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GEOCHEMICAL DATA FROM THE NABESNA B-3 QUADRANGLE, ALASKA

By

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Introduction

Analytical data for 90 stream-sediment and 2 rock samples from the Nabesna B-3, 1:63,360 scale quadrangle are presented in this report, together with a statistical treatment of the data for the stream sediments. The samples were collected in 1968, 1970, and 1971.

The State of Alaska, Division of Geological Survey Aeromagnetic Map for the Nabesna B-3 quadrangle (1971) discloses a striking dipolar anomaly north of Antler Creek. This anomaly occurs over the hornblende diorite pluton shown on Plate 1. Along the margins of the pluton, and locally within it, there is a coarse-grained hornblendite phase, locally up to 2000 feet thick which undoubtedly gives rise to the magnetic anomaly. The country rocks are magnetically transparent, Flysch-type sedimentary rocks.

Procedures and treatment of data

Standard procedures were followed in this collection and preparation of the stream-sediment samples. The samples were collected from the active stream channel and a wet sample was collected at most locations. The samples were dried, sieved, and the minus 80-mesh fractions were analyzed for 30 elements by the six-step semiquantitative spectrographic method and for gold by the atomic absorption method.

The two rock samples were crushed and pulverized and the minus 80-mesh fraction analyzed by the same methods as the stream sediments.

The spectrographic analyses were reported in percentage (%) or parts per million (ppm) to the nearest number in the series: 1.0, 0.7, 0.5, 0.3, 0.2, 0.15, 0.1, etc. The precision of a reported value is approximately plus 100 percent or minus 50 percent. Analyses for gold by the atomic absorption method are accurate to ± 100 percent. Minimum limits of detection for each element are given on page 4. Semiquantitative spectrographic analyses were done by K. J. Curry and E. E. Martinez, and atomic absorption analyses were done by R. L. Miller, D. G. Murrey, and R. B. Tripp.

Locations of the rock and stream-sediment samples are shown on Plate 1 and the analytical results for the two samples are given in Table 1 (for limits of detection see page 4). Rock sample 91 is a composite grab sample of stained hornblende diorite with disseminated pyrite and chalcopyrite. Sample 92 is a grab sample from a talus block of pyrite-bearing hornblendite which borders hornblende diorite.

Table 1

Analyses of rocks
Nabesna B-3 quadrangle, Alaska

Map No.	91	92	Map No.	91	92
Elevation	5330'	5800'	ppm La	L	N
% Fe	10	15	ppm Mo	N	5
% Mg	3	7	ppm Nb	L	10
% Ca	7	15	ppm Ni	50	15
% Ti	.5	1	ppm Pb	L	15
ppm Mn	1000	2000	ppm Sb	N	N
ppm Ag	.5	N	ppm Sc	30	70
ppm As	N	N	ppm Sn	N	N
ppm B	L	20	ppm Sr	700	1500
ppm Ba	300	300	ppm V	200	700
ppm Be	N	N	ppm W	N	N
ppm Bi	N	N	ppm Y	15	30
ppm Cd	N	N	ppm Zn	N	N
ppm Co	20	30	ppm Zr	70	50
ppm Cr	100	20	ppm Au (A.A.)	.04	L
ppm Cu	500	500			

L = detected, but below limit of determination; N = not detected

The results of the stream-sediment analyses have been processed by means of a computer program known as GEOSUM and are presented in Table 2. The GEOSUM program is designed primarily for summarizing and tabulating geochemical data - especially data from semiquantitative spectrographic analyses (commonly referred to as six-step spectrographic analyses) by the laboratories of the U.S. Geological Survey. The program output consists of: (a) a tabulation of the data, (b) frequency distributions and histograms for all elements on which there is sufficient data [1/], and (c) a statistical summary which includes geometric means and geometric deviations.

Explanation of Table 2

The analytical results from the stream-sediment samples are given in Table 2 as analytical values such as 20.0000 ppm, 5.0000 percent, etc. or as values qualified with a letter. The letter codes are N = not detected, L = less than the specified limit of detection, or G = greater than the value shown. Note that the right-most zero digits for each analytical value may or may not be significant. The specified limits of detection are as follows:

1/Frequency tables and histograms for arsenic, gold by the spectrographic method, bismuth, cadmium, antimony, tin and tungsten are omitted because no valid data points were reported for these elements.

Specified limits of detection

S-FE% [1] (Iron)	S-MG% (Magnesium)	S-CA% (Calcium)	S-TI% (Titanium)	S-MN (Manganese)	S-AG (Silver)
0.05000	0.02000	0.05000	0.00200	10.00000	0.50000
S-AS (Arsenic)	S-AU (Gold)	S-B (Boron)	S-BA (Barium)	S-BE (Beryllium)	S-BI (Bismuth)
200.00000	10.00000	10.00000	20.00000	1.00000	10.00000
S-CD (Cadmium)	S-CO (Cobalt)	S-CR (Chromium)	S-CU (Copper)	S-LA (Lanthanum)	S-MO (Molybdenum)
20.00000	5.00000	10.00000	5.00000	20.00000	5.00000
S-NB (Niobium)	S-NI (Nickel)	S-PB (Lead)	S-SB (Antimony)	S-SC (Scandium)	S-SN (Tin)
10.00000	5.00000	10.00000	100.00000	5.00000	10.00000
S-SR (Strontium)	S-V (Vanadium)	S-W (Tungsten)	S-Y (Yttrium)	S-ZN (Zinc)	S-ZR (Zirconium)
100.00000	10.00000	50.00000	10.00000	200.00000	10.00000

AA-AU-P [2]
(Gold by atomic absorption)
0.02000

1/an "S" prefixing the chemical symbol signifies values obtained from semiquantitative spectrographic analyses. Values are reported in parts per million (ppm) excepting iron, magnesium, calcium, and titanium which are reported as percent (%).

2/The last column in the table is for gold by the atomic absorption method. A column for gold is also given for the semiquantitative spectrographic analyses of gold, but no gold was found by this method because of the high limit of detection. Values are parts per million (ppm).

As mentioned above, semiquantitative spectrographic analyses by the U.S. Geological Survey are reported as geometric midpoints (1.0, 0.7, 0.5, 0.3, 0.2, 0.15, 0.1, etc.) of geometric brackets having the boundaries 1.2, 0.83, 0.56, 0.38, 0.26, 0.18, 0.12, 0.083, etc. The frequency distributions and histograms are on logarithmic scales and are computed using these brackets as class intervals, for example:

Reported value	Limits
1.0	.83 - 1.2
1.5	1.2 - 1.8
2.0	1.8 - 2.6
3.0	2.6 - 3.8
5.0	3.8 - 5.6
7.0	5.6 - 8.3
10.0	8.3 -12.0

On the frequency tables and histograms, the letter "E" after a value denotes an exponent to the base 10. The exponent, signed or unsigned, follows the letter "E". For illustration:

6.0E-02 means 6.0×10^{-2} or 0.06
6.0E-01 means 6.0×10^{-1} or 0.6
6.0E 00 means 6.0×10^{0} or 6.0
6.0E 01 means 6.0×10^{1} or 60.0
6.0E 02 means 6.0×10^{2} or 600.0
6.0E 03 means 6.0×10^{3} or 6000.0

The histograms represent frequency distribution where each "x" equals one percent of the total number (90) of stream-sediment samples.

The histograms and the statistics given below them are derived only from data values within the ranges of analytical determination (analytical values). The histograms are, therefore, incomplete, and the statistics are biased if data values qualified with N, L, or G codes are present. Statistical estimates that are unbiased in this regard are given at the end of Table 2. The geometric means is the antilogarithm of the arithmetic means of the logs of the analyses and an estimate of "central tendency," or a characteristic value, of a frequency distribution that is approximately symmetrical on a log scale, and is therefore useful for characterizing many geochemical distributions. The geometric mean is not an estimate of geochemical abundance. The geometric deviation is the antilogarithm of the standard deviation of the logs of the analyses. See U.S.G.S. Professional Paper 574-B (Miesch, 1967) and U.S.G.S. Bulletin 1147-E, p.20-23 (Miesch,1963), for further discussion and explanation of geometric mean and deviation.

In the computation performed to produce the statistical summary at the end of Table 2, all elements are ignored where one or more of the unqualified data values is less than the analytical limit of detection specified on input or where any data values are qualified with the G (greater than) code. Where none of the data values for an element are qualified, the mean and deviation should be the same as those given in the preceding section. Where data are qualified with the codes N or L, the estimates of geometric mean and deviation are based on a method by A. J. Cohen for treating censored distributions. The application of this method to geochemical problems is described in U.S.G.S. Professional Paper 574-B (Miesch, 1967). The estimates are unbiased in a strict sense only where the data are derived from a lognormal parent population, but experiments have shown that large departures from this requirement may not greatly invalidate the results. Acceptance and use of the estimates, however, is the responsibility of the individual.

References Cited

Miesch, A. T., 1963, Distribution of elements in Colorado Plateau uranium deposits - A preliminary report: U.S. Geol. Survey Bull. 1147-E, 57 p.

_____, 1967, Methods of computation for estimating geochemical abundance: U.S. Geol. Survey Prof. Paper 574-B, 15 p.

State of Alaska, Division of Geological Survey, 1971, Aeromagnetic Survey of East Alaska Range, Nabesna (B-3), Alaska: State of Alaska, Division of Geological Survey Aeromagnetic Series (1:63,360) Map, 1 sheet.

STREAM SEDIMENTS

TABLE 2

NABESNA B-3 STREAM SEDIMENTS

SAMPLE	MAP NUMBER	S-FE %	S-MG %	S-CA %	S-TI %	S-MN	S-AG	S-AS
BAL417	1	7.0000	2.0000	2.0000	0.7000	1000.0000	0.5000N	200.0000N
BAL416	2	10.0000	3.0000	1.5000	0.7000	1500.0000	0.5000N	200.0000N
BAL418	3	10.0000	2.0000	1.5000	0.5000	1000.0000	0.5000N	200.0000N
BAL442	4	10.0000	2.0000	1.5000	0.5000	1500.0000	0.5000N	200.0000N
BAL441	5	10.0000	2.0000	1.5000	0.7000	1500.0000	0.5000N	200.0000N
BAL440	6	15.0000	7.0000	7.0000	0.5000	2000.0000	0.5000N	200.0000N
BAL420	7	15.0000	7.0000	7.0000	0.7000	3000.0000	0.5000N	200.0000N
BAL419	8	15.0000	7.0000	7.0000	0.7000	2000.0000	0.5000N	200.0000N
BAL421	9	15.0000	3.0000	1.5000	0.7000	1500.0000	0.5000N	200.0000N
BAL438	10	15.0000	7.0000	7.0000	0.7000	2000.0000	0.5000N	200.0000N
BAL436	11	7.0000	2.0000	1.5000	0.7000	1000.0000	0.5000N	200.0000N
BAL423	12	10.0000	2.0000	2.0000	0.7000	300.0000	0.5000N	200.0000N
BAL422	13	10.0000	2.0000	2.0000	0.7000	300.0000	0.5000N	200.0000N
BAL424	14	10.0000	2.0000	1.0000	0.7000	300.0000	0.5000N	200.0000N
BAL430	15	10.0000	2.0000	1.5000	0.5000	1000.0000	0.5000N	200.0000N
BAL429	16	7.0000	1.5000	0.7000	0.5000	1000.0000	0.5000	200.0000N
BAL428	17	7.0000	1.5000	0.7000	0.7000	1000.0000	0.7000	200.0000N
BAL427	18	10.0000	2.0000	1.0000	0.7000	1500.0000	0.5000N	200.0000N
BAL426	19	10.0000	1.5000	0.7000	0.7000	2000.0000	0.5000	200.0000N
BAL425	20	10.0000	1.5000	0.7000	0.7000	1500.0000	0.5000N	200.0000N
BAL433	21	7.0000	2.0000	1.0000	0.7000	1500.0000	0.5000N	200.0000N
BAL432	22	10.0000	2.0000	0.7000	0.5000	1500.0000	0.5000L	200.0000N
BAL431	23	10.0000	2.0000	0.7000	0.7000	1000.0000	0.5000N	200.0000N
BAL458	24	7.0000	3.0000	3.0000	0.7000	1000.0000	0.5000N	200.0000N
BAL437	25	15.0000	7.0000	7.0000	0.7000	2000.0000	0.5000N	200.0000N
BAL469	26	10.0000	2.0000	1.5000	0.5000	1000.0000	0.5000L	200.0000N
BAL468	27	10.0000	2.0000	1.5000	0.5000	1500.0000	0.5000N	200.0000N
BAL467	28	5.0000	1.5000	1.0000	0.5000	700.0000	0.5000N	200.0000N
BAL457	29	7.0000	3.0000	1.5000	0.5000	1000.0000	0.5000N	200.0000N
BAL459	30	10.0000	3.0000	2.0000	0.7000	1500.0000	0.5000N	200.0000N
BAL445	31	5.0000	1.5000	1.5000	0.3000	700.0000	0.5000N	200.0000N
BAL446	32	7.0000	2.0000	2.0000	0.5000	700.0000	0.5000N	200.0000N
BAL460	33	10.0000	3.0000	1.5000	0.5000	1500.0000	0.5000N	200.0000N
BAL152	34	10.0000	5.0000	7.0000	1.0000	1500.0000	0.5000N	200.0000N
BAL151	35	10.0000	3.0000	1.5000	0.7000	1000.0000	0.5000N	200.0000N
BAL150	36	7.0000	3.0000	5.0000	0.7000	1000.0000	0.5000N	200.0000N
BAL149	37	7.0000	3.0000	7.0000	1.0000	1500.0000	0.5000N	200.0000N
BAL148	38	10.0000	3.0000	7.0000	1.0000	1500.0000	0.5000N	200.0000N
BAL147	39	7.0000	5.0000	7.0000	1.0000	1500.0000	0.5000N	200.0000N
BAL146	40	10.0000	3.0000	3.0000	1.0000	1500.0000	0.5000N	200.0000N
BAL145	41	7.0000	3.0000	5.0000	1.0000	1500.0000	0.5000N	200.0000N
BAL144	42	7.0000	3.0000	7.0000	1.0000	1500.0000	0.5000N	200.0000N
BAL143	43	7.0000	3.0000	7.0000	0.7000	1500.0000	0.5000N	200.0000N
BAL142	44	7.0000	3.0000	3.0000	0.7000	1000.0000	0.5000N	200.0000N
BAL140	45	7.0000	3.0000	3.0000	0.7000	700.0000	0.5000N	200.0000N
BAL139	46	7.0000	3.0000	3.0000	0.5000	1000.0000	0.5000N	200.0000N
BAL141	47	7.0000	3.0000	3.0000	0.7000	700.0000	0.5000N	200.0000N
BAL121	48	20.0000	7.0000	15.0000	1.0000G	2000.0000	0.5000N	200.0000N
BAL122	49	20.0000	7.0000	10.0000	1.0000	3000.0000	0.5000N	200.0000N
BAL123	50	20.0000	10.0000	15.0000	1.0000G	3000.0000	0.5000N	200.0000N

1 2 3 4 5 6 7 8 9

STREAM SEDIMENTS

TABLE 2

MAP#	SAMPLE	S-AU	S-B	S-BA	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA
1	BAL417	10.0000N	30.0000	700.0000	1.0000	10.0000N	20.0000N	15.0000	70.0000	100.0000	20.0000N
2	BAL416	10.0000N	50.0000	700.0000	1.0000L	10.0000N	20.0000N	30.0000	100.0000	100.0000	20.0000L
3	BAL418	10.0000N	20.0000	700.0000	1.0000L	10.0000N	20.0000N	30.0000	100.0000	150.0000	20.0000N
4	BAL442	10.0000N	30.0000	700.0000	1.0000L	10.0000N	20.0000N	30.0000	70.0000	100.0000	20.0000N
5	BAL441	10.0000N	50.0000	700.0000	1.0000L	10.0000N	20.0000N	30.0000	70.0000	150.0000	20.0000N
6	BAL440	10.0000N	10.0000L	300.0000	1.0000L	10.0000N	20.0000N	70.0000	70.0000	150.0000	50.0000
7	BAL420	10.0000N	10.0000L	300.0000	1.0000L	10.0000N	20.0000N	50.0000	150.0000	100.0000	20.0000N
8	BAL419	10.0000N	10.0000L	500.0000	1.0000L	10.0000N	20.0000N	70.0000	150.0000	150.0000	20.0000N
9	BAL421	10.0000N	20.0000	700.0000	1.0000L	10.0000N	20.0000N	30.0000	150.0000	150.0000	20.0000L
10	BAL438	10.0000N	10.0000L	300.0000	1.0000L	10.0000N	20.0000N	30.0000	200.0000	70.0000	20.0000N
11	BAL436	10.0000N	30.0000	700.0000	1.0000	10.0000N	20.0000N	30.0000	100.0000	70.0000	20.0000N
12	BAL423	10.0000N	10.0000	700.0000	1.0000L	10.0000N	20.0000N	30.0000	70.0000	70.0000	20.0000L
13	BAL422	10.0000N	10.0000	700.0000	1.0000	10.0000N	20.0000N	30.0000	70.0000	70.0000	20.0000
14	BAL424	10.0000N	15.0000	700.0000	1.0000L	10.0000N	20.0000N	30.0000	100.0000	70.0000	150.0000
15	BAL430	10.0000N	70.0000	700.0000	1.0000	10.0000N	20.0000N	30.0000	70.0000	100.0000	20.0000N
16	BAL429	10.0000N	70.0000	1500.0000	1.0000L	10.0000N	20.0000N	20.0000	70.0000	100.0000	20.0000L
17	BAL428	10.0000N	70.0000	1500.0000	1.0000L	10.0000N	20.0000N	20.0000	70.0000	100.0000	20.0000N
18	BAL427	10.0000N	30.0000	700.0000	1.0000L	10.0000N	20.0000N	30.0000	70.0000	150.0000	20.0000N
19	BAL426	10.0000N	50.0000	1500.0000	1.0000	10.0000N	20.0000N	50.0000	70.0000	150.0000	30.0000
20	BAL425	10.0000N	70.0000	700.0000	1.5000	10.0000N	20.0000N	30.0000	70.0000	150.0000	20.0000L
21	BAL433	10.0000N	70.0000	700.0000	1.0000L	10.0000N	20.0000N	30.0000	70.0000	150.0000	20.0000N
22	BAL432	10.0000N	70.0000	700.0000	1.0000L	10.0000N	20.0000N	30.0000	70.0000	150.0000	20.0000N
23	BAL431	10.0000N	70.0000	700.0000	1.0000L	10.0000N	20.0000N	30.0000	70.0000	70.0000	20.0000N
24	BAL458	10.0000N	30.0000	700.0000	1.0000L	10.0000N	20.0000N	20.0000	100.0000	70.0000	20.0000N
25	BAL437	10.0000N	10.0000L	300.0000	1.0000L	10.0000N	20.0000N	50.0000	100.0000	150.0000	20.0000N
26	BAL469	10.0000N	50.0000	700.0000	1.0000	10.0000N	20.0000N	30.0000	70.0000	70.0000	20.0000N
27	BAL468	10.0000N	50.0000	700.0000	1.0000	10.0000N	20.0000N	30.0000	70.0000	100.0000	20.0000N
28	BAL467	10.0000N	30.0000	700.0000	1.0000L	10.0000N	20.0000N	20.0000	70.0000	70.0000	20.0000L
29	BAL457	10.0000N	70.0000	500.0000	1.0000	10.0000N	20.0000N	20.0000	70.0000	70.0000	20.0000N
30	BAL459	10.0000N	20.0000	700.0000	1.0000	10.0000N	20.0000N	30.0000	100.0000	70.0000	20.0000L
31	BAL445	10.0000N	50.0000	700.0000	1.0000	10.0000N	20.0000N	20.0000	70.0000	30.0000	20.0000L
32	BAL446	10.0000N	50.0000	500.0000	1.0000	10.0000N	20.0000N	20.0000	70.0000	50.0000	20.0000N
33	BAL460	10.0000N	20.0000	700.0000	1.0000L	10.0000N	20.0000N	50.0000	150.0000	100.0000	20.0000N
34	BAL152	10.0000N	50.0000	300.0000	1.0000L	10.0000N	20.0000N	30.0000	150.0000	70.0000	20.0000L
35	BAL151	10.0000N	30.0000	500.0000	1.0000N	10.0000N	20.0000N	30.0000	150.0000	70.0000	20.0000N
36	BAL150	10.0000N	70.0000	500.0000	1.0000L	10.0000N	20.0000N	30.0000	100.0000	100.0000	20.0000N
37	BAL149	10.0000N	70.0000	500.0000	1.0000L	10.0000N	20.0000N	30.0000	150.0000	150.0000	20.0000L
38	BAL148	10.0000N	70.0000	500.0000	1.0000L	10.0000N	20.0000N	30.0000	150.0000	100.0000	20.0000L
39	BAL147	10.0000N	70.0000	500.0000	1.0000L	10.0000N	20.0000N	30.0000	150.0000	100.0000	20.0000L
40	BAL146	10.0000N	70.0000	500.0000	1.0000	10.0000N	20.0000N	30.0000	150.0000	70.0000	20.0000L
41	BAL145	10.0000N	150.0000	500.0000	1.0000L	10.0000N	20.0000N	30.0000	150.0000	70.0000	20.0000L
42	BAL144	10.0000N	30.0000	300.0000	1.0000L	10.0000N	20.0000N	30.0000	100.0000	100.0000	20.0000L
43	BAL143	10.0000N	15.0000	150.0000	1.0000L	10.0000N	20.0000N	30.0000	70.0000	150.0000	20.0000N
44	BAL142	10.0000N	100.0000	500.0000	1.0000	10.0000N	20.0000N	30.0000	150.0000	100.0000	20.0000L
45	BAL140	10.0000N	70.0000	300.0000	1.0000L	10.0000N	20.0000N	30.0000	150.0000	70.0000	20.0000L
46	BAL139	10.0000N	70.0000	300.0000	1.0000	10.0000N	20.0000N	30.0000	150.0000	100.0000	20.0000L
47	BAL141	10.0000N	70.0000	300.0000	1.0000	10.0000N	20.0000N	30.0000	150.0000	100.0000	20.0000L
48	BAL121	10.0000N	15.0000	150.0000	1.0000N	10.0000N	20.0000N	50.0000	150.0000	150.0000	20.0000N
49	BAL122	10.0000N	20.0000	300.0000	1.0000N	10.0000N	20.0000N	50.0000	150.0000	150.0000	20.0000N
50	BAL123	10.0000N	15.0000	300.0000	1.0000N	10.0000N	20.0000N	70.0000	150.0000	150.0000	20.0000N

10 11 12 13 14 15 16 17 18 19

STREAM SEDIMENTS

TABLE 2

MAP #	SAMPLE	S-MO	S-NB	S-NI	S-PB	S-SB	S-SC	S-SN	S-SR	S-V	S-W
1	BAL417	5.0000L	10.0000L	50.0000	15.0000	100.0000N	15.0000	10.0000N	300.0000	150.0000	50.0000N
2	BAL416	15.0000	10.0000L	70.0000	15.0000	100.0000N	20.0000	10.0000N	300.0000	200.0000	50.0000N
3	BAL418	5.0000L	10.0000L	70.0000	15.0000	100.0000N	30.0000	10.0000N	300.0000	300.0000	50.0000N
4	BAL442	5.0000L	10.0000L	70.0000	10.0000	100.0000N	30.0000	10.0000N	300.0000	200.0000	50.0000L
5	BAL441	5.0000L	10.0000L	70.0000	10.0000	100.0000N	20.0000	10.0000N	300.0000	200.0000	50.0000N
6	BAL440	5.0000L	10.0000L	50.0000	10.0000N	100.0000N	70.0000	10.0000N	700.0000	700.0000	50.0000N
7	BAL420	5.0000L	10.0000L	50.0000	10.0000N	100.0000N	70.0000	10.0000N	700.0000	700.0000	50.0000N
8	BAL419	5.0000L	10.0000L	70.0000	10.0000L	100.0000N	70.0000	10.0000N	700.0000	500.0000	50.0000N
9	BAL421	5.0000L	10.0000L	100.0000	15.0000	100.0000N	30.0000	10.0000N	500.0000	300.0000	50.0000N
10	BAL438	5.0000L	10.0000L	50.0000	10.0000N	100.0000N	70.0000	10.0000N	700.0000	700.0000	50.0000N
11	BAL436	5.0000L	10.0000	70.0000	10.0000	100.0000N	30.0000	10.0000N	300.0000	300.0000	50.0000N
12	BAL423	5.0000L	10.0000	70.0000	20.0000	100.0000N	30.0000	10.0000N	700.0000	300.0000	50.0000N
13	BAL422	5.0000L	10.0000	70.0000	15.0000	100.0000N	30.0000	10.0000N	500.0000	200.0000	50.0000N
14	BAL424	5.0000L	10.0000	70.0000	10.0000	100.0000N	30.0000	10.0000N	300.0000	300.0000	50.0000N
15	BAL430	5.0000L	10.0000	70.0000	10.0000	100.0000N	20.0000	10.0000N	300.0000	300.0000	50.0000N
16	BAL429	15.0000	10.0000L	70.0000	15.0000	100.0000N	20.0000	10.0000N	200.0000	500.0000	50.0000N
17	BAL428	10.0000	10.0000	70.0000	20.0000	100.0000N	20.0000	10.0000N	300.0000	500.0000	50.0000N
18	BAL427	5.0000L	10.0000L	70.0000	20.0000	100.0000N	20.0000	10.0000N	300.0000	200.0000	50.0000N
19	BAL426	7.0000	10.0000	100.0000	30.0000	100.0000N	30.0000	10.0000N	200.0000	300.0000	50.0000L
20	BAL425	5.0000	10.0000L	70.0000	30.0000	100.0000N	20.0000	10.0000N	200.0000	300.0000	50.0000L
21	BAL433	5.0000L	10.0000	70.0000	20.0000	100.0000N	30.0000	10.0000N	300.0000	200.0000	50.0000N
22	BAL432	5.0000L	10.0000	100.0000	30.0000	100.0000N	30.0000	10.0000N	200.0000	300.0000	50.0000N
23	BAL431	5.0000L	10.0000	70.0000	10.0000L	100.0000N	20.0000	10.0000N	200.0000	200.0000	50.0000N
24	BAL458	5.0000L	10.0000L	70.0000	10.0000	100.0000N	30.0000	10.0000N	300.0000	300.0000	50.0000N
25	BAL437	5.0000L	10.0000L	50.0000	10.0000N	100.0000N	70.0000	10.0000N	300.0000	500.0000	50.0000N
26	BAL469	5.0000L	10.0000L	70.0000	20.0000	100.0000N	20.0000	10.0000N	300.0000	200.0000	50.0000N
27	BAL468	5.0000L	10.0000L	70.0000	30.0000	100.0000N	20.0000	10.0000N	300.0000	300.0000	50.0000N
28	BAL467	5.0000L	10.0000L	50.0000	15.0000	100.0000N	20.0000	10.0000N	300.0000	200.0000	50.0000N
29	BAL457	5.0000L	10.0000L	50.0000	10.0000	100.0000N	20.0000	10.0000N	300.0000	300.0000	50.0000N
30	BAL459	7.0000	10.0000	70.0000	10.0000	100.0000N	30.0000	10.0000N	300.0000	300.0000	50.0000N
31	BAL445	5.0000L	10.0000L	70.0000	15.0000	100.0000N	20.0000	10.0000N	300.0000	200.0000	50.0000N
32	BAL446	5.0000L	10.0000L	70.0000	15.0000	100.0000N	20.0000	10.0000N	300.0000	200.0000	50.0000N
33	BAL460	5.0000L	10.0000L	70.0000	10.0000	100.0000N	30.0000	10.0000N	300.0000	300.0000	50.0000N
34	BAL152	5.0000L	10.0000	70.0000	10.0000	100.0000N	30.0000	10.0000N	500.0000	500.0000	50.0000N
35	BAL151	5.0000L	15.0000	70.0000	20.0000	100.0000N	20.0000	10.0000N	300.0000	300.0000	50.0000N
36	BAL150	5.0000L	15.0000	70.0000	15.0000	100.0000N	20.0000	10.0000N	500.0000	300.0000	50.0000N
37	BAL149	5.0000L	15.0000	70.0000	20.0000	100.0000N	30.0000	10.0000N	700.0000	500.0000	50.0000N
38	BAL148	5.0000L	15.0000	70.0000	20.0000	100.0000N	30.0000	10.0000N	500.0000	300.0000	50.0000N
39	BAL147	5.0000L	15.0000	100.0000	15.0000	100.0000N	30.0000	10.0000N	500.0000	300.0000	50.0000N
40	BAL146	5.0000L	15.0000	70.0000	15.0000	100.0000N	30.0000	10.0000N	700.0000	300.0000	50.0000N
41	BAL145	5.0000L	10.0000	70.0000	15.0000	100.0000N	30.0000	10.0000N	300.0000	300.0000	50.0000N
42	BAL144	5.0000L	10.0000	50.0000	15.0000	100.0000N	30.0000	10.0000N	700.0000	300.0000	50.0000N
43	BAL143	5.0000L	15.0000	50.0000	10.0000L	100.0000N	30.0000	10.0000N	700.0000	500.0000	50.0000N
44	BAL142	5.0000L	15.0000	70.0000	15.0000	100.0000N	30.0000	10.0000N	300.0000	300.0000	50.0000N
45	BAL140	5.0000L	15.0000	70.0000	15.0000	100.0000N	20.0000	10.0000N	300.0000	300.0000	50.0000N
46	BAL139	5.0000L	15.0000	70.0000	15.0000	100.0000N	20.0000	10.0000N	300.0000	300.0000	50.0000N
47	BAL141	5.0000L	15.0000	70.0000	15.0000	100.0000N	30.0000	10.0000N	300.0000	300.0000	50.0000N
48	BAL121	5.0000L	10.0000	50.0000	10.0000L	100.0000N	100.0000	10.0000N	700.0000	700.0000	50.0000N
49	BAL122	5.0000	10.0000	70.0000	15.0000	100.0000N	70.0000	10.0000N	700.0000	1000.0000	50.0000N
50	BAL123	5.0000	10.0000	70.0000	15.0000	100.0000N	100.0000	10.0000N	700.0000	1000.0000	50.0000N
		20	21	22	23	24	25	26	27	28	29

STREAM SEDIMENTS TABLE 2

MAP#	SAMPLE	S-Y	S-ZN	S-ZR	AA-AU-P
1	BAL417	20.0000	200.0000N	100.0000	0.0200L
2	BAL416	30.0000	200.0000N	150.0000	0.0200L
3	BAL418	20.0000	200.0000N	150.0000	0.0200L
4	BAL442	30.0000	200.0000N	150.0000	0.0200L
5	BAL441	20.0000	200.0000N	100.0000	0.0200L
6	BAL440	30.0000	200.0000N	70.0000	0.0200L
7	BAL420	30.0000	200.0000N	70.0000	0.0200L
8	BAL419	30.0000	200.0000N	100.0000	0.0200L
9	BAL421	30.0000	200.0000N	150.0000	0.0200L
10	BAL438	15.0000	200.0000N	30.0000	0.0200L
11	BAL436	30.0000	200.0000N	200.0000	0.0200L
12	BAL423	30.0000	200.0000N	150.0000	0.0200L
13	BAL422	30.0000	200.0000N	150.0000	0.0200L
14	BAL424	30.0000	200.0000N	100.0000	0.0200L
15	BAL430	30.0000	200.0000N	150.0000	0.0400L
16	BAL429	30.0000	300.0000	150.0000	0.0200L
17	BAL428	30.0000	300.0000	150.0000	0.0200L
18	BAL427	30.0000	200.0000N	150.0000	0.0200L
19	BAL426	50.0000	500.0000	150.0000	0.0400L
20	BAL425	30.0000	300.0000	100.0000	0.0400L
21	BAL433	20.0000	200.0000N	150.0000	0.0200L
22	BAL432	30.0000	200.0000N	100.0000	0.0200L
23	BAL431	20.0000	200.0000N	100.0000	0.0400L
24	BAL458	20.0000	200.0000N	100.0000	0.0200L
25	BAL437	30.0000	200.0000N	70.0000	0.0200L
26	BAL469	20.0000	200.0000N	150.0000	0.0200L
27	BAL468	20.0000	200.0000N	150.0000	0.0200L
28	BAL467	15.0000	200.0000N	150.0000	0.0200L
29	BAL457	20.0000	200.0000N	100.0000	0.0200L
30	BAL459	20.0000	200.0000N	100.0000	0.0400L
31	BAL445	20.0000	200.0000N	300.0000	0.0200L
32	BAL446	20.0000	200.0000N	150.0000	0.0200L
33	BAL460	20.0000	200.0000N	100.0000	0.0200L
34	BAL152	30.0000	200.0000N	150.0000	0.0200L
35	BAL151	20.0000	200.0000N	100.0000	0.0200L
36	BAL150	30.0000	200.0000L	150.0000	0.0200L
37	BAL149	30.0000	200.0000N	150.0000	0.0200L
38	BAL148	20.0000	200.0000N	150.0000	0.0200L
39	BAL147	30.0000	200.0000N	150.0000	0.0200L
40	BAL146	30.0000	200.0000L	150.0000	0.0200L
41	BAL145	30.0000	200.0000N	200.0000	0.0200L
42	BAL144	20.0000	200.0000N	150.0000	0.0200L
43	BAL143	20.0000	200.0000N	70.0000	0.0200L
44	BAL142	30.0000	200.0000L	150.0000	0.0200L
45	BAL140	20.0000	200.0000N	150.0000	0.0200L
46	BAL139	20.0000	200.0000N	150.0000	0.0200L
47	BAL141	30.0000	200.0000L	150.0000	0.0200L
48	BAL121	30.0000	200.0000L	200.0000	0.0200L
49	BAL122	30.0000	200.0000L	150.0000	0.0200L
50	BAL123	30.0000	200.0000N	150.0000	0.0200L

30 31 32 33

STREAM SEDIMENTS

TABLE 2

SAMPLE	MAP NUMBER	S-FE %	S-MG %	S-CA %	S-TI %	S-MN	S-AG	S-AS
BAL124	51	10.0000	5.0000	7.0000	1.0000	1500.0000	0.5000N	200.0000N
BAL125	52	7.0000	3.0000	3.0000	0.7000	1000.0000	0.5000N	200.0000N
BAL093	53	10.0000	5.0000	3.0000	1.0000	1500.0000	0.5000N	200.0000N
BAL094	54	10.0000	3.0000	2.0000	1.0000	1500.0000	0.5000L	200.0000N
BAL434	55	10.0000	3.0000	0.2000	0.5000	1500.0000	0.5000N	200.0000N
BAL435	56	10.0000	3.0000	3.0000	0.7000	1000.0000	0.5000N	200.0000N
BAL063	57	15.0000	5.0000	7.0000	0.7000	1500.0000	0.5000N	200.0000N
BAL108	58	10.0000	3.0000	10.0000	1.0000	1500.0000	0.5000N	200.0000N
BAL062	59	7.0000	3.0000	5.0000	0.5000	1500.0000	0.5000N	200.0000N
BAL061	60	10.0000	3.0000	1.5000	0.7000	1000.0000	0.5000N	200.0000N
BAL107	61	10.0000	3.0000	5.0000	1.0000	1000.0000	0.5000N	200.0000N
BAL060	62	10.0000	5.0000	7.0000	1.0000	1500.0000	0.5000N	200.0000N
BAL059	63	10.0000	5.0000	5.0000	0.7000	1500.0000	0.5000N	200.0000N
BAL106	64	10.0000	3.0000	3.0000	1.0000	1500.0000	0.5000N	200.0000N
BAL058	65	15.0000	5.0000	5.0000	1.0000	1500.0000	0.5000N	200.0000N
BAL057	66	15.0000	5.0000	5.0000	1.0000	1500.0000	0.5000N	200.0000N
BAL056	67	10.0000	2.0000	0.7000	0.7000	1500.0000	0.5000N	200.0000N
BAL447	68	7.0000	3.0000	1.0000	0.5000	700.0000	0.5000N	200.0000N
BAL448	69	7.0000	2.0000	1.5000	0.5000	700.0000	0.5000N	200.0000N
BAL449	70	7.0000	3.0000	1.5000	0.5000	700.0000	0.5000N	200.0000N
BAL450	71	7.0000	3.0000	1.5000	0.5000	700.0000	0.5000N	200.0000N
BAL451	72	7.0000	2.0000	1.5000	0.5000	700.0000	0.5000L	200.0000N
BAL452	73	7.0000	2.0000	1.5000	0.5000	700.0000	0.5000N	200.0000N
BAL453	74	7.0000	3.0000	2.0000	0.5000	1000.0000	0.5000N	200.0000N
BAL454	75	10.0000	3.0000	2.0000	0.5000	1000.0000	0.5000N	200.0000N
BAL455	76	7.0000	2.0000	1.5000	0.7000	1000.0000	0.5000N	200.0000N
BAL456	77	7.0000	3.0000	3.0000	0.5000	1000.0000	0.5000N	200.0000N
BAL444	78	7.0000	2.0000	1.5000	0.5000	700.0000	0.5000N	200.0000N
BAL466	79	7.0000	1.5000	1.5000	0.5000	500.0000	0.5000N	200.0000N
BAL465	80	10.0000	3.0000	1.0000	0.7000	1000.0000	0.5000N	200.0000N
BAL464	81	10.0000	3.0000	1.5000	0.7000	1000.0000	0.5000N	200.0000N
BAL461	82	7.0000	2.0000	1.5000	0.5000	1000.0000	0.5000N	200.0000N
BAL462	83	10.0000	3.0000	1.5000	0.7000	1500.0000	0.5000N	200.0000N
BAL463	84	10.0000	3.0000	3.0000	0.5000	1500.0000	0.5000N	200.0000N
AGG284	85	5.0000	3.0000	5.0000	0.5000	700.0000	3.0000	200.0000N
AGG287	86	5.0000	2.0000	3.0000	0.1500	500.0000	0.5000N	200.0000N
AGG282	87	15.0000	3.0000	5.0000	0.7000	2000.0000	0.5000N	200.0000N
AGG286	88	3.0000	2.0000	2.0000	0.2000	500.0000	0.5000N	200.0000N
AGG277	89	5.0000	5.0000	10.0000	0.1500	1000.0000	0.5000N	200.0000N
AGG276	90	15.0000	3.0000	7.0000	0.3000	1500.0000	0.5000N	200.0000N

1 2 3 4 5 6 7 8 9

STREAM SEDIMENTS

TABLE 2

MAP#	SAMPLE	S-AU	S-B	S-BA	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA
51	BAL124	10.0000N	200.0000	700.0000	1.0000	10.0000N	20.0000N	30.0000	150.0000	150.0000	20.0000N
52	BAL125	10.0000N	50.0000	500.0000	1.0000L	10.0000N	20.0000N	30.0000	100.0000	100.0000	20.0000L
53	BAL093	10.0000N	200.0000	700.0000	1.0000L	10.0000N	20.0000N	30.0000	150.0000	150.0000	20.0000N
54	BAL094	10.0000N	100.0000	500.0000	1.0000L	10.0000N	20.0000N	30.0000	150.0000	200.0000	20.0000N
55	BAL434	10.0000N	70.0000	700.0000	1.0000L	10.0000N	20.0000N	30.0000	150.0000	150.0000	20.0000N
56	BAL435	10.0000N	20.0000	700.0000	1.0000L	10.0000N	20.0000N	30.0000	150.0000	100.0000	20.0000N
57	BAL063	10.0000N	70.0000	300.0000	1.0000L	10.0000N	20.0000N	30.0000	150.0000	150.0000	20.0000N
58	BAL108	10.0000N	100.0000	700.0000	1.0000L	10.0000N	20.0000N	30.0000	150.0000	100.0000	20.0000L
59	BAL062	10.0000N	50.0000	300.0000	1.0000L	10.0000N	20.0000N	30.0000	100.0000	150.0000	20.0000N
60	BAL061	10.0000N	70.0000	300.0000	1.0000L	10.0000N	20.0000N	30.0000	150.0000	150.0000	20.0000N
61	BAL107	10.0000N	70.0000	500.0000	1.0000L	10.0000N	20.0000N	30.0000	150.0000	100.0000	20.0000N
62	BAL060	10.0000N	70.0000	500.0000	1.0000L	10.0000N	20.0000N	30.0000	150.0000	150.0000	20.0000N
63	BAL059	10.0000N	50.0000	300.0000	1.0000L	10.0000N	20.0000N	30.0000	150.0000	100.0000	20.0000N
64	BAL106	10.0000N	100.0000	700.0000	1.0000L	10.0000N	20.0000N	30.0000	150.0000	100.0000	20.0000L
65	BAL058	10.0000N	70.0000	300.0000	1.0000L	10.0000N	20.0000N	30.0000	150.0000	150.0000	20.0000N
66	BAL057	10.0000N	70.0000	300.0000	1.0000L	10.0000N	20.0000N	30.0000	150.0000	150.0000	20.0000N
67	BAL056	10.0000N	70.0000	300.0000	1.0000L	10.0000N	20.0000N	30.0000	100.0000	100.0000	20.0000N
68	BAL447	10.0000N	30.0000	700.0000	1.0000L	10.0000N	20.0000N	30.0000	100.0000	70.0000	20.0000L
69	BAL448	10.0000N	30.0000	700.0000	1.0000	10.0000N	20.0000N	30.0000	100.0000	70.0000	20.0000L
70	BAL449	10.0000N	50.0000	500.0000	1.0000L	10.0000N	20.0000N	20.0000	70.0000	70.0000	20.0000N
71	BAL450	10.0000N	30.0000	700.0000	1.0000L	10.0000N	20.0000N	20.0000	150.0000	70.0000	20.0000N
72	BAL451	10.0000N	50.0000	700.0000	1.0000L	10.0000N	20.0000N	30.0000	100.0000	70.0000	20.0000N
73	BAL452	10.0000N	30.0000	700.0000	1.0000	10.0000N	20.0000N	30.0000	70.0000	70.0000	20.0000N
74	BAL453	10.0000N	50.0000	700.0000	1.0000	10.0000N	20.0000N	30.0000	100.0000	70.0000	20.0000L
75	BAL454	10.0000N	70.0000	700.0000	1.0000	10.0000N	20.0000N	30.0000	150.0000	70.0000	20.0000L
76	BAL455	10.0000N	50.0000	700.0000	1.0000	10.0000N	20.0000N	30.0000	70.0000	70.0000	20.0000
77	BAL456	10.0000N	30.0000	700.0000	1.0000L	10.0000N	20.0000N	20.0000	70.0000	70.0000	20.0000
78	BAL444	10.0000N	30.0000	700.0000	1.0000	10.0000N	20.0000N	30.0000	100.0000	70.0000	20.0000N
79	BAL466	10.0000N	30.0000	300.0000	1.0000L	10.0000N	20.0000N	20.0000	50.0000	15.0000	20.0000N
80	BAL465	10.0000N	50.0000	700.0000	1.0000L	10.0000N	20.0000N	30.0000	100.0000	100.0000	20.0000N
81	BAL464	10.0000N	70.0000	700.0000	1.0000	10.0000N	20.0000N	30.0000	100.0000	70.0000	20.0000L
82	BAL461	10.0000N	30.0000	500.0000	1.0000L	10.0000N	20.0000N	20.0000	70.0000	70.0000	20.0000N
83	BAL462	10.0000N	50.0000	700.0000	1.0000	10.0000N	20.0000N	30.0000	100.0000	70.0000	20.0000L
84	BAL463	10.0000N	70.0000	700.0000	1.0000L	10.0000N	20.0000N	20.0000	100.0000	70.0000	20.0000L
85	AGG284	10.0000L	30.0000	500.0000	1.0000N	10.0000N	20.0000N	15.0000	100.0000	70.0000	20.0000N
86	AGG287	10.0000N	20.0000	500.0000	1.0000N	10.0000N	20.0000N	15.0000	100.0000	100.0000	20.0000
87	AGG282	10.0000N	700.0000	1000.0000	1.0000N	10.0000N	20.0000N	20.0000	150.0000	150.0000	20.0000L
88	AGG286	10.0000N	20.0000	500.0000	1.0000N	10.0000N	20.0000N	15.0000	100.0000	50.0000	20.0000
89	AGG277	10.0000N	15.0000	200.0000	1.0000N	10.0000N	20.0000N	10.0000	150.0000	50.0000	20.0000L
90	AGG276	10.0000N	10.0000	300.0000	1.0000N	10.0000N	20.0000N	50.0000	150.0000	500.0000	20.0000L
		10	11	12	13	14	15	16	17	18	19

STREAM SEDIMENTS

TABLE 2

MAP #	SAMPLE	S-MO	S-NB	S-NI	S-PB	S-SB	S-SC	S-SN	S-SR	S-V	S-W
51	BAL124	5.0000L	10.0000	100.0000	20.0000	100.0000N	30.0000	10.0000N	700.0000	300.0000	50.0000N
52	BAL125	5.0000L	10.0000	70.0000	30.0000	100.0000N	20.0000	10.0000N	500.0000	300.0000	50.0000N
53	BAL093	5.0000	15.0000	100.0000	20.0000	100.0000N	30.0000	10.0000N	300.0000	300.0000	50.0000N
54	BAL094	5.0000L	15.0000	100.0000	70.0000	100.0000N	30.0000	10.0000N	300.0000	300.0000	50.0000N
55	BAL434	5.0000L	10.0000	100.0000	10.0000	100.0000N	30.0000	10.0000N	300.0000	300.0000	50.0000N
56	BAL435	5.0000L	10.0000L	70.0000	10.0000L	100.0000N	30.0000	10.0000N	300.0000	200.0000	50.0000N
57	BAL063	5.0000L	10.0000	100.0000	20.0000	100.0000N	30.0000	10.0000N	300.0000	300.0000	50.0000N
58	BAL108	5.0000L	15.0000	100.0000	20.0000	100.0000N	30.0000	10.0000N	300.0000	300.0000	50.0000N
59	BAL062	5.0000N	10.0000L	70.0000	20.0000	100.0000N	30.0000	10.0000N	500.0000	300.0000	50.0000N
60	BAL061	5.0000N	10.0000	100.0000	15.0000	100.0000N	30.0000	10.0000N	300.0000	300.0000	50.0000N
61	BAL107	5.0000L	10.0000	70.0000	30.0000	100.0000N	30.0000	10.0000N	300.0000	300.0000	50.0000N
62	BAL060	5.0000L	10.0000	100.0000	15.0000	100.0000N	30.0000	10.0000N	700.0000	300.0000	50.0000N
63	BAL059	5.0000L	10.0000	100.0000	10.0000	100.0000N	30.0000	10.0000N	300.0000	300.0000	50.0000N
64	BAL106	5.0000L	15.0000	70.0000	20.0000	100.0000N	30.0000	10.0000N	300.0000	500.0000	50.0000N
65	BAL058	5.0000L	10.0000	100.0000	15.0000	100.0000N	30.0000	10.0000N	500.0000	300.0000	50.0000N
66	BAL057	5.0000L	10.0000	70.0000	15.0000	100.0000N	30.0000	10.0000N	500.0000	300.0000	50.0000N
67	BAL056	5.0000L	10.0000	70.0000	30.0000	100.0000N	30.0000	10.0000N	300.0000	300.0000	50.0000N
68	BAL447	5.0000L	10.0000L	70.0000	30.0000	100.0000N	20.0000	10.0000N	150.0000	200.0000	50.0000N
69	BAL448	5.0000L	10.0000L	70.0000	20.0000	100.0000N	30.0000	10.0000N	150.0000	300.0000	50.0000N
70	BAL449	5.0000L	10.0000L	50.0000	30.0000	100.0000N	20.0000	10.0000N	150.0000	200.0000	50.0000N
71	BAL450	5.0000L	10.0000L	70.0000	20.0000	100.0000N	20.0000	10.0000N	150.0000	200.0000	50.0000L
72	BAL451	5.0000L	10.0000L	70.0000	30.0000	100.0000N	20.0000	10.0000N	200.0000	200.0000	50.0000L
73	BAL452	5.0000L	10.0000L	70.0000	20.0000	100.0000N	20.0000	10.0000N	200.0000	300.0000	50.0000N
74	BAL453	5.0000L	10.0000	70.0000	30.0000	100.0000N	20.0000	10.0000N	300.0000	300.0000	50.0000N
75	BAL454	5.0000L	10.0000L	70.0000	20.0000	100.0000N	30.0000	10.0000N	200.0000	300.0000	50.0000L
76	BAL455	5.0000L	10.0000L	70.0000	30.0000	100.0000N	20.0000	10.0000N	300.0000	200.0000	50.0000N
77	BAL456	5.0000L	10.0000L	70.0000	15.0000	100.0000N	20.0000	10.0000N	300.0000	300.0000	50.0000N
78	BAL444	5.0000L	10.0000L	70.0000	15.0000	100.0000N	20.0000	10.0000N	200.0000	300.0000	50.0000N
79	BAL466	5.0000L	10.0000L	50.0000	10.0000N	100.0000N	20.0000	10.0000N	150.0000	150.0000	50.0000N
80	BAL465	5.0000L	10.0000L	70.0000	30.0000	100.0000N	30.0000	10.0000N	150.0000	300.0000	50.0000N
81	BAL464	5.0000L	10.0000L	70.0000	20.0000	100.0000N	30.0000	10.0000N	300.0000	300.0000	50.0000N
82	BAL461	5.0000L	10.0000L	50.0000	20.0000	100.0000N	20.0000	10.0000N	300.0000	200.0000	50.0000L
83	BAL462	5.0000L	10.0000L	70.0000	30.0000	100.0000N	20.0000	10.0000N	300.0000	300.0000	50.0000N
84	BAL463	5.0000L	10.0000 L	70.0000	15.0000	100.0000N	30.0000	10.0000N	300.0000	300.0000	50.0000N
85	AGG284	5.0000N	10.0000L	150.0000	10.0000L	100.0000N	70.0000	10.0000N	150.0000	500.0000	50.0000N
86	AGG287	5.0000	10.0000L	50.0000	10.0000	100.0000N	20.0000	10.0000N	500.0000	150.0000	50.0000N
87	AGG282	5.0000N	10.0000L	150.0000	10.0000N	100.0000N	70.0000	10.0000N	200.0000	300.0000	50.0000N
88	AGG286	5.0000L	10.0000L	30.0000	10.0000	100.0000N	15.0000	10.0000N	300.0000	150.0000	50.0000N
89	AGG277	5.0000N	10.0000L	200.0000	10.0000N	100.0000N	70.0000	10.0000N	150.0000	300.0000	50.0000N
90	AGG276	5.0000N	10.0000L	100.0000	10.0000L	100.0000N	30.0000	10.0000N	200.0000	300.0000	50.0000N
		20	21	22	23	24	25	26	27	28	29

STREAM SEDIMENTS

TABLE 2

MAP#	SAMPLE	S-Y	S-ZN	S-ZR	AA-AU-P
51	BAL124	30.0000	200.0000N	200.0000	0.0200L
52	BAL125	20.0000	200.0000L	150.0000	0.0200L
53	BAL093	50.0000	200.0000L	200.0000	0.0200L
54	BAL094	30.0000	200.0000L	150.0000	0.0200L
55	BAL434	30.0000	200.0000N	150.0000	0.0200L
56	BAL435	20.0000	200.0000N	100.0000	0.0200L
57	BAL063	30.0000	200.0000N	150.0000	0.0400
58	BAL108	30.0000	200.0000L	300.0000	0.0200L
59	BAL062	20.0000	200.0000N	70.0000	0.0600
60	BAL061	20.0000	200.0000N	150.0000	0.3000
61	BAL107	30.0000	200.0000N	300.0000	0.0200L
62	BAL060	30.0000	200.0000N	150.0000	0.0200L
63	BAL059	30.0000	200.0000L	150.0000	0.0400L
64	BAL106	30.0000	200.0000L	300.0000	0.0200L
65	BAL058	30.0000	200.0000N	150.0000	0.2000
66	BAL057	30.0000	200.0000N	150.0000	0.5000
67	BAL056	20.0000	200.0000L	150.0000	0.1000
68	BAL447	20.0000	200.0000N	150.0000	0.0200L
69	BAL448	30.0000	200.0000N	150.0000	0.0200L
70	BAL449	15.0000	200.0000N	100.0000	0.0200L
71	BAL450	20.0000	200.0000N	150.0000	0.0200L
72	BAL451	20.0000	200.0000N	150.0000	0.0200L
73	BAL452	20.0000	200.0000N	100.0000	0.0200L
74	BAL453	20.0000	200.0000N	150.0000	0.0200L
75	BAL454	30.0000	200.0000N	150.0000	0.0200L
76	BAL455	20.0000	200.0000N	150.0000	0.0200L
77	BAL456	20.0000	200.0000N	100.0000	0.0200L
78	BAL444	20.0000	200.0000N	150.0000	0.0200L
79	BAL466	15.0000	200.0000N	100.0000	0.0200L
80	BAL465	30.0000	200.0000N	150.0000	0.0200L
81	BAL464	30.0000	200.0000N	150.0000	0.0200L
82	BAL461	20.0000	200.0000N	150.0000	0.0200L
83	BAL462	20.0000	200.0000N	150.0000	0.0200L
84	BAL463	20.0000	200.0000N	100.0000	0.0200L
85	AGG284	30.0000	200.0000L	150.0000	0.0200L
86	AGG287	30.0000	200.0000L	70.0000	0.0200L
87	AGG282	30.0000	200.0000L	150.0000	0.0200L
88	AGG286	20.0000	200.0000L	150.0000	0.0200L
89	AGG277	10.0000	200.0000L	30.0000	0.0200L
90	AGG276	10.0000	200.0000N	30.0000	0.0200L

30 31 32 33

FREQUENCY TABLE FOR COLUMN 3 (S-FE %)

TABLE 2

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E-02 -	5.6E-02	0	0	0.0	0.0
5.6E-02 -	8.3E-02	0	0	0.0	0.0
8.3E-02 -	1.2E-01	0	0	0.0	0.0
1.2E-01 -	1.8E-01	0	0	0.0	0.0
1.8E-01 -	2.6E-01	0	0	0.0	0.0
2.6E-01 -	3.8E-01	0	0	0.0	0.0
3.8E-01 -	5.6E-01	0	0	0.0	0.0
5.6E-01 -	8.3E-01	0	0	0.0	0.0
8.3E-01 -	1.2E 00	0	0	0.0	0.0
1.2E 00 -	1.8E 00	0	0	0.0	0.0
1.8E 00 -	2.6E 00	0	0	0.0	0.0
2.6E 00 -	3.8E 00	1	1	1.11	1.11
3.8E 00 -	5.6E 00	5	6	5.56	6.67
5.6E 00 -	8.3E 00	32	38	35.56	42.22
8.3E 00 -	1.2E 01	38	76	42.22	84.44
1.2E 01 -	1.8E 01	11	87	12.22	96.67
1.8E 01 -	2.6E 01	3	90	3.33	100.00

HISTOGRAM FOR COLUMN 3 (S-FE %)

```
3.0E 00 X
5.0E 00 XXXXXX
7.0E 00 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.0E 01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.5E 01 XXXXXXXXXXXX
2.0E 01 XXX
```

N	L	G	ANALYTICAL VALUES
0	0	0	90
0.0	0.0	0.0	

MAXIMUM = 2.00059E 01
MINIMUM = 3.00006E 00
GEOMETRIC MEAN = 8.99369E 00
GEOMETRIC DEVIATION = 1.40206E 00

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FREQUENCY TABLE FOR COLUMN 4 (S-MC %) TABLE 2

LIMITS LOWER - UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E-02 - 2.6E-02	0	0	0.0	0.0
2.6E-02 - 3.8E-02	0	0	0.0	0.0
3.8E-02 - 5.6E-02	0	0	0.0	0.0
5.6E-02 - 8.3E-02	0	0	0.0	0.0
8.3E-02 - 1.2E-01	0	0	0.0	0.0
1.2E-01 - 1.8E-01	0	0	0.0	0.0
1.8E-01 - 2.6E-01	0	0	0.0	0.0
2.6E-01 - 3.8E-01	0	0	0.0	0.0
3.8E-01 - 5.6E-01	0	0	0.0	0.0
5.6E-01 - 8.3E-01	0	0	0.0	0.0
8.3E-01 - 1.2E 00	0	0	0.0	0.0
1.2E 00 - 1.8E 00	7	7	7.78	7.78
1.8E 00 - 2.6E 00	25	32	27.78	35.56
2.6E 00 - 3.8E 00	40	72	44.44	80.00
3.8E 00 - 5.6E 00	10	82	11.11	91.11
5.6E 00 - 8.3E 00	7	89	7.78	98.89
8.3E 00 - 1.2E 01	1	90	1.11	100.00

HISTOGRAM FOR COLUMN 4 (S-MC %)

```
1.5E 00 XXXXXXX
2.0E 00 XXXXXXXXXXXXXXXXXXXXXXXXX
3.0E 00 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
5.0E 00 XXXXXXXXXX
7.0E 00 XXXXXXX
1.0E 01 X
```

N	L	G	ANALYTICAL VALUES
0	0	0	90
0.0	0.0	0.0	

MAXIMUM = 1.00000E 01
MINIMUM = 1.50000E 00
GEOMETRIC MEAN = 2.90983E 00
GEOMETRIC DEVIATION = 1.53767E 00

FREQUENCY TABLE FOR COLUMN 5 (S-CA %) TABLE 2

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E-02 -	5.6E-02	0	0	0.0	0.0
5.6E-02 -	8.3E-02	0	0	0.0	0.0
8.3E-02 -	1.2E-01	0	0	0.0	0.0
1.2E-01 -	1.8E-01	0	0	0.0	0.0
1.8E-01 -	2.6E-01	1	1	1.11	1.11
2.6E-01 -	3.8E-01	0	1	0.0	1.11
3.8E-01 -	5.6E-01	0	1	0.0	1.11
5.6E-01 -	8.3E-01	7	8	7.78	8.89
8.3E-01 -	1.2E 00	6	14	6.67	15.56
1.2E 00 -	1.8E 00	25	39	27.78	43.33
1.8E 00 -	2.6E 00	9	48	10.00	53.33
2.6E 00 -	3.8E 00	13	61	14.44	67.78
3.8E 00 -	5.6E 00	9	70	10.00	77.78
5.6E 00 -	8.3E 00	15	85	16.67	94.44
8.3E 00 -	1.2E 01	3	88	3.33	97.78
1.2E 01 -	1.8E 01	2	90	2.22	100.00

HISTOGRAM FOR COLUMN 5 (S-CA %)

```
2.0E-01 X
3.0E-01
5.0E-01
7.0E-01 XXXXXXXX
1.0E 00 XXXXXXX
1.5E 00 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
2.0E 00 XXXXXXXXXX
3.0E 00 XXXXXXXXXXXXX
5.0E 00 XXXXXXXXXX
7.0E 00 XXXXXXXXXXXXXXXXX
1.0E 01 XXX
1.5E 01 XX
```

N	L	G	ANALYTICAL VALUES
0	0	0	90
0.0	0.0	0.0	

MAXIMUM = 1.5000CE 01
MINIMUM = 2.00000E-01
GEOMETRIC MEAN = 2.5[illegible]226E 00
GEOMETRIC DEVIATION = 2.312927 0[illegible]

FREQUENCY TABLE FOR COLUMN 6 (S-TI %) TABLE 2

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E-03 -	2.6E-03	0	0	0.0	0.0
2.6E-03 -	3.8E-03	0	0	0.0	0.0
3.8E-03 -	5.6E-03	0	0	0.0	0.0
5.6E-03 -	8.3E-03	0	0	0.0	0.0
8.3E-03 -	1.2E-02	0	0	0.0	0.0
1.2E-02 -	1.8E-02	0	0	0.0	0.0
1.8E-02 -	2.6E-02	0	0	0.0	0.0
2.6E-02 -	3.8E-02	0	0	0.0	0.0
3.8E-02 -	5.6E-02	0	0	0.0	0.0
5.6E-02 -	8.3E-02	0	0	0.0	0.0
8.3E-02 -	1.2E-01	0	0	0.0	0.0
1.2E-01 -	1.8E-01	2	2	2.22	2.22
1.8E-01 -	2.6E-01	1	3	1.11	3.33
2.6E-01 -	3.8E-01	2	5	2.22	5.56
3.8E-01 -	5.6E-01	29	34	32.22	37.78
5.6E-01 -	8.3E-01	37	71	41.11	78.89
8.3E-01 -	1.2E 00	17	88	18.89	97.78

HISTOGRAM FOR COLUMN 6 (S-TI %)

```
      1.5E-01 XX
      2.0E-01 X
      3.0E-01 XX
      5.0E-01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
      7.0E-01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
      1.0E 00 XXXXXXXXXXXXXXXXXXX
```

N	L	G	ANALYTICAL VALUES
0	0	2	88
0.0	0.0	2.22	

MAXIMUM = 1.0000E 00
MINIMUM = 1.5000E-01
GEOMETRIC MEAN = 6.2678ZE-01
GEOMETRIC DEVIATION = 1.4525ZE 00

FREQUENCY TABLE FOR COLUMN ▼ (S-MN) TABLE 2

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E 00 -	1.2E 01	0	0	0.0	0.0
1.2E 01 -	1.8E 01	0	0	0.0	0.0
1.8E 01 -	2.6E 01	0	0	0.0	0.0
2.6E 01 -	3.8E 01	0	0	0.0	0.0
3.8E 01 -	5.6E 01	0	0	0.0	0.0
5.6E 01 -	8.3E 01	0	0	0.0	0.0
8.3E 01 -	1.2E 02	0	0	0.0	0.0
1.2E 02 -	1.8E 02	0	0	0.0	0.0
1.8E 02 -	2.6E 02	0	0	0.0	0.0
2.6E 02 -	3.8E 02	3	3	3.33	3.33
3.8E 02 -	5.6E 02	3	6	3.33	6.67
5.6E 02 -	8.3E 02	13	19	14.44	21.11
8.3E 02 -	1.2E 03	26	45	28.89	50.00
1.2E 03 -	1.8E 03	35	80	38.89	88.89
1.8E 03 -	2.6E 03	7	87	7.78	96.67
2.6E 03 -	3.8E 03	3	90	3.33	100.00

HISTOGRAM FOR COLUMN ▼ (S-MN)

```
3.0E 02 XXX
5.0E 02 XXX
7.0E 02 XXXXXXXXXXXXX
1.0E 03 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.5E 03 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
2.0E 03 XXXXXXXX
3.0E 03 XXX
```

N	L	G	ANALYTICAL VALUES
0	0	0	90
0.0	0.0	0.0	

MAXIMUM = 3.00000E 03
MINIMUM = 3.00000E 02
GEOMETRIC MEAN = 1.14274E 03
GEOMETRIC DEVIATION = 1.57923E 00

FREQUENCY TABLE FOR COLUMN B (S-AG) TABLE 2

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E-01 -	5.6E-01	2	2	2.22	2.22
5.6E-01 -	8.3E-01	1	3	1.11	3.33
8.3E-01 -	1.2E 00	0	3	0.0	3.33
1.2E 00 -	1.8E 00	0	3	0.0	3.33
1.8E 00 -	2.6E 00	0	3	0.0	3.33
2.6E 00 -	3.8E 00	1	4	1.11	4.44

HISTOGRAM FOR COLUMN B (S-AG)

```
5.0E-01 XX
7.0E-01 X
1.0E 00
1.5E 00
2.0E 00
3.0E 00 X
```

N	L	G	ANALYTICAL VALUES
82	4	0	4
91.11	4.64	0.5	

MAXIMUM = 3.00000E 00
MINIMUM = 5.00000E-01
GEOMETRIC MEAN = 8.51216E-01
GEOMETRIC DEVIATION = 2.35055E 00

FREQUENCY TABLE FOR COLUMN 11 (S-B) TABLE 2

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E 00 -	1.2E 01	3	3	3.33	3.33
1.2E 01 -	1.8E 01	5	8	5.56	8.89
1.8E 01 -	2.6E 01	8	16	8.89	17.78
2.6E 01 -	3.8E 01	17	33	18.89	36.67
3.8E 01 -	5.6E 01	17	50	18.89	55.56
5.6E 01 -	8.3E 01	27	77	30.00	85.56
8.3E 01 -	1.2E 02	4	81	4.44	90.00
1.2E 02 -	1.8E 02	1	82	1.11	91.11
1.8E 02 -	2.6E 02	2	84	2.22	93.33
2.6E 02 -	3.8E 02	0	84	0.0	93.33
3.8E 02 -	5.6E 02	0	84	0.0	93.33
5.6E 02 -	8.3E 02	1	85	1.11	94.44

HISTOGRAM FOR COLUMN 11 (S-B)

```
1.0E 01 XXX
1.5E 01 XXXXXX
2.0E 01 XXXXXXXXX
3.0E 01 XXXXXXXXXXXXXXXXXX
5.0E 01 XXXXXXXXXXXXXXXXXX
7.0E 01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.0E 02 XXXX
1.5E 02 X
2.0E 02 XX
3.0E 02
5.0E 02
7.0E 02 X
```

N	L	G	ANALYTICAL VALUES
0	5	0	85
0.0	5.56	0.0	

MAXIMUM = 7.00000E 02
MINIMUM = 1.00000E 01
GEOMETRIC MEAN = 4.52438E 01
GEOMETRIC DEVIATION = 2.03360E 00

FREQUENCY TABLE FOR COLUMN 12 (S-BA) TABLE 2

LIMITS LOWER - UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E 01 - 2.6E 01	0	0	0.0	0.0
2.6E 01 - 3.8E 01	0	0	0.0	0.0
3.8E 01 - 5.6E 01	0	0	0.0	0.0
5.6E 01 - 8.3E 01	0	0	0.0	0.0
8.3E 01 - 1.2E 02	0	0	0.0	0.0
1.2E 02 - 1.8E 02	2	2	2.22	2.22
1.8E 02 - 2.6E 02	1	3	1.11	3.33
2.6E 02 - 3.8E 02	20	23	22.22	25.56
3.8E 02 - 5.6E 02	20	43	22.22	47.78
5.6E 02 - 8.3E 02	43	86	47.78	95.56
8.3E 02 - 1.2E 03	1	87	1.11	96.67
1.2E 03 - 1.8E 03	3	90	3.33	100.00

HISTOGRAM FOR COLUMN 12 (S-BA)

```
1.5E 02 XX
2.0E 02 X
3.0E 02 XXXXXXXXXXXXXXXXXXXX
5.0E 02 XXXXXXXXXXXXXXXXXXXX
7.0E 02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.0E 03 X
1.5E 03 XXX
```

N	L	G	ANALYTICAL VALUES
0	0	0	90
0.0	0.0	0.0	

MAXIMUM = 1.50000E 03
MINIMUM = 1.50000E 02
GEOMETRIC MEAN = 5.28064E 02
GEOMETRIC DEVIATION = 1.56098E 00

FREQUENCY TABLE FOR COLUMN 15 (S-BE) TABLE 2

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E-01 -	1.2E 00	24	24	26.67	26.67
1.2E 00 -	1.8E 00	1	25	1.11	27.78

HISTOGRAM FOR COLUMN 15 (S-BE)

1.5E 00 XXXXXXXXXXXXXXXXXXXXXXXXX
1.5E 00 X

N	L	G	ANALYTICAL VALUES
10	55	0	25
11.11	61.11	0.0	

MAXIMUM = 1.500000E 00
MINIMUM = 1.000000E 00
GEOMETRIC MEAN = 1.01635E 00
GEOMETRIC DEVIATION = 1.08447E 00

FREQUENCY TABLE FOR COLUMN /6 (S-CO) TABLE 2

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E 00 -	5.6E 00	0	0	0.0	0.0
5.6E 00 -	8.3E 00	0	0	0.0	0.0
8.3E 00 -	1.2E 01	1	1	1.11	1.11
1.2E 01 -	1.8E 01	4	5	4.44	5.56
1.8E 01 -	2.6E 01	14	19	15.56	21.11
2.6E 01 -	3.8E 01	61	80	67.78	88.89
3.8E 01 -	5.6E 01	7	87	7.78	96.67
5.6E 01 -	8.3E 01	3	90	3.33	100.00

HISTOGRAM FOR COLUMN 16 (S-CO)

```
1.0E 01 X
1.5E 01 XXXX
2.0E 01 XXXXXXXXXXXXXX
3.0E 01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
5.0E 01 XXXXXXX
7.0E 01 XXX
```

N	L	G	ANALYTICAL VALUES
0	0	0	90
0.0	0.0	0.0	

MAXIMUM = 7.00000E 01
MINIMUM = 1.00000E 01
GEOMETRIC MEAN = 2.88776E 01
GEOMETRIC DEVIATION = 1.38135E 00

FREQUENCY TABLE FOR COLUMN 17 (S-CR) TABLE 2

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E 00 -	1.2E 01	3	3	3.33	3.33
1.2E 01 -	1.8E 01	0	3	0.00	3.33
1.8E 01 -	2.6E 01	0	3	0.00	3.33
2.6E 01 -	3.8E 01	0	3	0.00	3.33
3.8E 01 -	5.6E 01	1	4	1.11	4.44
5.6E 01 -	8.3E 01	27	31	30.00	34.44
8.3E 01 -	1.2E 02	25	56	27.78	62.22
1.2E 02 -	1.8E 02	33	89	36.67	98.89
1.8E 02 -	2.6E 02	1	90	1.11	100.00

HISTOGRAM FOR COLUMN 17 (S-CR)

```
5.6E 01 X
7.0E 01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.0E 02 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.5E 02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
2.0E 02 X
```

N	L	G	ANALYTICAL VALUES
0	0	0	90
0.0	0.0	0.0	

MAXIMUM = 2.00000E 02
MINIMUM = 5.00000E 01
GEOMETRIC MEAN = 1.05672E 02
GEOMETRIC DEVIATION = 1.39915E 00

FREQUENCY TABLE FOR COLUMN 18 (S-CU) TABLE 2

LIMITS LOWER - UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E 00 - 5.6E 00	0	0	0.0	0.0
5.6E 00 - 8.3E 00	0	0	0.0	0.0
8.3E 00 - 1.2E 01	0	0	0.0	0.0
1.2E 01 - 1.8E 01	1	1	1.11	1.11
1.8E 01 - 2.6E 01	0	1	0.0	1.11
2.6E 01 - 3.8E 01	1	2	1.11	2.22
3.8E 01 - 5.6E 01	3	5	3.33	5.56
5.6E 01 - 8.3E 01	32	37	35.56	41.11
8.3E 01 - 1.2E 02	25	62	27.78	68.89
1.2E 02 - 1.8E 02	26	88	28.89	97.78
1.8E 02 - 2.6E 02	1	89	1.11	98.89
2.6E 02 - 3.8E 02	0	89	0.0	98.89
3.8E 02 - 5.6E 02	1	90	1.11	100.00

HISTOGRAM FOR COLUMN 18 (S-CU)

```
1.5E 01 X
2.3E 01
3.0E 01 X
5.0E 01 XXX
7.0E 01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.0E 02 XXXXXXXXXXXXXXXXXXXXXXXXXX
1.5E 02 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
2.0E 02 X
3.0E 02
5.0E 02 X
```

N C	L G	G 0	ANALYTICAL VALUES 90
0.0	0.0	0.0	

MAXIMUM = 5.00000E 02
MINIMUM = 1.50000E 01
GEOMETRIC MEAN = 9.59185E 01
GEOMETRIC DEVIATION = 1.56287E 00

FREQUENCY TABLE FOR COLUMN 19 (S-LA) TABLE 2

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E 01 -	2.6E 01	5	5	5.56	5.56
2.6E 01 -	3.8E 01	1	6	1.11	6.67
3.8E 01 -	5.6E 01	1	7	1.11	7.78
5.6E 01 -	8.3E 01	0	7	0.0	7.78
8.3E 01 -	1.2E 02	0	7	0.0	7.78
1.2E 02 -	1.8E 02	1	8	1.11	8.89

HISTOGRAM FOR COLUMN 19 (S-LA)

```
       2.0E 01 XXXXXX
       3.0E 01 X
       5.0E 01 X
       7.0E 01
       1.0E 02
       1.5E 02 X
```

N	L	G	ANALYTICAL VALUES
50	32	0	8
55.56	35.56	0.0	

MAXIMUM = 1.50000E 02
MINIMUM = 2.00000E 01
GEOMETRIC MEAN = 3.03504E 01
GEOMETRIC DEVIATION = 2.06326E 00

FREQUENCY TABLE FOR COLUMN 20 (S-MO)

TABLE 2

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E 00 -	5.6E 00	5	5	5.56	5.56
5.6E 00 -	8.3E 00	2	7	2.22	7.78
8.3E 00 -	1.2E 01	1	8	1.11	8.89
1.2E 01 -	1.8E 01	2	10	2.22	11.11

HISTOGRAM FOR COLUMN 20 (S-MO)

```
      5.0E 00 XXXXXX
      7.0E 00 XX
      1.0E 01 X
      1.5E 01 XX
```

N	L	G	ANALYTICAL VALUES
6	74	0	10
6.67	82.22	0.0	

MAXIMUM = 1.50000E 01
MINIMUM = 5.00000E 00
GEOMETRIC MEAN = 7.14039E 00
GEOMETRIC DEVIATION = 1.57383E 00

FREQUENCY TABLE FOR COLUMN 21 (S-NB) TABLE 2

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E 00 -	1.2E 01	29	29	32.22	32.22
1.2E 01 -	1.8E 01	16	45	17.78	50.00

HISTOGRAM FOR COLUMN 21 (S-NB)

```
      1.0E 01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
      1.5E 01 XXXXXXXXXXXXXXXXX
```

N	L	G	ANALYTICAL VALUES
0	45	0	45
0.0	50.00	0.0	

MAXIMUM = 1.50000E 01
MINIMUM = 1.00000E 01
GEOMETRIC MEAN = 1.15505E 01
GEOMETRIC DEVIATION = 1.21698E 00

FREQUENCY TABLE FOR COLUMN 22 (S-NI) TABLE 2

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E 00 -	5.6E 00	0	0	0.0	0.0
5.6E 00 -	8.3E 00	0	0	0.0	0.0
8.3E 00 -	1.2E 01	0	0	0.0	0.0
1.2E 01 -	1.8E 01	0	0	0.0	0.0
1.8E 01 -	2.6E 01	0	0	0.0	0.0
2.6E 01 -	3.8E 01	1	1	1.11	1.11
3.8E 01 -	5.6E 01	14	15	15.56	16.67
5.6E 01 -	8.3E 01	57	72	63.33	80.00
8.3E 01 -	1.2E 02	15	87	16.67	96.67
1.2E 02 -	1.8E 02	2	89	2.22	98.89
1.8E 02 -	2.6E 02	1	90	1.11	100.00

HISTOGRAM FOR COLUMN 22 (S-NI)

```
3.0E 01 X
5.0E 01 XXXXXXXXXXXXXXXX
7.0E 01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.0E 02 XXXXXXXXXXXXXXXXX
1.5E 02 XX
2.0E 02 X
```

N	L	G	ANALYTICAL VALUES
0	0	0	90
0.0	0.0	0.0	

MAXIMUM = 2.00000E 02
MINIMUM = 3.00000E 01
GEOMETRIC MEAN = 7.18639E 01
GEOMETRIC DEVIATION = 1.30790E 00

FREQUENCY TABLE FOR COLUMN 25 (S-PB) TABLE 2

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E 00 -	1.2E 01	14	14	15.56	15.56
1.2E 01 -	1.8E 01	27	41	30.00	45.56
1.8E 01 -	2.6E 01	20	61	22.22	67.78
2.6E 01 -	3.8E 01	14	75	15.56	83.33
3.8E 01 -	5.6E 01	0	75	0.0	83.33
5.6E 01 -	8.3E 01	1	76	1.11	84.44

HISTOGRAM FOR COLUMN 25 (S-PB)

```
1.0E 01 XXXXXXXXXXXXXXX
1.5E 01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
2.0E 01 XXXXXXXXXXXXXXXXXXXX
3.0E 01 XXXXXXXXXXXXXXX
5.0E 01
7.0E 01 X
```

N	L	G	ANALYTICAL VALUES
7	7	0	76
7.78	7.78	0.0	

MAXIMUM = 7.000000E 01
MINIMUM = 1.000000E 01
GEOMETRIC MEAN = 1.74093E 01
GEOMETRIC DEVIATION = 1.47610E 00

FREQUENCY TABLE FOR COLUMN 25 (S-SC) TABLE 2

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E 00 -	5.6E 00	0	0	0.0	0.0
5.6E 00 -	8.3E 00	0	0	0.0	0.0
8.3E 00 -	1.2E 01	0	0	0.0	0.0
1.2E 01 -	1.8E 01	2	2	2.22	2.22
1.8E 01 -	2.6E 01	32	34	35.56	37.78
2.6E 01 -	3.8E 01	45	79	50.00	87.78
3.8E 01 -	5.6E 01	0	79	0.0	87.78
5.6E 01 -	8.3E 01	9	88	10.00	97.78
8.3E 01 -	1.2E 02	1	89	1.11	98.89

HISTOGRAM FOR COLUMN 25 (S-SC)

```
1.5E 01 XX
2.0E 01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
3.0E 01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
5.0E 01
7.0E 01 XXXXXXXXXX
1.0E 02 X
```

N	L	G	ANALYTICAL VALUES
0	0	1	89
0.0	0.0	1.11	

MAXIMUM = 1.00000E 02
MINIMUM = 1.50000E 01
GEOMETRIC MEAN = 2.81917E 01
GEOMETRIC DEVIATION = 1.48577E 00

FREQUENCY TABLE FOR COLUMN 27 (S-SR) TABLE 2

LIMITS LOWER - UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E 01 - 1.2E 02	0	0	0.0	0.0
1.2E 02 - 1.8E 02	8	8	8.89	8.89
1.8E 02 - 2.6E 02	11	19	12.22	21.11
2.6E 02 - 3.8E 02	46	65	51.11	72.22
3.8E 02 - 5.6E 02	11	76	12.22	84.44
5.6E 02 - 8.3E 02	14	90	15.56	100.00

HISTOGRAM FOR COLUMN 27 (S-SR)

```
1.5E 02 XXXXXXXX
2.0E 02 XXXXXXXXXXX
3.0E 02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
5.0E 02 XXXXXXXXXXX
7.0E 02 XXXXXXXXXXXXXX
```

N	L	G	ANALYTICAL VALUES
0	0	0	90
0.0	0.0	0.0	

MAXIMUM = 7.00000E 02
MINIMUM = 1.50000E 02
GEOMETRIC MEAN = 3.25977E 02
GEOMETRIC DEVIATION = 1.56673E 00

FREQUENCY TABLE FOR COLUMN 28 (S-V) TABLE 2

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E 00 -	1.2E 01	0	0	0.0	0.0
1.2E 01 -	1.8E 01	0	0	0.0	0.0
1.8E 01 -	2.6E 01	0	0	0.0	0.0
2.6E 01 -	3.8E 01	0	0	0.0	0.0
3.8E 01 -	5.6E 01	0	0	0.0	0.0
5.6E 01 -	8.3E 01	0	0	0.0	0.0
8.3E 01 -	1.2E 02	0	0	0.0	0.0
1.2E 02 -	1.8E 02	4	4	4.44	4.44
1.8E 02 -	2.6E 02	18	22	20.00	24.44
2.6E 02 -	3.8E 02	53	75	58.89	83.33
3.8E 02 -	5.6E 02	9	84	10.00	93.33
5.6E 02 -	8.3E 02	4	88	4.44	97.78
8.3E 02 -	1.2E 03	2	90	2.22	100.00

HISTOGRAM FOR COLUMN 28 (S-V)

```
1.5E 02 XXXX
2.0E 02 XXXXXXXXXXXXXXXXXX
3.0E 02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
5.0E 02 XXXXXXXXX
7.0E 02 XXXX
1.0E 03 XX
```

N	L	G	ANALYTICAL VALUES
0	0	0	90
0.0	0.0	0.0	

MAXIMUM = 1.00000E 03
MINIMUM = 1.50000E 02
GEOMETRIC MEAN = 3.01075E 02
GEOMETRIC DEVIATION = 1.46521E 00

```
FREQUENCY TABLE FOR COLUMN    30 (S-Y      )        TABLE 2

        LIMITS            FREQ  FRFQ   PERCENT   PERCENT
    LOWER - UPPER               CUM     FREQ     FREQ CUM
  8.3E 00 -    1.2E 01      2     2      2.22       2.22
  1.2E 01 -    1.8E 01      4     6      4.44       6.67
  1.8E 01 -    2.6E 01     36    42     40.00      46.67
  2.6E 01 -    3.8E 01     46    88     51.11      97.78
  3.8E 01 -    5.6E 01      2    90      2.22     100.00

HISTOGRAM FOR COLUMN    30 (S-Y      )

       1.0E 01 XX
       1.5E 01 XXXX
       2.0E 01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
       3.0E 01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
       5.0E 01 XX

                                                          ANALYTICAL
      N         L                                    G     VALUES
      0         0                                    0        90
     0.0       0.0                                  0.0

MAXIMUM =  5.00000E 01
MINIMUM =  1.00000E 01
GEOMETRIC MEAN =  2.44132E 01
GEOMETRIC DEVIATION =  1.32270E 00
```

FREQUENCY TABLE FOR COLUMN 37 (S-ZN) TABLE 2

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E 02 -	2.6E 02	0	0	0.0	0.0
2.6E 02 -	3.8E 02	3	3	3.33	3.33
3.8E 02 -	5.6E 02	1	4	1.11	4.44

HISTOGRAM FOR COLUMN 37 (S-ZN)

3.0E 02 XXX
5.0E 02 X

N	L	U	ANALYTICAL VALUES
68	18	0	4
75.56	20.00	0.0	

MAXIMUM = 5.00000E 02
MINIMUM = 3.00000E 02
GEOMETRIC MEAN = 3.40865E 02
GEOMETRIC DEVIATION = 1.29099E 00

FREQUENCY TABLE FOR COLUMN 31 (S-ZN) TABLE 2

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E 02 -	2.6E 02	0	0	0.0	0.0
2.6E 02 -	3.8E 02	3	3	3.33	3.33
3.8E 02 -	5.6E 02	1	4	1.11	4.44

HISTOGRAM FOR COLUMN 31 (S-ZN)

3.0E 02 XXX
5.0E 02 X

N	L	G	ANALYTICAL VALUES
68	18	0	4
75.56	20.00	0.0	

MAXIMUM = 5.00000E 02
MINIMUM = 3.00000E 02
GEOMETRIC MEAN = 3.40865E 02
GEOMETRIC DEVIATION = 1.29099E 00

FREQUENCY TABLE FOR COLUMN 32 (S-ZR) TABLE 2

LIMITS LOWER - UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E 00 - 1.2E 01	0	0	0.0	0.0
1.2E 01 - 1.8E 01	0	0	0.0	0.0
1.8E 01 - 2.6E 01	0	0	0.0	0.0
2.6E 01 - 3.8E 01	3	3	3.33	3.33
3.8E 01 - 5.6E 01	0	3	0.0	3.33
5.6E 01 - 8.3E 01	6	9	6.67	10.00
8.3E 01 - 1.2E 02	19	28	21.11	31.11
1.2E 02 - 1.8E 02	53	81	58.89	90.00
1.8E 02 - 2.6E 02	5	86	5.56	95.56
2.6E 02 - 3.8E 02	4	90	4.44	100.00

HISTOGRAM FUR COLUMN 32 (S-ZR)

```
3.0E 01 XXX
5.0E 01
7.0E 01 XXXXXX
1.0E 02 XXXXXXXXXXXXXXXXXXX
1.5E 02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
2.0E 02 XXXXX
3.0E 02 XXXX
```

N	L	G	ANALYTICAL VALUES
0	0	0	90
0.0	0.0	0.0	

MAXIMUM = 3.00000E 02
MINIMUM = 3.00000E 01
GEOMETRIC MEAN = 1.29977E 02
GEOMETRIC DEVIATION = 1.50491E 00

FREQUENCY TABLE FOR COLUMN 33 (AA-AU-P) TABLE 2

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E-02 -	2.6E-02	0	[illegible]	[illegible]	0.0
2.6E-02 -	3.8E-02	[illegible]	[illegible]	[illegible]	0.0
3.8E-02 -	5.6E-02	1	1	1.11	1.11
5.6E-02 -	8.3E-02	1	2	1.11	2.22
8.3E-02 -	1.2E-01	1	3	1.11	3.33
1.2E-01 -	1.8E-01	0	3	0.0	3.33
1.8E-01 -	2.6E-01	1	4	1.11	4.44
2.6E-01 -	3.8E-01	1	5	1.11	5.56
3.8E-01 -	5.6E-01	1	6	1.11	6.67

HISTOGRAM FOR COLUMN 33 (AA-AU-P)

```
5.0E-02 X
7.0E-02 X
1.0E-01 X
1.5E-01
2.0E-01 X
3.0E-01 X
5.0E-01 X
```

N	L		G	ANALYTICAL VALUES
0	84		0	6
0.0	93.33		0.0	

MAXIMUM = 5.00000E-01
MINIMUM = 4.00000E-02
GEOMETRIC MEAN = 1.38960E-01
GEOMETRIC DEVIATION = 2.64453E 00

TABLE 2 STATISTICAL SUMMARY

ELEMENT	N	L	G	ANALYTICAL VALUES
	0	0	0	90
LATITUDE	0	0	0	6
LONGITUD	0	0	0	6
S-FE %	0	0	0	90
S-MG %	0	0	0	90
S-CA %	0	0	0	90
S-TI %	0	0	2	88
S-MN	0	0	0	90
S-AG	82	4	0	4
S-B	0	5	0	85
S-BA	0	0	0	90
S-BE	10	55	0	25
S-CO	0	0	0	90
S-CR	0	0	0	90
S-CU	0	0	0	90
S-LA	50	32	0	8
S-MO	6	74	0	10
S-NB	0	45	0	45
S-NI	0	0	0	90
S-PB	7	7	0	76
S-SC	0	0	1	89
S-SR	0	0	0	90
S-V	0	0	0	90
S-Y	0	0	0	90
S-ZN	68	18	0	4
S-ZR	0	0	0	90
AA-AU-P	0	84	0	6

ELEMENT	GEOMETRIC MEAN	GEOMETRIC DEVIATION	REMARKS
S-FE %	8.993686	1.40	90 SAMPLES AND 90 ANALYTICAL VALUES.
S-MG %	2.909829	1.54	90 SAMPLES AND 90 ANALYTICAL VALUES.
S-CA %	2.502258	2.31	90 SAMPLES AND 90 ANALYTICAL VALUES.
S-TI %	********	******	2 GREATER THAN VALUES. NO COMPUTATIONS.
S-MN	1142.737061	1.58	90 SAMPLES AND 90 ANALYTICAL VALUES.

TABLE 2 STATISTICAL SUMMARY

S-AG	********	******	COHEN'S TABLE EXCEEDED. H(1.0) OR GAMMA(1.1) GTR THAN ALLOW. NO COMPUTATIONS.	
S-B	40.436615	2.3[illegible]	5 NOT DETECTED, LESS THAN, OR TRACE VALUES.	85 REPORTED VALUES.
S-BA	528.363477	1.56	90 SAMPLES AND 90 ANALYTICAL VALUES.	
S-BE	0.703241	1.33	65 NOT DETECTED, LESS THAN, OR TRACE VALUES.	25 REPORTED VALUES.
S-CO	28.877563	1.38	90 SAMPLES AND 90 ANALYTICAL VALUES.	
S-CR	105.672134	1.40	90 SAMPLES AND 90 ANALYTICAL VALUES.	
S-CU	95.918274	1.56	90 SAMPLES AND 90 ANALYTICAL VALUES.	
S-LA	********	******	COHEN'S TABLE EXCEEDED. H(0.9) OR GAMMA(1.8) GTR THAN ALLOW. NO COMPUTATIONS.	
S-MO	0.827033	3.47	80 NOT DETECTED, LESS THAN, OR TRACE VALUES.	10 REPORTED VALUES.
S-NB	8.418255	1.46	45 NOT DETECTED, LESS THAN, OR TRACE VALUES.	45 REPORTED VALUES.
S-NI	71.863724	1.31	90 SAMPLES AND 90 ANALYTICAL VALUES.	
S-PB	14.887792	1.68	14 NOT DETECTED, LESS THAN, OR TRACE VALUES.	76 REPORTED VALUES.
S-SC	********	******	1 GREATER THAN VALUES. NO COMPUTATIONS.	
S-SR	325.976907	1.57	90 SAMPLES AND 90 ANALYTICAL VALUES.	
S-V	301.374217	1.47	90 SAMPLES AND 90 ANALYTICAL VALUES.	
S-Y	24.413167	1.32	90 SAMPLES AND 90 ANALYTICAL VALUES.	
S-ZN	********	******	COHEN'S TABLE EXCEEDED. H(1.0) OR GAMMA(0.2) GTR THAN ALLOW. NO COMPUTATIONS.	
S-ZR	129.976593	1.50	90 SAMPLES AND 90 ANALYTICAL VALUES.	
AA-AU-P	********	******	COHEN'S TABLE EXCEEDED. H(0.9) OR GAMMA(0.2) GTR THAN ALLOW. NO COMPUTATIONS.	