0.0249	-0.4453	-0.6564	-0.9881	*******	0.1490	-0.6191	0.7027	0.3430	0.0893
5 S-CA%	0.0886	0.3493	0.0555	-1.0000	*******	0.2096	0.0366	-0.0607	0.4580	0.3200
6 S-TI%	0.5040	-0.5665	0.1243	0.8660	*******	0.0954	0.0318	0.7015	-0.5899	0.5516
7 S-MN	-0.1247	0.3149	0.5204	0.0000	*******	-0.3239	0.3987	-0.2310	-0.4910	0.2810
8 S-AG	0.6096	0.4349	-1.0000	-1.0000	*******	-0.2881	0.1718	-0.6105	-0.3401	0.7753
9 S-B	0.7232	-0.6860	-0.7248	-1.0000	*******	-0.0208	-0.6827	-0.3653	0.6557	0.3142
10 S-BA	-0.0700	-0.1840	0.5158	1.0000	*******	-0.2217	0.0875	0.4987	-0.3614	-0.0802
11 S-BE	0.7269	-0.5116	-0.5227	*******	*******	0.0440	0.0386	-0.1844	0.0631	-0.1731
12 S-CO	-0.0893	0.1466	-0.2146	1.0000	*******	0.5085	0.3878	0.6091	-0.4022	0.5269
13 S-CR	0.4202	-0.6540	-0.9506	1.0000	*******	0.3356	-0.2558	-0.1973	-0.1798	0.3862
14 S-CU	9	0.6440	0.8170	*******	*******	-0.2369	0.4328	-0.3775	0.6102	-0.2225
15 S-LA	4	8	0.1759	*******	*******	-0.5942	0.8816	-0.0096	-0.4613	-0.7498
16 S-MO	2	1	0	0.3010	*******	0.7341	0.8660	*******	-1.0000	0.1692
17 S-NB	1	3	3	0	0.0000	*******	*******	*******	*******	*******
18 S-NI	20	15	8	3	3	0.3377	-0.0530	0.4532	0.0546	0.0949
19 S-PB	14	13	7	3	3	21	0.5943	0.0275	-0.5077	0.3117
20 S-SC	8	11	8	1	3	13	12	0.2345	-0.1795	-0.1646
21 S-SR	14	8	5	2	2	16	14	7	0.2985	-0.4947
22 S-V	20	15	8	3	3	28	21	13	17	0.4101
23 S-Y	18	14	8	3	3	26	20	13	14	26
24 S-ZR	17	15	8	2	3	25	20	12	13	25
25 AA-AS-P	4	3	0	2	0	5	4	2	3	5
26 AA-ZN-P	19	15	8	3	3	27	20	13	16	28
27 AA-CD-P	15	8	2	3	2	19	14	6	14	20
28 AA-BI-P	0	1	0	0	0	1	0	0	0	1
29 AA-SB-P	0	2	0	1	0	2	1	0	0	2

NOTE: THE DIAGONAL OF THE CORR MATRIX CONTAINS THE STD DEV OF THE VARIABLE FOR ONLY THE VALID PAIRS.

Table 9. Correlation coefficients for analytical data from rocks from the Sandia Mountain Wilderness, New Mexico.

ARRAY OF NUMBER OF PAIRS AND CORRELATION COEFFICIENTS -CONT.

		23 S-Y	24 S-ZR	25 AA-AS-P	26 AA-ZN-P	27 AA-CD-P	28 AA-BI-P	29 AA-SB-P
3	S-FE%	0.4055	0.3243	0.7588	0.4242	-0.0013	*******	*******
4	S-MG%	0.2824	-0.1483	0.1179	0.3747	0.2008	*******	*******
5	S-CA%	0.1919	-0.3152	-0.6612	-0.1645	0.6515	*******	*******
6	S-TI%	0.4466	0.8194	-0.2328	0.3344	-0.2178	*******	*******
7	S-MN	0.3862	-0.2366	-0.3164	0.2566	-0.0981	*******	*******
8	S-AG	-0.2552	-0.4761	-0.8974	-0.2163	0.8205	*******	*******
9	S-B	-0.3438	0.2924	-0.9775	-0.4339	0.0063	*******	*******
10	S-BA	0.4087	0.6913	0.5382	0.4176	-0.5041	*******	*******
11	S-BE	-0.0331	-0.2499	*******	0.0719	-1.0000	*******	*******
12	S-CO	0.2237	0.0196	0.9575	0.3679	-0.0627	*******	*******
13	S-CR	-0.0442	0.4606	-0.5625	-0.2710	0.3335	*******	*******
14	S-CU	0.5613	-0.5277	0.4467	-0.4666	0.6264	*******	*******
15	S-LA	0.9337	0.5922	*******	0.2668	*******	*******	*******
16	S-MO	*******	1.0000	1.0000	-0.6424	-0.8966	*******	*******
17	S-NB	*******	*******	*******	*******	*******	*******	*******
18	S-NI	-0.0771	-0.1504	0.7830	0.1240	0.1548	*******	*******
19	S-PB	0.3067	0.1511	-0.3410	0.3206	0.0192	*******	*******
20	S-SC	0.2191	0.5308	*******	0.8486	-0.4632	*******	*******
21	S-SR	-0.2967	-0.6890	0.9484	-0.1967	0.3848	*******	*******
22	S-V	0.3301	0.3244	-0.4040	0.1395	0.2909	*******	*******
23	S-Y	0.3316	0.1872	0.2317	0.4353	0.1182	*******	*******
24	S-ZR	24	0.5894	-0.2052	0.1157	-0.3400	*******	*******
25	AA-AS-P	4	4	0.4904	0.0535	-0.5784	*******	*******
26	AA-ZN-P	25	24	5	0.3868	0.0024	*******	*******
27	AA-CD-P	17	16	4	19	0.3714	*******	*******
28	AA-BI-P	1	1	0	1	1	*******	*******
29	AA-SB-P	2	2	1	2	2	1	0.0000

NOTE: THE DIAGONAL OF THE CORR MATRIX CONTAINS THE STD DEV OF THE VARIABLE FOR ONLY THE VALID PAIRS.

Table 10. Analytical data from waters from the Sandia Mountain Wilderness, New Mexico.

Sample	Latitude	Longitude	Cu-ug/L aa(1.0)	Mo-ug/L aa(1.0)	Pb-ug/L aa(1.0)	Zn-ug/L aa(1.0)	F-mg/L ic(.01)	Cl-mg/L ic(.05)	SO_4-mg/L ic(.1)	U-ug/L lf(.1)
SAN001W	35 12 27	106 28 33	5.9	2.1	<1.0	6.0	1.0	2.4	14.0	5.6
SAN014W	35 17 28	106 26 21	6.2	1.1	<1.0	70.0	.6	2.0	15.0	1.3
SAN026W	35 5 45	106 23 41	6.6	2.3	1.8	40.0	.1	2.1	17.0	1.7
SAN043W	35 8 7	106 23 18	3.1	3.6	1.1	8.2	.1	1.8	12.0	1.2
SAN044W	35 8 39	106 23 16	7.2	1.0	1.2	9.3	.2	2.7	14.0	1.5
SAN061W	35 13 56	106 26 30	8.5	<1.0	1.3	40.0	.3	1.6	12.0	.5
SAN062W	35 5 56	106 26 18	6.8	2.8	<1.0	70.0	1.7	3.5	44.0	3.4
SAN243W	35 5 48	106 27 49	1.0	1.0	<1.0	10.0	1.7	6.8	65.0	6.4
SAN249W	35 7 55	106 27 48	6.6	1.6	<1.0	8.2	1.0	7.5	47.0	8.0
SAN258W	35 10 11	106 23 4	7.0	1.6	1.3	30.0	.1	20.0	10.0	1.4
SAN273W	35 5 58	106 25 31	<1.0	2.6	1.2	60.0	.1	1.4	6.6	.7

Table 11. Basic statistics for analytical data from waters from the Sandia Mountain Wilderness, New Mexico.

Univariate Statistics

		Minium	Maximum	Geom. Mean	Geom. Deviation	Valid	L	N	G
1	Cu-ug/L	<1.000000	8.500000	5.197628	1.891126	10	1	0	0
2	Mo-ug/L	<1.000000	3.600000	1.799705	1.574783	10	1	0	0
3	Pb-ug/L	<1.000000	1.800000	1.299628	1.186779	6	5	0	0
4	Zn-ug/L	6.000000	70.00000	21.80378	2.649677	11	0	0	0
5	F-mg/L	0.100000	1.700000	0.352386	3.279280	11	0	0	0
6	Cl-mg/L	1.400000	20.00000	3.224451	2.262224	11	0	0	0
7	SO_4-mg/L	6.600000	65.00000	17.98934	2.058499	11	0	0	0
8	U-ug/L	0.500000	8.000000	1.986427	2.490021	11	0	0	0